OFFICIAL GAZETTE UNITED STATES PATENT OFFICE

MAY

VOL. 814

1965

MICROFILMED BY
[illegible] DIVISION
[illegible] & [illegible] COMPANY

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
May 4, 1965 Volume 814 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of March 1965

Examiner affirmed	291
Examiner affirmed in part	54
Examiner reversed	95
Total	440

Notice of Daylight Saving Time

The Patent Office will operate on Daylight Saving Time from April 26, 1965, through October 30, 1965.

Appeal Brief Extensions

In view of the large number of appeals to the Board of Appeals which are currently being filed it is desirable that the appeal briefs be promptly filed in order that the appeals may be decided as quickly and efficiently as possible. Accordingly, extensions of the times for filing such briefs should not be requested as a matter of course but only in cases of real necessity. Requests for extensions beyond the sixty day period which may be granted by the Board will be closely scrutinized and will be approved only on a clear showing that the appellant has proceeded with diligence and that the brief cannot reasonably be prepared within the time previously allowed, or that the Patent Office has not acted with reasonable promptness on a proper proposed amendment which was seasonably filed.

EDWIN L. REYNOLDS,
First Assistant Commissioner.

Apr. 5, 1965.

Adjudicated Patents

(D.C. Minn.) Gunther Schwank Patent No. 2,775,294 (158—116), for RADIATION BURNERS, *Held* valid and not infringed. *American Infra-Red Radiant Co.* v. *Lambert Industries, Inc.*, 238 F. Supp. 176; 145 USPQ 67.

(D.C. Minn.) Gunther Schwank Patent No. 2,870,830 (158—114), for GAS BURNERS, *Held* valid and infringed. *Id*

Decisions of the Commissioner of Patents

The 1964 Edition of the Decisions of the Commissioner of Patents has been released from the printer and is available from the Superintendent of Documents, Government Printing Office, Washington, D. C., 20402..............Price $4.50

International Convention for the Protection of Industrial Property

Adherence of Mauritania to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of the Islamic Republic of Mauritania to the Convention of Union of Paris for the Protection of Industrial Property, as last revised at Lisbon on October 31, 1958

The note also confirms the membership of that State in the International Union of Paris for the Protection of Industrial Property.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

Apr. 7, 1965.

International Convention for the Protection of Industrial Property

Adherence of South Africa to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 17, 1965, of the Republic of South Africa to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

Apr. 7, 1965.

International Convention for the Protection of Industrial Property

Adherence of Yugoslavia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of Yugoslavia to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

Apr. 7, 1965

Disclaimer

3,014,154.—*Kenneth W. Ehlers*, Lafayette, and *Ferdinand Voelker III*, Concord, Calif. ION ROCKET ENGINE. Patent dated Dec. 19, 1961. Disclaimer filed Mar. 8, 1965, by the assignee, *United States of America as represented by the United States Atomic Energy Commission.*

Hereby enters this disclaimer to claims 1, 2, 3, 4, 5, 6, 8, 9, 12, 13 and 15 of said patent.

New Applications Received During March 1965

Patents	8708
Designs	547
Plant Patents	5
Reissues	19
Total	9279

Issue—May 4, 1965

Patents	1160	No. 3,181,175 to No. 3,182,334, incl.
Designs	74	No. 200,996 to No. 201,069, incl.
Plant Patents	5	No. 2,502 to No. 2,506, incl.
Reissues	3	No. 25,772 to No. 25,774, incl.
Total	1242	

Foreign Patents Received in the Scientific Library as of March 31, 1965

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Mar. 22, 1965	53,158
(*Patents*)	Mar. 10, 1965	251,263
Austria	Feb. 23, 1965	237,700
Belgium	Mar. 29, 1965	621,950
Canada	Mar. 26, 1965	706,560
Czechoslovakia	Mar. 10, 1965	112,450
Denmark	Dec. 18, 1964	100,000
East Germany	Mar. 8, 1965	35,989
Egypt	Mar. 23, 1965	4,968
Finland	Jan. 14, 1965	33,9[illegible]7
France:		
(*Patents*)	Mar. 26, 1965	1,378,050
(*Additions*)	Mar. 26, 1965	84,050
(*Medicaments*)	Jan. 4, 1965	2,050 M
(*Additions*)	May 4, 1964	23 CAM
Germany:		
(*Auslegeschriften*)	Mar. 29, 1965	1,184,710
(*Patents*)	Feb. 4, 1965	1,169,287
Great Britain	Mar. 29, 1965	985,855
India	Oct. 15, 1964	86,939
Ireland	Feb. 9, 1965	23,946
Italy	Jan. 4, 1965	621,000
Japan	Mar. 30, 1965	3,880/65
Netherlands:		
(*Patents*)	Mar. 18, 1965	120,040
(*Octrooiaanvragen*)	Mar. 8, 1965	14,071/64
Norway	Mar. 15, 1965	105,490
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Mar. 10, 1965	48,950
Rumania	Mar. 29, 1965	42,843
Sweden	Mar. 11, 1965	194,131
Switzerland	Mar. 29, 1965	385,789
U.S.S.R.	Mar. 23, 1965	167,086

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: Missing 1–10,000
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,835,659, J. E. Guillet, POLYPROPYLENE WAXES AND METHOD OF MAKING, decided Nov. 25, 1964, Interference No. 90,960, claim 1.

Patent No. 2,838,546, B. J. Magerlein, W. P. Schneider O. K. Sebek and G. B. Spero, 6a-FLUORO-16a-HYDROXY-1,4-PREGNADIENES, decided Apr. 30, 1964, Interference No. 90,125, claims 1, 2, 3, 4, 5, 6, 7, 8 and 9.

Patent No. 2,838,548, B. J. Magerlein, W. P. Schneider, O. K. Sebek and G. B. Spero, 6a-FLUORO-16a-HYDROXY-4-PREGNENES, decided Apr. 30, 1964, Interference No. 90,125, claims 1, 2, 3, 4, 5, 6, 7, 8 and 9.

Patent No. 2,850,264, D. B. Grable, DUAL PASSAGE CONCENTRIC PIPE DRILL STRING COUPLING, decided Jan. 15, 1963, Interference No. 91,037, claims 1 and 3.

Patent No. 2,868,897, D. J. Hamilton, LOW OUTPUT IMPEDANCE SEMICONDUCTOR AMPLIFIER, decided May 10, 1961, Interference No. 90,251, claims 1, 2 and 3.

Patent No. 2,874,277, J. R. Orr, SOUND IF GAIN REGULATION, decided Dec. 13, 1962, Interference No. 90,877, claims 1, 2, 3, 4, 5 and 6.

Patent No. 2,884,197, A. Whittell, Jr., THERMOSTATIC FLOW GOVERNOR, decided Aug. 10, 1961, Interference No. 90,722, claims 1, 2, 4 and 7.

Patent No. 2,900,823, K. H. White, INERTIAL APPARATUS, decided Oct. 12, 1962, Interference No. 91,143, claims 1, 2, 3, 4, 5, 6, 7 and 8.

Patent No. 2,935,709, W. A. Paine II, APPARATUS AND METHOD FOR STRAIN ROD ASSEMBLY AND FILAMENT CORE, decided Feb. 19, 1964, Interference No. 92,482, claims 8 and 9.

Patent No. 2,968,826, J. Leshin, FLUID DISPENSER WITH BALL APPLICATOR, decided Mar. 19, 1965, Interference No. 93,497, claims 1, 4, 5 and 6.

Patent No. 2,974,252, C. F. Quate, LOW NOISE AMPLIFIER, decided Mar. 4, 1965, Interference No. 92,484, claims 1 and 12.

Patent No. 2,991,234, J. M. Andrus, ENAMELED ALUMINUM AND PROCESS FOR MANUFACTURE THEREOF, decided Mar. 26, 1965, Interference No. 92,839, claims 1 and 4.

Patent No. 3,053,934, R. B. Gray, AMPLIFIER SYSTEM FOR STEREO SOUND, decided Jan. 11, 1965, Interference No. 93,445, claims 1 and 3.

Patent No. 3,066,941, R. Van Antwerp, REMOTELY CONTROLLED RECORD CHANGER, decided Mar. 11, 1965, Interference No. 93,664, claim 2.

Patent No. 3,085,663, F. T. Jakeways, AUTOMATIC ADJUSTING DEVICE FOR DISC BRAKES, decided Feb. 18, 1965, Interference No. 93,932, claim 8.

Patent No. 3,085,663, F. T. Jakeways, AUTOMATIC ADJUSTING DEVICE FOR DISC BRAKES, decided Feb. 18, 1965, Interference No. 93,933, claims 3 and 4.

Patent No. 3,101,574, A. C. West, COTTON PICKER SPINDLE SHARPENER, decided Feb. 25, 1965, Interference No. 94,498, claims 1 and 2.

Patent No. 3,107,005, E. W. Cauffman, ADJUSTABLE LIVESTOCK FEEDER, decided Mar. 18, 1965, Interference No. 94,298, claims 1, 2, 3 and 4.

Patent No. 3,110,975, P. J. Kircher, STEAM IRON WITH DUAL HEATING MEANS, decided Mar. 4, 1965, Interference No. 94,111, claim 1.

Presidential Documents

Title 3—THE PRESIDENT

Executive Order 11215

ESTABLISHING THE PRESIDENT'S COMMISSION ON THE PATENT SYSTEM

WHEREAS the patent system established under the Constitution of the United States has contributed materially to the development of this country by furthering increased productivity, economic growth, and an enhanced standard of living and has strengthened the competitiveness of our products in world markets; and

WHEREAS we have experienced vast technological advances, particularly in recent decades, and industrial development continues to depend increasingly upon scientific and inventive endeavors; and

WHEREAS other industrial nations may be expected to exert vigorous efforts to obtain the greatest economic and social benefit from inventive activity; and

WHEREAS we and other nations are concerned with improving systems for the protection of industrial property to promote the beneficial exchange of products and services across national boundaries; and

WHEREAS the extensive international economic interests of the United States require that this Government take a leading role in international cooperation for the protection of industrial property; and

WHEREAS the patent system of the United States has developed a continuing backlog of patent applications and the cost of processing such applications increases constantly; and

WHEREAS the general character of our patent system has undergone no substantial change since 1836; and

WHEREAS it is now necessary to evaluate our patent system and to identify possible improvements in it:

NOW, THEREFORE, by virtue of the authority vested in me as President of the United States, it is ordered as follows:

SECTION 1. *Commission established.* (a) There is hereby established the President's Commission on the Patent System, hereinafter referred to as the Commission. The President shall designate the Chairman of the Commission from among its members.

(b) The Commission shall be composed of the Secretary of Commerce, the Secretary of Defense, the Administrator of the Small Business Administration, and the Director of the National Science Foundation, or their respective designees, and not to exceed ten other members appointed by the President from the public at large.

(c) The Secretary of State and the Director of the Office of Science and Technology, or their designees, may sit with the Commission as observers.

SEC. 2. *Functions of the Commission.* The Commission shall recommend to the President steps to ensure that the patent system will be more effective in serving the public interest in view of the complex and rapidly changing technology of our time. Specifically, it shall direct its efforts toward (1) ascertaining the degree to which our patent system currently serves our national needs and international goals, (2) identifying any aspects of the system which may need change, (3) devising possible improvements in the system, and (4) recommending any legislation deemed essential to strengthen the United States patent system. In carrying out its evaluation, and in achieving these objectives, the Commission shall make an independent study of the existing patent system of the United States including its relationship to international and foreign patent systems, inventive activity and the administration of the system.

SEC. 3. *Administrative arrangements.* (a) Each member of the Commission who does not concurrently hold other compensated office or employment under the United States shall receive such compensation as shall be fixed in accordance with the standards and procedures of the Classification Act of 1949, as amended, or such other laws or procedures as may be applicable, and may also receive travel expenses and per diem in lieu of subsistence as authorized by law (5 U.S.C. 73b–2) for persons in the Government service employed intermittently.

(b) The Department of Commerce is hereby designated as the agency which principally shall provide the Commission with necessary administrative facilities and services, including such advice as may be necessary to aid the Commission in the performance of its functions hereunder.

(c) Each Federal department or agency the head of which is referred to in Section 1(b) of this order shall, as may be necessary, furnish assistance to the Commission to accomplish the purposes of this order, in accordance with the provisions of Section 214 of the Act of May 3, 1945 (59 Stat. 134; 31 U.S.C. 691). Such assistance may include the detailing of employees to the Commission, one of whom may serve as its Executive Secretary, to perform such functions consistent with the purposes of this order as the Commission may assign to them.

(d) Each Federal department or agency shall, consonant with law and within the limits of available funds, cooperate with the Commission in carrying out its functions under this order. Such cooperation shall include, as may be appropriate, (1) furnishing relevant available information, (2) preparing reports or studies pursuant to requests by the Chairman, and (3) advising the Commission on its work pursuant to requests by the Chairman.

(e) The Commission shall have access to the records of the Patent Office and to other records of the Department of Commerce relating to patents, insofar as is not inconsistent with law.

SEC. 4. *Reports; termination of Commission.* (a) The Commission shall transmit to the President a preliminary report within one year after the date of this order and such interim reports as it shall deem appropriate. It shall submit its final report and recommendations to the President not later than 18 months after the date of this order.

(b) The Commission shall terminate not later than thirty days after date of transmittal of its final report to the President.

SEC. 5. *Revocation.* Executive Order No. 8977 of December 12, 1941, entitled "Establishing the National Patent Planning Commission," is hereby revoked.

LYNDON B. JOHNSON

THE WHITE HOUSE,
April 8, 1965.

[F.R. Doc. 65–3853; Filed, Apr. 9, 1965; 11:49 a.m.]

Published in 30 F.R. 4661, April 10, 1965

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF APRIL 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 3-58
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	10-31-62	9-15-58
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	9-23-58
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	5-14-59
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Supervisory Examiner Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-11-62	12-22-58
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	7-20-62	6-24-59
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	1-14-59
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	1- 5-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	4-12-60
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	4-15-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	12-28-59
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	5-16-57
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	1- 5-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner Optics; Radiant Energy; Measuring.	9-10-62	2-11-59
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner Conductors; Switches; Miscellaneous.	1-24-63	3-23-60

Total number of pending applications (excluding Designs)	198,445
Total number of Design applications pending	5,230
Total number of applications awaiting action (excluding Designs)	141,516
Total number of Design applications awaiting action	1,911
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	May 16, 1957

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during May 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1953*

Patents	Numbers 2,440,671 to 2,442,329, inclusive
Plant Patents	Numbers 797 to 798, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, (Acting) Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6- 3-63	12- 1-60
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	3- 1-63	1-23-61
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	10-26-62	9-26-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	2- 5-63	9-29-59
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	2-16-60
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	12-19-62	8-11-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	3- 4-63	6- 7-60
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	4- 8-63	9-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	7-29-63	4-26-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	10-22-59
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-23-63	6-23-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	4-25-63	11-15-60
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner Printing; Typewriters; Stationery; Material Treatment.	7-17-62	12-31-58
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—A. RUEGG, Acting Supervisory Examiner Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	3-22-63	9-27-61
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner Industrial Arts; Household, Personal and Fine Arts.	5-19-64	3-26-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

In re Arne V. Larson, Leveret C. Russler and Waldemar J. Meldahl

No. 7282. Decided February 4, 1965

[52 CCPA —; 340 F.2d 965; 144 USPQ 347]

1. Claim—Construction of Claims—Words and Phrases—"Integral."
With reference to the construction of the term "integral" by the Board of Appeals as "not limited to a fabrication of the parts from a single piece of metal, but * * * inclusive of other means for maintaining the parts fixed together as a single unit," *Held* that "We are inclined to agree with the Board's construction of the term 'integral.'"

2. Patentability—Obviousness—Use of One Piece Construction.
On the issue of obviousness with respect to the limitation in a claim of "a brake drum integral with a said clamping means" and the showing in a patent to Tuttle et al. of a brake disc rigidly secured to the clamping means, *Held* that "we are inclined to agree with the position of the Solicitor that the use of a one piece construction instead of the structure disclosed in Tuttle et al. would be merely a matter of obvious engineering choice."

3. Same—Same—Omission of Element and Its Function.
"The added structure shown in the Le Clair et al. patent serves a particular purpose in that it increases the cargo carrying capacity. If this additional feature is not desired, it would seem a matter of obvious choice to eliminate it and the function it serves."

4. Same—Particular Subject Matter—Mobile Fluid Carrier.
The decision of the Board of Appeals, refusing certain claims relating to a mobile fluid carrier as unpatentable over the prior art, is affirmed.

Appeal from the Patent Office. Serial No. 737,656.

AFFIRMED.

Allan B. Wheeler, *Wheeler*, *Wheeler & Wheeler*, for appellants.

Clarence W. Moore (*L. F. Parker* of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, and Rich, Martin, Smith, and Almond, Jr., *Associate Judges*

Almond, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming a rejection of claim 12, and the Examiner's refusal to allow claims 15 and 16, which were substituted for finally rejected claims 1 and 6. Eight claims were allowed.

Appellants' application [1] relates to a mobile fluid carrier unit and a vehicle assembly thereof.

Claims 12 and 15 are illustrative:

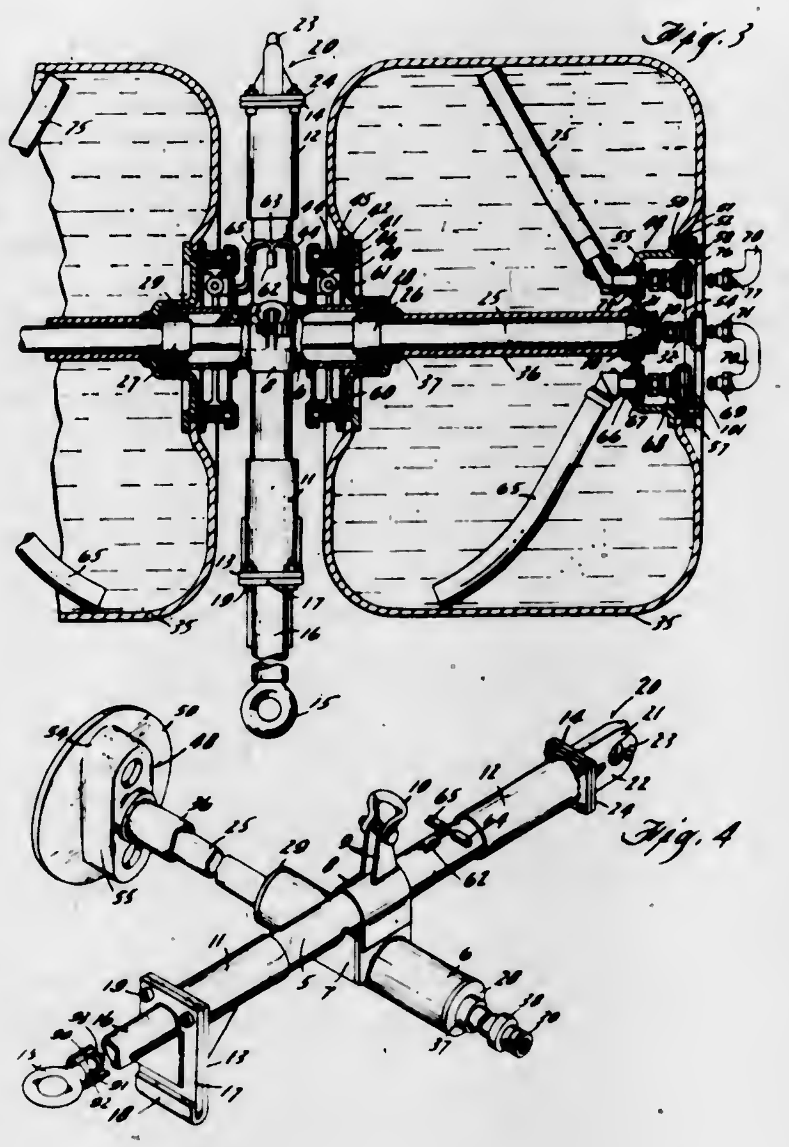
> 12. In a vehicle, a wheel hub having annular rim flanges, each flange having an annular clamping seat, a flexible-walled casing having beads engaged with the respective seats, clamping means fastened to the respective rim flanges in clamping engagement with said beads to hold said beads to said seats to form a fluid-tight fluid cargo enclosure bounded by said wheel hub and said flexible-walled casing, and frictional brake means, said means including a brake drum integral with a said clamping means, whereby to transmit heat from the brake drum to said wheel hub for transmission to a fluid cargo disposed within said fluid-tight enclosure.
>
> 15. A transport unit having a relatively light frame, said frame consisting only of a longitudinally extending relatively light central frame element and a relatively light tubular transverse axle attached to said central frame element,

---

[1] Serial No. 737,656, filed May 26, 1958.

> a pair of relatively light wheel hubs mounted on said axle, and a pair of flexible-walled carrier casings, a said carrier casing being disposed about said axle directly adjacent to each side of said central frame element, said wheel hubs being sealed to said carrier casings to enclose the entire cargo space of said unit.

Further illustrative of the claimed invention, FIGS. 3 and 4 of the drawings are reproduced below.



The three main features of the fluid carrier portrayed in the drawings are:

(1) A flexible walled wheel 35 in which the fluid is carried.
(2) A towbar 5 and hollow axle 25.
(3) A frictional brake comprising brake shoe 60 and brake drum 44.

Each unit of the assembly comprises a sectional towbar 5, which is centrally affixed to an axle 25. The opposite ends of the towbar are provided with coupling means 15, 23 which serve to connect with like couplings on other identical units to provide a vehicle of several units. A pair of flexible-walled rolling tanks 35 which serve as wheels are mounted on the ends of the axles. Each tank or wheel has a hub portion which includes a tubular member 36 through which the axle extends and annular members 40, 48 at the respective inner and outer ends of the tubular member 36 spaced to support the rim flanges of flexible casing 35 which is clamped thereon by means of rings 45 and 57. Clamp ring 45 carries the rotatable brake drum 44 engageable by a nonrotary brake shoe 60 operated by fluid pressure cylinder 61. Application of fluid to cylinder 61 exerts braking pressure to brake drum 44 which serves to decelerate each wheel 35. Inside each casing is a discharge hose 65 through which the casing may be filled or drained. A second hose 75 serves as a vent pipe. The brake drum 44 is integral with each inboard clamping ring 45.

The references relied on below are:

Le Clair et al. (British), 573,726, December 4, 1945.
Arpin, 2,548,190, April 10, 1951.
Albee, 2,952,468, September 13, 1960.
Tuttle et al., 2,974,970, March 14, 1961.

Like appellants' combination, Le Clair et al. discloses mobile tanks suitable for the transportation of liquids. The specification and drawings disclose a pair of tank wheels rotatably mounted on a transverse axle with a towbar centrally attached to the axle. The towbar has rear and front coupling means for disengageably attaching units. The hollow wheels of Le Clair et al. are formed of two dish-shaped inflexible shells welded to the inside of a T-ring encircled by a steel band. The wheels are mounted on an axle fixed in an axle tube. The specification states that "If so desired, each of the tank-wheels may be provided with an over run brake assembly * * *."

Both Arpin and Albee show the use of a hollow wheel-like flexible body mounted on an axle as a mobile fuel carrier. The Arpin patent states that his "tank is provided with a central axle which does not rotate with the tank, the reservoir revolving thereabout pursuant to ground friction when the axle is pulled as during towing." It is also stated that the axle is hollow. The Arpin drawings show that the flexible body is filled with fluid under pressure through one end of the hollow axle and that the tank is vented through the other end of the axle with a vertical pipe communicating with the axle to control the venting of air. Both Arpin and Albee show a tubular towbar and a frame affixed to the axle for towing the carrier.

Tuttle et al. disclose a fluid transporting vehicle having disc brakes rather than drum brakes as claimed by appellant. The Tuttle vehicle has one flexible-walled, cylindrical, fluid-carrying wheel. A hollow axle extends through the wheel and is connected to the frame of the vehicle at its ends. Brake discs are provided on a sleeve which is mounted on the axle between the wheel hub and the end of the axle. The sleeve is attached to a casing clamp on the wheel hub by bolts. The brake disc and hydraulically actuated brake pads are spaced away from the wheel hub by the sleeve.

The appealed claims were considered individually by the Examiner and the Board and were rejected on independent grounds.

Claim 12 was rejected as unpatentable over Tuttle et al. The Board regarded the brake disc of Tuttle et al. as the equivalent of a brake drum and considered the disc to be integral with the clamping means for the bead of the flexible casing.

Claim 12 calls for: (1) "a wheel hub having annular rim flanges, each flange having an annular clamping seat"; (2) "a flexible-walled casing having beads engaged with the respective seats"; (3) "clamping means fastened to * * * the rim flanges" to hold the beads to "form a fluid-tight fluid cargo enclosure"; (4) "frictional brake means" and (5) "a brake drum integral with a said clamping means."

Limitations (1), (2), (3) and (4) are clearly met by Tuttle et al. As to limitation (5) instead of a brake *drum integral* with the clamping means, Tuttle et al. show a brake *disc rigidly secured* to the clamping means. In this connection the Board stated:

> The essential difference between the Tuttle et al. construction and that of claim 12 is the manner of connecting the brake disc or drum to the wheel hub. While the term "integral" is not limited to a fabrication of the parts from a single piece of metal, but is inclusive of other means for maintaining the parts fixed together as a single unit * * *.

While the brake disc and clamp of Tuttle et al. comprise several parts, they are rigidly secured together as a single unit. The constituent parts are so combined as to constitute a unitary whole.

Webster's New International Dictionary (second edition) defines "integral" as "(2) Composed of constituent parts making a whole; composite; integrated."

[1] We are inclined to agree with the Board's construction of the term "integral" as used in claim 12. [2] Then, too, we are inclined to agree with the position of the Solicitor that the use of a one piece construction instead of the structure disclosed in Tuttle et al. would be merely a matter of obvious engineering choice. *In re Fridolph*, 50 CCPA 745, 309 F.2d 509, 135 USPQ 319.

Claim 12 includes a functional statement relating to the conveyance of heat from the brake drum to the hub of the wheel for transmission to the fluid cargo. This statement is predicated on appellants' "brake drum integral" with the clamping means. The Board reasoned that:—

> * * * this feature does not contribute to a better heat transfer in appellants' construction because the heat dissipated by the brake drum must still cross the joint between the clamping ring and the hub since the clamping ring is otherwise insulated from the cargo fluid by the flexible tire casing material positioned between the clamp and the hub. No difference in structure has been pointed out that would afford an unobvious improved heat transfer from the brake to the cargo fluid.

We agree with the Board that the claim defines no structure not shown by Tuttle et al. which would afford an unobvious heat transmission and therefore does not distinguish over the applied reference. *In re Mason*, 44 CCPA 937, 244 F.2d 733, 114 USPQ 127.

As correctly analyzed by the Solicitor, claim 15 is drawn to a transportation unit which includes:

1. a longitudinally extending light frame
2. a relatively light tubular transverse axle attached to the frame
3. a pair of relatively light wheel hubs mounted on the axle, and
4. a pair of flexible walled carrier casings disposed about the axle and sealed to the hub.

The Board sustained the Examiner's rejection of claim 15 as unpatentable over Le Clair et al. in view of either Arpin or Albee. The Examiner considered it obvious to replace the rigid cargo containing wheels of Le Clair et al. with the flexible-casing cargo-containing wheels of Arpin and Albee.

The Board pointed out that the claim requires the frame to consist only of a central frame and a tubular transverse axle; that Le Clair et al. diclose such a frame and axle responding fully to the structure as claimed except for added features for increasing cargo capacity such as containers for housing various articles in addition to liquid cargo carried in the hollow wheels. We agree with the Board that it would be obvious to dispense with the added cargo handling features of Le Clair et al. and use the frame without those features. The Board reasoned that if a hollow axle without more has the potential for use as a liquid transfer in appellants' vehicle, "it likewise must have that same potential in the Le Clair et al. vehicle since we find no claimed difference in structure over the reference."

The use of flexible casings for the cargo wheels of Le Clair et al. would be obvious in view of the teachings of either Arpin or Albee, who both teach the use of tank-type flexible-walled containers for liquid cargo carrier wheels. The apparent advantages and adaptable uses for such structures would afford ample reason to a skilled designer to adapt them to the Le Clair et al. vehicle.

Claim 16 adds to claim 15 frictional brake means defined in claim 12. As previously noted, Tuttle et al. disclose a brake disc rigidly connected to a bead clamping means. With reference to claim 16 the Board stated that it:

> * * * calls for both the brake construction of claim 12 and the frame construction of claim 15 and is unpatentable over the references as applied by the Examiner for the reasons set out * * * in our consideration of claims 12 and 15. Both the frame feature and the brake feature present to the vehicle combination only those advantages and results which are separately present individually in the prior art and this renders the combination of the two features obvious and routine.

The Le Clair et al. disclosure affords explicit suggestion for combining these features. The patent states:

> If so desired, each of the tank wheels may be provided with * * * [a] brake assembly * * *. Such brake mechanism may be of known construction and may be arranged to operate brake bands applied * * * to a ring fitted to the inner or outer face of the tank-wheel.

Appellants argue that the Board's holding that Le Clair et al. show the claimed structure is incorrect. They point out that the reference shows a great deal of additional framework, that it shows two axles, each solid.

[3] The added structure shown in the Le Clair et al. patent serves a particular purpose in that it increases the cargo carrying capacity. If this additional feature is not desired, it would seem a matter of obvious choice to eliminate it and the function it serves. *In re Listen*, 30 CCPA 1223, 136 F.2d 719, 58 USPQ 481.

The assertion that the Le Clair et al. patent is limited to two axles overlooks the fact that it specifically states that the axle assembly may comprise "either a single axle or two axles fixed in an axle tube * * *." While the axle is said to be solid, the use of a tubular axle is suggested by Arpin who shows a tubular axle connected directly to a towbar.

Appellants assert that there is "no reference which shows a trailer having two flexible-walled cargo carrying casings." The Tuttle et al. disclosure refutes that assertion since it clearly shows a trailer having two flexible-walled cargo-carrying casings in tandem relation. Aside from the flexible feature, Le Clair et al. shows such a structure with the casings in side-by-side relation.

Upon consideration of the record before us and the arguments of counsel, we are of the opinion that appellants' claimed improvements in mobile fluid carrier units are suggested by the references cited.

[4] The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

HANS SCHWARZKOPF *v.* JOHN H. BRECK, INC.

No. 7290. Decided February 11, 1965

[52 CCPA —; 340 F.2d 978; 144 USPQ 433]

1. TRADEMARK—DISCLAIMER.
   "As to the disclaimer, this does not have the effect of removing from the mark sought to be registered, or from our consideration, the words 'CHILDREN SHAMPOO.' It disclaims only any *exclusive* right in those words *per se.*"
2. SAME—STIPULATION OF FACTS.
   "* * * the record shows what the mark sought to be registered is and facts cannot be stipulated to be other than what they are shown by the record to be."

APPEAL from the Patent Office. Opposition No. 40,610.

AFFIRMED.

Michael S. Striker for appellant.
James E. Archer for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Trademark Trial and Appeal Board (abstract 138 USPQ 691) dismissing appellant's opposition to the registration of a trademark on application Serial No. 67,512, filed February 11, 1959, for "Hair Shampoos."

Applicant's mark consists of a double oval border of a thick outer line and a thin inner line, the oval having its long axis vertical. Inside the oval at the top is the silhouette of a girl's head facing to the left, underneath which and below the center of the oval are the words

CHILDREN
SHAMPOO

There is a disclaimer of record reading, "Applicant disclaims the words 'Children Shampoo' separate and apart from the mark as shown."

Opposer, Hans Schwarzkopf, a German company of Hamburg-Altona, Germany, relies on two existing registrations, No. 627,141 of May 15, 1956, on a mark consisting solely of the silhouette of a woman's head looking to the left, for shampoo, and No. 317,195 of September 18, 1934, on a mark consisting of two silhouettes of women's heads spaced apart and facing each other between which is the word "Hairgloss." The latter mark is said by the Board (the registration not being of record) also to be for shampoo.

Appellee's brief concedes that the products of the parties would be sold in the same channels of trade to the same class of purchasers and also that if there is any doubt as to the correct decision in this case it should be resolved against it.

Appellant suggests that we treat the issue as though it involves only an application to register the silhouette portion of the mark, referring to the disclaimer and also to a passage in the stipulation of facts reading:

> Said application [appellee's] is one for trademark registration of the silhouette of a human head, which silhouette is used by applicant to designate the John H. Breck, Inc. hair shampoo products.

[1] As to the disclaimer, this does not have the effect of removing from the mark sought to be registered, or from our consideration, the words "CHILDREN SHAMPOO." It disclaims only any *exclusive* right in those words *per se*. Appellant seems to recognize this in the following passage in its brief:

> It is of course well established that disclaimed material forming part of a trademark cannot be ignored in determining whether the marks are confusingly similar. *Sleeper Lounge Co.* v. *Bell Manufacturing Co.* (9th Circuit), 253 F.2d 720, 117 USPQ 117.

We agree with that statement. [2] With respect to the passage in the stipulation entered into by the attorneys, the record shows what the mark sought to be registered is and facts cannot be stipulated to be other than what they are shown by the record to be. We therefore treat the mark as we have described it at the beginning of this opinion.

The sole issue is as stated by the Board:

> The only question for consideration is whether or not, as used on shampoos, applicant's mark so resembles the marks of opposer as to be likely to cause confusion or to cause mistake or to deceive.

The Board gave as reasons for deciding that issue in the negative its view that the marks of the parties are readily distinguishable, opposer's silhouettes being of a woman while applicant's is obviously intended to be that of a child, and the fact that the representation of a human head is "obviously of a highly suggestive nature" in connection with a shampoo and necessarily entitled only to protection of limited scope as a trademark.

We agree with the Board and do not feel that the mere inclusion in appellee's mark of a silhouette of somewhat different appearance from those in appellant's marks would be sufficient to make confusion, mistake, or deception likely within the meaning of section 2(d) of the Trademark Act of 1946, as amended (15 U.S.C. 1052(d)).

The decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,146,780, G. F. Wales, APPARATUS FOR NOTCHING SHEET MATERIAL; **2,163,641**, same, PUNCHING PRESS; **2,265,331**, same, SHEET MATERIAL PERFORATING APPARATUS; **2,319,568**, same, PUNCHING DEVICES; **2,320,205**, same, APPARATUS FOR PERFORATING SHEET MATERIAL; **2,323,431**, same, PUNCHING DEVICES; **2,325,290**, same, SHEET MATERIAL PUNCHING APPARATUS; **2,325,990**, same; **2,329,020**, same, PUNCHING DEVICES; **2,355,344**, same, SHEET MATERIAL PUNCHING APPARATUS; **2,364,011**, same, PUNCHING MACHINE; **2,378,603**, same, PUNCHING APPARATUS; **2,380,485**, same, APPARATUS FOR PERFORATING SHEET MATERIAL; **2,381,476**, same, PERFORATING APPARATUS; **2,419,862**, same, METHOD AND APPARATUS FOR PUNCHING BY TRANSFER MEANS; **2,757,735**, P. H. Taylor, PERFORATING UNIT, filed Oct. 15, 1957, D.C., W.D.N.Y. (Buffalo), Doc. 7582, *George F. Wales et al.* v. *Punch Products Corp. et al.* Final consent judgment as to defendants Punch Products Corp., Chisholm-Ryder Co., Inc., and Niagara Frontier Industries, Inc., Jan. 13, 1964. Order of dismissal as to defendant Tool Products Corp. Nov. 20, 1964.

2,163,641. (See 2,146,780.)
2,265,331. (See 2,146,780.)
2,319,568. (See 2,146,780.)
2,320,205. (See 2,146,780.)
2,323,431. (See 2,146,780.)
2,325,290. (See 2,146,780.)
2,325,990. (See 2,146,780.)
2,329,020. (See 2,146,780.)
2,355,344. (See 2,146,780.)
2,364,011. (See 2,146,780.)
2,378,603. (See 2,146,780.)
2,380,485. (See 2,146,780.)

2,380,486, F. Willis, Jr., LIGHTING CONTROL SYSTEM; **2,718,612**, same, PHOTOTUBE CIRCUIT; **2,759,124**, same, AUTOMATIC DIMMING SYSTEM, filed Nov. 20, 1964, D.C. District of Columbia, Doc. 2876–64, *Floyd Willis III, administrator of estate of Floyd Willis, Jr., et al.* v. *General Motors Corporation.*

2,381,476. (See 2,146,780.)
2,419,862. (See 2,146,780.)

2,462,625, I. Florman, SHAVING MACHINES, filed Nov. 10, 1964, D.C., S.D.N.Y., Doc. 64/3414, *Irving Florman* v. *North American Philips Company, Inc. et ano.*

2,497,961, J. D. Shaw, ELECTRICAL MEASURING DEVICE, filed Nov. 3, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–722, *Joseph D. Shaw* v. *Non-Linear Systems, Inc.* (*Calif. & Cleveland, Ohio*). Same, filed Mar. 19, 1965, D.C., S.D. Ohio (Dayton), Doc. 3152, *Joseph D. Shaw* v. *Non-Linear Systems, Inc.* (*Dayton, Ohio*).

2,511,859, J. F. Langan, FILM RECORD CARD; **2,512,106,** same, RECORD CARD; **2,587,022,** same, METHOD OF MAKING FILM RECORD CARDS, **filed** Nov. 10, 1964, D.C. Colo. (Denver), Doc. 8857, *Minnesota Mining and Manufacturing Co.* v. *Dakota Microfilm Service, Inc.*

2,512,106. (See 2,511,859.)

2,540,494, M. H. Schwarz, PERMANENT HAIR WAVING, **filed** Dec. 1, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1659, *Turner Hall Corporation* v. *Redken Laboratories, Inc.*

2,543,143, C. H. Wells et al., TRUCK PARTITION, **filed** Nov. 16, 1964, D.C., S.D. Ill. (Peoria), Doc. P–2748, *Evans Products Company* v. *Transco, Inc.* **Same, filed** Apr. 7, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c609, *Evans Products Company* v. *Unarco Industries, Inc.* Cause dismissed without prejudice Mar. 24, 1965.

2,552,972, I. Jepson, MEANS FOR ROTATING A MIXER BOWL; **2,615,690,** same, BEATER AND BOWL ARRANGEMENT FOR MIXERS; also, 24 Sunbeam Trademarks (see T.M. Suits), **filed** Feb. 8, 1965, D.C., N.D. Tex. (Dallas), Doc. 3–868, *Sunbeam Corporation* v. *Pearsol Appliance Co. et al.*

2,570,637, M. M. Brown, METHODS OF AND APPARATUS FOR MENDING HOSIERY, **filed** July 8, 1963, D.C., S.D.N.Y., Doc. 63/2011, *Marvel Specialty Co., Inc.* v. *Stanford Marley Distributing Co., Inc.* Stipulation and order of dismissal without prejudice Nov. 19, 1964.

2,587,022. (See 2,511,859.)

2,615,690. (See 2,552,972.)

2,622,683, Silitch and D'Audiffret, APPARATUS AND METHOD FOR THE COLLECTION OF WATER; **2,670,180,** L. Ranney, METHOD AND APPARATUS FOR ADVANCING SUBTERRANEAN PIPE; **2,740,476,** D'Audiffret and Reimund, METHOD AND APPARATUS FOR COLLECTING WATER; **2,756,020,** same, METHOD AND APPARATUS FOR PROJECTING PIPES THROUGH GROUND; **Reg. No. 613,034,** (RANNEY METHOD), Ranney Method Water Supplies, Inc., Large capacity horizontal water collectors, **filed** Feb. 11, 1965, D.C., S.D. Ohio (Columbus), Doc. 7385, *Ranney Method Water Supplies, Inc.* v. *Aqua Ran Water Supplies, Inc. et al.*

2,670,180. (See 2,622,683.)

2,715,231, O. F. Marston, FLEXIBLE BUOYANT ARTICLE, **filed** Sept. 19, 1962, D.C., E.D. Va. (Richmond), Doc. 3539, *Oliver F. Marston* v. *Miller & Rhoads, Inc.* Claims 1 and 2 of Pat. 2,715,231 held valid and infringed; defendant enjoined July 11, 1963. **Same,** Doc. 3540, *Oliver F. Marston* v. *J. C. Penney Co.* Claims 1 and 2 of Pat. 2,715,231 held valid and not infringed; plaintiff enjoined from bringing suit on patent in suit, charging infringement by defendant. Aug. 25, 1964. **Appealed,** Oct. 16, 1964, C.C.A., 4th Cir., Docs. 9691 and 9692, *Oliver F. Marston* v. *J. C. Penney Company.*

2,718,612. (See 2,388,486.)

2,740,476. (See 2,622,683.)

2,756,020. (See 2,622,683.)

2,757,785. (See 2,146,780.)

2,759,124. (See 2,380,486.)

2,850,650, D. M. Fenske, DATA PLOTTING AND INDICATING DEVICE, **filed** Aug. 11, 1961, D.C., E.D.N.Y. (Brooklyn), Doc. 61C–590, *Ling-Temco Vought, Inc.* v. *Kollsman Instrument Corp.*

2,967,219, L. L. Galin, VIBRATING REED CONTROL DEVICE, **filed** Dec. 12, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c2241, *Leo L. Galin* v. *Klinetronics Division of Great Lakes Runway & Engineering Co.*

3,043,506, F. C. Bremer, ENVELOPE CONSTRUCTION, **filed** Feb. 23, 1965, D.C., N.D. Tex. (Dallas), Doc. 3–887, *Fred C. Bremer et al* v. *Artrex Co. et al.*

REISSUES

MAY 4, 1965

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

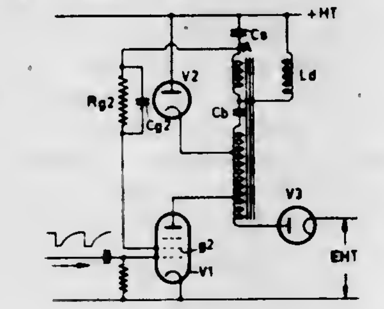
25,772
TIME-BASE CIRCUIT FOR MAGNETIC BEAM DEFLECTION

Edward James Glaisher, Horley, England, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Original No. 3,133,228, dated May 12, 1964, Ser. No. 51,199, Aug. 22, 1960. Application for reissue June 15, 1964, Ser. No. 386,471

Claims priority, application Great Britain Sept. 2, 1959

10 Claims. (Cl. 315—27)



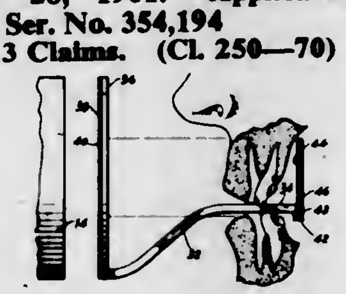
10. A deflection circuit for producing a sawtooth waveform current in a deflection coil, comprising a multigrid electron discharge device having a screen grid and an anode, a source of operating voltage, output transformer means having first and second inductively coupled windings, means connecting said anode to said first winding, a capacitor connected in series with said second winding, means connecting said deflection coil in parallel circuit arrangement with said second winding and capacitor, means connecting said source to said parallel circuit whereby a voltage appears at a terminal of said capacitor having a direct component and an alternating component, and means for connecting said screen grid to said terminal whereby at least a portion of said direct and alternating components appear at said screen grid.

25,773
X-RAY FILM HOLDER AND AIMING ELEMENT

Fred M. Medwedeff and William H. Knox, Nashville, Tenn., assignors to Precision X-Ray Company, North Nashville, Tenn.

Original No. 3,092,721, dated June 4, 1963, Ser. No. 127,671, July 28, 1961. Application for reissue Feb. 10, 1964, Ser. No. 354,194

13 Claims. (Cl. 250—70)



12. An X-ray film holder and aiming element comprising a support member arranged to be positioned at one end within the oral cavity of a patient and provided on said end with support means to receive an X-ray film and hold it substantially transversely to said support member, a combined aiming element and X-ray shield means on the opposite end of the support member having an area and shape at least substantially equal to that of the perimeter of the X-ray cone with which the same is used and positioned transversely to said member and arranged to aid in sighting the cone of an X-ray machine concentrically with the film when supported by said support means, said combined aiming element and X-ray shield means having an opening therethrough of a substantially similar shape and area to that of a conventional X-ray film and positioned so that a line passing perpendicularly through the center of said opening also will pass substantially through the center of said film, whereby the patient will be shielded from unnecessary primary radiation and from at least most of the scattered radiation from said cone when in use.

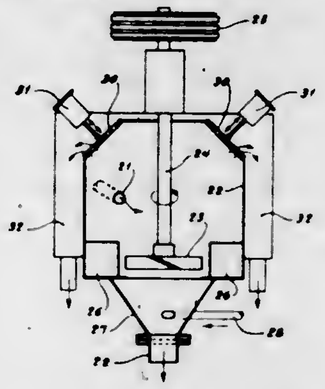
25,774
APPARATUS FOR WET SIZING OF FINELY DIVIDED SOLID MATERIALS

Risto Tapani Hukki, Otakallo, Otaniemi, Finland, assignor to Insinooritoimisto-Engineering Bureau R. T. Hukki, Otakallo, Otaniemi, Finland, a firm of Finland

Original No. 3,064,806, dated Nov. 20, 1962, Ser. No. 817,810, June 3, 1959. Application for reissue May 6, 1963, Ser. No. 278,814

Claims priority, application Sweden June 6, 1958

7 Claims. (Cl. 209—17)



1. An apparatus for the wet sizing of [solids containing] finely divided *solid* particles in a pulp, comprising a stationary vessel, means to impart substantially rotary motion to pulp within said vessel, means for settling down and removing the coarser size fraction of said particles from said pulp, inclined screen means positioned at the upper portion of said vessel, means to direct the upper portion of said pulp in said vessel continuously *counter to gravity* against said screen means and means to vibrate said screen means to accelerate the passage of the finer size fraction of said particles through said screen means together with the bulk of the liquid medium to be collected as a separate product outside said vessel.

PLANT PATENTS

GRANTED MAY 4, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,502
CHAMOMILE PLANT

Dorothy Sewart, Lower Treneague, Wadebridge, Cornwall, England
Filed Feb. 26, 1964, Ser. No. 347,636
1 Claim. (Cl. Plt.—88)

A new and distinct variety of chamomile plant substantially as herein disclosed, characterized as to novelty by the complete absence of flowers, short, much branched, creeping rootstock, spreading, decumbent stems, rapid growth by stem rootings, moss-like foliage, and aromatic odor.

2,503
AZALEA PLANT

Henry W. Motzkau, Whitewater, Wis., assignor to Yoder Brothers, Inc., Barberton, Ohio, a corporation of Ohio
Filed Sept. 5, 1963, Ser. No. 306,968
1 Claim. (Cl. Plt.—56)

A new and distinct variety of azalea plant substantially as herein disclosed, characterized as to novelty by its more rapid, vigorous growth, the larger size and double form of its blooms, the longer lastingness and the Strong Purplish Pink color of its blooms, the large size of its foliage, and the midseason, profuse and continuous flowering.

2,504
AZALEA PLANT

Howard Kerrigan, 3003 Totterdell St., Oakland, Calif.
Filed Dec. 26, 1963, Ser. No. 333,778
1 Claim. (Cl. Plt.—57)

A new and distinct variety of florists' forcing azalea which combines in a unique fashion many desirable characteristics of the Belgian Indica azaleas, the Kurume azaleas and the so-called Sanders hybrids, particularly the combination of a large hose-in-hose flower of intense Blood Red coloration possessing much greater substance and color stability than any other azalea of its color and type, borne in great profusion on a large, heavily branched, vigorous plant, which is easy to propagate and grow and which is covered with an abundance of very large dark green leaves.

2,505
AZALEA PLANT

Howard Kerrigan, 3003 Totterdell St., Oakland, Calif.
Filed Dec. 27, 1963, Ser. No. 334,062
1 Claim. (Cl. Plt.—57)

A new and distinct variety of florists' forcing azalea similar in general character to the Belgian Indica type, primarily characterized by its deep Blood Red color, large double flowers of the classical form which are borne in unusual profusion and which are retained on the flower for a long period in an essentially fresh condition, by its significantly greater vigor and more rapid growth than other varieties of red colored forcing azaleas.

2,506
AZALEA PLANT

Howard Kerrigan, 3003 Totterdell St., Oakland, Calif.
Filed Dec. 27, 1963, Ser. No. 334,063
1 Claim. (Cl. Plt.—57)

A new and distinct variety of azalea of the florists' forcing type derived from complex hybrid derivatives of *Rhododendron simsii* and related species of the *R. obtusum* complex, primarily characterized by its deep red color which is unique in its class, by the constancy and fidelity of its color under forcing conditions and on aging, by the perfection of the hose in hose flower in which the outer hose is never incomplete or ragged, by the broad classical flower form, by the unusually long life of the flower and its retention in a fresh condition on the plant which is ordinarily from 7–10 days after the flower opens, by its profuse bloom and ease of forcing for late winter and early spring use, by its ease of propagation on its own roots and especially by the extremely rapid growth which it makes on its own roots.

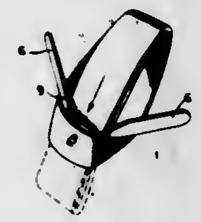
PATENTS

GRANTED MAY 4, 1965

GENERAL AND MECHANICAL

3,181,175
PRETIED NECKTIE

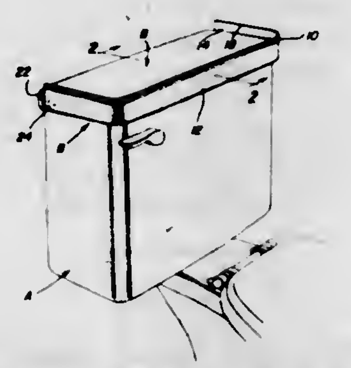
Louis L. Less, Clinton, Iowa, assignor to One-In-Hand Tie Company, Clinton, Iowa, a partnership of Iowa
Original application Oct. 4, 1962, Ser. No. 228,378, now Patent No. 3,167,784, dated Feb. 2, 1965. Divided and this application Aug. 19, 1964, Ser. No. 390,705
3 Claims. (Cl. 2—150)



1. A pretied necktie comprising, in combination,
an endless piece of necktie material extending as a closed loop having a one-half twist; and
a knot-shaping support having an upper edge, a front and a back,
the material of said endless piece including a portion passing across the front of said support from side to side thereof and extending rearwardly at both sides of said support,
the remainder of said endless piece extending from behind said support over the top thereof and thence downwardly between said portion and the front of said support and depending from said support in the form of front and back necktie body portions joined together in a transverse fold line, said fold line being spaced below said support and constituting the lower end of the necktie.

3,181,176
ARTICLE RETAINING BAND FOR FLUSH TANKS

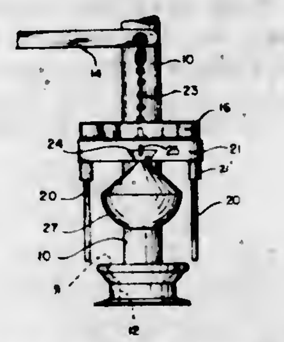
David Nagy and Michael Tarnowski, both of 268 Robina Ave., Toronto, Ontario, Canada
Filed Mar. 13, 1964, Ser. No. 351,605
4 Claims. (Cl. 4—1)



1. In combination, a toilet flush tank open at its top and provided with a readily applicable and removable lid, a band having a portion thereof snugly encircling a depending marginal edge portion of said lid, means for detachably applying and retaining said band in position on the lid, said band having a portion cooperating with an upper surface of the lid and transforming the same into an article-confining and retaining tray.

3,181,177
MOUNTING ASSEMBLY FOR A TOILET FLUSH BALL

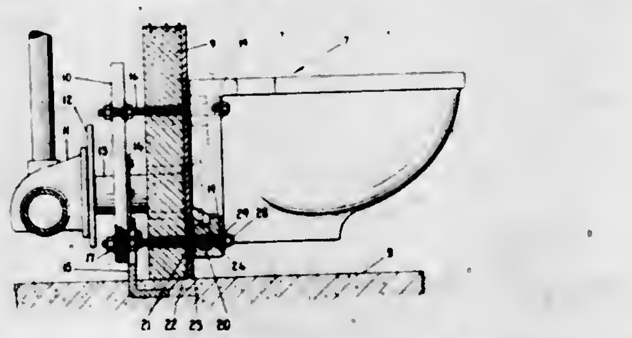
Charles X. Marshall, Norway, Mich., assignor of one-half to George F. Sager, Coleman, Wis.
Filed Oct. 23, 1962, Ser. No. 232,392
1 Claim. (Cl. 4—57)



In a toilet flush tank having a pivotal trip lever, having an opening defining a valve seat therebelow, and having an upright L-pipe adjacent said valve seat, a flush ball support and guide assembly, comprising: a bracket removably mounted on said L-pipe above said valve seat, said bracket having a pair of diverging arms; a pair of vertical guide rods mounted in and depending from said bracket arms in straddling relationship to said valve seat; a cross bar slidably carried on and between said vertical guide rods, said bar having a dovetail cutout in its bottom surface intermediate its length; a flush ball valve depending from said cross bar, said flush ball being movable with said cross bar from a raised position spaced above said valve seat to a lowered position in sealing engagement with said valve seat, and said flush ball having a dovetail-shaped top member threaded therein and removably mounted in said cross bar dovetail cutout; and flexible coupling means connecting said cross bar to said trip lever, whereby said cross bar can be raised and lowered on said guide rods in response to pivotal movement of said trip lever.

3,181,178
CARRIER FOR WALL HUNG FIXTURES

Roger J. Lerou and John E. Emberson, Scarborough, Ontario, Canada, assignors to Josam Products Limited, Toronto, Ontario, Canada, a corporation of Ontario
Filed June 22, 1962, Ser. No. 204,550
2 Claims. (Cl. 4—252)

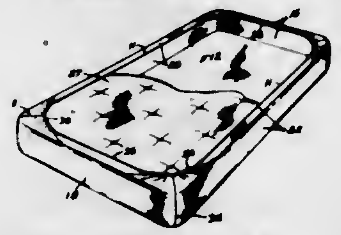


1. For a wall hung fixture having a flat mounting surface in parallel relationship with a vertical utility wall, a fixture carrier for the wall hung fixture having a carrier body mounted in an upright position adjacent and parallel to the utility wall, a plurality of cantilevered support members carried by the carrier body and project-

ing horizontally therefrom, said members being positioned to register with preformed mounting holes formed in an internally threaded fixture mounting surface, a fixture supporting sleeve rotatably mounted on each member and dimensioned to fit snugly into a portion of its respective preformed mounting hole to form a solid support for the fixture, said sleeve having a vertical back-up flange positioning the wall hung fixture relative to the utility wall, said sleeves being adjustable longitudinally on the supports by means of a tool inserted from the front into the preformed mounting holes to position all of the flanges in coplanar relationship with the fixture mounting surface when the fixture is mounted in position.

3,181,179
FITTED BED SHEET AND METHOD FOR MAKING SAME

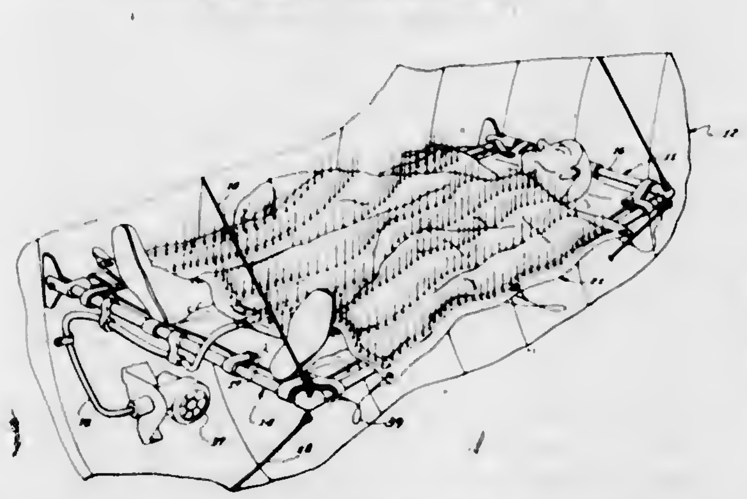
Belven B. Roddey, Jr., Lancaster, S.C., assignor to The Springs Cotton Mills, a corporation of South Carolina
Filed Apr. 3, 1962, Ser. No. 184,758
2 Claims. (Cl. 5—334)



1. A woven fitted bedsheet comprising a top center portion for covering the top of a mattress, end panel portions integral with and extending from said top center portion and having shoulder portions at each end of said end panel portions, side panel portions integral with and extending from said top center portion and having shoulder portions at each end of said side panel portions, each of said shoulder portions of said side panel portions being secured to the adjacent shoulder portions of each of said end panel portions to form four pockets having open edge lower extremities, an elastic strip and a separate binding strip substantially enclosing said elastic strip secured to each other and to said lower extremities of the four pockets in the extended condition of said elastic strip in such a manner that the open edges of the lower extremities are completely encased and are gathered in the relaxed condition of said elastic strip.

3,181,180
RESTRAINT DEVICE

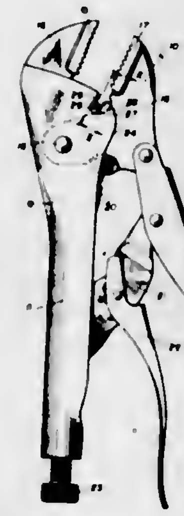
Raymond J. Moore, Gardena, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Oct. 1, 1962, Ser. No. 227,426
6 Claims. (Cl. 5—336)



1. A blanket adapted to function as a restraining device for a space traveler comprising: a covering having side edges adapted to overlay a space traveler; a primary and a plurality of secondary passages provided in said covering adapted to confine pressurized air flowing therethrough, said secondary passages being in fluid communication with said primary passage, a plurality of individual spaced apertures formed in the walls of said passages adapted to direct the egress of air from said passages as a plurality of individual jets in a single direction normal to a side surface of said covering and means through which pressurized air may be supplied to said primary passage.

3,181,181
LOCKING PLIERS WITH WIRE CUTTER

John Z. Buckley, Worcester, and Oscar H. Johnson, Holden, Mass., assignors to Parker Mfg. Company, Worcester, Mass., a corporation of Massachusetts
Filed Aug. 17, 1962, Ser. No. 217,619
1 Claim. (Cl. 7—5.6)

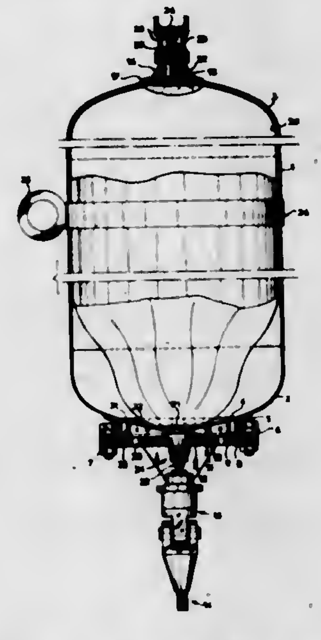


Pliers, comprising
(*a*) an elongated handle having spaced parallel flanges extending in the same direction,
(*b*) a fixed jaw attached to one end of the handle,
(*c*) a pivoted member pivotally attached to the handle and movable between the said flanges,
(*d*) a movable jaw attached to the pivoted member and facing toward the fixed jaw,
(*e*) actuator means connected to the pivoted member to move the movable jaw toward the fixed jaw,
(*f*) a narrow first slot entering one of the flanges adjacent the fixed jaw and having straight side edges which terminate in a semi-circular end edge, one of the straight side edges constituting a first cutting edge,
(*g*) a relatively wide second slot entering the other flange generally coextensively of the first slot,
(*h*) a concave curved second cutting edge formed on the pivoted member and located so as to move across the first slot closely adjacent thereto, the second cutting edge facing toward the said first cutting edge with a portion thereof tangential in an open position with the said end edge, so that the wire to be cut is trapped and pressed against the first cutting edge during the cutting operation.

3,181,182
FLOATS

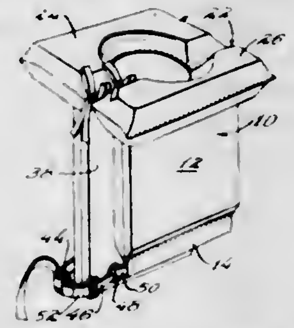
Jacques Delaruelle and Michel Banal, Paris, France, assignors to Electricite de France (Service National) and Gaz de France (Service National), Paris, France, French National Services
Filed Oct. 11, 1963, Ser. No. 315,718
Claims priority, application France, Jan. 17, 1963, 921,709
11 Claims. (Cl. 9—8)

1. A float having a buoyancy adapted to vary automatically in function of its depth of immersion, comprising a rigid envelope and a flexible envelope formed from an impermeable material in the shape of a bladder situated within the rigid envelope, said envelopes defining two chambers, one of the chambers being defined by the bladder which contains and permanently confines a buoyancy mass comprising an elastic fluid under a pressure equal to the hydrostatic pressure corresponding to a predetermined immersion depth, and the second of the chambers being defined by the rigid envelope, said rigid envelope comprising openings to allow the surrounding liquid to penetrate within said second chamber when the float is immersed beyond said predetermined depth, said float comprising an aperture within said rigid envelope for inserting said flexible envelope, a closing element for closing said aperture, fastening means for holding said closing element in its closed position and for fastening it to said rigid envelope.



3,181,183
LIFE JACKET

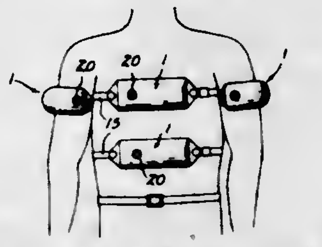
Myrtle R. Allen, 345 7th Ave. S., South St. Paul, Minn.
Filed Sept. 24, 1963, Ser. No. 310,989
5 Claims. (Cl. 9—333)



1. A life saving device to be worn by a person comprising:
(*a*) a pair of generally rectangular, buoyant, flexible panels secured together in spacedly opposed relation, adapted to overlie the front and back of a person's body,
(*b*) each said panel having an upper end portion of a width adapted to be accommodated between the armpits of a wearer,
(*c*) a buoyant, flexible, generally flat collar of substantial size including a front collar portion and a rear collar portion in separately movable relation about a normally horizontal axis,
(*d*) said collar portions defining a neck enclosing aperture, the edge of which is secured in movable engagement along the upper marginal edges of said panels,
(*e*) said collar being separable along one side,
(*f*) said collar adapted to move between a position whereby said collar is in generally parallel relation to said panels to a position whereby said collar is generally perpendicular to said panels,
(*g*) means whereby said separable portions of said collar may be secured together,
(*h*) the other ends of said panels having fastening means to hold said front and back panels in secured relation about the body of a person.

3,181,184
INFLATABLE DEVICES

Herbert J. Potts, Park View Village, Ohio, assignor of fifty percent to Dan W. Duffy, Cleveland, Ohio
Filed Apr. 26, 1963, Ser. No. 275,865
6 Claims. (Cl. 9—340)



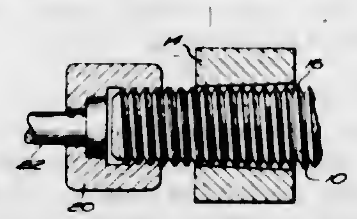
5. Apparatus including first and second devices, each of which includes an inflatable central portion composed of similarly-shaped upper and lower layers of a plastic material having side and end portions which layers are sealed together at their side and end edges and lie flat upon each other when the central portion of the device is deflated, valve means arranged in one of the layers of the central portion of each device through which air may be introduced between the layers to inflate the central portion of the device to provide a substantially cylindrical portion, and each of said devices having first and second flaps which are substantially nonresilient, the first of which is connected to and extends from one end of the central portion and the second of which is connected to and extends from the second end of the central portion of each device, a first flat strip which is slightly resilient having its inner end secured to the first flap of each device and a second flat strip which is slightly resilient having its inner end secured to the second flap of each device, said apparatus being applicable to a person with the central inflated cylindrical portion of the first device extending across or slightly below the chest of the person to whom the apparatus is applied and the central inflated cylindrical portion of the second device extending across his back in opposed relation to the first device, means associated with the first flat strip of the first device and the second flat strip of the second device and arranged along one side of the person to whom the device is applied for connecting the first resilient strip of the first device to the second resilient strip of the second device and maintaining them under tension and means associated with the second flat strip of the first device and the first flat strip of the second device and arranged on the opposite side of the person to whom the apparatus is applied for connecting the second resilient strip of the first device and the first resilient strip of the second device together and maintaining them under tension.

3,181,185
METHOD OF MAKING FRICTIONAL LOCKING SETSCREWS

Harrington Moore, East Acton, and Albert G. Engel, Medford, Mass., assignors to George W. Moore, Inc., Waltham, Mass., a corporation of Massachusetts
Filed June 20, 1963, Ser. No. 291,227
2 Claims. (Cl. 10—10)

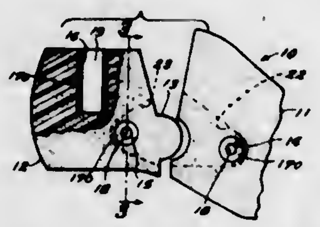
1. The method of making frictionally locking setscrews which comprises forming a screw thread on a rod of

indefinite length, shaving the crests of a few turns of thread at one end of the rod, pushing said end through a die block with a circular hole tapering from a diameter slightly greater than the crest diameter of the rod to a diameter slightly less than the crest diameter of the rod, gripping said shaved end, drawing said rod through the die block whereby the crests of the turns of thread are peened over to form a continuous feather along the crest of the thread, cutting off successive pieces of said rod and simultaneously beveling the leading end of the next piece to be cut off, shaving the crest of end turns of thread at the beveled end of each said piece, and forming a tool-receiving recess in the other end of each piece after it has been cut off.



3,181,186
SHOE LAST CONSTRUCTION

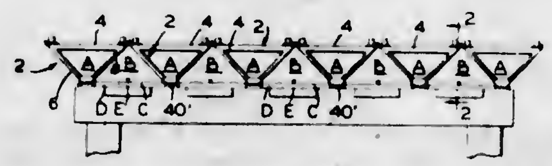
Charles J. Hunt, Independence, Ky., assignor to Vulcan Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 13, 1963, Ser. No. 264,885
1 Claim. (Cl. 12—136)



A collapsible shoe last comprising a forepart and a heel part having mating, contact surfaces; said parts each having a cellular body formed essentially of foamed plastic material; a laterally extending hole formed through the body of each last part adjacent a contact surface; a sleeve cemented in and filling each hole; said sleeves comprised essentially of a non-cellular and stronger plastic material than the material of the last parts; a hinge pin receiving hole extending laterally through the central portion of each sleeve; the hinge pin receiving holes in the sleeves being longitudinally spaced apart in the last within accurately controlled, minute tolerances; confronting routs formed in the last parts and through the sleeves; a last part connecting link disposed in the routs and extending across the mating, contact surfaces of the last parts; and a hinge pin positioned in each of the divided sleeves and each pin connected to an end of the link.

3,181,187
BRIDGE CONSTRUCTION

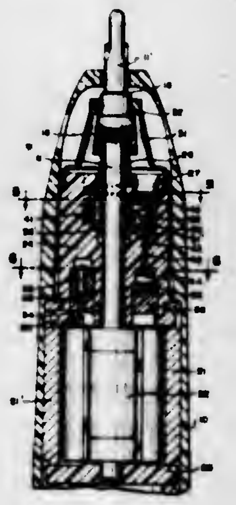
Harry J. Kahn, Fresh Meadows, N.Y., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed May 3, 1961, Ser. No. 107,579
4 Claims. (Cl. 14—73)



1. In a bridge construction the combination of a plurality of elongated modular units secured together to form a load-bearing structure, said modular units defining interdigited hollow upper inverted and hollow lower upstanding triangular cells, each of said units comprising a hollow beam member provided with a top section and interconnected downwardly and inwardly projecting side sections converging to an apex, a supporting base section secured along its longitudinal mid-portion to said apex and forming wing portions extending laterally therefrom, said base section being coextensive with and in parallel alignment with the top section with which it is associated, and means secured to the terminal edges of the top and base sections for alignment of adjacent beam members along substantially their entire lengths and the connection of adjacent beam members in abutting side-by-side load receiving and transferring relationship, a wing portion of each base section forming half of the structural base of a lower triangular cell.

3,181,188
ELECTRIC HAND APPLIANCES, PARTICULARLY TOOTHBRUSHES

Michel Moret, Geneva, Switzerland, assignor to Etablissements AESUP, Vaduz, Liechtenstein, a firm of Liechtenstein
Filed Apr. 25, 1963, Ser. No. 275,646
Claims priority, application Switzerland, Apr. 27, 1962, 5,087/62
7 Claims. (Cl. 15—22)



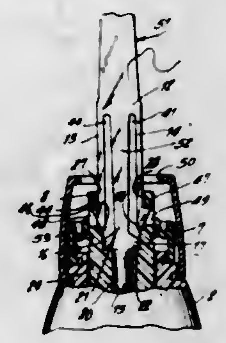
1. An electrically-operated hand appliance for corporal care which comprises

(*a*) an elongated casing forming a handle,
(*b*) a shaft extending to the exterior at one end of the casing for carrying an appliance head,
(*c*) electrical means mounted within the casing for driving the shaft and means for supplying electric power thereto,
(*d*) a fitting of insulating material fixedly mounted in the casing,
(*e*) a slider mounted on said fitting for movement transversely of the casing with at least one end thereof adjacent the casing and having a surface inclined to the direction of movement thereof,
(*f*) at least one resilient area on the casing near said end of the slider for enabling transverse movement of the slider by manual pressure thereon,
(*g*) a pair of cooperating, relatively movable switch contact members mounted within a chamber in said fitting and connected in the power supply circuit to said electrical means,
(*h*) at least one of said switch contact members being flexible,
(*i*) a longitudinally-extending elongated aperture of small cross-section in said fitting communicating with said chamber,
(*j*) said chamber being insulatedly closed except for said aperture,
(*k*) a pin of insulating material in said aperture for engaging said flexible switch contact member,

(*l*) said pin being positioned for engagement by the inclined surface of the slider to move the pin longitudinally thereof and thereby move the flexible switch contact member to and away from the other contact member,
(*m*) and a resilient sealing member near the end of said pin adjacent the slider in sealing contact with said pin and said fitting.

3,181,189
POWER OPERATED TOOTHBRUSH

Isadore Leyden, Shrub Oak, N.Y., assignor to Riviera Appliance Corp., a corporation of New York
Filed May 27, 1963, Ser. No. 283,392
6 Claims. (Cl. 15—22)

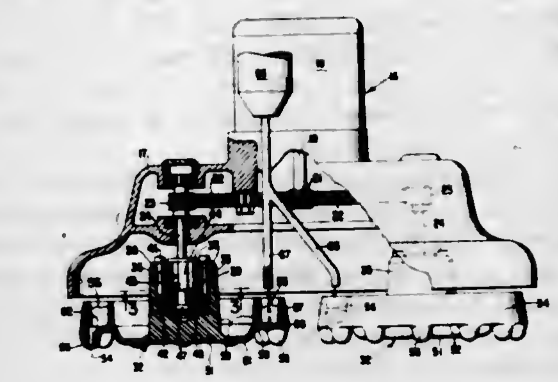


1. A power operated toothbrush comprising, a member adapted to be driven from a source of power, a socket formed at one end of said member and having an entrance opening for receiving a toothbrush, opposing openings defined in said socket inwardly of said entrance opening, a toothbrush having a forward bristle portion and a rearward shank portion, said shank portion having a pair of laterally spaced resilient elements and a central element between said resilient elements, said central and resilient elements extending rearwardly from said shank portion for reception within said socket, each of said resilient elements terminating in a latch portion for insertion into one of said opposing openings, and cooperating means provided on said socket and on said central element for guiding said resilient elements during insertion into said socket and for disposing said latches in predetermined disposition within said socket to effect snap engagement of said latches into said openings, said cooperating means comprising means defining a recess in said socket remote from said entrance opening, said recess having opposing shoulders at the entrance thereof, said central element extending beyond said resilient elements and having a guide post at the forward end thereof adapted to enter said socket recess, and said guide post having opposing detent shoulders remote from the free end thereof adapted to engage said recess shoulders when said guide post is inserted into said socket recess whereby to dispose said latches for snap engagement into said socket openings.

3,181,190
RUG SCRUBBING ATTACHMENTS

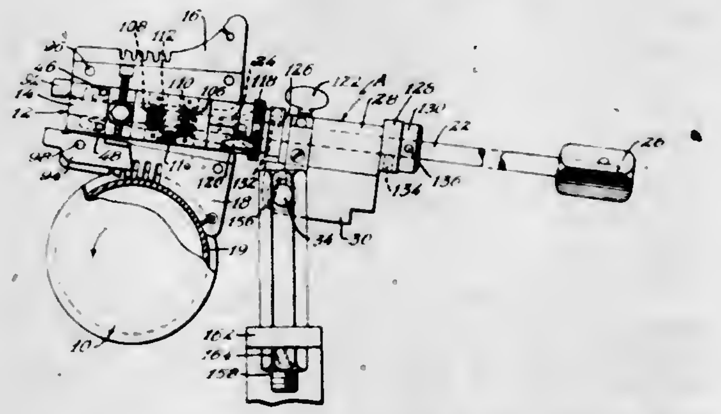
Willard A. Dix, North Plainfield, and Oswald M. Porter, Livingston, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 20, 1963, Ser. No. 303,341
7 Claims. (Cl. 15—98)

1. An annular attachment for use in scrubbing a pile type rug, said attachment having a hub portion equipped with means for connecting said hub portion to a drive spindle for rotatably driving said scrubbing attachment, and a plate portion secured to said hub portion, said plate portion having a down facing annular surface, a plurality of buttons depending from said down facing annular surface at least one of said buttons having a port extending downwardly therethrough and said port having an open end in a lower portion of said button to thereby deposit liquid deeply into rug pile as said attachment rotates, and means for feeding a liquid to said port in said button.



3,181,191
PISTON CLEANING TOOL

William A. Coninx, 273 W. 5th St., St. Paul, Minn.
Filed June 3, 1963, Ser. No. 285,007
16 Claims. (Cl. 15—104.01)

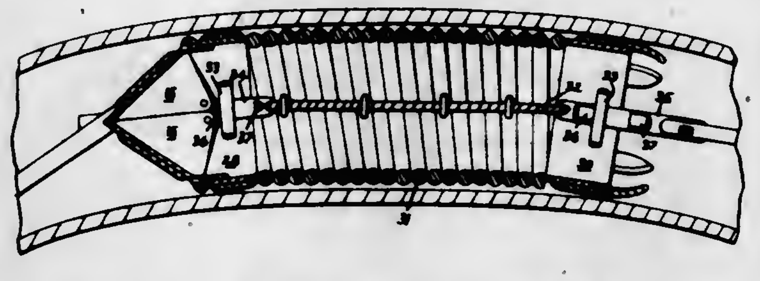


1. A groove cleaning tool adapted for use with an axially rotated cylinder having annular grooves therein comprising:

(*a*) a cleaning head,
(*b*) an elongated blade pivotally supported by said head on an axis parallel to the axis of rotation of said cylinder and adapted to snugly engage in a cylinder groove,
(*c*) a shaft secured to said head,
(*d*) a block supporting said shaft on an axis arranged in a plane normal to the axis of rotation of the cylinder, and
(*e*) said block pivotally supporting said shaft on an axis parallel to the axis of rotation of the cylinder.

3,181,192
BUCKET FOR SEWER CLEANING

Chester A. Truman, W. 2528 Garland, Spokane, Wash.
Filed Mar. 22, 1963, Ser. No. 267,215
3 Claims. (Cl. 15—104.3)



1. A bucket for cleaning sewers, comprising:
a flexible body of generally cylindrical cross section having an outside diameter slightly less than the inside diameter of the sewer to be cleaned thereby;

a pair of clam-type closures pivotally connected to opposite sides of one end of said body and extending outwardly therefrom, said closures being complementary to one another and to said body whereby they form longitudinal extensions of the body when in an open position and seal said one end of said body when pivoted relatively to said body to a closed position;

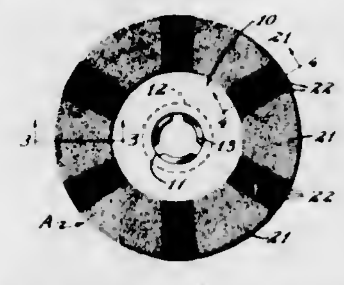
a pair of flexible movable elements slidably mounted by said body for longitudinal movement relative thereto, said elements being operatively connected to said closures and adapted to selectively shift said closures between said open position and said closed position responsive to longitudinal movement of said elements relative to said body.

3,181,193
FLOOR CLEANING BRUSHES

Warren H. Nobles, 645 E. 7th St., St. Paul 6, Minn.; Franklin C. Houser, 15520 Don Metz St., Granada Hills, Calif.; and Donald J. Burgess, 1784 Hartford Ave., St. Paul 6, Minn.

Filed Jan. 16, 1962, Ser. No. 166,551

5 Claims. (Cl. 15—114)



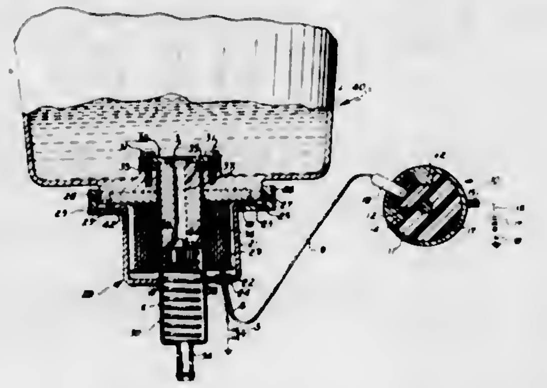
1. A rotary floor brush including a supporting disk, a series of angularly spaced arcuate segments of bristles mounted on a face of said disk, and a series of segments of similar radius of scouring material interposed between said bristled segments, said segments of scouring material including a plurality of flat pads arranged in contiguous relation and in face contact on planes generally normal to the said face of the disk, the free ends of said bristles and the free edges of said scouring material segments being in substantially the same plane, said segments of bristles and said segments of scouring material having substantially the same outer periphery, and said segments of bristles and said segments of scouring material abutting to provide a continuous brushing surface.

3,181,194
WINDSHIELD WASHER WIPER COMBINATION

Theodore W. Daykin, Dearborn, and William J. Pruner, Ann Arbor, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed June 25, 1962, Ser. No. 204,686

7 Claims. (Cl. 15—250.02)



1. In a vehicle having a windshield wiper and washer system, the combination comprising: a windshield wiper motor having a driving shaft, an actuating means having an operative and inoperative position, said actuating means adapted to be periodically operated by said driving shaft of said windshield wiper motor, a reservoir, a windshield nozzle, a fluid chamber coupled to said windshield nozzle, a piston coupled to said fluid chamber, said piston adapted to be actuated by said actuating means when said actuating means is operative, a valve located in said piston and having an open position when said actuating means moves to an inoperative position and a closed position when said actuating means is operative, said valve coupled to said reservoir and said fluid chamber to permit fluid to flow from said reservoir into said fluid chamber when said valve is in an open position and said valve preventing fluid from flowing from said reservoir to said fluid chamber when in a closed position, said piston and valve cooperating to force fluid from said fluid chamber through said nozzle when said valve is in a closed position and said piston is actuated.

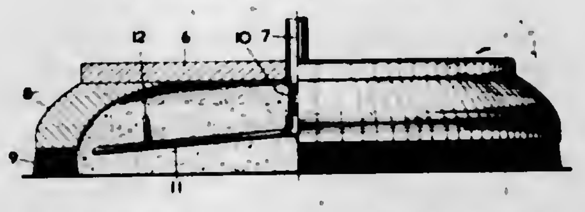
3,181,195
APPARATUS FOR THE TREATMENT OF FLOORS

Gerardus van Brakel, Rotterdam, Netherlands, assignor to Chem-Y, Fabriek van Chemische Producten N.V., Bodegraven, Netherlands, a Dutch corporation

Filed Mar. 18, 1963, Ser. No. 265,617

Claims priority, application Netherlands, Mar. 21, 1962, 276,209

10 Claims. (Cl. 15—501)



1. A rotary brush device, comprising an annular brush, with a hollow space for containing saw-dust type material, a stirring member disposed within the hollow space, said stirring member being arranged for rotation with respect to the brush.

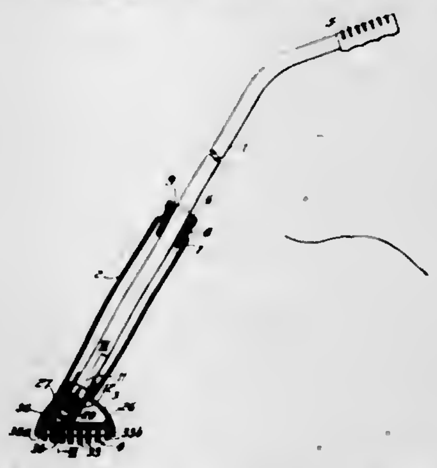
3,181,196
HANDLE OPERATED FOAM GENERATOR AND APPLICATOR

Richard Thomas William Knightly, Eastcote, Middlesex, England, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

Filed Mar. 4, 1963, Ser. No. 262,522

Claims priority, application Great Britain, Mar. 9, 1962, 9,277/62

5 Claims. (Cl. 15—525)



1. A device for applying foam to a surface comprising a reservoir for a liquid capable of foaming, a cylinder in a lower portion of said reservoir, said cylinder having an inlet port in an upper end communicating with said reservoir and an outlet in its lower end, normally closed valve means for said outlet, a manipulating handle movable relative to said reservoir, piston means fixed to said handle

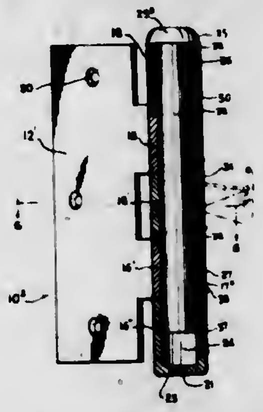
slidably movable in said cylinder, a chamber below said cylinder and communicating with said outlet to receive liquid from said cylinder, a perforated partition member in said chamber and an applicator mounted on said reservoir having passages communicating with said chamber downstream of said perforated member, said piston being movable downwardly by said handle to cover said inlet port and open said valve means substantially simultaneously and force liquid out of said cylinder into said chamber and through said perforated member and said piston being movable upwardly while said valve means is open and said inlet port is covered to create a reduced pressure in said chamber and said cylinder, and thereafter to close said valve means and uncover said inlet means whereby downward and upward movement of said piston causes said liquid to be foamed and discharged into said applicator.

3,181,197
LUBRICATING MEANS FOR HINGES

Albert M. Sperber, F-14 Bashford Ave., Union, N.J.

Filed Dec. 4, 1962, Ser. No. 242,178

2 Claims. (Cl. 16—161)



2. A butt hinge construction, comprising a pair of flat wing plates having spaced tubular eyes at one lateral edge of each plate, the eyes of one plate interfitting and aligned axially with the eyes of the other plate, said eyes each having a hole therein extending inwardly from the outside of the eye to the interior thereof, each hole being located between opposite axial ends of the eye, a bolt having a cylindrical shank removably disposed in the tubular eyes, one eye of one plate having an end wall defining with the wall of the eye a space thereat, said shank terminating short of said end wall, said end wall having a narrow axial hole for passing lubricant into said space, each of the eyes having a generally rectangular recess formed in its outer side, each of the holes being substantially centrally disposed at and communicating with said recess, and a plurality of leaf springs each engaged at one end thereof in a different one of the recesses, each leaf spring having a projection disengageably held in one of the holes in the eyes for retaining lubricant therein and for excluding dirt and dust, each of the eyes having a transverse groove formed across the recess therein, each leaf spring having a lip at said one end thereof engaged in the transverse groove of its respective eye, each leaf spring having another lip at the other end thereof extending slightly outward of the recess in the eye for engagement by a portion of a lubrication dispensing device to bend the spring and retract the projection from the hole in the eye.

3,181,198
FISH HOLDER AND SCRAPER

Fred Stelzen, 201 Lincoln Ave., Clifton, N.J.

Filed Oct. 21, 1963, Ser. No. 317,699

2 Claims. (Cl. 17—8)

1. A hand-held fish holding device comprising:

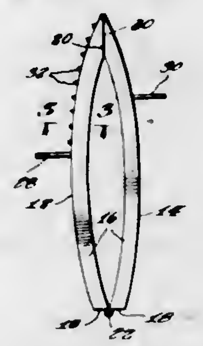
(*a*) a pair of rectangular longitudinally bowed plate members;

(*b*) an inwardly directed longitudinal side-flange at each side of each plate member and extending the full length thereof;

(*c*) said plate members being arranged in oppositely bowed relation with corresponding side-flanges disposed in opposed relation;

(*d*) a hinge connecting said plate members together at corresponding rear ends thereof;

(*e*) a plurality of longitudinal closely spaced narrow corrugations of equal length formed in each plate member with the ends thereof terminating short of the ends of said plate member;



(*f*) said corrugations being each arcuate in cross-section and positioned inwardly of the outside surface of each plate member so as to lie between the side-flanges thereof and of a depth slightly less than the depth of said side-flanges;

(*g*) a longitudinal row of prongs on each corrugation projecting inwardly of each plate member;

(*h*) the terminal ends of said side-flanges at the free forward ends of said plate members being correspondingly beveled such as to seat one on the other in the closed portion of said plate members;

(*i*) a rigid single finger grip on one plate member positioned centrally on the outer side thereof to receive therein the thumb of a hand, and

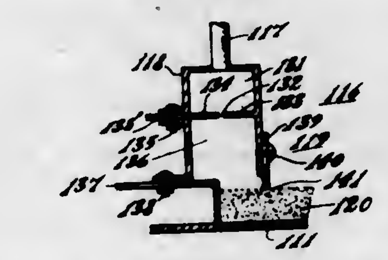
(*j*) a rigid single finger grip on the outerside of the other plate member positioned thereon substantially midway between the first mentioned finger grip and the free forward edge of said other plate member to receive the forefinger of the hand.

3,181,199
FROTH APPLICATOR

Walter D. Voelker, Philadelphia, Pa., assignor, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Dec. 7, 1961, Ser. No. 157,765

5 Claims. (Cl. 18—4)



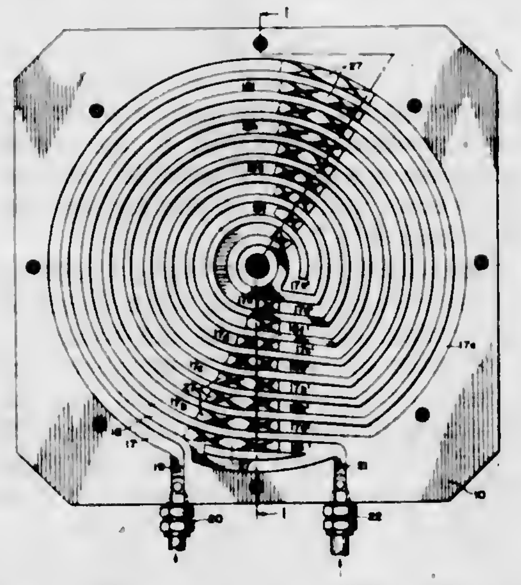
1. An applicator for depositing plastic froth transversely across substantially all of the width of a continuously advancing sheet of material, said applicator comprising, in combination, an elongated tank defining a high pressure plenum chamber of substantially uniform transverse cross section, one wall portion of said tank being provided with a froth-forming slit extending coextensively with the major dimension of said tank transversely across the sheet material; conduit supply means connecting to said tank adapted for directing plastic resinous material containing dissolved gas to the plenum chamber under a preselected pressure; a second elongated tank defining a froth-forming chamber subtending the

wall portion of the first elongated tank which contains said froth-forming slit, said froth-forming chamber communicating with said plenum chamber only by way of said froth-forming slit and a wall portion of said second tank being provided with a froth deposition opening extending transversely substantially across the full width of said sheet material; and mounting means adapted to secure said applicator in a position with respect to the advancing sheet so that said froth-forming slit is less than one foot from said sheet material in plastic froth depositing relationship thereto.

3,181,200
HEATING AND COOLING MEANS FOR FLAT PHONOGRAPH RECORD DIE

William Joseph, Livingston, N.J., assignor to Metro-Goldwyn-Mayer Inc., New York, N.Y., a corporation of New York

Filed Dec. 19, 1962, Ser. No. 245,690
6 Claims. (Cl. 18—5.3)

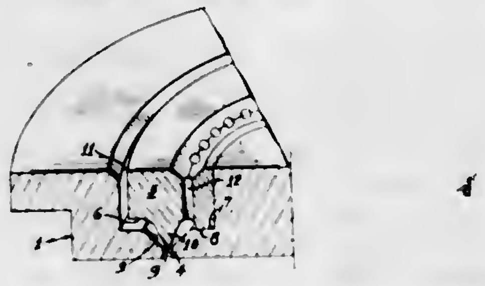


1. In a molding die, in combination, a plate of heat conducting material, a pair of interspersed spiral passages formed therein, each turn of each said spiral passage comprising a major portion in the form of a circle arc and a minor portion in the form of a straight line, said straight line portion joining the circle arc portions of two adjacent turns of the respective spiral adjacent ends of said pair of spiral passages being interconnected to form a continuous passage for the flow of fluid.

3,181,201
SPINNERETTE FOR THE PRODUCTION OF COMPOSITE THREADS

Richard Seiz, Hanau am Main, Germany, assignor to W. C. Heraeus, G.m.b.H., Hanau (Main), Germany

Filed Oct. 30, 1962, Ser. No. 234,159
Claims priority, application Germany, Nov. 2, 1961, H 44,026
1 Claim. (Cl. 18—8)

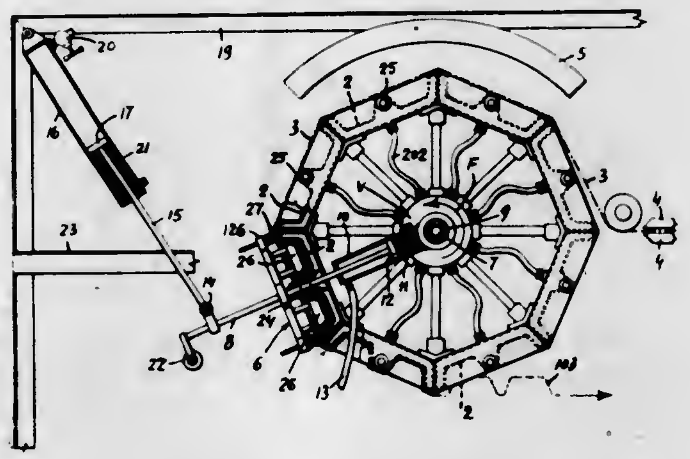


A spinnerette for the production of composite threads comprising a disk-shaped member having an annular recess formed in the top surface thereof, an annular groove formed in the bottom of the recess, a plurality of circumferentially spaced outlets formed in the bottom surface of the disk-shaped member and communicating with the groove, an annular insert member mounted in the recess, the annular insert having an annular projection extending from the bottom thereof into the groove, a first spinning mass passage means between a wall of the recess and a wall of the insert and communicating with the groove along one side of the projection, a plurality of circumferentially spaced inlets formed through the insert and communicating with the groove along the other side of the projection forming a second spinning mass passage, the first and second passages intersecting at a location below the projection and above the bottom surface of the disk-shaped member.

3,181,202
ROTARY MACHINE FOR THE COMBINED AUTOMATIC VACUUM- AND PRESSURE-FORMING OF CONTINUOUS THERMOPLASTIC BANDS

Guido Martelli, Nerio Martelli, and Francesco Martelli, Bologna, Italy, assignors to Compagnia Italiana Nest-Pack S.p.A., Bologna, Italy, a company of Italy

Filed June 14, 1962, Ser. No. 202,530
Claims priority, application Italy, June 20, 1961, 11,480/61
4 Claims. (Cl. 18—19)

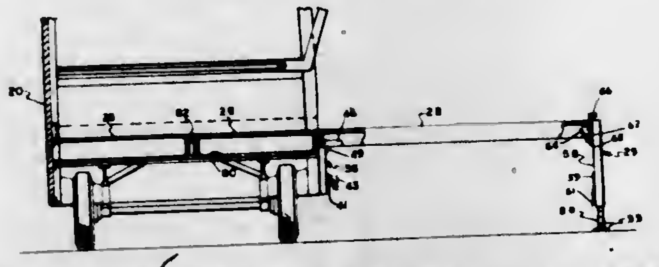


1. In a rotary machine for the combined automatic vacuum and pressure forming of continuous thermoplastic bands or sheets including a rotatable drum, a plurality of perforated molds around the periphery of said drum, heating means near the periphery of said drum, means for feeding a continuous strip of thermoplastic sheet material onto the periphery of said drum and in the vicinity of said heating means, suction means in communication with the perforations of said molds for drawing the sheet material into engagement with the mold surfaces, valve means controlling said suction means and operative upon rotation of said drum to place said suction means in communication with said molds successively as the respective molds are revolved and sealing means engageable with the sheet material to form an airtight seal with said drum around each of said molds, the improvements comprising first coupling means projecting from said drum in spaced positions along its periphery in correspondence of each of said molds, a punch having an initial position spaced radially from the periphery of said drum, fluid operated means for successively shifting said punch into engagement with the strip of thermoplastic sheet material upon each mold and pressing the sheet into the mold radially, second coupling means extending radially on said punch coacting with said first coupling means on said drum whenever said punch is being shifted into engagement with a strip of thermoplastic sheet material upon a mold and guiding the radial movement of the punch into the mold, said punch while inserted in a mold being entrained by said drum for a fraction of its revolution, means associated with said fluid operated means for withdrawing said punch clear of said punched sheet and the corresponding mold, and spring means pivotally connected to said punch for returning the punch to its initial position.

3,181,203
PORTABLE STAGE AND SHELL

Harry J. Wenger, Steele County, Minn. (Owatonna, Minn.)

Filed Feb. 15, 1961, Ser. No. 89,520
9 Claims. (Cl. 20—1.126)

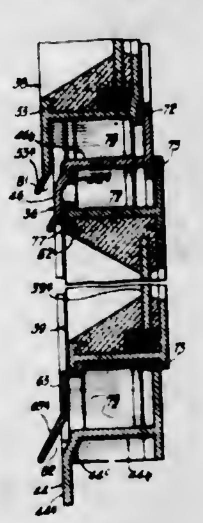


9. A portable stage and music shell comprising, a trailer one side of which hinges open to form a canopy, a pair of vertically spaced hooking portions formed in the base of said trailer below said canopy, a platform in said trailer, movable platform members, means secured to said movable platform members and engaged selectively with either of said vertically spaced hooking portions to support one end of said movable platform members adjacent the hinged side of said trailer, and jacks engaged with and supporting the ends of said movable platform members spaced from said trailer hinged side at the same elevation as the selected one of said vertically spaced hooking portions.

3,181,204
WINDOW STRUCTURE

Dan C. Muessel, Niles, Mich., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York

Filed Aug. 23, 1963, Ser. No. 304,124
2 Claims. (Cl. 20—53)

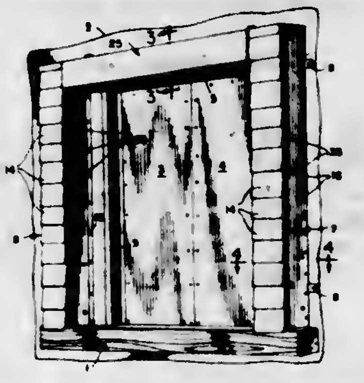


1. An operating window assembly comprising a frame defining a sash opening and formed of an upper and a lower horizontal frame member and a pair of vertical side frame members interconnecting said horizontal frame members, each of said members having a cross section with a first transverse leg extending edgewise, and inner and outer flange legs extending generally normal to the transverse leg; a sash portion in said opening operatively associated with said frame and including a sash frame formed of an upper and a lower horizontal sash member and a pair of vertical side sash members interconnecting said horizontal sash members, each of said sash members having a first transverse leg extending edgewise and at least one flange leg extending generally normal thereto; sealing means operatively positioned between said inner legs and associated ones of said legs of said sash members for forming an inner seal extending entirely around the inner perimeter of said opening; and sealing means operatively positioned between the outer legs of at least said vertical side frame members and associated ones of said legs of said vertical side sash members for forming an outer seal extending at least along the outer vertical perimeter of said opening forming a downwardly and outwardly projecting lip on the bottom of the lower sash member extending below the upper surface of the lower frame member and spaced outwardly from the outer surface of said frame member to define a slot therebetween, drainage means from the space between the inner and outer perimeter of said opening to the exterior of said window sufficiently large to equalize the air pressure in said space with the air pressure on the exterior of said window.

3,181,205
PAD STRUCTURES

Cyril P. Frommelt and Sylvan J. Frommelt, Dubuque, Iowa, assignors to Dubuque Awning & Tent Co., Dubuque, Iowa, a corporation of Iowa

Filed June 19, 1962, Ser. No. 203,647
3 Claims. (Cl. 20—69)



1. A pad structure adapted to be mounted adjacent a vertical side of a doorway to close off the space normally occurring between the side of the doorway and the rear edge of a truck body backed up to said doorway and comprising an elongated body of a cellular, resilient, compressible polymer mounted on an elongated, rigid, backing member, a flat face on said body opposite said member, a cover sheet on said body and extending over said flat face and opposite sides of said body, the longitudinal edges of said cover sheet overlapping the respective longitudinal edges of said elongated backing member, fastener means securing said longitudinal edge portions of said cover sheet on the respective longitudinal edges of said backing member, and a plurality of flaps of wear-resistant, flexible material attached to said cover sheet on said flat face, said flaps being arranged in a row extending longitudinally of said elongated body, and means extending transversely of said elongated body along only one of the respective edges of said flaps and attaching said flaps to said cover sheet only along said respective edges and providing a row of flaps on said flat face having their upper edges attached to said cover sheet and free, lower edges when said pad structure is mounted adjacent the side of a doorway.

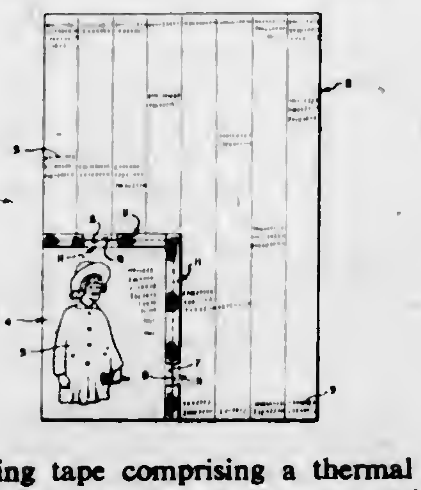
3,181,206
COMPOSITE MATRIX AND METHOD FOR MAKING THE SAME

Edward D. Hagney, Massapequa, and Marvin Mehlman, Bayside, N.Y. (both % National Electrotype Co., 227 E. 45th St., New York, N.Y.)

Filed Mar. 27, 1963, Ser. No. 268,333
9 Claims. (Cl. 22—5.5)

1. A composite matrix for use in heat generating plate casting machines comprising: an unsupported primary matrix; at least one unsupported secondary matrix positioned adjacent said primary matrix with the adjacent edges of the matrices in abutting, non-interlocking rela-

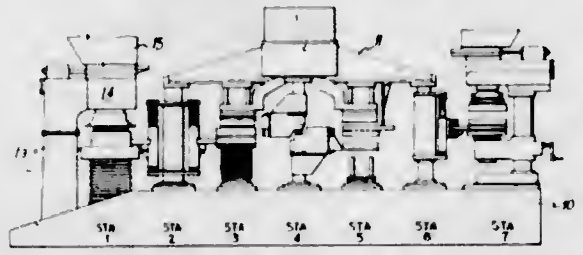
tionship with each other; and a sealing tape, substantially non-shrinking and non-deteriorating at the temperatures generated in the plate catsing machine, covering said abutting edges on at least one side of said primary and secondary matrices in the non-printing area of said mat-



rices, said sealing tape comprising a thermal insulating base member, a fluorinated synthetic resin coating on said base member, and a pressure sensitive, silicone adhesive affixed to one side of the coated base member securely bonding said coated tape to said primary and secondary matrices.

3,181,207
AUTOMATIC MOLD PREPARING APPARATUS

Michael Schaible and Wainwright, Tuttle, Cincinnati, Ohio, assignors, by mesne assignments, to Altamil Corporation, Indianapolis, Ind., a corporation of Delaware
Filed Mar. 15, 1962, Ser. No. 179,960
25 Claims. (Cl. 22—20)

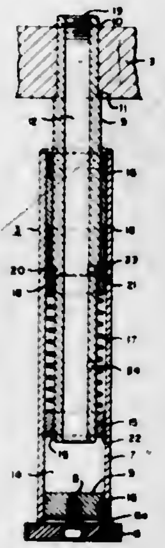


1. An apparatus for preparing a sand mold for pouring, the apparatus having a shooting station, an extraction station and as assembly station, said shooting station comprising a machine for shooting sand into a mold box containing a pattern to produce a sand mold half, means for presenting to said machine alternately a drag mold box and pattern, and a mating cope mold box and pattern, and for moving the filled mold boxes to an extraction station sequentially, means at said extraction station for extracting the said molds alternately from said drag and cope mold boxes, means for alternately moving said completed drag and scope molds from said extracting station to said assembly station, means operative during the movement of said drag mold from the extraction station to the assembly station for inverting said drag mold, all of the foregoing means operating in timed relation to provide at said assembly station a completed drag mold and a completed cope mold in spaced, aligned positions, means to bring said drag mold and said cope mold together, closing and completing said mold, and means to move said completed mold out of said apparatus for pouring.

3,181,208
MOLDING MACHINE SQUEEZE FOOT

Edwin H. Brauer, Zelienople, Pa., assignor to Herman Pneumatic Machine Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 12, 1962, Ser. No. 172,746
2 Claims. (Cl. 22—41)

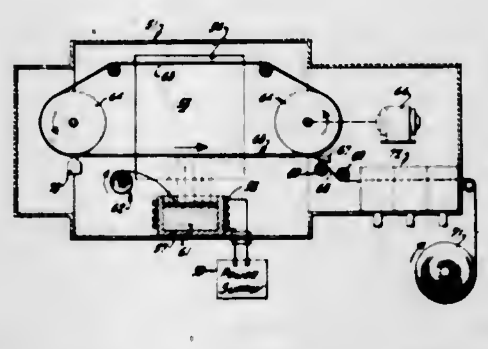
1. In a molding machine with a squeeze head having a multiplicity of squeeze feet the improvement comprising mounting each of said squeeze feet on a respective cylinder member spaced from other cylinder members which is slidably mounted on a rod member fixed to said squeeze head, means normally maintaining said cylinder member with said squeeze foot in a central position whereby said cylinder member and squeeze foot may be moved upwardly and downwardly along said rod member relative to said squeeze head, said cylinder member being of a length that substantially covers said rod member when



said cylinder member is fully retracted toward said squeeze head, said cylinder member having a substantially fluid-tight chamber therein communicating with fluid reservoir means through an axial opening in said rod member whereby fluid may enter and leave said chamber with said cylinder member thereby advancing and retracting respectively from said central position along said fixed rod member and centering means adapted to return said cylinder members and their respective squeeze feet to said central position.

3,181,209
FOIL PRODUCTION

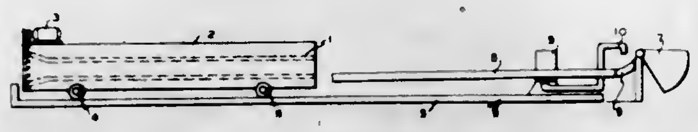
Hugh R. Smith, Jr., Piedmont, Calif., assignor to Temescal Metallurgical Corporation, Berkeley, Calif., a corporation of California
Filed Aug. 18, 1961, Ser. No. 132,423
8 Claims. (Cl. 22—57.4)



1. A method for the continuous manufacture of a thin self-supporting foil of uniform thickness comprising, evacuating a vacuum chamber to a low pressure, vaporizing a foil material within the vacuum chamber, moving an endless substrate positioned within the vacuum chamber so as to intercept the foil material vapors and condense the foil material vapors thereon in the form of a thin uniform coating, removing the coating from the substrate within the vacuum chamber in the form of a thin uniform self-supporting foil, and passing the foil out of the vacuum chamber through differential vacuum pumping stages, whereby the flow of air into the vacuum chamber is substantially prevented.

3,181,210
CENTRIFUGAL CASTING APPARATUS

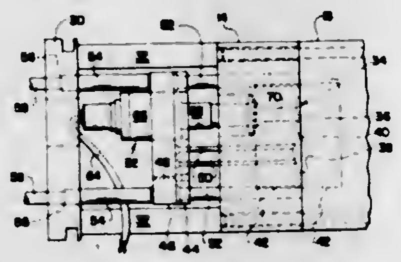
William A. Montgomery, Hayward, Calif., assignor to United States Pipe and Foundry Company, Birmingham, Ala., a corporation of New Jersey
Filed Jan. 29, 1962, Ser. No. 169,269
2 Claims. (Cl. 22—65)



1. A centrifugal pipe casting apparatus comprising an axially elongated mold rotatably mounted about its longitudinal axis, an elongated pouring trough mounted in substantially axial alignment with said mold, means for delivering molten metal to said pouring trough at a controlled rate, a container of predetermined capacity, an input line for delivering blacking slurry to the container, means for controlling the rate of slurry delivery to the container a discharge line for delivering the contents of the container to the pouring trough, an overflow line for the discharge of excess blacking slurry from the container and a three-way valve connected to the discharge line in a manner to permit the closing of the overflow line and the interconnecting of an air line to said container whereby the contents of the container are forced out through the discharge line.

3,181,211
DIE CASTING WITH ULTRASONIC VIBRATION

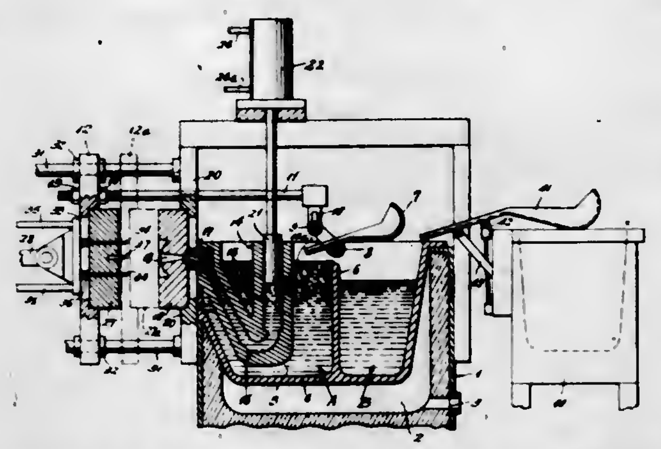
Earle W. Rearwin, High Point, N.C., assignor to Adams-Millis Corporation, High Point, N.C., a corporation of North Carolina
Filed May 16, 1962, Ser. No. 195,078
6 Claims. (Cl. 22—68)



1. A die construction for a die casting machine and comprising a cover-half and an ejector-half which engage to define a cavity for casting a metal product and a runner attached thereto at a gate, the die casting machine being of the type which has means for mounting the said die halves for relative movement so that they can be selectively engaged or closed and then opened respectively to receive molten metal and to eject the formed product and its runner, one of the said die halves being provided with an opening extending therethrough and communicating with the cavity, an electro-mechanical transducer disposed within said opening for movement therein and having a reduced end substantially flush with a surface of said one die half at the cavity, the said transducer being connectible with a source of radio frequency electrical energy and comprising a material capable of changing its dimension responsive to and in keeping with the frequency of such electrical energy to vibrate its reduced end, a nodal ring embracing said transducer between its ends at a point of minimum vibration, and means for mounting said ring within said opening to support the transducer therein.

3,181,212
DIE CASTING MACHINE

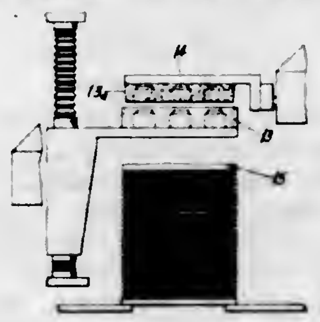
Albert Madwed, Bridgeport, Conn., assignor, by mesne assignments, to Automatic Casting Corporation, Bridgeport, Conn., a corporation of Connecticut
Filed May 31, 1962, Ser. No. 198,915
4 Claims. (Cl. 22—70)



1. In a die casting machine comprising a vat containing a supply of molten casting metal and a metal injection mechanism having a plunger and an injection cyllinder which is adapted to be partially immersed in said molten metal in said vat, said injection cylinder comprising a gooseneck section which extends above the level of said molten metal and opens into a die cavity, and a plunger receiving section having an intermediate opening adapted to be positioned below the level of said molten metal for allowing said molten metal from said vat to enter the injection cylinder and be forced by said plunger through said gooseneck section into the die cavity, said die cavity being formed by a sectional die, one of said sections being mounted in fixed position relative to and opening into said gooseneck section while the other of said sections is movable into engagement with said fixed die to form said cavity, the improvement which comprises using as the vat one which is provided with a wall, the height of which is selected so as to approach the height at which the gooseneck section opens into the die cavity; and automatic means responsive to the movement of said movable die section for supplying additional molten metal to said vat each time the dies are moved out of engagement in sufficient quantity to cause a surplus of molten metal to overflow said wall whereby molten metal added to said vat is maintained at a substantially constant and high level equal to the height of said wall, said automatic means comprising a pivotal ladle for dipping molten metal from a supply thereof and depositing it in said vat.

3,181,213
METHOD FOR THE USE OF DYNAMIC VACUUM IN FOUNDRY OPERATIONS

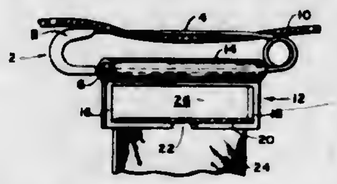
Michael Schaible, Boston, Mass., and Wainwright Tuttle, Cincinnati, Ohio, assignors, by mesne assignments, to Altamil Corporation, Indianapolis, Ind., a corporation of Delaware
Filed Mar. 6, 1963, Ser. No. 263,156
10 Claims. (Cl. 22—193)



2. The method of transporting a porous, hardened sand mold, which includes the steps of bringing the exposed

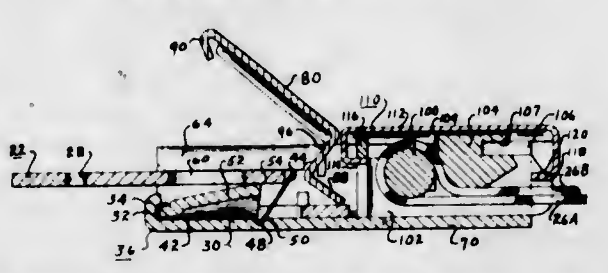
surface of said mold into contact with a hollow supporting member and continuously exhausting the air therefrom so as to maintain a sub-atmospheric pressure therein in spite of the movement of at least on the order of 40 cubic feet of free air per minute, through the pores of said mold, whereby the resistance to air flow of the tortuous passages between the sand grains of said mold creates a force holding said mold against said supporting member.

3,181,214
LINGERIE STRAP RETAINER
Teresa D'Ambrosio, 170 W. 75th St., New York 23, N.Y.
Filed July 10, 1963, Ser. No. 294,068
4 Claims. (Cl. 24—73)



1. A lingerie strap retainer comprised of a member adapted to be detachably secured to a flexible fabric, said member having a leg substantially the length thereof, a collar mounted upon said leg, said collar being pivotable about said leg, and a loop depending integrally of said collar, said loop having a bottom portion parallel with respect to said collar, said bottom portion having a split section along the length thereof, whereby a lingerie strap is receivable through said space and retainable upon said bottom portion.

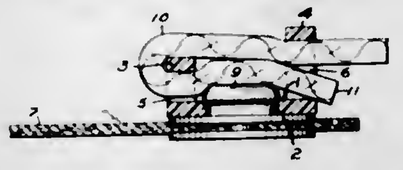
3,181,215
SAFETY BELT BUCKLE
Ray Eberhart, 317 E. Jefferson Blvd., Mishawaka, Ind.
Filed Mar. 28, 1963, Ser. No. 268,837
8 Claims. (Cl. 24—75)



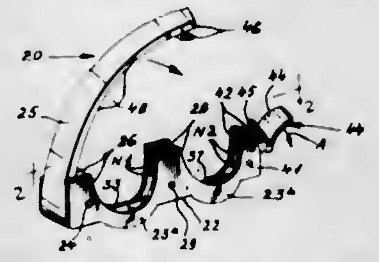
7. A buckle for a safety belt having two sections, comprising male and female portions, said female portion including a body with a back and two sides joined to said back, a lever in one end of said body, a spring means between said back and said lever urging said lever forwardly, a means for operating said lever, a means in said body in the end opposite said lever for receiving one end of one belt section, means for holding said male portion against forward movement relative to said lever, said lever and male portion having an interlocking lug and slot for holding said lever and male portion in locked position, yieldable means for disengaging said lever and male portion when said lever is operated to unlatch said buckle, and means on said male portion for receiving one end of said other belt section.

3,181,216
ADJUSTABLE SNAP FASTENER BUCKLE
Stuart T. Shears, Belmont, Mass., assignor to United-Carr Incorporated, a corporation of Delaware
Filed Dec. 20, 1962, Ser. No. 246,217
1 Claim. (Cl. 24—77)

An adjustable fastener installation comprising, in combination, a supporting structure such as a shoe, glove, and the like, having edge portions adjacent an opening, and an adjustable elastic strap extending from one edge portion over another edge portion and fastened to both edge portions by fastening devices, at least one of said fastening devices having a buckle of molded plastic material attached in superposed relation to one edge portion and adjustably associated with said elastic strap, said buckle being in the form of a one piece snap fastener socket having an apertured base portion for snap fastener engagement with a cooperating snap fastener stud on the associated edge portion located beneath said buckle and having spaced strap receiving slots and said strap being threaded through said slots in a manner whereby a free edge portion of the strap passes through both slots and another portion of the strap passes over a snubbing flange portion adjacent one of the slots and through a second slot only, said threading arrangement permitting sliding adjustment of the strap relative the buckle when desired while preventing slippage when the shoe, glove and the like, are in use and the strap is placed under strain.



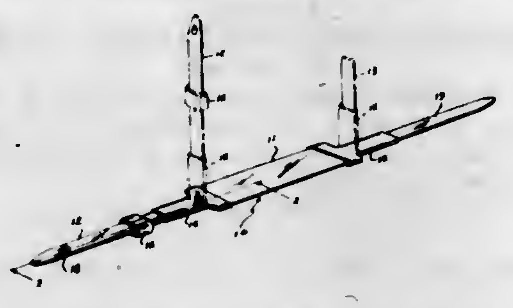
3,181,217
JEWELRY SHORTENER LOCK
Ernst Bohlinger, 31—15 25th Ave., Astoria, N.Y., and Samuel Friedman, 556 Ave. Z, Brooklyn, N.Y.
Filed Oct. 3, 1963, Ser. No. 313,549
1 Claim. (Cl. 24—116)



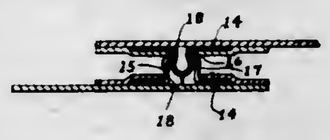
A jewelry clasp for adjusting the length of a necklace, comprising an elongated body member formed by a pair of individual side bars, each bar having a pair of spaced transverse notches therein, pivot pins connecting said bars at their ends and midway thereof and being the only connection therebetween, a clasp bar mounted on one end pivot pin and provided with spaced jaws at its opposite end and a depending spacing lug intermediate its ends receivable between said bars midway of their lengths, a combined catch member and finger piece pivotally mounted on the other end pivot pin for locking engagement between said spaced jaws when said clamp bar is in closed position, said transverse notches adapted to receive two end strands of a necklace, and a coil spring on said intermediate pivot pin having oppositely extending terminal ends resiliently engageable with said clasp bar and said catch member when in open and closed positions and contacting different portions of said clasp bar and catch member when they are in open and closed positions, respectively.

3,181,218
DOCUMENT FASTENER
Charles H. Wagner, 72 Central Ave., Plymouth Apts., Dayton, Ohio, and Richard J. Killoren, 169 Locust Drive, Fairborn, Ohio
Filed Mar. 19, 1963, Ser. No. 266,460
1 Claim. (Cl. 24—153)
(Granted under Title 35, U.S. Code (1952), sec. 266)

In combination with a two-pronged stamped out metallic paper fastener having a substantially flat elongated base plate and two narrow substantially flat prong members extending outwardly in diametrically opposite directions from opposite ends of said base plate and bendable substantially at the junction with the base plate to extend in parallel relation to each other, normal to said base plate, and having thin raw stamped edges on said prongs likely to cut or tear paper when inserted therethrough, a protective coating on each of said prongs adjacent said base plate, said coating completely surrounding said prongs and covering said thin raw edges to prevent their cutting papers held by the fastener when inserted through said papers, and means for retaining said prongs in juxtaposed relation whereby papers may be secured thereby.

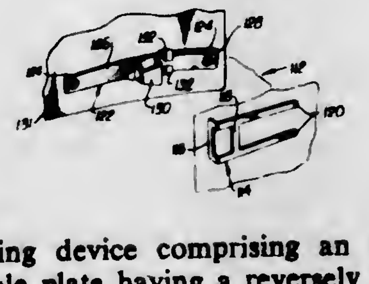


3,181,219
SNAP FASTENER ASSEMBLY
Leo J. Deshaies, Meriden, Conn., assignor to Scovill Manufacturing Company, New Haven, Conn., a corporation of Connecticut
Filed Jan. 29, 1964, Ser. No. 341,037
2 Claims. (Cl. 24—203)



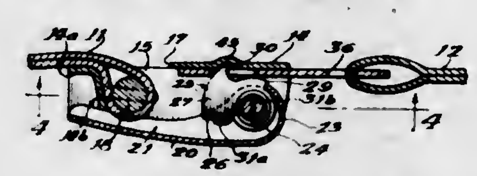
1. An elongated snap fastener assembly comprising an article of sheet material having an opening with front and back overlapping edge portions, a pair of elongated flexible strips in opposed relation to each other, one of which is adhesively secured to the front surface of said back overlapping edge portion and the other of which is secured to the back surface of said front overlapping edge portion, snap fastener elements arranged in pairs along the length of said assembly, each element having a thin flat back between one of said flexible strips and the sheet material to which it is adhesively secured, the elements of each pair having co-operating stud and socket snap fastening means of generally tubular shape projecting toward each other from the thin flat bases of the elements through apertures in their respective flexible strips, said edge portions of the article being both imperforate in the region of said fastener elements.

3,181,220
FASTENER WITH NOSE FOR GARMENT AND BELT
Ilona C. Mezerenyi, 1658 N. Raymond Ave., Pasadena, Calif.
Filed Nov. 22, 1961, Ser. No. 154,224
2 Claims. (Cl. 24—225)



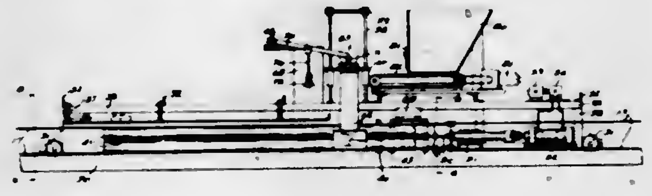
1. A fastening device comprising an elongated garment engageable plate having a reversely bent back end portion forming a garment stiffening nose portion of double thickness and terminating in a hook providing a flared opening facing the other end of said plate, said hook being rigidly secured to a mid-portion of the plate, and said plate having means for securing same to an end portion of an associated garment to stiffen the said garment end portion, said flared opening being adapted to engage a loop secured to another end portion of the garment to fasten the garment end portions together.

3,181,221
SEAT BELT BUCKLE
Seymour J. Kulwin, Chicago, Ill., assignor to Jeffrey-Allan Industries, Inc., a corporation of Illinois
Filed Sept. 4, 1963, Ser. No. 306,478
2 Claims. (Cl. 24—230)



1. In a seat belt buckle having a rigid latch body with a planar base, said planar base having a surface adapted to engage the user's body, a planar rigid latch tongue adapted to be slidably inserted along said base and having openings, and detent means pivotally mounted on said latch body for movement between an unlatched position out of engagement with said openings and a latched position received within said openings to releasably latch said tongue in said body, the improvement comprising: a plurality of shallow arcuate recessed grooves spaced transversely across said base, said grooves being defined by projections extending from said surface, the end of said detent means each being loosely received in one of said grooves when the detent means are in latched position, and areas coplanar with the base and transversely aligned with said recessed grooves to provide a guide surface on which said tongue may slide along said base without catching in said recess means.

3,181,222
MACHINE FOR MANUFACTURE OF PRE-STRESSED CONCRETE CONDUIT
Percy W. Palmer, 502 Washington St., Edgerton, Wis.
Filed Sept. 27, 1962, Ser. No. 226,673
3 Claims. (Cl. 25—41)



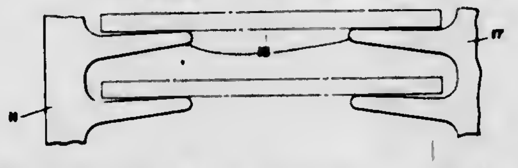
1. In a machine for casting concrete tubular products having prestressed metal reinforcement therein, a base substantially non-adherent to concrete and forming part of a mold for casting the product, and an anchorage at each end of the base for holding the reinforcement in prestressed condition, a first bulkhead positioned on the base and initially forming one end of the mold, a carriage movable on and along the base as a track and comprising a frame, plates coacting with the base in forming the four sides of a mold and providing an opening for access of concrete to the mold, a second bulkhead on the carriage within the mold and movable relative thereto for forming an end for the mold, the two bulkheads having apertures for passing the reinforcement therethrough to position the reinforcement relative to the four sides of the mold, means on the carriage for moving the second bulkhead longitudinally of the mold and relative thereto to press on the concrete in the mold, a frame resiliently mounted on the carriage, spaced cores mounted at one end on the frame to overhang from the frame and having the free ends

thereof extending into the mold through the second bulkhead, vibrating means mounted on the frame for impressing vibration along the overhanging length of the cores, and means on the carriage for feeding concrete through the access opening into the mold at the end thereof receiving the second bulkhead.

3,181,223
TILE SETTER

Howard B. Cummings, New Castle, Pa., assignor to Shenango China, Inc., New Castle, Pa., a corporation of Pennsylvania

Filed Jan. 22, 1962, Ser. No. 170,530
6 Claims. (Cl. 25—153)

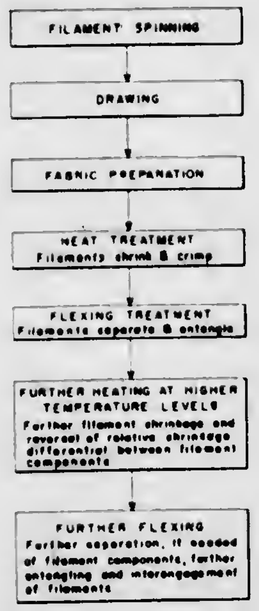


1. A tile setter for firing ceramic tile comprised of opposed side walls joined at their top and bottom to define a cell, a plurality of cantilever shelves carried by each side wall, said shelves being inclined upwardly with respect to the wall supporting them, and shelves carried by said opposite walls being arranged in pairs to provide pairs of tile supporting edges, the two edges in any one pair being equidistant from the bottoms of the supporting walls and one edge in such pair being spaced from its supporting side wall a distance equal to the distanc the other edge in the pair is spaced from its supporting side wall, whereby, when a tile is supported on a pair of said edges, the weight of tile between said edges is substantially counterbalanced by the weights of the portion of said tile extending beyond said edges toward the supporting side walls.

3,181,224
PROCESS FOR PREPARING BULKY FABRICS

David Tanner, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 2, 1963, Ser. No. 270,108
7 Claims. (Cl. 28—72)


FILAMENT SPINNING
DRAWING
FABRIC PREPARATION
HEAT TREATMENT
Filaments shrink & crimp
FLEXING TREATMENT
Filaments separate & entangle
FURTHER HEATING AT HIGHER TEMPERATURE LEVELS
Further filament shrinkage and reversal of relative shrinkage differential between filament components
FURTHER FLEXING
Further separation, if needed of filament components, further entangling and interengagement of filaments

1. In a process for preparing bulky fabrics the steps of:

(*a*) preparing a fabric from synthetic filament yarn comprised of a plurality of continuous multi-component filaments wherein the components have different shrinkages and extend longitudinally in temporary adhering side-by-side relationship along the length of said filaments,

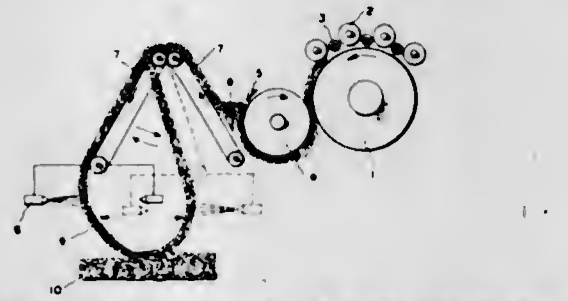
(*b*) shrinking one of said components an amount greater than any other component to crimp said filaments, and

(*c*) splitting said components into individual filamentary structures and interengaging and entangling said filamentary structures by vigorously flexing said fabric.

3,181,225
PROCESS OF RESIN TREATING A COTTON BATTING

Nestor B. Knoepfler and Homer K. Gardner, Jr., New Orleans, and Henry L. E. Vix, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Apr. 8, 1963, Ser. No. 271,525
9 Claims. (Cl. 28—75)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. The method for producing a fibrous cotton batt with improved stability, coherence, and resilience, which method comprises these several operatious carried out in sequence:

(*a*) forming webs of opened textile fibers of the group consisting of cotton fibers and chemically modified cotton fibers,

(*b*) treating the webs with a resin forming composition at least one component of which is a cellulose reactive, crosslinking reagent to a resin add-on of about from 3.76% to 24.2%, by weight of the cellulosic reactive component based on the weight of the cotton,

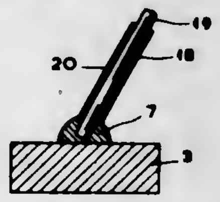
(*c*) collecting and condensing the treated webs to form a batt of layered, treated webs, and

(*d*) curing the batt of layered treated webs under compression less than the ultimate use compression of the finished batt.

3,181,226
METHOD OF MANUFACTURING SEMI-CONDUCTIVE DEVICES HAVING ELECTRODES CONTAINING ALUMINUM

Nico Bram Speyer, Mollenhutseweg, Nijmegen, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 26, 1959, Ser. No. 823,037
Claims priority, application Netherlands, Aug. 1, 1958, 230,165
4 Claims. (Cl. 29—25.3)

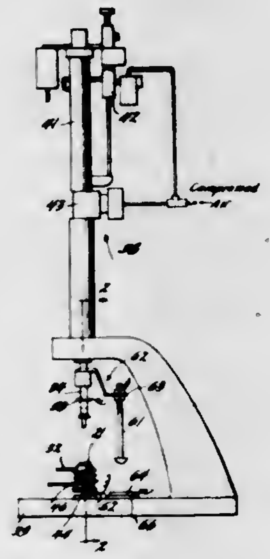


1. A method for making an aluminum-doped contact to a germanium semiconductive body, comprising providing in contact with the body a mass of metal free of aluminum but capable of alloying with the body, heating the assembly of body and mass at a temperature of about 500° C. at which the metal mass is melted, thereafter, while the mass remains in a molten state, immersing in the melt beneath its surface a wire-like member containing aluminum, thereafter subjecting the resultant assembly to a heat treatment at which at least some of the aluminum dissolves in the molten mass, thereafter cooling the assembly to solidify the mass and form the aluminum-doped contact alloyed to the body, and thereafter removing the portions of the wire-like member projecting from the solidified mass.

3,181,227
APPARATUS FOR ASSEMBLING COMPONENTS

William G. Grainger, Winston-Salem, N.C., and Delbert E. Wilson, Magna, Utah, assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 11, 1961, Ser. No. 158,432
13 Claims. (Cl. 29—25.42)

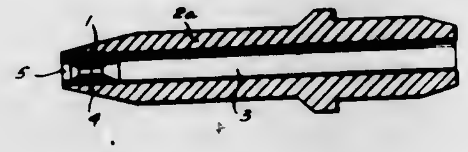


1. In a device for inserting an electrically non-conductive article into an electrically conductive bath received in a container, electrically conductive means for advancing the article within the container to displace the conductive bath about the article into contact with the advancing means, and means rendered effective upon contact of the conductive bath with the advancing means for interrupting operation of the advancing means.

3,181,228
METHOD FOR PRODUCING BALL POINTS AND THEIR PROTECTING CAPS

Jean Droubay, Chamonix, Haute-Savoie, France, assignor to A. J. Fagard & Cie, Paris, France, a French limited partnership company of France

Filed July 30, 1962, Ser. No. 213,377
Claims priority, application France, Aug. 10, 1961, 870,574
5 Claims. (Cl. 29—149.5)

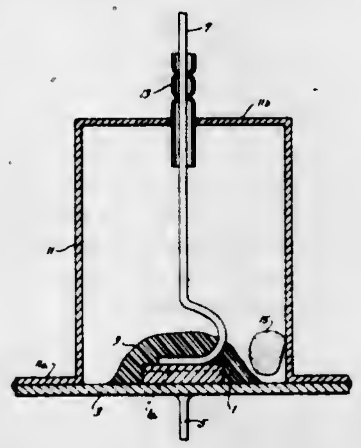


1. A method for producing ball points for ball point pens including their protecting cap, starting from a bimetallic bar constituted by a core of a metal facilitating the rolling of the ball and an outer sheath section of a harder metal, said method consisting in cutting the bar to a predetermined length, boring inside the core of the bar, an ink feeding channel followed by a short coaxial capillary channel and by a terminal ball housing, turning the outer surface of the outer sheath section of the bar to the desired shape and setting the ball in its housing, whereby the ball will be seated on the soft core and the hard outer sheath encompasses the ball seat to provide a wear resistant surface.

3,181,229
HERMETICALLY SEALED SEMICONDUCTOR DEVICE AND METHOD FOR PRODUCING IT

Rolf R. Haberecht, James M. Booe, and Wallace D. Loftus, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed Jan. 8, 1962, Ser. No. 164,655
5 Claims. (Cl. 29—155.5)

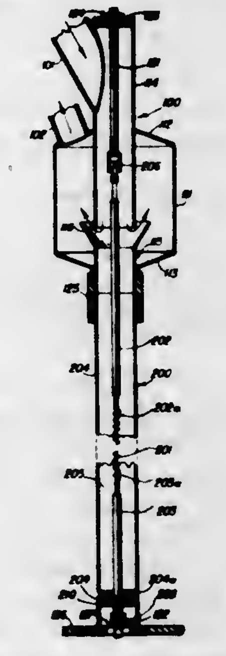


1. A process for producing a stabilized semiconductor device containing a wafer of semiconductive material, said process comprising the steps of: coating at least a portion of the surface of said wafer with a water-impervious resin which adheres thereto; heating the coated wafer to cure said resin and effect polymerization thereof; placing the cured resin-coated wafer and a quantity of barium oxide desiccant within a container, and heating said container to a temperature of 100°–200° C.; hermetically sealing said container while still at a temperature within said range; and heating the sealed container to a temperature of at least 120° C. for a period of at least 18 hours.

3,181,230
METHODS OF MAKING ELECTRIC HEATING UNITS OF THE SHEATHED RESISTANCE CONDUCTOR TYPE

Thomas McAvoy, Roselle, and Eugene F. Dillon, Chicago, Ill., assignors to General Electric Company, a corporation of New York

Filed Oct. 3, 1960, Ser. No. 60,104
7 Claims. (Cl. 29—155.63)



1. The method of making an electric heating unit comprising providing an assembly of an elongated electric resistance conductor and a pair of electric terminals respectively electrically connected to the opposite ends of said resistance conductor and an elongated tubular metallic

sheath surrounding said resistance conductor and at least the inner ends of said terminals, arranging said assembly in upstanding position with said resistance conductor and the inner ends of said terminals in spaced relation with said sheath and with the upper end of said sheath in open condition and with the lower end of said sheath in closed condition, blowing chemically inert gas having granular refractory material suspended therein in a first stream downwardly into the open upper end of said sheath, stripping the granular refractory material from the first stream and projecting the same downwardly through said sheath, conducting the thus stripped gas in a second stream upwardly through said sheath and out of the open upper end thereof, and continuing said three steps last set forth until a filling of the granular refractory material in said sheath is produced that embeds said resistance conductor and the inner ends of said terminals and that retains the same in place in spaced relation with said sheath.

3,181,231
MOLECULAR SIEVE-METAL AGGLOMERATES AND THEIR PREPARATION

Donald W. Breck, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 6, 1963, Ser. No. 300,163
13 Claims. (Cl. 29—182.5)

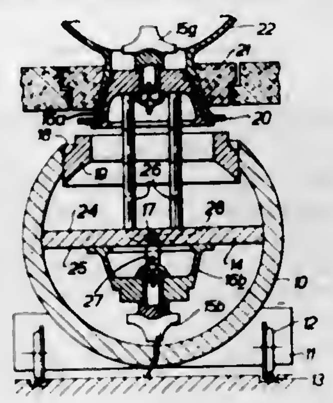
1. An agglomerate comprising zeolitic molecular sieve crystals of less than 10 microns individual size, and metal bodies having at least one dimension less than 50 microns, the ratio of the metal body size to the zeolitic molecular sieve crystal size being at least 5 to 1, said metal bodies having a melting point over 300° C., being uniformly dispersed throughout the agglomerate in quantity sufficient to constitute between about 5 and 30% by weight of the agglomerate and sintered to the outer surface of the molecular sieve crystals.

10. The method of preparing a sintered agglomerate composed of zeolitic molecular sieve crystals and metal bodies, comprising the steps of providing a mixture of said crystals of less than 10 microns individual size, and said metal bodies, constituting between about 5 and 30% by weight of the mixture and having a melting point over 300° C., and at least one dimension less than 50 microns, the ratio of the metal body size to the zeolitic molecular sieve crystal size being at least 5 to 1; intimately blending said mixture; and thereafter compacting the blended mixture under superatmospheric pressure and temperature above 100° C. but below the destruction temperature of said crystals and also below the fusion point of said metal bodies thereby sintering said bodies to the zeolitic molecular sieve crystals.

3,181,232
APPARATUS FOR REPLACING AN IMPELLER

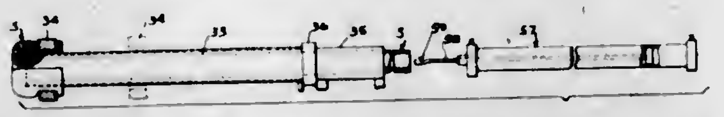
Ronald Scott Challender, Appleton, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Feb. 19, 1963, Ser. No. 259,511
Claims priority, application Great Britain, Mar. 21, 1962, 10,913/62
3 Claims. (Cl. 29—202)

1. An apparatus for replacing an impeller in a radioactive environment within a pressure vessel having an aperture therein comprising a shielded flask having an access opening, an impeller support platform, means rotatably mounting said support platform within said flask, a plurality of impellers, means mounting said impellers on said platform for raising and lowering said impellers with respect to the platform, and means for sealing said flask about the aperture in the pressure vessel when said aperture is in register with the access opening in said flask, whereby the flask may be positioned with the access opening in register with said aparture in the pressure vessel and the platform rotated to selective positions to permit each of the impellers to be raised through the access opening and aperture by said raising and lowering means for replacement of each impeller.



3,181,233
MANUFACTURE OF PAINT ROLLERS

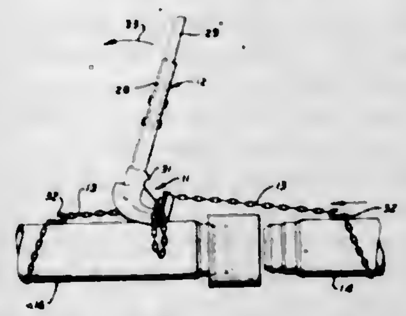
Alfred L. Sannipoli, Escondido, Calif., and Earl E. Thomas, Johnson City, Tenn., assignors to Seamless Covers, Inc., Johnson City, Tenn., a corporation of Tennessee
Application June 30, 1958, Ser. No. 745,632, now Patent No. 3,010,867, dated Nov. 28, 1961, which is a division of application Ser. No. 541,702, Oct. 20, 1955, now Patent No. 2,944,588, dated July 12, 1960. Divided and this application June 6, 1961, Ser. No. 115,255
10 Claims. (Cl. 29—235)



1. An apparatus for use in the manufacture of paint rollers from a knitted pile fabric sleeve wherein the sleeve initially has the pile on the inner surface thereof, comprising a tubular member having an outer diameter greater than the inner diameter of the tubular sleeve when in an untensioned condition, means for supporting said tubular member in position for receiving a kntted tubular sleeve therein and constructed and arranged to permit the end of said tubular sleeve to be turned over the end of said tubular member, means for gripping exteriorly of said tubular member the end of said tubular sleeve which has been turned over onto said tubular member, means for actuating said sleeve gripping means, and means for moving said sleeve gripping means in a path parallel to the longitudinal axis of said tubular member whereby said sleeve is moved along the length of said tubular member thereby inverting the full length of said sleeve onto said tubular member.

3,181,234
PIPE PULLING TOOL

John B. Gill, 20433 Earl St., Torrance, Calif.
Filed Oct. 16, 1961, Ser. No. 145,044
7 Claims. (Cl. 29—237)



1. A pipe pulling tool for bringing two sections of pipe and the like axially closer together through a chain gripping both sections of pipe and lever means acting to

bring the end portions of the chain relatively closer together, comprising a curved body member having walls defining a curved channel section containing a floor and a pair of side walls adapted to ride against a pipe and hold a section of chain within the channel, said curved channel section having a nonuniform curvature, said floor having a pair of inclined surfaces which define a V-shape in cross-section, means at one end of the channel for holding fixed positions of the chain, and means adapted to hold a lever at the other end of the channel.

3,181,235
PROCESS FOR RESISTANCE WELDING THROUGH A BUTYL RUBBER WELD-THROUGH SEALANT

Lyle Wallis, Baltimore, and James O. Mathis, Sykesville, Md., assignors to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed Jan. 15, 1963, Ser. No. 251,485
7 Claims. (Cl. 29—484)

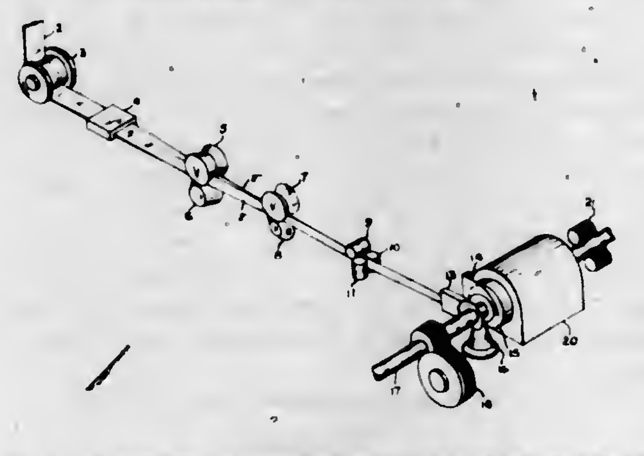
1. In a process for producing a high quality resistance weld between metal plates, said weld being effectively sealed from attack by highly reactive agents, the improvement including the steps of:

(*a*) mating said metal plates for resistance welding with a liquid film of uncured butyl rubber disposed between deoxidized faying surfaces thereof; and

(*b*) resistance welding said metal plates together through said liquid film.

3,181,236
APPARATUS FOR FABRICATING FINNED TUBING

Robert J. Garland, De Witt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Original application Mar. 27, 1957, Ser. No. 648,940, now Patent No. 3,000,084, dated Sept. 19, 1961. Divided and this application Nov. 30, 1960, Ser. No. 72,610
5 Claims. (Cl. 29—561)

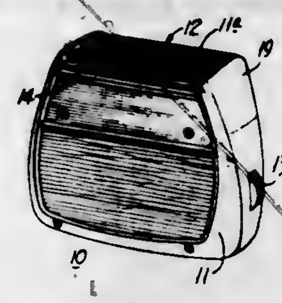


1. In an apparatus for winding a ribbon about a rotating and advancing tube, the combination of means for placing a longitudinal crease in a ribbon, means for placing the folded legs of the ribbon into face-to-face engagement, forming rolls for winding the folded ribbon about the tube with the fold adjacent the tube and discs for separating the legs of the folded ribbon from face-to-face contact.

3,181,237
ELECTRIC DRY SHAVER

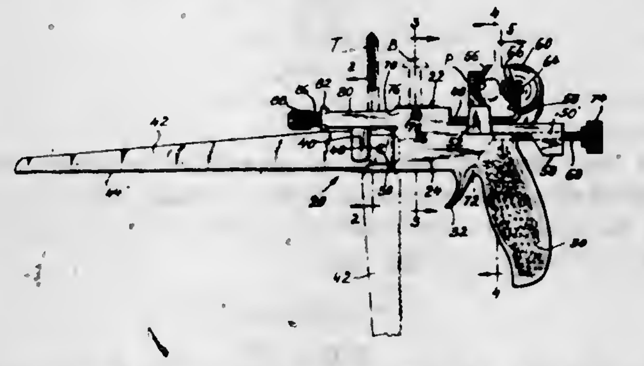
Ivar Jepson, Oak Park, and Otto Babler, Chicago, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 18, 1961, Ser. No. 159,893
5 Claims. (Cl. 30—34.2)

1. An electric dry shaving device comprising a casing defining a chamber, a cutting head associated with said casing, means defining a pair of elongated recesses one at each end of said casing, a roller having trunnions at the ends thereof, spring means biasing said trunnions outwardly from the ends of said roller, said trunnions being receivable one in each of said recesses, and cam means in said recesses for engaging the ends of said trunnions, said cam means having such a configuration that the force of said spring means moving said trunnions into engagement with said cam means causes said roller to move toward corresponding ends of said recesses.



3,181,238
PISTOL GRIP PIPE CUTTER

Leo Luca Liggio, 83 Cox Ave., Yonkers, N.Y.
Filed May 23, 1963, Ser. No. 282,791
1 Claim. (Cl. 30—94)



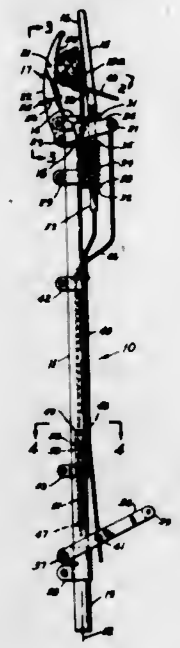
A combination hand tool assembly including a rectangular solid metal body with an integral pistol grip handle depending angularly from one end thereof, said body having a flat top above the handle, with grooves along both sides of the flat top, an integral upright plate at the end of the flat top, said plate having a central slot intersecting the top end edge thereof, an integral bulbous housing on the outer surface of the plate extending thereabove, a shaft on the top of the plate extending across the slot, a cutting wheel rotatably mounted on the shaft, said wheel projecting into the housing and outwardly of the plate, a yoke slidably mounted in the grooves at the top of the body, said yoke having a downwardly extending bight portion at the rear end thereof, a longitudinally extending threaded bore in said bight portion, a bridge member carried on the forward end of the yoke, a V-shaped anvil carried on the forward end of the yoke, said anvil facing said wheel, and an elongated threaded bolt threaded through said bore with the forward end thereof journalled in a hole in the rear end of said body, said bolt coacting with the yoke and body for moving the anvil toward and away from the cutting wheel.

3,181,239
TREE AND SHRUB BRANCH SAW

Alois Skok, 679 S. Mentor Ave., Pasadena, Calif.
Filed Oct. 4, 1963, Ser. No. 314,014
3 Claims. (Cl. 30—166)

1. A saw for cutting a branch comprising a pole, a saw blade guide attached thereto adjacent an end thereof, a saw blade reciprocable in said guide and having cutting teeth for cutting the branch, clamping means movably attached to the pole adjacent said end and movable toward the cutting teeth to engage the branch at a position remote from the position of engagement of the saw teeth at said branch, bearing means fixed to the pole adjacent said end and in the vicinity of the saw blade and the clamping means and disposed transverse to the direction of reciprocation of the saw blade, a clamping control

means attached to the pole, means connecting said clamping control means to the clamping means to move said clamping means in the direction to engage the branch and wedge it between the clamping means, the saw teeth and the bearing means at respective spaced positions around the circumference of the branch, and saw operating means connected with the saw blade to reciprocate the saw blade to cut the branch.



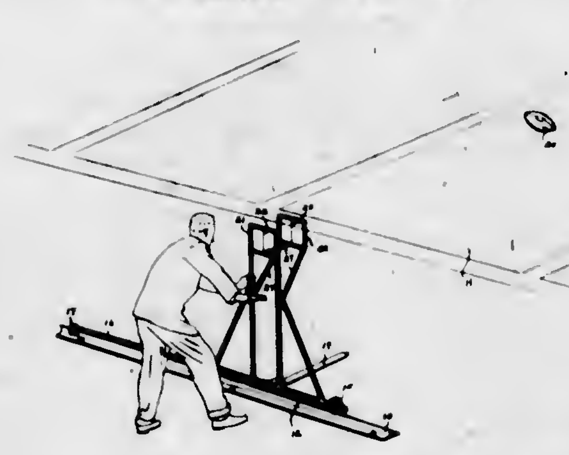
3,181,240
CERAMIC ARTIFICIAL TEETH AND METHOD OF THEIR MANUFACTURE

Waldemar Kerhart and Heinrich Wienand, Sprendlingen, Germany, and Dieter Weyl, Redwitz, Austria, assignors to Zahnfabrik Wienand Sohne & Company, G.m.b.H., Kreis Offenbach, Germany, a corporation of Germany
No Drawing. Filed June 30, 1961, Ser. No. 137,452
16 Claims. (Cl. 32—8)

1. An artificial tooth formed from porcelain material and containing finely divided opacifying particles of a size not substantially exceeding the wave length of light and having sufficiently different refractive indexes from said material to render at least the exterior surface portion of the tooth capable of reflecting and transmitting light in a manner resembling the opalescence exhibited by natural teeth under similar light conditions.

3,181,241
MEASURING MEANS FOR USE IN PLAYING FOOTBALL

Robert G. Middleton, 2920 Douglas, Des Moines, Iowa
Filed Feb. 5, 1962, Ser. No. 171,069
3 Claims. (Cl. 33—46)

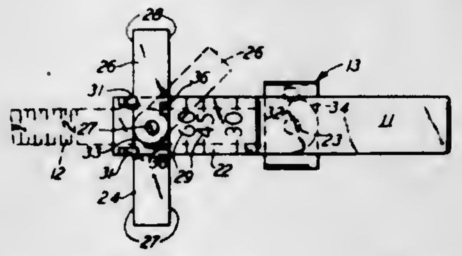


1. A football gains measuring means, comprising in combination,

an elongated track adapted to be positioned parallel to and at one side of the side line of a football playing field area,
a frame,
means on said frame for engaging and moving on said track,
a visual sighting means on said frame ,
an elongated resilient pointer secured to said frame adjacent the lower end thereof extending at a right angle from said track toward the side line of a football playing field,
said resilient pointer being adapted to normally hold said frame in an upright position but deformable to allow said frame to be tilted,
and an elongated, flexible member of predetermined length being operatively secured at one of its ends to said frame in vertical alignment with said sighting means and being detachably secured to said track at its other end.

3,181,242
STRAIGHTEDGE ATTACHMENT FOR TAPE MEASURE

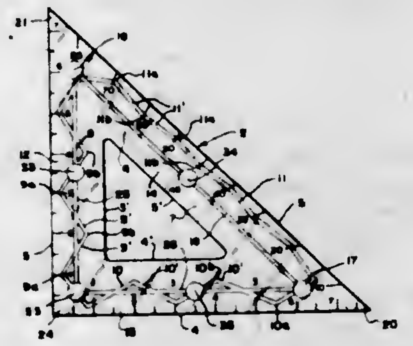
Robert W. Cook, 1715 Center St., Racine, Wis.
Filed Aug. 3, 1964, Ser. No. 386,970
6 Claims. (Cl. 33—75)



2. A straightedge attachment for a tape measure of the type having a housing and a measuring tape disposed therein and extendable therefrom, comprising clip-on means releasably attachable to said housing, a first member pivotally mounted on said means and extending therefrom in alignment with the extension of said tape, a second member pivotally mounted on the extending end of said first member and extending therefrom in the direction transverse thereto for alignment with the measurement marking on said tape, and stops included in said attachment to be operative between said means and both said members for establishing the respective positions of said members.

3,181,243
DRAFTING INSTRUMENT

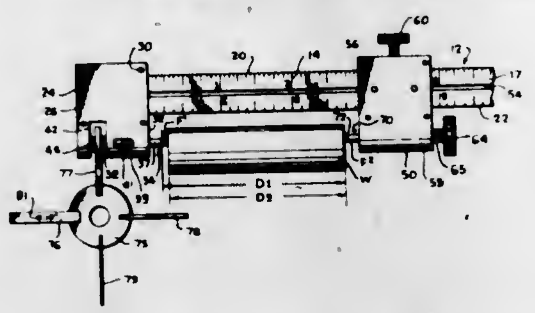
Thaddeus T. Zajac, 2704 W. 24th Place; Louis A. Osowski, 2153 W. 18th St.; and Joseph Michalowski, 2700 W. 24th Place, all of Chicago, Ill.
Filed June 5, 1963, Ser. No. 285,677
12 Claims. (Cl. 33—104)



1. In a drafting instrument, a light transmitting relatively flat body having a ruling edge, a light directing prism integral with the body and extending along said ruling edge and having a light-emitting face directed toward the ruling edge and extended below the edge and in close proximity thereto.

3,181,244
ADJUSTABLE CALIPER

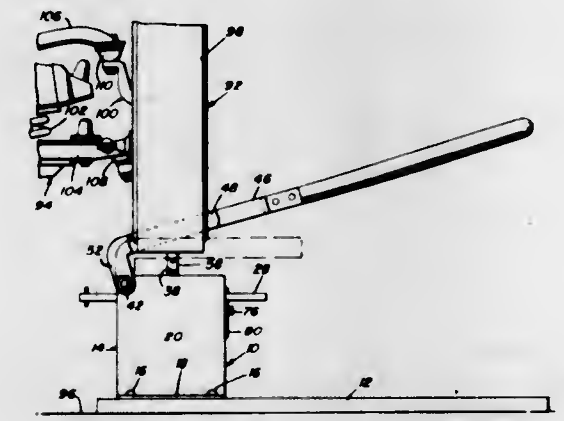
Victor M. Sosa, 2 Calle 0–71, Zona 1, Guatemala, Guatemala
Filed Apr. 18, 1963, Ser. No. 273,862
9 Claims. (Cl. 33—143)



5. A caliper gauge adapted for setting minimum and maximum dimensional tolerances of a work piece, comprising an elongated flat ruler, a first rectangular block secured at one end of the ruler, said block having a first bore therein, said block having a slot cut across the block and extending inwardly from one edge thereof to receive a gauge plate, a first pin axially slidable in said bore and having a head extending into said slot to engage said gauge plate, said pin having a shank extending out of the block oppositely of said head and axially parallel to said ruler, and spring means in said bore tending to retract the shank and extend said head, a second block axially slidable on the ruler, means for disengageably securing said second block in any selected position on the ruler, and a second pin carried by the second block and extending toward the first pin in axial alignment therewith.

3,181,245
VEHICLE BALL JOINT TESTING GAUGE

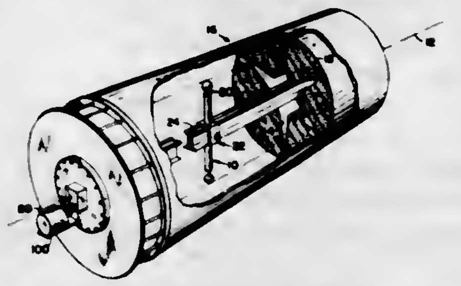
Othmar J. Bullinger, 727 Suter St., Johnstown, Pa.
Filed Aug. 20, 1963, Ser. No. 303,343
7 Claims. (Cl. 33—169)



1. A vehicle ball joint testing gauge comprising a base, an indicator, means movably supporting said indicator from said base for movement of at least a portion thereof vertically relative to said base, said portion being adapted to engage the lower portion of a raised vehicle wheel, and force means movably supported from said base for movement of at least a portion thereof relative to said base in a vertical plane adjacent but spaced from the path of movement of said indicator, said force means including means, on said portion thereof, adapted to engage the lower periphery of said vehicle wheel adjacent said portion of said indicator and to raise the wheel relative to said base whereby the vertical movement of said wheel may be registered by said indicator.

3,181,246
METHOD AND APPARATUS FOR DETERMINING THE INTEGRITY OF A SOLID PROPELLANT ROCKET MOTOR

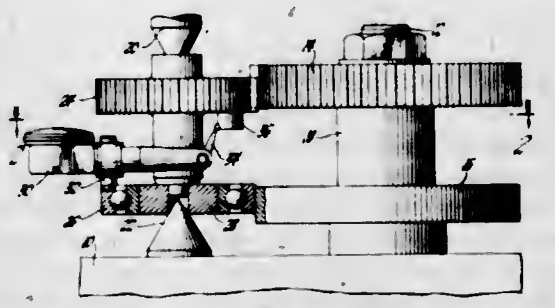
Lonnie W. Jenkins and Thomas H. Pratt, Huntsville, Ala., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Sept. 27, 1961, Ser. No. 141,228
6 Claims. (Cl. 33—174)



1. In a solid propellant motor having a longitudinal perforation therein, a profilometer for tracing the profile of a solid propellant grain along the surface of the perforation for testing the intgerity of said motor comprising; a frame disposed along the longitudinal axis of said perforation, a trolley mounted on said frame for movement therealong, motion transmission means carried by said frame and connected to said trolley for movement thereof, a reversible electric motor connected to said motion transmission means to effect movement of said trolley responsive to actuation of said motor, transducers carried by said trolley for movement therewith, contact means carried by said transducers for reciprocal movement normal to the path of movement of said trolley, resilient means urging said contact means into engagement with the surface of said perforation to trace the profile of said perforation and said transducer means generating a signal corresponding in amplitude to said reciprocal movement of said contact means, receiving means for recording the signal generated by said transducers, and means connecting said transducer means to said receiving means.

3,181,247
GEAR CHECKING APPARATUS AND METHOD

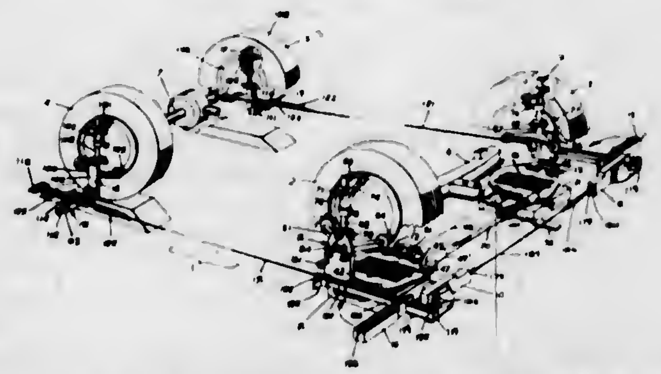
Herschel E. McMahan, Indianapolis, and Arthur H. Stoughton, Martinsville, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 13, 1961, Ser. No. 123,713
2 Claims. (Cl. 33—179.5)



1. Apparatus for checking production gear teeth comprising master gear means secured to a drive shaft for rotating a production gear at a constant speed, master gear pitch circle disk means secured to said shaft and axially spaced from said master gear means and adapted to be driven therewith, a pair of axially spaced conically tapered support pins, a production gear to be checked in driven engagement with said master gear and mounted on said support pins for rotation about an axis parallel to said shaft, production gear pitch circle disk means axially spaced from said production gear in driven engagement with said master gear pitch circle disk means and mounted on said support pins for free rotation relative to said production gear and about said axis and adapted to be driven by said master gear pitch circle

disk means, directly readable gauge means positioned between said production gear and production gear pitch circle disk means and fixed to said production gear pitch circle disk means and rotatable therewith in the spaces between said production gear and production gear pitch circle disk means and said master gear means and master gear pitch circle disk means, gauge control means associated with said directly readable gauge means and extending adjacent to said production gear, and locating means magnetically secured to said production gear to engage and displace said gauge control means whereby variations in angular displacement of said production gear relative to said production gear pitch circle disk means during rotation will be reflected by variations in the relative positions of said gauge control means and said locating means and shown on said directly readable gauge means.

3,181,248
WHEEL ALIGNMENT APPARATUS
Maxwell B. Manlove, 1724 Kansas Ave., Topeka, Kans.
Filed Mar. 19, 1963, Ser. No. 266,277
11 Claims. (Cl. 33—203.18)



1. Apparatus for measuring the alignment of a vehicle frame and respectively spaced pairs of dirigible and tracking wheels mounted on the frame comprising:

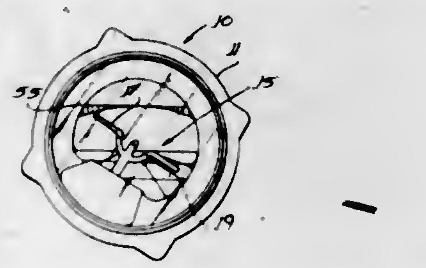
(*a*) mounting members having scale portions and being adapted for connection to each dirigible wheel and having interconnected indicating mechanisms for directly and simultaneously indicating by reference to each other the relative angular toe and camber displacement of each dirigible wheel,

(*b*) deflection indicating devices respectively adapted for mounting on each tracking wheel and having outwardly extending support members, supporting means on said support members and adjustable on said support members transversely with respect to the vehicle, said supporting means being operatively connected to the dirigible wheel mounting members for indicating frame distortion by reference to said scale portions and indicating mechanism,

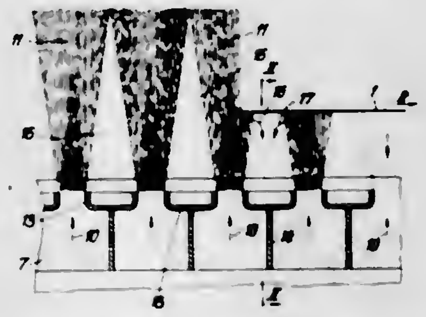
(*c*) turntable means supporting said dirigible wheels for steering simulation, and means interconnecting said turntable means and adapted to rotatably urge said turntable means in opposite directions for inducing normal driving toe-out thrust during use of said indicating mechanisms.

3,181,249
FLAT-FACED ATTITUDE INDICATOR
James R. Coffing, R.R. 2, Box 158D, Covington, Ind.
Filed July 27, 1961, Ser. No. 127,200
2 Claims. (Cl. 33—204)

1. An attitude indicator with a viewing window comprising, in combination, a housing, a gyro, means within the housing rotatable relative thereto about a horizontal longitudinal axis and mounting said gyro for pivotal motion thereon about a horizontal transverse axis, a pointer bar assembly pivotally mounted on the mounting means for the gyro and coupled to receive the pivotal motion of the latter, a first mask movable with the pointer bar assembly and covering the major portion of the viewing window, means connecting said movable mask to said pointer bar assembly and transversely thereof, a second mask fixed to said gyro mounting means between the movable mask and the gyro and covering the viewing window opening, a contrasting colored band positioned transversely on the fixed mask at a mid-portion thereof, a terrain reference on the movable mask, said terrain reference having a plurality of converging lines directed at a vanishing point at the center of the movable mask, the converging lines being separated by fixed intervals, at least two fixed grid lines horizontally intersecting said converging lines, and a climb reference dot above said vanishing point, the area above said vanishing point contrasting in color with the area below the vanishing point, and a miniature aircraft symbol secured to said housing in front of the movable mask, the whole being proportioned and oriented to show angle of bank by reference to the converging lines and angle of dive by reference to the grid lines and warn of extreme attitudes when the contrasting color on the fixed mask is exposed.

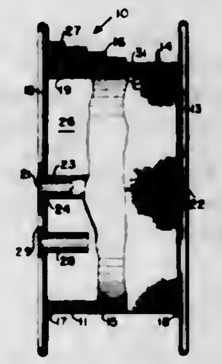


3,181,250
APPARATUS AND METHOD OF DRYING WEB MATERIAL BY DIRECTING HOLLOW GAS JET STREAMS AGAINST OPPOSITE FACES OF THE WEB
Hilmar Vits, Dusseldorf, Germany, assignor to Maschinenfabrik Vits G.m.b.H., Langenfeld, Germany
Filed Sept. 21, 1961, Ser. No. 140,650
Claims priority, application Germany, Oct. 1, 1960, M 46,709
13 Claims. (Cl. 34—23)



1. A method of contactless guiding an elongated web of flexible material during its movement in longitudinal direction substantially in one plane, comprising the steps of directing streams of compressed gaseous material onto opposite faces of said web as the same is moving in longitudinal direction in a plane; and arranging adjacent gas streams on each side of said web in such a manner that adjacent gas streams form together substantially tubular gas jets which respectively enclose non-fluid flowing spaces tapering toward the respective face of said web, so that portions of said gas streams impinging on the respective faces of said web will be deflected into said non-fluid flowing spaces to create therein respectively gas cushions with a static pressure in excess of atmospheric pressure, whereby, during deviation of said web to one side of said plane, the gas cushions on said one side will be compressed while the gas cushions on the other side will be expanded to create thereby an equalizing force tending to maintain said web substantially in said plane during its movement.

3,181,251
STRAND TREATING REEL
Sigmund Ege, Hastings on Hudson, and Martin David Schnur, New York, N.Y., assignors, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Dec. 8, 1961, Ser. No. 157,922
2 Claims. (Cl. 34—153)



1. A cable reel comprising:

(A) a strand-supporting cylindrical metal drum having substantially uniformly distributed perforations over the surface thereof,

(B) a pair of flanges normal to said drum, said flanges having strand-confining areas extending radially outwardly of said drum, said areas being substantially imperforate,

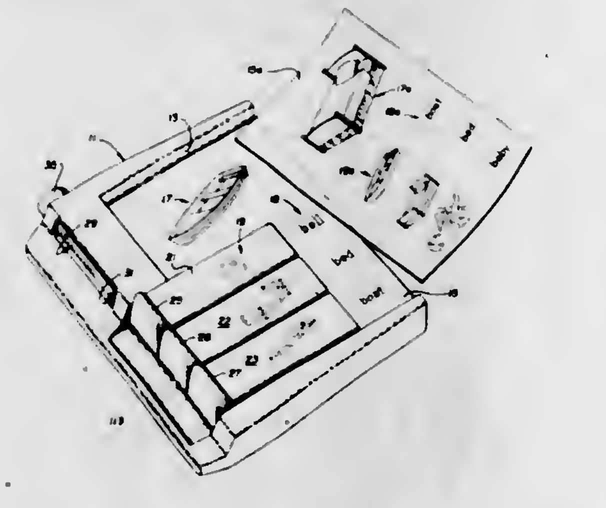
(C) a centrally disposed imperforate tubular member fixedly joined to said flanges and forming substantially vapor-tight seals therewith, said drum, said flanges, and said member comprising a chamber, and

(D) tubular bushing means in one of said flanges communicating with said chamber for introducing heated pressurized gas into said chamber, said bushing means being disposed between said tubular member and said drum,

(E) said chamber being substantially sealed except for said perforations and said bushing means,

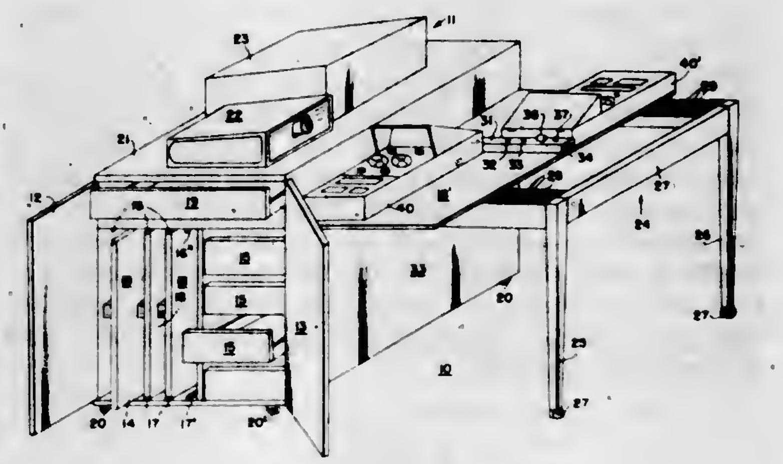
whereby said gas is forced through said strand.

3,181,252
TEACHING DEVICE (TUTOR TOY)
Hans Goldschmidt, Atherton, and Adrian B. Sanford, Portola Valley, Calif., assignors to H. Goldschmidt & Associates, Inc., Menlo Park, Calif., a corporation of California
Filed Dec. 17, 1962, Ser. No. 245,185
5 Claims. (Cl. 35—9)



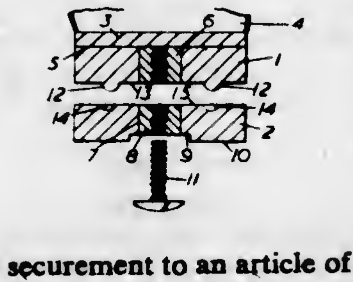
1. A teaching device comprising a housing having thereon means to receive a card of the type having a question area, a multiple choice answer area, and a correct answer area subdivided into correct and incorrect answer portions thereof, a plurality of raisable leaf-like cover members normally masking from view an associated one of said answer portions and manually pivotable individually about a common axis adjacent said housing to reveal one of said associated portions, whereby the correct answer for an associated multiple choice answer is revealed, a scoring device, said scoring device comprising a scoring indicator, a scoring scale associated with said indicator, means operable in response to a predetermined degree of pivotal movement of said cover members serving to advance said scoring indicator one increment of displacement on said scoring scale to register each raising of any of said cover members.

3,181,253
LABORATORY TEACHING SYSTEM
George Candreva and Arthur Becofsky, both of Box 13, Yorktown Heights, N.Y.
Filed Mar. 20, 1962, Ser. No. 181,014
8 Claims. (Cl. 35—60)



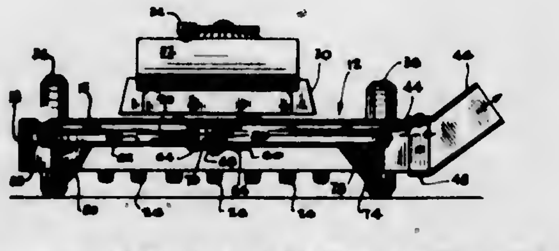
1. A teaching aid system for use in providing educational instruction, comprising a console assembly having a main housing, said main housing having a telescoping supporting structure movable to a plurality of predetermined positions between a collapsed and a fully extended position; a working surface assembly positioned upon said supporting structure; said working surface assembly including an adjustable number of elemental units successively arranged in juxtaposed position along the length of said support structure; the length of said support structure, as determined by its selectable predetermined positioning, defining the number of elemental units to be accommodated; common conduit means positioned along said working surface elemental units, an individual section of said common conduit means integral with each elemental unit, each common conduit section having a first end and a second end, said first end adapted to engage the second end of a preceding section, with the first end of the common conduit section closest to said main housing engaging a cooperating outlet along the wall of said main housing, at least one teaching unit having coordinated visual, audio and teaching means contained therein positionable upon each of said working surface elemental units for providing an educational format containing visual and audio material; said common conduit means operatively connectable to individual ones of said teaching units for transferring electrical power to said teaching units and program coordinating individual ones of said teaching units with said main housing; said teaching means providing means for enabling the user to participate both physically and mentally in the educational program; said supporting structure when in each of said predetermined positions compactly accommodating a selectible number of said working surface elemental units; said selectible number of working surface elemental units providing a desired number of teaching unit locations, each operatively connected to said console.

3,181,254
ROTATABLE HEEL CONSTRUCTION
James S. Cowen, 7 Denham Court, Abercorn St., Bulawayo, Southern Rhodesia
Filed Aug. 12, 1963, Ser. No. 301,578
4 Claims. (Cl. 36—39)



1. A heel for securement to an article of footwear, comprising an upper section adapted to be secured to the heel portion of an article of footwear, said upper section having flat upper and lower faces, a tread section having a flat upper face adapted to abut against and cover the flat lower face of said upper section, two stud-like projections formed displaced from the center on one of said lower and upper faces of the upper and tread sections respectively, the other of said lower and upper faces having two recesses to receive the two stud-like projections when the two sections are brought into abutting relation, a threaded sleeve fitted into a recess in the center of one of said sections, the other section being formed with a central aperture to register with the sleeve, and a screw of a length to pass through the aperture and threadedly engage in the said sleeve to clamp the two sections together with said stud-like projections in said two recesses when the screw is tightened.

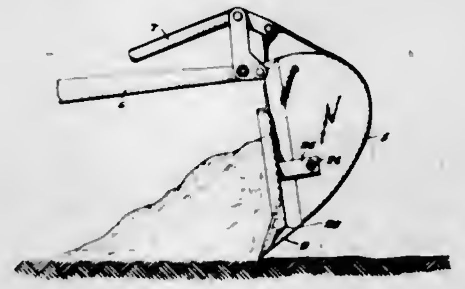
3,181,255
SNOW REMOVAL APPARATUS
Richard D. Stoddard, Rte. 1, Ord, Nebr.
Filed Aug. 13, 1962, Ser. No. 216,555
1 Claim. (Cl. 37—43)



A snow removal apparatus having a wheeled housing open at its bottom and having a top wall and depending skirt portions thereabout, and a discharge chute extending outwardly from one of the depending skirt portions of the housing in free communication with the area defined within the housing, said apparatus further characterized by power means mounted on said housing and having a power shaft extending into the area defined within the housing, said apparatus comprising:

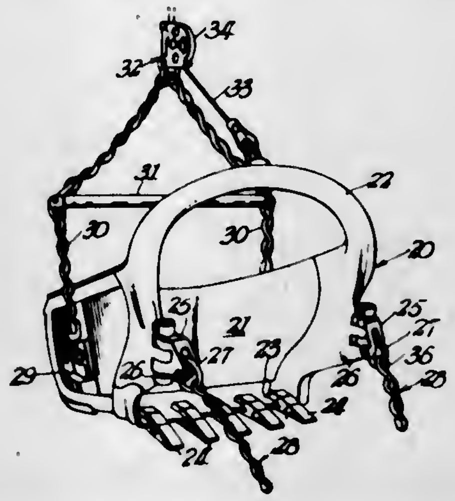
a disc affixed to the shaft of the power means and disposed within the housing for rotative movement therein in accord with the movement of the shaft, said disc being defined by a flat circular base portion having a top and bottom surface, a pair of scoop openings extending fully through the base portion, said base portion having scoops integral therewith and extending from the bottom surface of the base along the scoop openings, said scoops being substantially smaller in total area than the scoop openings of the base portion thereby to provide means for unrestricted admission of air through said openings during operation of the apparatus to prevent pressure buildup in the openings that would inhibit the introduction of snow into said openings, said base portion further having radially oriented upstanding fins affixed to the top surface thereof, said fins adapted to present an upstanding barrier serving to impart rotative cyclonic motion to the air-snow mixture above the disc during operation of the apparatus, the periphery of the base portion terminating in an upwardly flaring wall portion to urge the air-snow mixture upwardly through the chute upon discharge from the apparatus.

3,181,256
BACK-FILLING BLADE FOR A POWER SHOVEL
Nelson Discenza, 90 Lancaster Road, West Hartford, Conn.
Original application June 30, 1960, Ser. No. 40,001, now Patent No. 3,043,032, dated July 10, 1962. Divided and this application Mar. 28, 1962, Ser. No. 191,385
4 Claims. (Cl. 37—117.5)



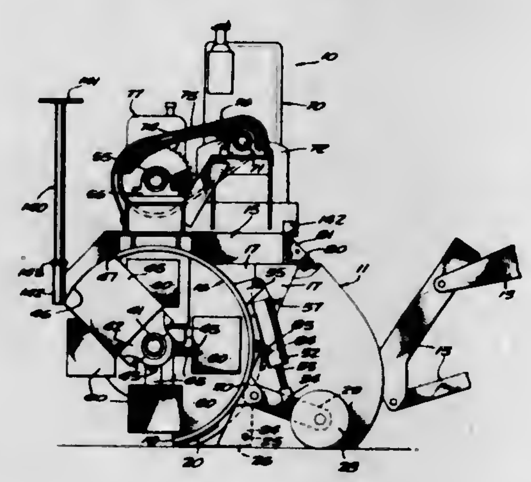
1. In combination with an excavating bucket of the type having opposed sides, an open front, and a plurality of laterally spaced digging teeth along the lower forward edge thereof, a back-filling attachment comprising a blade including an elongated front plate of generally rectangular form attached to said bucket in a substantially upright position and extending outwardly of said opposed sides thereof with its longitudinal axis substantially parallel to the ground, said blade having a relatively flat upper portion and a forwardly angled lower portion, said angled lower portion overlying and shielding said plurality of teeth to prevent scarring of the ground when said shovel is converted to back-filling purposes, a longitudinally extending supporting bar along the back of said angled portion in engagement with the base of said teeth, said blade having upper abutment surfaces in engagement with the sides of said bucket, and means for removably securing said abutment surfaces to said opposed sides.

3,181,257
TWISTED CHAIN WITH INCREASED AMOUNTS OF METAL AT POINTS OF HIGH WEAR
Paul V. Larsen, Portland, Oreg., assignor to Esco Corporation, Portland, Oreg., a corporation of Oregon
Filed Aug. 24, 1962, Ser. No. 219,160
6 Claims. (Cl. 37—135)



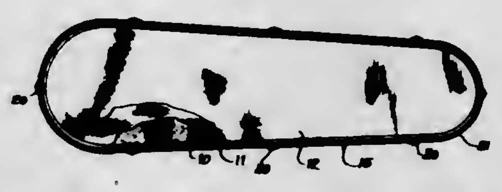
6. In combination, a dragline bucket, comprising a scoop-shaped housing equipped with a pair of spaced-apart shackles adjacent the forward end thereof, and a chain connected to each shackle, each chain comprising an end link and a plurality of intermediate links, with the end links being interposed between each shackle and the intermediate links associated therewith, each link comprising an elongated loop having an infinite number of integral segments and providing link ends and link side portions, with a line connecting the centers of mass of said segments being a closed curve, the intersection of said curve with a plane perpendicular thereto in each segment defining a cross section in each segment having an outer side and an inner side, each link inner end side being arcuate and adapted to enter into bearing relation with another link, the intersection of said curve at each link end with a plane perpendicular thereto defining a cross section wherein the link inner side is longer than the link outer side, the intersection of said curve with the center transverse plane of the link defining cross sections each also having an inner and outer side, the last-mentioned outer side being longer than the last-mentioned inner side, said intermediate links being oriented with one of the side portions of each intermediate link generally horizontally to dispose one of said last-mentioned outer sides parallel with the ground, the portion of said curve in one end of each link being angularly related to the portion of said curve in the other end of the last-mentioned link, the said angular disposition being about 90° in each intermediate link and the angular disposition of said end link being about 45°.

3,181,258
TRENCH BACK FILLING AND EXCAVATING MACHINE
William W. Duncan, Rte. 1, Box 922B, Lathrop, Calif.
Filed Jan. 29, 1962, Ser. No. 169,490
17 Claims. (Cl. 37—144)



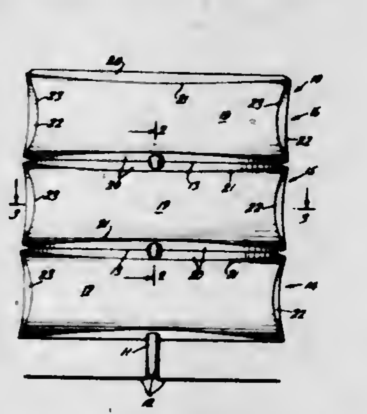
1. A self-contained unitary self-powered back filling apparatus designed to be detachably but rigidly and immovably secured temporarily to a motor driven vehicle of the type having primary uses other than the support and transport of said detachable back filling apparatus and without diminishing its utility to perform all of said primary uses, said apparatus having an elongated horizontally disposed main frame and including means carried by said main frame constructed and arranged for quickly attaching said unitary apparatus rigidly and immovably across one end of a motor-driven vehicle and for quickly detaching said apparatus therefrom, a semi-cylindrical moldboard secured to said main frame and including a closure end wall transversely of one end thereof and an unobstructed outlet for dirt at its second end, a paddle equipped shaft extending along the axis of curvature of said moldboard and having a rigid supporting bracket therefor at said second end which bracket extends downwardly and rearwardly from the forward longitudinal edge of said main frame thereby avoiding obstruction of dirt flow through the rear half of the outlet end of said moldboard, and a driving motor for said back filling apparatus mounted directly on said main frame and coupled to said paddle equipped shaft to drive the same at any desired speed irrespective of the speed of operation of the motor driving the motor vehicle used to transport said back filling apparatus along a trench during back filling of the same.

3,181,259
MOUNTING FRAME FOR FABRIC PRESSING PADS AND THE LIKE
Kurt Petrasch, Grand Rapids, Mich., assignor of fifty per cent to Nathan Root, Grand Rapids, Mich.
Filed Apr. 19, 1963, Ser. No. 274,100
6 Claims. (Cl. 38—66)



1. In a pressing pad or like assembly which comprises a plurality of superimposed layers of flexible material, the improvement which comprises a frame co-extensive with the periphery of the pad, said frame being in the form of an inverted substantially V-form trough having inner and outer opposite sides substantially perpendicular to the plane of the pad and a bendable web joining said sides at the apex of the V, said web having a thickness less than that of either of said sides to facilitate bending in the region of the web, said sides and web together defining a space receiving an upturned marginal portion of at least the exterior ones of said layers, said sides being mutually converged into gripping relation with said upturned portion.

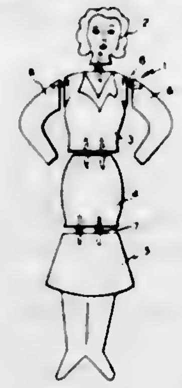
3,181,260
COLLAPSIBLE CARDBOARD DISPLAY DEVICE
John Scherotto, Secaucus, N.J., assignor, by mesne assignments, to Einson Freeman and De Troy Corporation, a corporation of New Jersey
Filed June 21, 1962, Ser. No. 204,286
7 Claims. (Cl. 40—124.1)



1. A display device comprising a display element and a support element, said display element being an initially flat cardboard sheet having a central display region bounded by a first pair of arcuate score lines adjacent its upper and lower edges respectively and a second pair of arcuate score lines adjacent to its side edges respectively, each pair of score lines being curved in mirror-image relation, the marginal regions beyond said score lines being all bent along said lines in the same direction through an angle less than 90°, said support element engaging only one pair of said marginal regions but being effective thereby to retain the other pair in bent condition whereby the central region is retained in a display condition stiffened along all edges.

3,181,261
DISPLAY DEVICE

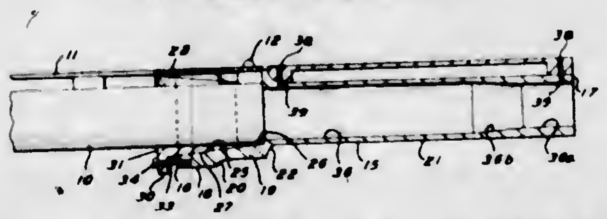
William M. Swartz, 337 Sumac Road, Highland Park, Ill.
Filed Oct. 4, 1962, Ser. No. 228,294
1 Claim. (Cl. 40—138)



A display device that forms a simulated object, said device comprising form-sustaining sheets each of which constitutes a section of the device, each sheet having parallel passageways that open at the edges thereof, some of said sheets being positioned to present its passages at right angles to the passages of the adjacent sheet and at least one spring securing each section to an adjacent section in spaced relationship thereto to form an articulated connection between the sheets, each spring being of a single piece of spring wire and having U-shaped end portions in substantially the same plane and which fit into passageways of two adjacent sections, the end portions of some of said springs being aligned and the end portions of other of said springs being substantially perpendicular, the springs having perpendicular ends joining sections which have passages perpendicular to the adjoining sections, the resiliency of the end portions exerting pressure against the walls of the passageways to maintain the springs therein, each spring also having between its end portions a middle portion having a series of reverse bends that are in substantially the same plane as that of the end portions and which span the space between the two sections, the middle portion being larger in one dimension than the cross sections of the passageways to limit the extent to which said end portions extend into said passageways, the distribution of the sections and the resiliency of the middle portions of the springs being such that vibrations in the vicinity of the device which are induced into the device cause the sections to move independently of one another.

3,181,262
EXTENSION FOR SHOTGUN BARREL

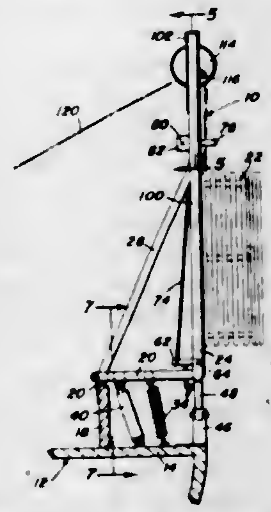
Edward W. Bridge, Sr., 1507 Foulkrod St.,
Philadelphia, Pa.
Filed Dec. 1, 1964, Ser. No. 415,012
10 Claims. (Cl. 42—79)



1. An attachment for a shotgun comprising a sleeve having an enlarged external rim at one end thereof and a slot extending inwardly from said one end, said sleeve having one end for the reception of the muzzle end of a shotgun barrel, said one end having an internal bore within said rim, a ring longitudinally axially movable in said bore for clamping engagement with the exterior of said muzzle end, longitudinally axially disposed fastening members engaging said rim and said ring urging said ring into engagement with said muzzle end, said sleeve having a bore extending inwardly from the other end for controlling the shot pattern.

3,181,263
LOBSTER TRAP DAVIT

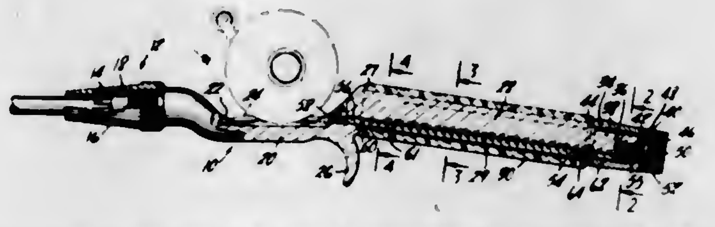
John R. Rogerson, Leonardville, New Brunswick, Canada
Filed Sept. 20, 1963, Ser. No. 310,360
8 Claims. (Cl. 43—8)



1. A davit for lobster traps and the like comprising a bed, a support, means mounting said bed at the forward end thereof upon said support for vertical swinging movement between a rearwardly extending horizontal position and an erect position, resilient means connected to said bed and support and biasing said bed toward its erect position, a latch means detachably connected to said support and bed and releasably retaining said bed in its erect position, release means connected to said latch means and including an actuator carried by and projecting from said bed in a position for actuation by a lobster trap when moved into predetermined position upon said bed when the latter is in its erect position whereby said bed may then be moved from its erect to its horizontal position.

3,181,264
FISHING ROD HANDLE

Emil De Simone, Hillsdale, N.J., assignor to The Conolon Corporation, a corporation of California
Filed Nov. 8, 1962, Ser. No. 236,257
5 Claims. (Cl. 43—22)

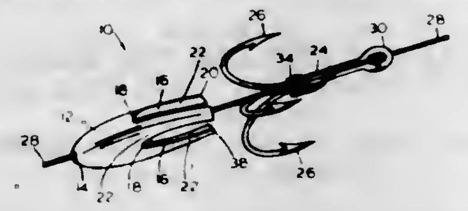


1. A rod handle having a rearwardly extending handle body, a longitudinal groove in the exterior surface of the body, a locking rack slidable in said groove, a handle grip mounted about said rack and said handle body, said handle body extending substantially the full length of said grip, and a member rotatably mounted on the rearward portion of said body and having a thread engaging said rack, means holding said member against axial movement so that rotation of said member axially moves the rack whereby a reel base may be releasably locked to said handle.

3,181,265
SINKING WEIGHT FOR SNAGGING GANG HOOKS

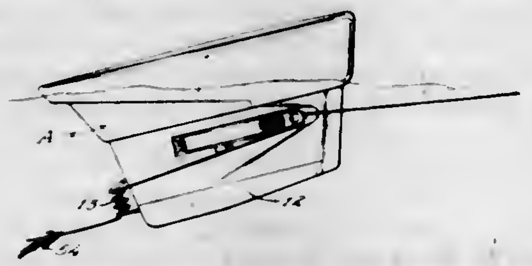
Earnest D. Cook, 205 S. 15th St., Norfolk, Nebr.
Filed Aug. 9, 1962, Ser. No. 215,826
3 Claims. (Cl. 43—42.7)

1. In combination: a line, a sinking weight for snagging gang hooks comprising a body having an elongated bore extending completely therethrough and having a forward and rearward end, said line extending completely through said bore, said body being provided with spaced slots extending into said body from said forward end, said slots each extending from a side of said body completely to said bore, said slots being each for the purpose of receiving an outwardly curved portion of a gang fish hook, said slots causing elongated fingers to be defined by portions of said weight disposed therebetween, said slots extending from the forward end toward the rear of said weight substantial and sufficient distances so as to permit said fingers to extend from adjacent the rearward end of a gang hook forwardly alongside the shank portion of the gang hook and said finger portions of said weight being formed of a malleable material adapted to permit said fingers to be pressed inwardly and bent toward each other for gripping against the shank of the gang hook for retaining said weight on a gang hook at times when the curved portions are received through said slots respectively, and the inner ends of said slots each terminating forwardly of the rearward end of said weight.



3,181,266
FISHING KITE

Karl J. Leufvenius, Minneapolis, Minn., assignor to Development Diversified, Inc., a corporation of Minnesota
Filed Nov. 1, 1961, Ser. No. 149,259
9 Claims. (Cl. 43—43.13)

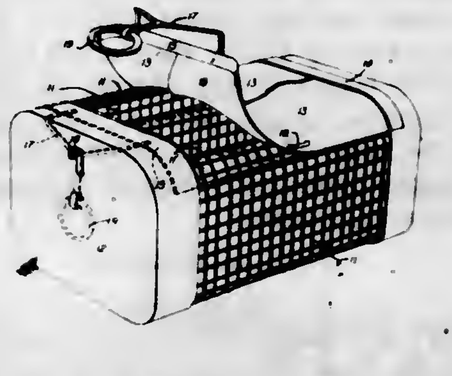


1. A fishing kite including an elongated float, a guide fin extending longitudinally of said float and depending therefrom, a pair of relatively pivotal clamping arms extending angularly from said fin, said arms diverging forwardly and outwardly from said fin and including clamping jaws at their forward end between which a fishing line may be clamped, line guide means at the rear of said fin through which said line is freely slidable and cooperating with said clamping arms to guide the float at a substantial angle to the towing line when the float is drawn from a boat.

3,181,267
LIVE BAIT CAGE

Loren A. Sawyer, 628 N. 4th St., and Walter E. Wood, 128 Platte St., both of Sterling, Colo.
Filed Feb. 8, 1962, Ser. No. 171,858
1 Claim. (Cl. 43—55)

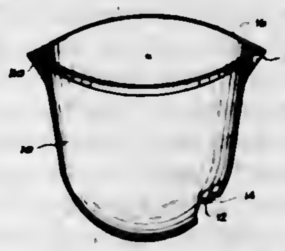
In a live bait cage having a rigid container unit formed with a rectangular, open top from permeable material and a flexible, rectangular closure member adapted to overlie said open top formed from complementary strips of resilient material marginally overlapped at their adjacent longitudinal edges to provide a pressure-yieldable, self-closing slit access opening centrally and longitudinally of the member, the improvement which comprises rigid keepers fixed to and transversely of the ends of the closure member and intersecuring the contiguous ends of its constituent strips, means affixing one of said keepers directly to said container unit adjacent and parallel to an end of the open top thereof, whereby to dispose said closure member for closing coaction with the open top of the container unit and to flex relative thereto under manipulation of the other of said keepers at the other end of the closure member, a non-extensible latch yoke convergently outstanding from connection to said other keeper at the manipulable end of the member and adapted to engage over the proximate end of the container unit at times, and a retainer fixedly projecting exteriorly



from said proximate end of the container unit in the median plane of the latter bisecting the open top thereof and disposed for latching engagement with the convergence of said yoke as extended and positioned relative to the container unit through stretching of the closure member material, whereby to effect latched closing coaction of the closure member and the container unit and tensioning of the closure member closely and securely over the open top of the container unit with concomitant enhancement of the self-closing attribute of the slit access opening.

3,181,268
INSECT CATCHER

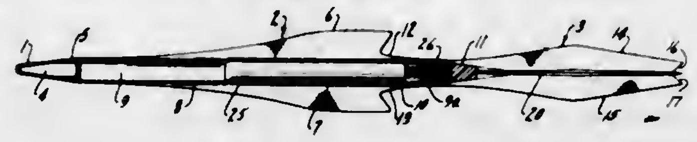
Taber de Forest, P.O. Box 151, Chester, Conn.
Filed Feb. 21, 1963, Ser. No. 260,959
6 Claims. (Cl. 43—110)



1. An insect catcher comprising a cup having a relatively wide bottom and sides extending upwardly therefrom and having a top edge with portions on opposite sides of the cup spaced apart from one another when in their normal positions, the cup being made of resilient material that can be distorted to bring the spaced portions of the top edge on opposite sides of the cup into substantial contact with one another along a line, the cup having two spouts, each of which is located at a different end of a diameter of the top end of the cup, the spouts being formed with sides consisting of portions of the top edge converging toward one another and meeting at an acute angle at the middle of the spout, the top edge at said middle of the spout being resilient enough to flex and bring the converging sides into generally parallel and substantially touching relation with one another when the sides of the cup are pressed together in directions normal to the diameter that extends from one spout to the other, and at an intermediate location along said diameter, said relatively wide bottom serving to hold the lower ends of the sides in spaced relation, the material of the cup being of sufficient resilience substantially to regain its undistorted shape after a distorting force is withdrawn.

3,181,269
GLIDING MISSILE TOY

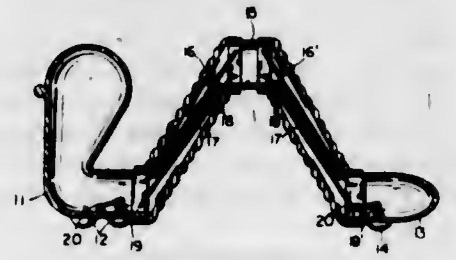
Phillip Nixon, 600 Glenview Drive, Glenview, Ill.
Filed May 17, 1963, Ser. No. 281,098
5 Claims. (Cl. 46—79)



5. A missile toy comprising a vehicle having the overall configuration of an aircraft, an elongated, tubular, entirely closed passage enclosed entirely within said aircraft and extending axially therewithin through a major portion of the length of said aircraft, an elongated weight slidably mounted in said passage, said weight having a length of the order of half the length of said passage, and yielding means positioned within said passage to urge said weight rearwardly thereof.

3,181,270
MOVABLE WHEELED INCH WORM TOY

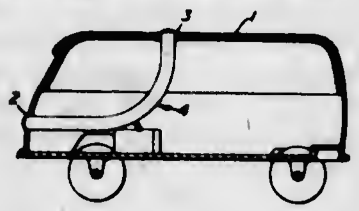
Charles Dale Trevena, 317th FIS, APO 942, Seattle, Wash.
Filed Apr. 23, 1963, Ser. No. 275,114
5 Claims. (Cl. 46—104)



1. A toy comprising in combination at least five discrete sections disposed in longitudinal arrangement in an axial plane, wheel mounting means on the endmost of said sections, means provided on said endmost sections to restrain said wheel mounting means from rearward rotation, said sections comprising a foremost section, a rearmost section, and middle section, and a section connecting said foremost section to said middle section, and a section connecting said rearmost section to said middle section, said connecting sections each comprising means extending respectively from said foremost and rearmost sections to said middle section to maintain the axes of said foremost section, said middle section, and said rearmost section parallel, said device, comprising resilient means causing said middlemost section to be biased to an elevation above said endmost sections, said middlemost section being disposed to be biased downwardly by manual force.

3,181,271
SIMULATED HEAD LAMPS FOR TOY VEHICLES

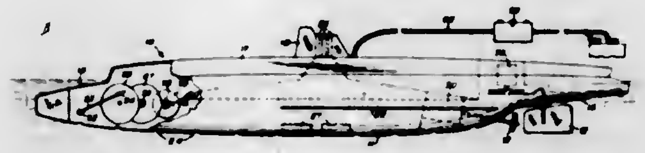
Brian Francis Withams, Kingston upon Thames, England, assignor to The Mettoy Company Limited
Filed Apr. 1, 1963, Ser. No. 269,306
Claims priority, application Great Britain, Apr. 16, 1962, 13,303/62
5 Claims. (Cl. 46—202)



1. A toy vehicle including a hollow opaque body formed with two openings in the outer surface thereof, one of which is located in the normal position of a lamp on said vehicle and the other of which is positioned at a point which normally receives a more intense radiation of ambient light, and a member of transparent material which internally reflects light and extends internally of said body between said openings with an end adjacent each of them, whereby ambient light reaching said member through the other of said openings is transmitted through said member and emitted through said one opening to simulate the appearance of a lighted lamp at the position.

3,181,272
REMOTE CONTROLLED TOY SUBMARINE

Robert Nelson Gibson, 3502 Macon Road, Columbus, Ga.
Filed Sept. 25, 1962, Ser. No. 226,046
6 Claims. (Cl. 46—244)



1. A toy submarine boat including in combination a thin hull shell, electric propulsion means and electric rudder control means in and carried by said shell, means ballasting said hull arranged near the lower portion thereof, flotation means in said hull near the upper portion thereof, apertures in the upper and lower portions of said hull in comunication with each other for the entrance of water into said hull through the first-mentioned apertures and the exit of air therefrom through the second-mentioned apertures whereby said flotation means alone keep the boat afloat with a predetermined load water line when stationary, diving rudder means extending from the forward portion of said hull below said water-line and adapted when the boat is in motion under the action of its propulsion means to be adjusted to cause the boat to dive below the surface, and remote control means for individually controlling said propulsion means, said rudder means, and said diving rudder means.

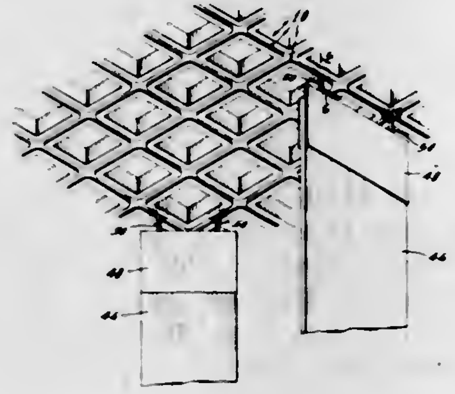
3,181,273
GROUND COVER

John R. West and Richard T. Westfall, Marysville, Ohio, assignors to The O. M. Scott & Sons Company, Marysville, Ohio, a corporation of Ohio
Filed June 7, 1962, Ser. No. 200,725
3 Claims. (Cl. 47—26)

1. A ground cover to protect seeds and the like, said ground cover being a knitted fabric comprised of an array of multiple strand bundles in parallel, side-by-side relationship, loops formed in each of said bundles at regularly spaced intervals with the loops of successive bundles aligned in rows normal to said strands, each of said loops extending through a loop of the next adjacent bundle to fix said bundles into a coherent structure, said loops each having a first portion extending to one side of said array to form a ground engaging projection whereby the first loop portions of each row of loops provide a rib for supporting the portions of said strands between adjacent rows of loops in spaced relationship above the surface engaged by said first loop portions, and a second loop portion inclined at an angle to said first loop portion and toward said array, the angularly inclined second loop portions of the loops in each of said bundles engaging and deforming those portions of the strands in the next adjacent bundle between the loops therein into slatlike louvers having a width substantially greater than the diameter of said strands and inclined at substantially equal angles to a plane tangent to said second loop portions, whereby said louvers are supported slightly above and are inclined at an angle to a surface supporting said ground cover and engaged by said ribs and said louvers shade, and provide a microclimate above, said surface.

3,181,274
VERSATILE DISPLAY APPARATUS

George C. Izenour, 10 Alston Ave., New Haven, Conn.
Filed Aug. 14, 1961, Ser. No. 131,366
11 Claims. (Cl. 50—24)

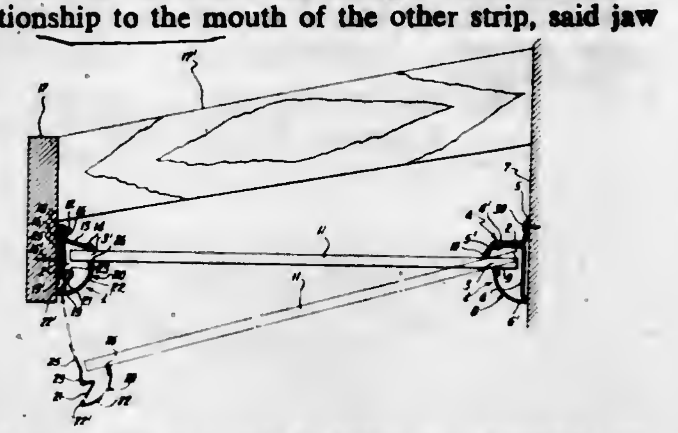


1. Display apparatus including a ceiling structure and means for adjustably suspending panels therefrom, said ceiling structure including a rectangular matrix of open frames each frame having four sides, each said side including a vertical opening-forming web and a horizontal flange that extends from the lower edge of the web outward relative to the frame of which it is a part, the flanges of the sides of all said frames being coplanar and each said flange being spaced from the confronting flange of a juxtaposed side of the adjacent frame in the matrix by a limited, uniform separation, and panel-supporting bogeys between the confronting webs of the juxtaposed sides of adjacent frames, each bogey including a suspension member extending through the space between confronting flanges, vertical-axis vertically spaced discs rotatably secured to said suspension member and having circular edges adapted to bear against the confronting webs of said frames, the juxtaposed sides of adjacent suspension member being coaxial with said disc, and the lowermost disc of each bogey having at least six supporting balls that bear on the upper surfaces of said flanges.

3,181,275
COVERING STRUCTURE

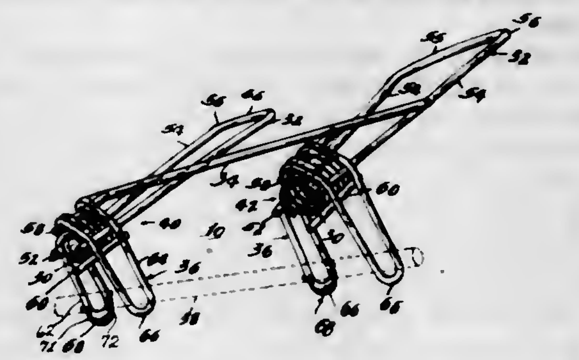
Richard C. Schroter, Berkeley, and James A. Wood, Danville, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Jan. 30, 1961, Ser. No. 85,900
3 Claims. (Cl. 50—66)

1. A soffit assembly for a building comprising the combination of a pair of spaced molding strips and a panel, each of said spaced strips including a flange for anchoring the strip to the building; each of said strips including unrestrained, convergent, resilient jaw elements; said jaw elements being arranged to define a hollow interior and to terminate adjacent a mouth in communication with the interior; said panel being mounted between said spaced strips with the opposing edges of said panel projecting in an unobstructed fashion through the mouths of said molding strips the mouth of one strip being disposed in opposing relationship to the mouth of the other strip, said jaw elements of each strip being arranged to clampingly engage the associated opposing edge of said panel regardless of the angle at which said panel is disposed therebetween.



3,181,276
DUAL ANCHORING INSERT FOR A CONCRETE SLAB

Harry G. Ballou, San Leandro, Calif., assignor to Superior Concrete Accessories, Inc., Franklin Park, Ill., a corporation of Delaware
Filed May 7, 1962, Ser. No. 192,772
3 Claims. (Cl. 50—82)

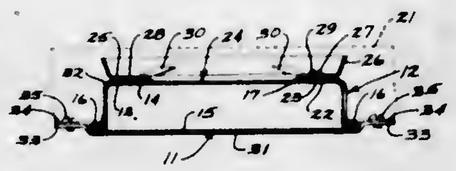


1. As a new article of manufacture, an anchoring insert adapted for embedment in a poured concrete slab and to form an anchor for a pair of lag screws, said insert comprising a pair of wire helices disposed in spaced relation and adapted to have their forward ends disposed directly inwards of and opening onto one vertical edge surface of the slab with the axes of the helices extending horizontally and in parallelism, the interiors of said helices forming internal screw threads for receiving the shanks of the lag screws, a reaction wing for each helix and in the form of a loop of wire having coplanar leg portions and a connecting bight portion, said leg portions having their free-~~end~~ regions welded to the outside of the associated helix at diametrically spaced regions and the loop extending rearwardly of the helix, said two reaction wings being coplanar and extending in a common horizontal plane, a transverse connecting rod welded to each wing at regions rearwardly of the helices and serving to maintain the wings, and the helices to which the wings are welded, in spaced relationship, and a separately formed wire saddle for each helix and having its bight portion extending around its respective helix so as to receive the helix therein, said saddle having side legs of upright U-shape configuration which straddle the helix on opposite sides thereof and also straddle the free end regions of the leg portions of the associated reaction wing and depend below the helix an appreciable distance, the lower ends of said side legs constituting bight portions which, in combination with each other, define an upwardly presented open cradle adapted to receive therein loosely an elongated traverse bar, the traverse bar being adapted to bridge the distance between the two cradles defined by the two saddles.

3,181,277
ELECTRICAL DUCTS WITH ACCESS CUPS

Thomas J. Slingluff, Baden, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 5, 1962, Ser. No. 221,509
2 Claims. (Cl. 50—127)



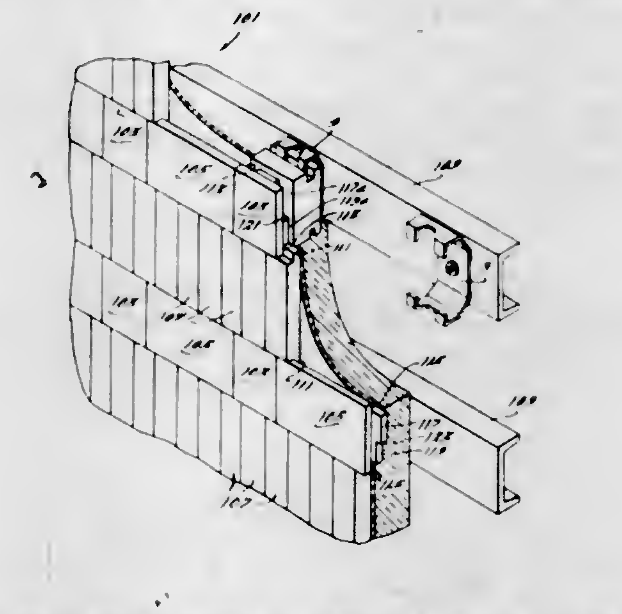
2. An electrical duct having an access cup and adapted for use in combination with cellular flooring, said duct having opposed flat exposed and unexposed horizontal walls and connecting side walls;
said exposed wall having at least one wire passageway opening having a rim lying in the plane of said flat exposed horizontal wall;
a plurality of outwardly raised dimples annularly disposed about said opening and projecting above said exposed wall;
said outwardly raised dimples being formed solely out of material from said flat exposed wall, each of said dimples having at its center a screw-receiving opening;
said access cup covering the said opening and secured to said exposed wall in overlying relation therewith;
said access cup being formed from a single sheet of material and having a central flat portion, a flat annular portion and an upwardly flared rim;
said central flat portion extending into the said wire passageway opening;
said flat annular portion being offset above said central flat portion, but parallel thereto and overlying the said exposed wall adjacent to the said opening;
said upwardly flared rim radiating from said flat annular portion and terminating in a rim disposed annularly of and above said flat annular portion;
a plurality of spacing means annularly disposed between said flat annular portion and said exposed wall to elevate said flat annular portion above the said exposed wall;
a plurality of screw-receiving apertures in said flat annular portion corresponding to the said screw-receiving openings; and
fastening screws extending through said screw apertures and threadedly engaged in the said screw-receiving openings, said fastening screws being positioned within the said dimples entirely above the horizontal plane of the inner surface of said flat exposed wall.

3,181,278
REFRACTORY WALL

Robert W. Jones, Birmingham, Mich., assignor to The Bigelow-Liptak Corporation, Detroit, Mich., a corporation of Michigan

Filed Jan. 12, 1959, Ser. No. 786,340
3 Claims. (Cl. 50—418)

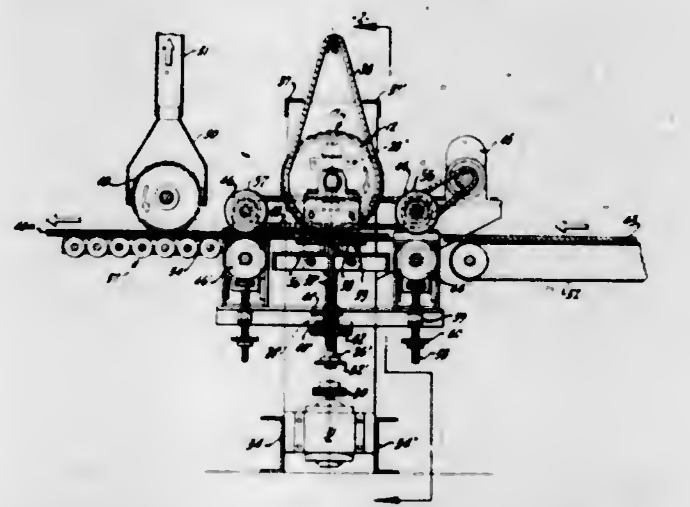
2. In a refractory wall structure having an outer metal frame, a plurality of C-shaped metal castings having back faces rigidly secured against the inside surface of said frame, said metal castings being arranged in horizontal rows, holding tile fitting one within each of the C-shaped metal castings to be supported thereby and arranged in spaced relationship to each other in horizontal rows, said castings being of approximately the same width and length as the holding tile supported thereby, beam tile each supported at opposite ends upon a pair of said holding tile and arranged in the same horizontal rows as the holding tile and metal castings, and service tile arranged in horizontal rows located between the horizontal rows of beam and holding tile and supported on said beam and holding tile, the entire weight of said service and beam tile being transferred through said holding tile to said metal castings and then into said frame, each said holding tile having a vertical cross section in the shape of an upside-down T with the width of the T being less than the width of the fire face of the tile, said beam tile having ends in the shape of upside-down L sections which fit on the T sections of the beam tile, and T and L lying on planes parallel to the fire face of the tile.



3,181,279
METHOD AND DEVICE FOR PRODUCING PATTERNED-SURFACE SHEET MATERIAL

Donald R. Bauer, John D. Cassidy, and Howard W. Hance, St. Helens, and Clarence R. Mullen, Portland, Oreg., assignors to Kaiser Gypsum Company, Inc., Oakland, Calif., a corporation of Washington

Filed Jan. 29, 1962, Ser. No. 169,489
17 Claims. (Cl. 51—90)

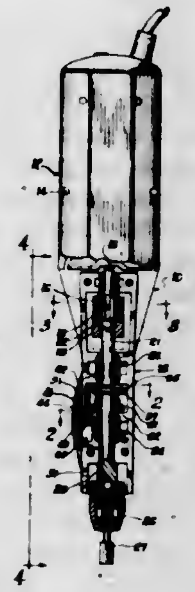


1. Device for forming fissure-like openings in a fibrous surface which comprises in combination a pair of rolls adapted to frictionally engage and forward a flat fibrous blank, a rotatable drum, a projection-bearing plastic coating on said drum, abrasive grains embedded in the surfaces of said plastic projections, means for rotating said drum, means for moving said drum in an orbital path, means for holding said blank in grinding contact with said projections whereby said abrasive grains disintegrate portions of the surface of said blank, and means for removing said distingrated portions.

3,181,280
HAND-HELD COMBINED ROTARY AND RECIPROCABLE TOOL

Gediminas J. Bubelis, Chicago, Ill., assignor to Supreme Products Corporation, Chicago, Ill.

Filed June 28, 1963, Ser. No. 291,472
6 Claims. (Cl. 51—170)

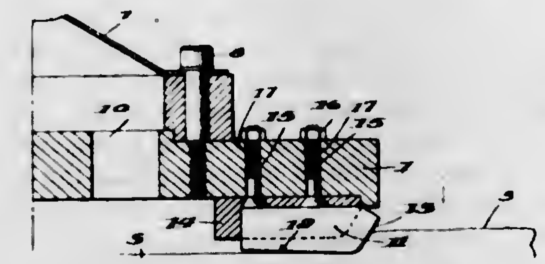


1. A hand-held tool comprising a framework, powered means supported on said framework providing a rotary output, a spindle mounted on said framework for combined rotary and reciprocating movement over a predetermined stroke, means at one end of said spindle coupling the same to said output for said combined movement, means at the opposite end of the spindle to hold an implement to be applied to the work piece, an abutment axially fixed on said spindle, a digitally-operable button movable between two positions mounted on said framework, an actuator providing an operative connection between said button and spindle abutment, bias means intermediate said abutment and framework normally urging said spindle to one limit of its stroke, the actuation of said actuator shifting said spindle toward the other end of its stroke against said bias means to impart reciprocating movement to said implement during rotation thereof.

3,181,281
GRINDING WHEELS

James L. Hensley, Clinton, Tenn., assignor, by mesne assignments, to Tysaman Machine Company, Inc., Knoxville, Tenn., a corporation of Delaware

Filed July 17, 1962, Ser. No. 210,374
6 Claims. (Cl. 51—209)

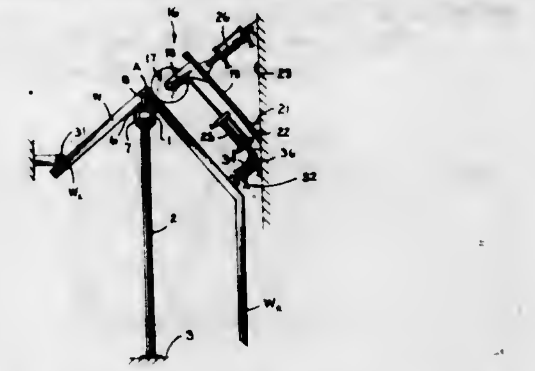


1. A grinding wheel comprising a rotary head having a plurality of elongated abrasive segments spaced circumferentially about the under surface of the head, the longitudinal axis of said segments extending substantially radially of said head, each of said segments having a plane bottom surface turned upward in sloping relation at the periphery of the head and forming a continuation of the bottom surface.

3,181,282
METHOD AND APPARATUS FOR HOLDING WORKPIECES FOR A MATERIAL REMOVAL OPERATION

Ramsay M. Bell, Schoolcraft, Mich., assignor to Hammond Machinery Builders, Inc., Kalamazoo, Mich., a corporation of Michigan

Filed Apr. 5, 1962, Ser. No. 185,423
14 Claims. (Cl. 51—217)

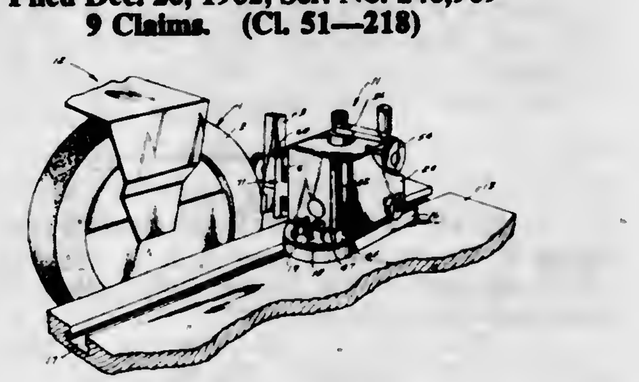


5. Apparatus for performing a material-removing operation on an angularly-shaped workpiece, comprising in combination:
support means for loosely engaging said workpiece adjacent an angle portion thereof, portions of said workpiece on either side of said angle portion extending downwardly to a point below said support means whereby said workpiece will hang on said support means stably although loosely in response to gravity;
clamp means for applying a clamp force to one part of said workpiece at a point spaced thereon from the point of support thereof by said support means;
abutment means resisting rotative movement of said workpiece induced therein by said clamp means, whereby said workpiece is clamped at three points thereon; and
material removal means engageable with said workpiece.

3,181,283
MEANS FOR CUTTING CHIP BREAKER GROOVES

Philip B. Tuttle, Brady Township, Kalamazoo County, Mich., assignor to Hammond Machinery Builders, Inc., Kalamazoo, Mich., a corporation of Michigan

Filed Dec. 26, 1962, Ser. No. 246,969
9 Claims. (Cl. 51—218)

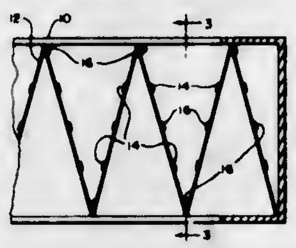


1. A fixture for supporting a workpiece in association with a grinding wheel, comprising:
a base adapted to be stationarily mounted in a fixed position, said base having a post extending upwardly therefrom, said post having a central recess in the upper end thereof and a stationary pin extending into said recess;
a housing mounted above said base, said housing having a central compartment within which said post is received;
a manually rotatable screw mounted on said housing and extending into said recess, said screw having external threads, said pin being received between said threads whereby rotation of said screw will

effect reciprocating movement of said screw and said housing toward and away from said base; and
a tool holder mounted on said housing for movement therewith.

3,181,284
ELECTROSTATIC AIR FILTER

John E. Copenhefer, Anchorage, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Apr. 30, 1962, Ser. No. 191,043
5 Claims. (Cl. 55—132)



1. An accordion pleated dielectric filter medium having an arrangement of conductive stripes disposed thereon for distributing an electrostatic charge thereover, comprising:

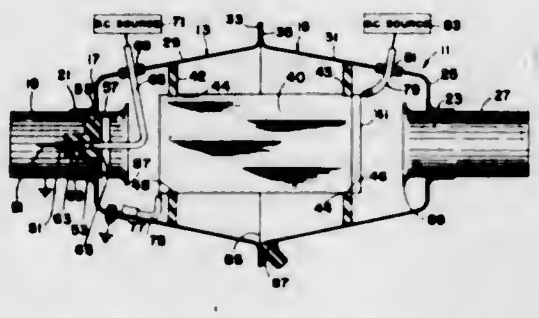
(*a*) a series of alternate and intermediate stripes adapted for connection to respectively different electrical potentials on each half pleat, the stripes on each half pleat being substantially equally spaced and disposed parallel to the pleating lines of said medium, all half pleats facing in one direction having their first stripes closely adjacent but not on crests and their last stripes spaced a substantial distance from troughs, and all half pleats facing in the generally opposite direction having their first stripes closely adjacent but not in troughs and their last stripes spaced a substantial distance from crests,

(*b*) the last stripe of said series on each half pleat which faces one way, and the first stripe of said series on each adjacent half pleat which faces the generally opposite way being spaced apart a sufficiently greater distance, as measured along the contour of the medium, than the distance between adjacent stripes in any one series that, in pleated form, the straight line distance between the said last stripe on one half pleat and the said first stripe on the next adjacent half pleat is not substantially less than the distance between adjacent stripes in any one series,

(*c*) said filter medium being devoid of any of said stripes lying on crest fold lines and lying in trough fold lines formed between said half pleats.

3,181,285
ELECTROSTATIC PRECIPITATOR

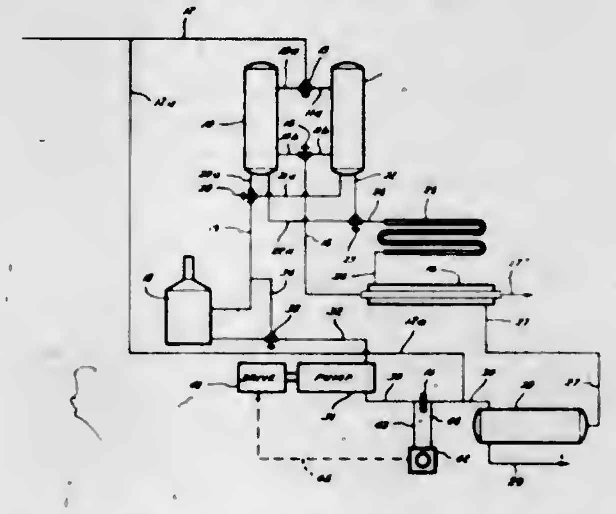
Florian E. Tepolt, Utica, and Neal B. Rothfuss, Clinton, N.Y., assignors to The Bendix Corporation, Utica, N.Y., a corporation of Delaware
Filed Oct. 31, 1960, Ser. No. 66,383
3 Claims. (Cl. 55—138)



1. An electrostatic precipitator for air containing oil particles comprised of an assembly of a plurality of elongated plates having top and bottom edges and two insulating support rings having the same diameter, each of said rings having square openings with side, top and bottom edges, said plates being vertically arranged and equispaced in said openings of said rings to provide passages between said plates, said rings having slots in the top and bottom edges of said opening receiving the top and bottom edges of the end parts of said plates, each side edge of the openings abutting the adjacent side of the outer ones of said plates, a first horizontal cup-like member encasing one end of said assembly, a second horizontal cup-like member encasing the other end of said assembly, each of said cup-like members having a conical side wall terminating in a flanged larger end, said flanged ends being connected to provide an elongated horizontal housing, said housing positioning said assembly by having the intermediate part of the conical side walls respectively abutting the peripheral edges of said rings, said conical side walls of said housing providing an arcuate sump below the center parts of said plates, said rings serving to confine flow to the passages between said plates, inlet means including an ionizer connected to said first cup-like member for providing a horizontal flow of air having charged oil particles to the passages between said plates, means connected to said plates for electrically charging alternate plates to opposite polarity whereby the charged oil particles are precipitated and drain into said sump, a gravity-flow outlet connected to said sump adjacent the larger end of one of said conical walls, and said second cup-like member having an axial outlet whereby the flow from the plates moves horizontally for discharge from the precipitator.

3,181,286
APPARATUS FOR RECOVERING HYDROCARBONS AND LIQUIDS FROM GAS STREAMS

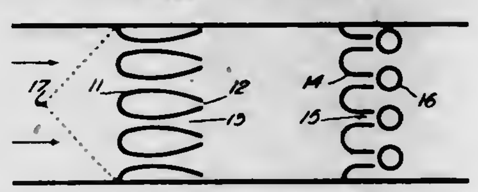
Asbury S. Parks, Houston, Tex., assignor, by mesne assignments, to National Tank Company, Tulsa, Okla., a corporation of Nevada
Filed Nov. 5, 1958, Ser. No. 771,987
3 Claims. (Cl. 55—163)



1. An apparatus for recovering liquid fractions from a main gas stream including, a vessel containing a bed of adsorbent material therein, means for directing the main gas stream through the bed whereby liquid fractions are extracted from gas stream, a regeneration gas circuit including a heater, a bypass around the heater, the adsorbent material bed, a condenser and a pumping device for circulating regeneration gas through said circuit, said pumping device including an outer casing forming a chamber, a compressor unit within said chamber having its inlet in communication with the chamber and having its outlet sealed against communication with the chamber whereby regeneration gas entering the chamber is pumped therefrom through the compressor discharge, a driving unit connected with said compressor unit and also within the chamber and having its inlet sealed against communication with the chamber, means equalizing the pressure in the chamber with the pressure in the regeneration circuit and the pressure in the driving unit outlet, and means for conducting a power gas to the inlet of said driving unit to operate the compressor unit and thereby control the rate of circulation of the regeneration gas in accordance with the volume of power gas directed through the driving unit.

3,181,287
SCRUBBING APPARATUS FOR REMOVING PARTICULATE MATTER FROM AIR

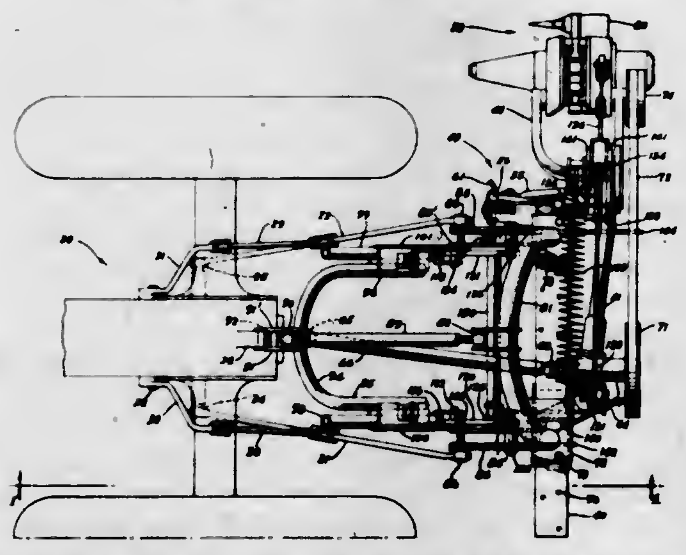
Solly R. Rabson, 8 Wethered St., Greenside Extension, Johannesburg, Transvaal, Republic of South Africa
Filed June 4, 1962, Ser. No. 199,947
Claims priority, application Republic of South Africa, June 14, 1961, 61/211; Jan. 23, 1962, 62/303
1 Claim. (Cl. 55—257)



Apparatus for removing particulate material from a gas stream, comprising means for confining gas containing particulate material to a path of movement having a substantial horizontal component, a single row only of guide elements extending transversely across said path, said elements having aerofoil cross sections the downstream tapered portions of which are truncated, said elements being spaced apart and defining between themselves a plurality of channels extending in the direction of said path and having convergent-divergent shape in cross section, spray means for introducing liquid into said path upstream of said guide elements, and eliminator means having upright surfaces extending across said path, said eliminator means being spaced a substantial horizontal distance downstream from said guide elements whereby the turbulence induced by the truncation of said guide elements causes the particulate material to agglomerate in the space between said guide elements and said eliminator means and the agglomerated material strikes and is stopped by said upright surfaces and falls by gravity a substantial horizontal distance from said guide elements.

3,181,288
MOWER MOUNTING APPARATUS

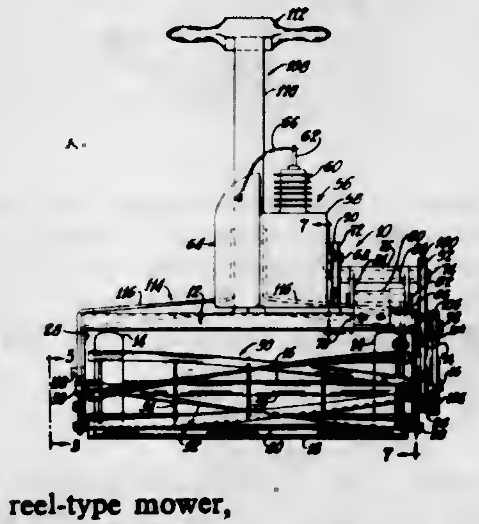
Lawrence M. Halls, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed July 31, 1962, Ser. No. 213,732
10 Claims. (Cl. 56—25)



9. Apparatus for mounting a mower on a tractor wherein the tractor has an upper rear hitch member and a pair of generally rearwardly extending swingable drawbars, said apparatus comprising a main frame, a mower carried on said main frame, means connecting said frame to said drawbars for vertical swinging movement therewith relative to said tractor, a torsion bar having a longitudinal axis, means mounting said torsion bar on said frame, and means connecting the respective ends of said torsion bar to said hitch member and exerting torsional stress on said bar about the axis thereof in response to lateral movement of said frame relative to said hitch member whereby lateral movement of said frame relative to said tractor is opposed by the resistance of said torsion bar to stress.

3,181,289
LAWNMOWER

Sylvester Patt, 37645 Vine St., Willoughby, Ohio
Filed Aug. 28, 1963, Ser. No. 305,044
4 Claims. (Cl. 56—294)



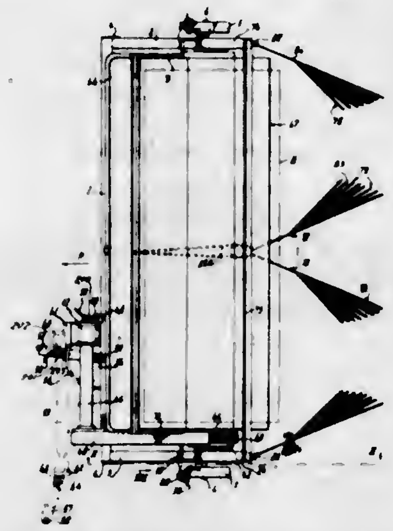
1. In a reel-type mower,
a stationary cutter bar,
a cylindrical reel having a blade lying in a spiral path oriented axially along the surface of the reel,
the blade having a cutting edge movable along the cylinder operating surface of the reel,
the blade positioned in a first plane disposed at an acute angle relative to a radial line passing through the axis of the reel and contacting the forward portion of the cutting edge,
said cutting edge having a cutting surface lying in a second plane forming with the first plane another acute angle which is substantially complementary to the other acute angle,
the cutter bar being oriented parallel to the axis of the reel and disposed to coact with the blade cutting edge in a shear action as the cutting edge is moved in contiguous reaction therepast,
the spiral nature of the blade producing a natural tendency during operation to urge encountered foliage along the axis of the reel in the direction of the spiral,
a plurality of spaced notches formed along the cutting edge to frictionally engage the stems of the foliage to be cut,
and said notches so oriented with respect to said cutting edge of the blade as to so urge encountered foliage to the natural spiral of the reel and thus retain the encountered foliage in an upright position.

3,181,290
TEDDERS

Cornelis van der Lely, Zug, Switzerland, assignor to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company
Filed Jan. 26, 1962, Ser. No. 169,007
Claims priority, application Netherlands, May 18, 1961, 264,940
20 Claims. (Cl. 56—372)

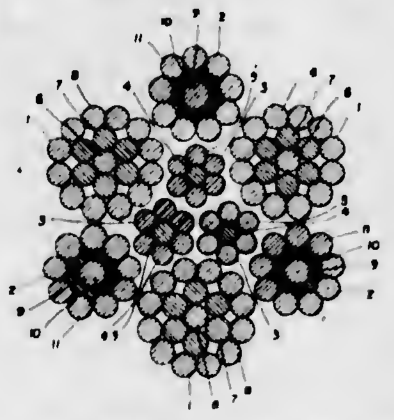
17. A tedder comprising a frame, a crop-working drum rotatably mounted on said frame, guide means provided

at the rear of said frame for concentrating and displacing crop material, said guide means being formed of a plurality of rods, parts of these rods being remote from said frame and being inclined at a substantial angle between the horizontal and vertical, said rods being inclined to the longitudinal axis of said crop-working body, means for pivoting said guide means about a substantial angle between the horizontal and vertical for vertically adjusting and locking said guide means about a non-vertical axis to secure said guide means in a plurality of positions relative to said crop-working body.



3,181,291
WIRE ROPE CONFIGURATION

Grant H. Carpenter, Montoursville, Pa., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 13, 1962, Ser. No. 236,951
2 Claims. (Cl. 57—148)

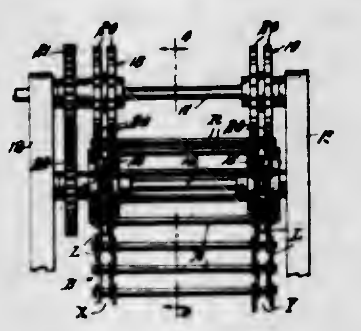


1. In a wire rope having an outer rope layer of strands of alternating larger and smaller diameter spirally laid together, the improvement comprising an outer strand layer of solid wires of uniform diameter, that wire diameter being the same in the strands of larger and smaller diameter, the outer rope layer strands being tangent to a circumscribed circle.

3,181,292
CONVEYOR BELTS

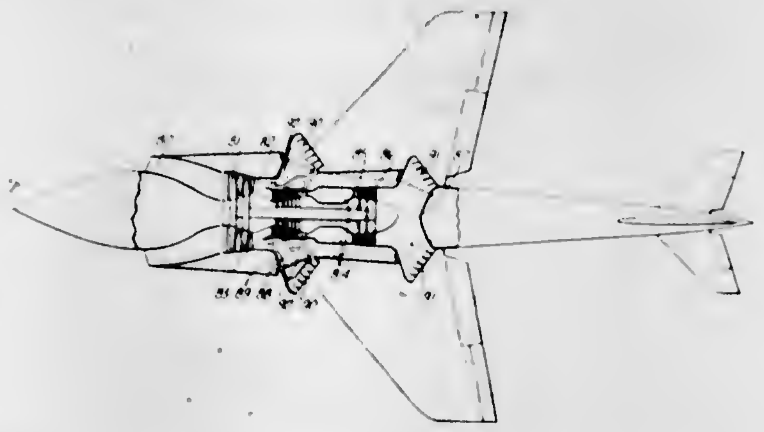
William E. Lanham, 1604 Jonesboro Road SE., Atlanta 15, Ga.
Original application Dec. 21, 1956, Ser. No. 629,861. Divided and this application Nov. 13, 1961, Ser. No. 155,880
3 Claims. (Cl. 59—1)

1. Apparatus for fabricating conveyor belts by deforming links assembled on and extending between grooves in the ends of adjacent rods comprising a rotatable shaft, sprocket wheels mounted on the shaft in spaced relation thereon and having radially projecting teeth of a length to closely fit between adjacent rods at one side of the links to position adjacent rods at the ends of the links at each end thereof, a hub projecting laterally from at least one side of each sprocket wheel to underlie the links and constituting anvils at one side of the links, a second rotatable shaft mounted in parallel relation to the first mentioned shaft, anvil wheels mounted in spaced relation on said second shaft with each anvil wheel cooperating with a corresponding sprocket wheel, each of said anvil wheels having spaced radially projecting anvil teeth in alignment with and overlying the hub projecting laterally from its corresponding sprocket wheel, the end of each anvil tooth being spaced from the periphery of its corresponding hub a distance to engage and deform a link therebetween and produce a parallel relation of the inner edges of the link to lock the link in the grooves in the rods, said anvil teeth on each anvil wheel being of an arcuate length to engage successive links centrally thereof and spaced from each other to disengage the end portions of the links surrounding a rod, gears connecting said shafts to deform successive links as they pass bewteen the hub and anvil teeth on the sprocket and anvil wheels, and means for driving at least one of said shafts.



3,181,293
FLUID FUEL BURNING EQUIPMENT

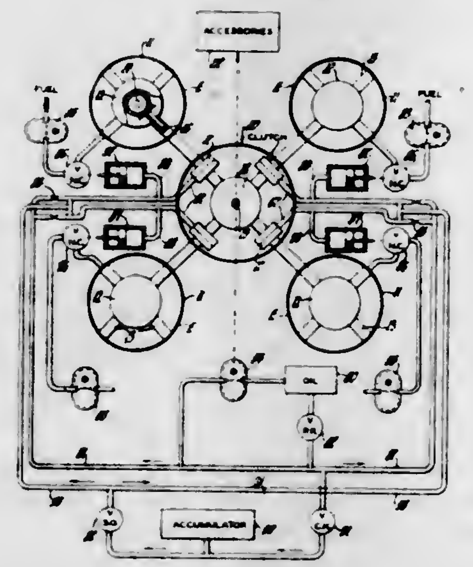
Peter Frederick Orchard and Michael Roy Williams, Bristol, England, assignors to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed Mar. 1, 1962, Ser. No. 176,745
Claims priority, application Great Britain, Mar. 6, 1961, 8,094/61
10 Claims. (Cl. 60—35.55)



2. An aircraft jet propulsion power plant including, in fore-and-aft succession, an axial flow low-pressure air compressor, an axial flow high-pressure air compressor, and turbine means drivingly connected to the compressors, the compressors being on a common primary axis; a casing including inner and outer walls having front portions which are centered on the primary axis and which define an arcuate-sectioned front entry to the casing adjacent to and in communication with the rear of the low-pressure compressor, a circular wall portion which is centered on a secondary axis arranged at a substantial angle to the primary axis, and which defines a circular lateral exit opening from the casing for delivering gas flow in substantially the same direction as the secondary axis, the inner and outer walls being merged at the rear of the casing, and the outer wall portion having an opening therein, the periphery of which is merged with the circular wall; a perforated liner within the casing, comprising an arcuate lip disposed intermediate the inner and outer arcuate walls, an inner liner wall and an outer liner wall extending rearwards from the lip and generally divergent from one another, and spaced from the inner casing wall and the outer casing wall respectively, and a circular liner wall within and spaced from the circular casing wall, the inner and outer liner walls being merged at the rear of the liner, and the outer liner wall having an opening therein, the periphery of which is merged with the circular liner wall; elongated arcuate fuel dispersing means forward of and adjacent to the lip; and a rotatable elbow nozzle, and means rotatably mounting the nozzle on the circular wall of the casing, as a prolongation thereof.

3,181,294
COUPLED ENGINES

Thomas F. Donohue, Cincinnati, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 6, 1961, Ser. No. 115,265
7 Claims. (Cl. 60—39.15)

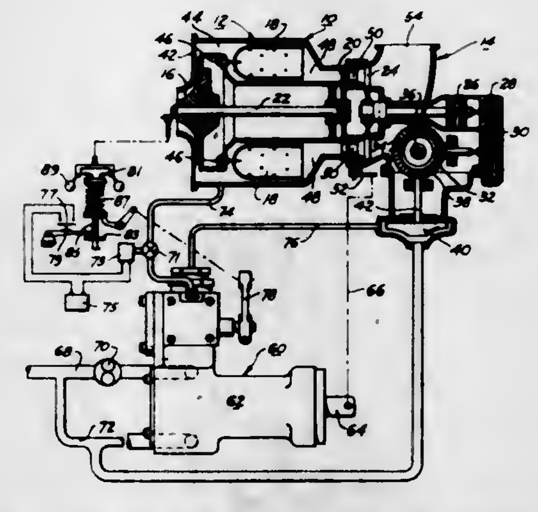


1. A clutch comprising a driving member, a driven member engageable with the driving member, the driving member normally exerting a driving torque in a particular direction on the driven member when the clutch is engaged, means coupled to transmit torque transmitted through the clutch and responsive to said torque to bias the clutch toward engagement when the torque is in the particular direction and toward disengagement when the torque is in the opposite direction, a fluid motor coupled to the clutch effective to exert an engaging force on the clutch in response to fluid pressure in the motor so that the torque-responsive means is loaded and is thus enabled to bias the clutch toward engagement and disengagement in accordance with the direction of the transmitted torque, and means responsive to disengagement of the clutch by the torque-responsive means effective to reduce the pressure in the motor so as to disable the torque-responsive means and prevent automatic reengagement of the clutch in response to a subsequent reversal of torque.

4. A power plant comprising, in combination, a plurality of clustered engines, a common accessory drive for the engines, a coupling means for each engine coupling the engine to the accessory drive, the plurality of coupling means thus intercoupling and synchronizing the engines, each coupling means including means for decoupling a failed engine, the said coupling means for each engine comprising a two-way clutch, means constantly operative to bias the clutch to disengaged condition, an expansible-chamber motor connected to the clutch effective to override the first-recited biasing means and bias the clutch to engaged condition, means responsive to operation of the accessory drive for supplying operating fluid to each motor to bias the respective clutch to engaged condition, and means responsive to torque transmitted by the clutch operative to bias it toward engagement when power is transmitted from the engine and bias it toward disengagement when power is transmitted to the engine.

3,181,295
OPERATOR AND SPEED CONTROLLED ACTUATOR FOR TURBINE GUIDE BLADES

Edward M. Pauwels and William J. Kestermeier, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Oct. 15, 1962, Ser. No. 230,581
7 Claims. (Cl. 60—39.16)

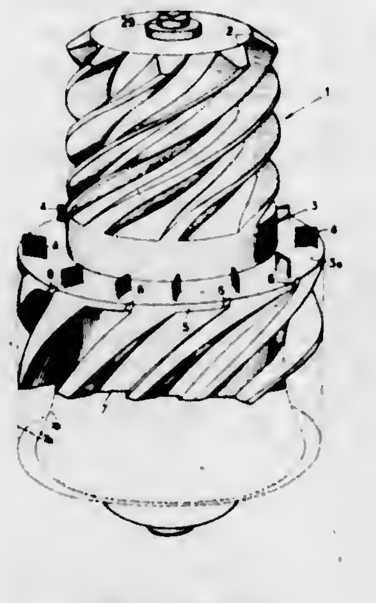


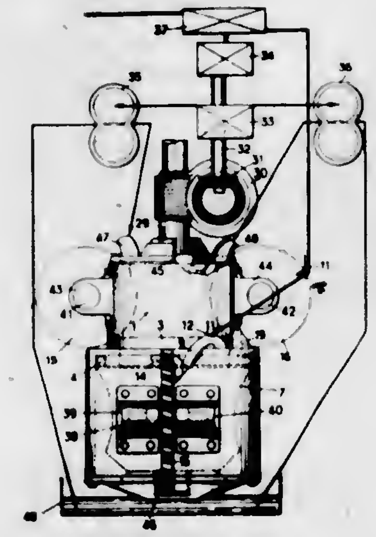
2. The combination of a gas turbine engine having a compressor driving turbine, an independent power output turbine, and variable position guide blades for controlling the directional flow of gas into said power turbine; an actuator connected to said variable position guide blades for controlling the position thereof, said actuator comprising: a hydraulic control fluid pressure responsive piston member adapted to be connected to said guide blades for controlling the position thereof; a servo valve member operative to control fluid pressure applied to said piston member and thereby control the movement of said piston member; a balance beam member interconnecting said piston member and said servo valve to control the position of said servo valve in response to piston movement; said balance beam including a movable pivot pin about which said beam is rotatable; a shaft member positionable in a rotational direction; a control throttle member secured to said shaft member for positioning said shaft rotationally in response to operator's demand; a cam member secured to said shaft for movement rotationally therewith; and cam follower means interconnecting said cam and said movable pivot pin so that said pivot pin and said servo valve are controlled in response to movement of the control throttle member, acceleration means operative to produce a high pressure control signal during engine acceleration; a pressure responsive member connected to said acceleration means and movable from a first to a second position in response to said high pressure acceleration signal; said pressure responsive means being connected to said cam follower means to override the controlling operation of said cam member during engine acceleration.

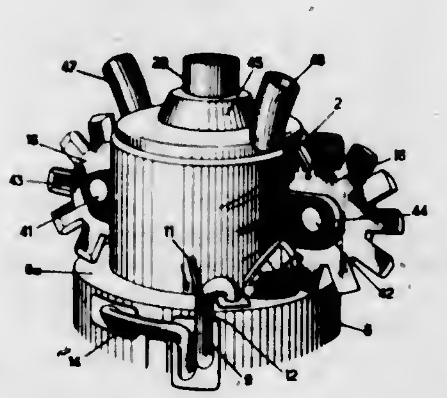
3,181,296

GAS ENGINE WITH CONTINUOUS FUEL INJECTION

Fernand Zimmern, 29 Blvd. Jules Sandeau, Paris, France
Filed Jan. 31, 1962, Ser. No. 170,183
Claims priority, application France, Feb. 2, 1961,
851,703, Patent 1,287,593
20 Claims. (Cl. 60—39.63)





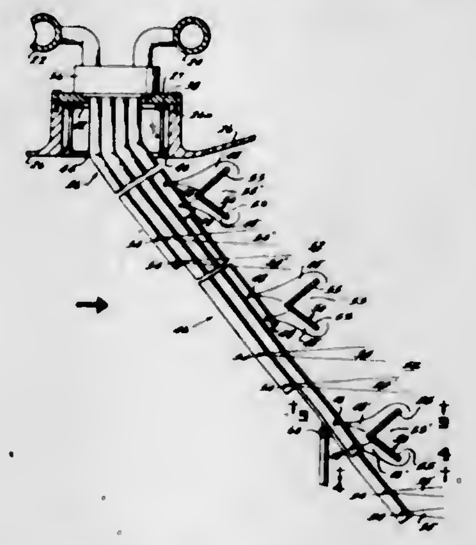


1. A rotary external combustion engine comprising a compression screw and an expansion screw coaxially mounted on a common shaft, each of said screws meshing with at least one pinion lying approximately in a plane containing the longitudinal axis of said shaft, said screws comprising a base portion having an hour glass shaped axial cross section, and a plurality of discrete threads carried on said base, each extending from one end to the other of said screw while occupying a peripheral arc no greater in length than the circumference of the screw divided by the number of pinions meshing with that screw, casing means in which said screws are rotatably mounted and comprising a cylindrical inner wall co-operating with the crests of said threads to form with each pair of adjacent threads on said compression screw a compression chamber and with each pair of adjacent threads on said expansion screw an expansion chamber, a high pressure outlet immediately adjacent each pinion at the end of the compression screw nearest said expansion screw for successive communication with said compression chambers as said screws rotate, means closing the high pressure ends of all compression chambers not in communication with a high pressure outlet, a low pressure inlet at the other end of the compression screw, a high pressure inlet immediately adjacent each pinion at the end of the expansion screw nearest said compression screw, a low pressure outlet at the other end of said expansion screw, duct means defining a combustion chamber connecting each high pressure outlet of said compression screw to a high pressure inlet of said expansion screw, and means for admitting fuel into each combustion chamber.

3,181,297

WIDE MODULATION COMBUSTION SYSTEM FOR JET ENGINES

Samuel Alan Belk, Cincinnati, Ohio, and William Humenick, Orangevale, Calif., assignors to General Electric Company, a corporation of New York
Filed Oct. 31, 1961, Ser. No. 149,015
2 Claims. (Cl. 60—39.72)

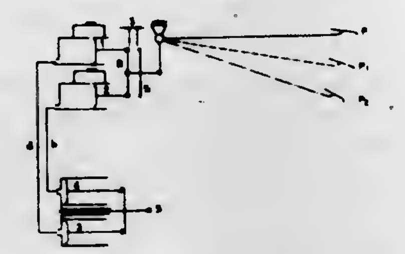


1. In a combustion system for an axial-flow jet engine, an outer casing, an inner liner spaced from said casing, a hollow outer support ring mounted on said casing, said ring having pairs of equally circumferentially spaced but axially-displaced holes in outer and inner walls thereof, a plurality of fuel injector bundles located in said holes, said bundles being bent in the direction of flow of the jet engine exhaust, the bend area of each bundle being within said hollow outer ring and without the hot stream of said engine exhaust, each of said bundles comprising a plurality of tubes of unequal length, a first group of said tubes having orifices supplying primary fuel and a second group of said tubes having orifices supplying secondary fuel, a plurality of annular flameholders V-shaped in cross-section and radially spaced within said liner immediately downstream of said bundles, said first group of orifices emitting said primary fuel transversely of said exhaust gas stream and immediately upstream of the apex of said flameholders whereby the force of said streams turns said primary fuel flow downstream directly onto the divergent sides of said V-shaped flameholders for local burning immediate said flameholders, and said second group of orifices emitting said secondary fuel transversely of said exhaust gas stream and radially intermediate said first orifices whereby the force of said stream turns said secondary fuel flow directly downstream into the areas intermediate each of the flameholders for fill burning in said areas.

3,181,298

TWIN SECTION HYDRAULIC CONTROL EITHER IN TANDEM OR IN PARALLEL FOR SINGLE OR MULTI SECTION COMPRESSED AIR DISTRIBUTOR

Giuseppe Alfieri, Milan, Italy, assignor to Fabbrica Italiana Magneti Marelli S.p.A., Milan, Italy, a corporation
Filed June 5, 1961, Ser. No. 114,982
Claims priority, application Italy, June 24, 1960,
11,270/60
1 Claim. (Cl. 60—54.5)

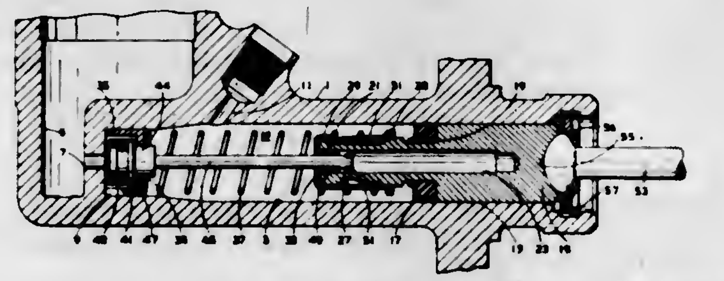


A hydraulic control device for actuating an air distributor of a pneumatic vehicle braking system comprising a first group of at least two cylinders having pistons working therein, an operating means kinematically connected to and actuating said pistons, a second group of at least two cylinders having pistons working therein, communicating means connecting one of said cylinders of said first group to one of said cylinders of said second group and connecting the other of said cylinders of said first group to the other of said cylinders of said second group, means responsive to the unbalance of pressure of either of said cylinders of said first group and means kinematically connected to said responsive means for limiting and controlling the unbalance of said responsive means to enable the distributor to be operated in the case of emergency by the liquid under pressure of only one of said pistons of said first and second groups, said cylinders of said first and second groups being disposed in parallelism and said pistons of said first group being connected to a rocker arm, a control rod connected to said rocker arm and a crosspiece provided to limit the oscillation of said rocker arm, and said pistons of said cylinders of said second group being connected to a crosspiece which is connected to a push rod, said push rod adapted to be energized by either of said pistons of said second group, and said push rod being adapted to be connected to an air distributor.

3,181,299

HYDRAULIC MASTER CYLINDER ASSEMBLY

Ernest Page, Upminster, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 9, 1963, Ser. No. 307,502
Claims priority, application Great Britain, Nov. 1, 1962,
41,290/62
8 Claims. (Cl. 60—54.6)

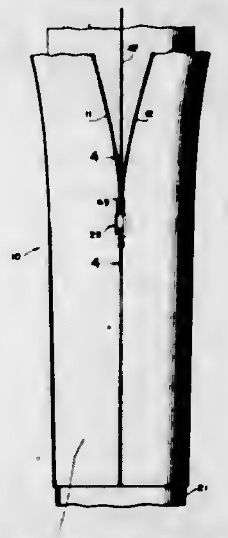


1. A hydraulic master cylinder assembly comprising a cylinder bore having an open end and a closed end, a piston slidable in said bore and defining a pressure chamber between its end and said closed end, a pressure outlet in said bore, a fluid reservoir, a port in said closed end providing communication between said reservoir and said chamber, a valve member movable to open and close said port, said valve member having a portion with an element frictionally engageable therewith and slidable thereon, said element being engageable by said piston when said piston is moved toward said open end of said bore so that it unseats said valve member.

3,181,300

PILING JACKET AND METHOD OF PROTECTING PILINGS

Walter A. Plummer, 3546 Crownridge Drive, Sherman Oaks, Calif.
Filed Oct. 31, 1960, Ser. No. 66,214
14 Claims. (Cl. 61—54)

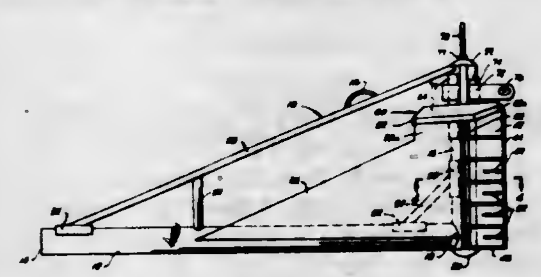


1. That method of jacketing submerged surfaces of tapering piling and the like with a protective layer of impervious flexible material to exclude marine organisms and to minimize leaching of protective chemicals with which the piling is impregnated said method comprising forming an elongated strip of sheet-like flexible plastic material having interlocking tongue and groove seam-forming means along its opposite edges capable of relative movement lengthwise of said seam while the seam is closed, applying a length of said jacket-forming strip to a pile to be protected in a width no greater than the circumference of the pile at its smaller end, closing said seam forming means together said smaller end and progressively wrapping said strip spirally about the pile and closing said seal forming means along an acutely pitched spiral path as necessary to obtain a snug fit of said jacket with said pile from a point below ground level to a point above high tide.

3,181,301

METHOD AND APPARATUS FOR ENTRENCHING A SECTION OF PIPELINE IN A RIVERBED

George W. Davis, Box 6072, Cimarron Station, Oklahoma City 11, Okla.; Alice C. Davis, executrix of said George W. Davis, deceased
Filed May 18, 1961, Ser. No. 110,941
6 Claims. (Cl. 61—72.4)



3. A device for entrenching a section of pipeline in the bed of a river comprising:
- a horizontally disposed tubular adapter conduit connected with one end of the section and in fluid communication therewith;

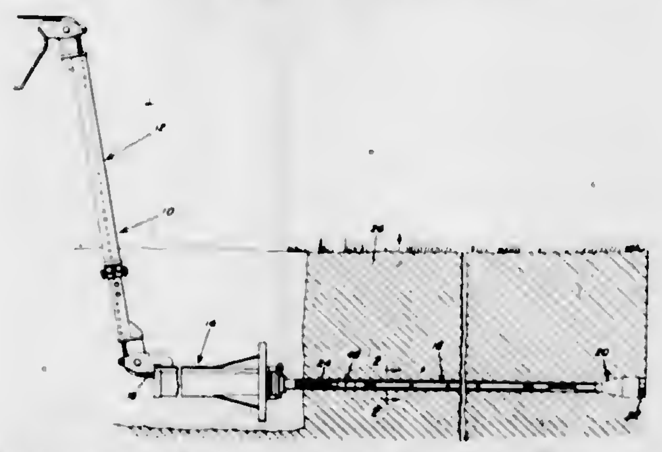
an elongated conduit connected in fluid communication with said adapter conduit and disposed at a substantially right angle thereto;

means forming a fluid chamber extending partially along said elongated conduit and in fluid communication therewith;

a plurality of nozzle members mounted in spaced relation on said chamber forming means, said nozzle members being in fluid communication with said chamber; and,

means mounted on said elongated conduit for connecting a tension line thereto.

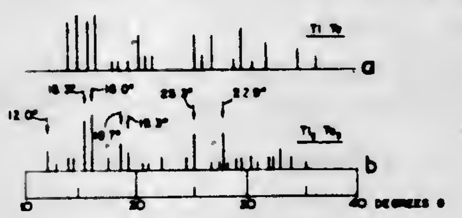
3,181,302
PIPE SPLITTER AND SPREADER
William R. Lindsay, 241 Dempsey St., Madisonville, Ky.
Filed Aug. 28, 1959, Ser. No. 836,650
3 Claims. (Cl. 61—72.7)



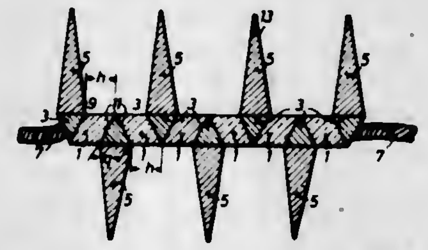
1. Apparatus for replacing a pipe occupying an underground passageway through which a substantially horizontal axis extends comprising, a pipe splitting cutter adapted to be drawn through said passageway in one direction, a pipe spreader connected to said cutter rearwardly thereof in said one direction, said spreader being dimensioned transversely larger than the largest transverse dimension of the cutter to enlarge said passageway in diameter, a pipe connector fitting connected to the pipe spreader rearwardly thereof, operating means connected to said cutter and extending forwardly therefrom for projecting out of the passageway and rendering the cutter operative in response to movement thereof through the passageway, pipe holding means through which said operating means extends forwardly from said cutter, said pipe holding means including an elongated ground tube disposed coaxially of said cutter and said spreader for spaced alignment with said passageway and having an internal passage dimensionally exceeding the cutter and the pipe spreader in transverse dimension, and means forming a pipe receiving seat on a rear end of the ground tube, a guide tube pivotally connected to the ground tube at the forward end thereof, said seat being formed by a pair of jaw halves, and means resiliently mounting said jaw halves on the ground tube for movement apart permitting the passage of the cutter and said spreader through the ground tube.

3,181,303
THERMOELECTRIC DEVICES OF SINGLE PHASE Tl_2Te_3 AND ITS SYSTEM
Albrecht Karl Heinrich Theodor Rabenau, Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Original application July 10, 1959, Ser. No. 826,341, now Patent No. 3,096,151, dated July 2, 1963. Divided and this application Dec. 1, 1961, Ser. No. 171,545
Claims priority, application Germany, July 23, 1958, N 15,384; June 11, 1959, N 16,780
6 Claims. (Cl. 62—3)

1. A thermoelectric device comprising a body consisting essentially of a semiconductor material comprising a single phase containing thallium and tellurium having a crystal structure isomorphous with that of Tl_5Te_3 and exhibiting a characteristic X-ray powder diffraction pattern containing substantially the line sequence indicated by the arrows in the graph of FIG. 1*b* of the accompanying drawing, wherein the abscissa is in degrees θ and the ordinate indicates relative line intensity, said single phase possessing a low thermal conductivity, a high thermoelectric power, and an electrical conductivity in the semiconductor range, and means coupled to the body for passing current through the body.



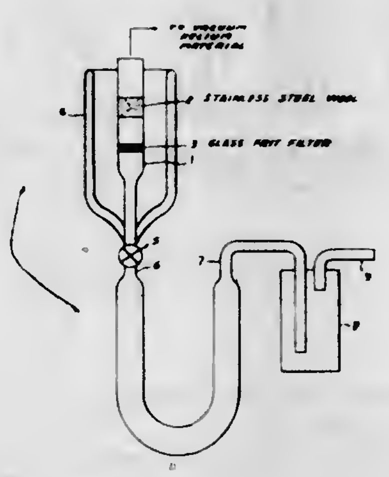
3,181,304
PELTIER DEVICE EMPLOYING SEMI-CONDUCTOR BODIES WHICH ARE CONNECTED TO ONE ANOTHER BY MEANS OF INTERPOSED MEMBERS OF SATISFACTORY ELECTRICAL AND THERMAL CONDUCTIVITY
Klaus Böke, Brand, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 24, 1964, Ser. No. 339,914
Claims priority, application Germany, Jan. 31, 1963, P 31,044
5 Claims. (Cl. 62—3)



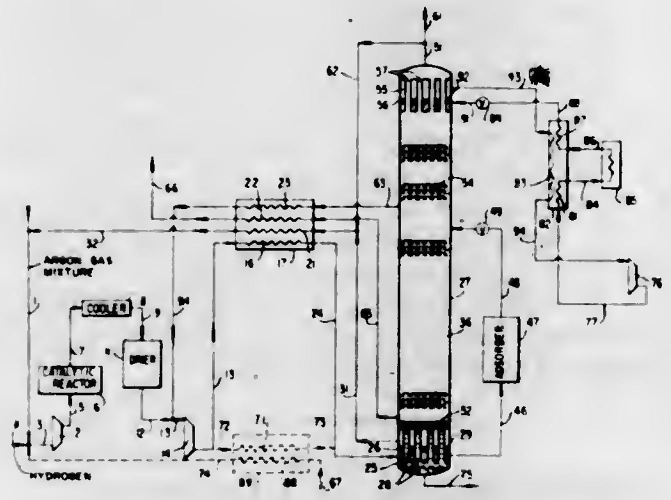
1. A Peltier device comprising a plurality of spaced thermoelectric semiconductor elements, a plurality of electrically and thermally conductive members each interposed between and connecting together adjacent semiconductor elements, means for passing current through the assembly of semiconductor elements and connecting members whereby one major surface of the assembly absorbs heat and the opposite major surface dissipates heat, alternate ones of said connecting members having a similarly oriented, generally triangular cross-section whereby the surfaces thereof connected to the adjacent semiconductor elements converge from said one major surface to the said opposite major surface, the connecting members intervening between the alternating members also having a generally triangular cross-section but oriented in the opposite direction whereby the surfaces thereof connected to the adjacent semiconductor elements converge from said opposite major surface to the said one major surface.

3,181,305
METHOD FOR ISOLATING NITROGEN TRIFLUORIDE FROM NITROUS OXIDE AND TETRAFLUOROHYDRAZINE
Carl W. Schoenfelder, Livermore, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 10, 1963, Ser. No. 272,165
4 Claims. (Cl. 62—12)

1. The process for preparing nitrogen trifluoride comprising passing a gaseous composition containing the nitrogen trifluoride contaminated by the presence of nitrous oxide and tetrafluorohydrazine through a stainless steel wool high-thermal conductivity trap maintained at the temperature of liquid nitrogen to within the physical state transition zone between the steel wool trap and a filter trap of sintered glass frit of medium porosity, in which transition zone nitrogen trifluoride and the tetrafluorohydrazine remain liquid and the nitrous oxide is altered to its solid physical state; forcing helium gas onto the liquid and the solid on the filter trap and causing the liquid nitrogen trifluoride and the liquid tetrafluorohydrazine to pass through the filter trap leaving the solid nitrous oxide on the high pressure side of the filter trap; collecting in a container the filtrate liquid nitrogen trifluoride and the liquid tetrafluorohydrazine on the low pressure side of the filter trap at the temperature −160° C.; and pumping the nitrogen trifluoride at −160° C. away from the tetrafluorohydrazine that remains within the container.



3,181,306
ARGON SEPARATION
Jacob M. Geist, Lilburn Carroll Claitor, and Joe L. Cost, Allentown, Pa., assignors, by mesne assignments, to Air Products and Chemicals, Inc., Trexlertown, Pa., a corporation of Delaware
Filed Jan. 11, 1961, Ser. No. 82,002
5 Claims. (Cl. 62—22)



1. The method of obtaining high purity argon from a gaseous mixture including argon, oxygen and nitrogen which comprises

providing compressed gaseous mixture and a quantity of hydrogen in excess of the stoichiometric amount required for the reaction of the hydrogen with the oxygen of the gaseous mixture to form water,

passing the compressed gaseous mixture and hydrogen over a catalyst to promote a catalytic reaction between the oxygen and the hydrogen and provide a reaction product including water, argon, nitrogen and hydrogen,

removing water from the reaction product,

cooling the water-free reaction product by heat interchange with cold fluids from ensuing separation and fractionating steps,

separating the cool reaction product under pressure by partial condensation producing a first liquid high boiling point fraction and a first gaseous low boiling point fraction,

the first high boiling point fraction comprising argon and nitrogen and the first low boiling point fraction containing substantially the total hydrogen content of the reaction product,

passing the first high boiling point fraction to a fractionating zone under reduced pressure wherein the first high boiling point fraction is separated under reduced pressure to produce second liquid high boiling point fraction and second gaseous low boiling point fraction,

the second high boiling point fraction comprising substantially pure argon and the second low boiling point fraction containing substantially the total nitrogen content of the reaction product,

the partial condensation of the cool reaction product being carried out by heat interchange between cool reaction product and a first relatively cold liquid material with concomitant vaporization of liquid material to provide first vaporized liquid material,

establishing heat interchange between second gaseous low boiling point fraction and a second relatively cold liquid material to provide liquid second low boiling point fraction with concomitant vaporization of liquid material to provide second vaporized liquid material,

utilizing liquid second low boiling point fraction as reflux for the fractionating zone,

compressing first vaporized liquid material and second vaporized liquid material to provide compressed gaseous material,

passing compressed gaseous material in heat interchange with second liquid high boiling point fraction to vaporize second high boiling point fraction and liquefy gaseous material,

deriving the first relatively cold liquid material and the second relatively cold liquid material from the liquefied gaseous material, and

utilizing vaporized second high boiling point fraction as reflux for the fractionating zone.

3,181,307
HELIUM SEPARATION
Richard D. Kuerston, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 16, 1960, Ser. No. 9,091
15 Claims. (Cl. 62—23)

1. A method for the recovery of helium from natural gas which comprises the following sequence of steps:

(1) refrigerating under pressure, a natural gas feed containing helium, nitrogen, and methane, and heavier hydrocarbons,

(2) removing from the refrigerated gas as a liquid a portion of methane and a substantial portion of hydrocarbons heavier than methane,

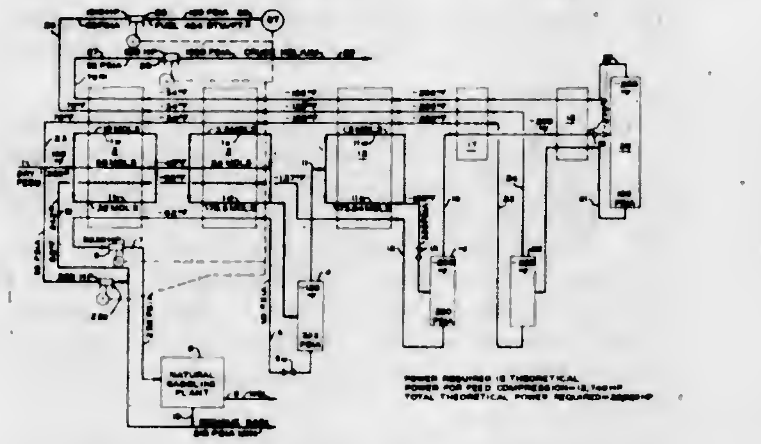
(3) further refrigerating the still uncondensed gases thus obtained,

(4) expanding the further refrigerated gases to a lower pressure, obtaining a liquid containing a large preponderant proportion of methane and a small percentage of higher boiling hydrocarbon,

(5) separating the last obtained liquid from the refrigerated gas,

(6) further refrigerating said gases,

(7) expanding said further refrigerated gases, obtaining a liquid phase containing at least about 50% nitrogen, up to about 50% methane, and a very small percentage of higher boiling hydrocarbon and a gas phase containing helium, nitrogen, and a very small percentage of methane,



(8) separating said liquid phase from said gas phase and recovering said gas phase as a helium concentrate product of the method, and

(9) utilizing the liquid phase obtained in step (7) as a combustible gas fuel for an internal combustion power plant used to power the operation whereby the nitrogen portion of said liquid phase serves as a non-combustible gas for preventing overheating of said power plant.

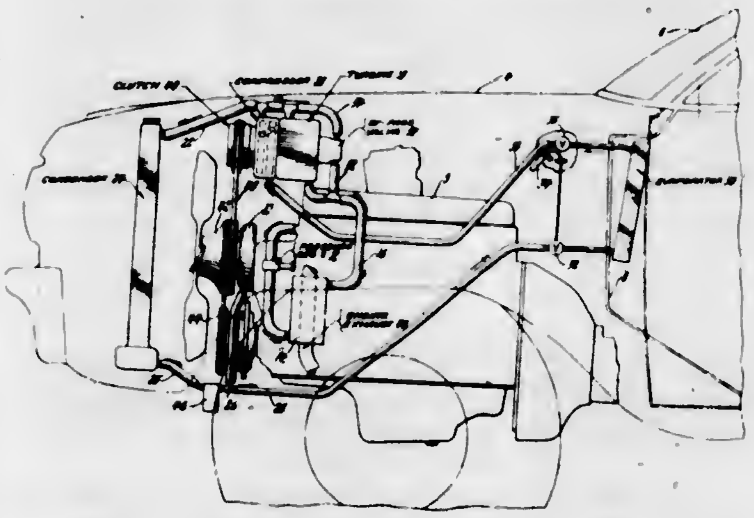
3,181,308

REFRIGERANT ENGINE COOLING AND AUXILIARY POWER SYSTEM

Orrie F. Vander Hagen, Lake Orion, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 5, 1963, Ser. No. 292,851

2 Claims. (Cl. 62—238)



1. Combined engine cooling and refrigeration systems enclosing a common refrigerant fluid, said engine cooling system including a pump, an engine jacket, pressure regulating valve, engine exhaust heat exchanger, an auxiliary power unit and a condenser connected in a closed circuit and in that order, said refrigeration system including an evaporator for effecting air conditioning, a compressor arranged to be driven by said auxiliary power unit, said condenser, and an expansion valve connected in that order to form a closed circuit, and said systems being supplemented by a bypass valve connecting said heat exchanger to said condenser around said auxiliary power unit.

3,181,309

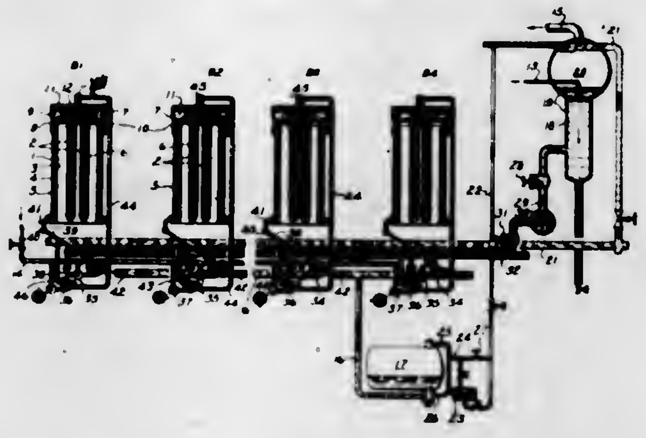
APPARATUS FOR FREEZING A LIQUID

Eugen Wilbushewich, Rotelstrasse 61, Postfach, Zurich 23, Switzerland

Filed Jan. 9, 1963, Ser. No. 250,325

Claims priority, application Switzerland, Feb. 7, 1962, 1,489/62

7 Claims. (Cl. 62—352)



1. In an apparatus for freezing a liquid, comprising

(*a*) a mold including

  (1) a jacket evaporator defining a freezing chamber and

  (2) an internal evaporator extending into the freezing chamber;

(*b*) a liquid separator including a sump;

(*c*) a feed line connected to the separator for supplying liquefied refrigerant to the sump;

(*d*) a liquid receiver vessel;

(*e*) a refrigeration circuit for circulating refrigerant through the evaporators, said circuit including

  (3) a main liquified refrigerant feed line leading from the liquid separator sump to the jacket evaporator,

  (4) a main evaporated refrigerant return line leading from the internal evaporator to the liquid separator, the liquefied refrigerant being capable of entering said jacket evaporator through the main feed line and evaporated refrigerant being capable of leaving the internal evaporator through the main return line, whereby the evaporators are connected in the circuit in series,

  (5) a main hot gaseous refrigerant feed line leading to one of said evaporators, and

  (6) an auxiliary main line leading from the latter one of said evaporators to said liquid receiver vessel for transferring liquefied refrigerant displaced by the hot gaseous refrigerant from the evaporators to the receiver vessel and for transferring liquefied refrigerant from the receiver vessel to said one evaporator;

(*f*) control means for controlling the respective flow of the refrigerant between each one of said circuit main lines and the evaporators; and

(*g*) a feed pump forming part of said main liquefied refrigerant feed line, said pump having an intake connected to said separator sump.

3,181,310

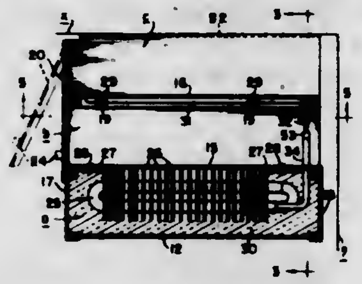
REFRIGERATING APPARATUS WITH HOLDOVER MEANS

Walter D. Ammons, 2020 SW. 18th Ave., Fort Lauderdale, Fla.

Filed Sept. 3, 1963, Ser. No. 305,976

3 Claims. (Cl. 62—432)

1. In a refrigerating apparatus having a coolant circulating system, means providing two superposed compartments the lower of which comprises a bottom compartment and the upper of which comprises an upper compartment with a single relatively thin thermal-conducting separating plate therebetween, the bottom compartment being sealed against exposure to air to define a sealed compartment, a system of evaporator coils positioned in the sealed compartment with the coils arranged in a horizontal course adjacent the separating plate thereabove, a second evaporator coil system positioned in the upper compartment and disposed with its coils arranged in a horizontal course adjacent the top of said upper compartment, thermal-conducting means connecting with the plurality of coils in said bottom compartment and extending upwardly to engage over an extended area of the compartment top and comprising suspension means to suspend the coil system carried thereby, tubular connections between the two coils systems whereby coolant circulated through one of them continues on to circulate through the other, and thermal-conducting means comprising a eutectic composition disposed within and substantially filling the bottom compartment so as to completely enclose the system of evaporator coils therein and being in contact with the separating plate thereabove to supplement the thermal-conducting suspension means for the proximate system of evaporator coils in transferring thermal units to the said plate and therethrough to the upper compartment whereby to cooperate with the second evaporator coil system therein in maintaining a temperature below the freezing point of water in said upper compartment.



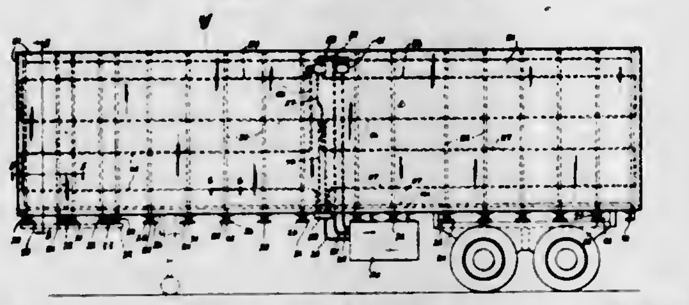
3,181,311

REFRIGERATED TRAILER

John B. Latzer, 5 University Lane, Clayton, Mo.

Filed Feb. 2, 1962, Ser. No. 170,570

9 Claims. (Cl. 62—440)



1. In a body construction: a bed, a box-like chamber, comprising an inner lining shell of heat-conductive material; a refrigeration conduit along the outside wall of the shell, means securing the conduit to the shell in close relationship to permit heat conduction from the shell to the conduit; initially fluent plastic insulating material around the shell and the conduit, the material being bonded to the shell and the conduit, and coating outside the insulating material, the coating comprising an initially fluent plastic, finally solid, material bonded directly onto the insulating material.

3,181,312

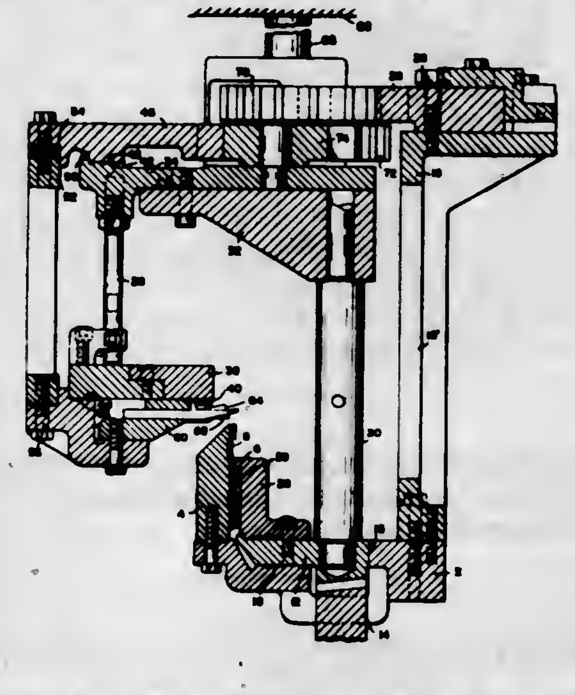
KNITTING MACHINE

Maurice H. Felker, Lakeport, N.H., assignor to Scott & Williams, Incorporated, Laconia, N.H., a corporation of Massachusetts

Filed Aug. 31, 1962, Ser. No. 220,759

5 Claims. (Cl. 66—28)

1. A large diameter circular knitting machine comprising a slotted needle cylinder, independent needles mounted in a circle slidably in the slots in said cylinder, a dial having radial slots therein, elements mounted in a circle in the last mentioned slots to cooperate with said needles for the formation of stitches, cams external to and operating said needles, mounting means for the needle operating cams, cams located above and operating said elements, mounting means for said element operating cams, annular means fixedly connecting said mounting means to each other, means providing a set of annular bearing surfaces between said connecting means and the needle cylinder, means providing a set of annular bearing surfaces between said connecting means and said dial and suspending said dial from said connecting means, means for maintaining said cylinder and dial in fixed angular relationship to each other, and means producing relative rotation between said connecting means and said cylinder, both sets of said bearing surfaces having radii closely approximating the radii of the circles of the needles and the elements and said radii of the sets of bearing surfaces differing only by a small fraction of the diameter of the circle of the needles.



3,181,313

MACHINE FOR KNITTING PLATE AND FLOAT PATTERNS

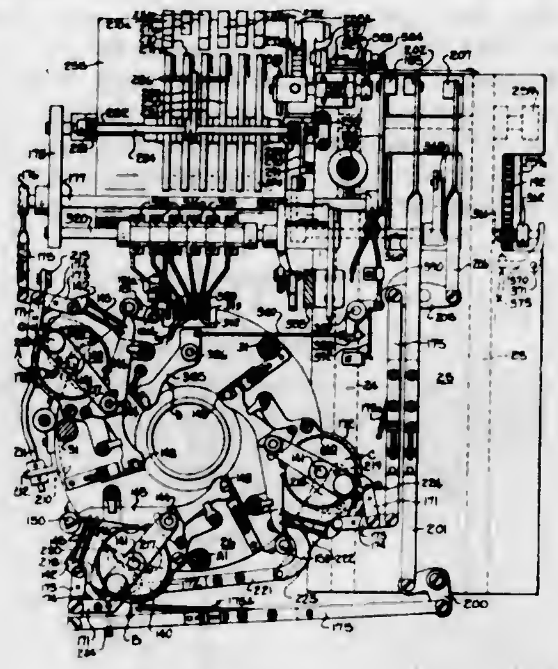
Herman E. Crawford and James H. Wells, Kernersville, N.C., assignors to H. E. Crawford Company, Inc., Kernersville, N.C., a corporation of North Carolina

Filed Sept. 8, 1961, Ser. No. 136,903

4 Claims. (Cl. 66—42)

1. In a circular knitting machine for knitting plate and float patterned fabrics formed of a body yarn and a plurality of pattern yarns, said machine having a rotating needle cylinder, needles carried by said cylinder for vertical independent movement therein, selector jacks individually associated with said needles and positioned therebeneath in said cylinder, and a circular bed plate surrounding said cylinder, the combination therewith of three yarn feeding stations spaced circumferentially around the cylinder and in spaced apart relationship to each other, a rotatable selector drum supported on said bed plate and positioned in advance of each of said yarn feeding stations, said selector drums being operative to select certain of said selector jacks to be raised to thereby raise corresponding needles to a sufficient level to receive yarn at said yarn feeding stations, a racking pawl associated with each of said selector drums and adapted to normally impart step-by-step movement to said selector drums, a ring mounted for annular sliding movement on the outer periphery of said bed plate, cams carried by said ring, means engageable by said cams for rendering

two of said racking pawls inoperative to move corresponding selector drums, and means for rendering the third racking pawl inoperative to move its corresponding selector drum in response to the rendering of the other two racking pawls inoperative.

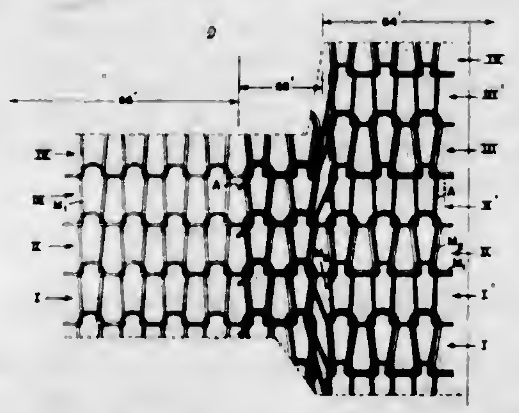


3,181,314
KNITTING METHODS AND APPARATUS AND PRODUCTS THEREOF

John J. Millar, Laconia, N.H., assignor to Scott & Williams, Incorporated, Laconia, N.H., a corporation of Massachusetts

Filed June 28, 1962, Ser. No. 205,972

6 Claims. (Cl. 66—42)



1. The method of knitting, by rotary knitting, on a circular knitting machine having at least two feeds, a fabric for the formation of stockings having instep and heel forming portions and junction portions extending walewise between the instep and heel forming portions, the method comprising, in the formation of said portions, feeding at least one yarn at only one of said feeds to needles of a first panel to produce single feed knitting of said instep portion, feeding at least one yarn at each of said feeds to needles of a second panel to produce two feed knitting of said heel portion, and feeding to needles of panels intermediate the foregoing panels yarns from both of said feeds but without clearing of needles until they take yarns at both of said feeds to produce single feed knitting of said junction portions incorporating in stitches thereof loops of both of the last mentioned yarns taken at both of said feeds.

3. A circular knitting machine for the formation by rotary knitting of a fabric for the formation of stockings having instep and heel forming portions and junction portions extending walewise between the instep and heel forming portions, said machine comprising a needle cylinder, independent needles mounted therein, means cooperating with said needles for the formation of stitches, and means for feeding yarns to said needles at at least two spaced feeds, means controlling needle movements to effect, during rotary knitting, feed of at least one yarn at only one of said feeds to needles of a first panel and single feed knitting of said instep portion, means controlling needle movements to effect, during the same rotary knitting, feed of at least one yarn at each of said feeds to needles of a second panel and two feed knitting of said heel portion, and means controlling needle movements to effect, during the same rotary knitting, feed, to needles of panels intermediate the foregoing panels, of yarns from both of said feeds, without clearing of needles until they take yarns at both of said feeds, and single feed knitting of said junction portions, thereby to incorporate in stitches of said junction portions loops of both of the last mentioned yarns taken at both of said feeds.

ERRATUM

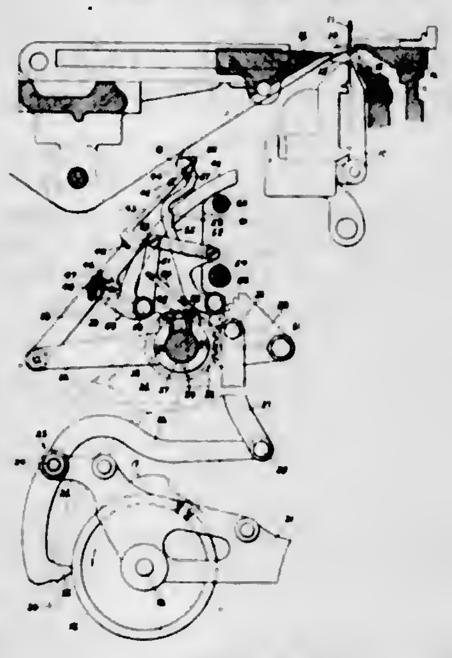
For Class 66—49 see:
Patent No. 3,181,940

3,181,315
AUXILIARY TAKE-UP MECHANISM FOR KNITTING MACHINES

Harry O. Werner, Philadelphia, Pa., assignor to Wildman Jacquard Co., Norristown, Pa., a corporation of Pennsylvania

Filed June 13, 1962, Ser. No. 202,251

4 Claims. (Cl. 66—150)



1. An auxiliary take-up mechanism for flat knitting machines adapted to supplement the action of a main take-up control and adapted to tension continuous fabric of variable width, having in combination a bar member with a plurality of hooks spaced on and extending from said bar member, means for causing said hooks to hook automatically said fabric and to draw the same under tension a distance sufficient to be acted upon effectively by the main take-up control, and a further means for causing said fabric to be stripped from said hooks which includes a hook bar holder having a roller member and a laterally extending lug member, a stationary inclined arcuated track on which said roller member is adapted to travel, a bell crank lever pivotally attached to the lower portion of said track including first and second arm members, a generally vertical and pivotally disposed stripper plate lever having a stripper plate fixedly attached to the upper portion thereof, said stripper plate lever being mechanically linked to said first arm of said bell crank lever and said second arm being provided with a screw adapted to

---

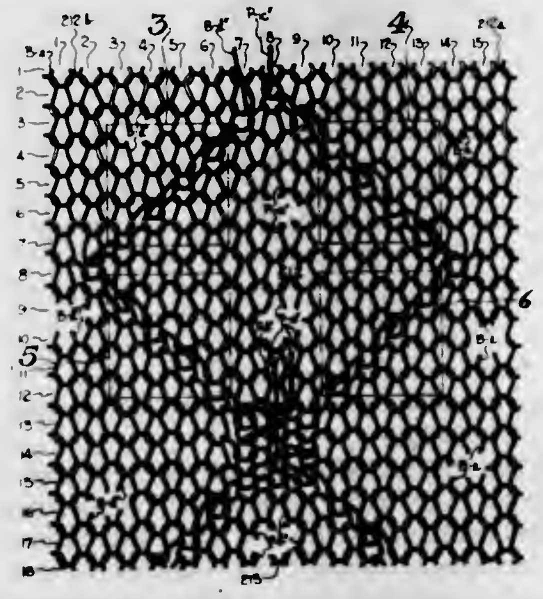
be contacted by said lug member as said hook bar holder and roller descend on said arcuated track thereby moving said stripper plate in a manner to push said fabric upwardly and away from said hooks.

3,181,316
KNIT FABRIC HAVING SUTURE-JOINED SOLID COLOR PATTERN AREAS

Claud C. Auton, Maiden, N.C., assignor to Wright-Knit Hosiery Mills, Inc., Hickory, N.C., a corporation of North Carolina

Original application Jan. 13, 1960, Ser. No. 2,254, now Patent No. 3,013,415, dated Dec. 19, 1961. Divided and this application Mar. 15, 1961, Ser. No. 96,021

5 Claims. (Cl. 66—179)



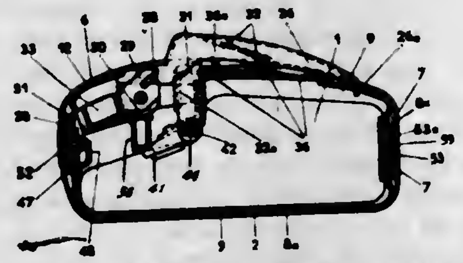
1. A knit fabric including at least first and second adjacent solid color pattern areas formed of partial courses knit of respective first and second yarns, a suture extending between and joining together corresponding ends of the partial courses of adjacent solid color pattern areas and forming a common course of each adjacent pair of partial courses in adjacent solid color pattern areas, said suture extending at an angle relative to the wales and courses of said first and second pattern areas, said suture comprising a pair of successive interknit suture stitch loops in the same wale in each of said common courses, one suture stitch loop of each of said pairs of suture stitch loops being formed of said first yarn, the other suture stitch loop of each of said pairs of stitch loops being formed of said second yarn, said one suture stitch loop of each of said pairs being interknit with a stitch loop of said first pattern area, and said other suture stitch loop of each of said pairs being interknit with a stitch loop of said second pattern area.

3,181,317
CIGARETTE LIGHTER

Stanley H. Newman, Savoy-Hilton Hotel, New York, N.Y.

Filed Oct. 16, 1961, Ser. No. 145,265

9 Claims. (Cl. 67—7.1)



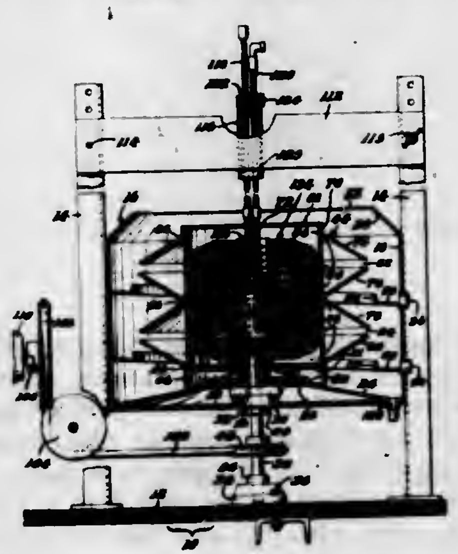
1. A lighter of ovoid-like longitudinal and substantially flattened transverse shape, adapted to be easily disassembled and comprised of three main cooperating parts, namely, a case, an actuating mechanism holder and a gaseous fuel supply tank which includes a gas expansion valve mechanism; the actuation mechanism holder consisting of a frame to which is attached an actuating push lever, a spring, a driver, a knurled spark wheel, a lever for opening of the expansion valve, a flint holder, a pivoted flint-push lever and a spring, said push lever acting against the spring to move the driver whereby the spark wheel is rotated and the expansion valve lever opens said valve at the same time as the spark wheel is rotated and a stream of sparks is created by the rotating spark wheel contacting a flint held in the flint holder by the flint-push lever and spring, said lighter having a case formed of two shells a spring and push member locking system and a rear closure spring, said shells placed about the frame and abutting each other, said shells held assembled to each other and with the frame at the front of the frame by the spring and push member locking system and at the rear by a closure spring, assembly, said frame comprising a continuous member and two fixed side plate flanges parallel to the side faces of the lighter, said frame bearing thereon a pivoted combination pawl for actuating the flint-push lever 41 and also locking the tank within the frame.

3,181,318
APPARATUS FOR DYEING YARN PACKAGES

William K. Wyatt, Lansdale, Pa., assignor to Turbo Machine Company, Lansdale, Pa., a corporation of Pennsylvania

Original application Dec. 11, 1961, Ser. No. 158,486, now Patent No. 3,145,398, dated Aug. 25, 1964. Divided and this application Dec. 31, 1963, Ser. No. 334,753

9 Claims. (Cl. 68—150)



1. In apparatus for centrifugally dyeing yarn packages multiple colors, the combination comprising a revolvable receptacle, means for introducing dye liquids respectively to axially spaced zones within the hollow core of a yarn package mounted within said receptacle for rotation therewith, means for rotating said receptacle and yarn package to drive said dye liquids by centrifugal force from said hollow core, through said yarn package and from said receptacle, means on the outside of said receptacle for collecting dye liquids discharged from said receptacle, and baffle means for receiving dye liquids discharged from said receptacle and directing them separately respectively to said collecting means.

3,181,319
DOOR LOCK

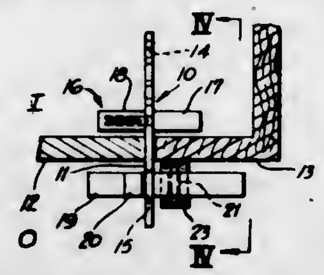
Marie Antoinette Hudon, 22 E. 29th St., New York 16, N.Y.

Filed Apr. 1, 1963, Ser. No. 269,355

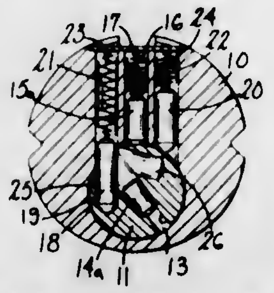
2 Claims. (Cl. 70—14)

1. A door locking device comprising an elongated plate adapted to extend through the space between a door and

its adjacent door frame and beyond both sides of said door when said door is in a closed position, said plate having a plurality of longitudinally arranged openings extending therethrough adjacent one end, said plate having a larger opening extending therethrough adjacent its other end, a retainer bar removably supported in one of the first-mentioned openings and on one side of said door and engaging said door and said door frame, a locking bolt removably supported in said larger opening and on the other side of said door and engaging said door and said door frame whereby said retainer bar and said locking bolt cooperate to prevent swinging movement of said door relatively to said door frame, and a combination lock for preventing the removal of said locking bolt from said larger opening in said plate.



3,181,320
PIN TUMBLER LOCK
Charles A. Bauer, Woodbridge, Conn., assignor to Sargent & Company, New Haven, Conn.
Filed Mar. 14, 1963, Ser. No. 265,120
8 Claims. (Cl. 70—421)

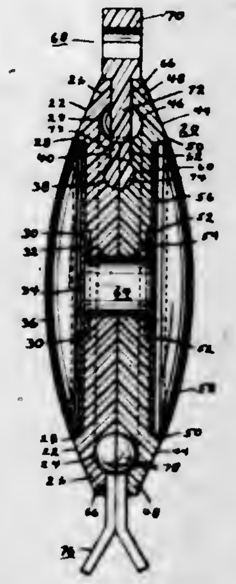


1. A lock comprising a housing, a key barrel mounted in said housing for rotation therein, a pin tumbler mechanism locking said barrel against rotation therein comprising at least one coacting tumbler and driver received in a well defined by said housing and said barrel and means biasing said tumbler and driver in a locking position, a security well defined in said barrel and extending at a small angle from said driver-tumbler assembly such that said well approaches a vertical position upon a small degree of rotation of said barrel, and a security pin carried in a well defined in said housing, said security pin extending transversely of the longitudinal axis of said barrel and being arranged with respect to said security well such that upon unauthorized rotation of said barrel a predetermined distance, said security pin is inserted into said security well, said security pin being of a length sufficient to extend into said housing from said well and prevent further rotation of said barrel.

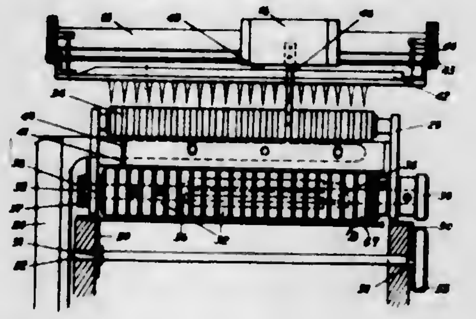
3,181,321
KEY HOLDERS
Jules P. Gits, River Forest, Ill., assignor to John R. Gits, River Forest, Ill.
Filed Jan. 21, 1963, Ser. No. 252,654
12 Claims. (Cl. 70—456)

6. A key holder that comprises:

(*a*) spaced apart surfaces that coact to define a recess,
(*b*) a groove that is spaced inwardly from said recess,
(*c*) a second groove that is spaced inwardly from said recess,
(*d*) said grooves being in register with and adjacent each other and coacting to form a composite groove within said key holder that is disposed inwardly of said recess in said key holder,
(*e*) the width of said composite groove within said key holder being greater than the normal width of said recess in said key holder, and
(*f*) an actuator that is carried by said surfaces and that has a portion thereof disposed within said recess in said key holder,
(*g*) said portion of said actuator being wider than it is deep so it normally permits said surfaces to have a predetermined spacing and so it can be moved to force sections of said surfaces further apart to make the spacing between said sections of said surfaces at least as great as the width of said composite groove within said key holder.

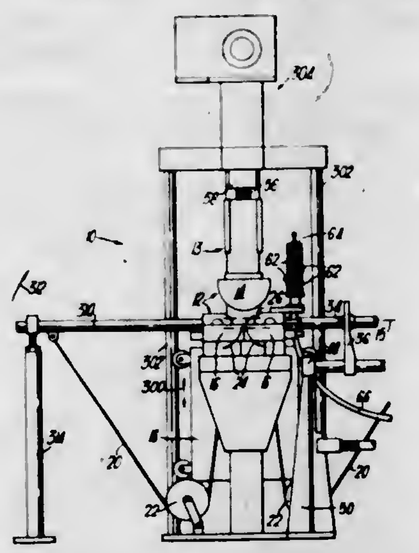


3,181,322
MACHINE FOR SMOOTHING BAND-SAW BLADES
Raymond Egide Theodore Lehacque, Mons-en-Laonnois, Aisne, France, assignor to Iseli & Co., Schotz, Lucerne, Switzerland
Filed Mar. 13, 1961, Ser. No. 108,219
6 Claims. (Cl. 72—17)



2. A machine for removing dents and the like from metal bands, said machine comprising a bed for supporting a metal band to be smoothed, a bridge supported by said bed and carrying a hammer, said bridge extending transverse of the band, said hammer being movable from one end of said bridge to the other, an electrical feeler situated transverse of said band for detecting the position of any dents therein, means for feeding said band longitudinally on said bed, means responsive to the detection of a dent by said feeler to stop said feeding means for said band and to initiate movement of said hammer across said bridge, and means responsive to the positioning of said hammer over a dent to temporarily stop said hammer movement and to cause said hammer to strike the band to remove the dent, the movement of said hammer continuing after each hammer stroke until the entire width of the band is traversed thereby.

3,181,323
TUBE BENDING APPARATUS
Karel Bos, 1151 Pierneef St., Pretoria, Transvaal, Republic of South Africa
Filed Nov. 21, 1961, Ser. No. 153,814
Claims priority, application Republic of South Africa, Nov. 28, 1960, 4,821/60
15 Claims. (Cl. 72—26)

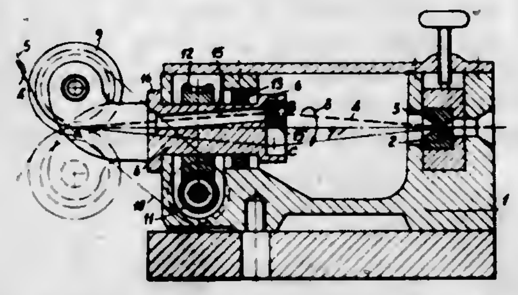


1. In bending apparatus suitable for the bending of workpieces of the kind referred to and which includes bend parts comprising a bend former and at least one coacting part to clamp a workpiece for bending transverse to an alignment axis, and actuating means for displacing at least one of the bend parts to bend the workpiece: locating means for locating a workpiece coaxially with and relative to the alignment axis by locating one end of the workpiece both in axial distance from the bend former and in its rotational disposition about the alignment axis, and comprising a shaft disposed longitudinally and having its axis parallel to the alignment axis; axially spaced transversely disposed arms fast with and circumferentially spaced about the axis of the shaft, the axial spacing between the various arms corresponding to the various pitches between bends to be formed in the workpiece; and engaging means on each transverse arm and mounted to be adjustable in position in the arm about an axis parallel to the shaft axis, for the polar location of a workpiece about the alignment axis to determine the angle between the planes of the bends to be formed in the workpiece.

3,181,324
LUBRICANT PAD FOR EXTRUDING HOT METALS
Dominick Labino, Grand Rapids, Ohio, assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 28, 1963, Ser. No. 261,856
9 Claims. (Cl. 72—42)

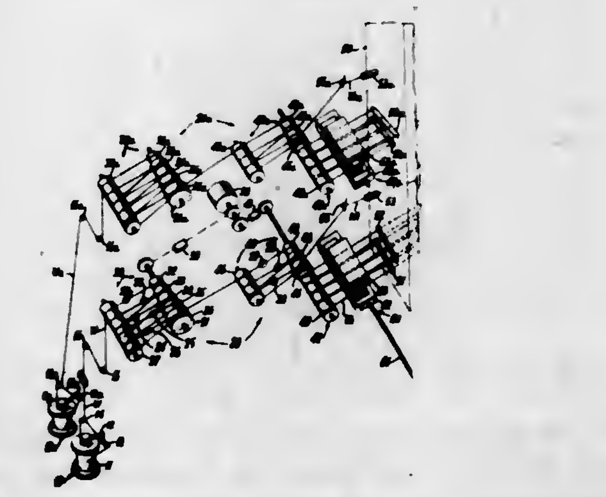
1. A method of deforming a metal workpiece in a metal shaping chamber having a die at one end and having an opening through which the workpiece is extruded comprising covering the entrance opening of said die with a glass fiber matrix pad containing between about 14% and about 40% by weight thereof of glass fiber having a melting point in excess of about 1200° F. and having an average diameter between about 0.5 and about 2.0 microns, and between about 60% and about 86% by weight thereof of a powdered refractory having a melting point in excess of 1500° F., particle size less than about 100 mesh, and selected from the group consisting of alumina, silica, zirconia, powdered glass having a high percentage of boro-silicate, and mixtures thereof.

3,181,325
DEVICE FOR INCREASING THE LIFE OF DIES FOR WIRE DRAWING FRAMES
Mario Cecchin, Via Stabilini 14, Malgrate, Lecco, Italy
Filed Aug. 28, 1961, Ser. No. 134,328
Claims priority, application Italy, Dec. 31, 1960, 22,525/60, Patent 645,763
4 Claims. (Cl. 72—43)



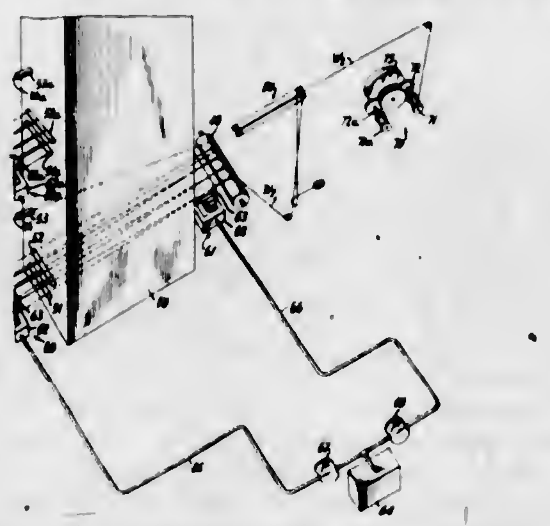
1. A drawing device which may be applied to wire drawing machines in order to increase the life of their dies and to prevent the formation of any ring-shaped grooves in the die apertures, said drawing device comprising a lubricating box, a wire-drawing die mounted within said box, said die having an aperture therein through which the wire being drawn is passed, a rotatable member disposed ahead of the die along the axis of the die aperture, a wire-guiding eye carried by said rotatable member at a point thereon which is off-center with respect to said axis, a sheave mounted tangentially to said axis and engaging said wire, means for angularly adjusting the operating position of said sheave about said axis in accordance with the direction of approach of said wire to the drawing device, and means operatively connected to said sheave for driving said rotatable member in rotation in response to the movement imparted to the sheave by the wire being down, the resulting circular motion of said wire-guiding eye about said axis causing the wire to follow a first path segment comprising a divergent conical envelope between the sheave and the eye and then to follow a second path segment comprising a convergent conical envelope which converges at said die aperture.

3,181,326
HIGH-SPEED PRODUCTION OF MAGNET WIRE
Henry L. Hollingsworth, Perrysburg, Ohio, and Verne H. Lausen, Fort Wayne, Ind.; said Hollingsworth assignor to Phelps Dodge Copper Products Corporation, New York, N.Y., a corporation of Delaware
Filed July 20, 1962, Ser. No. 223,283
5 Claims. (Cl. 72—46)



1. Apparatus for high-speed production of magnet wire, which comprises a wire source for continuously

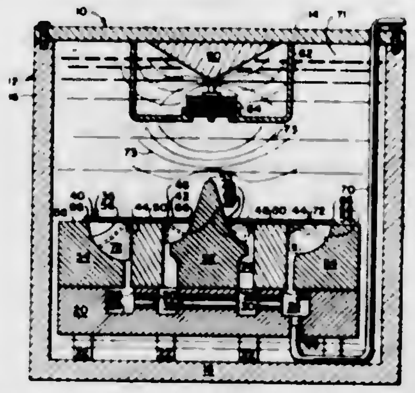
supplying a length of bare wire, a series of wire-drawing dies operable to draw the wire down to a final cross-sectional area at which the wire length is at least double its length at said source, means for continuously pulling the bare wire lengthwise from said source at a first linear speed and successively through said dies, said pulling means including a driven drawing capstan operable to pull the drawn wire from the dies at a linear speed at least double said first speed, a source of liquid insulating enamel, applicator means connected to said source for receiving liquid enamel therefrom and operable to coat said enamel on the wire, an oven for baking the coated enamel to a solid film on the wire, wire transport means for continuously pulling the elongated wire from said pulling means successively through the applicator means and the oven in multiple passes, whereby the wire in each pass receives a liquid coating which is baked on the wire prior to the next pass, said transport means including a second driven capstan in driving engagement with the wire passing from each alternate one of said passes to the next one of said passes, a power-driven packaging device for continuously taking up the coated wire from the transport means, and an operative connection between said capstans for driving said transport means at a rate to pull the elongated wire at said greater speed at which the drawn wire is pulled from the dies.



3,181,327
EXPLOSIVE EDGE-FORMING

Paul B. Barnett and Louis H. Knop, Glendora, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Apr. 10, 1961, Ser. No. 101,859
10 Claims. (Cl. 72—56)

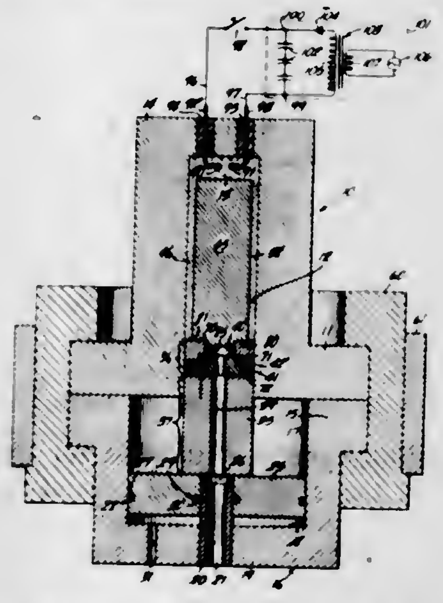


1. A method of edge-forming material comprising the steps of supporting the surface of the material, except the edge portions to be formed, on a die with a peripheral forming surface, immersing the material and the die in a fluid, initiating a shock wave in the fluid, channeling the shock wave against the unsupported edge portions of the material, and forcibly bending the unsupported edge portions by the shock wave into engagement with the peripheral forming surface of the die so that when the shock wave acts against the unsupported edge portions of the material, it forcibly guides the periphery of the unsupported edge portions of the material along respective curved surfaces of a corresponding guide member adjacent thereto to prevent dissipation of the shock wave past the periphery of the unsupported edge portions of the material.

3,181,328
SHOCK AIDED EXTRUSION

Alexander Zeitlin, White Plains, N.Y., assignor to Barogenics, Inc., New York, N.Y., a corporation of New York

Filed Nov. 9, 1962, Ser. No. 236,602
10 Claims. (Cl. 72—56)

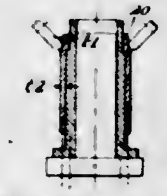


1. Apparatus for extruding an object comprising container means for said object, die means at one end of said container means, means to subject said object to a pressure sufficient to produce extrusion thereof from said container means through said die means once said extrusion has been initiated, and a shock pressure generator responsive to actuation thereof to subject said object to a shock wave of pressure supplementing said first named pressure and adapted in conjunction therewith to initiate said extrusion of said object.

3,181,329
METHOD OF FORMING RIBBED TUBES

Claus L. Sporck, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio

Continuation of application Ser. No. 53,488, Sept. 1, 1960. This application Oct. 8, 1963, Ser. No. 320,947
3 Claims. (Cl. 72—85)



1. The method of forming a cylindrically-shaped article with ribs spaced along the axis thereof comprising the steps of:

taking a cylindrically-shaped blank and forming a rib in the blank by applying a force on the blank along a helical path, the force being applied by imposing an inwardly directed radial force sequentially about the axis of the blank and simultaneously imposing an inwardly directed radial force sequentially along the axis of the blank, the forces being applied to inwardly neck a portion of the blank into a cylindrical shape, the necked portion having smaller inside and outside diameters than those of the unworked part of the blank, said necked portion constituting said rib;

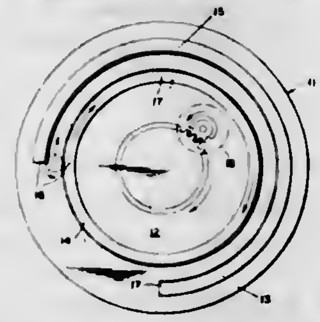
forming a wall in the blank by applying a force along a helical path, the force being applied by imposing on a section of said blank adjacent said rib an inwardly directed radial force sequentially about the axis and simultaneously imposing an inwardly directed radial force sequentially along the axis of the blank, the forces being applied to reduce the wall thickness of said adjacent section and to axially elongate the section, said reduced and elongated section constituting said wall; and

forming a second rib adjacent said wall by applying a force along a helical path, the force being applied by imposing on a section of said blank adjacent said wall an inwardly directed radial force sequentially about the axis of the blank and simultaneously imposing an inwardly directed radial force sequentially along the axis of the blank, the forces being applied to inwardly neck last said section into a cylindrical shape, the necked section having smaller inside and outside diameters than those of the unworked part of the blank, and last said necked section constituting said second rib.

3,181,330
SWAGE FORMING MACHINE

Daniel H. Prutton, 5305 W. 130th St., Cleveland 30, Ohio

Filed Sept. 12, 1960, Ser. No. 55,267
16 Claims. (Cl. 72—90)



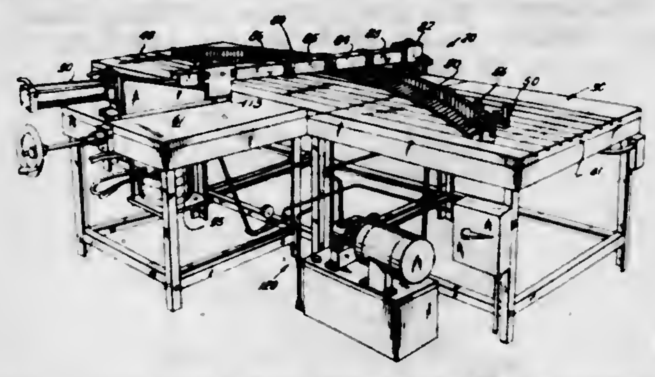
5. A machine comprising, in combination, first and second dies having an entrance end and an exit end, said first die having a first section extending from said entrance end toward said exit end, said second die having a second section extending from said entrance end toward said exit end, said first and second dies gradually converging toward each other from said entrance end to said exit end, said first and second sections each having teeth, at least part of the teeth on said first die having a pitch different from the pitch of the teeth on said second die, and means for relatively moving said dies in cooperation with a workpiece therebetween at said entrance ends to first have said dies form first teeth in an annular line on any said workpiece, and secondly said dies form teeth of a different pitch.

3,181,331
ARTICLE BENDING MACHINE

Eugene M. Wishing, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 27, 1962, Ser. No. 205,611
3 Claims. (Cl. 72—215)

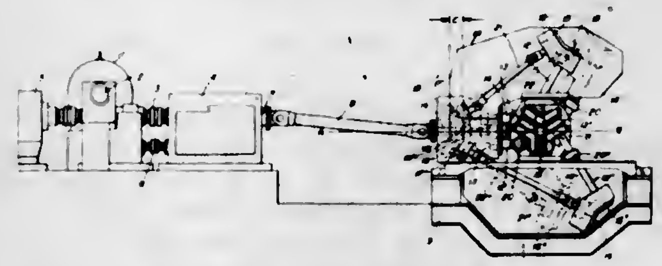
1. An article bending apparatus comprising a back up form having an enlogated surface of a predetermined contour; follower means operatively positioned to translate along a path established by said elongated surface; drive means operatively connected to said follower means and including power actuating means adapted to simultaneously move said follower means along said path, and force said follower means against said elongated surface with appreciable force; said follower means constructed to forcibly present an article to said elongated surface in a close relationship therewith, whereby the translation of said follower means along said path progressively urges the length of said article against said elongated surface; said drive means including an elongated arm motivating said follower means at the terminus thereof; said power actuating means moving said arm such that said follower means simultaneously sweeps the extent of said path and is radially varied to forcibly contact said elongated surface; said actuating means including a first and second actuating member; said first actuating member forcibly rotating said arm about a first axis operatively positioned to sweep said follower along the extent of said path; said second actuating member forcibly providing transverse movement of said follower along the axis of said arm to urge said follower towards said elongated surface; said transverse movement limited by the engagement of said follower and said elongated surface wherein; said first and second actuating members are interconnected to a common control circuit; said common central circuit providing a constant sweep motion substantially independent of the transverse movement of said arm.



3,181,332
ROLLING MILL HAVING PLURALITY OF ROLL HEADS

Walter vom Dorp, Rheydt, and Otto Gerhardus, Dusseldorf, Germany, assignors to Mannesmann-Meer Aktiengesellschaft, Dusseldorf, Germany, a German company

Filed Mar. 27, 1962, Ser. No. 182,772
Claims priority, application Germany, Mar. 27, 1961, M 48,520
7 Claims. (Cl. 72—224)



1. A rolling mill for rolling tubes and the like which is especially useful in processing thick wall material having high resistance to deformation, said mill comprising;

a plurality of roll heads arranged one behind the other in the direction of rolling, each roll head containing three cooperating rolls of the same caliber whose axes lie in a plane at right angles to the direction of rolling,

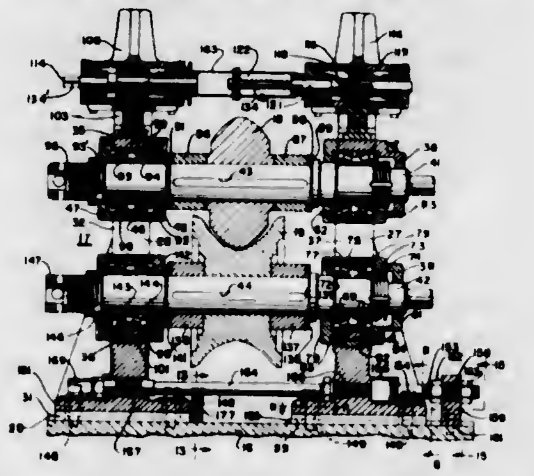
a plurality of input shafts connected to said roll heads at one side common to all drives for said rolls, said roll heads being provided in pairs, with the rolls of one head of each pair being positioned opposite rolls in the other head of the pair, there being one input shaft for each roll head in a pair,

a plurality of stands in which said roll heads are mounted, said stands each being open at one side, said side being common to all said stands and opposite the common side of the roll heads to which the input shafts are connected, in combination with shaft and gear means connected to said rolls for driving said rolls, said means comprising shafts disposed symmetrically about a horizontal plane containing the axis of the material being rolled, so that said shafts each have the same position as the mirror image of a corresponding shaft in an adjacent roll head, when said plane is considered a mirror.

3,181,333

ROLL STAND FOR A TUBING MILL

Ralph W. Hall, Cincinnati, Ohio, assignor to Textron, Inc., Cincinnati, Ohio, a corporation of Rhode Island
Filed Apr. 13, 1962, Ser. No. 187,263
6 Claims. (Cl. 72—240)

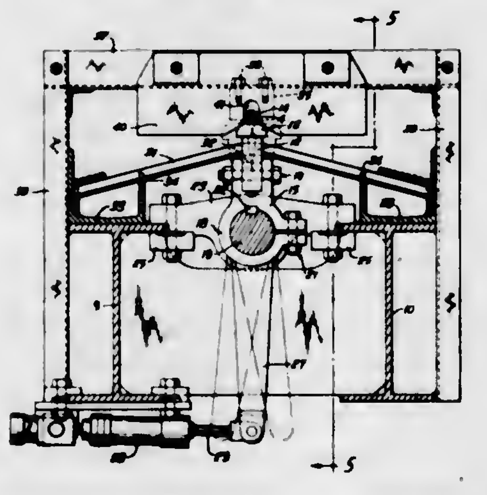


1. The combination of a roll stand including a base, a pair of columns mounted on said base, said base having an upwardly directed column supporting face, at least one of said columns being mounted on and being slideable crosswise of said face, bearings mounted in said columns, and roll shafts journalled in said bearings with a track mounted on said base and extending along said base, a carriage mounted on said track for moving along said base, the carriage having a main plate portion having an upper face alignable with said face of the base, a bracket mounted on the carriage, a threaded shaft rotatably mounted on said bracket, a cross arm mounted on and threaded to said threaded shaft, means on the cross arm for engaging the slideable column, and means for turning the threaded shaft to draw the slideable column onto the plate portion of the carriage to remove the slideable column from the roll shafts.

3,181,334

EXTRUSION APPARATUS

Richard E. Mattson, Milwaukee, and Bertil G. Winstrom, Mequon, Wis., assignors to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Mar. 16, 1962, Ser. No. 180,132
10 Claims. (Cl. 72—255)

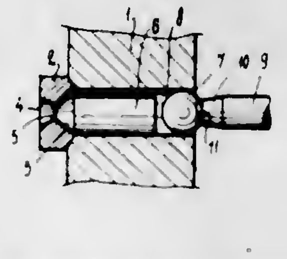


1. In a run-out assembly for a hot extruded wire-like element being extruded from a die assembly, said die assembly including means for severing said wire-like element in the vicinity thereof, a supporting framework, a series of supporting walls longitudinally aligned in end to end relation for supporting the complete length of the extruded wire-like element, longitudinal shafts secured in end to end relation in alignment with the supporting walls and rotatably mounted on the framework, mounting means secured to the shafts and to the supporting walls, arms secured to each mounting means and depending therefrom, means to selectively position the arms and cause said supporting wall to bodily tilt to opposite sides thereof, support means disposed on opposite sides of the supporting wall for receiving said extruded wire-like elements, and a series of run-out top wall members mounted in overlying relation to the supporting walls for the complete length of the supporting walls and having an inverted U-shaped groove aligned with the supporting walls to define a run-out passageway.

3,181,335

EXTRUSION APPARATUS

Rolf Dietrich Weber, Vasteras, Sweden, assignor to Aktiebolaget Svenska Metallverken, Vasteras, Sweden, a joint-stock company limited of Sweden
Filed Nov. 24, 1961, Ser. No. 154,681
Claims priority, application Sweden, Dec. 16, 1960, 12,193/60
8 Claims. (Cl. 72—273)

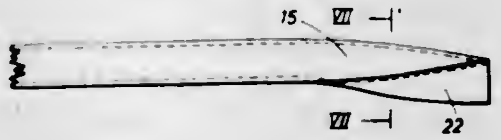


1. In an extrusion press wherein material is fed to a cylindrical chamber and forced through a die bounding said chamber by a ram, a ball shaped member between the ram and the material of a diameter less than that of the diameter of the chamber for limiting the transfer of force from the ram to the material substantially centrally of the latter, said ram being provided with a spherical bearing surface in which is partially accommodated said ball shaped member.

3,181,336

METHOD OF PRODUCING THE POINTED END OF A HYPODERMIC NEEDLE

Hubert Percival Schofield, Langdale, Hatchet Lane, Windsor Forest, England
Filed Nov. 15, 1961, Ser. No. 152,558
2 Claims. (Cl. 72—340)

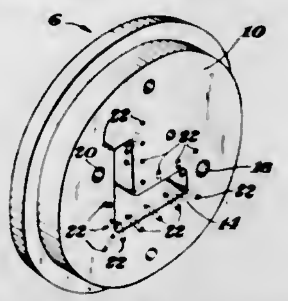


1. A method of producing the pointed end of a hypodermic needle comprising flattening an end portion of an axially bored hollow tube of deformable material to give said end portion a tapering configuration leading to a solid point with one ear-like projection extending laterally from one side of said tapering end portion and having two thicknesses of said material, and trimming-off said projection so as to provide one narrow slit opening laterally from the axial bore of the tube at the tapering end portion of the tube in back of said solid point.

3,181,337

PROCESS FOR PREPARING FINE GRAINED, HIGH STRENGTH EXTRUSIONS

George S. Foerster, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 7, 1962, Ser. No. 242,938
5 Claims. (Cl. 72—342)



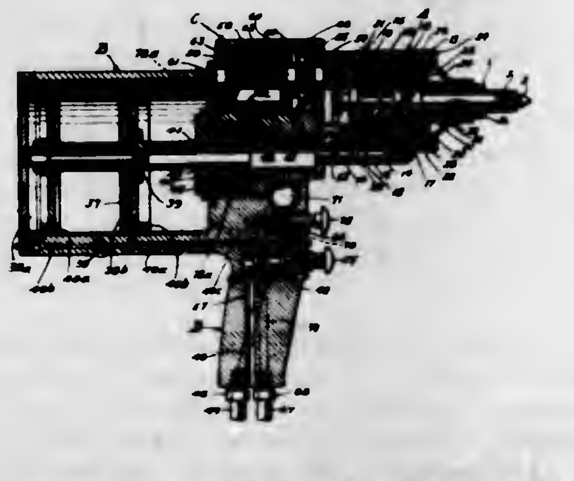
1. A method of making a fine grained extrude article of a magnesium-base alloy which comprises:

(*a*) providing an extrusion machine containing a die having an aperture and die land through which to die express an extrude, an internal cooling channel encircling said aperture but spaced therefrom and a multiplicity of uniformly spaced spray ports, said ports opening into a die relief cavity in the die and communicating with the cooling channel;
(*b*) extruding a magnesium-base alloy through said die;
(*c*) circulating coolant through the channel of the die of said extrusion machine during the extruding of said alloy;
(*d*) bleeding off through said spray ports a portion of said coolant circulating through said channel; and
(*e*) discharging said portion of coolant through said spray ports onto the extruded alloy as the extrude leaves the die land and enters the die relief cavity thereby rapidly and mildly spray quenching said extrude and producing a fine grained extrude article.

3,181,338

POWER HAND TOOL

Rune A. E. Zetterlund, Abington, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed July 26, 1962, Ser. No. 212,628
4 Claims. (Cl. 72—391)

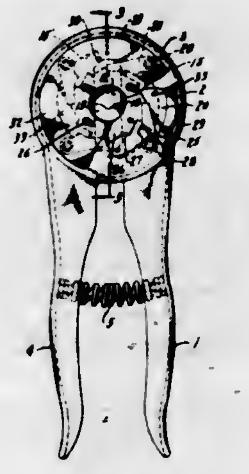


1. A power hand tool assembly for installing press nuts and the like, including a mandrel having an outer threaded end for receiving the internally threaded nut;
an anvil surrounding sand mandrel;
a first power system comprising a reversible air motor adapted to controllably impart rotation to the mandrel in clockwise and counter-clockwise directions;
a second power system independent of said first power system and including at least one axially movable pressure responsive piston for retracting the mandrel relative to the anvil;
a pneumatic pressure source for driving said first and second power systems;
a first conduit between said source and said first power system;
a second conduit between the source and the second power system; and
pressure regulator means in the second conduit for independently varying the pressure supplied to said second power system.

3,181,339

WRENCH FOR CRIMPING CONNECTORS

Harold H. Esser, Chicago, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware
Filed Dec. 1, 1961, Ser. No. 156,220
5 Claims. (Cl. 72—402)



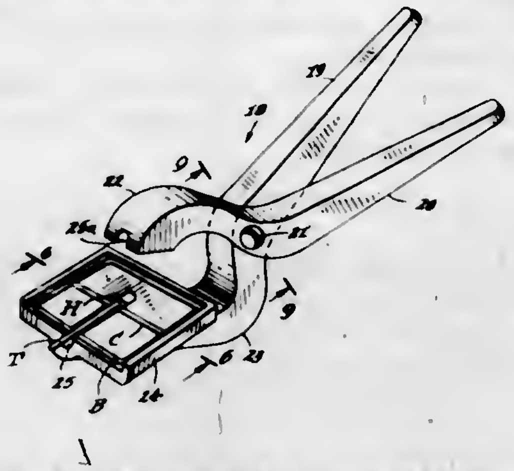
1. In a crimping tool for crimping sleeves for forming electrical connections, a cylindrical housing having a central passageway defining a crimping station in the housing to receive such sleeves, diametrically opposed cam surfaces on the inner wall of said housing, an annular die carrier freely rotatably positioned in the housing and spaced from the cam surfaces, a plurality of opposed crimping dies slidably seated in the carrier, said dies extending from the central opening of said annular die carrier to the outer periphery thereof and engaging said cam surfaces, a ratchet fixed to the carrier on the front side, front and back covers rotatably mounted on the housing and having central openings registering with the central opening in the annular die carrier, pawls pivotally joined to the front cover and biased by springs to engage the ratchet means to actuate the pawl and ratchet whereby reciprocal movements of said means rotate the die carrier so that the crimping dies are forced inwards as they engage the high points of the cam surfaces, and intercepting means to effect separation of the pawls from the ratchet when the handle is moved fully in one direction.

3,181,340

BUCKLE-TONGUE FASTENER

Herman H. Graetzmacher, 530 E. King, Kingsville, Tex.
Filed May 23, 1963, Ser. No. 282,740
1 Claim. (Cl. 72—409)

A buckle-tongue fastener of the class described for mounting a buckle tongue to a belt buckle comprising, in combination, an upper handle, a lower handle, a pivot member upon which said handles are made to hinge, an upper jaw in said lower handle and a lower jaw in said upper handle, a die on said lower jaw for removably mounting thereon said belt buckle, grooved means in each sad jaws to receive the hooked end of a buckle tongue and opening through the free ends of the jaws the grooved means in the upper jaw constituting a clearance groove, said grooved means being adapted to register when said jaws are closed, said lower and upper jaws being positioned centrally to said die, said die having a flat surface upon which a belt buckle may rest, a portion of said flat surface and the surface of said upper jaw which is provided with the grooved means being adapted to register when said jaws are closed to affix said buckle-tongue to said belt buckle.

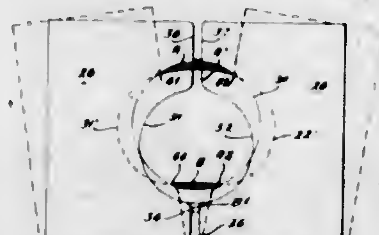


3,181,341
DIES FOR COMPRESSION TOOLS

John A. Thornton, St. Louis, and Carl G. Zemels, Clayton, Mo., assignors to James R. Kearney Corporation, St. Louis, Mo., a corporation of Delaware

Filed Oct. 4, 1961, Ser. No. 142,918

4 Claims. (Cl. 72—410)



4. A compression tool for securing a tubular compression fitting on a line conductor or wire comprising, a pair of jaws pivoted for relative movement, manually operated means for moving said jaws together and for multiplying the manual force applied to move said jaws, a pair of die pieces mounted one in each of said jaws, cooperating mating faces on said die pieces for engagement with opposite sides of said compression fitting and dimensioned to form a circumferential indentation in said tubular fitting when said jaws are brought together, said die pieces having active faces forming opposite cavities which are symmetrical with respect to each other but asymmetrical within themselves in that the active faces of the respective cavity halves nearer the jaw pivot converge together more pointedly in the direction toward said pivot than the active faces of the halves thereof remote from said pivot converge together in the direction away from said axis.

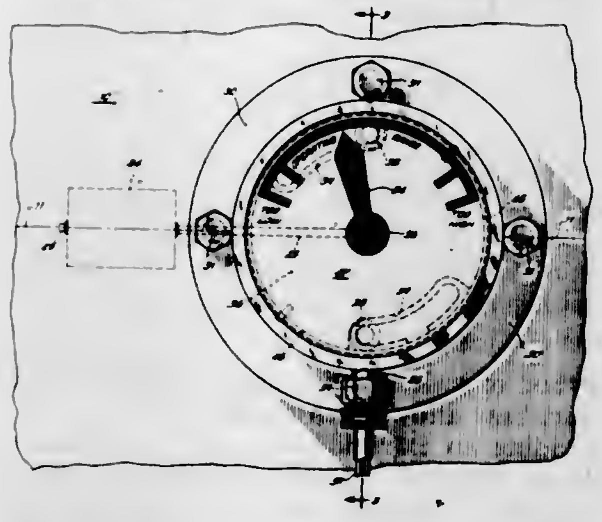
3,181,342
OIL GAUGE WITH TESTING FACILITY

Bernard A. Barengoltz, Pittsburgh, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Sept. 26, 1961, Ser. No. 140,931

7 Claims. (Cl. 73—1)

1. In apparatus comprising a closed tank containing a liquid and a liquid level inndicating device of the type having float means which is responsive to liquid level variation, movable indicator means operatively connected to said float means, and alarm means which is normally responsive to relatively extreme fluctuations of said float means; the improvement therein comprising, a gauge housing constructed and arranged in such a manner that it may be rotated with respect to said indicator means, means for mounting said gauge housing on the exterior of said tank so that it is normally stationary but may be rotated relative to said tank, alarm actuating means affixed to said gauge housing, and means fixedly associated with said indicator means and movable therewith for normally activating said alarm actuating means, wherein testing of said alarm means is accomplished by rotating said gauge housing with respect to said tank and to said indicating means to thereby cause said alarm actuating means to be activated by said means fixedly associated with said indicator means.



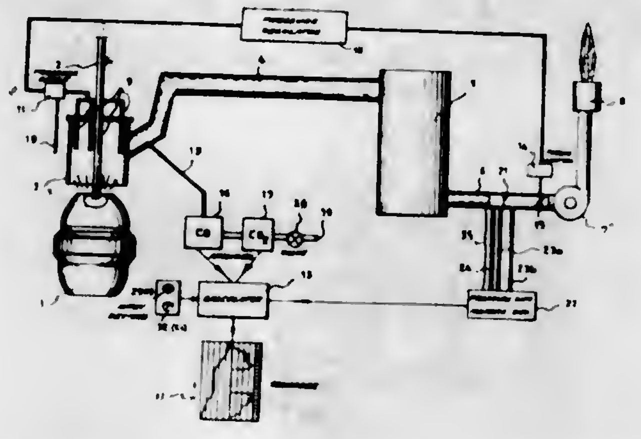
3,181,343
METHOD AND ARRANGEMENT FOR MEASURING CONTINUOUSLY THE CHANGE OF THE CARBON CONTENT OF A BATH OF MOLTEN METAL

Jacques Dumont Fillon, Metz-Queuleu, France, assignor to Institut de Recherches de la Siderurgie Francaise, St. Germain-èn-Laye, France

Filed July 24, 1962, Ser. No. 211,999

Claims priority, application France, Aug. 5, 1961, 870,286, Patent 1,309,212; Mar. 13, 1962, 890,868, Patent 81,514; Mar. 14, 1962, 891,032, Patent 1,325,024

25 Claims. (Cl. 73—23)



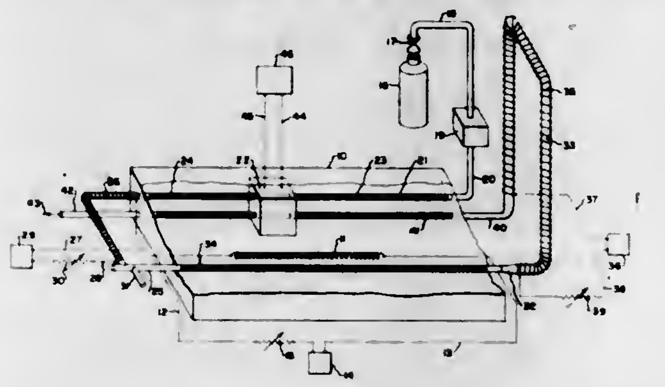
1. A method of measuring continuously the change of the carbon content of a bath of molten metal during decarburization thereof in a decarburization vessel under formation of CO and CO_2 in the absence of combustion of the CO subsequent to its formation, said bath of known weight having a known initial carbon content, comprising the steps of: continuously automatically determining the amount of gases per unit of time leaving said vessel in said decarburization process; continuously automatically determining the CO and CO_2 content of said gases; and continuously determining, by continuous integration of the content of CO and CO_2 in said amounts of gases over a period of time beginning with the start of the decarburization process, the corresponding total amount of carbon removed from the bath of molten metal during such period of time, the difference between said total amount of removed carbon and the initial carbon content of the bath being an indication of the carbon content still present in the metal bath at the end of said period of time.

3,181,344
CHROMATOGRAPHIC APPARATUS

Frank H. Burow, Cheswick, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Dec. 30, 1960, Ser. No. 79,602

2 Claims. (Cl. 73—23.1)



1. Analytical apparatus comprising in combination a carrier gas preheating conduit having an inlet and an outlet and containing a gas permeable mass of heat conductive metal particles, a carrier gas source, conduit means connecting said carrier gas source and the inlet of said carrier gas heating conduit, a sample vaporizing conduit having an inlet and an outlet and containing a gas permeable mass of heat conductive metal particles, means for heating said sample vaporizing conduit, conduit means connecting the outlet of said carrier gas heating conduit and the inlet of said sample vaporizing conduit, sample introduction means for introducing a sample of the mixture to be analyzed in unvaporized form into the conduit means connecting the carrier gas heating conduit and the sample vaporizing conduit, a chromatographic separating column having its inlet connected to the outlet of the sample vaporizing conduit, means independent of the aforesaid means for heating the sample vaporizing conduit and independent of the heating means hereinafter referred to for maintaining the carrier gas heating conduit and the effluent heating conduit at constant temperature, for raising the temperature of the chromatographic separating column in a controlled manner during passage therethrough of the components to be separated, detecting means sensitive to variations in the composition of the chromatographic separating column effluent, an effluent heating conduit containing a mass of gas permeable, heat conductive metal particles, said conduit connecting the outlet of the chromatographic separating column and the detecting means, and heating means common to said carrier gas heating conduit and said effluent heating conduit for maintaining these conduits at the same constant temperature.

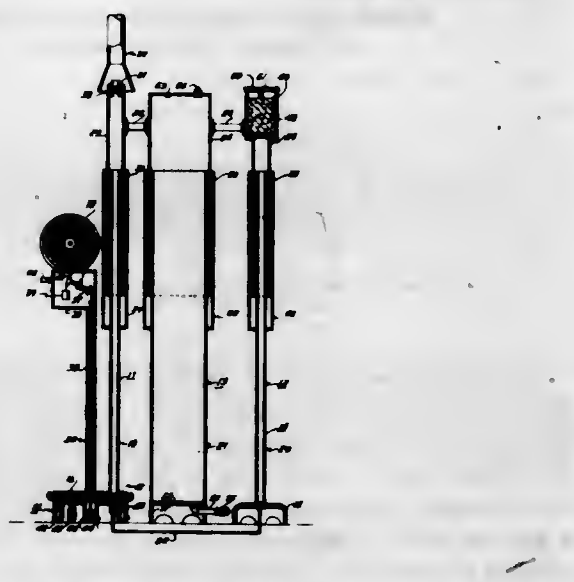
3,181,345
GAS GRAVITOMETERS

Joseph W. Bartlett, 11767 Valley Dale Drive, Dallas, Tex.

Filed Aug. 18, 1961, Ser. No. 132,385

9 Claims. (Cl. 73—30)

6. A gas gravitometer including a pair of upright columns of equal height and having open upper ends, each column having a pair of telescoping members so as to be variable in height, one of the columns having a gas to be tested flowing therethrough, the other of said columns containing air at ambient temperature, pressure-responsive means communicating with the lower ends of the lower members of said columns for actuation by the differences in pressures at the bases of said columns, means for recording the actuation of the pressure-responsive means, and compensating means responsive to variations in the ambient temperature and barometric pressure and having connection with the upper members of said columns for raising and lowering said members to increase and decrease the height of said columns in direct proportion to the ambient temperature and in inverse proportion to the barometric pressure.

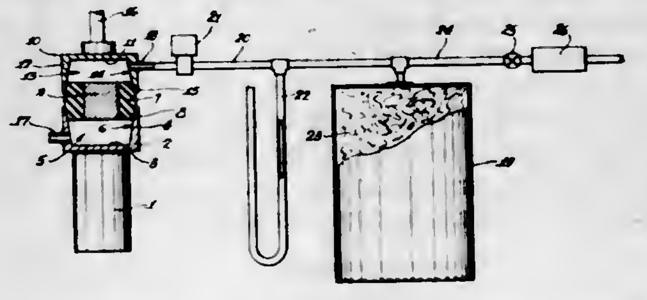


3,181,346
METHOD AND APPARATUS FOR MEASURING THE GAS PERMEABILITY OF PERMEABLE BODIES

Leslie J. Davies, Lachute, Quebec, Canada, assignor to Canadian Refractories Limited, Montreal, Quebec, Canada

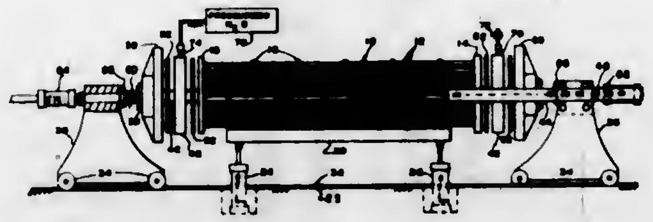
Filed Feb. 26, 1962, Ser. No. 175,528

1 Claim. (Cl. 73—38)



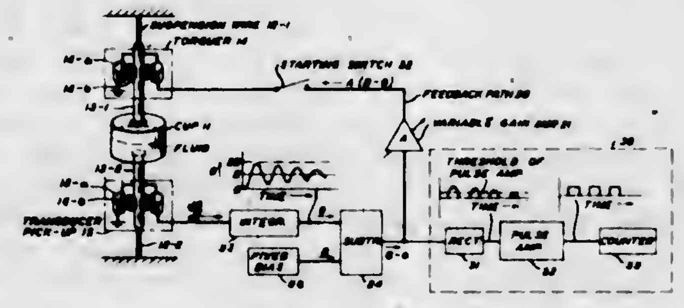
An apparatus for determining the gas permeability of a solid permeable body which comprises a sample holder having a gas transmitting chamber, a gas outlet chamber open to atmosphere, and a sample supporting member between said chambers, a gas delivery system comprising a gas reservoir, a gas feed tube leading from said reservoir to said gas transmitting chamber, and a gas supply conduit leading to said reservoir, a first valve in said gas feed tube, a second valve in said gas supply conduit, said valves being operable firstly to close said gas feed tube and open said gas supply conduit to charge said reservoir with gas and secondly to open said gas feed tube and close said gas supply conduit to place said reservoir in communication with said gas transmitting chamber, a manometer in said system between said valves, and means preventing a decrease in gas temperature due to gas expansion in said reservoir as a result of gas discharge from said system comprising, a mass of strands of a metal of a specific heat not substantially less than 0.08 calorie per gram per degrees C. substantially uniformly distributed throughout the interior of said reservoir, each said strand being in engagement with a plurality of others of said strands to provide a high surface to volume ratio, said mass in any transverse section thereof having a multiplicity of interconnecting gas passages.

3,181,347
TUBE BUNDLE TESTING EQUIPMENT
Robert L. Ohmstede, Beaumont, Tex., assignor to Ohmstede Machine Works, Inc., Beaumont, Tex., a corporation of Texas
Filed Apr. 5, 1962, Ser. No. 185,336
6 Claims. (Cl. 73—49.1)



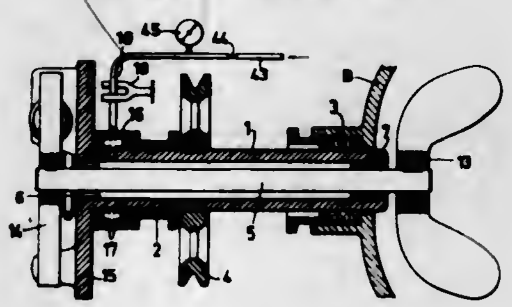
1. Apparatus for leak testing tube bundles each having a plurality of tubes held together and normally sealed at their ends to respective end plates through which the tubes open, comprising a pair of pressure plates having opposed faces spaced apart more than said end plates, a pair of sealing rings respectively for said faces, said rings having an external diameter substantially no greater than the outer diameter of the respective face and an internal diameter greater than the diameter formed by all the tube openings in the respective end plate, at least one of said rings having a fluid connection for communicating fluid between its interior and exterior, and means for applying pressure, while said tubes are disposed with their said end plates respectively adjacent the said pressure plates and the said rings are respectively disposed between adjacent end and pressure plates, to at least one of said pressure plates to cause them to move relatively toward each other and effect a fluid seal by said rings so that fluid entering via said connection under a given pressure can escape only if a leak exists in one of said tubes or a tube to end plate seal, wherein said pressure applying means includes a ram connected to the rear side of one of said pressure plates, a ram carriage normally movable in the longitudinal direction of said tubes, means for preventing movement of said carriage in a longitudinally outward direction from a given point, said ram being slidably mounted on said carriage and having means cooperating with said carriage for preventing movement of said ram relative to said carriage in the said longitudinal outward direction more than a predetermined amount.

3,181,348
SEMIDIRECT OSCILLATIONAL VISCOMETRY
John A. Lewis, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 5, 1962, Ser. No. 207,728
5 Claims. (Cl. 73—54)



1. Apparatus for determining the viscosity of a fluid which comprises
a container for the fluid,
means for oscillating said container,
means for varying the oscillation frequency of said container,
and means for obtaining an indication of the oscillation frequency having the maximum rate of decay,
whereby the viscosity of said fluid is directly proportional to the oscillation frequency having said maximum rate of decay.

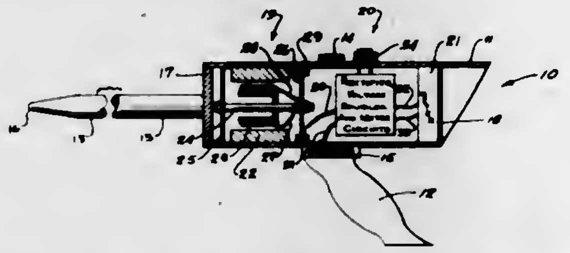
3,181,349
TORQUE SENSING APPARATUS FOR PULP SUSPENSIONS OR THE LIKE
Johannes Gerhard Jansson, Stockholm, Sweden, assignor to AB A. Ekströms Maskinaffär, Stockholm, Sweden, a joint-stock company of Sweden
Filed Apr. 15, 1963, Ser. No. 273,104
Claims priority, application Sweden, Apr. 27, 1962, 4,777/62
4 Claims. (Cl. 73—59)



1. A torque sensing apparatus for use in determining the density of a solution, said apparatus comprising a container for the solution, a tubular shaft rotatably mounted in a wall of said container and projecting exteriorly thereof, means to drive said shaft, means to seal said shaft against leakage from said container, a second shaft rotatably mounted within said tubular shaft, the inner end of said second shaft projecting inwardly of the inner end of said tubular shaft into said container, the outer end of said second shaft projecting outwardly of the outer end of said tubular shaft, means to prevent leakage between said second shaft and said tubular shaft, a rotor fixed to the inner end of said second shaft, vanes on said rotor, a disk fixed to the outer end of said tubular shaft, a cross arm fixed to the outer end of said second shaft, yieldable means interposed between one arm of said cross arm and said disk for transmitting torque from said disk to said cross arm and for yieldably opposing relative rotary movement of said cross arm with respect to said disk, fluid pressure operated expansible and contractable means mounted on said disk and engaging the other end of said cross arm, contraction of said last named means permitting movement of said cross arm with respect to said disk in a direction opposite to the direction of rotation of said disk and expansion of said last named means moving said cross arm with respect to said disk in the same direction as the direction of rotation of said disk, a nozzle fixed to said disk, means connecting said nozzle to a source of fluid pressure, a conduit connecting said nozzle and said expansible and contractable means, said nozzle having an exhaust opening, a valve for controlling flow through said exhaust opening, said valve being disposed in the path of movement of said other arm of said cross arm, spring means urging said valve toward closed position, said valve serving to control fluid pressure in said expansible and contractable means, and indicating means responsive to the pressure in said expansible means.

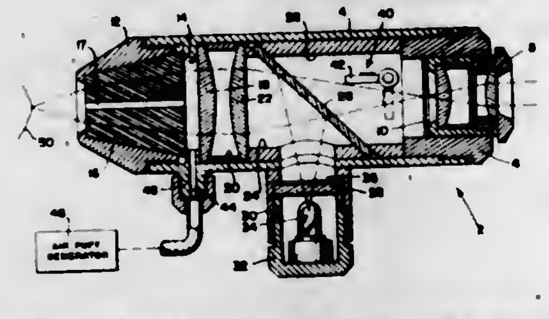
3,181,350
PORTABLE CLASSIFIER FOR UNBALANCE
Glen H. Thomas, Columbus, and Robert S. Morrow, Worthington, Ohio, assignors to International Research and Development Corporation, Worthington, Ohio, a corporation of Ohio
Filed Apr. 18, 1963, Ser. No. 273,935
2 Claims. (Cl. 73—71.2)

1. A portable engine unbalance classifier comprising:
a portable casing containing:
a transducer resonant to a selected frequency of vibration to be classified, said transducer being adapted to vibrate in harmony with a vibration source as the said vibration source changes speed through a spectrum of frequencies including the said selected frequency, and to deliver an alternating electrical signal corresponding in frequency with the said vibration source and having an amplitude corresponding with the amplitude of the said vibration source;
a pair of transducer terminals to which the said transducer signal is delivered;
three circuits connected in parallel with each other across the said transducer terminals as follows:
a first circuit comprising a damping resistor;
a second circuit comprising in series a first rectifier diode, a first output terminal and a first capacitor;
a third circuit comprising in series a second rectifier diode, a second output terminal and a second capacitor;



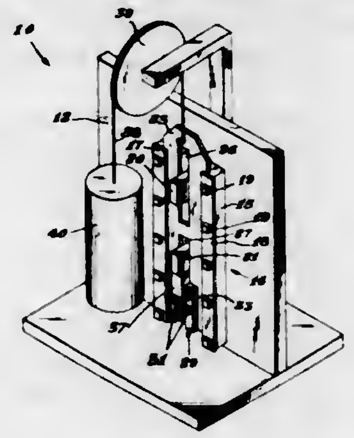
a meter circuit connected between the said first and second output terminals and comprising in series an ammeter and a normally open switch;
the said first and second capacitor being connected in series between the said first and second output terminals;
the anode of said first rectifier diode and the cathode of the said second rectifier diode being connected to the same one of said transducer terminal;
whereby the said two capacitors develop additive charges and hold a charge which is approximately double the direct current equivalent of the highest amplitude of the said alternating signal; and
whereby the said capacitors discharge through the said ammeter when the said normally open switch is closed to present an indication of the amplitude of vibration at the said frequency of vibration.

3,181,351
NON-CONTACTING TONOMETER
Norman L. Stauffer, Denver, Colo., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 6, 1962, Ser. No. 235,723
10 Claims. (Cl. 73—80)



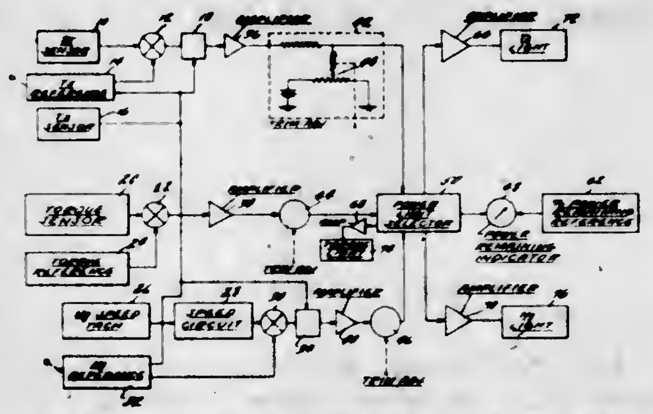
1. A non-contacting tonometer comprising an elongated main body member, means defining an optical path coaxial with said body member, said path defining means including an optical eyepiece at one end of said body member and objective lens means within said body member, a light source means, means for injecting a light beam from said source means into said body member to coincide with said optical path, said objective lens means being arranged to focus said beam to form a first image of said source a slight distance beyond the end of said tonometer opposite from said eyepiece, said tonometer being positionable adjacent an eyeball to be tested whereat said first image is formed on said eyeball, said beam being reflected back into said tonometer by said eyeball to form a reflected beam, said objective lens means being effective to focus said reflected beam to produce a reflected image of said image at the focus of said eyepiece whereby to determine when said tonometer is properly positioned relative to said eyeball, a photocell, means for causing at least a part of said reflected beam to fall on said photocell, and means associated with the end of said tonometer opposite from said eyepiece for directing a predetermined puff of air against said eyeball to momentatrily deform said eyeball at the place of the formation of said first image thereon.

3,181,352
MACHINABILITY TESTER FOR FOAM PLASTIC
Masao Nakamura and Donald J. McKenney, Midland, and Allen L. Butzin, Linwood, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 20, 1962, Ser. No. 211,200
5 Claims. (Cl. 73—101)



1. A method of determining the machinability of rigid foam plastic bodies comprising providing a body of rigid foam plastic material to be tested, forcing into said body of foam plastic material a blade, said blade comprising a generally flat body, said flat body having a thickness of from about 1 mil to about 250 mils and at least one blunt cutting edge, exposing at least one of the foam surfaces generated by said blade and determining the surface roughness thereof.

3,181,353
POWER REMAINING INDICATOR
Charles B. Brahm, Ellington, and Richard F. Gamble, Simsbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 4, 1963, Ser. No. 255,815
19 Claims. (Cl. 73—116)



1. A power remaining computer for a gas generator having at least one turbine driving a compressor comprising:
means for sensing a first power limiting operating parameter of the gas generator,

means responsive to said first parameter sensing means for providing a first signal proportional to power output of the gas generator as a function of said first parameter,

means for sensing a second power limiting operating parameter of the gas generator,

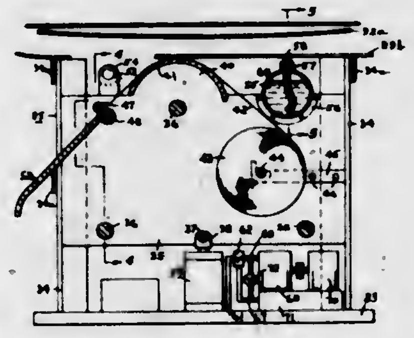
means responsive to said second parameter sensing means for providing a second signal proportional to power output of the gas generator as a function of said second parameter,

means responsive to said first and second power output signals for selecting the one of said signals which corresponds to the operating parameter which is nearest to its power output limiting value, and

means responsive to said selected power output signal for producing an indication of the remaining power available from the gas generator.

3,181,354
APPARATUS AND METHOD FOR DETECTING CORD LENGTH IRREGULARITIES IN CREELS

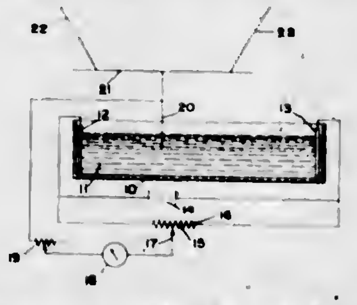
Louis J. Cashore, 113 E. 7th Ave., Conshohocken, Pa.
Filed July 9, 1962, Ser. No. 208,339
13 Claims. (Cl. 73—159)



1. A method of marking out of plane cords in an array of moving cords normally disposed in parallel extending fashion in a common plane which intersects the vertical to a substantial degree, consisting of the steps of, disposing a cord marking medium beneath the cord array common plane in non-contacting spaced parallel relation thereto across the full transverse span of said cord array so that any cord which drops below the normal common plane of said cord array contacts said medium and is marked thereby to indicate an abnormal condition thereof.

3,181,355
DISPLACEMENT MEASURING TRANSDUCER

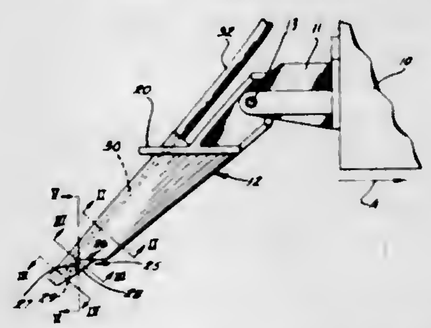
Alexander G. Dallas, 2034 Pratt St., Philadelphia, Pa., and John L. Figgles, 63 Thallabush Lane, Levittown, Pa.
Filed Nov. 14, 1962, Ser. No. 237,771
3 Claims. (Cl. 73—167)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a displacement measuring transducer, the combination of, a pendulum, means resiliently supporting said pendulum in a predetermined position of rest for linear movement therefrom, a nonconductive vessel having conductive plates therein spaced in the line of movement of said pendulum and containing a solution having a known resistance per unit distance between said plates, a probe fixed to and movable with said pendulum and extending into said solution at a point intermediate said plates, means for applying voltage between said plates, a potentiometer connected between said plates and having a movable contact adjustable to a point where its voltage is identical with that of said probe, and means connected between said probe and said contact for measuring departure of said probe from said point.

3,181,356
PITOT TUBE

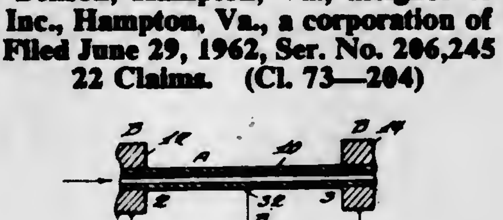
William R. Carpenter, Muskegon, Mich., assignor to Carpenter Corporation, a corporation of Michigan
Filed Oct. 24, 1962, Ser. No. 232,747
4 Claims. (Cl. 73—182)



1. In a Pitot tube type device for actuating a marine speedometer, a body member, said body member being inclined downwardly and rearwardly and having a conduit adapted to be connected to the speedometer; said body member having a sharp, knifelike leading edge offset to one side of the body and inclined similarly to said body member; said body member having a forwardly opening recessed pocket therein adjacent its lower end; a water receiving aperture communicating with said conduit and opening horizontally and forwardly into said pocket, said pocket having a horizontal upper wall; a guard fin offset to the same side of said body member as said leading edge and closing one side of said pocket and situated to one side of said aperture and projecting a substantial distance ahead of the opening of said aperture into said pocket for sweeping weeds from the water before they can enter said aperture, said guard fin being recessed rearwardly from said leading edge and said upper wall extending forwardly of said guard fin to said leading edge whereby turbulence in the flow pattern of water at said aperture is eliminated.

3,181,357
THERMAL FLOWMETER

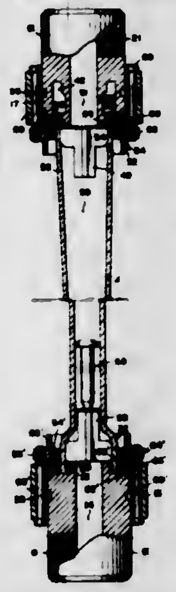
James M. Benson, Hampton, Va., assignor to Hastings-Raydist, Inc., Hampton, Va., a corporation of Virginia
Filed June 29, 1962, Ser. No. 206,245
22 Claims. (Cl. 73—204)



1. In a fluid flowmeter, a section of electrically and thermally conductive conduit of given length for flow of fluid therethrough having first and second ends, heat sink means thermally coupled to said conduit ends, means for heating the conduit section intermediate said ends by passage of electrical heating current through the material forming said conduit in at least a portion of said conduit section intermediate said ends, and a thermocouple circuit for measuring the temperature of at least one point spaced between the heat sinks and along the length of said conduit section, the thermocouple circuit having at least a portion of the conduit as a part thereof and connected with the conduit at at least one dissimilar material thermocouple junction so positioned along the conduit section in respect to the circuit of the heating current as to preclude passage of heating current through the portion of the thermocouple circuit external to the conduit.

3,181,358
FLOWMETER

Eugene P. Busillo, Huntingdon Valley, Pa., assignor to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1962, Ser. No. 230,037
6 Claims. (Cl. 73—209)



2. A flowmeter comprising a pair of mounting assemblies, a metering tube, and a flow indicating element within said tube, each of said assemblies including a pair of elements providing an annular socket, packing means within said socket, and means urging said elements towards each other to compress said packing means and urge said means into fluid-tight engagement with the exterior surface of an end of said tube, said packing means including a cylindrical element of flexible plastic material engageable with the tube end, at least one of said assemblies providing a clearance space into which, upon release of compression on the packing means, the corresponding end of the tube may enter by sliding movement relative to said cylindrical element to clear its other end from the corresponding packing means, said cylindrical element being flexible to allow tilting of the tube for removal thereof.

3,181,359
FLOW RATE TRANSMITTER

Gordon E. Osterstrom, Winnetka, Ill., assignor to GPE Controls, Inc., Chicago, Ill., a corporation of Illinois
Filed May 18, 1961, Ser. No. 110,984
1 Claim. (Cl. 73—211)

Apparatus for producing a direct voltage output signal proportional with the rate of flow of fluid past an orifice in a first conduit comprising,

a differential pressure-to-force transducer including a diaphragm and a movable rod element connected to said diaphragm;

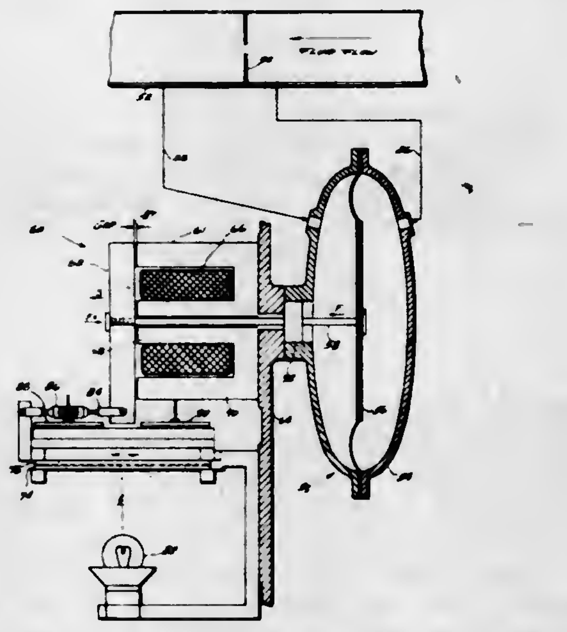
a pair of second conduits, each respectively directly connected to said first conduit on opposite sides of said orifice and to said differential pressure-to-force transducer on opposite sides of said diaphragm;

a photo electric displacement-to-electrical signal transducer including a movable mask, a fixed mask, a light source and first and second photo-detectors, each of said masks having alternate apertures and opaque portions on opposite sides of the center of said mask;

means securing said movable mask to said movable rod element, thereby defining a first plane;

means rigidly positioning said fixed mask in a second plane substantially parallel to, but spaced apart from, said movable mask defining said first plane;

further means positioning said light source on one side of said first and second planes and said first and second photo-detectors on the opposite side of said first and second planes, said first and second photo-detectors being symmetrically positioned about said center of said masks;



circuit means electrically connecting the output of each of said first and second photo-detectors in an electronic balanced bridge arrangement to provide a direct voltage signal in order that a translation of said movable mask increases the quantity of light incident upon said first photo-detector through said masks from said source while simultaneously decreasing the quantity of light incident upon said second photo-detector through said masks from said source as said movable mask is translated in a first direction, thereby decreasing the impedance of one of said photo-detectors and simultaneously increasing the impedance of the other of said photo-detectors so as to modify the magnitude of said direct voltage signal as said movable mask is translated relative to said fixed mask;

an amplifier coupled to said direct voltage signal generated by said balanced bridge arrangement for providing an output signal; and

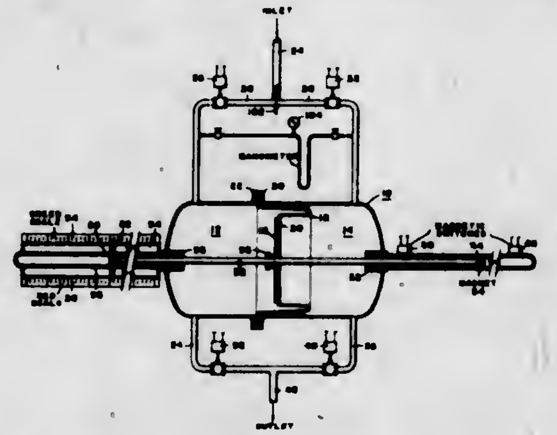
a force motor connected to be operated by said output signal and further connected to apply a rebalancing force to said movable rod element, said force motor comprising an electromagnet having a winding connected to be excited by said output signal and an armature including an element of magnetic material arranged to be attracted by said electromagnet, said armature being mechanically connected to said movable rod element to apply said rebalancing force to said movable rod element and said diaphragm.

3,181,360
GAS DISPLACEMENT METER

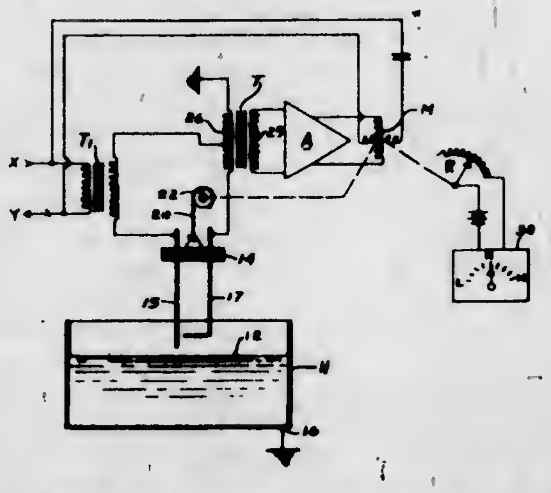
Fred Hederhorst, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Dec. 8, 1961, Ser. No. 158,024
3 Claims. (Cl. 73—270)

3. A continuous flow gas displacement meter comprising: a housing; a flexible member mounted within said housing so as to provide a first chamber and a second chamber in said housing; a first chamber gas inlet

line and a second chamber gas inlet line; a first chamber gas outlet line and a second chamber gas outlet line; a solenoid valve in each of said gas inlet lines, and a solenoid valve in each of said gas outlet lines; a shaft having a magnet on its outer end, said shaft being connected to the flexible member for reciprocal movement therewith, said shaft also extending out of said housing; a first magnetic switch located so as to be actuated when the shaft moves to its outermost position; a second magnetic switch located so as to be actuated when the shaft moves to its innermost position; and an electrical circuit including said first and second magnetic switches, said first magnetic switch being closed by movement of the shaft to its outermost position so as to close the first chamber gas inlet valve and the second chamber gas outlet valve, and open the second chamber gas inlet valve and first chamber gas outlet valve, the position of each of said valves being reversed when said first magnetic switch is opened, said second magnetic switch being closed when the shaft is moved to its innermost position, and an indicator actuated each time the second magnetic switch is closed.

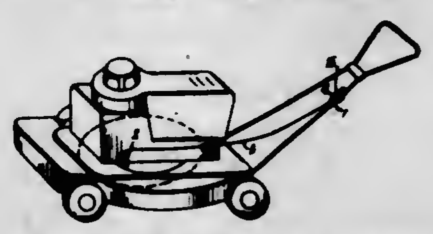


3,181,361
LIQUID LEVEL MEASURING SYSTEM
Allen N. Bell, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Sept. 21, 1962, Ser. No. 225,312
2 Claims. (Cl. 73—290)



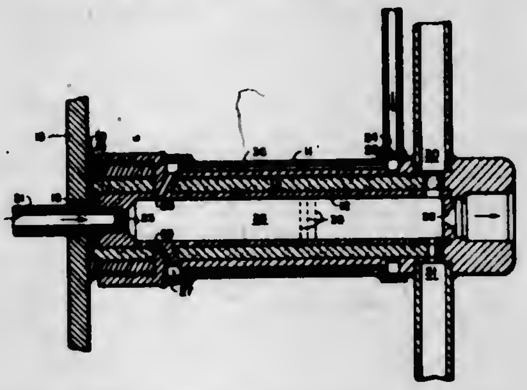
1. In a system for measuring the level of an electrically conductive liquid, a vertically movable probe arranged thereover in spaced relation therewith forming a spark gap between the probe and the liquid, a motor for vertically moving said probe, means providing a reference spark gap, a circuit for operating said motor in one direction including one of such gaps and one part of the primary windings of a transformer, and a circuit for operating said motor in the reverse direction including the other of said gaps and another part of said primary winding, whereby as the level of the liquid is raised, one of said circuits is activated and as the level of the liquid is lowered, the other of said circuits is activated.

3,181,362
CONVERTIBLE OIL FEED PLUG AND VISIBLE OIL LEVEL AND RESERVOIR KIT
George F. McKenney, Turner Road, Auburn, Maine
Filed Oct. 25, 1961, Ser. No. 147,693
1 Claim. (Cl. 73—303)



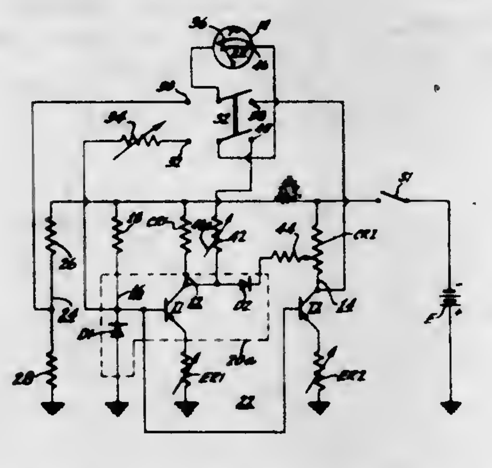
A kit for providing a visible oil level and reservoir for a four-cycle gasoline motor including a container through which oil may be viewed, means adapted to clamp said container to a selected element remote from said motor, an oil line, said oil line connected to said container, a convertible oil feed plug adapted to fit the oil inlet opening of a four-cycle gasoline motor, including means adapted to receive said oil line, a length within said plug adapted to deliver oil to a shallow receptacle; said length opening into the apex of a cone within said plug, and a removable delivery tube adapted to deliver oil to a deeper receptacle and adapted to be removably held by said length and extending through the enlarged exterior.

3,181,363
CALORIMETRIC TEMPERATURE MEASURING DEVICE
Robert B. Edmonson, Upland, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Jan. 25, 1963, Ser. No. 253,954
4 Claims. (Cl. 73—339)



1. A sonic flow temperature measuring and control device comprising:
insulated plenum chamber means;
first critical nozzle means for introducing a gas of known mass flow rate and pressure and unknown temperature into said chamber;
second critical nozzle means for introducing a diluent gas of known mass flow rate, temperature and pressure into said chamber adjacent said first critical nozzle means, said second critical nozzle means exiting into a manifold formed in the wall of said chamber means;
a plurality of passages connecting said manifold and said chamber;
exit critical nozzle means in said chamber remote from said first critical nozzle means for determining the mass flow rate of gas from said chamber;
pressure and temperature measuring means in said chamber adjacent said exit critical nozzle means whereby said unknown temperature may be determined from the known enthalpy-pressure-temperature data;
mixing means in said chamber intermediate said first critical nozzle means and said pressure and temperature measuring means for effecting improved intermixture of gases introduced into said chamber; and
passage means extending along the outer periphery of the insulated chamber means, said passage means extending from a point adjacent said pressure and temperature measuring means to said manifold whereby said diluent gas may reclaim heat having penetrated through said insulated chamber.

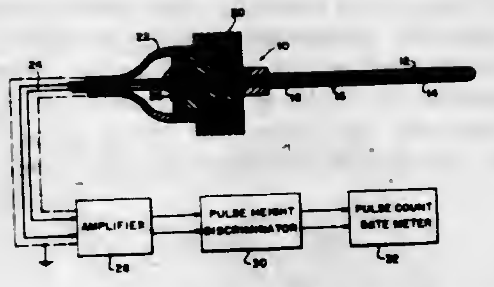
3,181,364
APPARATUS FOR MEASURING DIFFERENTIAL TEMPERATURE
Loy E. Barton, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 31, 1962, Ser. No. 213,750
11 Claims. (Cl. 73—342)



1. Apparatus to indicate the difference in temperature between two spaced apart points, said apparatus comprising
(*a*) a pair of substantially similar transistors connected in a pair of substantially similar parallel circuits, respectively,
(*b*) bias means to provide a voltage that varies inversely with temperature,
(*c*) means connecting said bias means to each of said transistors to bias them similarly for conduction of current the conduction of current through said transistors being a function of their temperatures, one of said transistors being adapted to be disposed at one of said two points, said bias means being physically adjacent to said one transistor and tending to bias said one transistor to become less conductive when an increase in temperature tends to make said one transistor more conductive, and vice versa, whereby to maintain the current through said one transistor substantially constant over a range of temperatures, the other of said transistors being adapted to be disposed at the other of said two points, and
(*d*) indicating means connected between said parallel circuits to indicate said difference in temperature as a function of the difference in conduction of current through said transistors.

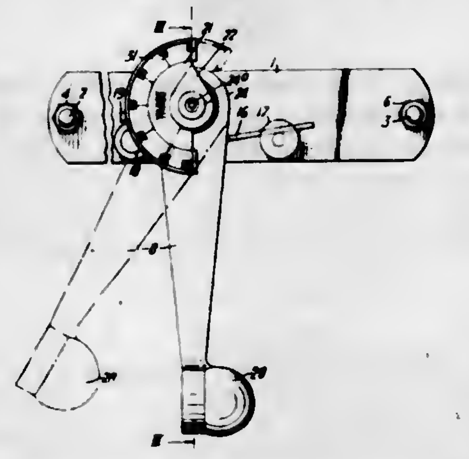
3,181,365
THERMAL NOISE INVESTIGATION
Ralph Carroll Maninger, Los Altos, Calif., assignor to General Precision, Inc., a corporation of Delaware
Filed Jan. 9, 1961, Ser. No. 81,408
8 Claims. (Cl. 73—362)

1. A temperature measuring instrument comprising:
a thermal noise generating resistance element for producing a random thermal noise voltage in response to external energy applied to said element,
electronic threshold circuitry coupled to said resistance element for applying an arbitrary preselected threshold voltage to said random thermal noise voltage generated by said resistance elment, and



means coupled to said threshold circuitry for determining the rate at which the amplitude peaks of said thermal noise voltage exceed said threshold voltage.

3,181,366
MECHANICAL AIDS TO PRACTISING GOLF
Christopher Collaro, "Polyantha," 16 Rose Walk, Woodcote, Purley, Surrey, England
Filed May 28, 1962, Ser. No. 198,360
Claims priority, application Great Britain, June 12, 1961, 21,150/61
3 Claims. (Cl. 73—381)

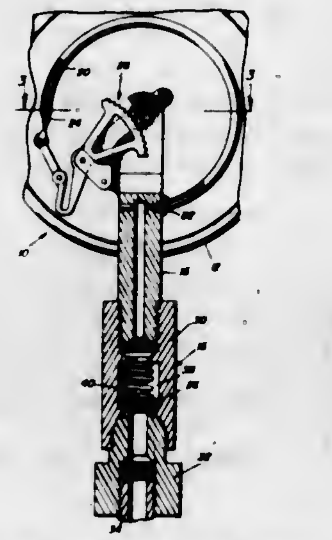


1. A mechanical golf aid comprising a base, a pivot pin rigidly fixed to said base, a substantially rigid arm having first and second ends, said first end being pivotally mounted on said pin, a part simulating a golf ball on said second end, a coiled torsion spring surrounding said pin, means anchoring one end of said spring to said base and the other end of said spring acting on said arm to resist turning thereof about said pivot pin, first and second abutment members mounted on said pivot pin, first inter-engaging means on said pin and said abutment members preventing rotation of said members but allowing axial movement thereof, a rotary indicator mounted on said pin between and frictionally engaging said abutment members, additional spring means urging said abutment members into contact with said indicator to restrain the movement thereof and second interengaging means on said arm and said indicator, said second interengaging means being positioned to come into contact with each other to move said indicator with said arm when said arm swings in a direction against the action of said torsion spring but move out of contact on reverse movement of said arm, whereby when said arm is swung by striking said golf ball simulating part, said indicator moves to a position indicating the magnitude of the angular movement of said arm and is there retained by the frictional grip of said abutment members.

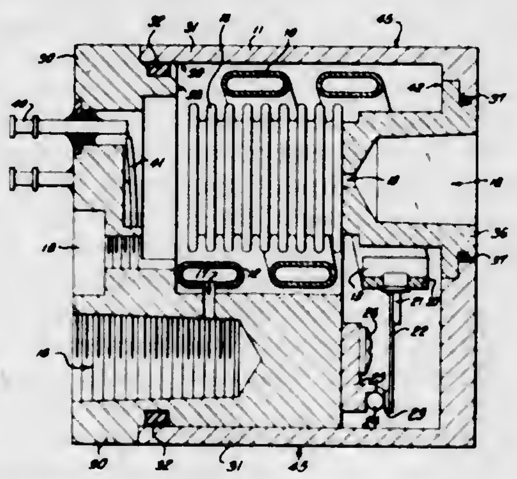
3,181,367
HIGH PRESSURE BAROMETER
Daniel Parilla, 331 S. 1st St., Brooklyn, N.Y.
Filed July 13, 1961, Ser. No. 123,747
2 Claims. (Cl. 73—396)

1. A method of detecting directional increase in fluid pressure from a reference pressure for charting pressure patterns comprising the steps of: exposing a high pressure barometer to a reference pressure of the fluid medium

at a starting point; trapping fluid under reference pressure within the barometer thereby permitting only fluid under pressure exceeding said reference pressure to enter the barometer to increase the pressure of fluid trapped therein; moving the barometer along paths of unknown pressure variation in different charting directions within the fluid medium from said starting point; returning the barometer to said starting point along each of the said paths; and comparing the readings of the barometer prior to movement thereof and following return thereof of each path for detecting the directions of increasing pressures from said starting point to chart a pressure pattern.



3,181,368
FLUID PRESSURE TRANSDUCER
Ralph S. Cass, Azusa, and Richard W. Goetz, Temple City, Calif., assignors to Edcliff Instruments, Inc., Monrovia, Calif., a corporation of California
Filed Apr. 5, 1962, Ser. No. 185,371
15 Claims. (Cl. 73—412)



1. A fluid pressure transducer, comprising:

(*a*) a housing,

(*b*) hollow helical pressure sensing means disposed within the housing having a first end attached to the housing and a second end free to move within the housing,

(*c*) the first end of the helical pressure sensing means defining an opening communicating with the interior thereof and adapted to be selectively opened and closed,

(*d*) the second end of the helical pressure sensing means being closed and adapted to be deflected in response to a pressure differential between a pressure applied to the interior of the helical pressure sensing means and a pressure applied to the exterior of the helical pressure sensing means,

(*e*) a compressible bellows disposed within the housing and adapted to expand and contract in response to a pressure differential between a pressure applied to the interior of the belows and a pressure applied to the exterior of the bellows,

(*f*) the helical pressure sensing means being disposed around at least a portion of the bellows,

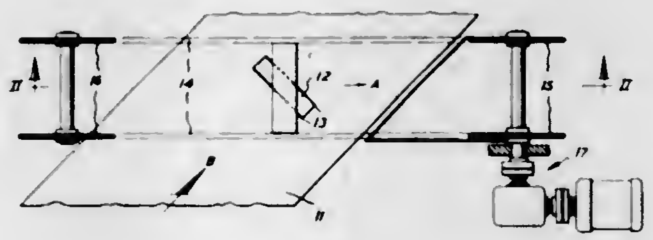
(*g*) damping oil filling the housing,

(*h*) first pressure inlet means adapted to communicate with the opening defined by the first end of the helical pressure sensing means,

(*i*) second pressure inlet means adapted to communicate with the interior of the compressible bellows, and

(*j*) measuring means for measuring the deflection of the second end of the helical pressure sensing means.

3,181,369
SAMPLING DEVICE FOR BULK MATERIALS
Wilfred Taylor, Newcastle-upon-Tyne, England, assignor to The Birmingham Small Arms Company Limited, Birmingham, England, a British company
Filed Mar. 8, 1962, Ser. No. 178,384
10 Claims. (Cl. 73—421)

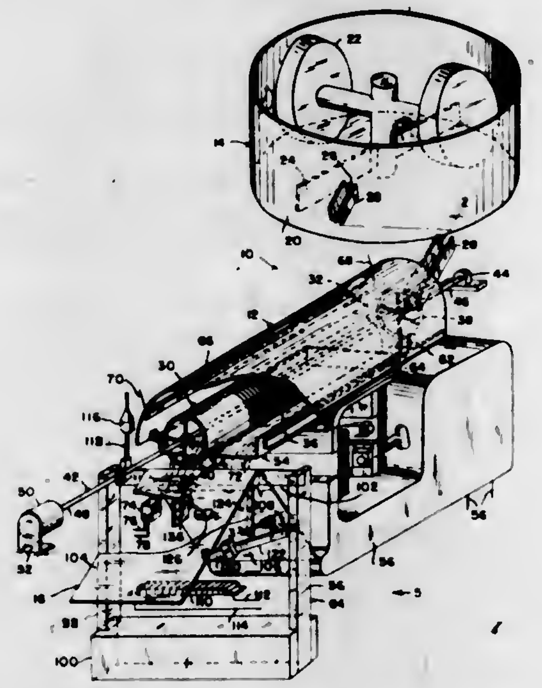


1. In a bulk material sampling device, a longitudinally-movable bulk material handling belt, at least one rotatable sprocket wheel situated above each edge of the belt, a chain assembly comprising at least one endless chain, the chain assembly drivingly engaging at least one sprocket wheel above each edge of the belt, a sampling implement supported on the chain assembly, said sampling implement being constructed to remove from the belt a transverse section of the moving material when moved across the belt, and the sprocket wheels being so mounted in relation to the belt that the lower run of the chain crosses the belt in a direction inclined to the direction of movement of the belt at an angle less than a right angle, belt driving means engaging the belt, sprocket wheel driving means engaging at least one sprocket wheel to drive the sampling implement across the belt at a speed substantially equal to the product of the speed of the belt and the secant of the angle of inclination between the direction of movement of the belt and the run of the chain.

3,181,370
MOLDABILITY RECORDER
Harry W. Dietert, Kerrville, Tex., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan
Filed July 9, 1962, Ser. No. 208,526
7 Claims. (Cl. 73—432)

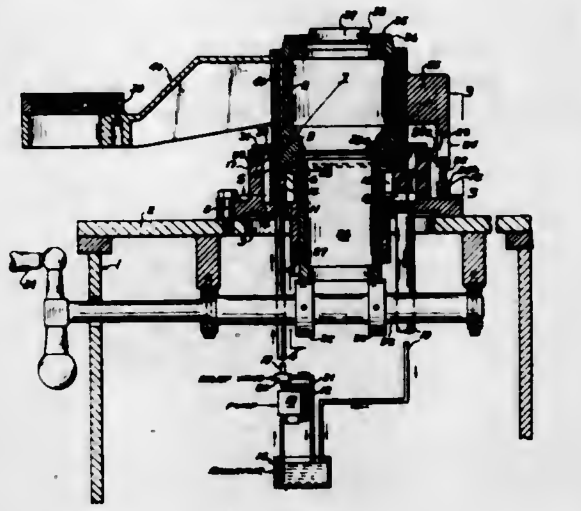
1. Mechanism for continuously determining and recording the moldability index of granular material comprising an elongated hollow cylindrical member having imperforate end sections and a perforated central section, means mounting the elongated cylindrical member in a position inclined to the horizontal, means for feeding a continuous sample of the granular material into the upper end of the cylindrical member, means for rotating the cylindrical member to advance the sample of granular material to the lower end thereof, a trough positioned beneath the perforate portion of the cylindrical member, means for vibrating the trough to advance granular material received therein through the perforate section of the cylindrical member toward one end of the trough, a semi-circular shield secured to the trough extending

for substantially one hundred eighty degrees about the cylindrical member, a torsion balance positioned beneath the trough and cylindrical member including a pair of balance planes, one of which is located to receive that portion of the sample of granular material passing entirely through the cylindrical member, the other of which is located to receive that portion of the sample of granular material passing over the one end of the trough, a light sensitive source of electric energy, a source of light directed toward the light sensitive source of electric energy, a light shield carried by the balance and positioned between the light sensitive source of electric energy and light source movable with the balance to regulate the amount of light falling on the light sensitive source of electric energy in accordance with the moldability of the sample of granular material as determined by the separation thereof between the cylindrical member and trough, an electric motor, a balanced electric circuit operable to drive the electric motor in a direction determined by the direction of change of the electric signal produced by the light sensitive source of electric energy connected to the light sensitive source of electric energy, a visual indicator connected to the motor for visually indicating the moldability index of the sample of granular material and permanent recording means including a pulley connected to and driven by the electric motor, a linear member driven by the pulley in opposite directions, a pen secured to the linear member, a chart engagable with the pen and means for continuously moving the chart in engagement with said pen.

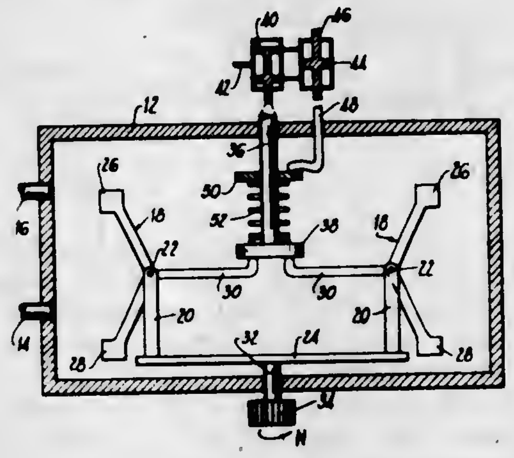


3,181,371
UNIVERSAL BALANCE TESTING MACHINE
Joseph P. Lannen, Detroit, Mich., assignor to Micropoise Engineering & Sales Co., Detroit, Mich., a partnership
Filed Nov. 9, 1962, Ser. No. 236,535
7 Claims. (Cl. 73—483)

1. A balance testing machine comprising a base, a substantially annular seating member mounted on and upstanding from the base, a work carrier disposed above the seating member and having a predetermined up and down travel, said member and carrier having complementary annular spherical faces of substantially the same radius, and such faces being interengageable in the down position of the carrier to afford a universal lateral tilting of the carrier, and means for applying fluid pressure upwardly to the carrier through the seating member to slightly raise the carrier and thereby reduce the gravitational pressure applied by the carrier and its load to the seating member, said pressure-applying means including a plurality of fluid passages upwardly extending through and spaced circumferentially of said member and having outlets in the spherical face of said member, and means for delivering a fluid under pressure concurrently to said passages.



3,181,372
COMPENSATED FLYWEIGHT
Paulmer D. Hunt and James R. Goerke, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed Sept. 29, 1958, Ser. No. 763,887
13 Claims. (Cl. 73—497)

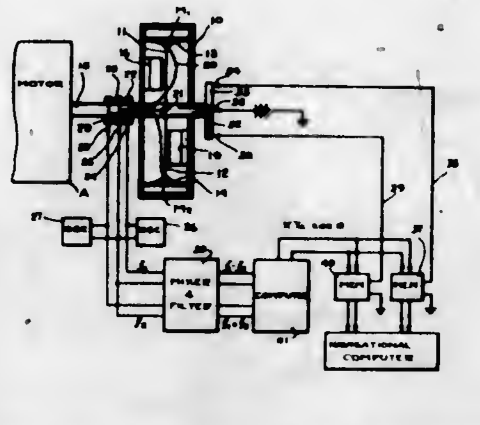


3. In a fluid immersed governor, the combination of a revolving support, centrifugally and differentially acting weights arranged in pairs comprised of a flyweight and a counterweight, a lever for interconnecting said flyweight and said counterweight, a bracket mounted on said support, a pivot for said lever situated between said flyweight and said counterweight and supported by said bracket, said counterweight composed of material having less average density than said flyweight, and a means which opposes the resultant action of the weights.

3,181,373
ACCELEROMETER
Alexander M. Voutsas, New York, N.Y., assignor to American Bosch Arma Corporation, a corporation of New York
Filed Jan. 13, 1959, Ser. No. 786,558
4 Claims. (Cl. 73—517)

1. In a device of the character described, an element adapted for rotation about an axis, a wire attached to said element, a mass attached to said wire, means for rotating said element about said axis, means for maintaining said wire radially disposed with respect to said axis so that the centrifugal force on said mass created by rotation of said element applies tension to said wire, means for vibrating said wire at its natural frequency,

computer means controlled by the vibrational frequency of said wire whereby the instantaneous radial acceleration of said mass may be obtained, said wire being substantially unstressed when said element is not rotating.

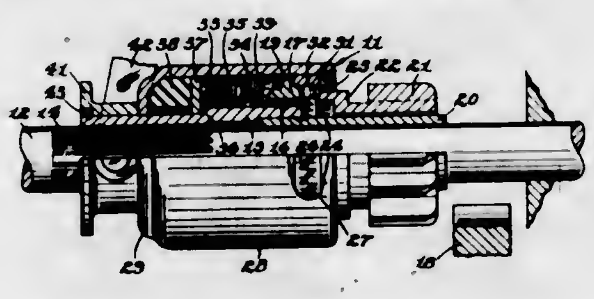


3,181,374
ENGINE STARTER DRIVE

John J. Sabatini, Horseheads, N.Y., assignor to The Bendix Corporation, Elmira Heights, N.Y., a corporation of Delaware

Filed Apr. 1, 1963, Ser. No. 269,433

5 Claims. (Cl. 74—6)



1. Starter gearing for an internal combustion engine adapted to be supported on the power shaft, comprising:

a sleeve slidably but non-rotatably connected to the power shaft, said sleeve having external splines formed on one extremity;

a pinion slidably journalled for axial movement relative to the power shaft adapted for movement into and out of engagement with a gear of an engine to be started;

a driven clutch member operatively connected to the pinion;

a driving clutch member threaded on the sleeve splines, said clutch members having complementing inclined torque transmitting teeth adapted to provide an indexing and an overrunning clutch connection;

a barrel housing, having an open end, slidably supported adjacent the other extremity of the sleeve and spatially encompassing the clutch members;

means within the housing adjacent the open end thereof adapted for engagement with the clutch members for confining the clutch members within the housing;

means in the housing for normally biasing the clutch members into engagement;

resiliently yieldable means interposed between the housing and the sleeve adapted to resist axial movement of the housing relative to the sleeve for absorbing peak starting torque;

means intermediate the sleeve splines and the resiliently yieldable means adapted for intermittent engagement by the driving clutch member for dampening clutch member movements during portions of clutch overrun and for biasing the clutch members during portions of indexing movements; and,

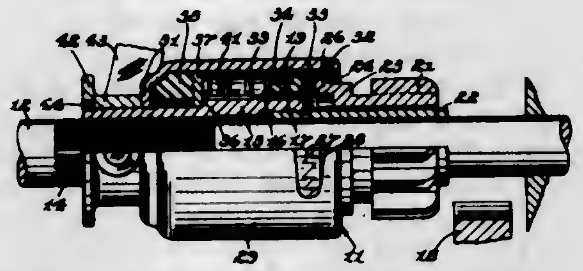
means for actuating the housing and sleeve toward and away from the engine gear.

3,181,375
ENGINE STARTER DRIVE

John J. Sabatini, Horseheads, N.Y., assignor to The Bendix Corporation, Elmira Heights, N.Y., a corporation of Delaware

Filed Apr. 1, 1963, Ser. No. 269,434

4 Claims. (Cl. 74—6)



1. Starting apparatus for an internal combustion engine comprising, in combination:

a starting motor including a power shaft;

a sleeve slidably but non-rotatably secured to the power shaft, said sleeve having external splines formed on one extremity thereof;

a pinion slidably journalled for axial movement relative to the power shaft adapted for movement into and out of engagement with a gear of the engine to be started;

a driven clutch member secured to the pinion;

a driving clutch member threaded on the sleeve splines, said clutch members having complementing inclined torque transmitting teeth adapted to provide an overrunning and an indexing clutch connection;

a barrel housing, having an open end, slidably supported adjacent the other extremity of the sleeve and spatially encompassing the clutch members;

means within the housing adjacent the open end thereof adapted for engagement with the driven clutch member for confining the clutch members within the housing;

means in the housing for normally biasing the clutch members into engagement and toward the means confining the clutch members within the housing;

means supported by the driven clutch adapted to continuously overlie portions of the driving clutch members for limiting the axial separation between the clutch members during overrun; and,

means for actuating the housing and sleeve toward and away from the engine gear for controlling the energization of the starting motor.

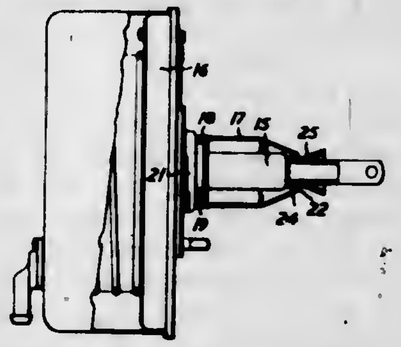
3,181,376
FLEXIBLE SEALING BOOTS OR DUST COVERS

Harold Fineman, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company

Filed Sept. 4, 1962, Ser. No. 221,037

Claims priority, application Great Britain, Sept. 6, 1961, 31,959/61

7 Claims. (Cl. 74—18.2)



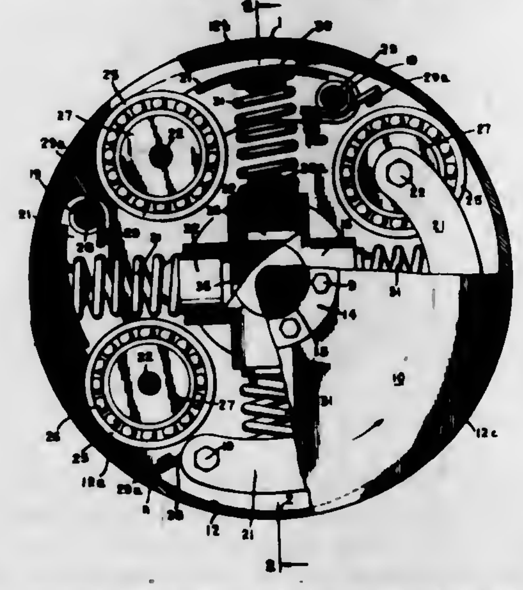
1. A device for making a seal between two relatively movable members comprising a boot of flexible material attached at one end to one of said members and at the other end to the other of said members, one of said members extending axially through said boot, a former carried by one of said members and positioned outside said boot, said boot and said former being shaped such that upon relative axial movement of the members towards one another, the former and boot move from a disengaged position into an engaged position where the boot is adapted to roll smoothly over the former and into itself.

3,181,377
PULSATING TORQUE CONVERTER

Paul Johnson Heister, Oxford, Md., assignor of one-half to Claire C. Heister

Filed July 10, 1963, Ser. No. 293,964

11 Claims. (Cl. 74—64)



1. In a torque converter, a driving shaft, a driven shaft, said shafts being journaled in end-to-end relation for rotation about a common axis, a rigid cam surface extending continuously about said axis in a plane normal thereto, said surface being generated by the rotation at constant speed about said axis, of a line of fixed length parallel with and radially offset from said axis, while uniformly varying the radial distance of said line through a whole number of cycles, greater than one, between predetermined minimum and maximum radial distances, to define a corresponding number of cam lobes, a plurality of cam followers, means mounting said followers on said driven shaft for rotation as a unit therewith and for motion relatively thereto, radially of said axis, and means operable to yieldingly urge said followers radially of said axis, into contact with said cam surface, with variable force, the number of said cam lobes being three, and the number of said cam followers being four, said cam surface being formed on the interior surface of a cylinder fixed to said driving shaft coaxially of said axis and having an open end, said mounting means comprising a hub connected for rotation as a unit with said driven shaft and having four equiangularly-spaced radial cylinder bores, four pistons each fitting a respective one of said bores, four compression springs each acting between a respective one of said pistons and a corresponding one of said cam followers, and hydraulic fluid pressure means connected with a common circuit in said hub to all said bores and operable to controllably vary the force with which each said spring urges its follower into contact with said cam surface.

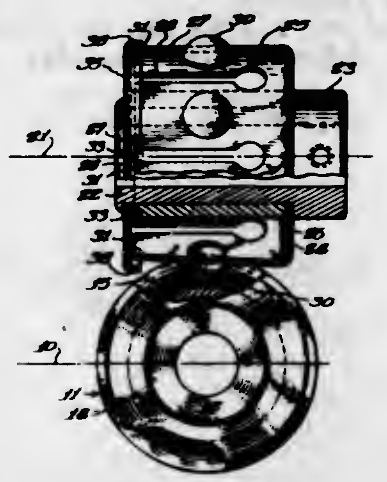
3,181,378
INTERMITTENT MOTION MECHANISM

Robert J. Petroff, Lombard, Ill. (% R. Petroff Associates, 5101 W. Lake St., Chicago 44, Ill.)

Filed Feb. 4, 1963, Ser. No. 255,981

4 Claims. (Cl. 74—84)

1. An intermittent motion comprising a modified roller gear type of mechanism, said mechanism comprising a cam having a worm type of cam groove and rotatable about an axis, a follower member rotatable about an axis which is generally perpendicular to and laterally offset from the cam axis, said follower having a member provided with a plurality of spring fingers, each finger having an embossing, said fingers and embossings being disposed in a pattern so that upon rotation of said follower about its axis, the embossings will move circularly about the axis of said follower, means for maintaining said fingers in stressed condition so that an embossing can cooperate with said cam track for effecting follower rotation upon rotation of said cam as a driver, said spring finger when the embossing engages the cam being urged against its spring to effect pre-loading.

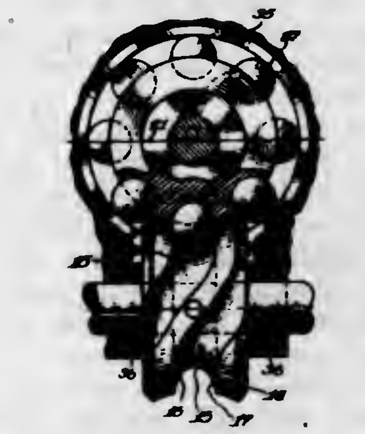


3,181,379
INTERMITTENT MECHANISM

Robert J. Petroff, Lombard, Ill. (% R. Petroff Associates, 5101 W. Lake St., Chicago 44, Ill.)

Filed Feb. 4, 1963, Ser. No. 255,982

5 Claims. (Cl. 74—84)

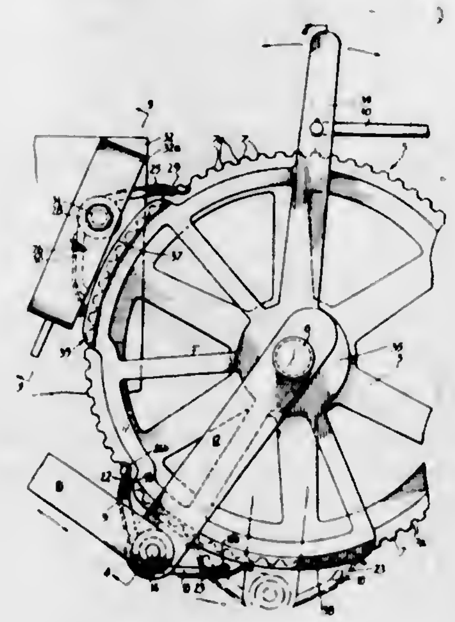


1. A ball gear type of intermittent motion mechanism comprising a cam body having a straight axis and having a globoidal worm type of cam groove, a follower including a body having a plurality of ball accommodating sockets with one ball for each socket, each socket having the ball-engaging portion in the shape of a surface of revolution so that a ball and socket contact each other at least along the circumference of a circle, a ball having a substantial portion thereof projecting outside of the follower, said follower being movable about an axis which is perpendicular to and laterally offset from the cam axis, said sockets being in a circular pattern and having a spacing corresponding to the cam pattern and movable with body rotation in planes normal to the body axis, means for maintaining each ball in its socket, means for maintaining said cam and follower in meshing engagement so that as said cam rotates, the projecting parts of the balls are successively engaged to cause said follower to turn, said cam groove having a radius of cur-

vature which is greater than that of the ball whereby a ball will engage a cam groove wall at no more than two points.

3,181,380
REVERSIBLE RATCHET DRIVES

Josef Pellen, Dandenong, Victoria, and Roy Alis, Clayton, Victoria, Australia, assignors to Sperry Rand Corporation, New York, N.Y.
Filed Feb. 4, 1964, Ser. No. 342,476
2 Claims. (Cl. 74—152)

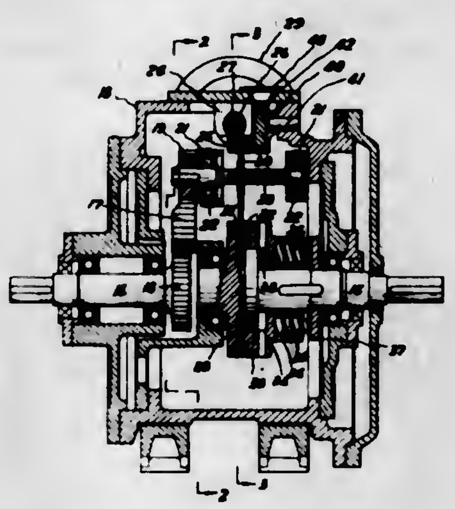


1. A reversible ratchet drive mechanism comprising a toothed wheel mounted for rotation about its axis, a cam quadrant mounted for oscillation about said wheel axis and having a cam rise, an arm mounted for oscillation about said wheel axis, a first driving pawl journalled on said arm and engageable with said toothed wheel to drive said wheel in one direction upon oscillation of said arm, a second driving pawl journalled on said arm and engageable with said toothed wheel to drive said wheel in the opposite direction upon oscillation of said arm, a first spring carried by said first pawl and having a portion engageable with said cam rise to hold said first pawl out of engagement with said toothed wheel, a second spring carried by said second pawl and having a portion engageable with said cam rise to hold said second pawl out of engagement with said toothed wheel, means connected to said arm to oscillate the arm about said wheel axis, and means connected to said cam quadrant for selectively moving said cam rise into and out of engagement with said first and second springs to selectively control engagement of said pawls with said toothed wheel.

3,181,381
STEPLESSLY VARIABLE POWER TRANSMISSION DEVICES

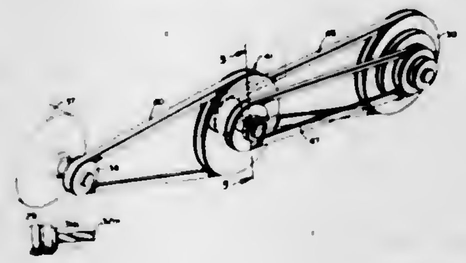
Oscar Halfdan Jorgensen, "Kyneton," Mona Vale Road, St. Ives, near Sydney, New South Wales, Australia
Filed May 9, 1961, Ser. No. 108,878
Claims priority, application Australia, May 12, 1960, 60,382/60; Oct. 14, 1960, 65,616
5 Claims. (Cl. 74—199)

1. In a power-transmission gear unit of the kind in which the speed ratios between a driving shaft and a driven shaft are governed by steplessly variable devices comprising at least two co-axial peripherally-beaded fixed-axis discs drive-connected to the driven shaft and axially loaded one towards the other, at least one obtusely-coned migratory disc penetrable between the fixed-axis discs and drive-connected to the driving shaft, and mechanism whereby a selected degree of penetration of the migratory disc between the fixed-axis discs may be established and held: the combination comprising, a swing bracket in the form of a bell-crank fulcrumed on the casing for the gear unit and incorporating a pair of co-directed webs and a third web angularly splayed from said co-directed webs, a spline-shaft having its two ends respectively mounted in said co-directed webs and having said migratory disc keyed thereon, a worm wheel sector fixed on said third web, a worm pinion borne in said casing and meshing said sector, means for turning said pinion, a first fixed-axis disc fixed on the driven shaft, a second fixed-axis disc axially movable along the driven shaft, a spring housing whereon the second disc is fixed which is slidably keyed on said driven shaft and has a counterbore opening to one end face and a plurality of spring pockets opening to its opposite end face, an abutment plate fixed on said driven shaft, springs in said pockets which bear against said abutment plate and urge said second disc towards said first disc, and a mounting plate fixed on said driven shaft which slidably but neatly fits inside said counterbore.



3,181,382
MACHINE TOOL

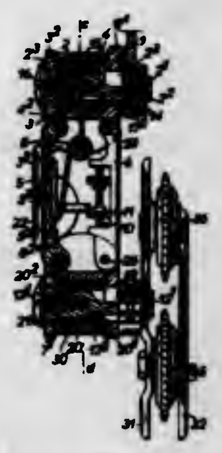
Ernest J. Berlo, 184 Nueva Ave., San Francisco 24, Calif. Original application June 24, 1959, Ser. No. 822,526. Divided and this application Nov. 23, 1962, Ser. No. 240,214
2 Claims. (Cl. 74—217)



1. A multiple belt drive means comprising in combination a first shaft; a first pulley mounted on and rotatable with said first shaft; a second shaft; a step-cone pulley mounted on and rotatable with said second shaft; a stub-shaft floatingly suspended between said first and second shafts; a first end pulley rotatably mounted on said stub-shaft; a second end pulley mounted on said stub-shaft and rotatable therewith; an intermediate pulley mounted between said first and second end pulleys, on and rotatable with said stub-shaft; a first belt embracing said first pulley and said intermediate pulley; a second belt embracing said first end pulley and one step of said step-cone pulley; a third belt embracing said second end pulley and another step of said step-cone pulley whereby the floating suspension of said stub-shaft, and the pulleys thereon, is effected by said first, second and third belts.

3,181,383
CHANGE SPEED GEAR CONTROL DEVICES FOR BICYCLES AND SIMILAR CHAIN DRIVEN VEHICLES

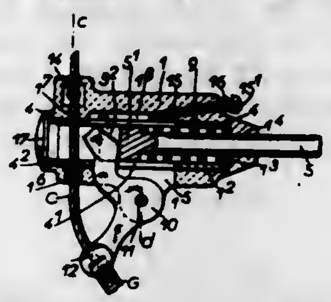
Lucien Charles Hippolyte Juy, 75 Rue General Fauconnet, Dijon, Cote d'Or, France
Filed Mar. 19, 1963, Ser. No. 266,388
Claims priority, application France, Apr. 20, 1962, 8,427
6 Claims. (Cl. 74—217)



1. A change speed gear control device for a chain driven vehicle, including a normally upper support constituted solely of synthetic plastic material and a normally lower support constituted solely of synthetic plastic material, each of said supports including a base portion and two opposite sets of flanges projecting from each base portion, a metal pin associated with a first set of flanges of said upper support for pivotally mounting said upper support on a frame member of the vehicle, a chain guide assembly, a second metal pin associated with a first set of flanges of said lower support for pivotally mounting said chain guide assembly on said lower support, two levers of synthetic plastic material constituting a parallel linkage connecting a second set of flanges of said upper support to a second set of flanges of said lower support for moving said lower support laterally with respect to said upper support, a compression spring associated with each metal pin, one end of each spring being engaged in a groove in a corresponding pin, the opposite end of said spring cooperating with the corresponding support member, pins carried by the second set of flanges of each support and pivotally supporting said two levers, a further pin carried by one of said set of flanges, a torsion spring mounted on said further pin, said spring comprising two oppositely wound coils and two juxtaposed limbs projecting centrally from said coils guidably received in a recessed portion of one of said levers, a cable secured to one of said lever support pins, a sheath surrounding said cable and secured to a second of said lever support pins whereby relative axial movement of said cable in said sheath causes angular displacement of said parallel linkage, first stop means operatively associated with the upper support for limiting pivotal movement of the upper support relative to said frame member, second stop means operatively associated with the lower support for limiting pivotal movement of the chain guide means relative to said lower support, third stop means operatively associated with said linkage for limiting angular deformation of said parallel linkage, angularly adjustable means supported in said linkage for engaging with said third stop means for predetermining the limits of movement of said lower support relative to said upper support, said third stop means including a threaded rod, angularly adjustable flanged nuts screwed onto said threaded rod, said rod being supported by one of said levers, and a stop member supported on the other of the levers for engaging the nuts, two lugs on the said one lever formed during the moulding thereof, said lugs supporting the rod in transverse offset relationship relative to the said one lever and spring wires disposed in circular chambers in said flanged nuts for exerting tangential pressure within the screw thread of the rod whereby unintentional rotation of the nuts is prevented.

3,181,384
CHAIN SHIFT DEVICES FOR BICYCLES AND SIMILAR CHAIN DRIVEN VEHICLES

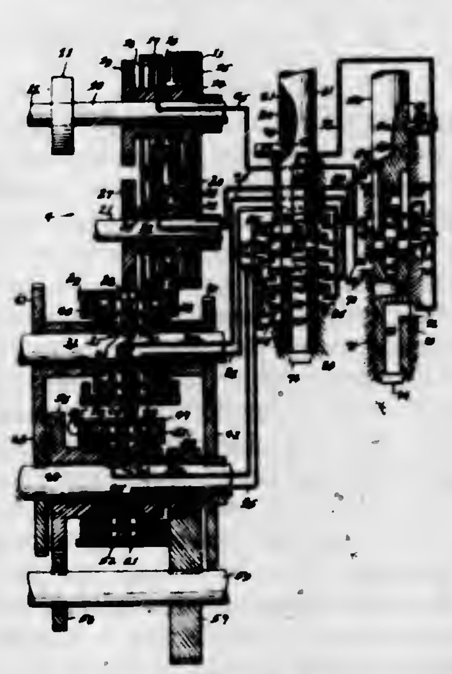
Lucien Charles Hippolyte Juy, 75 Rue General Fauconnet, Dijon, France
Filed Mar. 20, 1963, Ser. No. 266,727
Claims priority, application France, Apr. 20, 1962, 8,429
10 Claims. (Cl. 74—242)



1. A chain shift device for chain driven vehicles comprising a housing having a bore therein, chain guide means for displacement of a chain of the vehicle during a gear changing operation, a spring loaded spindle slidably supported in said bore and in turn supporting the chain guide means for displacement, means supported from said housing and in contact with the spindle for moving the same to effect desired displacement of the chain, said housing being constituted of synthetic plastic material and metal sleeve means in the bore of the housing isolating the spindle therefrom and providing a bearing surface for the spindle.

3,181,385
POWER TRANSMISSION

Charles A. Siler, Racine, Wis., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed Oct. 5, 1962, Ser. No. 228,577
12 Claims. (Cl. 74—364)



1. In a power transmission including a master, hydraulically actuated, friction plate clutch arranged for connection to a power source, a plurality of constant mesh, gear trains having respectively different speed ratios and connection with the output of the master clutch and a load shaft, and a plurality of hydraulically actuated, friction plate clutches associated with the gear trains, the combination of a source of liquid pressure, a first selector valve for connecting and disconnecting the liquid pressure source with and from the master clutch, a second selector

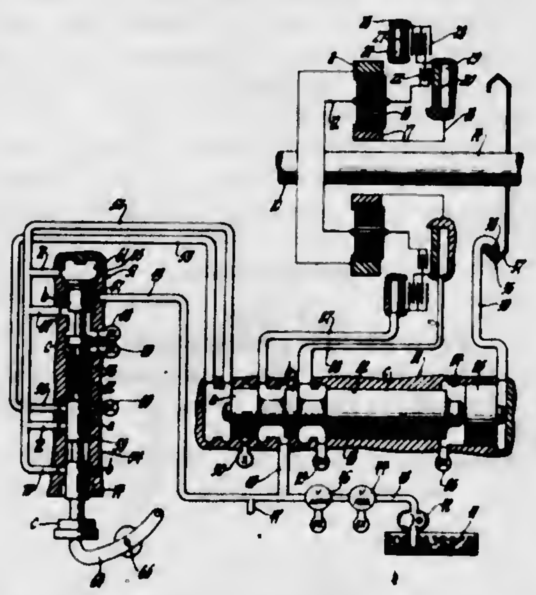
valve movable to connect the liquid pressure source with selected gear train clutches to establish a selected speed ratio when the first selector valve is in connecting position, means for releasing all gear train clutches when the first selector valve is in disconnecting position, means for releasing the master clutch when the first selector valve is in connecting position and the second selector valve is moved from one speed ratio position to another, pressure regulating valve means for regulating the source pressure between a relatively low value when all clutches are released and a maximum value when the master and selected gear train clutches are fully engaged, means for delaying rise of the source pressure from the low to maximum value for the master and selected gear train clutches, and means for establishing a predetermined, less than maximum pressure for the selected gear train clutches prior to the beginning of pressure rise for the master clutch.

3,181,386
TRANSMISSION

Robert H. Schaefer, Westfield, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 13, 1962, Ser. No. 237,037

5 Claims. (Cl. 74—472)



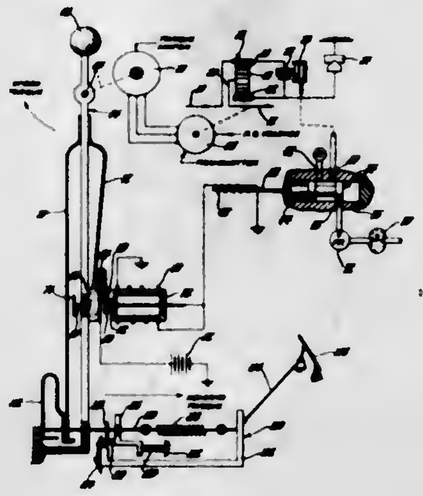
1. In a transmission, drive means providing a drive and including fluid operated drive engaging means, a source of fluid under pressure, governor means providing a force proportional to transmission speed, torque demand means providing a force proportional to torque demand, shift valve means operatively connected to said governor means and said torque demand means and controlled by said governor and torque demand forces to move between a downshift position and an upshift position, said shift valve means in said downshift position connecting said fluid operated drive engaging means to exhaust and movable in response to governor and torque demand forces to connect said source to said fluid operated drive engaging means to engage the drive, said valve including a valve body having a cylindrical bore and an annular port located in an intermediate portion of said bore and connected to said source and including a movable valve element having a land fitting said bore and an adjacent coaxial annular passage portion of uniform annular section, said land opening said port during upshifting movement of said valve element having a land edge extending into said passage portion and controlling flow through said port, said land having a thin walled impervious axial extension of the body at the external perimeter providing an extended land surface terminating in a knife-like edge to limit the pressure reduction at the restriction between the annular port and the annular edge of the valve land substantially to the annular area of said knife-like edge to substantially eliminate any extraneous forces produced by the Bernoulli effect due to fluid flow through said port.

3,181,387
TRANSMISSION CONTROL SYSTEM

John P. Baier, Homer E. Smith, and William E. Fritz, Rochester, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 5, 1962, Ser. No. 242,410

13 Claims. (Cl. 74—472)



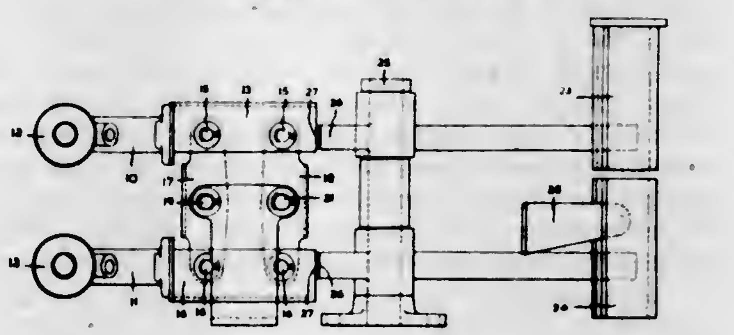
1. In a control system, the combination of an electrically operated control valve having a circuit for operating the control valve and including a circuit control device having a plural state, a force responsive controller movable in one direction for causing the circuit control device to assume one state and in another direction for causing the circuit control device to assume another state, means maneuvering the controller in the one or the other direction, the maneuvering means including means urging the controller in the one direction with a force corresponding to one characteristic of the system and another means urging the controller in the other direction with a force corresponding to another characteristic of the system, and means rendering the sum of the forces required for causing the controller to place the circuit control device in one of the plural states to be different from the sum of the forces required to place the circuit control device in another of the plural states.

3,181,388
BRAKING SYSTEMS FOR VEHICLES

Frederick Thomas Riddy, Erdington, Birmingham, England, assignor to Girling Limited, a British company

Filed Mar. 27, 1961, Ser. No. 98,355

4 Claims. (Cl. 74—478)



1. A braking system for vehicles having two sets of brakes comprising two driver-operable means angularly movable independently or simultaneously about a common stationary axis in a fixed member, two brake applying members for applying said sets of brakes and of which each brake applying member is operatively connected to one of said driver operable means, a compensating mechanism pivotally connected to a second fixed member and interconnecting each of said brake applying members, and means providing on said driver-operable means for preventing movement of said compensating mechanism upon operation of one of said driver operable means alone and rendered inoperative upon simultaneous operation of both of said driver operable means to permit free movement of said compensating mechanism.

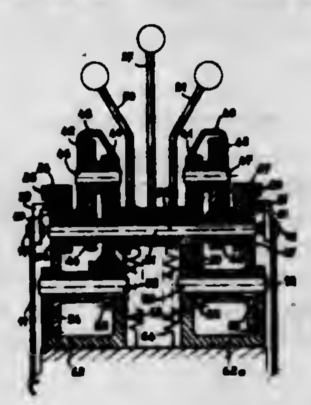
3,181,389
CONTROL MECHANISM

Paul P. Richard, 10 Rue du Perou, Villeurbanne, France

Filed Feb. 20, 1963, Ser. No. 260,003

Claims priority, application France, Mar. 6, 1962, 42,360, Patent 1,327,759

2 Claims. (Cl. 74—480)



1. An arrangement for controlling the speed, direction of progression and steering of a vehicle, including carrier means on each side thereof and independent transmission gears for the drive of each carrier means, said arrangement comprising two parallel plates provided with arcuate slideways parallel to each other, a spindle rigid with both plates and extending perpendicular thereto, said spindle having an axis of rotation, a slider in each slideway, adapted to be shifted along said slideway, a pair of connecting rods each having one end pivotally connected with a corresponding slider, a pair of levers each being pivotally connected to the other of the ends of a corresponding connecting rod, and pivotally connected for movement around an axis parallel with said spindle to thereby adjust the speed of the corresponding transmission gear, means for shifting the spindle around its axis together with the slideway plates to control simultaneously the two levers to adjust simultaneously the speed of both transmission gears for rectilinear movement of the vehicle, and further means for controlling the position of each slider in its slideway to adjust selectively the speed of one transmission gear, said connecting rods each having a length such that pivotal movement of the rods with respect to said levers causes the rods at said ends where they are pivotally connected to the sliders to generate arcs passing through the axis of the spindle and lying parallel to the arcuate slideways.

3,181,390
CONTROL LEVER DEVICES

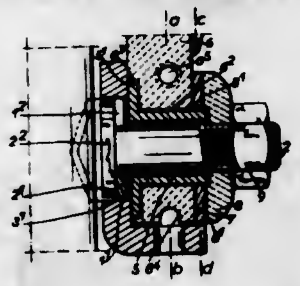
Lucien C. H. Juy, 75 Rue General Fauconnet, Dijon, Cote d'Or, France

Filed Mar. 19, 1963, Ser. No. 266,382

Claims priority, application France, Apr. 20, 1962, 8,426

6 Claims. (Cl. 74—531)

1. A control lever device for use on bicycles and like vehicles, comprising a bracket adapted for connection to a frame member of the vehicle, a pivot member carried by and extending from said bracket, a control lever constituted of synthetic plastic material and mounted for pivotal movement with respect to said pivot member, and securing means adjustably securing said lever on said pivot member, said bracket including lugs for attachment to said frame member of said vehicle and a polygonal protruding portion defining a recess, said pivot member including an enlarged head slidably engaged in said recess, said protruding portion of said bracket having a slot, said pivot member extending from said bracket through said slot in said protruding portion, the enlarged head being shaped to cooperate with the polygonal protruding portion to restrain rotation of said pivot member, said securing means including a metal support washer having an aperture in which the protruding polygonal portion of the bracket is engaged to support and restrain said support washer from rotation, a metal bush rotatably mounted on said pivot member, said control lever having a transverse bore for receiving said bush, said bush supporting



the control lever for pivotal movement about said pivot member, the bush including at one end a flange which bears axially against said support washer and including at the opposite end a portion protruding axially beyond said lever, an intermediate washer mounted on the latter said portion of the bush concentric with said pivot member, said securing means further including means urging the intermediate washer axially against said lever in adjustable fashion to provide a desired frictional control in the freedom of pivoting movement of said lever with respect to said pivot member.

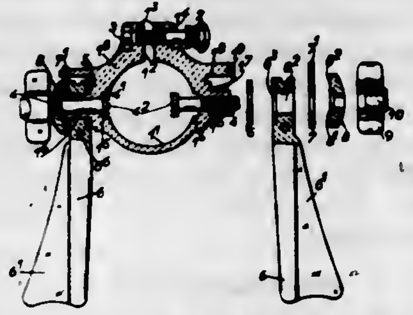
3,181,391
CONTROL LEVER DEVICES

Lucien Charles Hippolyte Juy, 75 Rue General Fauconnet, Dijon, Cote d'Or, France

Filed Mar. 20, 1963, Ser. No. 266,726

Claims priority, application France, Apr. 20, 1962, 8,428

5 Claims. (Cl. 74—531)

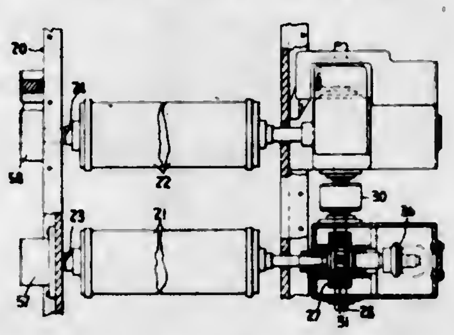


1. A control lever device for a bicycle and like vehicles, comprising a clamping collar adapted for mounting on the frame of the vehicle, pivot means on and protruding from said collar, a control lever having a transverse bore, said control lever being mounted on said pivot means for rotation on said pivot means, and retaining means on said pivot means and engaging the control lever with adjustable force to vary the degree of freedom of pivotal movement of the control lever on the pivot means, said collar being constituted of synthetic plastic material, said pivot means including a radially extending boss on said collar, said retaining means comprising a metal pin extending through said boss and protruding from the radially outer end of said boss, a first metal washer mounted on the boss at the side of said lever remote from the collar, a resilient washer constituted of synthetic plastic material on said pin, said resilient washer having an axially raised annular portion which abuts said first washer, said pin including a portion which extends beyond the said boss which is screw-threaded, a nut threadedly engaged on the threaded portion of the pin retaining the lever and first washer on the boss of the collar through the intermediary

of the resilient washer, said first washer including a radial finger, said collar including a projecting lug, said lug having a slot, said finger being engaged in said slot to prevent said first washer from rotating around the boss.

3,181,392
GLASS DRAWING APPARATUS

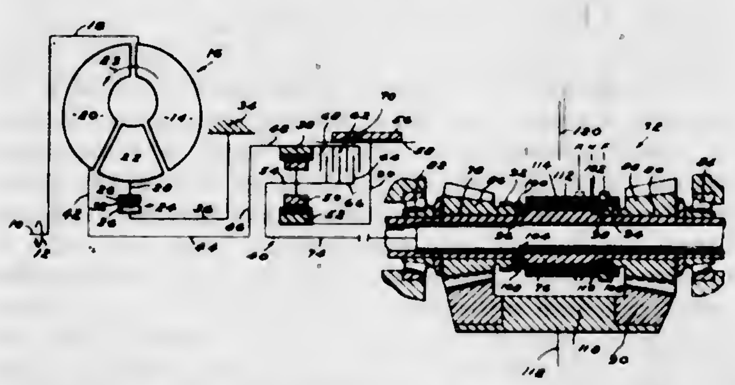
Jay J. Brand, Pittsburgh, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1960, Ser. No. 51,585
4 Claims. (Cl. 74—665)



1. Apparatus for drawing sheet glass from a molten bath substantially along a predetermined vertical plane comprising,
  a series of pairs of drawing rolls each rotatably supported by a shaft and normally arranged successively in substantial alignment, one pair above another pair,
each pair of rolls including a fixed roll and a swing roll,
each shaft having a gear attached thereto,
a drive shaft common to all pairs of rolls having thereon gear means to drive said gear attached to the fixed roll shaft of each pair of rolls to rotate all roll shafts at a predetermined speed,
a pivotal shaft about which each swing roll is movable in an arcuate path relative to its respective fixed roll to vary the spacing between the rolls of the pair,
a first gear mounted on each pivotal shaft,
means to drive said first gear mounted on the pivotal shaft to rotate the pivotal shaft at the same speed and in an opposite direction as the fixed roll shaft,
a second gear mounted on each pivotal shaft,
and means, driven from said second gear and swinging with said swing roll shaft, to drive the gear attached to the swing roll shaft of the pair of rolls at the same speed and in a same direction as the pivotal shaft while allowing said change of spacing between the pair of rolls.

3,181,393
TRANSMISSION

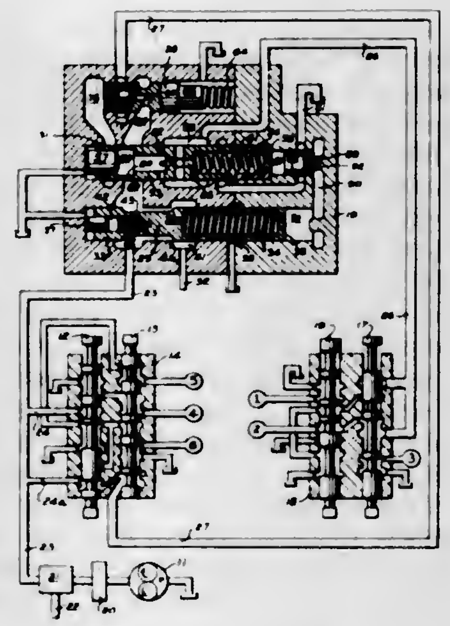
Vladimir J. Jandasek, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 23, 1962, Ser. No. 232,419
8 Claims. (Cl. 74—732)



1. A transmission comprising a forwardly rotating power input shaft and an ouput shaft, and means operably connecting said shafts providing a plurality of forward drives and a reverse drive from said input shaft to said output shaft, said means comprising a hydrodynamic drive device having a rotatable pump operably connected to said input shaft and a rotatable turbine, gear means having a rotatable drive member operably connected to said turbine and other rotatable members including a driven member, selectively operable means acting on said gear means conditioning said gear means selectively for a plurality of forward drives therethrough, and selectively controlled direction reversing means operably connecting said driven member and said output shaft selectively operable for conditioning said output shaft for rotation in opposite directions by said driven member, said controlled means comprising a dual axle pinion assembly having diametrically opposed drive pinions alternately engageable with said driven member.

3,181,394
HYDRAULIC CONTROLS

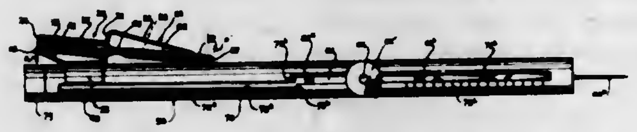
Charles A. Ramsel, Gerald D. Rohweder, and Clifford L. Shoemaker, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Mar. 19, 1962, Ser. No. 180,443
5 Claims. (Cl. 74—754)



4. In a hydraulic control system for modulating and regulating the pressure of fluid to gear selecting mechanism of a transmission having two sections each of which requires fluid operating pressures of different characteristics the combination comprising;
  an engine driven fluid pump supplying working fluid to a conduit;
  first gear selecting mechanism communicating with said conduit;
  a modulating valve communicating with said conduit and diverting a portion of the fluid therefrom through a variable flow passage;
  a proportioning reducing valve in communication with said modulating valve and receiving undiverted fluid therefrom which is delivered at a lower pressure, which is a function of the undiverted fluid pressure, to an output passage which communicates with said proportioning reducing valve;
second gear selecting mechanism communicating with the output passage;
said modulating valve responsive to conduit pressure above an equilibrium pressure to increase flow through the variable flow passage and responsive to conduit pressure below the equilibrium pressure to restrict flow through the variable flow passage; and
means active after the two selecting mechanisms have filled with fluid to increase the equilibrium pressure of said modulating valve up to a pre-set steady state pressure.

3,181,395
REAMER CLIP TOOL

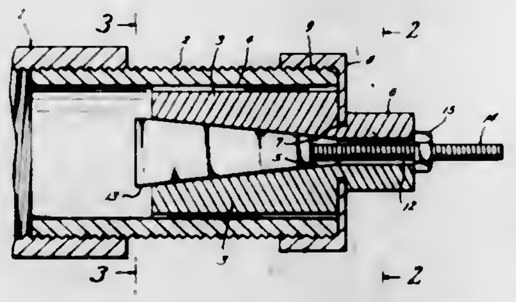
Irving Gardner, Hunter, N.Y.
Filed Dec. 26, 1962, Ser. No. 247,262
3 Claims. (Cl. 77—72)



2. In a reamer and clip assembly for mounting on a cylindrical tool body, a spring clip having a plate with arcuate opposing flanges for engaging said tool body, a plate portion extending angularly to said plate with a hole in said plate portion, a tapered flexible arm having one end integral with said plate portion and extending angularly to said plate portion, and a tubular sheath for holding said reamer, said sheath extending through the hole in said plate portion, said arm having lateral projections on an end portion engaging the sheath, said sheath having a widened and flattened portion for engaging at said plate portion, whereby said clip holds said sheath and said arm urges the same toward said tool body when said flanges are engaged on said tool body.

3,181,396
NIPPLE REMOVING TOOL

Luther L. Nance, 12340 Kayla Lane, Houston, Tex.
Filed May 7, 1962, Ser. No. 192,782
1 Claim. (Cl. 81—72)

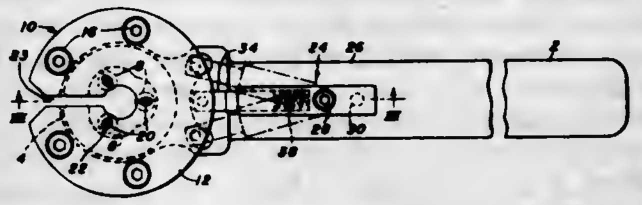


In a nipple removing device, a pair of semicircular segments, longitudinal teeth formed on the outer surface of said segments, said segments having an inner chamber having longitudinally tapered side walls, one end of said segments being reduced forming a wrench receiving area and arcuate longitudinal slots in said reduced ends forming a shaft receiving port when the segments are joined, a longitudinally tapered mandrel mounted in said inner chamber, an externally threaded shaft extending from one end of said mandrel and extending through said shaft receiving port, a nut on said shaft bearing against said extended end of said wrench receiving area adapted to draw said mandrel into said inner chamber and spread said segments, said wrench receiving area having an annular groove, a cap having an axial bore by means of which the cap is rotatably mounted on the wrench receiving area and in said groove, said cap being internally threaded and mountable on the nipple to be removed.

3,181,397
TRIFOIL CAM-AND-ROLLER WRENCH

Joseph P. Drangula, Hamilton, N.J., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Dec. 12, 1963, Ser. No. 330,096
3 Claims. (Cl. 81—128)

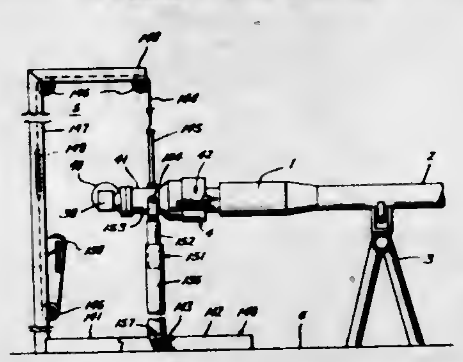
1. A cam-and-roller wrench comprising a cage having rollers journaled therein, a block rotatable in said cage, cam surfaces in said block engageable with said rollers to move said rollers inwardly to grip a workpiece, a handle fixed to said block, and a spring-urged pressure pin



pivoted on the handle and engaging said cage effective to yieldingly hold the cage in a position intermediate two positions of engagement on either side of said intermediate position.

3,181,398
PIPE JOINT REFACING APPARATUS

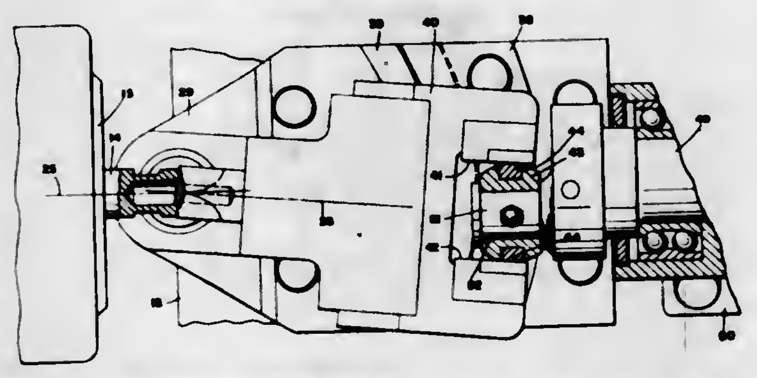
John M. Rogers, 505 Park, Luling, Tex.
Filed Oct. 29, 1962, Ser. No. 233,625
6 Claims. (Cl. 82—4)



1. A device for refacing a pipe joint having a screw thread for engagement with another pipe joint, comprising,
  means for engaging the screw thread of the pipe joint,
    said engaging means having a member with a taper screw thread arranged to mate with the screw of the pipe joint in a rigid mechanical thread joint;
  a support means;
  said member being mounted for rotational movement on said support means to engage with the pipe joint;
  means arranged to rotate said member for the member screw thread to form a rigid mechanical thread joint with the pipe joint screw thread and to thereafter rotatably drive the pipe joint; and
  cutting means supported by said support means and movable for refacing the pipe joint as the pipe joint is rotated;
  said engaging means having a reference means spaced from the pipe joint face for use in indicating the amount of pipe joint face that can be removed.

3,181,399
ANGULAR CUTTING MACHINE

Walter W. Jenkins, Willowick, Ohio, assignor to The National Acme Company, a corporation of Ohio
Filed July 12, 1961, Ser. No. 123,588
13 Claims. (Cl. 82—11)

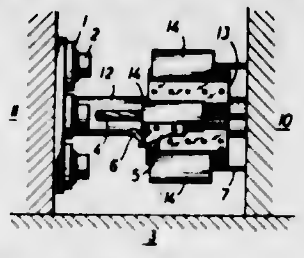


1. An angular cutting machine for a rotatable workpiece comprising in combination, a base, a tool holder

carried on said base and adapted to hold a tool, an axis intersecting the axis of the workpiece and defining a work machining position thereat, Scotch yoke and crank means to relatively pivot said workpiece and said toolholder about said intersecting axis in a single plane in oscillatory simple harmonic motion at the rate of rotation of said workpiece or a harmonic thereof, and feed means to relatively move said workpiece and said tool holder whereby said workpiece is machined at said work machining position at an acute angle relative to a plane normal to the axis of said workpiece.

3,181,400
TWO SPEED POWER TOOL TRANSMISSION

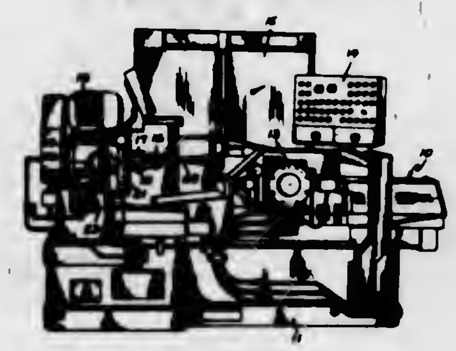
Erwin Kohring, 11 Sieglarer Strasse, Cologne-Poll, Germany
Filed Dec. 4, 1962, Ser. No. 242,200
3 Claims. (Cl. 82—25)



1. In a machine tool,
- (*a*) a tool slide carrier having an axis and being formed with a plurality of open grooves extending parallel to said axis, each groove being defined by a wall representing a portion of a substantially cylindrical wall,
- (*b*) at least a single solid tool slide received in at least a portion of one of said grooves for sliding movements in said one groove, said tool slide being provided with a centrally extending bore to receive at one end thereof a tool, and having a surface including
  - (1) a contact face, and
  - (2) an exposed face, said contact face conforming to and slidingly engaging the groove-defining wall of said one groove, said contact and exposed faces forming, when viewed in cross-section, parts of a substantially circular line including the substantially circular arc of said contact face,
- (*c*) means for mounting a tool on said exposed face, and
- (*d*) means for slidably retaining said tool slide in said one groove.

3,181,401
MACHINE TOOL

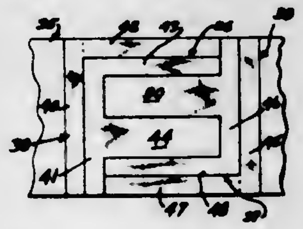
Stanley I. Rice, Worcester, and Alden H. Jacobson, Paxton, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Nov. 1, 1961, Ser. No. 149,410
4 Claims. (Cl. 82—34)



1. A machine tool, comprising a base, a tool holder mounted on the base for movement along either of two angularly-disposed lines, a tool mounted on the said holder and having a substantially perfect semi-circular cutting edge, a device including two adjacent inspection areas into which the tool is introduced and including means indicating the relative amounts of intrusion of the tool into the two areas, and apparatus responsive to the indicating means and the sum and difference of the indicated values to move the tool holder along one of the said lines until the indicated values differ by a predetermined value and when the sum of the indicated values differs from a predetermined value to move the tool holder along the other of the said lines until the sum is equal to the last-named predetermined value.

3,181,402
METHOD OF FORMING F-SHAPED AND L-SHAPED LAMINATIONS FOR SHELL-TYPE CORE

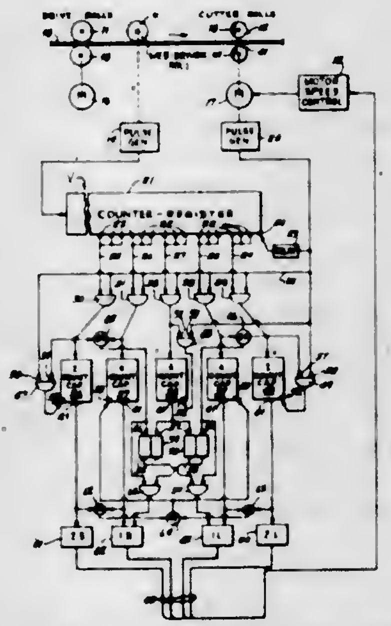
David J. Kuck, 8120 Keystone Ave., Skokie, Ill., and Joseph B. Lindecker, Skokie, Ill. (1193 Valetta Drive, Temperance, Mich.)
Filed Apr. 3, 1963, Ser. No. 270,390
3 Claims. (Cl. 83—32)



1. The method of forming shell-type laminations which comprises selecting a generally rectangular strip of sheet magnetic material, cutting said strip to define a pair of facing and overlapping F-shaped members, and cutting said strip to define generally L-shaped members outside and adjacent to the outer edges of the body and top leg of each of the respective F-shaped members to form a pair of shell-type laminations.

3,181,403
CONTROL SYSTEM

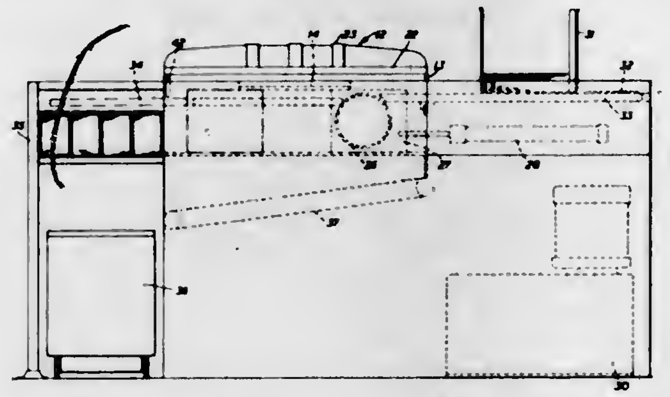
Robert B. Sterns, Great Neck, and Donald J. Mahony, White Plains, N.Y., and Herman G. Meyer, Jr., Newark, N.J., assignors to Logic Systems, Inc., Great Neck, Long Island, N.Y., a corporation of New York
Filed Aug. 3, 1962, Ser. No. 214,679
10 Claims. (Cl. 83—76)



1. Apparatus for controlling the length of cut produced by a cut-off device, said apparatus comprising, means for producing a continuous succession of voltage pulses having intervals representative of incremental distances by which material to be cut moves with respect to a cutting tool, means for producing a further pulse upon the occurrence of each cut made by said cutting tool, a main counter arranged to count the successive pulses and to be cleared by said further pulses, a plurality of signal storage counters having discrete count capacities, means for applying an input signal to one of said storage counters upon the occurrence of each further pulse, the particular storage counter being selected according to the number of pulses accumulated in said main counter at the instant of occurrence of each cut, each of said signal storage counters being arranged in isolation from the effects of the pulses directed into other signal storage counters so that the accumulated pulse count in each signal storage counter is unaffected by the sequence of application of pulses to said signal counters, means associated with each storage counter to produce upon overload a correction signal having an amplitude and direction which bears a given relationship to the number of pulses required in said main counter to supply an input signal at said storage counter, and means for adjusting said cut-off device to produce a different length of cut according to said correction signal.

3,181,404
CUTTING MACHINES

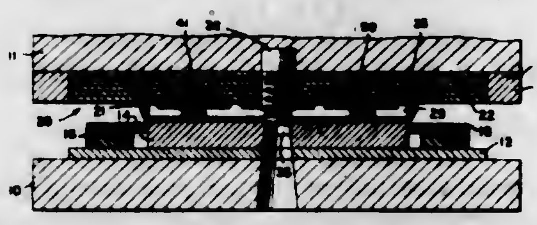
William Edward Walker, Stansted, England, assignor to Walker (Enfield) Limited, Enfield, England
Filed Jan. 8, 1963, Ser. No. 250,151
Claims priority, application Great Britain, Jan. 8, 1962, 655/62
14 Claims. (Cl. 83—98)



1. A cutting machine for sheet material comprising a stationary forme, a cylinder movable over the forme to roll the material on to the forme and cause cutting of the sheet material, means movable with the cylinder for removing waste material from the forme, the wanted material being retained on the forme, a delivery device for receiving the wanted material, and means for removing the wanted material from the forme and on to the delivery device, subsequent to the removal of the waste material.

3,181,405
DIE STRUCTURE

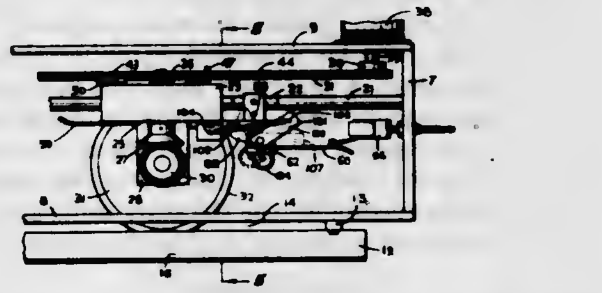
Truman Coy, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Aug. 23, 1963, Ser. No. 304,160
8 Claims. (Cl. 83—123)



1. A die structure for blanking shaped pieces from a sheet metal workpiece, comprising cooperative male and female dies, said male die being mountable on a bed and said female die on a ram reciprocal toward and away from said bed, said female die comprising a rule engaging said ram and extending therefrom toward said bed, a wood block within said rule and engaging the ram and the inside of the rule, said rule having a working end projecting below the surface of said wood and providing a space within the rule, said wood having an opening extending from said surface to said ram, a retainer cup in said opening and having an end adjacent said ram, said retainer cup having a laterally outwardly extending flange engaging the surface of said wood, a resilient stripper within said retainer cup and extending outwardly therefrom and beyond said surface of said wood, said stripper being compressed between the retainer cup and the workpiece on a working stroke of said ram to store energy as said rule blanks a workpiece, and the stripper expanding thereafter when the ram retracts to force the blanked piece from the rule.

3,181,406
SHARPENING MECHANISM FOR RECIPROCATING ROTATABLE CUTTER

Raymond E. Sayles, Kansas City, Mo., assignor to Pennway Garment Company, Kansas City, Mo., a corporation of Missouri
Filed Apr. 22, 1963, Ser. No. 274,439
3 Claims. (Cl. 83—174)



1. In a cutting mechanism having a frame and a reciprocable carriage with a rotatable cutter disc thereon, a sharpening mechanism for said disc comprising: a bracket movably supported on said carriage and carrying a contact sharpening member in a path selectively intersecting the periphery of said cutter disc, resilient means cooperating between said carriage and said bracket for selectively urging said sharpening member into contact with said periphery, and stop means on said frame and adapted to cooperate with said bracket for moving said sharpening member away from said periphery during a carriage reciprocation.

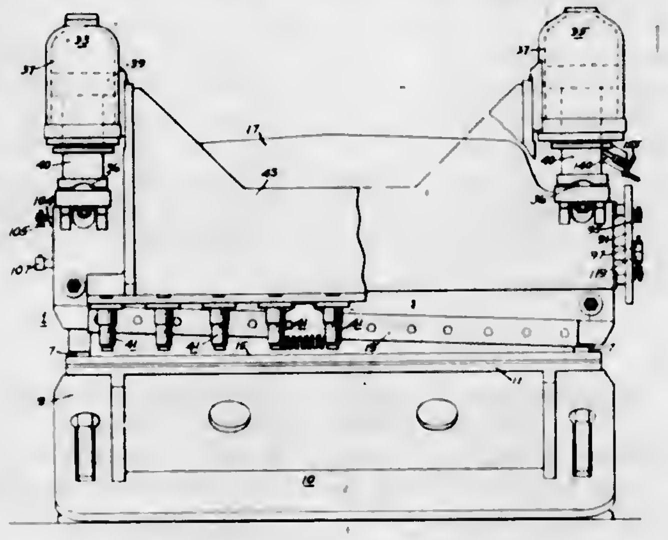
3,181,407
SHEAR MACHINE WITH ADJUSTABLE RAM HAVING MEANS TO IMMOBILIZE SAID MACHINE DURING ADJUSTMENT

Eugene W. Pearson, Orinda, Calif., assignor to Pacific Industrial Manufacturing Co., a corporation of California
Continuation of application Ser. No. 704,923, Dec. 24, 1957. This application Aug. 5, 1963, Ser. No. 301,696
11 Claims. (Cl. 83—300)

1. A shear machine comprising a frame;
a ram reciprocally mounted on said frame;
a shear blade carried by said ram;
a work supporting table affixed to said frame;
drive means for said ram, said drive means including
- a first cylinder assembly fixedly supported by said frame and having a piston drive connection to said ram at one end thereof, said piston drive connection including a pivotal coupling,
- a second cylinder assembly fixedly supported by said frame and having a piston drive connection to said ram, said piston drive connection including a pivotal coupling;
- a hydraulic system including said cylinder assemblies, and

means for supplying liquid to said cylinder assemblies at rates providing substantially equal piston speeds;

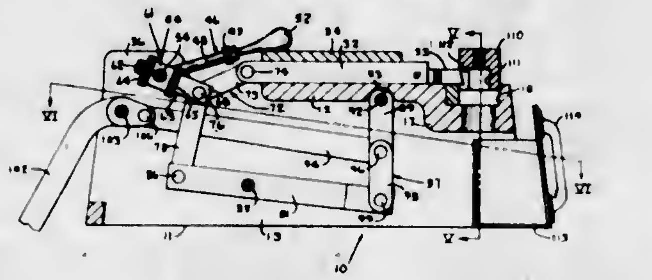
manually controlled means for immobilizing said first cylinder assembly to preclude vertical travel of the proximate end of said ram at its point of connection to said cylinder assembly;



and manually controlled means for selectively urging the piston drive connection of said second cylinder assembly in either the upward or downward direction within a permissible range of travel, while said first cylinder assembly is maintained in its immobilized condition, to effect a change in the prevailing angle of said ram and blade for shearing different thicknesses of sheet metal at maximum efficiency.

3,181,408
RECIPROCATING TOOL ACTUATED BY TOGGLE JOINT MEANS

John A. Richards, Sr., Kalamazoo, Mich., assignor to J. A. Richards Co., Kalamazoo, Mich., a partnership
Filed Dec. 21, 1960, Ser. No. 77,366
4 Claims. (Cl. 83—630)



1. In a compact machine for moving a tool with respect to a workpiece-holding device on said machine, the combination comprising:

a rigid frame;

an elongated tool bar slidably supported upon said frame for movement lengthwise thereof toward and away from said holding device;

a first toggle joint pivotally connected to and between one end of said tool bar and said frame, said first toggle joint extending substantially lengthwise of said tool bar;

a first, manually operable lever pivotally supported near one end thereof upon said frame for movement around an axis near to said first toggle joint;

a second lever pivotally supported upon said frame for movement around an axis spaced from the ends of said second lever and substantially parallel with the pivot axes of said first toggle joint, said lever being near to, and substantially parallel with said tool bar;

a link bar pivotally connected to and between one end of said second lever and the knee of said first toggle joint;

a second toggle joint pivotally connected to and between the other end of said second lever and a point on said frame adjacent to said tool bar;

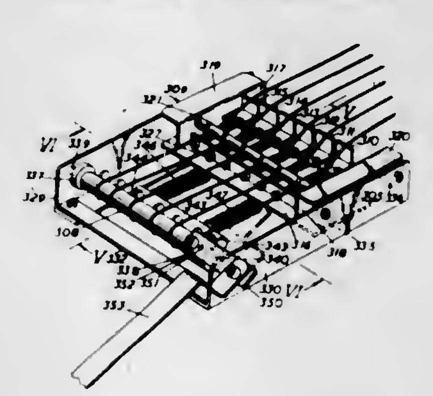
a thrust bar pivotally connected to and between the knee of said second toggle joint and said one end of said first lever, whereby pivotal movement of said first lever operates through said thrust bar, said second toggle joint, said second lever and said first toggle joint to effect lengthwise movement of said tool bar, said thrust bar being substantially parallel with and between said second lever and said tool bar;

a crank supporting the end of said first toggle joint remote from said tool bar on said frame; and

actuating means for rotating said crank simultaneously with the operation of said first lever, whereby the remote end of said first toggle joint is moved lengthwise of said tool bar while said knee of said first toggle joint is being moved transversely of said tool bar.

3,181,409
BRIDGES FOR STRINGED INSTRUMENTS SUCH AS FOR GUITARS

James Ormston Burns, Buckhurst Hill, and Gordon Spencer Chandler, Frimley, near Aldershot, England, assignors to Ormston Burns Limited, London, England
Filed Dec. 5, 1962, Ser. No. 242,483
Claims priority, application Great Britain, Dec. 6, 1961, 43,736/61
15 Claims. (Cl. 84—313)



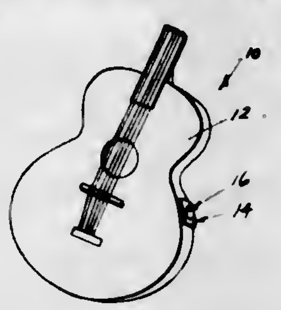
1. A bridge unit for a stringed musical instrument such as a guitar, comprising in combination, a bridge member adapted for engagement by strings of a said instrument, a carrier member carrying said bridge member, a base member adapted to be attached to the body of a said instrument, a tremolo spindle adapted for anchoringly receiving ends of said strings, means for angularly displaceably journalling said spindle on said base member, resilient means for urging said spindle in one angular direction, manually operable means for angularly displacing said spindle, and friction-reducing bearing means interposed between said base member and said carrier member to permit substantially linear rolling movement of said carrier member only in directions towards and away from said spindle.

3,181,410
GUITAR PICK RETENTION

James S. Phillips, 3500 Cascade Road SE., Grand Rapids, Mich.
Filed Aug. 6, 1962, Ser. No. 214,965
13 Claims. (Cl. 84—322)

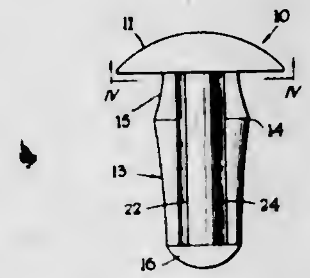
1. A stringed instrument having pick retention means, said means comprising: a magnetizable retention element secured to the instrument; a pick having magnetizable portions; at least one of said magnetizable element and portions being magnetized; and at least one magnetic circuit existing between said element and said portions

when the latter are in a predetermined proximity to the former, said magnetic circuit serving to retain said pick in fixed relation to said instrument until manually detached therefrom.



3,181,411
FASTENERS

George Montague Mejlso, Hounslow, England, assignor to United-Carr Incorporated, a corporation of Delaware
Filed Aug. 23, 1963, Ser. No. 304,112
Claims priority, application Great Britain, Aug. 31, 1962, 33,596/62
3 Claims. (Cl. 85—5)



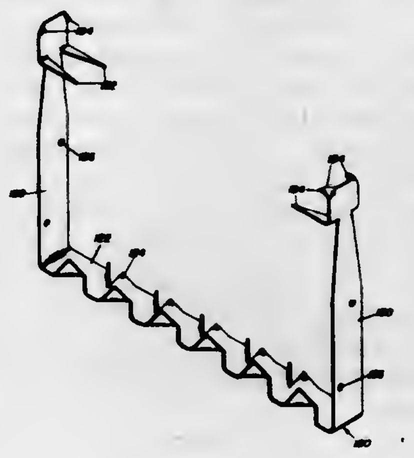
1. A one piece fastener formed of a resilient material, such as synthetic plastic, comprising an elongated shank having an axis, adapted for insertion in an aperture in a support and an enlarged head, the head providing a surface for engagement with a surface of the support and said shank including a substantially W-shaped portion having a plurality of longitudinal slots of substantial depth defining axially extending, flexible, spaced apart limb sections therebetween, said limb sections having axially extending side surfaces in substantially parallel relation, to each other and to said shank axis along the major portion of their lengths, each limb section being connected to each adjacent limb section by a relatively thin U-shaped portion lying between said limb sections whereby adjacent slots open on diametrically opposite sides of said shank.

3,181,412
RETAINER WITH PENETRATING TEETH

Frank R. Hill, 4087 Chamoune, San Diego, Calif.
Filed May 7, 1962, Ser. No. 193,902
1 Claim. (Cl. 85—13)

An article of manufacture comprising a retainer for wood or the like, said article consisting of:

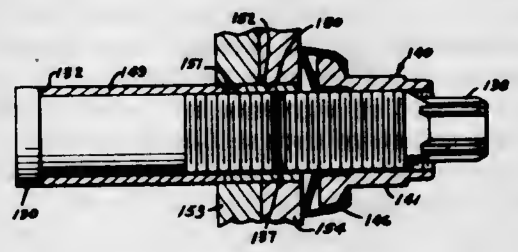
(A) An integral strip of metal, said strip including:
  (1) an elongated flat section,
  (2) integrally formed wood penetrating teeth disposed at substantially forty-five degrees with respect to the linear direction of the first mentioned section, all of said teeth extending in the same direction from said flat section and being normal thereto, the penetrating ends of said teeth extending inwardly from opposite side edges of the flat section, said teeth being struck from said flat section to define a plurality of substantially V-shaped notches spaced uniformly along said side edges, one of said teeth extending from each edge of said notch, whereby the two teeth adjacent each notch are angularly related at substantially 90° with respect to one another, and the teeth extending from one edge of the flat section are in staggered relationship with the teeth along the opposite edge of the flat strip, said teeth being adapted to be driven into the end of a plank throughout substantially the width of the plank;



  (3) a pair of sections, one of said pair of sections extending from one end of the said elongated section and the other of said pair of sections extending from the other end of said elongated sections, said pairs of sections extending substantially at right angles with respect to said elongated section and in the same direction as said wood penetrating portions for securing the strip to opposite side edges of the plank, said pairs of sections each including:
    (*a*) a pointed portion, said pointed portions extending toward one another.

3,181,413
FASTENING DEVICE WITH LUBRICATING MEANS

George S. Wing, Palos Verdes Estates, Calif., assignor to Hi-Shear Rivet Tool Company, Torrance, Calif., a corporation of California
Filed May 15, 1959, Ser. No. 813,536
3 Claims. (Cl. 85—70)



1. A blind fastener comprising: a mandrel comprising a cylindrical shank, a head on such shank adjacent one end thereof, and two sets of exterior threads on the shank spaced from the head, with a groove disposed between the two sets, and torque-tool receiving means at the end of said shank opposite the headed end; a tube having a central axis, an axial hole extending from a first end thereof, a first circular cylindrical surface defining at least a portion of the hole, and a second circular cylindrical surface defining at least a portion of the outside contour of the tube, said cylindrical surfaces being coaxial around the central axis, at least a portion of the second cylindrical surface being axially aligned with at least a portion of the first cylindrical surface, the ratio of length of the axially aligned portions of the cylindrical surfaces, the wall thickness of the said tube, and the radii of the cylindrical

surfaces at the axially aligned portions being so proportioned relative to each other that compressive loading of said tube which is exerted by engaging said threads and pulling the mandrel to force the head against the tube to press it toward its first end while opposing movement of the first end, causes the tube to bulge outwardly in at least two axially spaced locations included in the axially aligned portions of the cylindrical surfaces, the said aligned portion being continuous and ungrooved; a nut adapted to be threaded onto the threads; and a tubular spacer; a washer bearing a substantially dry lubricant on at least one surface thereof between the nut and spacer for standardizing frictional forces resulting from tightening down the nut; a flange on the nut adjacent one end, and a turned-in rim on the washer which fits around said flange to hold the washer to the nut; whereby with the tube against the mandrel head and with the spacer between the tube and nut, counter-rotation of said nut and mandrel draw the headed end of the mandrel against the tube in opposition to force exerted by the nut on the spacer, so as to upset the tube at a plurality of axially aligned locations, sufficient torque resulting in torsional failure of the mandrel at the groove.

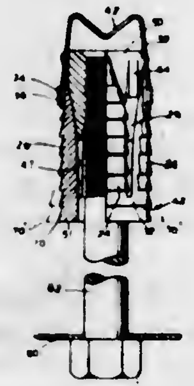
3,181,414

MINE ROOF BOLT EXPANDING SHELLS

Frederick P. Dickow, Auburn, N.Y., assignor to The Eastern Company, Naugatuck, Conn., a corporation of Connecticut

Filed May 14, 1963, Ser. No. 280,232

4 Claims. (Cl. 85—75)



1. A mine roof bolt expansion assembly comprising a shell composed of two separate semi-cylindrical malleable iron sections, each section having a slot extending centrally from the upper end to a point short of the lower end to provide a pair of segments and integral means connecting the segments of each section at the lower end, each segment having external gripping teeth and upwardly and outwardly flaring inside camming surfaces, said camming surfaces being straight crosswise of the segments, and convex lengthwise substantially the entire length of the segments, a U-shaped bridging resilient strap having depending substantially parallel side portions terminating with dovetail end portions affixed in complemental dovetail recesses in the outside upper end of one segment of each of said sections, the side walls of said recesses being swaged over and rigidly engaging the dovetail end portions, and a wedge member axially disposed in the upper ends of said shell section and having an axially threaded bore, said wedge member having four wedge faces disposed at angles of 90 degrees from one another and each face being straight transversely and concave lengthwise thereof and complemental to said camming surfaces respectively at their upper ends, said wedge member having opposed side grooves loosely embracing the side portions of said strap and opposed wings disposed in a plane 45 degrees from the plane of said grooves and adapted to slide in the slots between the segments of each section.

3,181,415

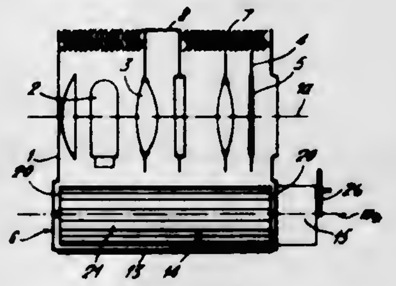
COOLING ARRANGEMENTS FOR PROJECTORS AND OTHER APPARATUS EMITTING WASTE HEAT IN OPERATION

Nikolaus Laing, Stuttgart, Germany, assignor, by mesne assignments, to Laing Vortex, Inc., New York, N.Y.

Filed Apr. 24, 1961, Ser. No. 105,056

Claims priority, application Germany, Apr. 23, 1960, L 35,985

4 Claims. (Cl. 88—24)



1. A light projector comprising a casing defining sides and ends of a vertical rectangular section air duct having an inlet in the lower part of the casing and an outlet at the top of the casing said inlet and said outlet extending over the major part of the length of the casing, a plurality of optical elements within the casing and arranged along an axis extending horizontally parallel to the sides of the casing said optical elements including a lamp and means to concentrate light therefrom along said axis, cylindrical bladed rotor means mounted in the lower part of the casing adjacent said inlet for rotation about an axis parallel to the optical axis, said rotor means extending the greater part of the length of the casing, and the sides of said casing adjacent the rotor means being shaped to provide guide walls cooperating with the rotor means on rotation thereof to guide air from the inlet transversely to the axis of the rotor means through the path of the rotating blades into the interior of the rotor and thence again through the path of the rotating blades in a generally upward direction into said duct.

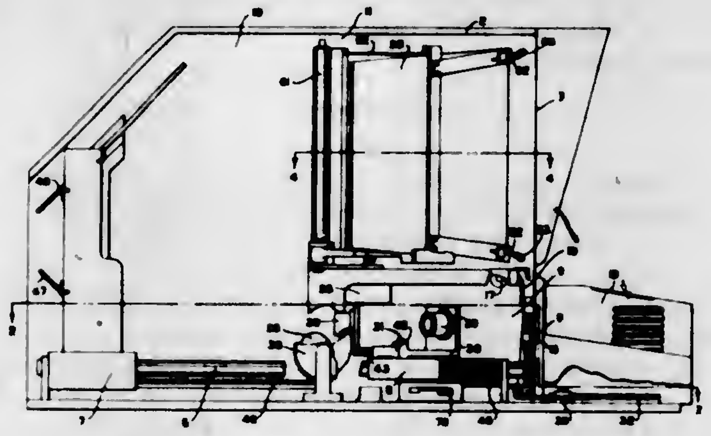
3,181,416

AUTO-FOCUS VIEWING AND REPRODUCING APPARATUS

Robert A. Halberg, West St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corportion of Delaware

Filed Apr. 27, 1961, Ser. No. 106,039

4 Claims. (Cl. 88—24)



1. An enlarger and copying device capable of providing copies in continuous varying degrees of enlargement comprising, in combination, a substantially light-tight housing mounted on a base, a viewing screen at the front end of said housing to view a light image, an adjustable film holder positioned in a projection aperture under said viewing screen, a removable and adjustable light source positioned outside said housing and adjacent said film holder, an adjustable mask for said protection aperture, a track on said base extending longitudinally within said housing opposite said projection aperture, a reflecting sled slidably mounted on said track and having means thereon for reflecting light from said light source onto said viewing screen, a projection lens sled slidably mounted on said track between said reflecting sled and said projection aperture, a plurality of lenses mounted on a rotatable turret on said lens sled, linkage means between said adjustable light source and said turret for automatically adjusting said light and altering the intensity of light emitted therefrom in accordance with the individual requirements of each of said lenses, a synchronized drive and focusing means coupling both said lens sled and said reflecting sled for relative movement thereof on said track to maintain proper focusing of the projected light image at all positions of said slidably mounted lens sled, a folding mirror capable of being extended to deflect light from said light source onto photosensitive copypaper, a blind operating in conjunction with said mirror to expose the photosensitive surface of said copypaper only when said mirror is extended, a developing station for developing a visible image on said photosensitive copypaper, and drive means for feeding said copypaper into and through said developing station.

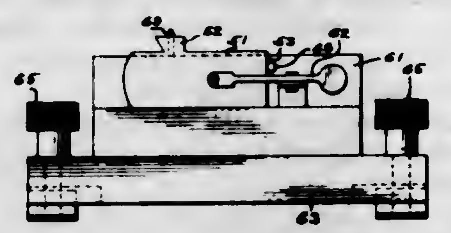
3,181,417

METHOD OF TESTING WITH AN OPTICAL COMPARATOR

Ernests Asons, Indianapolis, and Walter E. Hillsman, Greenfield, Ind., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York

Filed June 23, 1961, Ser. No. 119,115

3 Claims. (Cl. 88—24)



1. The method of testing two dimensions of successive articles against a pattern displayed on the screen of an optical comparator, the two dimensions extending from at least related points and being of such relative magnitude that the remote or unrelated end of a larger dimension is incapable of display on the comparator screen simultaneously with the related end thereof when the smaller dimension is magnified to the extent desired for proper testing, which method comprises:

- establishing a distinguishable reference point on a fixture for the remote end of the larger dimension, said distinguishable point being capable of effecting an image on the screen of the comparator;
- mounting an article on the fixture with the remote end of the larger dimension at a predetermined position relative to the distinguishable point on the fixture, and with the smaller dimension closely adjacent to the distinguishable point;
- projecting an image of the fixture and the article onto the screen of the comparator, the screen having separate tolerance patterns thereon corresponding to the smaller dimension and to the larger dimension as represented by the distinguishable point; and
- positioning the fixture on the comparator to locate the distinguishable point and the smaller dimension relative to the respective tolerance patterns on the screen to determine if the images of both the distinguishable point and the smaller dimension can be brought within the prescribed pattern lines with the fixtures in a single position.

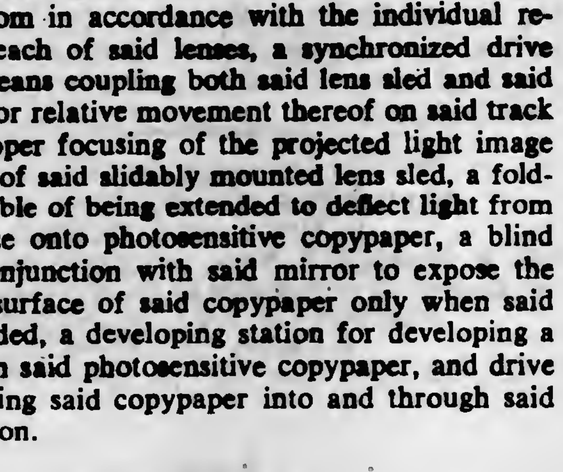
3,181,418

PROJECTION APPARATUS

Meyer T. Durlofsky, Philadelphia, Pa., assignor to Radio Corporation of America, a corporation of Delaware

Filed July 25, 1961, Ser. No. 126,632

8 Claims. (Cl. 88—24)



1. Apparatus for projecting light images on a photosensitive web comprising an optical image projector, means for moving said web into the focal plane of said projector, a mounting base for said projector, said base being supported for movement in a direction transverse to the direction of movement of said web, a reversible motor for controlling said movement of said base, means for detecting transverse displacement of at least one edge of said web with respect to said projector to provide a signal indicative of the direction and degree of said transverse displacement of said web, signal utilization means coupling said detecting means to said motor to control operation of said motor in response to said signal and means for providing transverse movement of said detecting means coincident with said movement of said base.

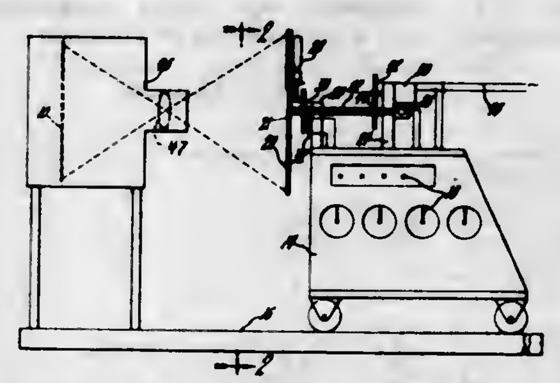
3,181,419

METHOD AND APPARATUS FOR PRODUCING DIALS

David R. Knaup, Waukesha, James T. Lehmann, Milwaukee, and Ralph W. Stockdale, Greendale, Wis., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 15, 1961, Ser. No. 138,480

5 Claims. (Cl. 88—24)



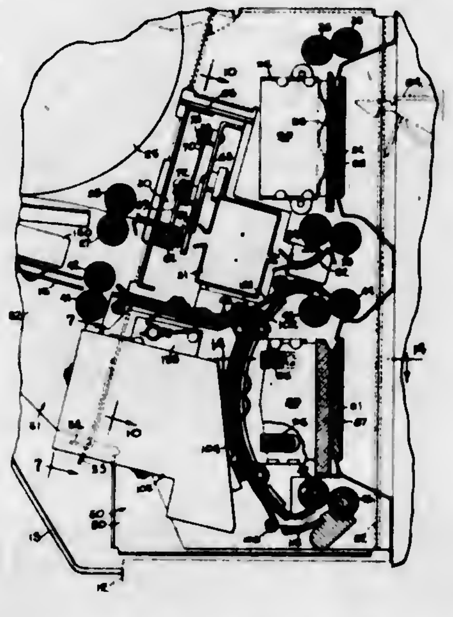
1. An apparatus for producing equally spaced dial markings on a photographic film comprising a camera containing said film, a rotatable mask in view of said camera, an aperture defined by said mask, a stroboscopic light disposed to shine through said aperture toward said camera, means for rotating said mask, and means for synchronizing said stroboscopic light with said mask rotation whereby equally spaced exposures are made on said film.

3,181,420
COPYING MACHINE

Clayton L. Rautbord, Glencoe, Harley M. Newcomb, Bensenville, Meyer L. Sugarman, Jr., Glencoe, Burton D. Eisner, Highland Park, and George C. Kent, Elmhurst, Ill., assignors to American Photocopy Equipment Company, Evanston, Ill., a corporation of Illinois

Filed May 23, 1963, Ser. No. 282,682

7 Claims. (Cl. 88—24)



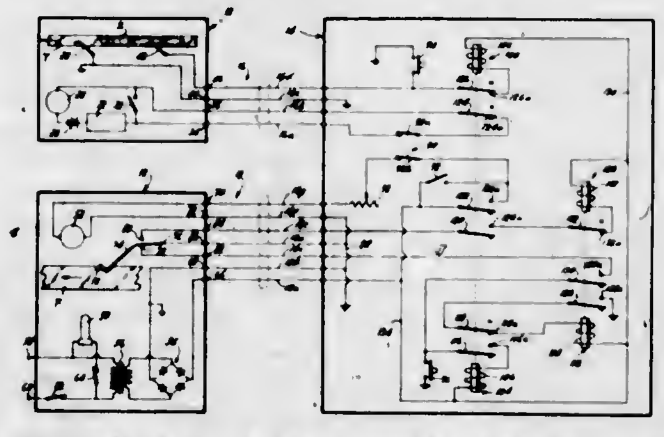
1. In an electrophotographic copying machine, the combination comprising, an optical system including an exposing station and an illuminating station from which images are projected to the exposing station, a first set of guides and driven rollers defining a copy paper path through said exposing station, means including a roll of copy paper for delivering a web of copy paper to said copy paper path, a knife in said copy paper path for severing sheets from said web, a second set of guides and driven rollers defining an original sheet path through said illuminating station, means defining, together with at least a portion of said second set of guides and rollers, a closed loop path for recirculating an original sheet back through said illuminating station, and means including sensing elements in both said original path and said closed loop path for severing said web into copy paper sheets in lengths equal to the length of the original sheet as it moves into and through said illuminating station.

3,181,421
VISUAL AND AUDIO PRESENTATION SYSTEM

Helmut E. Nimke, Brooklyn, and Arthur M. Wagner, New York, N.Y., assignors, by mesne assignments, to Impcomation, Inc., a corporation of Delaware

Filed Jan. 29, 1962, Ser. No. 169,254

9 Claims. (Cl. 88—28)



1. In combination, a tape recorder adapted to playback a tape and including a recorder motor for initiating a tape-playing interval and a recorder power supply for said tape recorder, a film projector adapted to project a film and including a projector motor for initiating a film-projecting interval and a projector power supply for said projector, tape-sensing means adapted to monitor said tape and providing tape-controlled signal, film-sensing means adapted to monitor said film and providing a film-controlled signal, and control means responsive to said tape-controlled and film-controlled signals respectively for coordinating said tape-playing and film-projecting intervals, said control means including means responsive to said film-controlled signal for initiating a tape-playing interval and means responsive to said tape-controlled signal for ending said tape-playing interval.

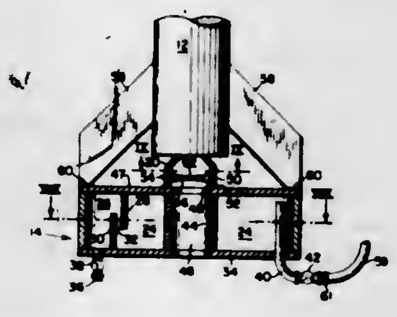
3,181,422
DEVICE FOR HANDLING A WATER-LAUNCHABLE MISSILE

John E. Draim, U.S. Navy, assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 28, 1962, Ser. No. 240,759

9 Claims. (Cl. 89—1.7)

(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A device for orienting an elongate water launchable missile in a body of water wherein the missile is floatable in the water and has a nose end and an exhaust bottom end, said device comprising:

(*a*) a tank adapted to be releasably mounted at the bottom end of said missile and disposed rearward thereof;

(*b*) said tank being divided into two compartments by baffle means which are laterally disposed on at least one side of the longitudinal axis of the missile when said tank is mounted to the missile;

(*c*) the weight and volume of said tank and the volume of one of the compartments being such that when the one compartment is full of water the missile is stabilized in roll and is oriented in a desired towing position when the combination of the tank mounted ot the missile is disposed in the water;

(*d*) further the weight of the tank and its entire volume being such that when the tank is full of water the missile is positioned substantially upright in the water when said combination is disposed in the water;

(*e*) said compartments being in communication with one another and each of said compartments having an opening to the outside of said tank with the outside opening of said one compartment capable of allowing water to enter or exit said one compartment and the outside opening of the other compartment capable of allowing air to vent from or enter said tank;

(*f*) the outside opening of said one compartment being located so as to be capable of being in a submerged condition when said combination is disposed in the water; and

(*g*) valve means for opening and closing at least one of said outside openings,

whereby upon selectively opening and closing the valve the missile can be stabilized in roll and oriented for towing purposes by filling said one compartment and can be oriented for launching purposes by completely filling said tank.

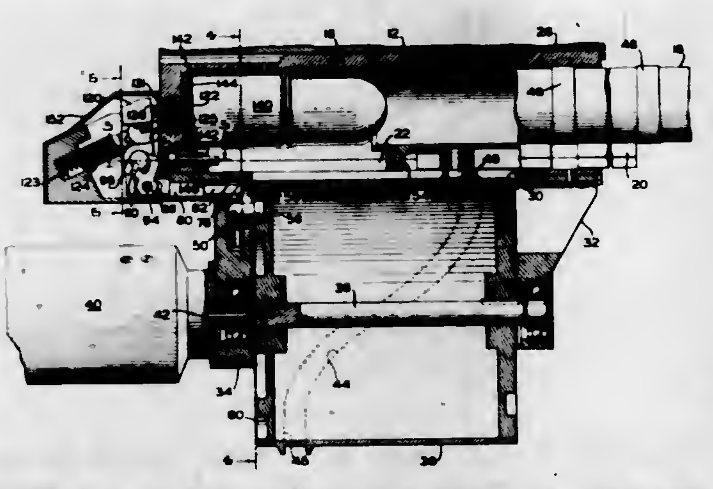
3,181,423
MOTOR DRIVEN AUTOMATIC GUN

John G. Rocha, Westfield, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed Feb. 17, 1961, Ser. No. 90,147

7 Claims. (Cl. 89—161)

(Granted under Title 35, U.S. Code (1952), sec. 266)



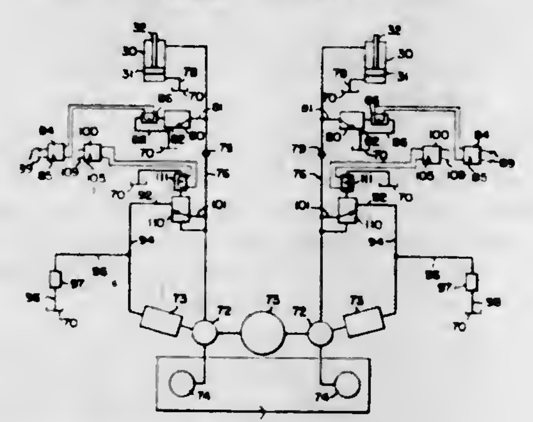
1. In an automatic gun having a receiver with a longitudinal bore formed into one end thereof for holding a cartridge in firing position, and a barrel slidably disposed in the bore for reciprocable movement to and from battery position, the improvement of an operating drum rotatably secured to the receiver, a cam follower projecting from the barrel, cam track means in said drum engageable with said follower for continuously cycling the barrel forwardly from battery position and rearwardly in return thereto, and means responsive to the rotation of said drum for firing the cartridge subsequent to movement of the barrel into battery position.

3,181,424
COUNTERBALANCING MECHANISM

William R. Miller, Rochester, Worthy J. Forward, Irondequoit, and Norris E. Bleck, Rochester, N.Y., assignors to Farrel-Birmingham Company, Inc., Rochester, N.Y., a corporation of Connecticut

Filed Feb. 14, 1962, Ser. No. 173,285

7 Claims. (Cl. 90—15)



1. The combination with

(*a*) a column,

(*b*) a slide reciprocable vertically thereon, and

(*c*) means for reciprocating said slide, of

(*d*) means for counterbalancing the slide comprising

(*e*) a cylinder and a piston, one of which is movable relative to the other and one of which is connected to said slide to be moved in opposite directions, respectively, upon movement of said slide in opposite directions,

(*f*) a single first duct connected to said cylinder for conducting hydraulic fluid into said cylinder between one end face of said piston and the opposed end face of said cylinder when said slide is moving in one direction and for conducting hydraulic fluid from between said end faces when said slide is moving in the opposite direction,

(*g*) means for supplying hydraulic fluid to said first duct when said slide is moving in said one direction including a second duct,

(*h*) means for shutting off said first duct from said second duct when said slide is moving in said opposite direction,

(*i*) means for exhausting fluid from said first duct when said slide is moving in said opposite direction including a first relief valve, and

(*j*) means for exhausting fluid from said second duct including a second relief valve,

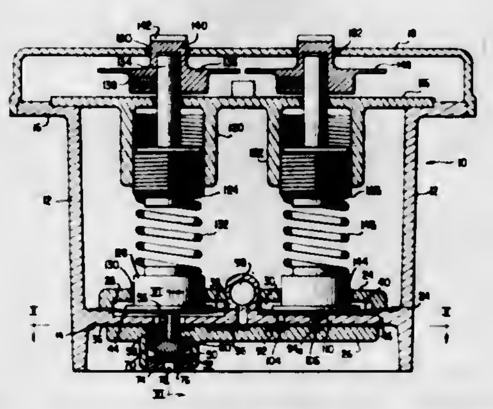
(*k*) said relief valves being separately adjustable so that greater pressure is required to open said first relief valve than said second relief valve.

3,181,425
PRESSURE ACTUATED CONTROL DEVICE

Klaus Petro Mueller, Goshen, Ind., assignor to Robertshaw Controls Company, a corporation of Delaware

Filed Nov. 13, 1962, Ser. No. 236,888

15 Claims. (Cl. 91—25)



1. A fluid pressure actuator comprising;

a low limit chamber, a high limit chamber and an operating chamber each having a wall movable to expand and contract the chambers with each of the movable walls normally in the contracted position,

means connecting the high limit chamber with the low limit chamber upon expansion of the low limit chamber,

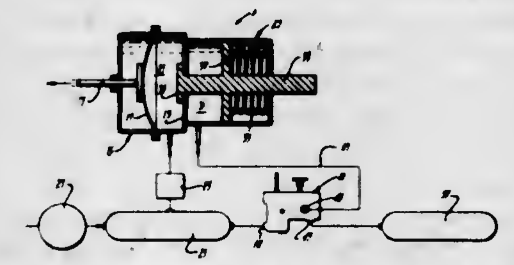
and means for connecting the operating chamber directly with both the low limit and high limit chambers upon expansion of the high limit chamber and for disconnecting only the high limit chamber from the operating chamber upon subsequent contraction of the high limit chamber.

3,181,426
FLUID PRESSURE BRAKE SYSTEM

Ernest C. Ike, Lafayette, Calif., assignor to Western Die Casting Company, Emeryville, Calif., a corporation of California

Filed Aug. 12, 1963, Ser. No. 301,360

5 Claims. (Cl. 91—33)



1. A brake system comprising a brake cylinder of the spring type whereby air pressure is normally applied to compress a spring and to release the brakes, a main air tank for applying air to said spring brake, an auxiliary

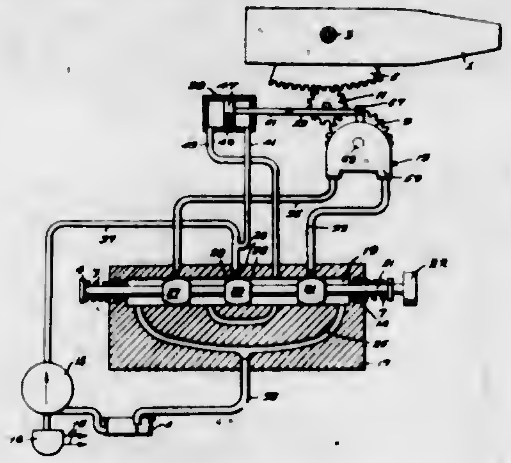
air tank for applying air to said spring brake, a valve having an inlet port, an auxiliary tank port and a cylinder port, said cylinder port being connected to the spring brake, said inlet port being connected to the main tank, said auxiliary tank port being connected to the auxiliary tank, means in said valve for normally permitting communication from the inlet port to the cylinder port, and means in said valve operable upon a reduction of pressure at said inlet port for interrupting said communication from the inlet port to the cylinder port and for venting said cylinder port to the atmosphere.

3,181,427
HYDRAULIC MOTOR CONTROL SYSTEM

Roland A. Magnuson, Seattle, Wash., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Jan. 25, 1963, Ser. No. 254,026

8 Claims. (Cl. 91—202)



1. In a constant pressure-variable displacement hydraulic motor system for moving a load, a valve in said system for controlling the quantity of fluid per unit time which moves in said system, a stroke control cylinder, a piston mounted for reciprocation in said cylinder, said piston dividing said cylinder into first and second pressure chambers, first conduit means connecting said first chamber to said valve, second conduit means connecting said second chamber to a source of constant pressure, said piston having an orifice therethrough permitting fluid to flow from said first chamber to said second chamber when there is low fluid flow in the system, a rod connecting said piston to the variable displacement hydraulic motor, said piston and rod adapted to move a bearing forming part of the hydraulic motor to vary the stroke thereof on a change in load on the motor.

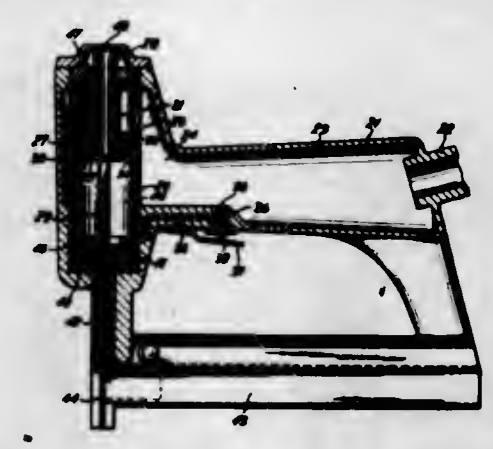
3,181,428
PNEUMATIC FASTENER DEVICE

Dieter Volkmann, Neustadt am Rubenberge, Germany, assignor to Bukama G.m.b.H., Hannover, Germany

Filed Mar. 6, 1962, Ser. No. 177,915

6 Claims. (Cl. 91—392)

1. A pneumatic fastener inserting device comprising a housing body, a cylinder having an upper and a lower end, a piston reciprocable in said cylinder, a driver fixed to said piston and actuates thereby to drive a staple, said housing body having an air chamber communicating with a source of compressed air, a permanently open duct between said air chamber and said upper end of the cylinder, and a second duct in said housing body leading to said lower end of the cylinder, a manually operated valve adapted to control the flow of compressed air to said second duct, said housing body further having a vent duct communicating with said valve, whereby when in its normal position said valve is closed said second duct communicates with said air chamber, thus causing compressed air also to act upon the lower face of said piston thereby maintaining said piston in a retired initial position, and when said valve is operated said second duct is closed against said air chamber and said second duct communicates through said vent duct to atmosphere thus causing compressed air to act solely upon the upper face of said piston, thereby to bring about an immediate



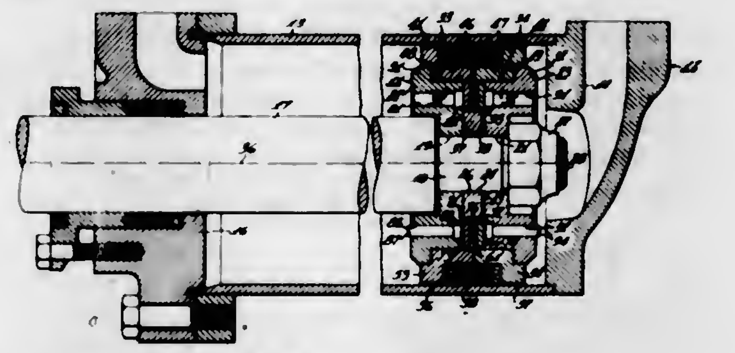
movement of said piston in its staple driving direction, and means increasing during the course of the working stroke the effective area of the upper face of said piston permanently submitted to the action of compressed air, as compared to the size of said upper face in the retired initial position of said piston, a part of said upper face being vented to atmosphere in said retired initial position.

3,181,429
PISTON AND UNLOADING VALVE THEREFOR

Harry H. Washbond, Springfield, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Sept. 30, 1963, Ser. No. 312,403

6 Claims. (Cl. 91—401)



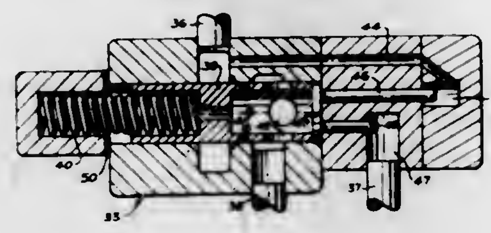
1. A piston comprising,
a pair of piston segments having
  reduced diameter portions in axially facing relation to one another and presenting, respectively,
    cylindrical surfaces coaxial with said piston and with one another, and
  enlarged diameter portions presenting
    flat surfaces, respectively extending radially outward from said reduced diameter portions,
a pair of wear rings of nonferrous material having
  cylindrical portions, respectively, with
    adjacent ends in axial abutment with one another and
    remote ends in engagement, respectively, with said flat surfaces and
  flanges extending, respectively, radially outward from said remote ends and each terminating in a cylindrical bearing surface,
  a spacer between said segment in radially inward spaced relation to said wear rings, said wear rings, piston segments and spacer defining an interior cavity,
  mechanical unloading valve means in said piston between said spacer and wear rings,
  a packing between said flanges and in radial engagement with said cylindrical portions of said wear rings, and
means releasable fastening said piston segments together thereby maintaining said ends of said wear rings in abutment.

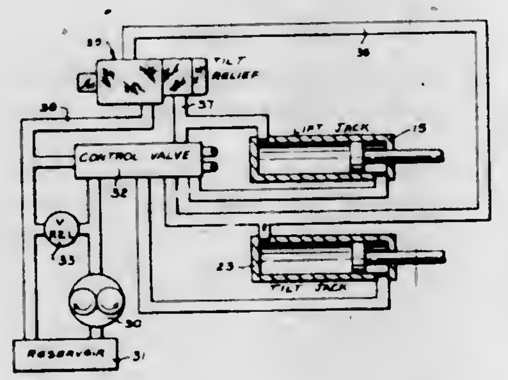
3,181,430
RELIEF VALVE FOR BUCKET LOADER CIRCUITS

Allan L. Freedy, Aurora, and Eugene J. Wittry, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed July 30, 1962, Ser. No. 213,347

5 Claims. (Cl. 91—413)





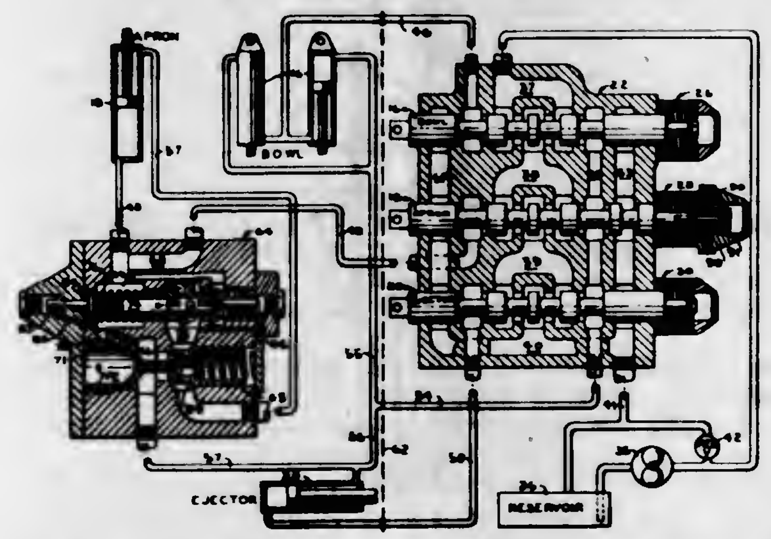
1. In a hydraulic circuit including a source of fluid under pressure and two hydraulic jacks to be actuated by said fluid, a normally closed relief valve to relieve fluid from one jack, means to communicate pressure from said one jack to said relief valve to tend to open it, and separate means to communicate pressure from the other of said jacks to tend to open the relief valve.

3,181,431
HYDRAULIC CIRCUIT FOR TRACTOR DRAWN SCRAPERS AND THE LIKE

Allyn J. Hein and John A. Junck, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Original application Nov. 24, 1961, Ser. No. 154,790, now Patent No. 3,115,716, dated Dec. 31, 1963. Divided and this application June 24, 1963, Ser. No. 289,961

1 Claim. (Cl. 91—414)



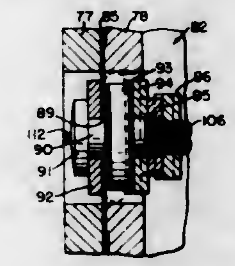
In a hydraulic circuit which includes a plurality of independently operable reversible fluid motors, a source of fluid under pressure, means to direct fluid from said source to said motors, valve means including a control element for each motor, separate conduits for communicating fluid from each control element to its respective motor for driving the motor in one direction, and means including a single conduit common to all of the motors for returning fluid through said valve means, and in which said single conduit serves for the supply of fluid for driving said motors in the opposite direction and said separate conduits return fluid through said valve means.

3,181,432
MEANS FOR ADJUSTING THE EFFECTIVE AREA OF A PRESSURE RESPONSIVE DIAPHRAGM

Louis Medart Puster, Knoxville, Tenn., assignor to Robertshaw Company, a corporation of Delaware

Filed Oct. 9, 1961, Ser. No. 143,889

6 Claims. (Cl. 92—6)



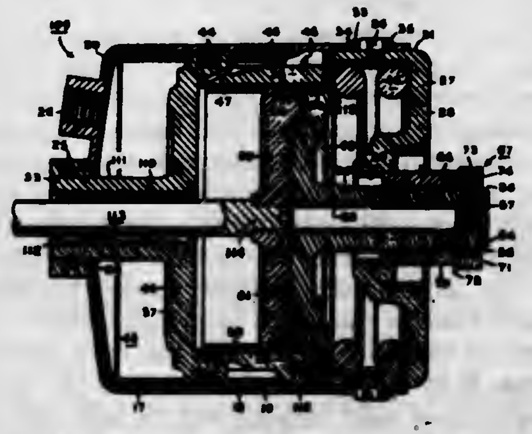
1. In combination, a housing having a cavity, a diaphragm having the outer periphery thereof secured to said housing and cooperating with said cavity to define a chamber, a flexible disc having a surface abutting one side of said diaphragm, and means operatively interconnected to said disc to vary the effective surface thereof abutting said one side of said diaphragm to vary the effective area of said diaphragm.

3,181,433
FRICTION DEVICE OPERATING MECHANISM

Oliver B. Cruse, Florissant, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Original application Oct. 12, 1962, Ser. No. 230,141. Divided and this application Sept. 28, 1964, Ser. No. 399,573

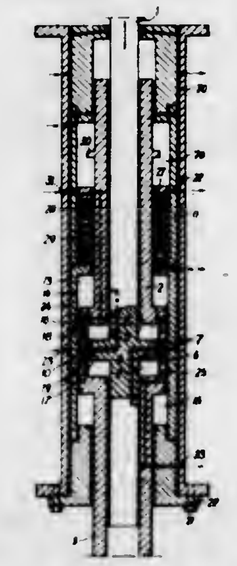
15 Claims. (Cl. 92—52)



1. A friction device operating mechanism comprising a housing having an expansible chamber therein, resiliently urged means normally opposing expansion of said chamber and including extension means extending exteriorly of said housing, another expansible chamber in said resiliently urged means, actuator means opposing expansion of said other chamber and including a reduced portion extending through said extension means and having a working end exteriorly of said housing, means for introducing fluid pressure into said other chamber, said actuator being movable in a working direction in response to fluid pressure in said other chamber to actuate said reduced portion and energize the working end thereof, and

means for introducing fluid pressure into said first named chamber, said resiliently urged means being movable in response to fluid pressure in said first named chamber less than a predetermined amount to urge said actuator in a working direction to actuate said reduced portion and energize the working end thereof.

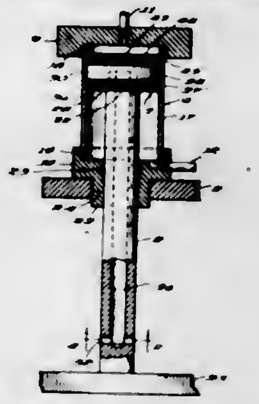
3,181,434
ROCK DRILLING DEVICE
Erik Olov Persson, Nalden, Sweden, assignor to Torsten Neldas
Filed Nov. 27, 1962, Ser. No. 240,217
4 Claims. (Cl. 92—107)



1. A rock drilling device comprising a tubular casing, a tubular housing mounted inside said casing, means defining an annular space between said housing and said casing, sealing means carried between said casing and said housing at points spaced axially therealong for maintaining said annular space airtight, axially spaced annular means projecting radially inwardly from said tubular housing defining a cylindrical chamber therein, a drill holder extending axially into said housing, said drill holder having an enlarged piston portion thereon slidably received in the cylindrical chamber of said housing; at least a part of the piston portion of said drill holder being hollow defining a cylindrical chamber within the piston portion, a drill driving rod extending axially into said drill holder, said drill driving rod having an enlarged piston portion slidably received in the cylindrical chamber of said drill holder; sealing means received between said driving rod piston, and said drill holder cylindrical chamber and between said driving rod and said drill holder for maintaining the space above and below the piston portion of the driving rod airtight; sealing means between said drill holder piston and said cylindrical housing chamber and between said drill holder and said tubular housing for maintaining the space above and below the piston portion of the drill holder airtight; means for supplying a pressurized fluid to the space above and below the piston portions of the drill holder and the drill driving rod, said pressure fluid being used for transmitting the reciprocal movement of said driving rod to said drill holder and dampening the reciprocal movement of said drill holder.

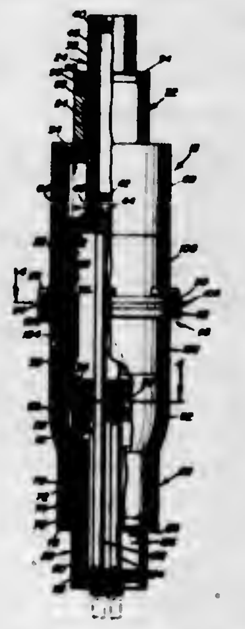
4. A rock drilling device according to claim 1 wherein the tubular housing defines a second cylindrical chamber coaxial with the other cylindrical housing chamber, said second chamber enclosing a spring biassed against an annular piston member surrounding the upper portion of said drill holder, said drill holder having an annular collar projecting radially therefrom above said piston member, means defining an opening into said second cylindrical chamber and means for introducing fluid under pressure to said second chamber during operation of the drilling device for compressing the spring and holding the annular piston member below said collar and means for decreasing the fluid pressure in the second chamber when the drilling device is not operating whereby said spring contacts the annular collar of the drill holder and lifts the drill holder away from the work surface upon which the device is operating.

3,181,435
FLUID PRESSURE ACTUATED MECHANISM
Harry R. Bucy, 625 S. Glenwood Place, Burbank, Calif.
Filed Oct. 27, 1961, Ser. No. 148,162
6 Claims. (Cl. 92—110)



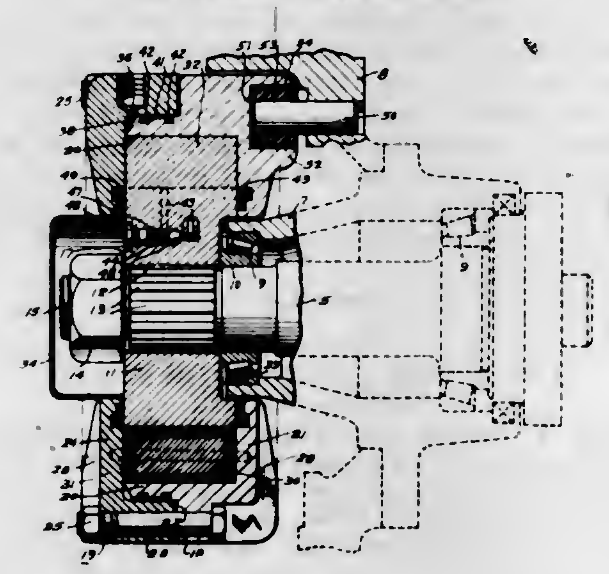
1. In a hydraulic pressure actuated mechanism,
a hollow cylinder having end members closing the ends thereof,
a piston reciprocable in said cylinder,
a piston rod having one end thereof attached to said piston and thence extending through guiding and gasket means in one of said end members to the exterior of said cylinder,
fluid ports at opposite ends of said cylinder each affording means for fluid ingress and egress incident to reciprocation of said piston, and
other means incorporated in said piston rod and normally sealed by the engagement between said piston and piston rod constantly effective to provide visual indication exteriorly of said cylinder of existing malfunction of some portion of said piston or of said piston rod within said cylinder.

3,181,436
DIFFERENTIAL HYDRAULIC CYLINDER MECHANISM
Robert B. McCreery, Xenia, Ohio, assignor to The Marmac Company, Xenia, Ohio, a corporation of Ohio
Filed Jan. 12, 1962, Ser. No. 165,761
13 Claims. (Cl. 92—117)



1. A fluid pressure load handling mechanism comprising, column means having spaced slide bearing surfaces externally formed therein, tubular housing means spaced throughout in surrounding relation to said column means to define a plurality of annular pressure cavities, and a plurality of fixedly spaced side bearing assemblies operatively mounted on the housing means in sliding engagement with said bearing surfaces of the column means on opposite axial sides of said pressure cavities supporting the housing means on the column means for relative movement therebetween, said column means including a center section having an enlarged external diameter and axial end portions of different external diameters less than said enlarged external diameter of the center section, each of said center section and said end portions defining said spaced slide bearing surfaces.

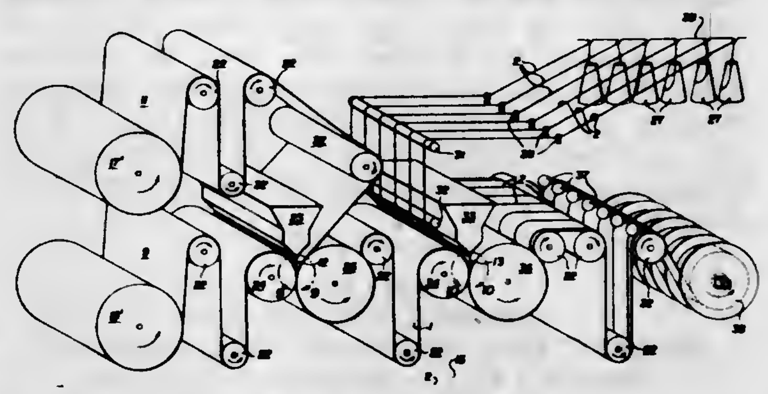
3,181,437
ROTARY ACTUATOR
Rollin Douglas Rumsey and Gordon W. Kamman, Buffalo, N.Y., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Nov. 8, 1962, Ser. No. 236,218
12 Claims. (Cl. 92—122)



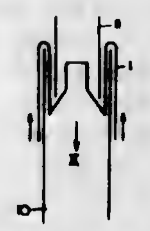
2. In a rotary hydraulic actuator,
a wing shaft disk body of generally cylindrical form having an axial face and vane means projecting radially from its periphery,
a housing providing a hydraulic actuating chamber about the periphery of the wing shaft body and abutment means in the chamber coactive with the vane means for oscillation of the wing shaft body by hydraulic fluid in the working chamber,
said wing shaft body having an axial bore therethrough for attachment to a shaft member to be rotatably actuated,
the housing having a clearance opening for the shaft coaxial with and of substantially greater diameter than said bore with a radial flange portion of the housing opposing said face,
and means for retaining the housing against rotation relative to the shaft.

3,181,438
METHOD AND APPARATUS FOR MAKING TEAR STRIP POUCH TYPE CONTAINERS
Daniel C. Leary, Jr., Portland, Oreg., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Original application Aug. 23, 1957, Ser. No. 679,829, now Patent No. 3,057,539, dated Oct. 9, 1962. Divided and this application Jan. 11, 1962, Ser. No. 171,549
8 Claims. (Cl. 93—8)

1. Apparatus for applying a coating of heat sealable material and a plurality of spaced elongated cords to a flexible sheet comprising coating means for applying a uniform layer of flowable heat sealable material to said sheet for substantially its full length and width, supply means for feeding said sheet past said coating means, additional supply means for feeding a plurality of continuous cords in laterally spaced relationship into contact with said sheet adjacent said coating means, oscillating means for changing the position of said cords relative to said sheet whereby said cords may be applied in an undulating manner to said sheet, said oscillating means precluding projection of all said cords beyond the lateral marginal confines of said sheet, and means adjacent said coating means for applying pressure to said coated sheet to secure said cords to said sheet and to adhere said coating to said sheet throughout the length thereof.

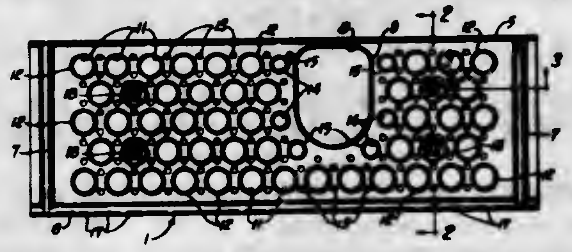


3,181,439
VALVED CONTAINERS OF FLEXIBLE PLASTIC MATERIAL
Valer Flax, Vic-Fezensac, Gers, France
Filed Nov. 9, 1961, Ser. No. 151,274
Claims priority, application Germany, Nov. 11, 1960, C 22,716; France, May 24, 1961, 862,648
2 Claims. (Cl. 93—35)



1. A method of making a container which comprises the steps of forming an open-ended flattened tube having one end portion of lesser width than the remaining portion of the tube, turning said remaining portion inside out over said end portion, and welding together the walls of said remaining portion to close the other end of the container.

3,181,440
STAMPED TREAD PLATE
Norbert F. Mullaney, Milwaukee, and Chester P. Carlton, Brookfield, Wis., assignors to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Mar. 15, 1962, Ser. No. 179,899
2 Claims. (Cl. 94—5)

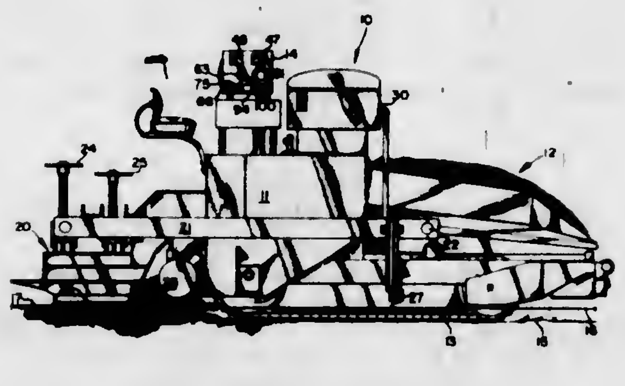


1. A lightweight, unitary sheet metal tread plate having a series of relatively large openings provided therein for passing obstructing material through the surface of the plate, said plate having a continuous interconnecting, flat web portion, formed integrally with surrounding flanges struck to a common level above the flat web portion to provide a non-skid tread surface, said flanges extending

above said plate a distance substantially greater than the plate thickness and being thinner than said plate, said flanges having a gulleted edge construction providing individual truncated gripping and cutting edges in each of said flanges to increase the traction of said tread surface and to facilitate breaking up of obstructing material on said surface, said web portion further being provided with a series of drain holes surrounding each of said larger openings for draining water from the plate surface and said plate being further formed with corrugated stiffening ribs extending along preselected edges of the plate and extending upwardly to the top level of the flanges to provide footing along the corresponding edges of the plate.

3,181,441
CONTROL APPARATUS

Richard C. Flom, Minneapolis, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Oct. 12, 1961, Ser. No. 144,667
14 Claims. (Cl. 94—46)

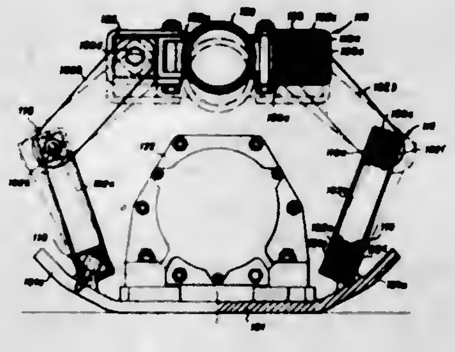


6. Control apparatus for use with a floating screed paving machine, in which the screed is towed behind a propulsion unit and the height and slope profile of a resulting road surface is controlled by independently controlling the angle of attack of the opposite ends of the screed, the apparatus comprising; height sensing means vertically movably mounted in relation to the paving machine and carried thereby, control means having an input connected to be controlled by said height sensing means and having an output connected to control the angle of attack of one end of the screed and to concurrently move said height sensing means vertically relative to the paving machine; slope sensing means mounted in relation to the screed to be responsive to the transverse slope of the screed and to the angle of attack of the opposite ends of the screed, and control means having an input connected to be controlled by said slope sensing means and having an output connected to control the angle of attack of the other end of the screed.

3,181,442
VIBRATOR FOR COMPACTING THE BED AND SURFACING OF ROADS

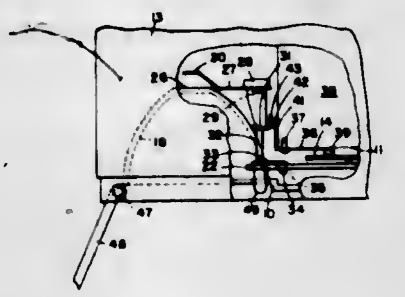
Jürg H. Brigel, Stauffacherstrasse 96, Zurich, Switzerland
Filed Apr. 3, 1961, Ser. No. 100,296
Claims priority, application Switzerland, Apr. 5, 1960, 3,836/60; Austria, July 22, 1960, A 5,628/60
1 Claim. (Cl. 94—48)

A vibrator machine for compacting the bed and surfacing of roads, comprising a frame, a plurality of juxtaposed compacting plates each having a vibrating means mounted thereon and at least two levers affixed to each plate, a rod and carrier secured to the frame, two levers connected to the rod and to the first-mentioned levers to form a toggle lever pivotally joined to each other by means of a joint, the lower end of each toggle lever being pivotally connected to the compacting plate by means of a second joint and the upper end of each toggle lever being pivotally connected to the carrier by means of a third joint, the two toggle levers and the joints with the carrier and rod and its plate forming a substantially polygonal configuration in side elevation, a pin of non-circular cross-section with flat side portions for each joint with each joint pin being fixed to one lever interconnected by the joint, a plurality of rubber-elastic elements disposed adjacent said flat side portions of each joint pin, means for securing said rubber-elastic elements to the levers interconnected by the joint, said rubber-elastic elements of each joint elastically exerting resistance to the movement of the joint in either direction, and a hydraulic cylinder and piston rod connected to the frame and the carrier to be loaded on either side of the piston to move the rod up and down for raising the plates from the ground and positively pressing the plates on the ground.



3,181,443
TWO-SPEED CAMERA FOR FLASH PHOTOGRAPHY

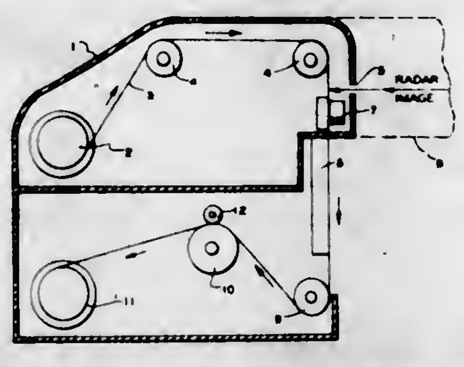
Norman N. Lareau and Richard J. Olson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 26, 1962, Ser. No. 218,193
6 Claims. (Cl. 95—11.5)



1. In a flash camera, the combination comprising:
(*a*) a shutter mechanism including a part which moves when the shutter operates to make an exposure, and the extent of movement of which part determines the exposure speed of said shutter mechanism;
(*b*) flash means for said camera movable between an operative position for illuminating the subject upon making an exposure, and an inoperative position for preventing illumination of the subject upon making an exposure;
(*c*) a slidable member movable between two positions and including a portion lying in the path of movement of said movable part in either position and engageable by said movable part in at least one of said positions to limit the extent of movement of said part and thereby achieve shutter speeds of different duration in said respective positions; and
(*d*) means interconnecting said slidable member and flash means for moving said slidable member into one of said two positions in response to movement of said flash means from one of its positions to the other.

3,181,444
CONTROL AND ACTUATION OF RAPID PROCESSING EQUIPMENT

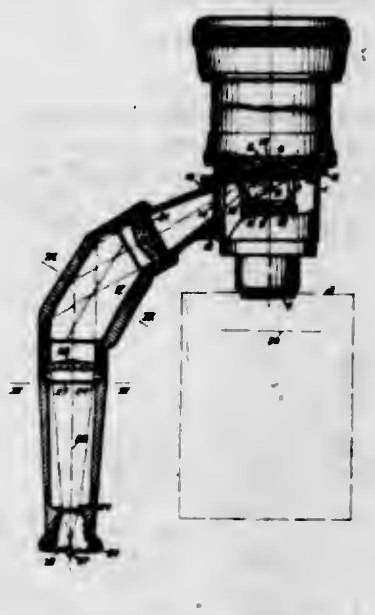
Zoltan Takats, Vestal, and John Komas, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 27, 1962, Ser. No. 219,487
7 Claims. (Cl. 95—12)



1. In photographic apparatus, wherein photographic film is withdrawn continuously from a supply spool by a metering roll and is sequentially fed past an exposure station, a rapid processing station, and a viewing station, in rapid succession, the improvement which comprises a power driven sequencing unit operable from an initial starting point for automatically actuating said metering roll to withdraw film from said supply spool and feed it serially, and continuously, through the respective stations, means on said sequencing unit for contacting said film with developer solution at said rapid processing station, and means for automatically returning said sequencing unit to its initial starting point on failure of driving power.

3,181,445
VIEW FINDER

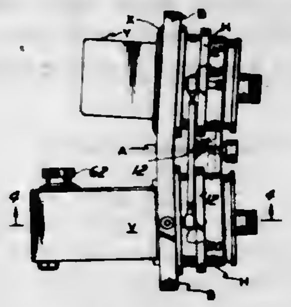
Lucien Reymond, Paris, France, assignor to Societe d'Optique et de Mecanique de Haute Precision, Paris, France, a company of France
Filed Oct. 31, 1961, Ser. No. 148,960
Claims priority, application France, Oct. 12, 1954, 677,678; Mar. 29, 1961, 857,154, Patent 1,293,087
5 Claims. (Cl. 95—42)



1. A view finder for a camera having an objective establishing an image of the subject on a photographic surface at right angles to optical axis of the camera, a substantially opaque fixed reflecting surface substantially the size of the pupil of the eye of a human operator disposed in the path of the light rays from the subject entering the objective, said surface being disposed at an angle to the optical axis so as to reflect a minor portion of the light rays, and an optical system receiving said reflected rays comprising at least one finder objective lens forming a real image of said reflecting surface and a real image of the subject, restoring means for restoring the attitude of the real image of the subject, and an ocular lens for viewing the restored real image of the subject and for forming a final real image of the reflecting surface in a plane normally occupied by the pupil, the magnification ratio of said optical system having a value approximating unity.

3,181,446
TWIN LENS CAMERA

Frank L. Bertucci, 2442 E. Spaulding Ave., Long Beach, Calif.
Filed June 21, 1961, Ser. No. 118,643
1 Claim. (Cl. 95—44)



In a portable camera:
(*a*) first and second matched lenses;
(*b*) first and second tubes in which said first and second lenses are transversely mounted;
(*c*) first and second end pieces that support said first and second tubes in forwardly extending positions therefrom, which tubes are in coaxial alignment with bores formed in said end pieces;
(*d*) first and second inner focusing tubes extending rearwardly from said first and second end pieces, which tubes are in coaxial alignment with said bores in said end pieces, with said inner tubes having first threads formed on the exterior surfaces thereof;
(*e*) first and second outer focusing tubes having second threads formed on the interior surfaces thereof which engage said first threads;
(*f*) a magazine having a forward open end adapted to hold light-sensitive film;
(*g*) a first ring mounted on the forward end of said magazine and projecting outwardly therefrom;
(*h*) a housing having a open forward end and a viewing opening formed in the rear thereof;
(*i*) an elongate rigid member having two forwardly and outwardly extending portions that are in angular relationship, which portions have first and second openings extending forwardly therethrough, with the rear of said first opening terminating in a first circular recess wherein said first ring is rotatably supported;
(*j*) first means for removably maintaining said first ring in said first recess to permit selective rotation of said magazine to expose film contained therein either vertically or horizontally;
(*k*) second means for supporting said housing with said open end adjacent the rear surface of said member and said housing being in coaxial alignment with said second opening;
(*l*) a frosted transparent plate positioned transversely in said housing;
(*m*) third and fourth means for supporting the rear ends of said first and second outer focusing tubes from the forward surface of said rigid member and in co-axial alignment with said first and second openings;
(*n*) fifth manually operable means for concurrently rotating said first and second outer focusing tubes relative to said first and second inner focusing tubes

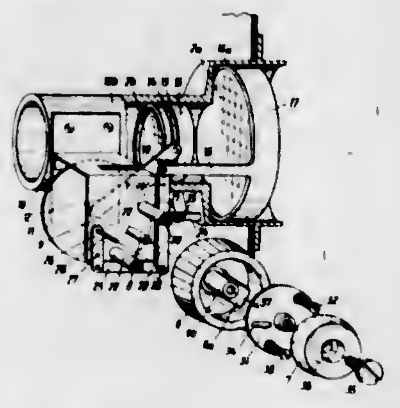
to move said first and second lenses in fixed parallel paths relative to said film in said magazine and said frosted plate to focus said lenses on an object to be photographed, which object is viewable on said frosted plate in the position it will be reproduced on said film;

(*o*) shutter means for establishing light communication between said first lens and said film in said magazine;

(*p*) two rods rigidly affixed to said first and second end pieces which extend rearwardly therefrom; and

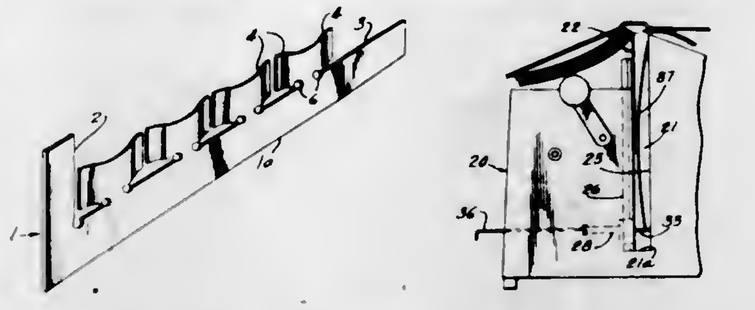
(*q*) two tubes affixed to said member and coaxially aligned with said rods, which rods are slidably movable in said tubes, with said rods and tubes cooperatively preventing rotation of said first and second inner focusing tubes when said first tubes are concurrently rotated to move said first and second inner focusing tubes forwardly and rearwardly relative to said member.

3,181,447
CAMERA HAVING A VARIFOCAL OBJECTIVE
Eduard Keznickl, Vienna, Austria, assignor to Karl Vockenhuber, Vienna, Austria
Filed Mar. 15, 1961, Ser. No. 95,980
Claims priority, application Austria, Apr. 1, 1960, A 2,504/60
9 Claims. (Cl. 95—45)



1. A camera comprising
a camera casing,
a varifocal objective including a plurality of objective members defining an optical axis,
an objective tube enclosing said objective members and mounted at least partly immerged in said camera casing,
means controlling the movement of at least two objective members in the direction of the optical axis according to different laws, in order to vary upon axial movement of said objective members the focal length of said objective,
two knobs rotatably mounted on a wall of said camera casing disposed parallel to the optical axis,
said two knobs being rotatable about the same axis at a right angle to the optical axis of said objective,
a cam disc,
a lever,
said cam disc being coupled to one of said knobs controlling said lever,
a first arm of said lever engaging one of said movable objective members,
means coupled to said one of said knobs controlling another of said movable objective members,
a cam coupled to another of said knobs,
a second arm of said lever being controlled by said cam and causing an additional axial movement of said one of said objective members coupled to said lever upon rotating said another of said knobs, thus focusing said objective.

3,181,448
COPY SHEET SUPPORT FOR BOOK COPYING MACHINE
Philip Hemenway, 12625 42nd Ave. S., Seattle, Wash.
Filed July 1, 1963, Ser. No. 292,169
3 Claims. (Cl. 95—73)
(Granted under Title 35, U.S. Code (1952), sec. 266)



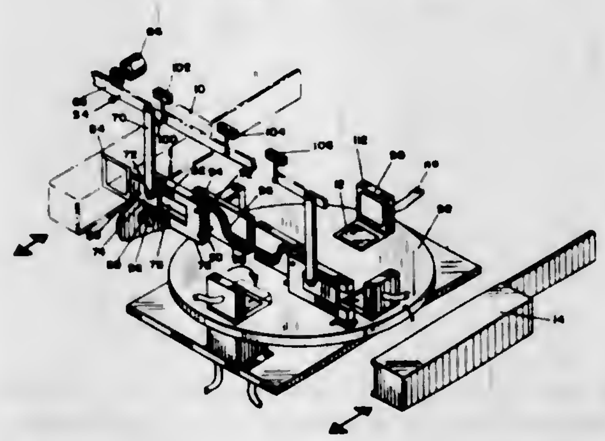
1. A copy sheet support for use in a book copying machine having a substantially vertical work receiving slot comprising an L-shaped member made from a thin sheet of resilient metal having semi-detached spring finger elements formed along the upper edge of the longer leg of said L-shaped member, said finger elements being partially offset relative to the plane of the L-shaped member.

3. In combination with a book copying machine having a substantially vertical work receiving slot in the body thereof defined by a stationary plate and a movable press plate for pressing the page to be copied against a copy sheet, the improvement comprising:

(*a*) registering vertical slot-like openings in said body and said movable press plate, said openings communicating with said work receiving slot; and

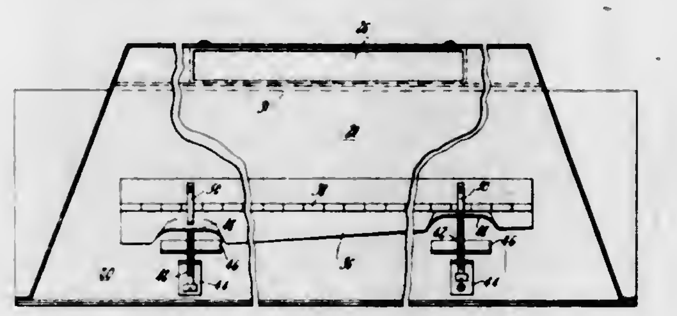
(*b*) movable support means comprising an adjustable handle disposed for translational and rotational movement within said slot-like openings, a spring biased pin associated with each handle bridging the work receiving slot and capable of being translated thereby to a plurality of locations at differing distances above the bottom of said work receiving slot, and locking means connected to each adjusting handle and actuated by rotation thereof for locking each pin at any selected location.

3,181,449
DATA PROCESSING SYSTEM
Malor Wright, Lexington, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Aug. 22, 1961, Ser. 133,210
5 Claims. (Cl. 95—89)



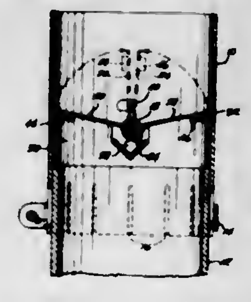
1. A film processing system comprising, in combination, a plurality of processing stations, a supply of film sheets to be processed, film transport means for transporting individual film sheets to respective ones of said processing stations, means at each of said processing stations for applying processing fluids at a uniform velocity to said film sheets simultaneously at at least two stations, and means for removing each of said film sheets from said respective stations after processing.

3,181,450
VENTILATION AND LIGHTING
Michael Henry Kruger, Chestnut Hill, Mass., assignor to Smithcraft Corporation, Chelsea, Mass., a corporation of Massachusetts
Filed Mar. 8, 1962, Ser. No. 178,315
5 Claims. (Cl. 98—40)



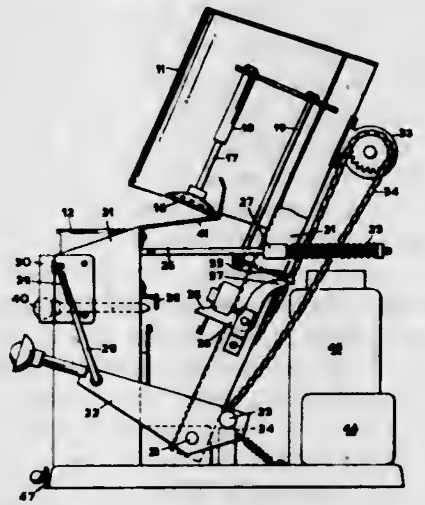
1. A ventilation unit having an extended air outlet, a supply passage for said outlet defined by spaced apart walls and connectable to an air source, an extended, flexible damper member warpable along its extent, said damper member located between said walls and arranged generally parallel with said outlet in a manner to permit control of the flow of air through said passage and outlet, means mounting said damper member for arcuate movement about an axis lying in the direction of extent of said damper member from a first position to other positions relative to said walls defining said passage to effect said control of the air flow, position control means including a plurality of adjustment means spaced apart along the extent of said flexible damper member, each adapted to be adjusted independently, said adjustment means cooperatively constructed and arranged with respect to each other and to said means mounting said damper member to move the corresponding portion of said damper member from said first to said other positions and to flexibly warp the corresponding portion of said damper member about said axis relative to the remainder of said damper member to vary the air flow from point to point along the extent of said outlet.

3,181,451
EXHAUST PIPE CLOSURE MECHANISM
Wynn S. Hess, Kent, Wash., assignor of one-fourth to Delbert J. Barnard
Filed Feb. 5, 1963, Ser. No. 256,396
6 Claims. (Cl. 98—59)



1. In combination with a vertically extending duct member forming a part of an internal combustion engine exhaust system through which hot exhaust gases flow, and having an open upper end, closure means completely contained in duct member, said closure means comprising: a pin extending across the interior of said duct member a substantial distance down from its upper end; a first closure flap in said duct member having a free outboard edge portion; first hinge means mounting said first closure flap onto said pin, for free pivotal movement thereabout on one side of the pin; a second closure flap in said duct member having a free outboard edge portion; second hinge means mounting said second closure flap onto said pin, for free pivotal movement thereabout on the opposite side of the pin; seat means for underlying and supporting the outer edge portions of said first and second closure flaps, and preventing downward pivotal movement of said closure flaps beyond a predetermined, substantially horizontal, closed position; and stop means extending radially inwardly from the wall of said duct member above at least a portion of said pin, and between said closure flaps, said stop means serving to prevent movement of either closure flap from a substantially vertical open position towards the substantially horizontal closed position of the other closure flap, and with movement of said closure flaps from their closed to their open positions being effected during engine operation by the exhaust gases flowing upwardly through said duct member, and with closure of said closure flaps being effected by gravitational return of the closure flaps to their substantially horizontal closed positions whenever the exhaust gases cease to flow through said duct member.

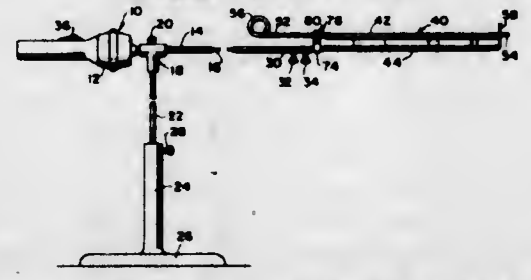
3,181,452
COOKING BY MEANS OF ELECTRICITY
Kitty Zaidener, 414 The White House, Albany St., London, England
Filed May 22, 1963, Ser. No. 284,282
Claims priority, application Great Britain, Apr. 7, 1960, 12,479/60; May 31, 1960, 19,301/60
15 Claims. (Cl. 99—332)



1. Apparatus for cooking sausages, comprising an open-topped water container for receiving a sausage, a base on which said container is mounted, a lower contact electrically connected to one pole of an electrical circuit arranged in said container near the bottom thereof, an upper contact electrically connected to the opposite pole of said electrical circuit arranged above the container, a generally upright carrier on which said upper contact is mounted for movement through the top of the container from a retracted position outside the container to a working position within the container where it is adapted to contact the top end of a sausage within the container, means mounted on said carrier and coupled with said upper contact for moving said upper contact into and out of said container and releasing said carrier for movement relative to said base, said carrier being pivotally mounted on said base for pivoting said upper contact away from the top of said container when the upper contact has been withdrawn, and timer means coupled to said upper contact moving means and said carrier and said electrical circuit for deenergising said electrical circuit and energising said upper contact moving means for retracting said upper contact from said container and for permitting said carrier to pivot on said base away from said container after a cooking time has elapsed.

3,181,453
PORTABLE POWER OPERATED BARBECUE APPARATUS

Edward F. Moran, 510 Park Ave., Perkasie, Pa.
Filed Feb. 18, 1964, Ser. No. 345,673
1 Claim. (Cl. 99—349)

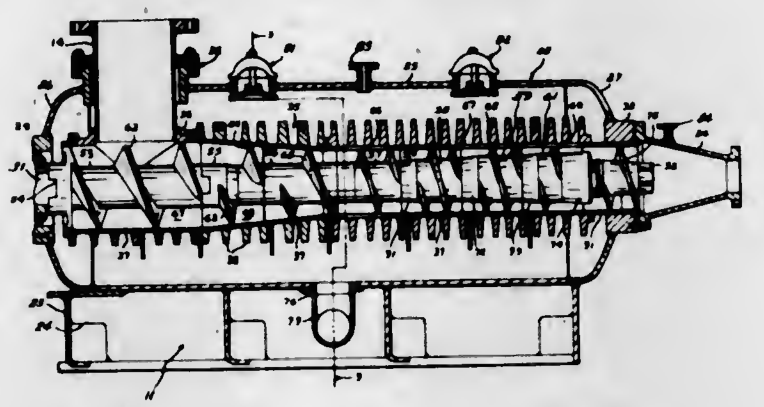


A food holding device, comprising: first and second substantially flat food holding members; said members being attachable to each other in a substantially parallel planar relation with alternatively a relatively close interspacing to securely clamp therebetween foods of a relatively small thickness, and a relatively distant interspacing to securely clamp therebetween foods of a relatively large thickness; each of said members including a congruent support frame with an open central portion, a central elongated element attached to two opposite sides of this frame dividing this frame into two symmetrical halves and having a portion extending beyond one of said attachment sides to provide a handle, the two respective handles being parallel and manually graspable by a single hand, and a plurality of additional elongated elements attached to said two opposite sides symmetrically with respect to said respective central elongated element, the frame, the central elongated element and the additional elongated elements of each said member being respectively substantially coplanar; a symmetrical pair of additional elongated elements of said first member having ends extending beyond said other attachment side; a locking plate attached to and projecting from and external to said other attachment side of said frame of said second member towards said first member, having two pairs of closed periphery apertures therein, each pair of apertures alternatively adapted to receive therethrough said extending ends of said symmetrical pair of additional elongated elements of said first member, the first pair of apertures being parallel to and relatively closely spaced from said frame of said second member, the second pair of apertures being parallel to and relatively distantly spaced from said frame of said second member; a locking bracket attached to and projecting from said central elongated element of said second frame and external to said second frame towards said first member, having two locking notches therein, each notch alternatively adapted to sidewise receive therein said extending portion of said central elongated element of said first member, the first notch being relatively closely spaced from said frame of said second member, the second notch being relatively distantly spaced from said frame of said second member, said alternatively usable notches and extending portion of said central elongated element, and said alternatively usable pairs of apertures and extending portions of said additional elongated elements providing a symmetrical three point locking suspension, said locking plate and said locking bracket having a spacing therebetween substantially equal to, and receiving closely therebetween said attachment sides of said frame of said first member.

3,181,454
PRESSURIZED PRESS

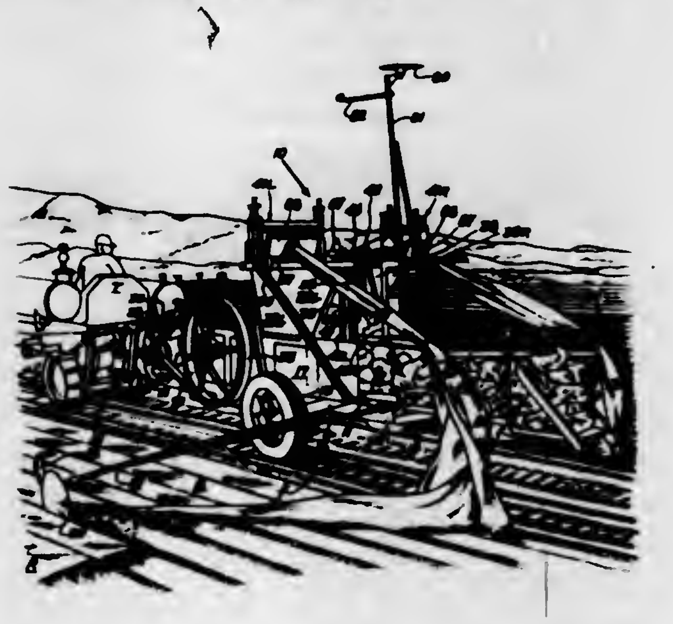
Marvin E. Ginaven and Albert H. Adams, Springfield, Ohio, assignors to The Bauer Bros. Co., Springfield, Ohio, a corporation of Ohio
Filed Nov. 8, 1962, Ser. No. 236,339
4 Claims. (Cl. 100—74)

1. In the art of pulping and refining, a press including a press barrel providing a through passage for material to be acted on by the press, a jacket fully enclosing said press barrel, feed screw means disposed longitudinally of said through passage having on one end thereof, within said barrel, a tapered collar forming with said barrel an annular restricted area adjacent one end of said jacket, means extending through the other end of said jacket into rotary driving engagement with one end of said feed screw means, means for admitting material, for treatment in said barrel, adjacent the said one end of said feed screw means, said feed screw means being operative to advance said material through said barrel, the material forming at said annular retricted area a plug inhibiting escape of fluids from said barrel, said barrel having openings for expression of fluid from said material into said jacket, and means for treating the material as it advances through said barrel with fluids under pressure independently admitted to said jacket and having access to the material in said barrel through the openings therein.



3,181,455
APPARATUS FOR GATHERING PLIOFILM SHEETING FROM A FIELD

Zelbert Gouker, Watsonville, Calif., and Richard C. Storkan, 112 Robin Way, Los Gatos, Calif.; said Gouker assignor to said Storkan
Filed Apr. 21, 1964, Ser. No. 361,401
7 Claims. (Cl. 100—97)

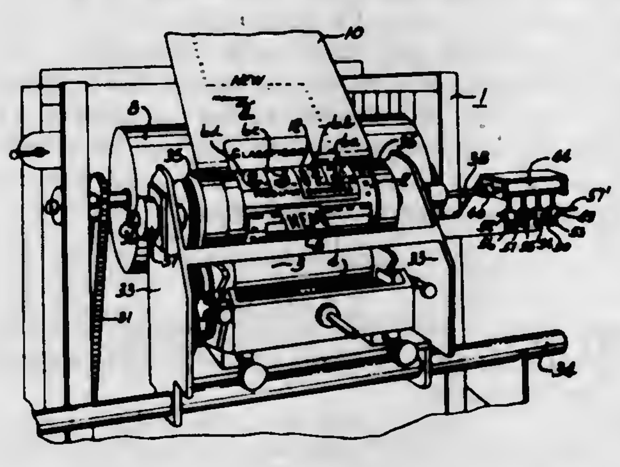


7. Apparatus for gathering Pliofilm sheets from a field on which the sheets have been laid in alternate rows as a fumigating cover with the edges of such sheets covered by a furrow of soil comprising in combination:
- (*a*) a wheeled vehicle adapted to travel between alternate rows of such sheets,
- (*b*) a baler on said vehicle including a material receiving chamber, a ram and means for reciprocating the same for packing such material into bundles therein,

- (*c*) means on said vehicle for cutting such sheets longitudinally into half sheets as said vehicle moves along the field,
- (*d*) a guide ring supported on each side of said vehicle each adjacent and above one edge of adjacent sheet halves to receive one corner of the half sheets for training each of them into a loose narrow strand,
- (*e*) a puller supported on each side of said vehicle above said baler for receiving such strands of the half sheets,
- (*f*) a guide grommet mounted on each of said pullers between the latter and the guide ring to the rear thereof for training the loose narrow strands into a more compacted strand as they come from said guide rings,
- (*g*) each puller including a pair of rollers for pulling the compacted strands of sheet material through said guide rings and grommets and for flattening such compacted strands into flat foldable strands,
- (*h*) a hopper mounted on said vehicle above said baler and having a discharge opening in its bottom communicating with said baler for receiving such flat foldable strands from said pullers and for discharging the same into the chamber of said baler, and
- (*i*) means for drivingly connecting said puller rollers with at least one wheel of said vehicle for pulling such strands of sheet material from the field in timed relation with the speed of travel of said vehicle along the field.

3,181,456
FLEXOGRAPHIC ROTARY PRINTING CYLINDER WITH RETRACTABLE DIES

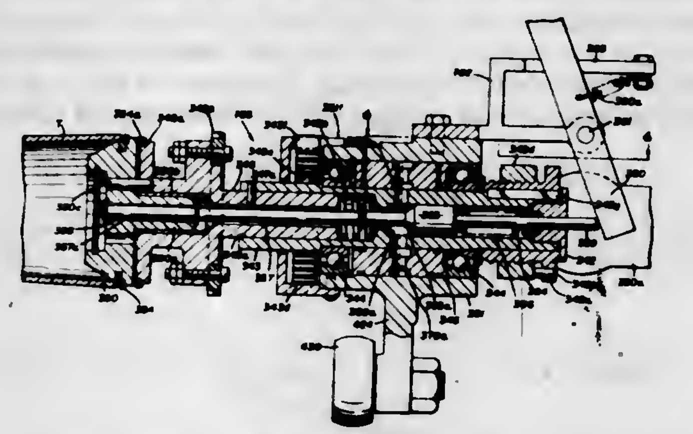
Ralph A. Pannier, Richland Township, Allegheny County, and Laverne A. Stoltenberg, Gibsonia, Pa., assignors to The Pannier Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1961, Ser. No. 133,648
19 Claims. (Cl. 101—91)



1. A rotary printing cylinder consisting of a frame supporting a cylindrical printing surface and mounted for rotation to present this cylindrical printing surface to an object to be printed and having longitudinally aligned lateral guide openings, a plurality of dies with selected indicia to be printed, a plurality of die holders guided for lateral movement by said lateral openings on said frame and each die holder carrying a die for printing longitudinally of said cylinder, die holder retracting means carried by said frame and effective on each die holder to retract and maintain the printing surface of its die in retractible position from said cylindrical printing surface. aligned cams slidable axially within said frame to selectively actuate said die holders and extend their dies to the cylindrical printing surface, a fluid cylinder having an operating position for each cam, and control means to actuate said fluid cylinder to a selected operating position and move the corresponding cam to extend the printing surface of the die selected to the cylindrical printing surface of said cam.

3,181,457
TURRET TYPE ARTICLE STENCILING MACHINE

John W. Eldred and James B. Legg, Columbus, Ohio, assignors to The Eldred Company, Columbus, Ohio, a corporation of Ohio
Filed May 9, 1963, Ser. No. 279,289
14 Claims. (Cl. 101—124)



1. A decorating machine comprising a rotatable turret, spindles mounted on said turret at angularly spaced intervals and carrying article-supports, a plurality of decorating stations disposed in cooperation with the turret at angularly spaced positions about the axis of the turret, means for rotating the turret to bring articles carried by said spindles successively to the successive decorating stations, each of said stations including a screen support mounted for oscillation and adapted to carry a screen, means at each of said stations for bringing an article into and out of contact with the screen, interengaging means between the screen support and each article support for rotating the article about its axis when in contact with the screen, and means for automatically reversing the direction of rotation of each article carried by an article support upon disengagement thereof with the rotating means on the screen support.

3,181,458
TRANSFER PROCESS FOR PRODUCING STENCILS

Max Van Dam, Newton, Omar Baturay, Andover, and Walter C. Zaniewski, Swartswood, N.J., assignors to Anken Chemical & Film Corporation, Newton, N.J.
No Drawing. Filed Feb. 16, 1961, Ser. No. 89,676
5 Claims. (Cl. 101—128.3)

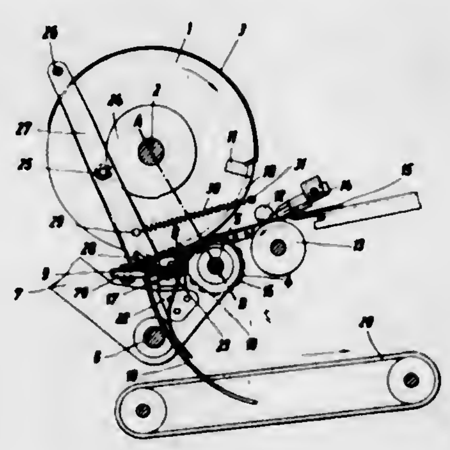
1. The process for producing a duplicating master from an original copy which comprises exposing a silver halide emulsion coating to the copy, developing the exposed emulsion in contact with a heat fusible coating on a stencil with a developing solution containing a silver halide solvent and a nucleating agent whereby a silver image is formed on said coating separating the developed emulsion coating from the stencil coating and exposing the imaged stencil coating to heat generating radiation to liquefy the stencil coating coextensively with the developed images.

3,181,459
STRIPPER ARRANGEMENT FOR A PRINTING MACHINE

Wilhelm Ritzerfeld, Schorlemer Allee 14, Berlin-Dahlem, Germany, and Gerhard Ritzerfeld, Franzensbader Strasse 21, Berlin-Grunewald, Germany
Filed Aug. 9, 1963, Ser. No. 301,136
Claims priority, application Germany, Aug. 13, 1962, R 33,321
19 Claims. (Cl. 101—132.5)

1. In a rotary printing machine, in combination, a rotary printing roller means; a rotary counterpressure roller means cooperating with said printing roller means; drive means for rotating said printing roller means; support means supporting said counterpressure roller means for movement between an operative position forming a printing line with said printing roller means so as to be rotated

by the same for printing and for transporting a copy sheet at a given speed in one direction corresponding to a selected direction of rotation of said counterpressure roller means and to an opposite direction of said printing roller means, and an inoperative position in which said counterpressure roller means is at a standstill and said copy sheet is not printed and transported; rotary stripper means mounted on said support means; and transmission means connecting said rotary stripper means with said counterpressure roller means for rotation in opposite directions so that a peripheral portion of said stripper means moves in said direction



at said given speed while said counterpressure roller means rotates in said operative position, and stops when said counterpressure roller means and the copy sheet stop, said peripheral portion being disposed so as to be engaged by copy sheets intermittently transported by said printing roller means and said counter pressure roller means in said operative position for guiding transported printed copy sheets away from said printing roller means whereby said copy sheets are stripped from said printing roller means whereby relative movement between said rotary stripper means and said copy sheets is prevented.

3,181,460
PAPER OFFSET PLATE FOR PHOTOGRAPHIC TRANSFER AND DIRECT IMAGE PRINTING

Glenn H. Perkins, West Peru, and Loring W. McFail, Rumford, Maine, assignors to Oxford Paper Company, Rumford, Maine, a corporation of Maine

No Drawing. Filed Feb. 5, 1960, Ser. No. 6,839

13 Claims. (Cl. 101—149.2)

1. A planographic printing plate comprising a base and, adhered thereto, an insolubilized coating which comprises a pigment and the reaction product of a hydrophilic colloid and a water-soluble cationic thermosetting resin prepared by reacting a saturated aliphatic dicarboxylic acid containing 3 to 8 carbon atoms with from about 0.8 to about 1.4 moles, per mole of dicarboxylic acid, of a polyalkylene polyamine having two primary amine groups and at least one secondary amine group to form a long chain water-soluble polyamide, and then reacting the polyamide with epichlorohydrin in a mole ratio of epichlorohydrin to secondary amine groups of the polyamide of from about 0.5 to 1 to about 1.8 to 1.

8. The planographic printing plate of claim 1, upon which there is placed an ink-receptive image.

3,181,461
PHOTOGRAPHIC PLATE

Howard A. Fromson, Rogues Ridge Road, Weston, Conn.

Filed May 23, 1963, Ser. No. 282,810

16 Claims. (Cl. 101—149.2)

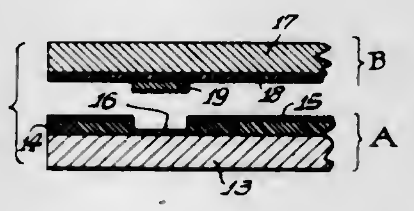
7. A photographic printing plate comprising an aluminum sheet which has been treated to form an aluminum oxide coating thereon, a water-insoluble, hydrophilic, organophobic layer on said sheet resulting from the reaction of the aluminum oxide coating on said sheet and an alkali metal silicate applied to said coating, and a water-insoluble, image-forming coating over said layer having the properties of being water-insoluble, hydrophobic and organophilic, said layer being exposed in the non-image areas of the plate between the areas of the image-forming coating.

3,181,462
PHOTOHECTOGRAPHIC DUPLICATING

Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York

Filed Feb. 27, 1961, Ser. No. 91,699

4 Claims. (Cl. 101—149.4)



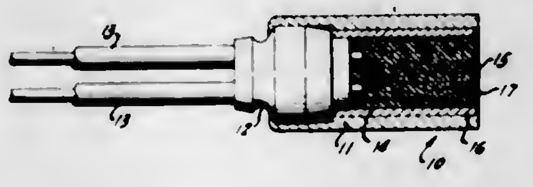
1. The process of producing a hectograph master sheet directly from an imaged original sheet which comprises the steps of positioning said original sheet together with a sheet comprising a flexible foundation having on one surface thereof a layer containing undissolved hectograph imaging material carried by a binder material, and having on the surface of said layer a top protective photosensitive layer; exposing said photosensitive layer to light through said imaged original and hardening only the background areas; removing the unhardened areas of said layer to expose said layer containing hectograph imaging material in areas corresponding to the imaged areas of said original sheet; contacting said layer with a master sheet having a working surface coated with an adhesive material, said adhesive material and said layer containing hectograph imaging material making contact at said exposed areas; and separating said sheets causing portions of said layer containing hectograph imaging material to transfer to the surface of said adhesive material in said image areas to form said hectograph master sheet.

3,181,463
EXPLOSIVE DEVICE CONTAINING CHARGE OF ELONGATED CRYSTALS AND AN EXPLODING BRIDGEWIRE

William C. Morgan, San Jose, and Michael A. Picciano, Menlo Park, Calif., assignors to General Precision, Inc., Glendale, Calif., a corporation of Delaware

Filed Mar. 17, 1961, Ser. No. 96,440

6 Claims. (Cl. 102—28)



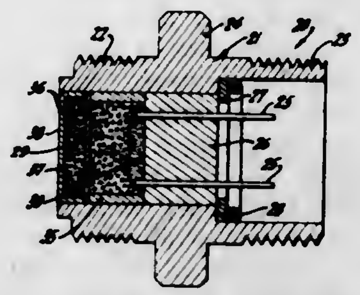
1. An article of manufacture comprising a housing having a cavity therein, a bridgewire within said cavity capable of exploding upon application of sudden high voltage, and an explosive solid in said cavity and in intimate contact with said bridgewire, said explosive being of a type which is initiated by an exploding bridgewire and substantially all of said explosive being in the form of small, elongated crystals having a density within the range of 1.2 to 1.27 grams per cc.

3,181,464
LOW CONDUCTANCE EXPLODING BRIDGE

Theodore C. Parker, Sunnyvale, and William H. Colburn, Jr., Irvington, Calif., assignors to General Precision, Inc., a corporation of Delaware

Filed June 21, 1961, Ser. No. 118,634

2 Claims. (Cl. 102—28)



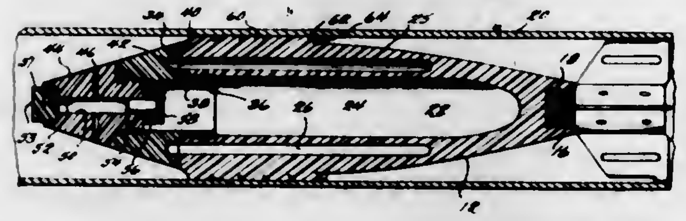
1. An exploding bridge device comprising,
a nonconductive base member;
a pair of mutually insulated conductive terminals extending through said base member;
a normally nonconducting dielectric bridge connecting said terminals and supported upon said base member, said bridge element including an elongated rodlike portion consisting essentially only of a hardened water glass solution having dispersed therethrough a plurality of metallic aluminum particles, each of said particles exhibiting an average diameter of about 15 microns and being insulated from adjacent ones of said particles by said hardened water glass solution, said bridge element having a cross-sectional dimension within the range 3×10^{-6} to 1.5×10^{-3} square inches, said dispersed aluminum particles being present in sufficient quantity that said bridge element *explodes* only in response to a voltage pulse in excess of 2000 volts with a rise time of the order of one micro-second applied from a 0.5 μf. source coupled to said pair of terminals.

3,181,465
PLASTIC MORTAR SHELL

William E. Anthony, Box 2485, Gastonia, N.C.

Filed Jan. 2, 1962, Ser. No. 163,407

7 Claims. (Cl. 102—41)



1. In a mortar shell the combination comprising an elongated unitary body portion composed of semi-rigid plastic material, said elongated body having its radially outer extent defined by a surface of revolution extending between first and second ends of said body, means defining an elongated chamber within said body adapted to receive explosive material, said chamber being coaxial with said surface of revolution and communicating with the exterior of the body through the first end of said body, means defining a longitudinally elongated annular cavity within said elongated body, said cavity surrounding said chamber and being coaxial therewith, said cavity communicating with the exterior of the body through the first end of said body; a generally frusto-conical unitary adapter head having a first end of larger diameter and a second end of smaller diameter, means defining a longitudinal passage through said adapter head, means securing the adapter head to said body whereby said adapter head and said body are mutually coaxial, said adapter head first end engaging said body first end at the radially spaced annular portions thereof defined between said surface of revolution and said cavity means and between said cavity means and said chamber, said annular head first end thereby providing a closure for said cavity, said adapter head longitudinal passage being positioned to communicate with said chamber through said body first end; the second end of said elongated body being adapted to receive a tail assembly and the second end of said adapter head being adapted to receive a fuse assembly for communication with said chamber through said adapter head passage.

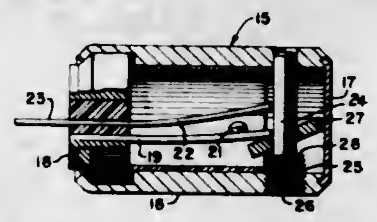
3,181,466
SPIN COMPENSATING SWITCH FOR A PROJECTILE FUZE

Norman Czajkowski, Chevy Chase, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 4, 1957, Ser. No. 638,184

6 Claims. (Cl. 102—70.2)

(Granted under Title 35, U.S. Code (1952), sec. 266)



3. A centrifugally operated switch for use with a spin projectile comprising a pair of normally closed contact elements carried by a contact reed and a datum reed respectively, each of said reeds being constructed and arranged to be moved from an initial closed contact position to a moved position by centrifugal force acting thereon as the projectile is fired from a gun, means controlled by the rate of spin of the projectile for locking said datum reed in a firing position correlative with the maximum rate of said spin, said contact and datum reeds having different spring constants whereby the contact element of the contact reed is disengaged from the contact element of the datum reed in response to the initial spin of the projectile as the projectile is fired from a gun and the contact of the contact reed is moved into circuit closing position with respect to the contact of the locked datum reed as the spin rate of the projectile is decreased by a predetermined amount from the maximum rate of spin.

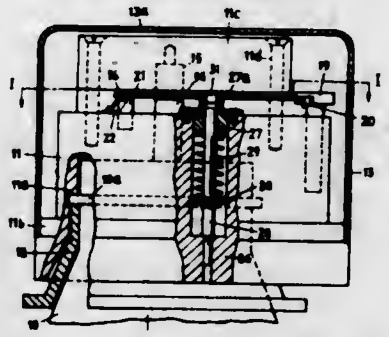
3,181,467
CONTROL MECHANISMS

John Edmund Baldwin Jacob and James McGregor Sowerby, Hitchin, England, assignors to British Aircraft Corporation Limited, London, England, a British company

Filed Aug. 1, 1963, Ser. No. 299,265

Claims priority, application Great Britain, Aug. 3, 1962, 29,854/62

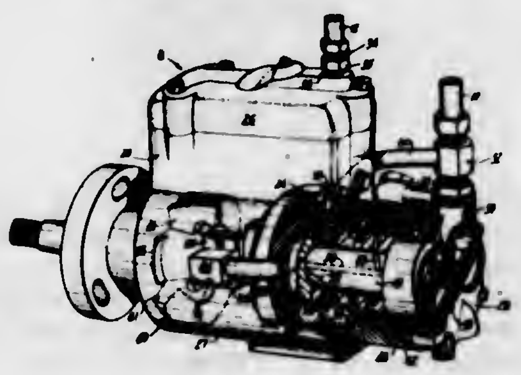
8 Claims. (Cl. 102—83)



2. A control mechanism comprising a rotatable member rotatable about a fixed axis and formed with a plurality of projections at intervals around the said axis, rotary drive means for rotating the rotatable member about its axis in a given direction, an arresting member co-

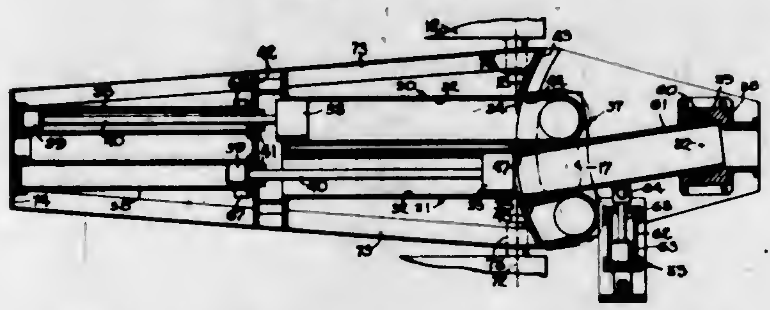
operable with the said projections, biasing means urging the arresting member in one direction towards a first position, and variable force-applying means for moving the arresting member against the action of the said biasing means to a second position, the projections on the rotatable member being engageable with the arresting member when the arresting member is in its first position, said projections and arresting member comprising interengaging means for preventing movement of the arresting member away from its first position once the arresting member has engaged any one of the projections, the inter-engagement of the arresting member with one of the projections being effective also in preventing further rotation of the rotatable member in the said given direction.

3,181,468
FUEL SUPPLY SYSTEM
Vernon D. Roosa, West Hartford, Conn. (% Hartford Machine Screw Co., Box 1440, Hartford, Conn.)
Filed July 12, 1963, Ser. No. 294,567
11 Claims. (Cl. 103—2)



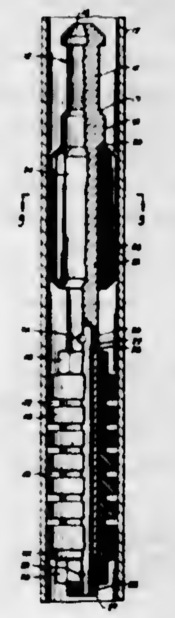
1. In a fuel pump for an internal combustion engine and adapted for vertical and horizontal mounting the combination of a housing provided with a chamber having inlet and return ports for connection to a fuel supply tank, said chamber further having a plurality of discharge ports to be respectively connected to a plurality of cylinders of the engine, a fuel distributor in the chamber having means for communicating with said inlet and discharge ports, a bypass outlet port in the housing opening into said chamber and being spaced substantially below said return port when the pump is mounted either vertically or horizontally, and a conduit establishing communication between said inlet and bypass outlet ports to thereby recirculate fuel through the chamber and to bypass the return port.

3,181,469
CONCRETE PUMPING APPARATUS
Kurt E. Schumann, % Hydro-Con Corp., 614 Shaw, Rockford, Ill.
Filed Feb. 7, 1963, Ser. No. 256,972
9 Claims. (Cl. 103—49)



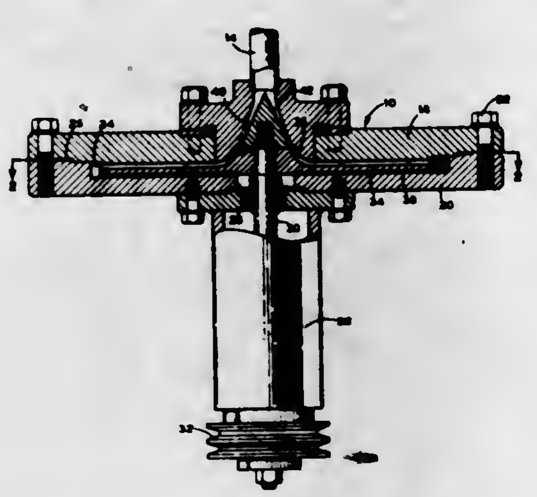
1. In a concrete pump, the combination of, a frame, a hopper on said frame having an opening in its lower side, a member disposed below said hopper and including two angularly spaced intake ports, mechanism for swinging said member back and forth relative to said hopper between two positions in which alternate ones of said intake ports communicate with said opening to receive a gravity flow of concrete from said hopper, said member having an arcuately curved side, a seat of arcuate cross-section fitted closely against said curved side, said seat being formed with two angularly spaced outlet ports, two reciprocating pumps on said frame each communicating with one of said outlet ports, means defining two angularly spaced inlet ports in said curved side continuously communicating with said intake ports, a central port disposed between said inlet ports and alternately communicating with said outlet ports in said two positions, said central port being spaced from said inlet ports a distance equal to the spacing of said outlet ports whereby one inlet port communicates with one outlet port in each of said positions to carry concrete to the pump not in communication with the central port, mechanism for operating said pumps in timed relation with the swinging of said member and in unison but in opposite directions whereby each pump draws concrete through the inlet port and then pumps the concrete out through said central port.

3,181,470
GAS LIFT PLUNGER
Walter L. Clingman, 2013 Andover Court, Oklahoma City, Okla.
Filed Sept. 3, 1963, Ser. No. 306,167
7 Claims. (Cl. 103—52)



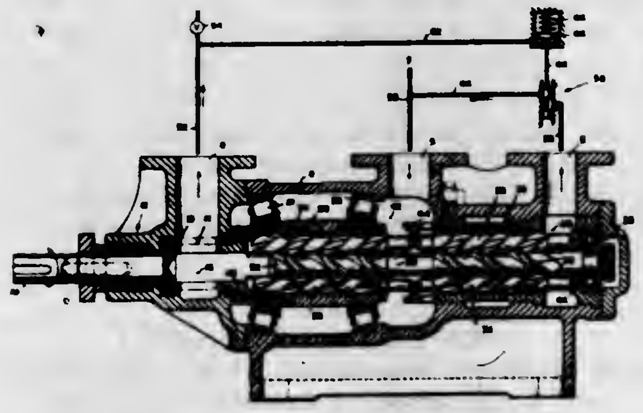
1. A gas lift plunger including:
an elongated mandrel having an upper end and a lower end and having
  a flange near the upper end thereof forming a downwardly facing shoulder,
  means forming an axial bore extending partially through said mandrel from the lower end of said mandrel, and
  means forming at least one port extending transversely through the medial portion of said mandrel into said bore;
a generally tubular guide member slidingly positioned on said mandrel below said shoulder and having at least one longitudinally extending fluid passageway formed therein;
a sealing member slidingly positioned on said mandrel below said guide member; and
retaining means fixed to said mandrel below said downwardly facing shoulder a distance greater than the combined lengths of said guide member and sealing member for retaining said guide member and sealing member on said mandrel;
the arrangement being such that said guide member and sealing member are adapted to cover and uncover said port.

3,181,471
CENTRIFUGAL PUMP CONSTRUCTION
Edward M. Poole, Alliance, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed June 23, 1961, Ser. No. 119,089
2 Claims. (Cl. 103—103)



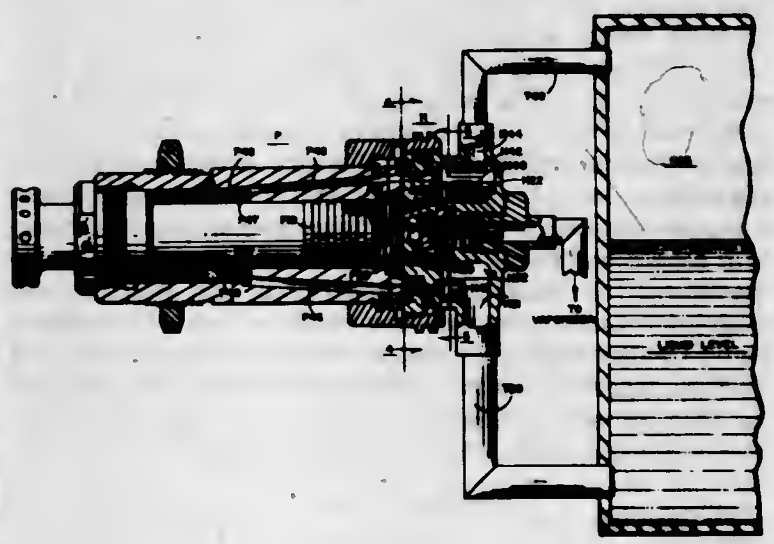
1. A centrifugal pump for pumping a gas-solids suspension having a substantially circular casing with a centrally disposed gas-solids suspension inlet arranged in one side thereof and a peripherally disposed gas-solids suspension outlet, a fluid impeller means comprising a generally flat imperforate circular disc member rotatably mounted in said casing and having a flat face thereof substantially in contact with one side of said casing, said disc member having a centrally disposed annular inlet channel formed in said flat face thereof communicating with said fluid inlet, a multiplicity of angularly spaced substantially straight open grooves formed in said flat face of said disc member and extending from said annular inlet channel to the periphery of said disc member and communicating with said casing peripheral outlet, said grooves having a substantially constant narrow width from said inlet channel to the outer periphery of said disc member constructed to minimize separation of the solids from the gas.

3,181,472
PUMPS OR MOTORS
Morgan B. Sennet, Erwinna, Pa., assignor to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware
Filed July 10, 1963, Ser. No. 293,984
7 Claims. (Cl. 103—120)



1. In combination, a first liquid displacement device of the type comprising a rotatable casing having a plurality of bores mounting a set of intermeshing screws and in which device axial liquid displacement therethrough is interdependent with relative coaxial rotation between one of its screws as a first element and its casing as a second element, both of said elements being rotatable, a second liquid displacement device operating as a pump and of a type comprising a casing having a plurality of bores mounting a set of intermeshing screws and in which second device axial liquid displacement therethrough is interdependent with relative coaxial rotation between one of its screws as a third element and its casing as a fourth element, means restraining one of said elements of the second device against rotation, means connecting the other element of the second device to one of said rotatable elements of the first device for rotation therewith, means providing inflow and outflow liquid passages for each of said devices at the respective ends of its screws, means external to said second device for variably controlling liquid pumped thereby, and means effecting flow of liquid through said first device.

3,181,473
HIGH-PRESSURE, CAVITATION FREE PISTON PUMPS
Paul Duron, Anaheim, Calif., assignor, by mesne assignments, to Air Reduction Company, Incorporated, a corporation of New York
Filed June 19, 1961, Ser. No. 117,954
6 Claims. (Cl. 103—153)



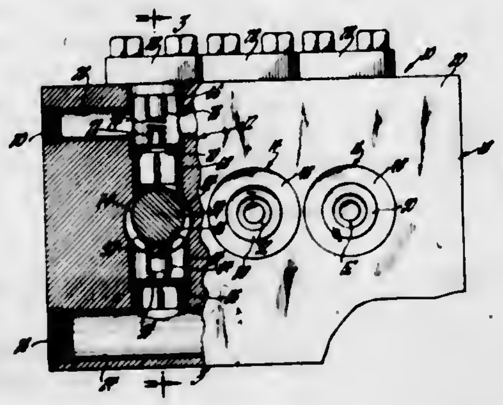
1. In a system including: a tank for storing liquid in a bottom portion and gas in an upper portion, a piston chamber and piston, a head providing a plurality of fluid intake ports and a fluid discharge port for said piston chamber, a fluid intake pipe connecting said bottom portion of said tank with said plurality of fluid intake ports, a vaporizer, and a fluid discharge pipe connecting said fluid discharge port to said vaporizer; the improvements comprising: an annular gas vapor removal chamber interposed between said intake pipe and said fluid intake ports to provide for expansion in the liquid drawn into said piston chamber and thereby to remove gas from said fluid to prevent entry of such gas into said piston chamber; a gas exit port connected to said annular gas vapor removal chamber; a gas exit chamber and a gas exit pipe connecting said gas exit port to said upper portion of said tank; means within said piston chamber including gas discharge ports connecting said piston chamber to said gas exit chamber to remove gas caused by blow-by during the compression cycle within said piston chamber; and a concentric intake-discharge valve arrangement including a central discharge valve and a disc-like concentric intake valve arranged to sit at the periphery of said piston chamber during the intake cycles, whereupon fluid is drawn through said plurality of intake ports, said intake valve having a center passage therethrough to provide for the passage of fluid under compression to said discharge valve said discharge valve being arranged to inhibit fluid flow into said piston chamber during intake cycles and to permit passage of compressed fluid into said vaporizer during discharge cycles.

3,181,474
DISMOUNTABLE PRESSURE PUMP

Reinhard A. Yohpe, Battle Creek, Mich., assignor to Union Pump Company, Battle Creek, Mich., a corporation of Michigan

Filed June 4, 1962, Ser. No. 199,779

9 Claims. (Cl. 103—153)



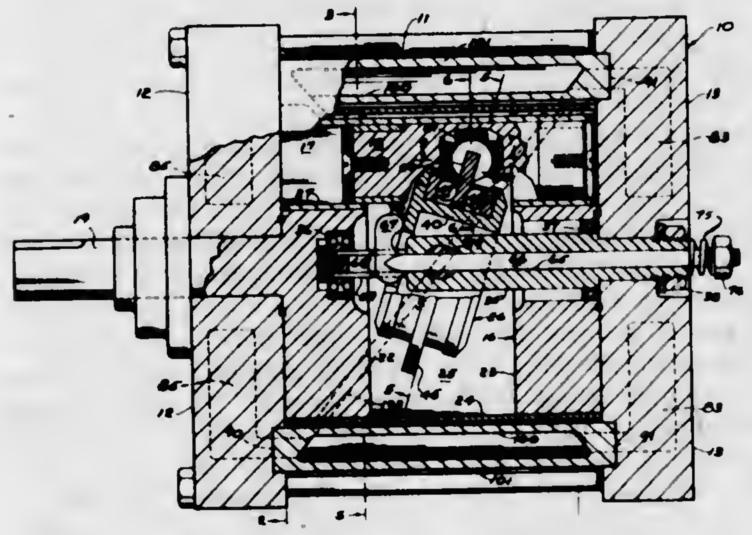
1. A fluid pump comprising a housing enclosing a pumping chamber therein, said housing including opposed wall means, pump plunger, means mounting said plunger through one of said wall means for reciprocation within said chamber, inlet passage means communicating with said chamber, means defining an access bore through said other wall means to said chamber, the axis of said bore being located a predetermined distance eccentrically from the axis of said plunger toward said inlet passage means, a closure member removably mountable within said bore, arm means secured to said closure member and projecting therefrom into said chamber between said plunger and said inlet passage means, the width of said arm means being smaller than said inlet passage means whereby fluid flowing therefrom into said chamber may pass around the sides of said arm means, and an outlet passage means communicating with said pumping chamber.

3,181,475
WOBBLE PLATE PUMP

Tom H. Thompson, Daytona Beach, Fla., assignor to Daytona Thompson Corporation, Daytona Beach, Fla., a corporation of Florida

Filed Jan. 30, 1961, Ser. No. 85,655

9 Claims. (Cl. 103—162)



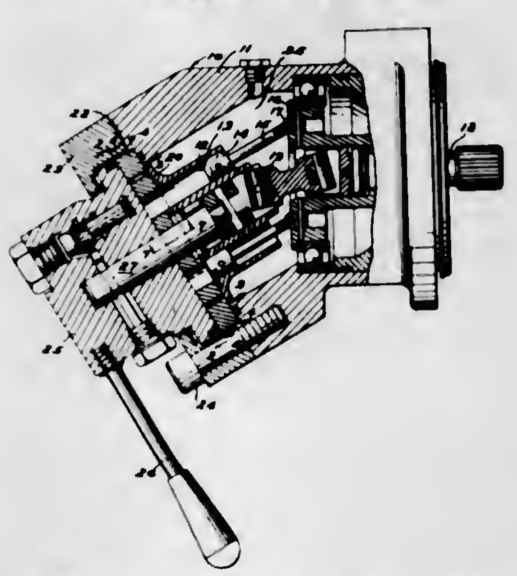
1. In a pump of the kind including a cluster of pistons and a wobble plate incorporating a radially disposed drive ring, drive connections between the ring and the pistons comprising: a plurality of ball socket members, each of said pistons having a radially disposed recess to accommodate one of said socket members with freedom for limited endwise movement therein toward and from the drive ring, a ball in each socket member having a slot to receive the periphery of the drive ring and spring means engaged with and biasing the socket members in a direction to move the balls toward the drive ring.

3,181,476
POWER TRANSMISSION

Hugh B. Matthews, Birmingham, Mich., assignor to Sperry Rand Corporation, a corporation of Delaware

Filed Sept. 14, 1961, Ser. No. 138,046

7 Claims. (Cl. 103—162)



1. In a hydraulic power system, the combination comprising a rotary fluid pressure energy translating device, said device comprising a housing, said device comprising a cylinder block rotatably mounted in said housing and a plurality of cylinders, each said cylinder having a bore of substantially constant diameter throughout its length, pistons reciprocable in said cylinders, a rotary drive member and motion converting means interconnecting the reciprocating piston to the rotatable drive member, said device having an inlet and outlet communicating successively with one end of each said cylinder, a valve plate in said housing having arcuate inlet and outlet openings communicating with said inlet and outlet, the radial width of said inlet and outlet openings being substantially equal to the diameter of said cylinders, means in said housing defining a chamber at the end of said cylinder block remote from said inlet and said outlet adjacent the other ends of said cylinders, said pistons having portions exposed to hydraulic fluid in said chamber, pressure regulating means connected to said inlet and said outlet and communicating with said chamber for continuously applying a pressure to hydraulic fluid in said chamber and in turn to said cylinder block and said pistons, said pressure having a substantially constant magnitude ranging between the pressure at the inlet and the pressure at the outlet, means defining a cavity between said cylinder block and each of said inlet and outlet openings of said valve plate, respectively, and means interconnecting the outlet to the cavity adjacent the inlet opening and means interconnecting the inlet to said cavity adjacent the outlet opening.

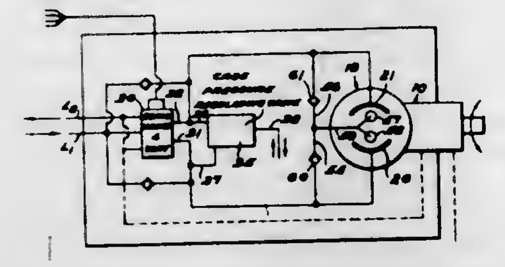
3,181,477
POWER TRANSMISSION

Hugh B. Matthews, Birmingham, Mich., assignor to Sperry Rand Corporation, a corporation of Delaware

Filed Sept. 14, 1961, Ser. No. 138,156

10 Claims. (Cl. 103—162)

1. In a hydraulic system, the combination comprising a housing, a rotary fluid pressure energy translating device in said housing, said device being of the type having a rotatable drive member, a cylinder block rotatably mounted in said housing and having a plurality of axially positioned cylinders, pistons reciprocable in said cylinders, and motion converting means interconnecting the reciprocating pistons to the rotatable drive member, said housing having an inlet and an outlet communicating successively with one end of each said cylinder, said housing defining a chamber at the end of said cylinder block remote from said inlet and said outlet adjacent the other ends of said cylinders, said pistons having portions exposed to hydraulic fluid in said chamber, and pressure regulating means communicating with said inlet, said outlet, and said chamber for continuously applying a pressure to hydraulic fluid in said chamber and in turn to said cylinder block and said pistons, said pressure having a substantially constant magnitude ranging between the inlet pressure and the outlet pressure.

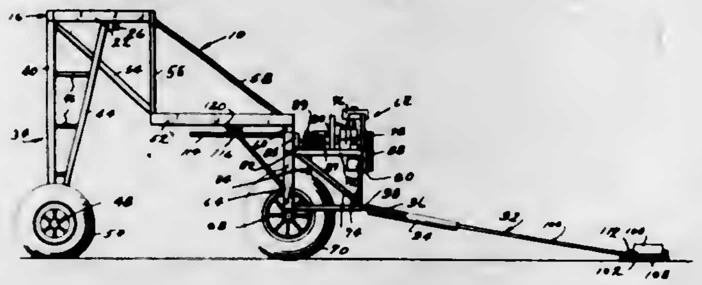


3,181,478
MECHANISM FOR STEERING A VEHICLE IN AN AGRICULTURAL FIELD

Donald L. Smeal, Snyder, Nebr., assignor, by mesne assignments, to L. R. Nelson Mfg. Co., Inc., Peoria, Ill.

Original application Dec. 29, 1958, Ser. No. 783,299, now Patent No. 3,082,883, dated Mar. 26, 1963. Divided and this application Mar. 19, 1963, Ser. No. 281,073

8 Claims. (Cl. 104—244.1)



1. In an apparatus, the combination comprising a vehicle frame, ground engaging wheels mounted on the rear end of said frame, forward wheel means, means mounting said forward wheel means on the forward end of said vehicle frame for pivotal movement about an upright axis, motor means carried by said mounting means drivingly connectible with said forward wheel means for propelling said vehicle frame, furrow engaging means disposed in advance of said forward wheel means, means connecting said furrow engaging means with said mounting means for pivotal movement with said forward wheel means about said upright axis and for vertical movement independent of said mounting means and said forward wheel means, and means for limiting the pivotal movement of said forward wheel means about said upright axis, said limiting means comprising a tiller bar fixed to said mounting means for movement therewith about said upright axis, a plate fixed to said frame adjacent the outer end of said tiller bar and a pair of pins removably engageable with said plate on opposite sides of said tiller ber for engagement by the latter.

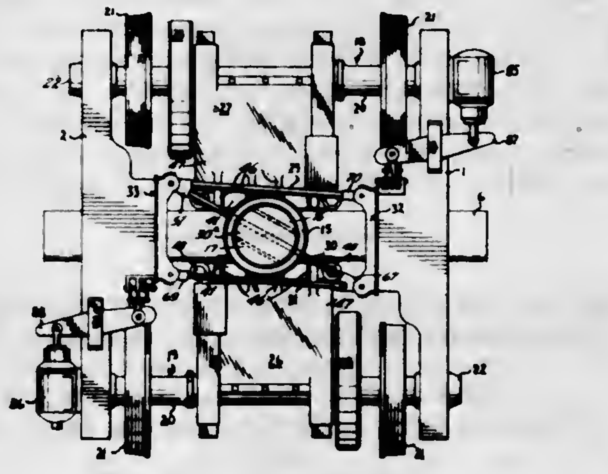
3,181,479
LIGHTWEIGHT TRUCK

Clayton S. Rumsey, Lawrence Park, Erie, and Conway H. Melcher, Erie, Pa., assignors to General Electric Company, a corporation of New York

Filed Mar. 30, 1960, Ser. No. 18,641

3 Claims. (Cl. 105—136)

1. A railway car truck assembly comprising: a pair of individual side frames extending in the longitudinal direction of said truck and having their ends mounted on wheel and axle assemblies; a truck bolster extending transversely between said side frames; means for resiliently mounting the ends of said bolster from said side frames to provide for movement of said bolster in both the vertical and transverse directions with respect to said side frames and transverse restoring forces for said bolster upon relative transverse movement of said bolster with respect to said side frames; a traction motor suspended at one end on at least one of said axle assemblies and resiliently supported at the other end thereof on said bolster, said traction motor and the resilient supporting means having means cooperating with each other to provide for relative transverse movement between said bolster and said traction motor; and stabilizing means disposed within a horizontal plane of said truck for interconnecting said side frames, said stabilizing means being operative to prevent relative transverse and longitudinal movement of said side frames to maintain the squareness of said truck assembly while at the same time permitting said side frames to pivot individually about an axis contained in a vertical transverse plane of said truck and to tilt together with respect to a vertical longitudinal plane of said truck to provide respectively for equalization of the load on the axle assemblies associated with said side frames and amplification of the relative transverse motion of said bolster with respect to said side frames.

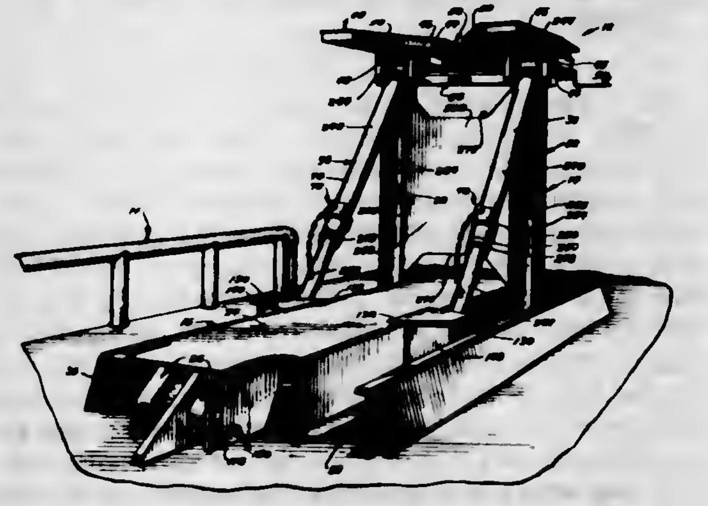


3,181,480
LONG TRAVEL CUSHIONED FIFTH WHEEL STAND

Robert M. Sherrie, Lansing, William H. Peterson, Homewood, and Jack W. Borger, Calumet City, Ill., assignors to Pullman Incorporated, a corporation of Delaware

Filed Mar. 9, 1959, Ser. No. 797,989

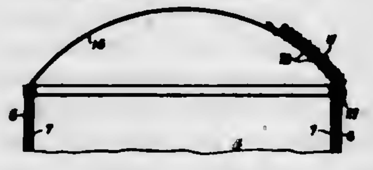
6 Claims. (Cl. 105—368)



1. A fifth wheel stand for railroad cars comprising, in combination with the car, a lift structure, a fifth wheel plate structure carried by said lift structure, and cushion means interposed between said lift structure and the rail-

road car for cushioning buff and draft forces applied to the railroad car, said cushion means including a traveling component adapted to move longitudinally of the car under the cushioning action of said cushion means, said lift structure comprising, a first strut pivotally secured at one end thereof to said traveling component, a second strut pivotally secured at one end thereof to said traveling component at a point spaced longitudinally of the car from the pivotal connection of said first strut, means for pivotally securing said struts together adjacent the other ends thereof, said fifth wheel plate structure being operatively secured to at least one of said struts adjacent said other end thereof, said first strut comprising an extensible and contractible member, and means for locking said first strut in contracted relation, said second strut serving as lever means for swinging said plate structure along an arcuate path between a lowered inoperative position and an elevated operative position, said first strut when locked in contracted relation holding said plate structure in its elevated position.

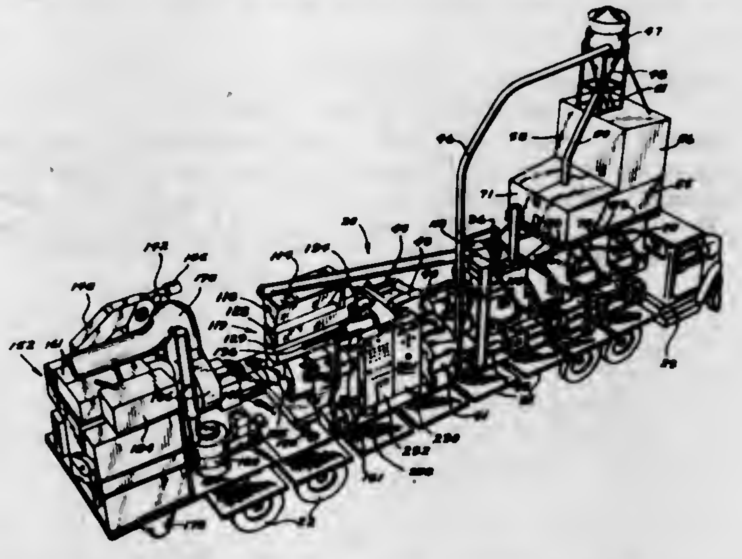
3,181,481
COVER ASSEMBLY FOR OPEN TYPE VEHICLES
Frank Taylor, 273 Eleanor Ave., Otterburn Heights, Quebec, Canada
Filed Aug. 14, 1963, Ser. No. 302,120
Claims priority, application Canada, July 2, 1963, 879,214
7 Claims. (Cl. 105—377)



1. A cover assembly for open top vehicles in combination, a vehicle having side and end walls and an open top, sector shaped sockets on the side walls of the said vehicle, the said sector shaped sockets being located in planes at right angles to the said side walls of the vehicle, straight spring rods having one end thereof mounted in the sockets on one side of the vehicle, the said rods adapted to be bent transversely of the vehicle and having their opposite ends secured in the sockets on the opposite side wall of the vehicle, and a cover extending lengthwise of the vehicle and slidably secured on the said rods.

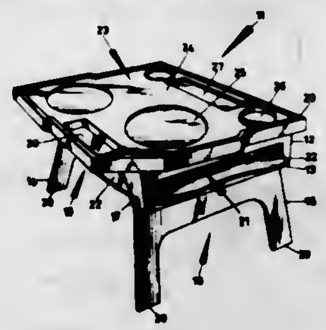
3,181,482
PORTABLE PELLET MILL APPARATUS
Arthur M. Heth, Mandan, N. Dak., and Carroll H. Bruun, Dallas, S. Dak., assignors to Midwest Feed & Pelleting Co., Inc., Mandan, N. Dak., a corporation of North Dakota
Filed Jan. 18, 1962, Ser. No. 167,119
5 Claims. (Cl. 107—4)

1. A portable pellet mill apparatus including a trailer, a prime mover on said trailer, a pellet forming mill on said trailer, a first hot pellet belt conveyor on said trailer and situated to receive newly formed pellets from said pellet forming mill, a second hot pellet belt conveyor on said trailer and situated to receive pellets from said first hot pellet belt conveyor, a bucket elevator on said trailer and situated to receive pellets from said second hot pellet belt conveyor, a third pellet cooling conveying belt on said trailer, means for cooling pellets on said pellet cooling conveyor belt including an exhaust air fan on said trailer, a pellet mill mixer unit supported on said trailer for mixing feed, steam and molasses and conveying the mixture to said pellet forming mill, a source of steam and a source of hot molasses on said trailer, manually operable means for supplying steam and molasses from said sources to the interior of said mixer unit, a pellet mill feeder unit supported on said trailer situated to discharge into said pellet mill mixer unit for conveying said feed into said unit, a surge hopper adapted to discharge feed into said pellet mill feeder unit, collector means supported on said trailer and situated to convey feed to said surge hopper, a hay bin, a grain bin and a plurality of feed supplement bins mounted on said trailer, a hay bin conveyor for conveying commutated hay from said hay bin, a grain bin conveyor for conveying grain from said grain bin, a plurality of adjustable means supported on said platform each for conveying feed from one of said hay bin conveyors, grain bin conveyor and feed supplement bins, first power means to drive said pellet cooling conveyor belt, first disabling means to manually disable said first power means, second power means to drive said exhaust air fan, second disabling means operative upon disability of said first power means to disable said second power means, third power means to drive said bucket elevator, third disabling means operative upon disability of said second power means to disable said third power means, fourth power means to drive said second hot pellet belt conveyor, fourth disabling means operative upon disability of said third power means to disable said fourth power means, fifth power means to drive said first hot pellet belt conveyor, fifth disabling means operative upon disability of said fourth power means to disable said fifth power means, drive means operably connecting said prime mover to drive said pellet forming mill, said drive means including an overload device operative to disconnect said pellet forming mill from said prime mover upon overload of said mill, sixth power means operative to drive said pellet mill mixer unit, sixth disabling means to disable said sixth power means upon disability of said fifth power means, seventh disabling means to disable said sixth power means upon operation of said overload device, seventh power means to drive said pellet mill feeder unit, eighth disabling means to disable said seventh power means upon disability of said sixth power means, eighth power means to simultaneously drive all of said adjustable means, ninth disabling means operative to disable said eighth power means upon disability of said seventh power means, ninth power means to drive said grain bin conveyor, tenth disabling means to disable said ninth power means upon disability of said eighth power means, tenth power means to drive said hay bin conveyor, and eleventh disabling means to disable said tenth power means upon disability of said ninth power means.

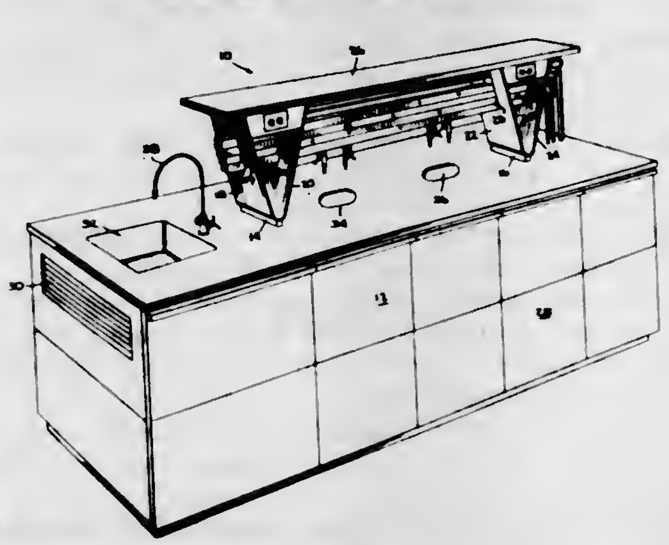


3,181,483
SERVING TRAY
John W. Devitt and Kenneth E. Jones, both % Claremont P.O., Claremont, Ontario, Canada
Filed Nov. 6, 1963, Ser. No. 321,825
4 Claims. (Cl. 108—25)

1. A serving tray comprising a supporting frame; a shelf secured subjacent to said frame; a pair of rails secured to said frame, subjacent thereto and to two sides thereof, each said rail defining a downwardly facing slot therealong; resilient gripping members secured within said slot at the upper end thereof, and adapted to releasably grip the upper edge of said leg placed within said slot; a plurality of compression springs secured within said slot and extending in side by side relationship substantially the length of said slot, thereby to bias said leg in a neutral position both of said legs thereby providing gripping means for said serving tray; a reversible serving tray removably placed on said frame and supported thereby; and means for defining receptacles in the surface of said tray, whereby food vessels and utensils may be located thereon.



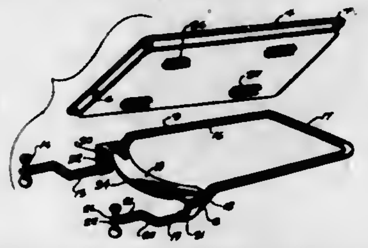
3,181,484
MANIFOLD CONSTRUCTION
Frank W. Keppler, Plainview, N.Y., assignor to Norbute Corporation, New York, N.Y., a corporation of Delaware
Filed May 3, 1962, Ser. No. 192,245
3 Claims. (Cl. 108—50)



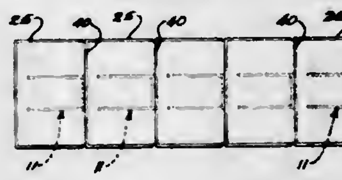
2. In a compound manifo'd reagent shelf having a supporting table, an upper shelf, inlet conduits, the combination comprising a plurality of elongated manifolds, each manifold having two substantially parallel side faces with a plurality of outlets, a lower male side portion, an upper female side portion; said manifolds being stacked in a vertical nest-like relationship with one another with said male side portion being in frictional engagement with its corresponding adjacent said female portion; two V-shaped brackets each being provided with two inclined arms, said arms having elongated vertical slots which are arranged in alignment with one another, said manifolds being carried within such slots, and means connecting said inlet conduits to said manifolds.

3,181,485
TABLE MOUNTED TRAY
Cleao R. Dotson, 302 W. Newman, Harrison, Ark., and William B. Willis, Rte. 1, Everton, Ark.
Filed Apr. 25, 1963, Ser. No. 275,639
5 Claims. (Cl. 108—97)

1. In an article holding attachment for tables and the like comprising, a U-shaped frame having spaced parallel leg members adapted to be positioned in a horizontal plane and connected by a transverse bar member at one end thereof, said leg members having downwardly inclined portions extending from the other ends thereof, spaced parallel arms extending from said inclined portions in a plane spaced from and substantially parallel to the plane of said parallel frame leg members, a transverse member connecting said spaced arms adjacent said inclined portions and having edge portions normal to said arms and adapted to engage an edge of a tabel top with said arms disposed under said table top, a flat portion on said transverse member between said edge portions thereof and extending relative thereto in upwardly spaced relation to said arms for overlying a marginal portion of an upper surface of the table top when said edge portions engage the edge of the table top, abutment means adjustably mounted adjacent free ends of said arms and adapted to engage an undersurface of said table top to cooperate with the engagement of the flat portion of the transverse member with the table top to support the frame with said leg portions thereof extending laterally therefrom, a tray extending between and connecting said frame member legs in overlying relation thereto, and means for releasably connecting said tray to said frame leg members.



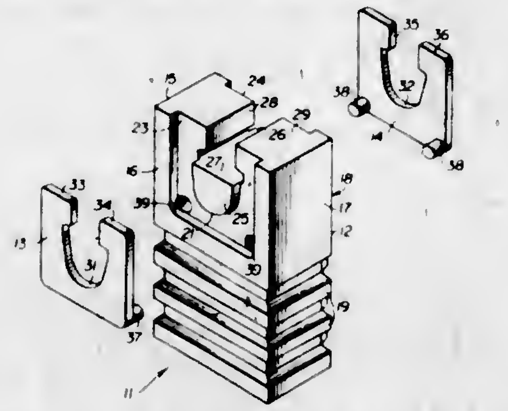
3,181,486
REFRACTORY STRUCTURE
Donald F. King, Pittsburgh, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 26, 1962, Ser. No. 212,537
9 Claims. (Cl. 110—99)



9. An open hearth roof comprised of a plurality of reinforced refractory shapes each shape comprised of a refractory body having at least a pair of opposed faces, having only two oxidizable metal reinforcing channels carried by said body, each of said channels including a web portion between a pair of substantially parallel leg portions, a first of said channels being smaller and comolded through a first of said faces into the refractory body so as to divide said body into sections, said first channel being substantially entirely encapsulated within said refractory body with only the outer surface of the web of said first channel being exposed through said first face and lying in substantially the same plane as said first face, the web of the second reinforcing channel being contiguous to the second of said opposed faces, the legs of both of the channels being oppositely directed, substantially parallel, and terminating short of an opposed face, a hanger device attached to the web of each of the channels and extending beyond the same surface of the refractory body, the plurality of shapes being arranged in soldier style and in parallel rows with the outer surface of all but one of the smaller channels in each row in contiguous face-to-face relation with the outer surface of the web of a larger channel, and means cooperating with the hanger devices arranged to support them in position.

3,181,487
HANGER CONSTRUCTION FOR REFRACTORY ROOF

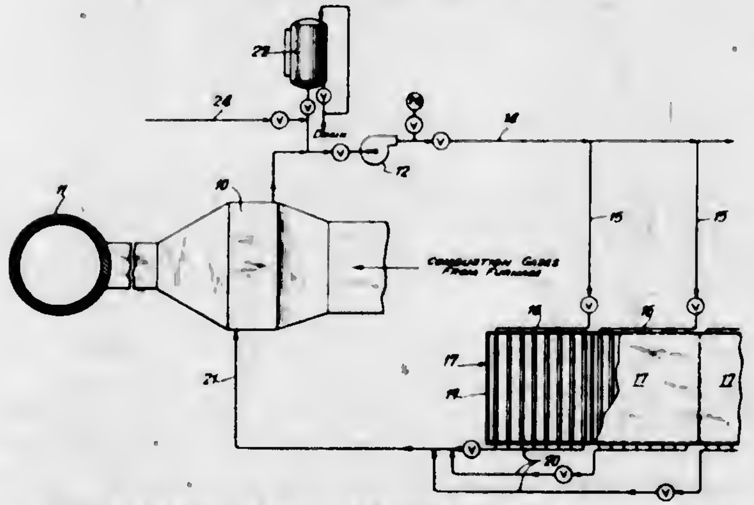
Andrew J. Darke, Garfield Heights, Ohio, assignor to North American Refractories Company
Filed Sept. 21, 1962, Ser. No. 225,329
11 Claims. (Cl. 110—99)



1. A hanger for anchoring and supporting a refractory material in a monolithic form from a support structure having hanger supporting flange means; said hanger comprising:
(*a*) an anchor body having a ribbed anchor portion and a hanger portion;
(*b*) lug projections protruding from opposite sides of said hanger portion;
(*c*) a pair of hanger plates, one adjacent each of said opposite sides, said hanger plates including surfaces supportably engaging said lug projections; and,
(*d*) aligned portions of both said anchor body and said hanger plates defining a groove sized and shaped to slidably receive the flange means of the support structure.

3,181,488
APPARATUS FOR DRYING COAL IN BUNKERS

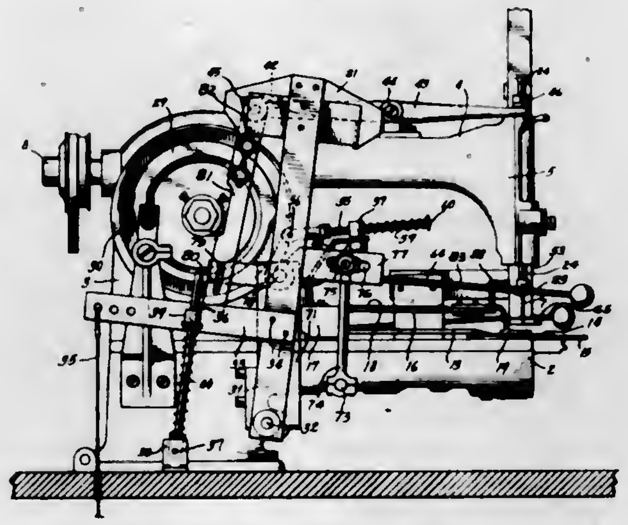
Ralph C. Roe, Tenafly, N.J., and Joseph Lichtenstein, Bayside, N.Y., assignors to Burns and Roe, Inc., New York, N.Y., a corporation of New Jersey
Filed Feb. 23, 1961, Ser. No. 91,171
6 Claims. (Cl. 110—101)



1. In a system of the class described for removing surface moisture from coal in bunkers prior to its introduction into a furnace, a heat exchanger positioned in heat exchange relation to the furnace exhaust gases, means defining chambers respectively positioned within the bunkers immediately adjacent coal moving therethrough, and means directing air under pressure through said heat exchanger to absorb heat from said exhaust gases and thence into said chambers, said chambers having a plurality of apertures in the undersurfaces thereof for discharging heated air into the natural void spaces between coal particles passing through the bunkers to evaporate and carry off as increased humidity surface moisture from the coal, and means venting the moisture laden air from the bunkers.

3,181,489
MECHANISM FOR SEWING FASTENER ELEMENTS

Erich A. Schmidt, Lexington, Ky., assignor of one-half to Universal Button Company, Lawrenceburg, Ky., a corporation of Kentucky
Filed Dec. 29, 1961, Ser. No. 163,100
7 Claims. (Cl. 112—113)

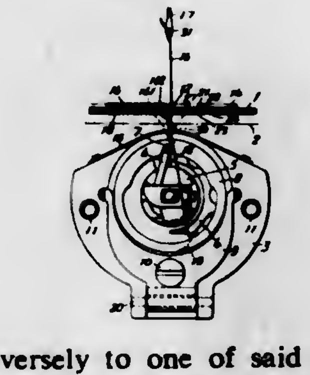


1. In combination with a sewing machine having stitch mechanism arranged therewith including a reciprocating needle,
a movable fastener element holding member having one end thereof pivotally attached to said machine,
fastener holding means mounted on one end thereof which is positioned below said needle and in which a fastener element is adapted to be disposed,
means arranged to one side of said holding member for delivering fastener elements successively to a point spaced from said holding member,
means of transferring fastener elements successively from said point of delivery to the fastener holding means on said holding member,
means actuated simultaneously with said last mentioned means for actuating said transfer means,
a treadle-actuated oscillating lever having one end thereof pivotally attached to the sewing machine,
a cam member mounted on the opposite free end of said oscillating member,
a horizontal lever mounted on said machine and pivotally connected thereto intermediate the length thereof,
a cam follower mounted on one end of said horizontal lever which cooperates with said cam member,
a vertically extending lifting bar mounted on said machine having an outwardly projecting member carried thereby adjacent the lower end thereof,
and finger-like means carried by said fastener element holding member adjacent the free end thereof which cooperates with said projecting member to lift the free end of said fastener element holding member so as to position the fastener holding means carried thereby in alignment with said transfer means.

3,181,490
METHOD AND APPARATUS FOR CUTTING THREADS IN A SEWING MACHINE

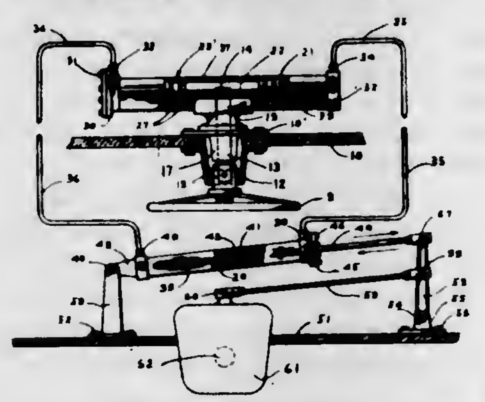
Keiki Kawasaki, Ohta-ku, Tokyo, Japan, assignor to Riccar Sewing Machine Co., Ltd., Tokyo, Japan
Filed Oct. 2, 1962, Ser. No. 227,886
Claims priority, application Japan, Oct. 2, 1961, 36/35,761; Jan. 20, 1962, 37/2,428; Sept. 13, 1962, 37/51,921
5 Claims. (Cl. 112—252)

1. In a sewing machine, in combination, a supporting table for a material and having an elongated opening adapted to extend in the feeding direction of the material and being bounded by two lateral longitudinal edges; a needle reciprocable to pass with a first thread through the material and through one end of said opening; shuttle means cooperating with said needle for interconnecting a second thread with the first thread, said shuttle means including loop-forming means for forming a loop in which said first thread extends at an angle to said second thread; and cutting means mounted on the underside of said supporting table and including a first cutting edge extending transversely to one of said edges laterally of said opening and being located spaced from said one end of said opening, and a second cutting edge forming part of said one edge and being located farther spaced from said one end than said first cutting edge so that one of said threads is first cut by said first cutting edge and then the other thread is cut by said second cutting edge when the material is manually moved away from said one end toward the other end of said opening.



3,181,491
HYDRAULIC BOAT STEERING CONTROL

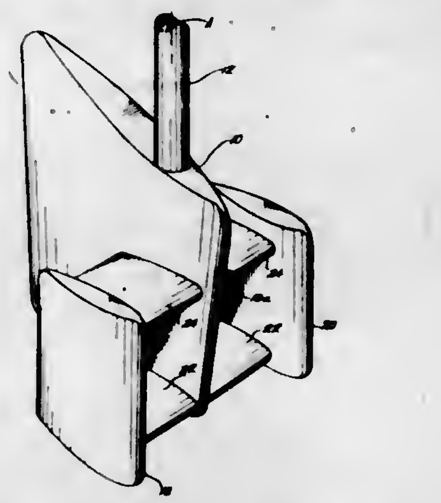
Elmer D. Dunning, 231 W. 6th Ave., Roselle, N.J.
Filed Apr. 2, 1963, Ser. No. 270,512
4 Claims. (Cl. 114—150)



1. A fluid operating steering mechanism comprising,
(*a*) a steering means including a steering shaft, a steering wheel fixed to one end of said shaft and a pinion gear fixed to the other end of said shaft,
(*b*) a direction changing means,
(*c*) a fluid operated means for remotely interconnecting said steering means to said directional changing means whereby the latter is rendered responsive to the former,
(*d*) said fluid operated means including a master piston and cylinder assembly operatively connected to said steering means, and a slave piston and cylinder assembly operatively connected to said direction changing means,
(*e*) fluid connection interconnecting said master and slave assembly so that said slave assembly is responsive to said master assembly,
(*f*) said master assembly including a master cylinder positioned for receiving said pinion gear,
(*g*) a pair of spaced apart displaceable piston mounted in said master cylinder,
(*h*) a rack interconnecting said pistons, said rack being disposed in meshing relationship with said pinion gear so that displacement of said piston is effected by rotation of said steering wheel,
(*i*) and an indicating means for visually indicating the position of said direction steering means,
(*j*) said indication means being connected so as to be rendered responsive to said steering means,
(*k*) said steering shaft having a threaded portion intermediate the end thereof,
(*l*) a lever arm having an arcuate shaped lower edge portion having teeth formed thereat,
(*m*) means for pivotally supporting said lever arm so that the teeth thereof are in meshing relationship with said threaded portion,
(*n*) said lever arm having a slot formed in the upper edge thereof,
(*o*) a bell crank indicating lever,
(*p*) means for pivotally mounting said bell crank lever adjacent said lever arm, and said bell crank lever having one leg thereof connected in said slot in said lever arm, and the other leg thereof functioning as a pointer for indicating the angular position of said rudder means.

3,181,492
RUDDER FOR MARINE VESSELS

Leiter W. Hockett, 3415 NW. 66th, Seattle 7, Wash.
Filed Aug. 27, 1962, Ser. No. 219,408
12 Claims. (Cl. 114—167)



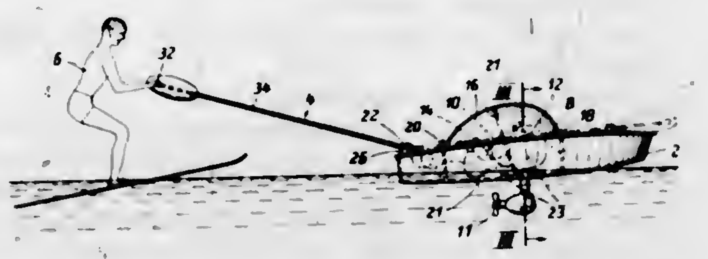
1. A multifoil rudder assembly for a marine vessel having propellers mounted at locations spaced laterally outward from respectively opposite sides of a longitudinal vertical plane of the vessel, comprising a main rudder having a supporting shaft by which the main rudder is mounted to pivot on a substantially vertical axis contained in said plane, and companion foils, each of a shape that produces a neutral hydrodynamic effect as between its opposite faces, carried by and in parallel relationship with said main rudder at respective locations spaced laterally outward from opposite sides of the main rudder each by a distance which approximates the spacing between said plane and the tip circles of the respectively adjacent propellers, whereby the foils when positioned parallel to said plane lie substantially at the edges of the respective propeller washes, said companion foils having their leading edges offset forwardly from the pivot axis, whereby when the foils are turned about said axis the leading edge of one such companion foil is projected rearwardly and more deeply outwardly into the adjacent propeller wash to afford maneuverability apart from any afforded by the main rudder.

3,181,493
WATER SKIING APPARATUS

Branko R. Perkut, Grosse Allee 9, Hamburg 1, Germany
Filed Apr. 10, 1963, Ser. No. 272,123
2 Claims. (Cl. 115—6.1)

1. Water skiing apparatus comprising, in combination, a watercraft having fore and aft portions and a hull

bottom, an opening defined in said hull bottom substantially centrally located intermediate said fore and aft portions, a motor mounted within said watercraft having a drive shaft extending therefrom, means supporting said motor adjacent said opening for selective positioning of said drive shaft from a storage position within said watercraft to an operative position substantially central to said fore and aft portions and extending through said opening, a hull plate attached to said motor and adapted to seal said opening and become a portion of said hull bottom upon positioning said drive shaft to the operative position, releasable securing means securing said hull plate within said opening, and water skier towing means attached to said watercraft aft portion for selective positioning between an operative position trailing said watercraft and a transportation position superimposed over said watercraft and substantially parallel to said hull bottom.

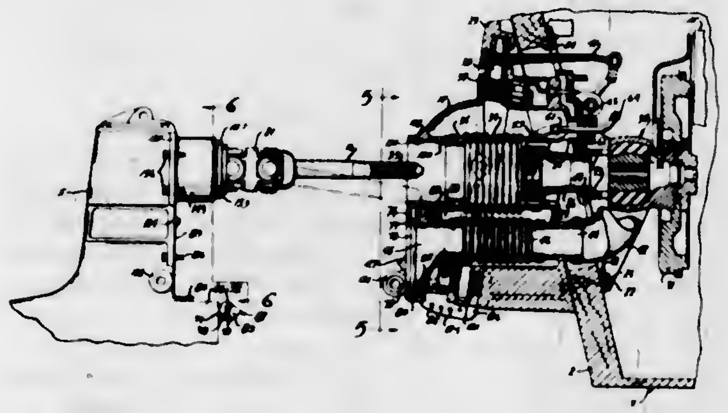


3,181,494
STERN DRIVE UNIT ASSEMBLY

Elmer Carl Kiekhaefer, Winter Haven, Fla., and Irving W. North, Fond du Lac, Wis., assignors to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware

Filed Jan. 7, 1963, Ser. No. 249,642

11 Claims. (Cl. 115—34)



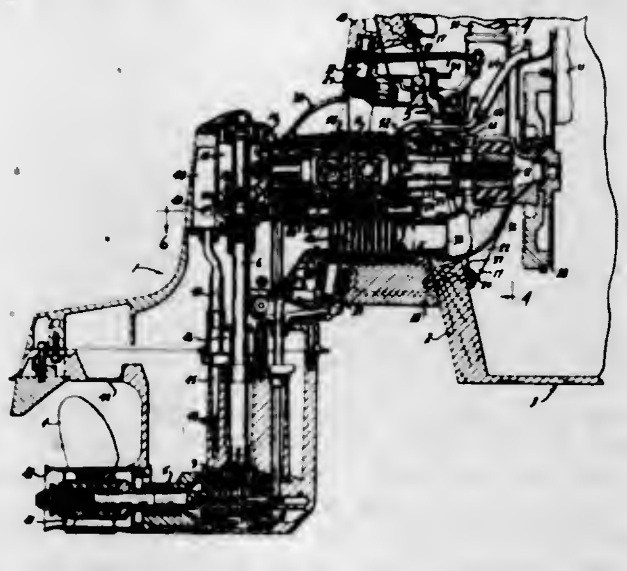
9. In an outboard propulsion unit for watercraft having a transom and wherein said unit is driven by an engine mounted inboard of the watercraft, a generally vertical drive shaft, a housing rotatably supporting said drive shaft, a housing member supporting the drive shaft housing and extending forwardly therefrom and along with said drive shaft housing being dirigibly and pendantly supported from the transom of the watercraft on generally vertical and transverse horizontal axes forwardly of the vertical drive shaft, a generally horizontal drive shaft extending through the housing member and being removably coupled to the engine and adapted to accommodate movements of the housing member on said axes, said horizontal drive shaft extending into the drive shaft housing for driving connection to the vertical drive shaft and being secured axially within said housing, said drive shaft housing being removable from the housing member and separation thereof effecting an uncoupling and removal of the horizontal drive shaft from the engine and housing member respectively.

3,181,495
COOLANT SUPPLY AND EXHAUST DISCHARGE MEANS FOR INBOARD-OUTBOARD DRIVES

Elmer Carl Kiekhaefer, Winter Haven, Fla., assignor to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware

Filed Jan. 7, 1963, Ser. No. 249,726

12 Claims. (Cl. 115—34)



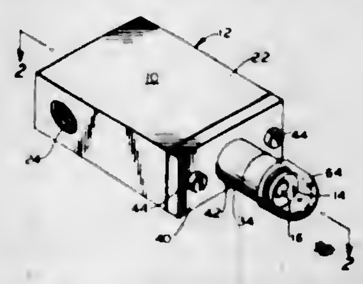
1. In an inboard-outboard drive for watercraft, an engine disposed inboard of the watercraft, a propulsion unit disposed outboard of the watercraft and dirigibly and pendently supported therefrom for steering movement on a generally vertical axis and for tilt movement on a generally horizontal transverse axis substantially intersecting said steering axis, a substantially vertical drive shaft in said propulsion unit rearward from said steering axis, drive means interconnecting said engine and said propulsion unit drive shaft, mounting means for said propulsion unit secured to the transom of the watercraft and surrounding an opening through said transom for receiving said drive means, water pick-up means in said propulsion unit, a water pump in said propulsion unit driven by said drive shaft and connected to receive water from said pick-up means, means to conduct water from said pump through the propulsion unit and through the transom opening and said mounting means to said engine and including flexible conduit means adjacent said axes intersection to provide freedom for steering and tilt movements of said propulsion unit upon said axes.

3,181,496
VISUAL INDICATOR

Robert A. Bilbrey, Kensington, Calif., assignor to Benjamin W. West, doing business as California Controls Company, Oakland, Calif.

Filed Jan. 20, 1964, Ser. No. 338,716

3 Claims. (Cl. 116—70)



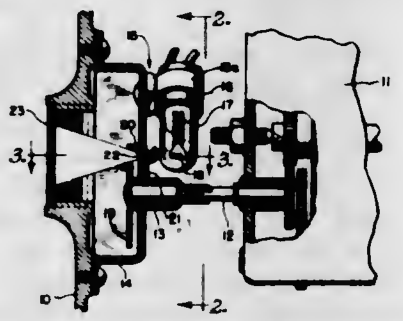
1. A visual indicator comprising, an outwardly flared generally conically shaped reflecting surface having a centrally located aperture extending therethrough, said reflecting surface defining a reflecting zone, a movable elongated indicator element having a brightly colored sidewall and an end wall of a contrasting color mounted for axial movement through said aperture between an extended position wherein said indicator element extends through said aperture into said reflecting zone with a portion of said indicator extending beyond said reflecting surface and out of said reflecting zone, and a retracted position wherein said indicator element does not extend into said reflecting zone, and means for effecting relative movement between said reflecting surface and said indicator element, whereby movement of said indicator element between said extended position and said retracted position provide a visual color signal.

3,181,497
TUNING INDICATOR

Clement R. Tompson, Melrose Park, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Nov. 21, 1963, Ser. No. 325,428

5 Claims. (Cl. 116—124.4)



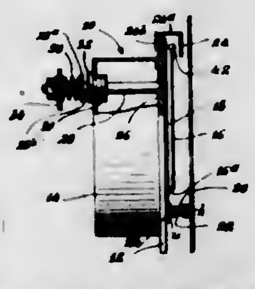
1. A tuning indicator for a wave-signal receiver including a cabinet and a frequency-selective tuning mechanism, said indicator comprising:
an image projection screen on said cabinet;
an astigmatic light source disposed within said cabinet near said screen and supported therein at an orientation to project astigmatic light upon said screen;
a mask with a plurality of transparent areas arranged in a predetermined pattern, movably mounted within said cabinet between said astigmatic light source and said screen in a position to selectively allow light from said astigmatic light source to be projected upon said screen through said transparent areas;
and means for coupling said mask to said frequency selective tuning mechanism.

3,181,498
HOLD METERS

Harry Bruce Nankervis, Middletown, N.J., assignor to Stephenson Corporation, Red Bank, N.J., a corporation of New Jersey

Filed Feb. 26, 1963, Ser. No. 261,017

4 Claims. (Cl. 116—129)



1. A device for clamping a meter needle which comprises, a meter case including a face plate comprising upper and lower portions, said face plate having an extension disposed in front of, and spaced from, the upper portion of the face plate, a calibrated dial plate disposed between the face plate and its said extension, means operatively carried by said face plate for mounting the dial plate adjacent its lower edge for swing movement between the face plate and its extension and including means normally holding the dial plate in a plane substantially parallel with the face plate, said meter case defining a passage extending through it substantially at right angles to the dial plate, an indicating needle extending from the meter case up over the outer surface of the dial plate with its free end disposed between the dial plate and the extension of the face plate, a plunger adapted to be reciprocated within the said passage through the meter case, and means for moving the plunger between a position in which its forward end does not affect the normal position of the dial plate to a position in which it has contacted the dial plate and swung it outwardly to a position in which its upper portion clamps the top of the needle against the inner surface of the face plate extension.

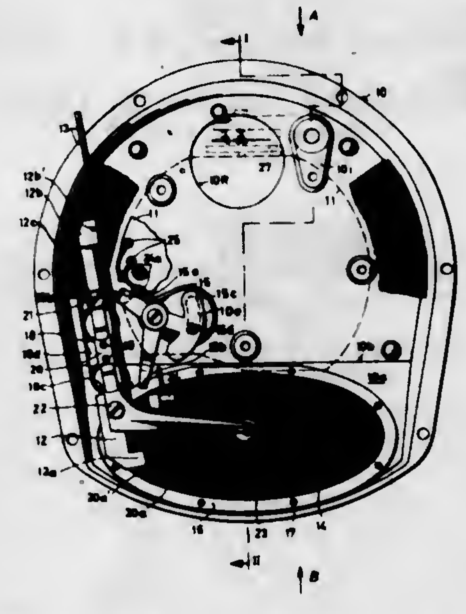
3,181,499
STRIKING CLOCK

Helmut Junghans, Schramberg-Sulgen, Eckenhof, and Günther Glaser and Paul Jahn, Schramberg, Germany, assignors to Gebruder Junghans Aktiengesellschaft, Schramberg, Wurttemberg, Germany, a corporation of Germany

Filed July 16, 1962, Ser. No. 210,097

Claims priority, application Germany, July 25, 1961, J 20,291

8 Claims. (Cl. 116—169)



1. Striking clock with a clockwork mechanism and having an extremely flat housing, comprising a rear wall plate to act as carrier for the clockwork mechanism, an oval-conical diaphragm secured to the said wall plate and opening out towards a rear side of the clock, a gong block coupled to the diaphragm and provided with a plurality of gong rods disposed in a plane which is perpendicular to a plane of the edge of the diaphragm and the gong block being of elongated rod-shape with its long main axis and the longitudinal axis of the diaphragm edge being at right angles to each other and the elongated gong block and the gong rods being provided adjacent the diaphragm and therewith the clockwork mechanism.

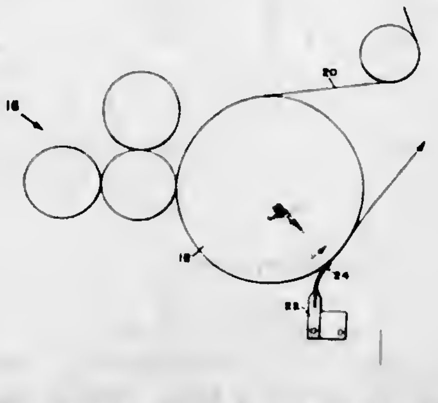
3,181,500
APPARATUS FOR THE PRODUCTION OF COATED PAPER

Morris G. Paulson and Carroll M. Thureen, International Falls, Minn., assignors to Minnesota and Ontario Paper Company, Minneapolis, Minn.

Filed Jan. 25, 1960, Ser. No. 4,394

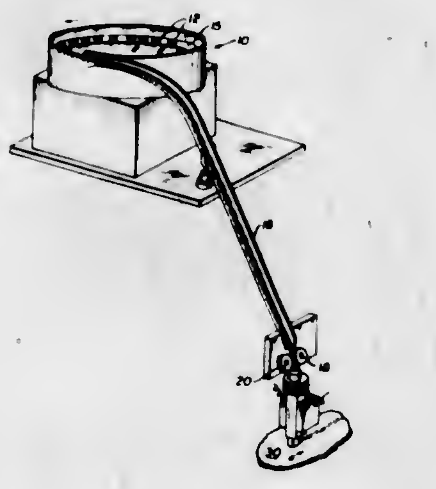
1 Claim. (Cl. 118—126)

In a coating apparatus for producing coated paper having smooth and glossy surface comprising a roller coating apparatus, a backing roll for supporting paper during coating and smoothing, a smoothing blade contacting the coated paper supported by the backing roll, said blade of a thickness of about 0.010 inch to less than about 0.50 inch and inflatable means contacting an adjacent portion of the smoothing blade contacting the coated paper and holding the blade in close contact with the coated paper,



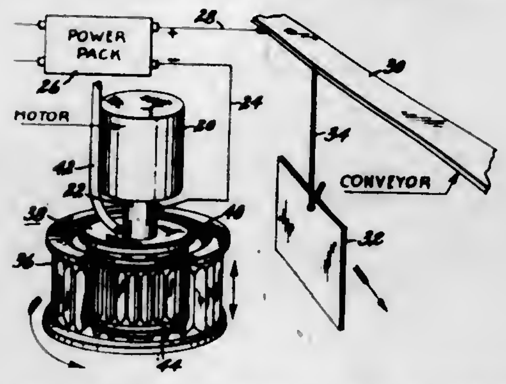
said inflatable means divided lengthwise into separate compartments with the separate compartments increasing in size from the mid-portion toward the ends thereof and means of inflating each of said compartments.

3,181,501
MACHINE FOR APPLICATION OF HOT MELT ADHESIVE
Robert Berridge Dean, Bainbridge, N.Y., assignor to The Borden Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 28, 1961, Ser. No. 141,467
1 Claim. (Cl. 118—70)



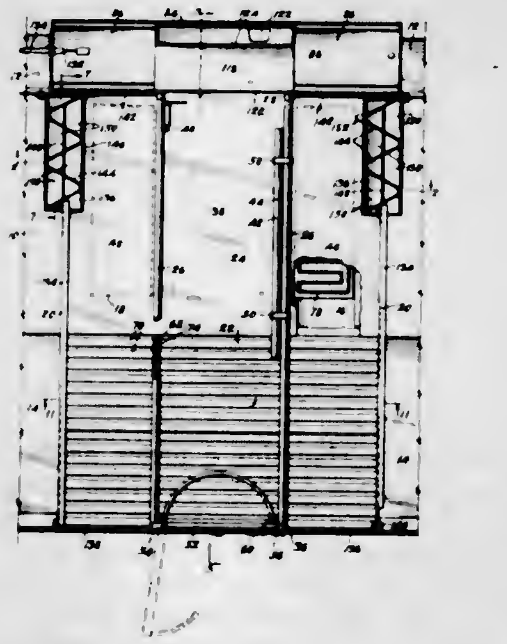
A machine for applying hot melt adhesive to a surface to be bonded thereby, the machine comprising means for delivering, between coacting feeding rollers, shaped discontinuous generally cylindrical masses of a solid fusible adhesive composition, the rollers being spaced apart at their faces at a distance to receive and press upon said masses, a melting chamber, guides extending continuously from the outlet between the rollers through said chamber for guiding and confining the adhesive after passage between said rollers and through the melting chamber, means for maintaining said chamber at a temperature above melting of the adhesive composition, an outlet from the melting chamber for delivery of the fluid adhesive composition to the surface to be bonded, and means for rotating said rollers so as to maintain a forward pressure on the said masses delivered thereto and on the molten adhesive up to and including the time of delivery of the adhesive from said outlet, said rollers having circular faces for contacting the said masses, the faces being provided with annular grooves, and the said guide having tapered ends extending into and fitting within the grooves, so that the tapered ends remove the masses of adhesive after passage between the said rollers, from the faces thereof.

3,181,502
MANUFACTURING APPARATUS AND METHOD FOR OPERATING THE SAME
Harold J. Reindl, Dayton, and Charles W. Killen, Piqua, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 15, 1961, Ser. No. 95,986
2 Claims. (Cl. 118—627)



1. An apparatus for electrostatically depositing paint on an article to be painted comprising in combination, a source of electrostatic power having one pole thereof attached to the article to be painted, a horizontally disposed stationary paint distributor spaced from the article and attached to the other pole of said power source, means for supplying paint to the distributor and for causing flow of the paint from the distributor whereby the said paint carries an electrostatic charge similar to the charge on the distributor, an air moving means comprising a squirrel cage blower rotating on an axis substantially concentric with the distributor and surrounding the paint being discharged therefrom for throwing the charged paint outwardly thereof in dispersed condition in a plane substantially normal to the axis of rotation of said means, and a second, auxiliary air moving means comprising a plurality of compressed air jets substantially concentric with the first mentioned air moving means for supplying additional air within said first air moving means for aiding in the mechanical dispersion of paint therefrom.

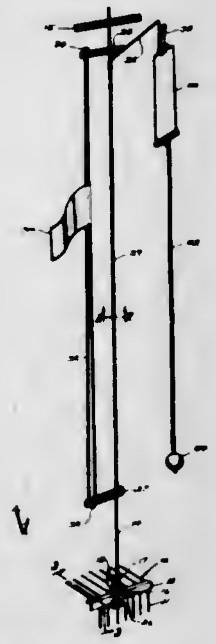
3,181,503
FARROWING PEN WITH FLOOR HEATED PLIGHT AREAS
Herman W. Tripp, Wiggins, Colo., assignor to Agricultural Research Development, Inc., Denver, Colo., a corporation of Colorado
Filed Aug. 17, 1962, Ser. No. 217,756
14 Claims. (Cl. 119—20)



1. In a hog stall which comprises a rectangular enclosure having a width of approximately five feet and a length of approximately seven feet, having a feeder means

located at one end of the enclosure, the improvement comprising a recessed waste gutter extending laterally along the other end of the enclosure, and open gratings covering said gutter forming a floor whose area is not greater than approximately one-fourth to one-third of the total floor area of the stall, said gratings each comprising a plurality of T-irons arranged in spaced parallel relation with their cross-bar forming portions uppermost and their stem portions projecting downwardly, the adjacent T-irons being spaced apart a distance insufficient for the hoof of a new born pig to pass therebetween yet being spaced apart a distance sufficient to permit body wastes to be forced therethrough into the gutter by the pigs' feet and sub-floor heater means located and positioned adjacent to the feeder means at said one end and extending almost to the waste gutter.

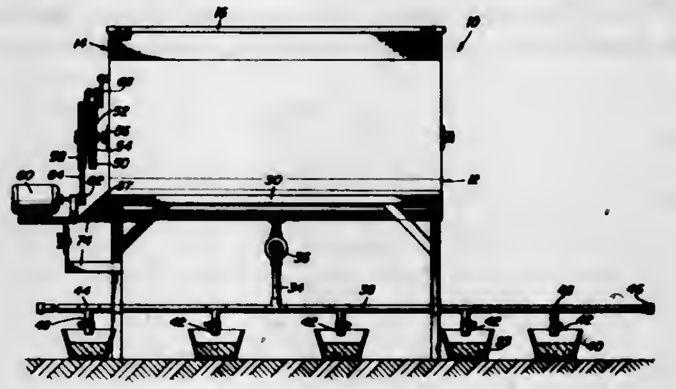
3,181,504
EXERCISING DEVICE FOR BIRDS
Gerald F. Stortz, Rte. 2, Decorah, Iowa
Filed June 21, 1962, Ser. No. 204,216
5 Claims. (Cl. 119—29)



1. In an exercising device for birds,
a vertical elongated rod,
securing means on the lower end of said rod to secure said rod to a supporting surface,
a first beam secured to a lower portion of said rod and extending outwardly therefrom,
a second beam secured to said rod above said first beam and extending outwardly from said rod,
and a flexible continuous line movably secured to and extending between said first and second beams and including first and second line portions,
said line adapted to be moved between said beams when a bird perches on one of said line portions, the weight of said bird causing that line portion upon which said bird is perched to move downwardly and to cause the other line portion to move upwardly.

3,181,505
SEMI-AUTOMATIC HOG AND CALF FEED DISPENSER
Ollie C. Walraven, R.R., Erwin, S. Dak.
Filed Apr. 9, 1963, Ser. No. 271,757
4 Claims. (Cl. 119—51)

3. A feed mixer and dispenser consisting of an enlarged agitator tank, means for introducing the feed ingredients into said tank, means for mixing said ingredients, a discharge opening in said tank, means for preventing an accumulation of feed about any portion of said opening, a discharge pipe communicated with said discharge opening, means for controlling the flow of feed from the tank and into the discharge pipe, and means for receiving the feed from said discharge pipe and distributing it equally to a plurality of individual feeding troughs, said means for mixing the ingredients including a centrally located rotatably mounted shaft within the tank, means for driving the shaft, and a plurality of radially projecting blades fixed to said shaft at longitudinally spaced points therealong, each of said blades consisting of an elongated bar having an enlarged flat plate secured transversely across the outer end thereof, one of said blades being so orientated and of such a length as to pass the flat plate directly over the discharge opening and as close thereto as feasible, said flat plate having a width greater than the width of the discharge opening and completely spanning said opening as it passes thereover, thereby constituting the means for preventing an accumulation of feed about the opening.



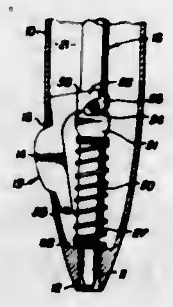
3,181,506
FEEDING METHOD
Shaun A. Seymour, Ephrata, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
No Drawing. Filed Jan. 17, 1964, Ser. No. 338,308
1 Claim. (Cl. 119—56)

A method for feeding stock animals such as hogs, comprising withdrawing feed from a supply source and generally uniformly distributing the feed throughout the length of an elongated horizontally extending container located above a station where the animals are to feed, then after the withdrawn feed has been distributed, dumping it simultaeously along the length of the feed station so that the animals along the station all have feed deposited for them at the same time, then repeating the distribution and dumping cycles until a desired total amount of feed has been deposited for the animals, and then, while the animals are eating, distributing a given amount of feed along the length of the container and before the feed is dumped stopping the operation so that a distributed charge of feed will be held in readiness for the next feeding of the animals, whereby when the next feeding takes place it will begin with the dumping of feed simultaneously along the length of the feeder and the animals will not have to wait for a feed distribution to take place.

3,181,507
PEN TIP AUTOMATIC RETRACTION
Rex P. Dannebaum, 45-071 Towne Ave., Indio, Calif.
Filed Sept. 20, 1962, Ser. No. 225,065
2 Claims. (Cl. 120—42.03)

1. In a writing pen assembly, the combination comprising an elongated shell having an end opening, an elongated cartridge having a writing tip, the cartridge being movable axially within the shell to vary the exposure of said tip with respect to said end opening, and actuator means including a pressure responsive element movable in a direction to advance said cartridge within the shell for increasing the exposure of said tip, said element being exposed at the side of said shell near said

end opening and in position to be pressed by the pen gripping finger or thumb of the writer during writing, said actuator means including a spring continuously urging the cartridge in a retraction direction for decreasing the exposure of said tip, said actuator means including a cam and follower mounted so that one of the cam and follower coupled to said element moves generally inwardly into the shell interior as the other of said cam and follower coupled to said cartridge moves generally axially within said shell, the cam having an inclined face movable over a range corresponding to different degrees of exposure of the writing tip at said end opening, the cam also having a plateau angled with respect to said face and having a position of near but not quite completely stable engagement with the follower characterized in that retraction of said cartridge is blocked only when said element is pressed by the pen gripping finger or thumb of the writer, said plateau facing generally axially endwise to receive endwise thrust transmitted between the cam and follower and to transmit the bulk of said thrust to the shell independently of transmission to the pen gripping finger or thumb of the writer.



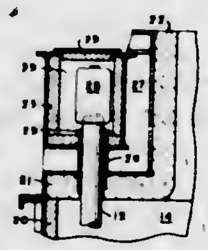
3,181,508
INDUSTRIAL FURNACES

Cornelis Hennipman, The Hague, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed June 12, 1962, Ser. No. 201,925

Claims priority, application Netherlands, June 26, 1961, 266,352

9 Claims. (Cl. 122—356)



1. An industrial furnace for heating fluids, comprising:

(*a*) a hearth chamber defined by side walls and end walls;

(*b*) at least one source of heat arranged within said chamber and supported by one of said end walls;

(*c*) a plurality of fluid conveying heating tubes disposed within said chamber and extending through at least one end wall thereof;

(*d*) ducts disposed externally of said chamber and sealingly secured to the end walls thereof having the tubes extending therethrough, said ducts being aligned with the tubes and defining passages through which the tubes may pass without obstruction;

(*e*) closed hollow bearing elements spaced laterally from said chamber and secured in communication with said ducts, said elements having access means therein to permit the tubes to pass therethrough without obstruction; and,

(*f*) support elements secured to the tubes within the bearing elements to support tubes therein.

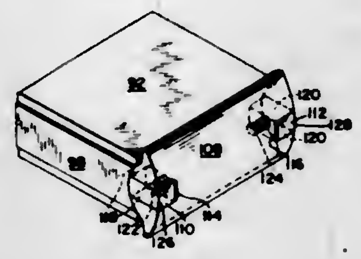
3,181,509
SEALING MEANS FOR ROTARY ENGINES

Lewis B. Simon, Santa Paula, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 29, 1963, Ser. No. 254,845

3 Claims. (Cl. 123—16)

(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a rotary engine including a rotor eccentrically mounted within a casing, the casing having a cylindrical inner wall between two inner end walls; a device for making a seal with said walls comprising:

(*a*) the rotor having a groove extending both radially and between said end walls;

(*b*) a vane sealably engaging an inner surface of said groove and slidably supported therein so that upon rotation of the rotor the vane can move radially with respect to said rotor;

(*c*) said vane having a pair of side walls with each side wall facing a respective one of said end walls;

(*d*) a side plate mounted adjacent each of the vane's side walls with each plate having an outermost end with respect to the rotor which is coextensive with an outermost end of the vane;

(*e*) each side wall of the vane having a radially extending groove and each side plate sealably and slidably engaging a respective groove along a pair of opposing planes, both planes being substantially parallel to a radial plane through said rotor;

(*f*) the sealing engagement of each side plate with the respective groove in the vane extending from a position within the radial groove of the rotor to the outermost ends of the side plates and said vane;

(*g*) each side plate having a surface which is capable of sealably engaging a respective one of said end walls;

(*h*) means biasing each of said surfaces of the end plates towards the respective end wall so as to effect the sealing engagement therebetween;

(*i*) a sealing shoe having an outer surface which is curved to conform to said cylindrical wall so as to make sealing engagement therewith;

(*j*) said sealing shoe being mounted at the outermost ends of the side plates and said vane with the sealing shoe and said outermost ends sealingly and slidably engaging one another along a curved plane so that said sealing shoe is rockable with respect to the vane and said said plates; each side plate being biased radially outwardly to bear against said shoe;

(*k*) said shoe extending from one end wall to the other end wall and having ends capable of sealingly and slidably engaging the end walls;

(*l*) said shoe being divided into a plurality of portions; and

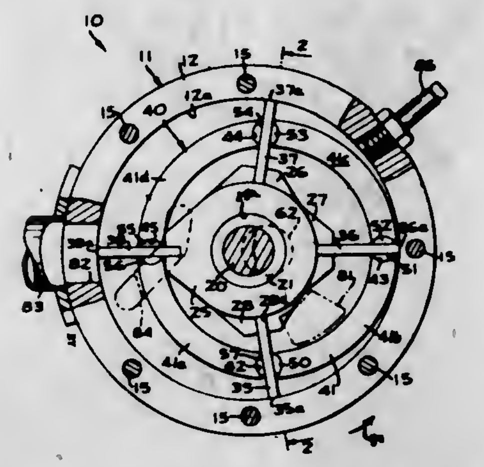
(*m*) means biasing two of said portions of the shoe toward a respective end wall so as to effect the sealing engagement therewith, whereupon rotation of said rotor unbroken surface sealing engagement is maintained between the rotor, the side plates, and the shoe with the end walls and the cylindrical inner wall of said casing.

3,181,510
ROTARY VANE DEVICE

Robert W. Hovey, 19704 Crestbrook Drive, Saratoga, Calif.

Filed Mar. 1, 1963, Ser. No. 262,131

4 Claims. (Cl. 123—16)



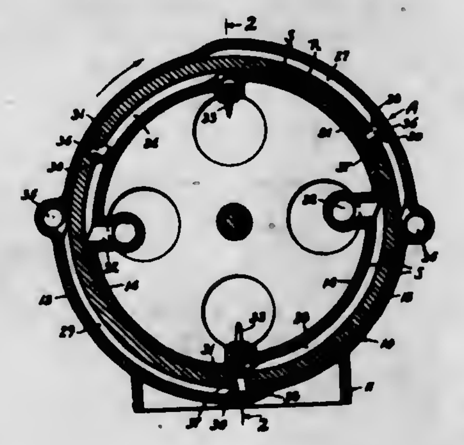
1. A rotary vane motor comprising a housing with a stationary cylindrical outer wall, a rotatable inner wall spaced radially inward from said outer cylindrical wall concentric therewith, means carried by said housing to support said inner wall for rotation, a rotor with a rotatable intermediate cylindrical wall disposed between said inner and outer walls, said rotatable intermediate wall being formed with a plurality of axially disposed angularly spaced separation areas, an axially extending vane disposed in each of said separation areas, said housing being formed with a by-pass passageway communicating with the space between said outer wall and said intermediate wall and communicating with the space between said inner wall and said intermediate wall, means projecting from said inner wall and supporting said vanes for rotation about an axis coincident with the axis of said inner and outer walls, means carried by said housing to support said rotor for rotating said intermediate wall thereof about an axis offset from said axis coincident with said inner and outer walls, and means adapted for imparting movement to said vanes and said intermediate wall to turn said intermediate wall with said vanes and to move said intermediate wall in sliding engagement with said vanes in the radial direction.

3,181,511
INTERNAL COMBUSTION ENGINE

Paul B. Johnson, Rte. 1, Box 24, Yucaipa, Calif.

Filed Apr. 19, 1963, Ser. No. 274,158

5 Claims. (Cl. 123—16)



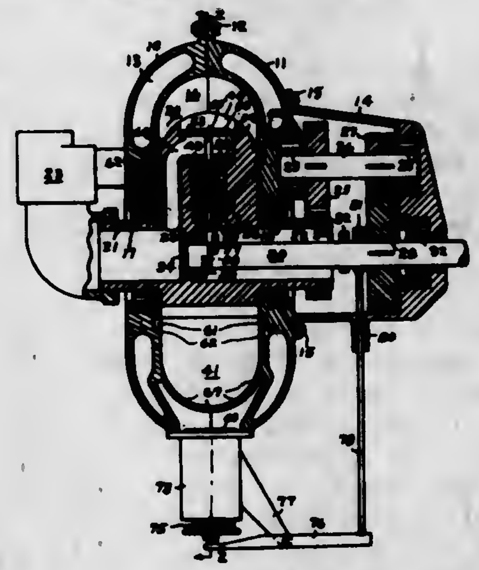
1. A rotary internal combustion engine comprising a rotor, a stator having a first wall structure on one side of said rotor and a second wall structure on the other side of said rotor; said first wall structure having a first wall section directly adjacent said rotor throughout substantially the length of said first wall section and a second wall section angularly spaced from said first wall section, said second wall section being spaced from said rotor a predetermined amount throughout substantially the length of said second wall section to form an intake-compression chamber, said second wall structure having a third wall section aligned with said first wall section and a fourth wall section aligned with said second wall section, said third wall section being spaced from said rotor a predetermined amount throughout substantially the length of said third wall section to form an expansion-exhaust chamber, a vane movable through an opening in said rotor and slideably engaging said first and second wall structures, a combustible gas inlet port opening into said intake-compression chamber adjacent the forward end thereof, an ignition device in said intake-compression chamber adjacent the rear end thereof, and an exhaust port opening into said expansion-exhaust chamber adjacent the rear end thereof, said vane having a gas receiving cavity therein, said vane having a first gas transmitting opening communicating said cavity with a portion of said intake-compression chamber ahead of said vane when said vane projects into said intake-compression chamber and said vane having a second gas transmitting opening communicating said cavity with a portion of said expansion-exhaust chamber behind said vane when said vane projects into said expansion-exhaust chamber.

3,181,512
ROTARY INTERNAL COMBUSTION ENGINE

Fred J. Hapeman, Chicken, Alaska

Filed Apr. 22, 1963, Ser. No. 274,584

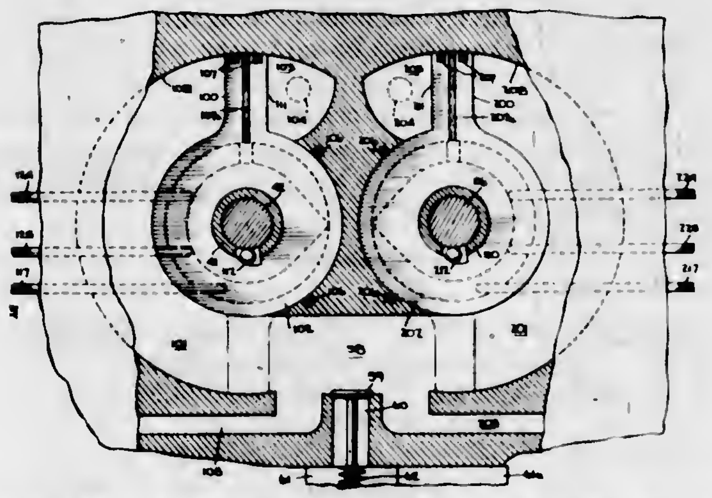
2 Claims. (Cl. 123—16)



1. In a rotary internal combustion engine, a housing having a cylindrical rotor chamber; two aligned bearings carried by opposite sides of said housing with their axes transversely offset a short distance to one side of the axis of said rotor chamber; a cylindrical rotor of smaller diameter than said rotor chamber disposed within said rotor chamber with its peripheral wall in close proximity to the peripheral wall of said rotor chamber at one point and spaced from the wall of said rotor chamber throughout the remainder of its circumference; two tubular axial bearing shanks rigid with said rotor and journaled in said bearings; a plurality of angularly spaced apart radially movable vanes carried by said rotor; a gas pocket provided in the periphery of said rotor between each two vanes; gaseous fuel supply means communicating with one of said tubular bearing shanks; conduits in said rotor, one of said conduits extending between each of said gas pockets and the tubular bearing shank which communicates with said gaseous fuel supply means; and intake control valve in each conduit controlling the flow of gaseous fuel to the gas pocket with which said conduit is connected; a cam shaft extending into the other tubular

bearing shank; a gear secured to the shank of said rotor; a countershaft journaled in said housing; a gear on said countershaft meshing with the gear on said rotor shank; two other enmeshed gears providing a driving connection between said countershaft and said valve shaft, said gears and countershaft cooperating in driving said cam shaft at one half the angular velocity of said rotor; exhaust ports in said rotor housing; and a plurality of cams on said cam shaft with one of the cams controlling the movement of each intake valve and providing a complete cycle of opening and closing movement of the intake valve at each two revolutions of the rotor.

3,181,513
OSCILLATING ENGINE
Gerald H. Young, 12 Lorraine Road, Summit, N.J.
Filed Aug. 23, 1962, Ser. No. 218,962
19 Claims. (Cl. 123—18)



1. A fluid device comprising a pair of adjacent arcuate chambers extending in substantially opposite directions with respect to one another, each of said pair of chambers having an exhaust opening; a vaned rotor mounted for oscillating within each of said chambers; means for synchronizing the rotors to oscillate in opposite angular directions with respect to one another; and means for controlling the flow of fluid into and out of said chambers in timed relationship with the oscillation of said rotors, said flow controlling means including a rotary valve member for each of said pair of chambers, said rotary valve member having a passage extending therethrough and being disposed adjacent said exhaust opening, and means operated in timed relationship with the oscillation of said rotor for rotating said valve member from one position where said valve member closes said exhaust opening to another position where said passage partially overlies said exhaust opening, said valve member being responsive to the flow of fluid from said chamber after the expansion of said fluid following the combustion of said fuel, said flow engaging said passage and rotating said valve member to said other position.

3,181,514
PISTON CONSTRUCTION
Frank C. Druzynski, Bloomfield Hills, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed Nov. 21, 1963, Ser. No. 325,272
4 Claims. (Cl. 123—41.35)

1. In an internal combustion engine a piston assembly comprising

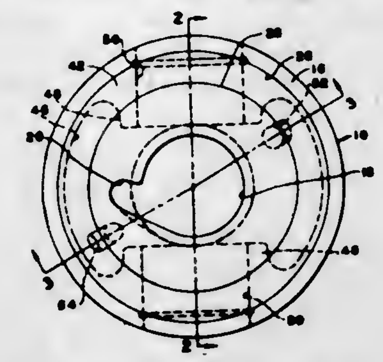
(*a*) a piston member having a head portion,

(*b*) said head portion being provided with a top planar surface and an annular surface extending on an axis substantially normal with respect to said top surface,

(*c*) a combustion chamber cavity extending into said head portion from said top surface,

(*d*) an annular cavity being provided in said head portion intermediate said combustion chamber cavity and said annular surface,

(*e*) an annular recess being provided in said top surface in registry with said annular cavity,

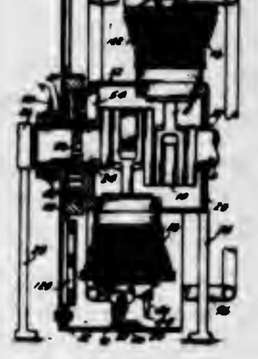


(*f*) said cavity being provided with an enlarged portion to form a radially extending shoulder portion and a corner portion spaced radially inwardly from said shoulder portion,

(*g*) a ring member having a portion seated on said shoulder portion and a radially extending flange portion adapted to be wedged against said corner portion, and

(*h*) said recess above said ring member being filled with a welding material whereby to close said cavity.

3,181,515
INTERNAL COMBUSTION ENGINE
Nikola O. Zurich, % Royal Hotel, 435 W. Michigan, Milwaukee, Wis.
Filed Oct. 3, 1963, Ser. No. 313,676
12 Claims. (Cl. 123—41.65)



1. An engine, comprising the combination with a crankshaft, a relatively fixed cylinder, a piston reciprocable in the cylinder and connected with the crankshaft and means supported on the cylinder requiring operation in timed relation to the movement of the piston, of a ring encircling the crankshaft and the cylinder, means supporting the ring for rotation, means for driving the ring rotatably from the crankshaft and a cam on the ring for actuating the cylinder-supported means.

3,181,516
INTERNAL COMBUSTION ENGINE
Ruben V. Peterson, 801 Cedar Ave., Albert Lea, Minn.
Filed Dec. 23, 1963, Ser. No. 332,724
7 Claims. (Cl. 123—41.82)

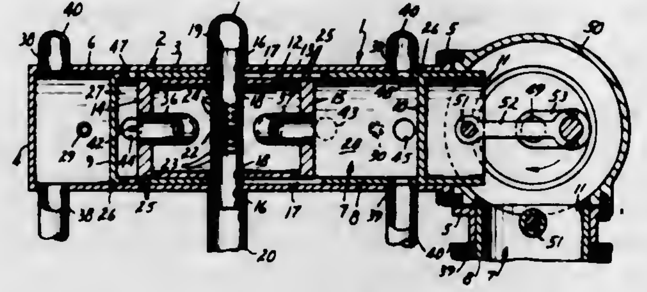
1. In an internal combustion engine:

(*a*) a generally tubular elongated block having a central axis,

(*b*) a generally tubular elongated reciprocating cylinder fit within said block and coaxial therewith and adapted for connection to a member to be driven,

(*c*) a fixed piston positioned within said cylinder generally intermediate the opposite ends thereof and secured to said block through openings in said cylinder,

(*d*) said cylinder with said fixed piston defining a pair of combustion chambers each one located within said cylinder and adjacent a different end portion thereof,

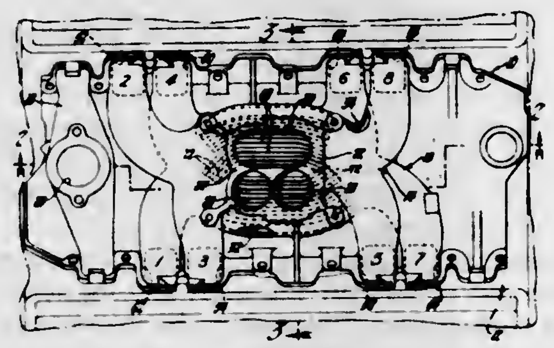


(*e*) air inlet means and fuel inlet means for each of said combustion chambers, said air inlet means comprising:

- (1) a supercharger, and
- (2) conduit means extending from the supercharger through said block, cylinder and piston to both of the opposite end portions of said piston, said conduit means at both end portions of said piston opening into both of said combustion chambers, and

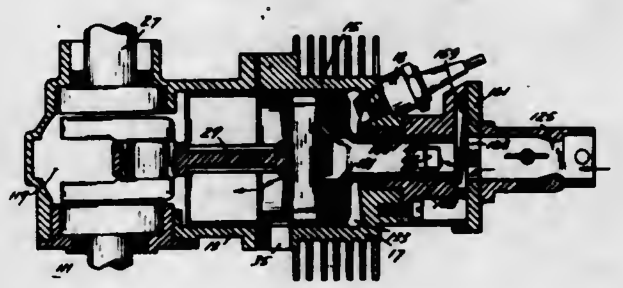
(*f*) said cylinder defining valve means for each of said combustion chambers for introducing air and fuel from said respective air and fuel inlet means alternately into one of said combustion chambers and then into the other thereof to produce upon ignition a power impulse with each stroke of said cylinder.

3,181,517
INLET MANIFOLD
Richard L. Keinath, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 3, 1964, Ser. No. 342,038
4 Claims. (Cl. 123—52)



1. An inlet manifold adapted to be installed on an engine having a plurality of cylinders, said inlet manifold including a plurality of distribution passages extending longitudinally of said manifold, each end of said distribution passages having a pair of branch passages integrally connected at one end to each other and to the end of the associated distribution passages, said branch passages extending substantially transversely of said manifold, the other end of each branch passage being connected to an intake port of one of said cylinders, a plurality of riser passages extending substantially vertically from the center of said distribution passages, each of said riser passages having one of their ends connected to one of said distribution passages for delivering a fluid charge of fuel and air to said distribution passage from a carburetor operatively connected to the other end of said riser passage, each of said distribution passages having a series of ribs and depressions along substantially their entire lower surface for collecting such fuel as may drop from the fluid charge, and a plurality of said ribs extending from said distribution passage into one or more of said branch passages associated with the respective distribution passage.

3,181,518
ENGINE
Leo T. Kincannon, Milwaukee, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Jan. 4, 1963, Ser. No. 249,365
3 Claims. (Cl. 123—73)

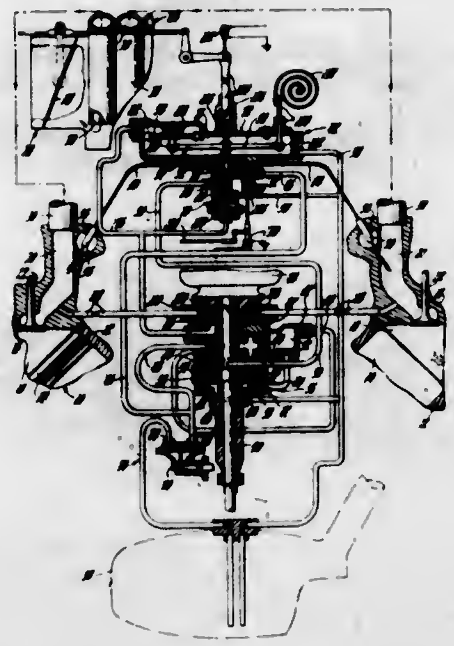


2. An internal combustion engine comprising a cylinder having an opening at the head end thereof, a hollow extension projecting from said cylinder head, a crankcase communicating with the other end of said cylinder, a piston movable axially within said cylinder between a top dead center position adjacent to said cylinder head end and a bottom dead center position to define a combustion chamber of variable volume, said piston having a face with a bore therethrough, a hollow neck projecting from said piston face in communication with said bore and passing through said opening at the head end of said cylinder in fluid-tight relation thereto and in telescopic relation to said hollow extension, said neck having in spaced relation to said piston face means defining a supply port located so as to be in communication with said combustion chamber when said piston is adjacent to said bottom dead center position, and to be out of communication with said combustion chamber when said piston is substantially spaced from said bottom dead center position, means on one of said neck and said extension and in communication with said crankcase for admitting combustion air to said crankcase, said means admitting combustion air to said crankcase including a reed valve preventing escape of combustion air from said crankcase during travel of said piston toward bottom dead center and permitting entry of air into said crankcase during travel of said piston toward top dead center, and means in the side of said cylinder defining an exhaust port spaced from the head end of said cylinder in position to be in communication with said combustion chamber when said piston is adjacent to said bottom dead center position, and to be closed when said piston is substantially spaced from said bottom dead center position.

3,181,519
FUEL CONTROL
John Dolza, Fenton, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 14, 1956, Ser. No. 591,450
46 Claims. (Cl. 123—119)

1. A fuel injection system for an internal combustion engine having a plurality of cylinders and an induction system for charging said cylinders, said fuel injection system comprising a pump interconnected with a source of fuel and having an outlet for discharging fuel therefrom, a housing having a substantially cylindrical distributing chamber wherein with an inlet at one end and an outlet at the other end, said inlet being interconnected with the outlet of said pump and said outlet having a by-pass valve therein adapted to by-pass fuel from said distributing chamber to said source of fuel, separate injector lines for each of said cylinders for discharging the fuel into the

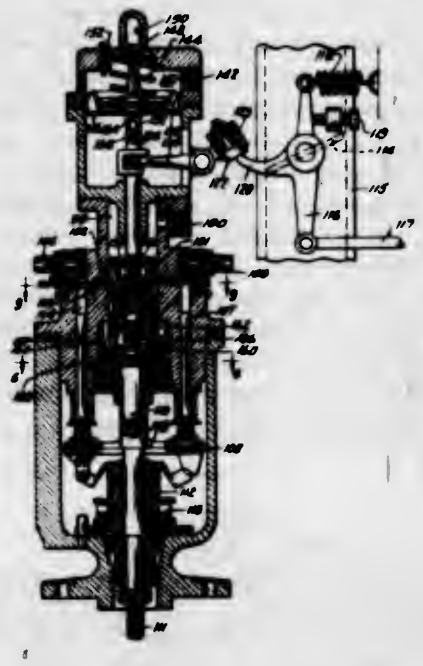
charges for the cylinders, the inner ends of said lines intersecting said distributing chamber radially to the axis in a common plane at circumferentially spaced equal points, means responsive to the quantity of air consumed by said engine and effective for actuating said by-pass fuel and thus meter the fuel flow through said injector lines to said cylinders.



3,181,520
FUEL INJECTOR SYSTEM WITH SMOG INHIBITING MEANS

Frank G. Mock, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed July 2, 1962, Ser. No. 206,839
4 Claims. (Cl. 123—139)

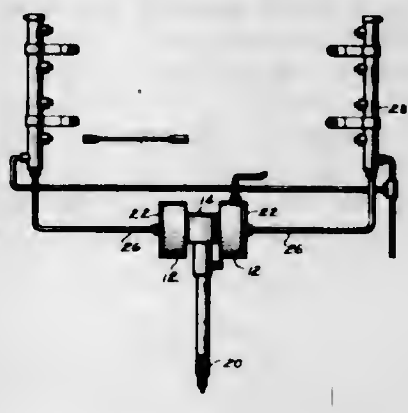


1. A fuel injector system for a multi-cylinder internal combustion engine comprising: a fuel source; an engine driven swash plate injection pump having a plurality of annularly arranged spaced apart pumping chambers and pumping pistons therein, one for each engine cylinder; wall means defining a cylindrical chamber centrally of said injection pump connected to said fuel source for receiving inlet fuel; a first group of radially disposed passages formed in said wall means opening on one end into said central chamber in a first common transverse plane; and connecting on the other end to separate and alternate pumping chambers; a second group of radially disposed passages formed in said wall means opening on one end into said central chamber in a second common transverse plane spaced from said first plane and connecting on the other end to separate pumping chambers intermediate the chambers connected by said first group of passages; a spool valve driven synchronously with said swash plate disposed in said central chamber operative in a first position to selectively block said first group of passages in timed relation with the respective piston pumping stroke to enable fuel delivery and operative in a second position to selectively block said second group of passages in timed relation with respective piston pumping stroke; and cam means driven at one-half the spool valve speed operative to position said spool valve alternately between first and second positions.

3,181,521
IGNITION DISTRIBUTOR FOR AUTOMOBILES

Robert Lee, 1508 Price St., Savannah, Ga.

Filed Nov. 19, 1963, Ser. No. 324,658
1 Claim. (Cl. 123—146.5)

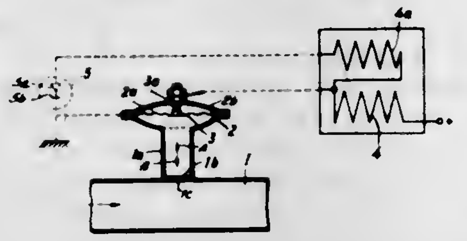


In an ignition system for an internal combustion engine having at least two rows of cylinders, a pair of housings, at least one of said housings containing an ignition circuit breaker mechanism including a cam means having spaced lobes one for each cylinder in each row of cylinders, a driven shaft having opposite ends projecting into each of said pair of housings and rotating said cam means, a driving shaft angularly arranged with respect to said driven shaft carrying a gear at one end for driving connection with an engine, a gearing at the opposite end of said driving shaft and located intermediate the ends of said driven shaft for rotating said driven shaft from said driving shaft, a pair of tube-like distributors one for each row of cylinders and extending therealong, means in each distributor for electric connection with a spark plug lead, a rotatable shaft in each distributor having a plurality of separate conductors for supplying ignition current to each of said leads through said means and a connection common to all of said separate conductors with the secondary of an ignition coil energized and deenergized by operation of said ignition circuit breaker mechanism; the improvement in said system for operating each of said distributor shafts from said driven shaft comprising, drive cables having flexible conduits secured at one end to each of said pair of tube-like distributors, caps for enclosing each of said pair of housings, openings in said caps aligned with the opposite ends of said driven shaft in which the opposite ends of said conduits are secured, and driving connections between one end of each of said cables with opposite ends of said driven shaft and the other end of each of said cables and said rotatable shaft in each distributor, to transmit rotary motion from said driven shaft to each distributor shaft.

3,181,522
CONTROL SWITCH ARRANGEMENT FOR A SPARK PLUG IGNITION CIRCUIT

Siegfried Kofink, Zell, near Esslingen (Neckar), Germany, assignor to J. Eberspächer, Esslingen (Neckar), Germany, a German firm

Filed May 2, 1960, Ser. No. 26,093
Claims priority, application Germany, May 8, 1959, E 17,600
1 Claim. (Cl. 123—148)

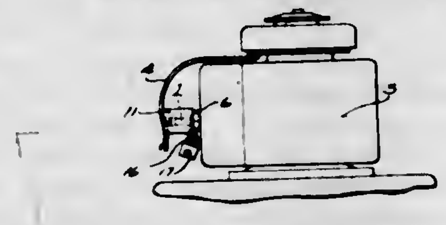


An interrupter switch for the electrical spark ignition of a device having an exhaust gas conduit with a pulsating exhaust gas flow therethrough during operation of the device, comprising a closed housing, an extension conduit connected into the lower end of said housing and into said exhaust gas conduit, a member extending across said extension conduit adjacent the connection to said exhaust gas conduit and having an orifice opening therethrough, a movable member disposed across said housing exposed to the pulsating gas flow from said extension conduit, a spark ignition circuit, a first contact connected in said spark ignition circuit and mounted in a fixed location in said housing on a side thereof opposite from said extension conduit, and a second contact connected in said spark ignition circuit carried by said movable member on the same side of said housing as said first contact and being displaceable with said movable member into and out of engagement with said first contact in accordance with the pulsating gas flow in said conduit.

3,181,523
SPARK PLUG COVER

Robert W. Casey, 2362 N. 49th St., Milwaukee, Wis.

Filed Nov. 19, 1963, Ser. No. 324,680
2 Claims. (Cl. 123—198)

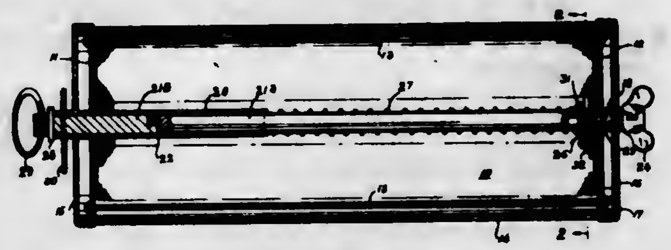


1. A cover for a spark plug of an internal combustion engine from which spark plug the ignition lead has been disconnected comprising first and second slidingly engageable tubular cover parts; said first tubular cover part being the one of smaller diameter and extending less than the normally exposed length of said spark plug and having a relatively flat transverse member extending outwardly from the medial portion thereof and an end portion at one end thereof, said end portion having a central aperture therein slightly larger than the outer diameter of the threaded base portion of said spark plug whereby said first tubular cover part may be secured to the cylinder head of said internal combustion engine by said spark plug; said second tubular cover part being closed at one end and having a relatively flat transverse member extending outwardly adjacent the other end thereof; said transverse members being disposed in planes normal to the axes of said first and second tubular cover parts and having aligned openings therein through which may be passed the staple of a padlock thereby preventing substantial relative axial movement of the engaged said first and second tubular cover parts.

3,181,524
WIRE GUN

Otto J. Bratz, Adrian, Mich., assignor to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York

Filed Aug. 24, 1962, Ser. No. 219,240
4 Claims. (Cl. 124—16)



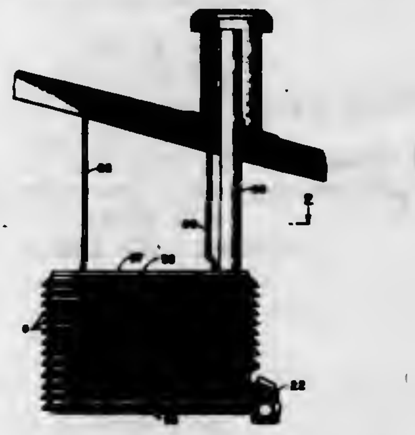
1. A wire gun comprising:

(*a*) a multi-layered helically wrapped coil of round wire, said wire in said coil being elastically twisted longitudinally throughout its length to a point approaching but not exceeding its yield point,
(*b*) a canister open at one end and surrounding said coil,
(*c*) a restraining device within said canister releasably holding the end portion of the innermost layer of said wire, and
(*d*) selectively operable triggering means exposed on the exterior of said canister and extending therewithin into operative engagement with said restraining device for selectively releasing the hold of said device on the wire on said coil, whereby upon actuation of said triggering means said wire is released and self-discharges substantially linearly outwardly under the cumulative impulse of its own released elastic energy through the open end of said canister.

3,181,525
RADIANT HEATERS

Henry S. McKann, Fredericksburg, Va., assignor to General Products Co., Inc., Fredericksburg, Va., a corporation of Virginia

Filed Aug. 28, 1962, Ser. No. 219,941
7 Claims. (Cl. 126—94)



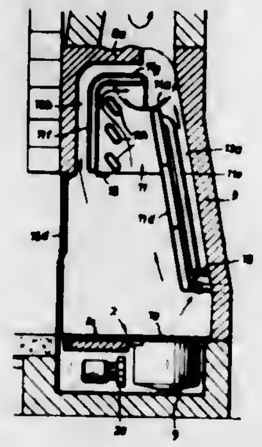
1. In a radiant heater adapted to be supported in an elevated position above an area over which radiant heat is to be distributed, the combination of
  two upright hollow metal casings each having an at least generally upright wall provided with a plurality of circular openings,
    said casings being spaced apart with said upright walls facing each other,
    said openings of each of said upright walls being spaced in an upwardly extending series, the openings in one of said upright walls being aligned horizontally with corresponding ones of the openings in the other of said upright walls;
  frame means rigidly connected to said casings and comprising a plurality of horizontal elongated frame members extending between said casings,

said frame members being rigid and said frame means and casings constituting a rigid assembly in which said casings are supported in their spaced apart relation by said frame members,
said rigid assembly including vane supporting means comprising a plurality of laterally extending vane supporting projections arranged in vertically spaced, horizontally aligned series;
a plurality of sheet metal tubes of circular transverse cross section,
each of said tubes having one end engaged in an opening in one of said upright walls and the other end engaged in an opening in the other of said walls,
said tubes extending horizontally between said casings in parallel, side-by-side relation and forming a vertically extending series which commences with a first, lower tube and ends with a last, upper tube,
said tubes being supported on said rigid assembly by the engagement of the ends of said tubes in the openings in said upright walls;
one of said casings having an additional opening to accommodate a burner in a position to discharge products of combustion into said first tube;
flow directing means in said casings operatively arranged to direct products of combustion successively from tube to tube in said series of tubes;
vent means carried by one of said casings in position to receive products of combustion from said last tube,
said vent means including means connectable to a vent pipe for conveying products of combustion away from the area over which radiant heat is to be distributed;
a plurality of elongated heat reflecting vanes extending horizontally on both sides of said series of tubes,
said vanes extending over and respectively engaging said vane supporting projections,
said vanes being spaced apart vertically and each slanting downwardly and outwardly to reflect to said area heat radiated from said tubes; and
support means secured to said rigid assembly.

3,181,526

FIREPLACE

Walter Rüegg, Chapfstrasse 541, Zumikon,
Zurich, Switzerland
Filed Mar. 28, 1962, Ser. No. 183,169
Claims priority, application Switzerland, Mar. 29, 1961,
3,746/61
3 Claims. (Cl. 126—133)

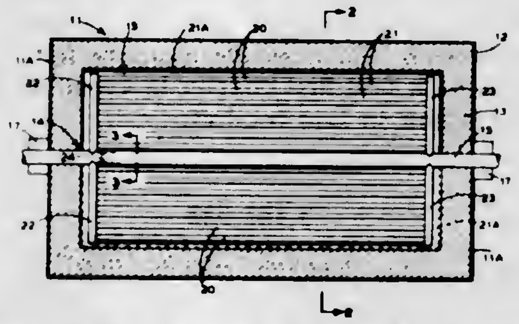


1. A fireplace comprising a hearth including a bottom plate, said hearth including a forward portion adapted for wood firing and a rear portion adapted for oil firing, a displaceable cover on said bottom plate for selectively covering the said portions to render the same inoperative, the fireplace further comprising an outer jacket and a heat exchange element adapted for connection to a hot water system, said heat exchange element comprising a hollow metal jacket including a front and rear portion in spaced relation and side portions interconnecting the front and rear portions, means supporting the heat exchange element from the outer jacket to position the heat exchange element in the path of heated combustion gases which are produced during wood firing and oil firing operations, the heat exchange element being supported from the outer jacket such that the rear portion of the hollow jacket terminates at a distance above the bottom plate of the hearth while the front and rear portions are respectively in spaced relation with the said outer jacket to define separate front and rear channels for the passage of combustion gas, said fireplace further comprising discharge duct means in communication with the aforesaid channels for the discharge of combustion gases after the latter have contacted the heat exchange element, and control and closure flap means adjacent said duct means for controlling opening and closing of the said channels, said channel between the rear portion of the heat exchange element and the outer jacket being proximate the rear portion of the hearth to enable combustion gas produced during oil firing to pass at least in part in the latter said channel when the latter is opened by the flap means.

3,181,527

FLUID COOLED DAMPER

Elmer J. Forsman, Wadsworth, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 15, 1962, Ser. No. 237,862
10 Claims. (Cl. 126—285)



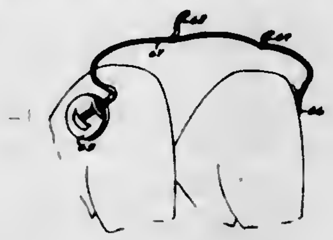
1. A fluid cooled damper for use in a passageway confining the flow of a high temperature fluid, said damper including a hollow shaft member extending across said passageway and having an inlet end and an outlet end extending outwardly from opposite sides of said passageway, means for supplying cooling fluid to said inlet end of said shaft member, said shaft member having restricted passage means to provide a direct flow path for the passage of a portion of said cooling fluid therethrough, an impermeable damper member mounted on said shaft member and being rotatable about the longitudinal axis of said shaft member and including a plurality of tubular members arranged in a coplanar fashion, said tubular members having their inlet ends and outlet ends connected in fluid conducting relationship to said shaft member, and means for effecting flow of the remaining portion of said cooling fluid from said inlet end through said tubular members in parallel flow relation to said outlet end.

3,181,528

PROCESS AND APPARATUS FOR ANALYZING JOINT DISORDERS

Roy E. Brackin, 1866 N. Sheridan Road,
Highland Park, Ill.
Filed Feb. 16, 1961, Ser. No. 89,807
3 Claims. (Cl. 128—2)

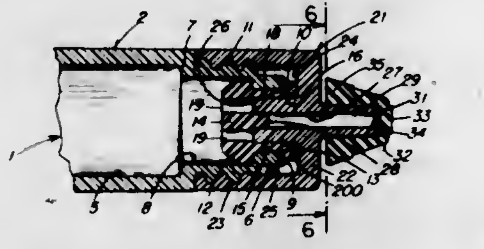
1. Apparatus for diagnosing the pathologic state of joints comprising at least two acoustical-to-electrical energy transducers, means for mounting said transducers adjacent the joint to be diagnosed and a reference joint respectively, means for selectively varying the pressure of application of said transducers to their respective joints, means connected to said transducers for making an aural record of the joint to be analyzed, means for making two simultaneous spaced parallel visual records of electrical signals, means including selective frequency filters connecting said transducers to said record making means, and means for analyzing the output of a portion of said aural record and making a visual record of the frequencies and their respective amplitudes.



3,181,529

VALVED BODY-FLUID SAMPLING TUBES

Edgar H. Wilburn, Rutherford, N.J.
(Box 166, Highland Lakes, N.J.)
Filed July 30, 1962, Ser. No. 213,487
6 Claims. (Cl. 128—2)



1. A body-fluid sampling tube comprising, in combination,

(*a*) a receptacle having a suction chamber evacuated to a relatively high degree of evacuation sufficient to suck thereinto body fluid from a cavity in and the circulatory system of a person's body when communicated thereto,

(*b*) said receptacle having a tubular end defining a suction inlet passage communicating with the chamber for this purpose,

(*c*) closure means movably mounted to said tubular end for axial translation relative thereto and having a central through longitudinal passage for supply of body-fluid to the inlet passage,

(*d*) said receptacle tubular end and closure means having a pair of telescoped tubular parts respectively connected in fluid-tight manner thereto with one of said parts mounted in the other for relative axial translation between inward relative valve-closing positions and outward relative valve-open positions,

(*e*) said telescoped tubular parts carrying at the inner end of the closure supply passage complementary valve structures cooperatively engaged in flow blocking relation to form a closed valve in the inward valve-closing axial position of one of said telescoped tubular parts relative to the other preventing leakage of atmospheric air to said evacuated suction chamber through the closure supply passage and axially separable in flow permitting relation when one of said telescoped tubular parts is retracted to its outward valve-open position relative to the other to apply suction to the closure supply passage,

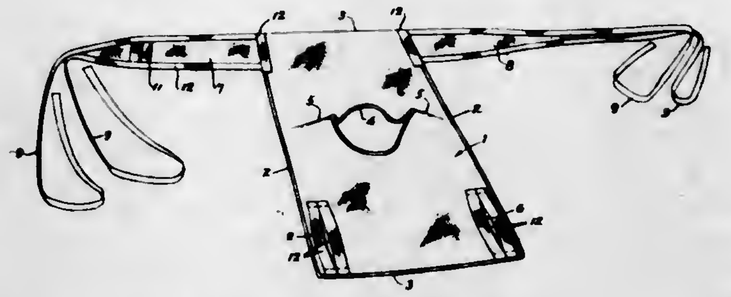
(*f*) fluid-tight sealing means interposed between said pair of telescoped tubular parts at a point outward of said valve in the form before assembly of parts of an annular transversely extending rib means of relatively high elasticity carried by one of said pair of telescoped tubular parts in a fixed axial location thereon and confined after assembly of parts in distorted compressed condition between said pair of telescoped parts in a relatively narrow annular zone to limit drag resistance to relative longitudinal sliding action of said pair of telescoped parts, said compressed rib means being under appreciable compression of a degree sufficient to prevent leakage therepast of surrounding atmospheric air into the evacuated suction chamber while body fluid is sucked into the latter through the closure supply passage, said telescoped tubular parts being freely slidable manually relative to each other at all points of opposition axially offset from the location of said compressed rib means, and

(*g*) manually manipulative camming means temporarily locking said pair of telescoped tubular parts in their relative valve-closing positions and to permit release for relative retraction to their valve-open positions.

3,181,530

RESTRAINT FOR INHIBITING MOTION OF A PERSON IN A BED OR CHAIR OR THE LIKE

Edgar J. Storey, San Francisco, Calif., assignor of one-half to Martin G. Colman, San Francisco, Calif.
Filed Dec. 21, 1962, Ser. No. 246,413
4 Claims. (Cl. 128—134)



1. A restraint for a person comprising

(*a*) a flexible panel

(*b*) having a hole for inserting the head therethrough so that said panel is folded over the shoulders and hangs over the back and front of the person

(*c*) said panel having parallel and generally longitudinal slits therethrough near an end thereof

(*d*) oppositely extended wing straps at the other end of said panel adapted to be drawn through said slits respectively to tighten said folded panel substantially about the waist of the person

(*e*) and a tying strap extended from the end of each wing strap for securing the wing straps in tightened attitude,

(*f*) a slit through one of said wing straps generally parallel with said slits in said panel and being adapted to hold the other wing strap inserted therethrough.

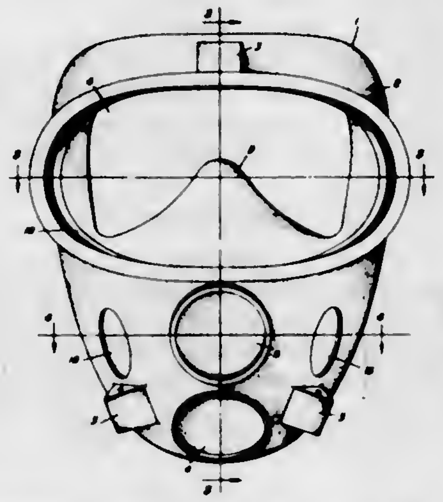
3,181,531

RUBBER GAS MASK

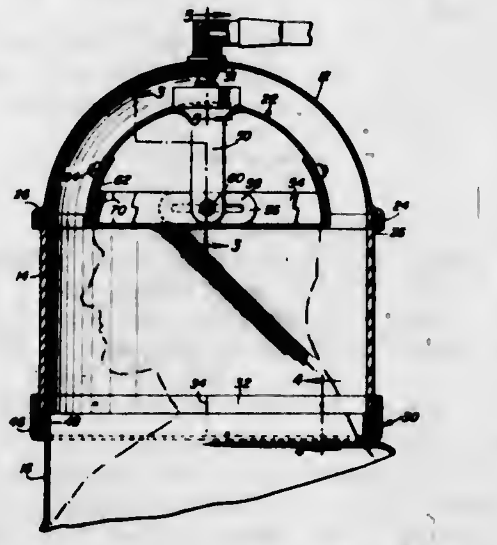
Attilio Angioletti, Milan, Italy, assignor to
Pirelli S.p.A., Milan, Italy
Filed Mar. 29, 1961, Ser. No. 99,299
Claims priority, application Italy, Apr. 1, 1960, 5,706/60
2 Claims. (Cl. 128—141)

1. In a rubber gas mask molded in a single piece comprising a facepiece adapted to cover and bear against portions of the face of the user, said facepiece having a centrally disposed seat adapted to receive a phonic device and a pair of outlet openings, said seat communicating with the exhalation space, each said outlet opening communicating with the exhalation space and being disposed upon an opposite side of said seat, said facepiece having an eye window in its upper portion and an inlet seat in

its lower portion adapted to receive a filter and an inlet valve, a transverse diaphragm disposed within the inner confines of said facepiece and extending upwardly and inwardly relative to the bottom portion of said eye window, said transverse diaphragm having a rearmost edge adapted to fit against the user's face and a forward edge contiguous the bottom portion of said eye window, and a substantially vertical diaphragm disposed adjacent the inner and forward surface of said facepiece and below said eye window and extending downwardly from the forward edge of said transverse diaphragm to the lower edge of said facepiece, said vertical diaphragm forming with the adjacent portions of the inner surface of said facepiece a central space and a pair of inhalation ducts, said ducts being in communication with said central space, said vertical diaphragm being substantially U-shaped and positioned with its legs of the U shape contiguous and around said centrally disposed phonic seat such that each of said pair of inhalation ducts are disposed on opposite sides and next to said centrally disposed phonic seat, said transverse diaphragm having two openings located at said forward edge of said transverse diaphragm each in communication with one of said inhalation ducts, said transverse diaphragm further defining a first and second plurality of holes therein located at said forward edge of said transverse diaphragm, said first and second plurality of holes communicating with the exhalation space of the mask, said first and second plurality of holes being disposed on either side of said two openings.

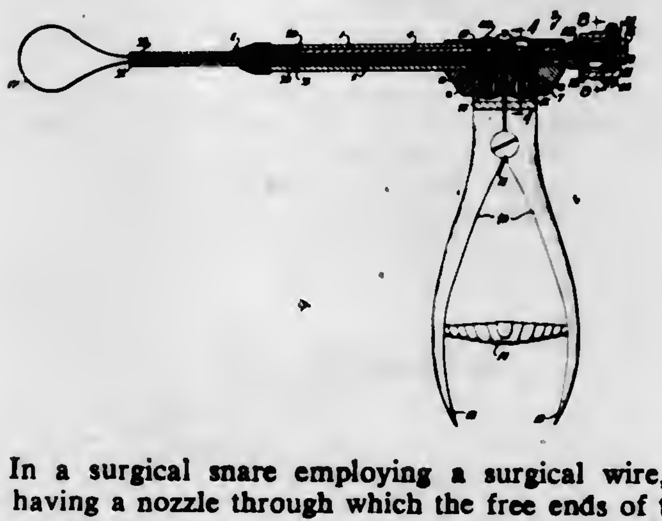


3,181,532
SAND BLASTER'S HELMET
Artell L. Harris, 244 E. 2nd N., Rexburg, Idaho
Filed Apr. 22, 1963, Ser. No. 274,649
13 Claims. (Cl. 128—142)



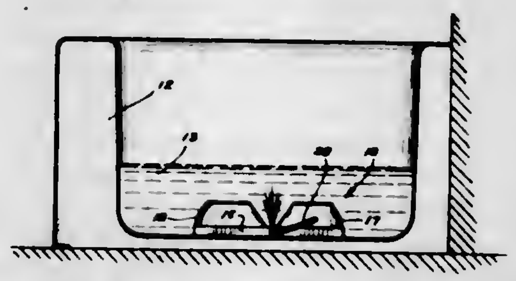
11. A helmet comprising a support adapted for embracingly resting upon the head of a wearer, a dome-shaped, downwardly opening body enclosing and carried by said support, a transparent, generally cylindrical, open-ended shield, having its upper end secured to and sealingly engaged with the lower edge of said body and extending downwardly therefrom to completely surround the wearer's head, an upstanding hollow spindle on said support, means supplying air to the upper end of said spindle, an air distributor on the lower end of said spindle and receiving air therefrom, said air distributor having outlet openings directing air upwardly therefrom to the top of said body from whence the air is directed downwardly and circulated about the head of the wearer.

3,181,533
SURGICAL SNARE
William C. Heath, 1121 N. Waverly Place, Milwaukee, Wis.
Filed Jan. 15, 1962, Ser. No. 166,198
5 Claims. (Cl. 128—320)



1. In a surgical snare employing a surgical wire, a body having a nozzle through which the free ends of the surgical wire forming a loop are threaded, and pull means carried by said body securing said free ends to pull the loop into the nozzle in operation by pulling both ends simultaneously relative to the nozzle, said pull means comprising a cylindrical tubular plunger axially movable in said body and having ratchet teeth on one side thereof, ratchet actuating means carried by said body and including pawl means engageable with said teeth, and means to actuate said pawl means relative to said ratchet teeth to effect movement of said plunger in a direction to pull said wire, and said plunger being rotatable in said body to disengage said ratchet teeth from said pawl means and thereby release said plunger for rapid return in a direction opposite to said wire pull direction.

3,181,534
SITZ BATH THERAPY DEVICE
Melbourne E. Davis, 1611 E. 57th St., Minneapolis 17, Minn.
Filed Oct. 30, 1961, Ser. No. 148,477
2 Claims. (Cl. 128—377)



1. A sitz bath therapy device for patients adapted to be submerged in a bath tub, said device comprising:

(*a*) a base portion;

(*b*) a pair of spaced disconnected seat portions upstanding from said base portion and connected thereto;

(*c*) a passageway centrally positioned in said base portion and extending linearly from the front edge to adjacent the rear edge thereof and positioned between said seat portions;

(*d*) said passageway having the end adjacent the rear edge of said base portion closed and the other end open;

(*e*) said seat portions having adjacent upwardly diverging wall portions at either side of said passageway;

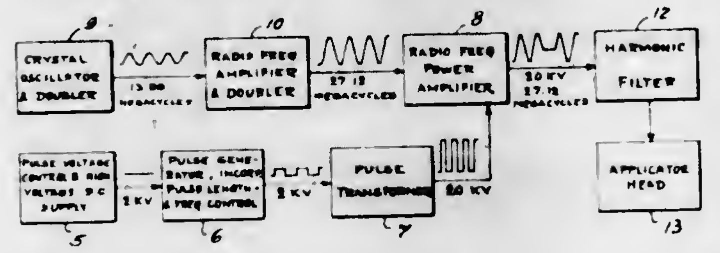
(*f*) a plurality of spaced orifices extending from the front to the rear of said passageway and opening upwardly from said passageway providing communication between said passageway and the area between said diverging wall portions;

(*g*) means connected to the open end of said passageway adapted to provide a supply of water to said passageway and said orifices;

(*h*) said seat portions extending a substantial height above the top surface of said base portion so as to provide a substantial area between the diverging wall portions of said seat, the orifices, and the patient; and

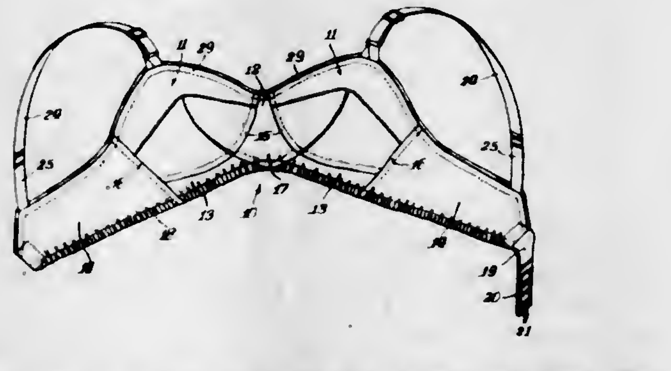
(*i*) said seat portions having a concave upper surface so as to conform to the contacting body portions of the patient.

3,181,535
ATHERMAPEUTIC APPARATUS
Arthur S. Milinowski, Peekskill, N.Y., assignor to Diapulse Manufacturing Corp. of America, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 688,219, Oct. 4, 1957. This application Nov. 4, 1958, Ser. No. 773,538
6 Claims. (Cl. 128—422)


9
CRYSTAL OSCILLATOR & DOUBLER
13.56 MEGACYCLES
10
RADIO FREQ AMPLIFIER & DOUBLER
27.12 MEGACYCLES
8
RADIO FREQ POWER AMPLIFIER
20 KV
27.12 MEGACYCLES
12
HARMONIC FILTER
PULSE VOLTAGE CONTROL & HIGH VOLTAGE D.C. SUPPLY
2 KV
5
PULSE GENERATOR, INCORP. PULSE LENGTH & FREQ CONTROL
2 KV
6
PULSE TRANSFORMER
20 KV
7
APPLICATOR HEAD
13

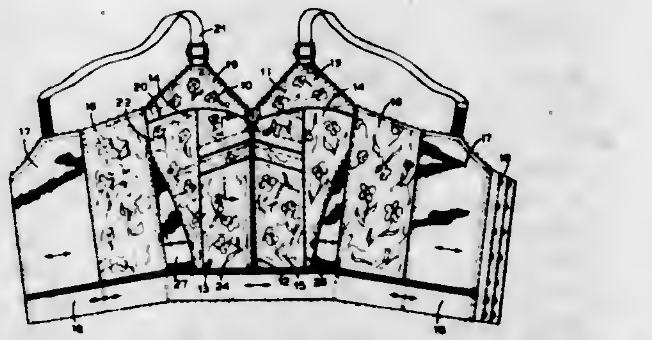
1. An ultra short wave athermapeutic apparatus for administering therapeutic treatments to a patient, said apparatus comprising: oscillation generating means for producing continuous high frequency electrical oscillations of predetermined frequency; separate pulse generating means for producing a series of electrical pulses, each having a duration which is very small compared to the interval between pulses; first control means associated with said pulse generating means comprising a plurality of impedance elements and a switch operable to select the number of such elements associated at any time with said pulse generating means, and said first control means being operable to establish at a predetermined time value, the duration of each of the pulses produced by said pulse generating means; second control means associated with said pulse generating means comprising a plurality of impedance elements and a switch operable to select the number of such elements associated at any time with said pulse generating means, and said second control means being operable to independently adjust to any one of a plurality of predetermined time values, the interval between the initiation of each of the pulses produced by said pulse generating means; power amplifying means operable to amplify the oscillations produced by said oscillation generating means; said oscillation generating means electrically connected to and operable to deliver its output high frequency oscillations as signal excitation to said power amplifying means; said pulse generating means electrically connected to and operable to deliver its output pulses as established by said first and second control means as energization to said power amplifying means; said power amplifying means upon receiving the respective outputs of said oscillations generating means and said pulse generating means having as output, a series of high-frequency-modulated electrical pulses; and applicator means coupled to and responsive to the output of said power amplifying means for generating and introducing into the body of a patient in receptive proximity thereto, pulsed electromagnetic radiations having a predetermined frequency, a predetermined pulse duration, and a predetermined pulse repetition rate; and a tunable circuit comprising a pair of impedance elements one of which is variable and operable to tune said applicator means to the same resonant frequency as said power amplifying means.

3,181,536
LAMINATED BRASSIERE PAD
Dominick J. Cannata, Chicago, Ill., assignor to Genesco, Inc., Nashville, Tenn., a corporation of Tennessee
Filed Feb. 4, 1963, Ser. No. 255,764
3 Claims. (Cl. 128—481)



1. For use in a brassiere having a pair of cups, the combination of a pair of inner pad members one each for each of said cups, and each of said pad members being comprised of a layer of downy material and a layer of fabric contacted to each side of said downy material by adhesive applied in pattern form whereby a design is registered on said fabric and a quilting effect is imparted thereto.

3,181,537
BRASSIERE
Harry Steiner, 130—14 Cronston Ave., Belle Harbor, N.Y.
Filed Dec. 17, 1962, Ser. No. 245,307
3 Claims. (Cl. 128—492)

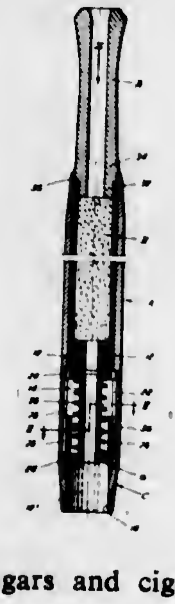


1. A garment having two substantially identical sides connected along a first seam at a vertical center-line, each of said sides having a front section of non-extensible material with a breast portion, said front section having three panels, a first top panel extending up from a horizontal line running across approximately the center of said breast portion to each side of said front section, a second vertical seam extending down from approximately the center of the horizontal line and connecting the two lower panels, said lower panels being a lateral lower panel and a central lower panel, a first pleat extending from the said second seam at approximately the bottom of said breast portion across said central lower panel to the said first seam just below the said horizontal line, and a sec-

ond pleat spaced below and parallel to said first pleat, each pleat having a downward fold extending over the outer face of the garment and an upward fold positioned behind the downward fold, each pleat having a line of stitching close to the edge of each fold, each of said pleats being secured only within the respective seams at each of its ends whereby the pleats may open and close to permit vertical freedom of movement by the wearer while reinforcing lateral support.

3,181,538
HOLDER FOR CIGARS AND CIGARETTES INCORPORATING AN EJECTOR AND FILTER

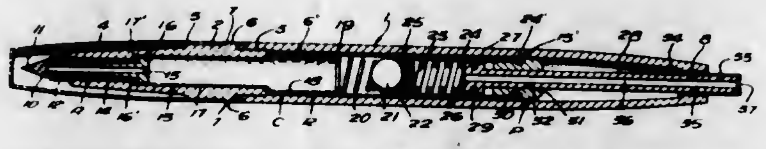
Mario Piliego, Milan, Italy, assignor to Bofil S.r.l., Milan, Italy, a corporation of Italy
Filed June 16, 1961, Ser. No. 117,789
Claims priority, application Italy, June 18, 1960, 10,828/60, Patent 4,444
2 Claims. (Cl. 131—182)



1. A holder for cigars and cigarettes comprising, in combination,
- a substantially elongated tubular housing having an inner surface;
- a filter cartridge positioned in said tubular housing;
- a mouthpiece affixed to one end of said filter cartridge in said tubular housing and extending beyond one end of said tubular housing, a portion of said mouthpiece being slidably and frictionally engageable with the inner surface of said tubular housing;
- a sleeve affixed to the other end of said tubular housing and extending beyond said other end of said tubular housing, said sleeve being shaped to receive a cigarette at its extending end and having a shoulder in its other end, the shoulder of said sleeve forming an aperture;
- spring biased pusher means comprising a substantially elongated pusher member having an axis and abutting at one end the other end of said filter cartridge and forming therewith a fluid coupling and passing through the aperture formed by the shoulder of said sleeve adjacent its other end, said pusher member being slidably supported in the other end of said tubular housing and having a shoulder positioned thereon intermediate the ends thereof, and spring means supported by the shoulder of said sleeve and the shoulder of said pusher member for urging said pusher member toward said one end of said tubular housing thereby urging said pusher member toward said other end of said filter cartridge and maintaining said fluid coupling; and
- guide means for limiting movement of said pusher member to an axial direction, said guide means comprising radially extending projections extending from the inner surface of said tubular housing toward said pusher member between the shoulder of said pusher member and said one end of said pusher member.

3,181,539
FLUENT COSMETIC APPLICATOR WITH REPLACEABLE CARTRIDGE

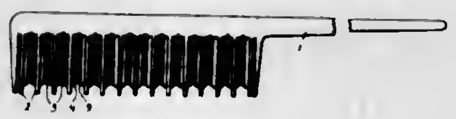
Bruno D. Aston, West Covina, Calif.
(14421 Autumn Moon Drive, Hacienda Heights, Calif.)
Filed June 12, 1961, Ser. No. 116,562
5 Claims. (Cl. 132—79)

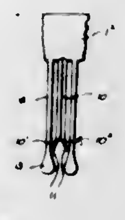


1. A device for applying fluent material, comprising: an elongated case; a cartridge removably disposed in said case and including applicator means extending from one end of said case; said cartridge including a reservoir for fluent material communicating with said applicator means; pressure supplying means for supplying fluid under pressure to said reservoir to displace fluent material therefrom to said applicator means; said pressure supplying means including a chamber in said cartridge; a piston in said chamber; a stem on said piston projecting from said cartridge and the other end of said case and manually engageable to shift said piston in said chamber; means for allowing air to enter said chamber, interengaging means between said stem and casing limiting projection of said stem from said other end of said case, and means urging said cartridge toward said one end of said case and urging said stem toward said other end of said case.

3,181,540
TEASING COMB

Anton Abraham, Perchtoldsdorf, N.O., Austria, assignor to Wiener Kammfabrik Anton Abraham Komm. Ges., Wiener Neudorf, Austria, a corporation of Austria
Filed Mar. 18, 1963, Ser. No. 265,903
Claims priority, application Austria, Mar. 19, 1962, A 2,253/62
1 Claim. (Cl. 132—159)





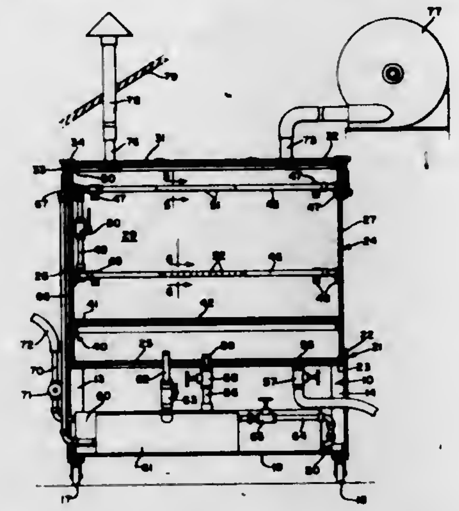
A teasing comb comprising
- a main body,
- a plurality of teeth extending from said main body substantially parallel relative to each other and disposed very closely to each other in a single plane,
- said teeth being alternately longer and shorter,
- at least said shorter teeth having oppositely directed prongs at their ends extending laterally in said single plane, and
- said longer teeth and said prongs having drop shaped enlargements at their free end.

3,181,541
APPARATUS WASHER

Donald R. Brooking, 4129 27th Ave., Rock Island, Ill.
Filed Sept. 30, 1963, Ser. No. 312,439
5 Claims. (Cl. 134—186)

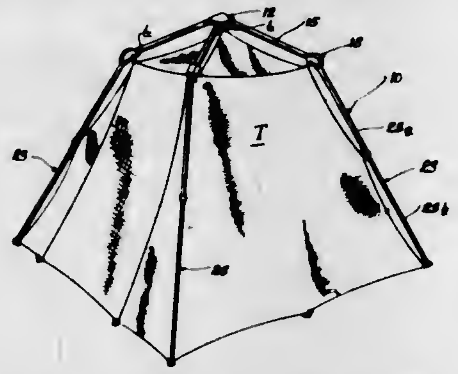
2. An apparatus cleaner comprising: an upwardly opening cleaning tank having a floor and upright side walls extending to upper edges defining the upper opening; an open apparatus-supporting platform supported

spacedly above the floor; horizontally disposed conduit means extending around the inner surfaces of the upright walls having outlets therein for directing fluid inwardly; a fluid container supported beneath the floor; a conduit communicating with the container and extending upwardly through the floor and terminating at an open upper lip adjacent to but above the surface of the floor; a valve in the latter conduit; connecting means effecting communication between the container and said conduit means; an air pressure inlet in said container; a lid for said opening with means associated therewith for sealing the upper opening of the tank; an air inlet and air outlet in the lid; a conduit extending from the outlet to a place remote from the tank; and a pressurized source of air communicating with the tank via the inlet.



3,181,542
UMBRELLA TENT FRAME

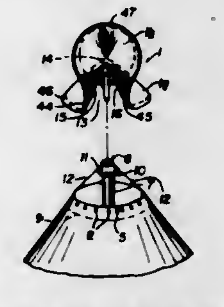
Marvin A. Bareis, New Haven, Mo., assignor to Hawthorn Company Division of Kellwood Company, Chicago, Ill., a corporation of Delaware
Filed June 24, 1963, Ser. No. 290,016
9 Claims. (Cl. 135—4)



1. An articulated umbrella tent frame with parts movable from a collapsed position to an erect position, comprising
- (*a*) a peak member having
- (*b*) a plurality of radial sockets and also having
- (*c*) a recess outwardly disposed and aligned with each of said sockets,
- (*d*) sleeve members pivotally secured to said peak member adjacent to and movable into and out of said recesses and aligned with said sockets,
- (*e*) said sleeve members having an internal cross-section substantially the same as said sockets,
- (*f*) said sleeve and peak members having means for limiting pivotal movement of the former relative to the latter in opposite extremes to the approximate limits of 180° in one direction and not less than 90° in the other, between the axis of each sleeve relative to that of its adjacent socket,
- (*g*) an elongated frame member having an end portion slidably disposed in each sleeve member and normally positioned, when the frame is collapsed, out of said socket, and
- (*h*) cooperating means on said end portion and sleeve, respectively, for retaining said end portion against displacement out of the sleeve in its normal position while permitting sliding movement of the end portion out of the sleeve and into the adjacent socket for erection of the frame.

3,181,543
TENT SMOKE VENTING AND VENTILATING ARRANGEMENT

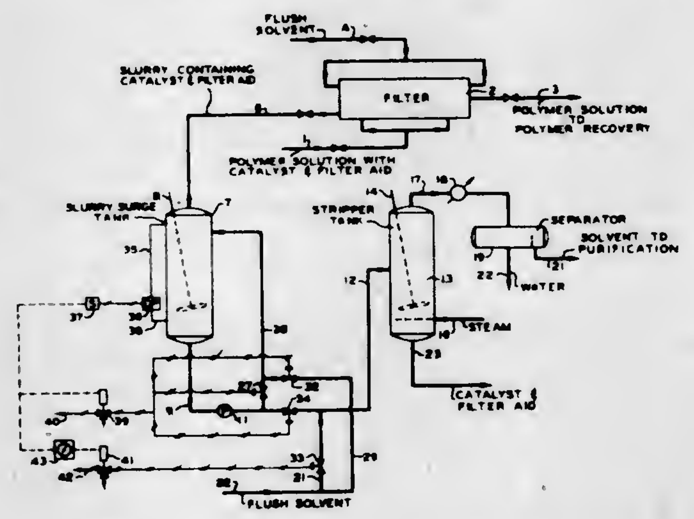
John D. Petrie, 3641 9th St. SW., Calgary, Alberta, Canada
Filed May 13, 1963, Ser. No. 279,977
Claims priority, application Canada, Oct. 10, 1962, 859,848, Patent 672,586
6 Claims. (Cl. 135—14)



1. In or for a peaked tent having an open top and a tent supporting pole extending through said open top, a circular conical hood adapted to be pivotally mounted on said tent supporting pole for rotation about a substantially vertical axis and to cover said open top, a horizontally narrow, vertically disposed opening in said hood, said opening comprising a sector of the surface of said hood, and cover means overlying the horizontal projection of said opening to prevent the entry of rain or the like therethrough, said cover means having a substantially circular conical surface with its apex substantially coincident with the apex of said hood, the surface of said cover means having an open sector corresponding to said opening and contiguous with said hood generally along elements defining sides of the open sector such that said opening and said open sector are in coincidence to permit communication between the interior and exterior of said tent.

3,181,544
SYSTEM FOR DISCHARGING SLURRY FROM A TANK

Thomas A. Reid, Pasadena, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 17, 1962, Ser. No. 217,613
9 Claims. (Cl. 137—15)

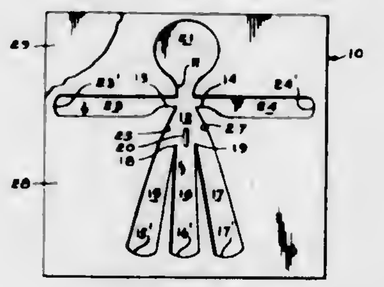


1. A method of discharging a slurry from a tank having a variable volume of said slurry therein, which com-

prises continuously discharging said slurry from said tank, continuously measuring the volume of slurry in said tank, recycling discharged slurry to said tank while flushing discharged slurry downstream of the point of recycle when the volume of slurry in said tank falls to a predetermined value, and passing discharged slurry downstream of said point of recycle while flushing the recycle line when the volume of slurry in said tank rises to predetermined value.

3,181,545
STABLE FLUID AMPLIFIERS

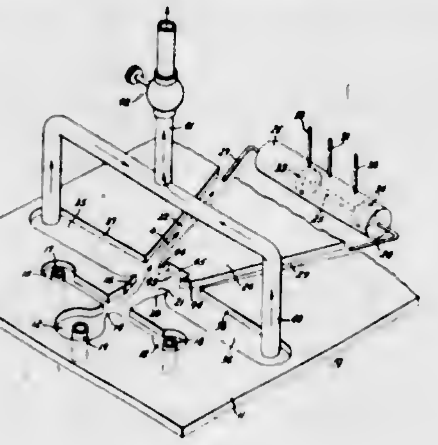
Frank E. Murphy, Jr., Horseheads, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Sept. 26, 1962, Ser. No. 226,298
8 Claims. (Cl. 137—81.5)



1. A fluid control device comprising, means for injecting a power stream into a chamber, a plurality of outlet means communicating with said chamber, control means adjacent said injecting means for selectively directing the power stream so as to flow outwardly through a pre-selected one of said outlet means, and a separate fin-like member positioned within said chamber downstream of said injecting means for stabilizing and locking the power stream in position so that it flows outwardly through a pre-selected outlet means until such power stream is positively acted upon by said control means.

3,181,546
FLUID CONTROL DEVICES

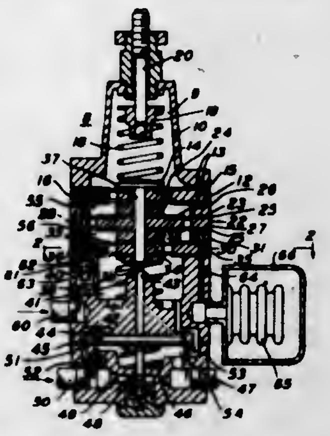
Willis A. Boothe, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 8, 1962, Ser. No. 236,777
24 Claims. (Cl. 137—81.5)



1. In a fluid control device, first means for generating a jet of fluid, fluid receiving means downstream from said first means for receiving fluid from a jet generated by said first means, control means for controllably deflecting a jet generated by said first means relative to said receiving means, a pair of vent passages opening at opposite sides of a jet generated by said first means for relieving fluid pressure in said receiving means, and passage means connecting said vent passages in communication with each other and in communication with a common vent passage.

3,181,547
PNEUMATIC TRANSMITTERS

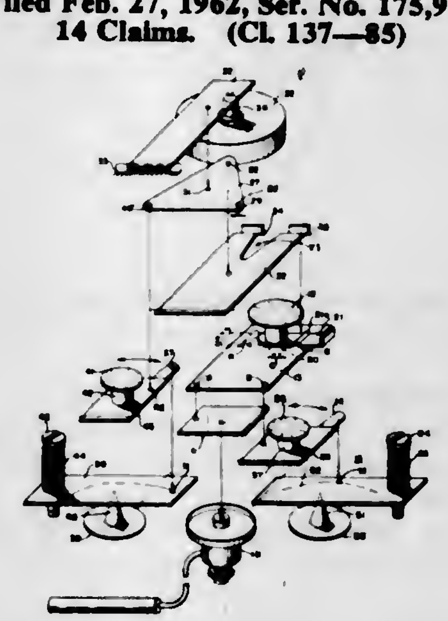
James Stewart Bennett, Toronto, Ontario, Canada, assignor to Moore Products Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 22, 1962, Ser. No. 167,772
6 Claims. (Cl. 137—82)



1. A fluid pressure transmitter comprising a signal input connection, a fluid pressure responsive device having a first chamber with a first pressure responsive member therein, a second chamber with a second pressure responsive member therein in opposed relation to said first pressure responsive member, and a mechanical connection between said members for movement of said members together, members for applying a signal from said input connection to said device, a fluid connection connecting said chambers to each other, one of said chambers having a variable volume chamber connected thereto, a restriction in said fluid connection providing the sole access to and from said one of said chambers, a fluid supply connection, a fluid delivery connection, a valve interposed between said fluid supply and said fluid delivery connections, and members controlled by said device for controlling said valve.

3,181,548
CONDITION RESPONSIVE PNEUMATIC CONTROLLER

Kenneth G. Kreuter, Goshen, Ind., assignor to Robertshaw Controls Company, a corporation of Delaware
Filed Feb. 27, 1962, Ser. No. 175,979
14 Claims. (Cl. 137—85)

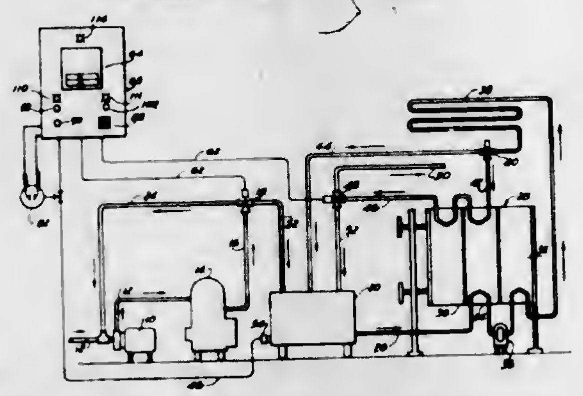


1. In a pneumatic control apparatus comprising a casing for housing in a compact assembly adaptable for either modulating or two position control as selected, means for establishing an output pressure variable in response to a condition being measured for the purpose of controlling said condition, said means comprising a superimposed lever system of plates, one of said plates being an input plate, a triangular output plate pivoted at the apex

of one corner thereof to a supporting base and a plurality of intermediate plates, operatively associated between said input and output plates, said triangular output plate at a second corner at the apex thereof having a bearing point engageable with a next adjacent intermediate plate, a third corner at the apex thereof having a bearing point engaging a throttling range lever, a condition responsive means operatively engaged with the input lever plate of said system, one of said intermediate plate levers being a set point lever, operatively connected means to said set point lever for setting the value at which said output pressure is to be established, said set point lever plate being engageable with said input lever plate for movement thereby, a pilot valve positioned in said casing above said triangular output lever plate and having a control means, said control means being engaged with a fourth bearing point of said triangular output lever plate in accordance with the forces applied by said condition responsive means to said input lever plate and operatively associated intermediate plates, and a pneumatic relay having a main fluid supply line and a fluid output line, the output of said output line being proportional to the positioning of said pilot valve control means by said triangular output lever.

3,181,549
LIQUID LEVEL CONTROL SYSTEM

Joseph A. Perry, Jr., Cedar Rapids, Iowa, assignor to Cherry-Burrell Corporation, Cedar Rapids, Iowa, a corporation of Delaware
Filed Dec. 18, 1961, Ser. No. 160,221
7 Claims. (Cl. 137—118)

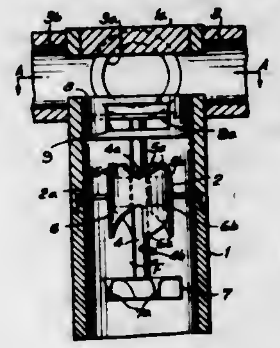


1. A liquid processing system comprising a liquid processor, liquid supply and discharge lines connected to said processor, a surge tank in said supply line, means to pump the liquid through said system, and level control means for controlling the level of liquid in said tank, said level control means comprising a first valve in said supply line upstream from said tank, means responsive to a liquid level in said tank to control the operation of said valve to maintain a selected operating level in said tank, a second valve in the processor discharge line, and a recirculating line connecting said discharge line and tank through said second valve, the operation of said second valve being controlled by said level responsive means when the liquid level in the tank falls to a predetermined level below the operating level.

3,181,550
HYDRAULIC VALVE DEVICE SWITCHING AUTOMATICALLY OVER MULTIPLE DISTRIBUTING PIPES

Misao Okabe, 35 2-chome, Aioi-cho, Shizuoka-shi, Shizuoka-ken, Japan
Filed Feb. 5, 1963, Ser. No. 256,422
Claims priority, application Japan, Feb. 8, 1962, 37/3,896; June 20, 1962, 37/25,936
6 Claims. (Cl. 137—119)

1. A hydraulic valve device operable, upon successive actuations thereof, to connect plural distribution lines respectively and sequentially to a source of liquid under pressure, said valve device comprising, in combination, means forming an upwardly extending liquid supply passage having a lower end for connection to a supply of liquid under pressure; plural distribution ports arranged in a common diametric plane adjacent the upper end of said passage and spaced at substantially uniform angular spacings therearound; a substantially cylindrical valve in said passage and having an outer diameter of the order of the inner diameter of said passage, said valve having a radial port in a cylindrical side wall in communication with said passage below said valve; a rod secured to extend axially from said valve; a substantially cylindrical sleeve coaxial with said passage; means supporting said sleeve against axial displacement relative to said passage; said sleeve having means extending transversely of its interior and formed with an axial aperture slidably receiving said rod for guided displacement thereof axially of said passage; said sleeve having first cam means on its upper periphery and second cam means on its lower periphery; first and second radial pins on said rod respectively cooperable with said first and second cam means; said first radial pin in cooperation with said first cam means limiting the lower position of said valve to a level below said distribution ports, and said second radial pin in cooperation with said second cam means limiting



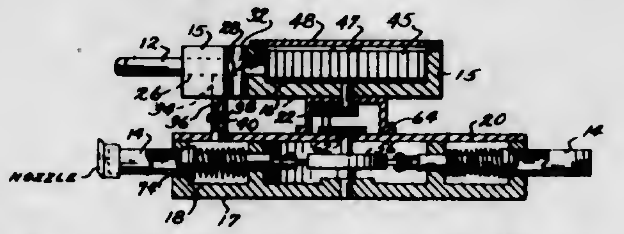
upward movement of said valve to a position in which its radial port is centered on such diametric plane; and means secured to said rod and operable, responsive to admission of liquid under pressure into said passage, to move said rod and said valve upwardly; said second radial pin, in engagement with said second cam means during such upward movement, angularly displacing said cylindrical valve to move the radial port thereof into registry with one of said distribution ports when said valve is at its upper limit of movement; said valve and said rod descending by gravity when the supply of liquid under pressure to said passage is terminated; said first radial pin, in engagement with said first cam means during descent of said rod and said valve angularly displacing said valve and said rod in the direction of displacement thereof by said second radial pin in cooperation with said second cam means, whereby, upon a subsequent upward movement of said rod and said valve means, said second pin in cooperation with said second cam means will angularly displace said valve in the same direction to register its radial port with the next succeeding distribution port in the same direction; the angular displacement of said valve by the combined action of said first and second pins, and said first and second cam means, being equal to the angular distance between adjacent distribution ports.

3,181,551
FLOW DIVIDING VALVE

Rudolph L. Coletti, 246 5th Ave., Troy, N.Y.
Filed Feb. 15, 1963, Ser. No. 258,784
6 Claims. (Cl. 137—119)

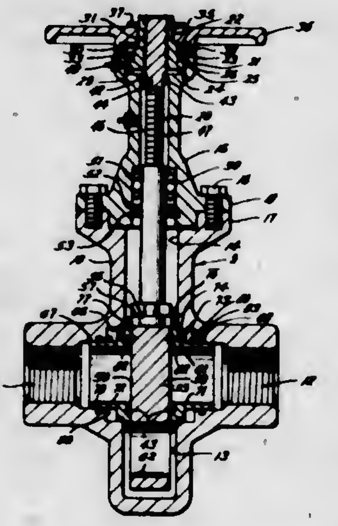
1. In a flow dividing valve of the type comprising a first fluid tight motor chamber having a fluid inlet, a second fluid tight chamber, a fluid transfer conduit connecting the chambers, a fluid operated motor located in the first chamber, outlet conduits connecting the second chamber

with the exterior of the valve, valve means for controlling the outlet conduits and a cam operatively connected to the motor for the valve means, the improvement which comprises a metering bypass connecting the inlet to the second chamber whereby the pressure and amount of water entering the first chamber to drive the fluid operated motor is controlled by diverting a portion of the fluid entering said inlet directly to said second chamber.



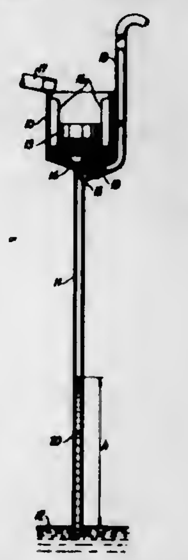
4. A flow dividing valve comprising a first fluid tight motor chamber having a fluid inlet and a fluid motor therein, a second fluid tight chamber having outlet openings therein, a fluid transfer conduit interconnecting the chambers, a cam driven by the fluid motor and positioned for rotation within said second chamber, and a plurality of plungers in said second chamber, one adjacent each outlet opening and being movable under the control of the cam, between a first position where it blocks the associated outlet opening and a second position where it is spaced from the associated outlet opening, and resilient means urging each plunger away from said associated outlet, said plungers each comprising a pair of axially aligned rods supported in a hollow sleeve, resilient means interposed within the sleeve between the adjacent ends of said rods, one opposite end of one of said rods cooperating with said cam, the other end of the other of said rods cooperating with said outlet opening, said resilient means permitting a lost motion when said rod is activated by said cam whereby said lost motion serves as a shock absorber between said cam actuated rod and the outlet opening.

3,181,552
VALVES WITH ENHANCED PRESSURE ACTUATED SEALS
John G. Jackson, Jr., Angleton, Tex., assignor to McEvoy Company, Houston, Tex., a corporation of Texas
Filed Sept. 26, 1961, Ser. No. 140,929
4 Claims. (Cl. 137—246.12)



1. In a gate valve including a valve body having a chamber therewithin and a flow passage therethrough intersecting said chamber, removable seat means surrounding said flow passage at opposite sides of said chamber and each movable axially of said flow passage, reciprocal gate closure means in said chamber for closing said flow passage at said seat means at opposite sides of said chamber, and internal sealing means for forming seals between said gate closure means and each of said seat means when supplied with fluid sealant under pressure, the improvement comprising annular sealant reservoirs for said fluid sealant disposed inside of said body and each surrounding said flow passage at one side of said chamber, each said reservoir comprising an annular space between said body and one of said seat means, seal means between said body and one of said seat means at opposite sides of each said reservoir each permitting relatively free movement of the seat means axially of said flow passage, a supply of fluid sealant confined within each said reservoir, each said seat means serving as movable force transfer means to cause pressuring of said sealant in one said reservoir upon movement of the seat means axially of said flow passage to pressure energize said seal between said gate closure means and the seat means.

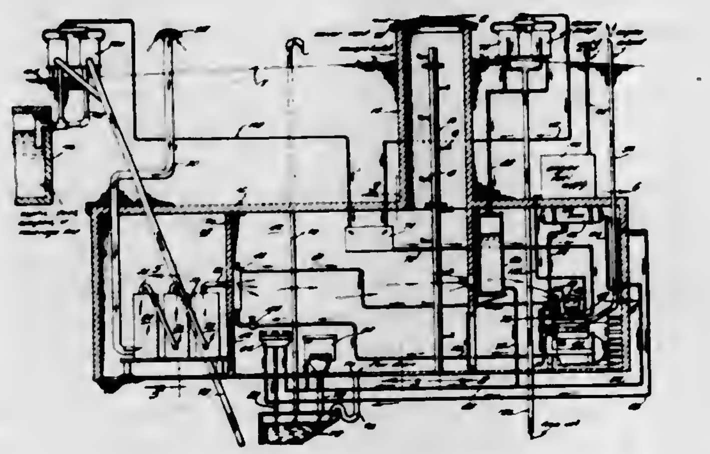
3,181,553
PRODUCTION AND UTILIZATION OF VACUUM
Sven Algot Joel Liljendahl, Gyllenstiernas Väg 8, Staket, Sweden
Filed May 27, 1959, Ser. No. 816,131
Claims priority, application Sweden, May 28, 1958, 5,100/58
9 Claims. (Cl. 137—357)



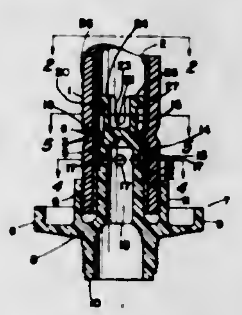
1. A building sewerage system for carrying away waste water, comprising waste water receiving apparatus having an outlet, a hermetically sealed collecting vessel, means for maintaining a sub-atmospheric pressure in said collecting vessel, conduit means connecting the outlet of said waste water receiving apparatus to said collecting vessel, a shut-off valve inserted in said conduit means, means for moving said shut-off valve from a closed to an open position in response to the discharge of liquid from said waste water receiving apparatus and to reclose said shut-off valve when said discharge ceases, an outlet from said collecting vessel, and means to discharge the contents of said collecting vessel, wherein said conduit means comprises flexible tubes of plastic material.

3,181,554
SHELTER AIR AND WASTE SYSTEM
Robert A. Cook, 2909 40th Ave., and Daniel Cook, 1611 24th Ave., both of Gulfport, Miss.
Filed Nov. 7, 1962, Ser. No. 235,948
2 Claims. (Cl. 137—357)

1. In combination with an underground bomb shelter provided with an entrance and exit hatch and a sealing door closing said hatch, an air supply system comprising at least one air washing tank having an inlet for air and an outlet for air, a first conduit having one end connected in communication with the atmosphere and having the other end connected in communication with the inlet of said tank, a second conduit having one end connected in communication with the interior of said shelter and having the other end connected in communication with said tank outlet, an internal combustion engine having an inlet for combustion air disposed so that the air inlet is connected in communication with the interior of said shelter, said engine having the exhaust thereof connected in communication with the atmosphere, said engine including a water jacket provided with an inlet and an outlet, a radiator disposed in such shelter and being communicated with the inlet and outlet of the water jacket for circulation of water therethrough, said radiator being disposed in overlying relation to said second conduit which has one end communicated with the interior of the shelter whereby incoming air will pass through the radiator for heating the air and cooling the water in the radiator.

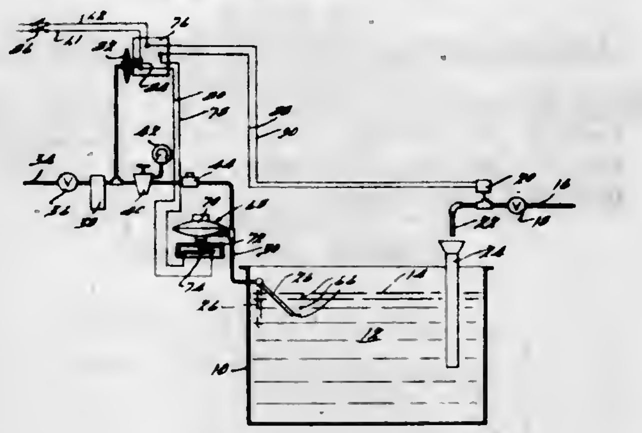


3,181,555
DRAIN VALVES AND THE LIKE
Irvin D. Jacobson, Painesville, Ohio, assignor to Perfection Pipe Nipple Company, Madison, Ohio, a corporation of Ohio
Filed Aug. 20, 1962, Ser. No. 217,928
3 Claims. (Cl. 137—375)



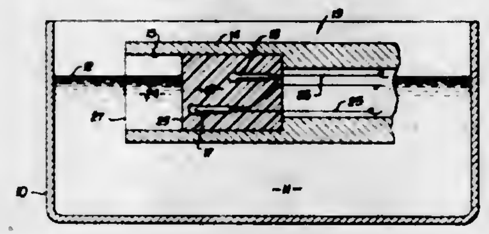
1. In combination with a tubular member consisting of a metallic tube and a tubular liner of plastic material extending through said tube and interlocked with said tube by corrugations on the tube and liner, the corrugation on the tube being nested in the corrugation on the liner, and the corrugation on the liner forming an annular projection which extends internally of the liner and provides a valve seating surface and a drain valve member supporting surface, a drain valve member of plastic material removably secured to said tubular member and having an annular surface adapted to engage said seating surface when the valve is closed, said valve member being threadedly secured to said tubular member and having circumferentially-spaced ears formed integrally with said valve member and adapted to engage said second-named surface whereby said second-named surface supports said valve member in the event said valve member is inadvertently unscrewed entirely from said tubular member, said ears having a resiliency such that they can be forced toward each other by said annular projection to permit passage of said ears past said projection when said valve member is assembled with said tubular member and when said valve member is to be removed entirely from said tubular member.

3,181,556
LIQUID LEVEL CONTROL
Norman A. Baker, Grosse Pointe Farms, Mich., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Apr. 10, 1963, Ser. No. 272,036
1 Claim. (Cl. 137—389)



A liquid level control system for maintaining the level of a liquid in a tank within prescribed limits comprising a conduit immersed in the liquid and provided with an outlet disposed below the liquid, means for supplying a substantially constant flow of fluid to said conduit for discharge through said outlet, a first pressure switch connected to said conduit for sensing fluctuations in the pressure of said fluid in said conduit in response to fluctuations in the hydrostatic head of the liquid above said outlet in said conduit, means for supplying makeup liquid to the tank incorporating remotely actuable valve means therein, said first switch operable to open said valve means for adding liquid to the tank in response to a preselected drop of the pressure of said fluid and to close said valve in response to an increase in the pressure of said fluid above a preselected magnitude, and a second pressure switch connected to the first mentioned said means for supplying fluid to said conduit and operative in response to the reduction in pressure in the supply fluid below a preselected magnitude to deenergize said valve means in overriding relationship relative to said first pressure switch.

3,181,557
LIQUID INTERFACE SENSOR
James E. Lannan, Jr., 646 Meigs Road, Santa Barbara, Calif.
Filed Nov. 2, 1962, Ser. No. 234,933
12 Claims. (Cl. 137—391)

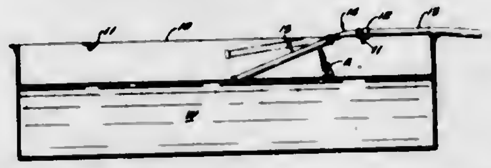


1. In a sensor device for detecting heat absorption rate differences of flowable substance, a body having a recess wherein said substance is receivable in relatively non-flowing condition for heat transfer, first and second electrically energizable means each characterized as having impedance that varies with temperature, said means being carried in thermally semi-conductive body material and in differential heat transfer proximity to said recess so that heat transfer from the first means will be affected to relatively greater degree by a change in heat absorption capacity of substance in said recess, and heat transfer from the second means will be affected to relatively lesser degree by said change, said material having a face exposed to said recess interiorly thereof and to remain contacted

by said flowable substance during a change in the surface level thereof in said recess, said first and second means being located interiorly of said material with the spacing of said second means from said face being substantially greater than the spacing of said first means from said face.

3,181,558
LIQUID LEVEL CONTROL FOR LIVESTOCK WATERING TROUGHS

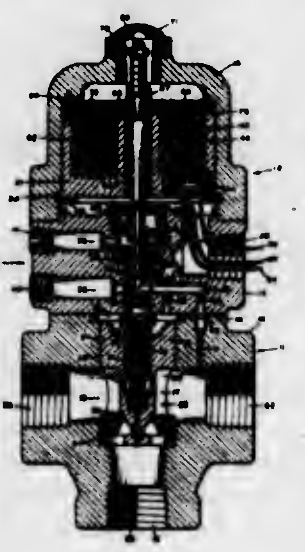
Henry E. Straub, deceased, late of Hartford Township, Licking County, Ohio, by Martha Hunt Straub, administratrix, Hartford Township, Licking County, Ohio (R.R. 1, Croton, Ohio)
Filed Nov. 21, 1962, Ser. No. 239,276
5 Claims. (Cl. 137—438)



5. A liquid level control device comprising an elongated tubular body having an inlet end section for connection to a liquid supply conduit and an outer buoyant end section adapted to float in a body of liquid whose level is to be controlled by said device, the inlet end section of said body including a resiliently flexible outer casing and an internal, normally closed valve means arranged for movement to an open position in response to a downward flexing of said casing, the outer buoyant end section of said body being provided with a discharge outlet and having a weight sufficient to flex said casing downwardly to open said valve means when said outer buoyant end section occupies a position substantially below the inlet end section of said body.

3,181,559
ELECTROMAGNETIC AND FLUID PRESSURE OPERATED VALVE AND ANTI-HYSTERESIS CONTROL CIRCUIT THEREFOR

George M. Hipple and Jack S. Hickman, Columbus, Ohio, assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Oct. 19, 1960, Ser. No. 63,569
25 Claims. (Cl. 137—489)

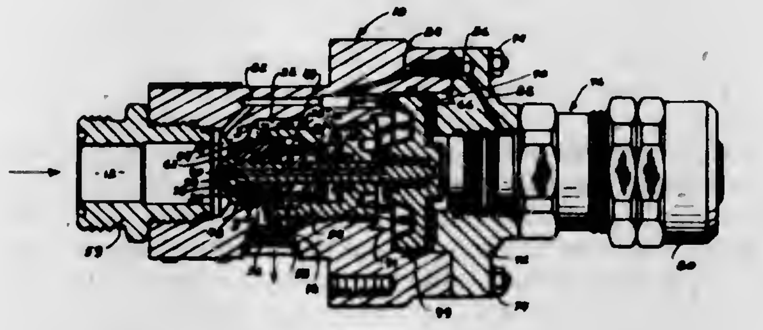


1. The combination of a valve having a movable valve member cooperable with a port, an electromechanical transducer for actuating said valve member in response to a direct voltage applied to said transducer, said transducer having an element made of a material which displays magnetic hysteresis, and an electric circuit connected to said transducer for supplying a direct voltage to said transducer, said circuit also including means for imparting controlled fluctuations to said direct voltage whereby the effective hysteresis displayed by said element is substantially reduced.

16. The combination of a valve, an electromechanical transducer for controlling said valve, and an electric circuit for controlling said electromechanical transducer, said valve comprising a body having a bore, a pressure inlet port and an outlet port each communicating with said bore, fluid pressure operated valve means between said ports, means forming a control chamber communicating with said bore the pressure in which effects operation of said valve, pressure limiting and shut-off valve means for controlling the pressure of fluid within said chamber, the pressure in said chamber exerting a force tending to open said pressure limiting and shut-off valve means, said transducer delivering a mechanical force in response to a direct voltage input thereto which force for any given direct voltage input thereto varies with the past magnetization of said electromechanical transducer, the force of said electromechanical transducer maintaining said valve closed until the pressure in said chamber acting upon said pressure limiting and shut-off valve means overcomes the force of said electromechanical transducer and thereafter the force of said electromechanical transducer controls said pressure limiting and shut-off valve means to maintain the pressure in said chamber in relation to the electrical voltage input to said electromechanical transducer, said circuit comprising means connected to said electromechanical transducer for supplying an electrical voltage input to said electromechanical transducer which includes a direct component and an alternating component, said alternating component being effective to reduce the effect of the past magnetization of said electromechanical transducer on the mechanical force delivered by said electromechanical transducer in response to said direct voltage component.

3,181,560
PRESSURE REGULATING VALVE CONSTRUCTION

Donald A. Worden, Pompton Plains, and Sam Robert Smolen, Bloomingdale, N.J., assignors to Marotta Valve Corporation, Boonton, N.J., a corporation of New Jersey
Filed Aug. 29, 1960, Ser. No. 52,529
5 Claims. (Cl. 137—494)

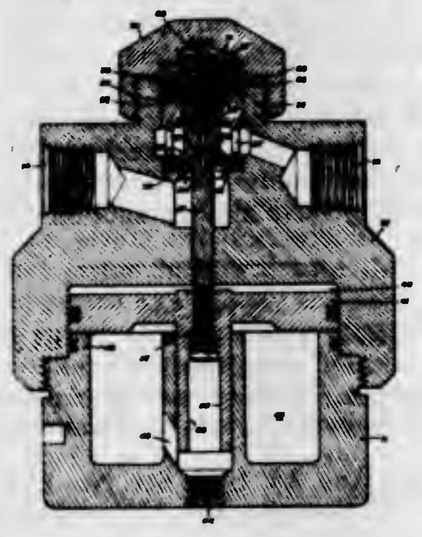


1. A valve assembly including
(*a*) a housing having two passages opening through a wall thereof,
(*b*) chambers within the housing including an inlet chamber and an end chamber which communicate with one another through an opening surrounded by a valve seat,
(*c*) a valve element that closes against said seat,
(*d*) guides along which the valve element reciprocates toward and from the valve seat, into open and closed positions, respectively,
(*e*) a pressure-responsive actuator operatively-connected with the valve element and having a surface area exposed to gas pressure from one of said chambers of the housing for moving the valve element toward one of said positions,

(*f*) means urging the valve element to move in opposition to the pressure against said surface,
(*g*) said actuator having an abutment thereon which contacts with the valve element to operate said valve element,
(*h*) the valve element having a surface portion substantially parallel to the valve seat and which contacts therewith when the valve element is in closed position,
(*i*) said surface portions having a thin layer of plastic material that absorbs some water when the valve element is subjected to sweating as the result of pressure drop in the valve assembly,
(*j*) the valve element being made of harder and non-water-absorbent material beneath the layer of plastic whereby growing of the valve element is avoided and the valve-operating abutment remains in substantially constant relation to the surface area of the actuator exposed to the gas pressure.

3,181,561
BALANCED REGULATING VALVE

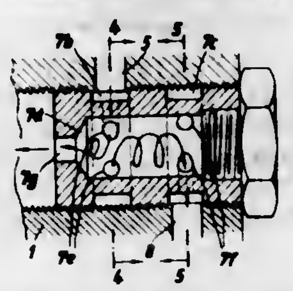
Robert L. Schaller, Camillus, N.Y., assignor to Engelberg, Inc., Syracuse, N.Y., a corporation of New York
Filed Nov. 20, 1961, Ser. No. 153,426
2 Claims. (Cl. 137—505.18)



1. A regulating valve of the type described comprising a housing formed with a valve compartment, a valve seat in said compartment, an inlet port communicating with said compartment above said valve seat, an outlet port arranged below said valve seat, a poppet valve positioned in said compartment above said seat, a compression spring urging said valve against said seat, said valve having an upwardly extending stem slidable in a sleeve fixedly mounted in said body above said compartment, said sleeve being formed with a counterbore in its upper portion to provide an annular shoulder encircling the upper portion of said stem in spaced relation thereto, an annular seal positioned on said shoulder and being formed with an inner downwardly extending cylindrical portion encircling said stem and positioned between said shoulder and the stem, said seal having an outer upwardly extending cylindrical portion positioned against said counterbore, a bushing mounted in said counterbore, and means urging said bushing downwardly to clamp said seal against said shoulder, said valve being formed with a passage extending axially upwardly from below the area of the valve contacting said seat and communicating with the area above the upper end of said stem for the transmission of fluid thereto from the area below said seat, said housing being formed with a cylinder below said valve chamber, a piston mounted in said cylinder, means for applying fluid under predetermined constant pressure against the under side of said piston to urge the same upwardly, said valve also having a downwardly extending stem for engagement by said piston when the same is moved upwardly to move said valve from the seat, a conduit extending from said outlet port to the area above said piston for the conveyance of fluid thereagainst to urge said piston downwardly against said predetermined constant pressure.

3,181,562
LUBRICATING FLUID DISTRIBUTOR SYSTEM

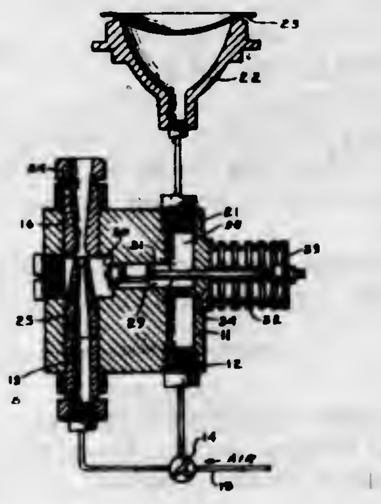
Siegfried Kofink, Zell (Neckar), Germany, assignor to Geratebau Eberspacher, Esslingen (Neckar), Germany, a German firm
Filed May 17, 1963, Ser. No. 281,124
Claims priority, application Germany, July 18, 1962, G 35,492
5 Claims. (Cl. 137—561)



1. A lubricating fluid distributor system comprising a supply line for supplying lubricating fluid at various pressures and quantities, a distributor device defining a distributing bore arranged substantially transverse to the supply line, the supply line being connected tangentially into said distributing bore, said distributor device bore having an opening at one end defining a passage for the flow of lubricating fluid to a bearing part, a return line connected tangentially into the bore of said distributor device, the bore of said distributor device together with the tangential connection of said supply line and said return line defining means for rotating the fluid delivered from said supply line and for delivering a portion of the fluid through the opening at one end for delivery to a bearing part at substantially constant flow rate and for delivering an additional portion to said return line.

3,181,563
VALVE MEANS FOR SELECTIVELY SUPPLYING A DESIRED PORT WITH POSITIVE AND NEGATIVE PRESSURES

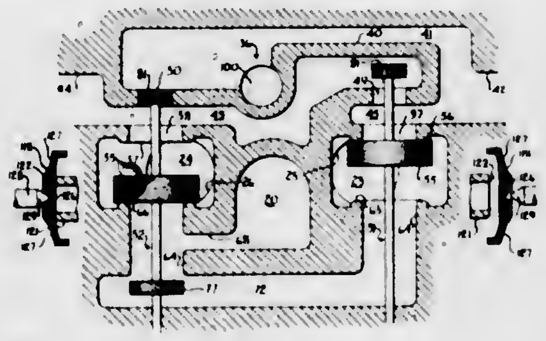
James W. Giffen, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 5, 1961, Ser. No. 157,117
5 Claims. (Cl. 137—596)



1. A valve housing for selectively supplying a desired outlet port with positive and negative pressures solely by the application of a positive pressure to preselected inlet ports which comprises, a housing body, a pair of passages extending through said housing body, each of said pas-

sages having an inlet port and an outlet port, an aspirator formed in one of said passages, a transverse passageway communicating between said one passage adjacent the low pressure region of said aspirator and an intermediate portion of the other of said passages, a normally opened valve for closing said passageway, fluid pressure responsive means communicating with said other passage for actuating said valve, and means for alternately supplying positive fluid pressure to the inlet port of said one passage and through said aspirator to produce a negative pressure at the outlet port of said other passage and for supplying positive fluid pressure to the inlet port of said other passage to actuate said fluid pressure responsive means and close said valve to thereby supply positive pressure to the outlet port of such other passage.

3,181,564
CONTROL VALVE FOR WATER SOFTENERS
John Rudelick, Milwaukee, Wis., assignor to Bruner Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 1, 1962, Ser. No. 234,669
13 Claims. (Cl. 137—599.1)



1. A fluid flow control device for liquid treating apparatus, which device is characterized by an inlet for liquid to be treated, an outlet for treated liquid, a pair of main ports for connecting the device with treating apparatus, and a drain port, and is further characterized by the following:

(A) first and second two-position valves, one for each main port;

(B) first and second valve controlled ports associated with each valve and arranged to be selectively closed thereby;

(C) passage means connecting the drain port with each main port through its associated first port;

(D) passage means connecting the main port of the first valve with the inlet through said second port of the first valve;

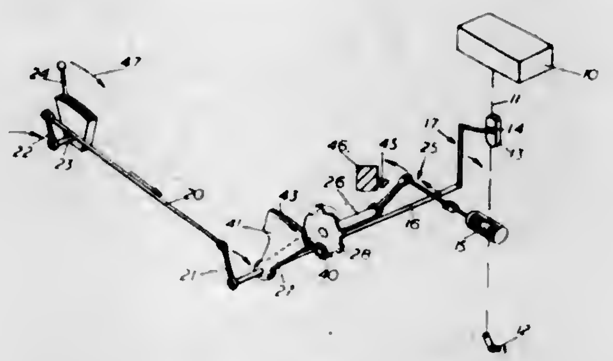
(E) passage means connecting the main port of the second valve with the outlet through said second port of the second valve;

(F) a valve element on the second valve operable to close the passage means connecting the main port of the first valve with the drain port whenever the second valve is in a position closing said second port thereof;

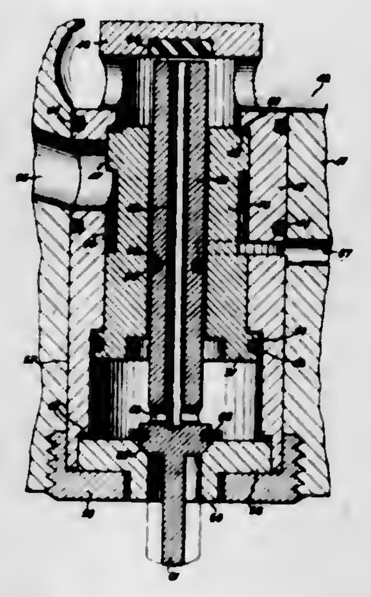
(G) and means for moving said valves from one position to the other thereof.

3,181,565
LOST MOTION MECHANISM
Bernard John Haskins, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Jan. 7, 1963, Ser. No. 249,837
Claims priority, application Great Britain, Jan. 30, 1962, 3,542/62
3 Claims. (Cl. 137—614.11)

1. A gas turbine engine fuel system comprising a fuel reservoir, a fuel conduit through which fuel may flow from the reservoir to engine burners, a fuel metering valve and a shut-off cock in said fuel conduit, a driven shaft and a driving shaft connected respectively for adjustment of the shut-off cock and the metering valve, a pilot's throttle lever for rotating the driving shaft, the pilot's throttle lever being movable between operative and inoperative positions, and a lost motion mechanism so arranged between the driving and driven shafts that movement of the pilot's throttle lever away from its inoperative position causes the driving and driven shafts initially to rotate to open simultaneously the metering valve and the shut-off cock respectively, further movement of the pilot's throttle lever away from its inoperative position after the shut-off cock is fully open causing the metering valve to be opened further without causing movement of the shut-off cock, movement of the pilot's throttle lever towards its inoperative position causes the metering valve to be closed initially without effecting movement of the shut-off cock, and finally causes simultaneous closure of both the metering valve and the shut-off cock.

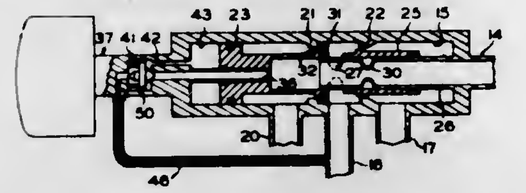


3,181,566
CONTROL VALVE FOR PNEUMATIC EQUIPMENT
Dieter Volkmann, Neustadt am Rubenberge, Germany, assignor to Bukama G.m.b.H., Hannover, Germany, a firm
Filed Aug. 28, 1961, Ser. No. 135,100
13 Claims. (Cl. 137—625.6)



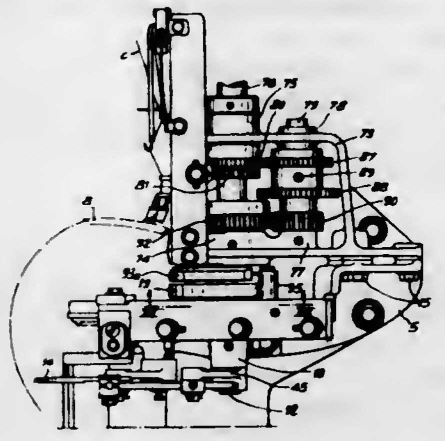
1. A control valve for pneumatic equipment, comprising a sleeve member having an air supply passage, an air transmitting passage and an exhaust passage, said sleeve member comprising means forming a bottom surface thereof, a valve piston member, a valve rod member extending axially within said sleeve member, an auxiliary piston member located within said sleeve member, said auxiliary piston member being coaxial with said valve piston member and being spaced from said bottom surface, said valve rod member being coaxial with said piston members and having an uninterrupted axial bore connecting said air supply passage with the space between the surface of the auxiliary piston member located away from the valve piston member and said bottom surface, and an actuating member extending from said valve rod member partly outside of said sleeve member and adapted to actuate said valve rod member.

3,181,567
FOUR PORT REVERSING VALVE
Bela Deutsch, Ladue, and Thomas C. Knaebel, Kirkwood, Mo., assignors to Bela Deutsch, Herman Deutsch, and Carl J. Deutsch, doing business as Standard Machine & Manufacturing Co.
Filed Apr. 3, 1961, Ser. No. 100,399
1 Claim. (Cl. 137—625.43)



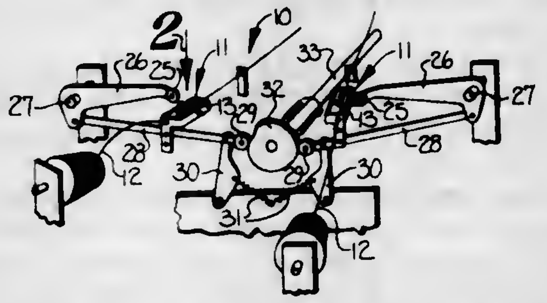
A four way valve comprising a valve body having a chamber therein, a piston sealably slidable within the chamber, an inlet to and an outlet from said chamber at one side of said piston, first and second connections communicating with said chamber at the same side of said piston, a valve seat on the body within the chamber between the inlet and each of the first and second connections, an annular sealing element carried by the piston, abutments on the piston between which the sealing element slides, said piston having a bore therethrough, an internal tube supported by the body and extending through the piston bore in substantial sealing relation, said piston being slidable on said internal tube, a first sleeve connected to said piston, said tube having one end disposed in and communicating with the interior of said first sleeve, a second sleeve extending from said outlet into said chamber, said sleeves being telescopically related and having ports therein, said one end of the tube communicating directly with only the outlet and not the inlet of said chamber, the body being provided with a compartment, a partition between said chamber and compartment, the opposite end of said tube communicating with said compartment through said partition, a passage through said partition communicating said compartment with the chamber at the other side of said piston, an external line interconnecting the inlet directly to said compartment, and a pilot valve including a reciprocating valve element alternately connecting the passage with either the last said tube end or the external line, said piston and said first sleeve being movable between a first position in which the sealing element seats on the valve seat between the inlet and the second connection to direct flow from the inlet into said first connection and opening one of said ports to communicate with the chamber at the other side of the valve seat between the inlet and second connection for directing flow from the second connection into the outlet, and a second position in which the sealing element seats on the valve seat between the inlet and first connection to direct flow from said inlet in said second connection and aligning said ports to communicate with the chamber at the other side of the valve seat between the inlet and first connection to direct flow from the first connection into the outlet, the valve ports being closed by relative movement of the sleeves before the piston abutments engage the sealing element to move the sealing element away from one valve seat and toward the other valve seat upon movement of the piston between the first and second pistons.

3,181,568
DEVICE FOR THE FORMATION OF SELVEDGES ON LOOMS
Raymond Dewas, 120 Blvd. Saint Quentin, Amiens, Somme, France
Filed Feb. 23, 1962, Ser. No. 175,145
Claims priority, application France, Feb. 24, 1961, 853,749; Oct. 17, 1961, 876,148; Feb. 13, 1962, 887,841
11 Claims. (Cl. 139—122)



1. In a loom, warp threads having sheds formed therein to receive weft threads, said weft threads being beaten-up into a fell to form a fabric, a device for forming selvedges along marginal warp threads; said device including a needle for inserting an auxiliary thread between the marginal warp threads of the shed, a plunger operable to temporarily engage and retain the auxiliary thread, whereby a loop is formed in said auxiliary thread as the needle leaves the shed, the loop being beaten-up against the fell together with a corresponding weft thread, means operatively connected with said needle for actuating said needle in a predetermined motion while the shed is open and operatively connected with said plunger for actuating said plunger in a predetermined motion and in conjunction with the motion of said needle, said means comprising a cam, a main rotary shaft mounting said cam, rollers engageable with said cam and operatively connected to said needle and to said plunger, and resilient means for urging said rollers into engagement with said cam, disc coaxial with said cam and having arcuate portions adapted to retain at least the roller operatively connected to said needle at a distance equal to the outer limit of the cam for preventing said needle from moving to active position, and means for driving said disc from said main shaft, whereby the first-mentioned means are rendered inoperative during a predetermined number of shed changes.

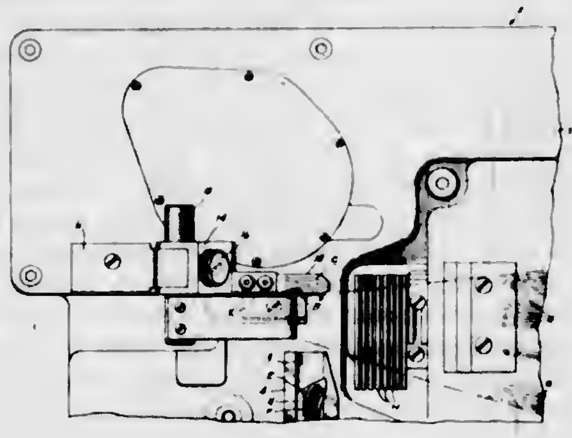
3,181,569
FILLING YARN CONTROL MEANS
William J. Carroll, Asheville, N.C., assignor to Beacon Manufacturing Company, a corporation of Delaware
Filed Feb. 6, 1964, Ser. No. 343,093
2 Claims. (Cl. 139—122)



1. A filling yarn control means for use on a Sultzer Loom comprising a bracket having eyelets therein for the passage of a filling yarn therethrough and an aperture in one side thereof, a first hollow braking disc fixed to said bracket and disposed around said aperture, a movable

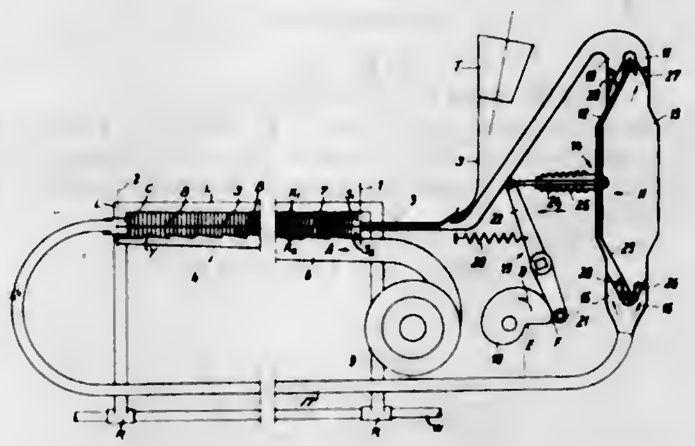
shaft slidably disposed in said aperture in said bracket and having a cam surface on one end thereof, a second braking disc in operative engagement with said movable shaft to be moved thereby and adapted to contact said first braking disc to clamp and stop the movement of the filling yarn, said movable shaft having an elongate slot therein for the passage of thread therethrough to insure that the filling yarn always passes between said first and second discs, spring means normally biasing said second braking disc into clamping contact with said first braking disc, and a constantly operating cam mechanism adapted to intermittently contact said cam surface to move said shaft and said second braking disc against the bias of said spring means out of contact with said first braking disc to release the filling yarn for free unobstructed movement into the loom mechanisms.

3,181,570
BEARD NEEDLE CLOSING DEVICE
Frank W. Clarke, Meadville, Pa., assignor to Talon, Inc., a corporation of Pennsylvania
Filed Apr. 19, 1962, Ser. No. 188,737
12 Claims. (Cl. 139—124)



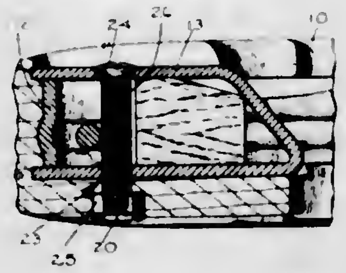
1. In a needle loom for weaving tape and the like having means for feeding warp threads thereto,
means for forming a shed between the warp threads,
a weft needle for laying a weft thread into the shed,
the combination of a supporting means positioned along one side of the warp threads,
a bar-like member mounted on said supporting means for reciprocation substantially parallel to said warp threads,
at least one knitting needle having a beard carried thereby securely mounted in the outer end of said bar-like member,
said knitting needle cooperating with the outer end of said weft needle so as to remove therefrom a loop of weft thread,
a swingable arm-like member mounted on the outer end of said bar-like member having the inner end thereof pivotally attached thereto adjacent said knitting needle,
a pin-like member arranged on the outer free end of said swingable arm-like member which is adapted to cooperate with the beard of said knitting needle to close the same,
a plate-like member mounted on said supporting means having a cam race arranged in one side thereof in which one end of said pin-like member is disposed and with which it cooperates whereby the pin-like member is moved in a path to a point contact with said beard to close the same when the bar-like member is moved in a direction toward its retracted position and in a path spaced from said beard when moved in a direction toward its protracted position.

3,181,571
PNEUMATIC WEFT INSERTING MEANS
Walter Scheffel, Industriestrasse 53, Weissenburg, Bavaria, Germany
Filed July 5, 1962, Ser. No. 207,592
Claims priority, application Germany, July 7, 1961, Sch 29,953
8 Claims. (Cl. 139—127)



1. In a loom for producing woven fabrics of considerable width having a pneumatic picking system comprising a blast pipe located adjacent the side of the warp, means for admitting a weft thread to said blast pipe, air-supply means located below the shed adjacent to the shedding point for providing a stream of air within said shed capable of carrying said weft thread through said shed and means independent of said air supply means for imparting a high initial acceleration to said weft thread in said blast pipe prior to its entrance into the shed so that upon entering the shed said weft thread will have a velocity which is comparable to the velocity of said air stream provided by said air-supply means.

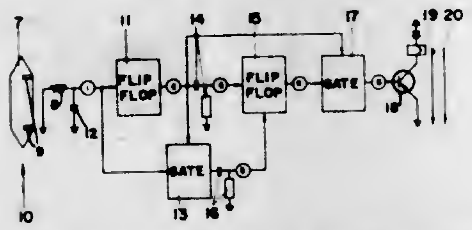
3,181,572
LOOM SHUTTLE
William W. Mogayzel, South Dartmouth, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Aug. 24, 1962, Ser. No. 219,312
4 Claims. (Cl. 139—207)



3. In a loom shuttle having a body portion with a centrally located bobbin compartment and a spring bobbin holder and a generally U-shaped spring cover having interconnected top and lower portions positioned at one end of said compartment and in clamping relationship with said bobbin holder, a retaining means for fixedly positioning said spring cover in said compartment and in contact with said bobbin holder which comprises the combination of a thrust bushing internally threaded for substantially its entire length and a threaded cover screw, one of said combination of thrust bushing and cover screw extending through the upper portion of said spring cover and the other of said combination extending through the lower portion of said cover as well as through a portion of the shuttle body and being non-rotatable therewith said thrust bushing including a base portion with a cylindrical barrel portion extending therefrom, said barrel portion terminating immediately adjacent the underside of said upper portion, said cover screw having

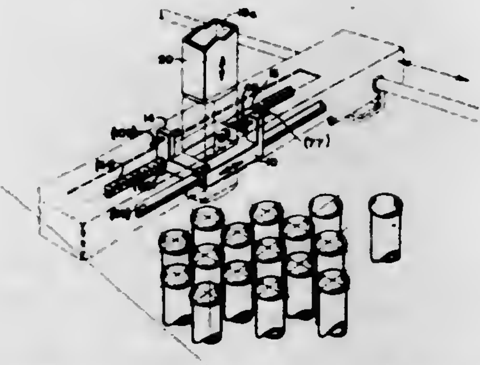
substantially the entire threaded portion thereof received into said barrel portion so that movement of said upper portion of said spring cover is restricted between a head portion of the cover screw and the terminal portion of the barrel whereby said cover screw is substantially strengthened to eliminate shearing thereof due to repetitive bobbin transfers and there is provided extended contact area between said cover screw and thrust bushing in order to assure positive and firm assembly of said bobbin holder and cover.

3,181,573
SHUTTLE CONTROL FOR LOOMS
Hansruedi Stutz, Zurich, Switzerland, assignor to A.G. Gebrueder Loepfe, Zurich, Switzerland
Filed July 6, 1962, Ser. No. 207,868
Claims priority, application Switzerland, July 6, 1961, 7,887/61
4 Claims. (Cl. 139—341)



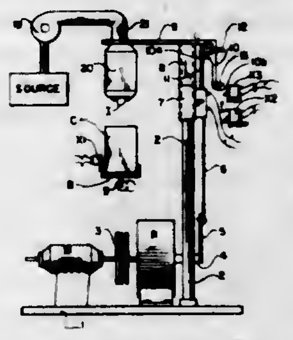
1. In a loom having a lathe, a shuttle which reciprocates along a predetermined path, and loom stopping means; a shuttle control comprising, in combination with a permanent magnet carried by the shuttle, a pair of fixed coils located in the path of the lathe close to the path of the shuttle and receiving magnetic impulses from said permanent magnet while the shuttle moves past said coils, electronic time-comparing means connected with said coils and actuated by said impulses, and means operatively connected with said electronic time-comparing means and said loom stopping means and actuating said loom stopping means when the time difference determined by said electronic time-comparing means deviates from a predetermined time period.

3,181,574
DISPENSING HEAD FOR A FLUID FRACTION COLLECTOR
Andrew Lenkey, Menlo Park, and Robert J. Ehret, Los Altos, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Feb. 23, 1962, Ser. No. 175,252
16 Claims. (Cl. 141—130)



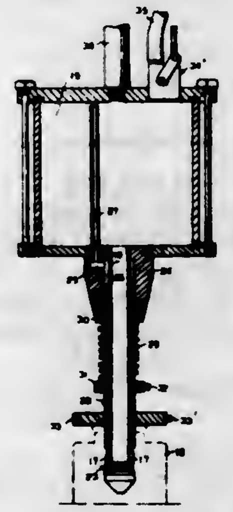
1. In a fraction collector wherein predetermined quantities of fluid are delivered to each of a number of test tubes disposed in an array, dispensing apparatus comprising a bed movable with respect to said array to be positionable above said test tubes from one to the next, said bed including means serving to readily releasably receive a dispensing unit, said dispensing unit including electro-mechanical means for establishing said predetermined quantities, the last named means including valve means controlling delivery of said quantities, a pair of conductors controlling said electro-mechanical means, said conductors being disposed to be electrically coupled by said fluid to immediately actuate said valve means to effect said control.

3,181,575
FILLING MACHINES
Jerry A. Krizka, Chicago, Ill., assignor to Pak'tronic Machine Corporation, a corporation of Ohio
Filed Nov. 9, 1961, Ser. No. 151,335
15 Claims. (Cl. 141—141)



1. A machine for automatically filling containers with a semiliquid material supplied by a source, comprising a filling head shaped to fit inside a container; conveyor means for intermittently advancing said containers under said filling head; pump means between said source and said head to force the material through the head and float the head upwardly thereon within the containers; reciprocating head-support means above said conveyor means; first control means at the conveyor means and actuated by the advance of a container under the head; second control means responsive to the floating of the head to a predetermined level; and reciprocating drive means engaging said head-support means to lower the head into a container in response to the actuation of the first control means by the advancing of a container under the head, and said drive means including means responsive to the second control means to abruptly raise the head-support means away from the container.

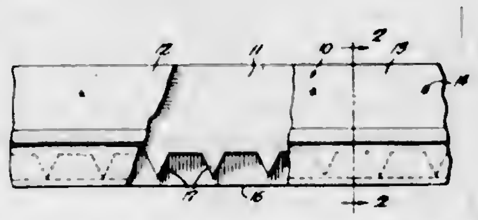
3,181,576
FILLING APPARATUS FOR DISPENSING MEASURED AMOUNTS OF LIQUIDS
Ernest Pellerino, 518 E. 6th St., New York, N.Y., and Arthur Martorelli, 1035 Crawford Ave., Brooklyn, N.Y.
Filed Nov. 9, 1962, Ser. No. 236,549
4 Claims. (Cl. 141—293)



1. In a filling apparatus of the character described, the combination of a structure having a confined chamber for holding a supply of liquid, a discharge tube having discharge opening structure at its lower end; the upper end of said discharge tube being communicatively connected with and extending downwardly from said chamber whereby liquid from said chamber is free to flow

through said discharge tube and out of said discharge opening structure; said discharge tube being adapted to be entered into a container which is to receive liquid from said chamber, means affording relative movement of said discharge tube and container whereby said discharge tube is entered into such container to a predetermined depth therein and when desired, withdrawn, structure movably associated with said discharge tube, closing said discharge opening structure and movable with respect to said discharge tube to open and close said discharge opening structure, an open-ended vent tube structure entered into said chamber and joined air-tight to the structure having the chamber so no air from around said vent tube structure enters said chamber; the upper end of said vent tube structure being above the level to which liquid is housed in said chamber; the lower end of said vent tube structure being above the discharge opening structure when the discharge tube is entered into the container and said discharge opening structure is opened and an element carried on the discharge tube serving as a seat to close the lower end of said vent tube structure when said discharge opening structure is closed, whereupon when the discharge tube is entered in the container and the discharge opening structure is opened, liquid will flow from said chamber into the container and stop at the level of the lower end of said vent tube structure.

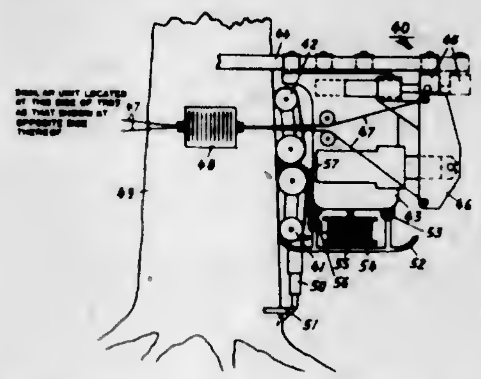
3,181,577
SAW FOR PALM WOOD
Thomas Gaskins, Palmdale, Fla.
Filed Nov. 24, 1961, Ser. No. 154,778
2 Claims. (Cl. 143—133)



1. A saw for cutting palm wood and the like comprising a laminated blade including an intermediate plate having its working edge formed with raker teeth lying in a common plane and outer plates secured on the opposite sides of said intermediate plate having working edges extending beyond the working edge of said intermediate plate, the working edges of said outer plates being offset and disposed parallel relative to said intermediate plate, the inner sides of the working edges of said outer plates being beveled to provide incisive cutting edges disposed parallel to the direction of cutting of the saw and said raker teeth terminating short of the beveled surfaces of said outer plates.

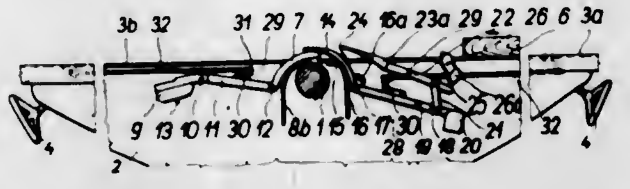
3,181,578
DEVICE FOR THE MECHANICAL PROCESSING OF STANDING TREES
Christian L. Longert, Pfarrgasse 3, Vaduz, Liechtenstein
Filed Mar. 12, 1962, Ser. No. 179,164
Claims priority, application Switzerland, Aug. 3, 1961, 9,112/61
6 Claims. (Cl. 144—2)

1. In a device for the mechanical working of trees and the like, the combination of:
- at least one drive unit adapted to be positioned at the surface of a tree to be worked;
- climbing means attached to said drive unit and disposed on the surface thereof positioned at the surface of said tree to thus enable said drive unit to ascend and descend along said tree;
- flexible cutting chain means disposed at the upper end of said drive unit and circumferentially surrounding said tree;
- a plurality of roller means projecting above said drive unit with said chain means being trained about said roller means;
- at least one of said roller means being driven to cause said cutting chain to rotate;
- a chain means tensioning portion movably mounted in said drive unit and being selectively movable toward and away from said tree;
- at least one of said roller means being mounted upon said tensioning portion whereby relative movement of said tensioning portion controls the tension in said cutting chain means; and
- holding means secured to said drive unit to maintain the same against said tree;



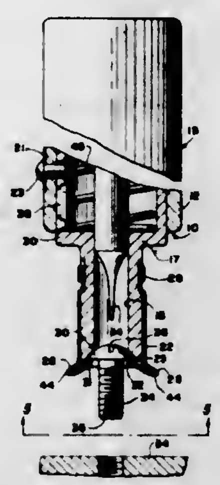
- said holding means including at least one clamping cable means disposed beneath said cutting chain means in at least partially surrounding relationship to said tree;
- a clamping cable tensioning portion movably mounted in said drive unit and being selectively movable toward and away from said tree;
- said clamping cable being secured to said clamping cable tensioning portion whereby relative movement of the latter controls the tension in the former;
- said chain means tensioning portion and said clamping cable tensioning portion being independently operable whereby the tension in said cutting chain and said clamping cable means can be individually controlled and varied.

3,181,579
GUARD AND ACCIDENT PREVENTION EQUIPMENT FOR WOOD WORKING INDUSTRY
László Kántor, Budapest, Hungary, assignor to Techno-impex Magyar Gepipari Kulkereskedelmi Vallalat, Budapest, Hungary, a firm
Filed May 29, 1963, Ser. No. 284,172
4 Claims. (Cl. 144—251)



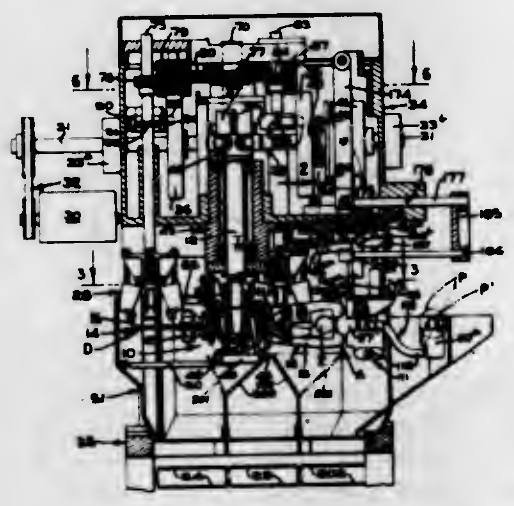
1. A guard and accident prevention equipment for planing machines of the wood working industry, comprising a plurality of arched lower and upper guard elements respectively comprising comb like elements closing over the blade shaft from opposite sides thereof and tiltable to positions under the machine worktable, a plurality of opening levers located on the feed side of the blade shaft and similarly tiltable to under the worktable, said equipment further comprising a plurality of weight-loaded lock levers pivotally mounted to swing under their own weight into engagement with said opening levers, said lock levers being arranged prior to said opening levers in the feed path of the workpiece and being tiltable to positions under the worktable.

3,181,580
COLLET TYPE FINDERS FOR USE WITH POWER SCREW DRIVERS
Hugh B. Taylor, Waverly, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed July 26, 1962, Ser. No. 212,699
2 Claims. (Cl. 145—52)



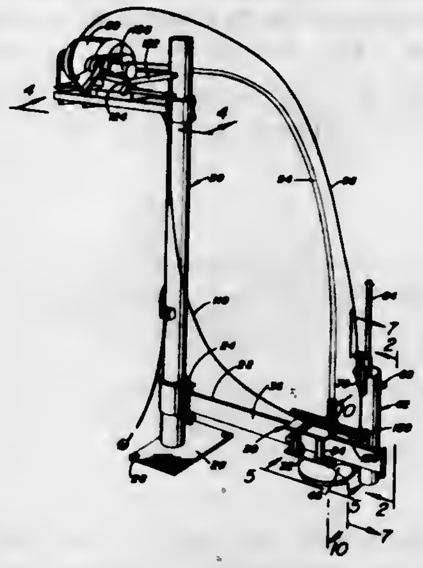
1. In a tool for setting in a base a threaded fastening element of the class wherein a bit sets said threaded fastening element in said base, a collet body disposed around said bit to support compression load, the combination with said collet body:
- (*a*) a cradle disposed on said collet body; and
- (*b*) fingers disposed on said collet body extending in part around said cradle to receive said threaded fastening element;
- (*c*) said fingers being provided with hooked ends to hook underneath a portion of said threaded fastening element to positively hold said threaded fastening element against said cradle.

3,181,581
APPARATUS FOR PITTING PEACHES
James M. Hait, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Oct. 22, 1957, Ser. No. 691,671, now Patent No. 3,040,795, dated June 26, 1962. Divided and this application Sept. 19, 1961, Ser. No. 139,232
12 Claims. (Cl. 146—28)



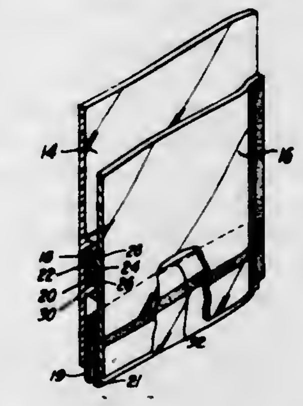
1. A pitting machine comprising gripper means arranged when actuated to cut into a whole peach to bisect the flesh of the fruit and grip the pit, means for actuating said gripper means, and means for successively gripping and twisting each peach half to twist the half away from the pit held by said gripper means.

3,181,582
SLICER
Eugene Bailey, Columbus, Ohio
(2528 Home Road, Grove City, Ohio)
Filed May 10, 1962, Ser. No. 187,326
10 Claims. (Cl. 146—105)



1. A slicing machine comprising, in combination, frame means; a horizontally extending arm including an inner end, an outer end, and a track portion intermediate said ends; means forming a pivotal connection between said inner end of said arm and said frame means whereby said track portion is free to swing laterally about a vertical pivotal axis; head means slideably mounted on said track portion for reciprocation along the horizontally extending longitudinal axis of said arm; rotary cutter means mounted on said head means; container means for a product to be sliced mounted on said head means; a first driving means for reciprocating one of said cutter and container means on said head means for causing cutting engagement between said cutter and said product; product advancing means for intermittently advancing and stopping said product in said container means; and a second driving means for said product advancing means.

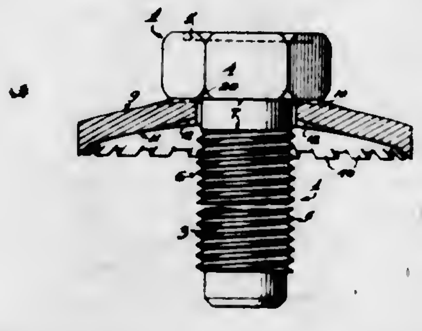
3,181,583
RECLOSABLE PLASTIC CONTAINER
Daniel J. Lingenfelter, 1404 Bruce Ave., Glendale 2, Calif.
Filed Sept. 24, 1962, Ser. No. 225,820
8 Claims. (Cl. 150—3)



1. A fillable, flexible container comprising:
- a thermoplastic bag open at its bottom and closed at its upper end, said upper end being provided with a rupturable, transverse tearline through which access may be had to the closed bag, said bag being opened at its bottom but closable by heat sealing; and
- a pair of flexible closure strips, said closure strips having interlocking means arranged on adjoining faces thereof for selectively engaging to connect said strips and for disengaging to disconnect said strips and being

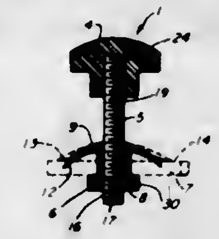
respectively held to the upper end of the bag on opposite sides of the rupturable tearline.

3,181,584
SCREW-AND-WASHER PRE-ASSEMBLY
Frederick Gordon Borowsky, Philadelphia, Pa., assignor, by mesne assignments, to George K. Garrett Company, Division of MSL Industries, Inc., a corporation of Minnesota
Filed Aug. 21, 1959, Ser. No. 835,227
2 Claims. (Cl. 151—37)



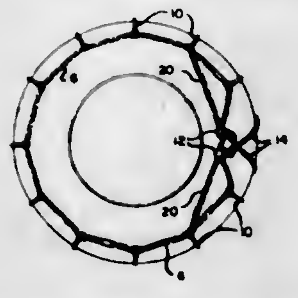
1. A bolt-and-washer pre-assembly including two members, namely, a pre-threaded separately heat-hardened steel bolt having a head whose bearing-face is generally normal to its screw-axis and having a portion of its stem adjacent its head unthreaded and of a diameter substantially less than the outer thread-diameter thereof and forming an annular groove-like portion between the head and the threaded portion of the stem, and a pre-dished stamped sheet-steel washer concave on one side and convex on its other side, disposed on the aforementioned unthreaded portion of the stem adjacent the head, with its convex side facing the bearing-face of the head of the bolt and with its concave side facing the threaded portion of the stem of the bolt, at least one of said members having a surface-altering pre-assembly-finish absent from the other member, the body of said washer including an annular portion of unbroken continuity and having a generally uniform wall-thickness throughout the major portion of its area and its overall axial dimension being substantially greater than in its aforementioned wall-thickness, said washer having an uninterrupted and substantially circular screw-receiving hole of a diameter generally the same as the outer thread-diameter of the bolt plus only such working clearance as would be sufficient to permit the threaded portion of the stem of the bolt to be passed through the hole except for the retaining nibs referred to hereinbelow, said washer having a plurality of circumferentially distributed co-planar swaged washer-retaining assembly-nibs around and projecting inwardly of said hole on the convex side thereof, swaged by pressing against the bearing-face of the head of the bolt, originally axially upstanding projections extending from the convex side of the washer immediately adjacent said hole, said swaged nibs extending radially inwardly from the hole into the groove-like unthreaded portion of the stem of the bolt adjacent the head thereof to points which are at radial distances from the screw-axis thereof substantially less than the radial distance of the outermost ridge of the screw-thread from the screw-axis, the radial dimension of said nibs being not greater than the radial depth of the screw-thread and the axial dimension of said nibs being substantially less than the wall-thickness of the washer and the common plane of said nibs being generally normal to said screw-axis, and the radially innermost portions of said nibs being directly adjacent the bearing-face of the head when it bears against the washer, the end of the hole in the washer at the concave side thereof being devoid of said nibs and the axial length of the aforementioned untreaded portion of the stem being substantially less than the over-all axial distance between the top and bottom of the dished washer.

3,181,585
ANCHORING BOLT FOR WATER CLOSET BOWLS
Philip J. Brewington, 6401 Emerald St., Austin, Tex.
Filed Aug. 19, 1963, Ser. No. 303,051
3 Claims. (Cl. 151—41.75)



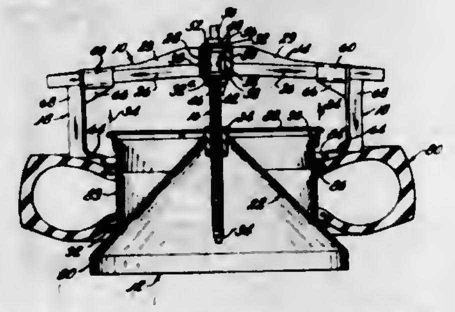
1. A three-piece anchoring bolt for water closet bowls comprising a retainer adapted to slide in the bayonet slot of the flange of the outlet pipe of a closet bowl, a headless steel screw having a threaded engagement with the retainer, and a cap having an axially directed threaded opening extending partially thereinto to receive the screw; said retainer having an axis and an axially extending oblong central section with substantially parallel sides to prevent rotation in said slot, in integral botton portion at one end of said central section extending in a radial direction beyond said parallel sides whereby to engage one side of said outlet pipe flange on both edges of said bayonet slot, thin flexible wings extending radially beyond said parallel sides, said wings being integral with the end of said center section opposite to said one end and being curved downward toward said one end to resiliently engage the side of said flange opposite said one side, said wings adapted to overlie both edges of said bayonet slot on the side of said flange opposite said one side to resist movement of the retainer along said slot and accommodate different thicknesses of the flange, said retainer having an axially extending bore therethough, and said cap having a cylindrical neck adapted to engage one of the usual holes in the rim of said bowl and an enlarged head having flat sides adapted to overlie the bowl rim and be engaged by a wrench to turn the cap to bind the closet rim to the outlet flange.

3,181,586
TIRE CHAIN TRACTION DEVICE AND THE LIKE
Frank J. Skrip, 2247 Wilson Ave., Pittsburgh, Pa.
Filed Jan. 11, 1963, Ser. No. 250,931
7 Claims. (Cl. 152—241)



1. A traction device for a wheeled vehicle comprising, a pair of circumferential support chains that lie generally concentric with said wheel along the inside and outside side walls of said wheel respectively when in place, cross links comprising shorter links of chain that lie across the tread of said wheel interconnecting the circumferential support chains at periodic intervals, the inner circumferential support chain being discontinuous and having a ring attached at each of its ends, a reinforcing link of chain extending from each of said rings as a chord to their respective portions of said inner circumferential chain and being fastened to said inner circumferential chain at points on the bight of said inner circumferential chain distant from said rings, a connecting chain being fastened at its ends to spaced points on the outer circumferential chain and extending across the tread of said wheel at an angle, through one of said rings in a loose manner and through the other of said rings in a loose manner so that said connecting chain crosses itself near said rings, said connecting chain having stoppage means connected to said connecting chain near where said connecting chain passes through said rings, capable of preventing the separable ends of said connecting chain from passing through said rings when said connecting chain is separated in its region which crosses the tread of said tire.

3,181,587
TIRE REMOVAL AND ASSEMBLY DEVICE
Charles D. Morrison, 8533 Cleveland Ave. N., North Canton, Ohio, and David G. Guessford, 1317 Grant Ave., Cuyahoga Falls, Ohio
Filed Oct. 25, 1963, Ser. No. 319,031
6 Claims. (Cl. 157—1.17)

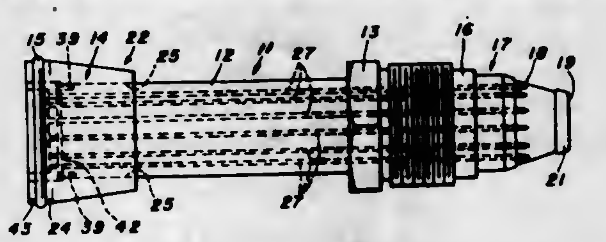


1. In an apparatus for removal or assembly of a pneumatic tire from a pneumatic tire-rim assembly which rim has a removable bead ring and a locking ring the combination of

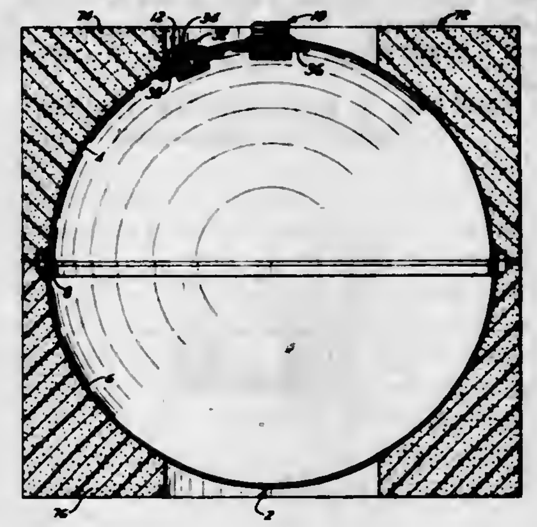
a base cone to support said tire-rim assembly,
an adjusting rod threadably positioned in the apex of said base cone and extending outwardly therefrom for vertical movement relative thereto,
a spider having a central hub rotatably mounted through said hub on the extended end of said adjusting rod, said spider having a plurality of arms equally spaced circumferentially and extending radially from said central hub with said arms being directed towards said base cone at an angle of between about 2° and about 10°,
a plurality of shoes slidably received on said arms, said shoes having lower portions extending axially outwardly at an angle substantially equal to the angle of inclination of said arms and having radially offset footers adapted to engage with the bead ring of said rim, and
means to rotate said adjusting rod to force said footers of said shoes against the removable bead ring and the bead of said tire with a force substantially parallel to the axis of the tire-rim assembly and a force directed substantially radially inwardly towards the axis of the tire-rim assembly because of the offset footers and the tendency of the shoes to move radially inwardly on the arms of the spider to relieve pressure.

3,181,588
SCARFING TORCH TIP
Daniel A. Marra, Sr., P.O. Box 211, Cheswick, Pa.
Filed Apr. 16, 1962, Ser. No. 187,681
4 Claims. (Cl. 158—27.4)

1. A scarfing torch tip having a burner end and an opposite end, said tip comprising a generally tubular body having a central oxygen, passageway extending axially therethrough and having a series of gas passageways extending therethrough in concentric arrangement about the oxygen passageway, a separate shield of a high heat-conducting metal at the burner end of the tubular body having an opening therethrough, the tubular body terminating in said opening and snugly fitting therein, the shield being of larger minimum exterior diameter than the tubular body, said shield having an end free and a shouldered cavity in its end face, a refractory liner in said cavity comprising an annulus closely fitted into said cavity and secured therein, the annulus having an internal flange sealed against the end of the tubular body with a central port aligned with the oxygen passageway of the tubular body and a series of ports in the flange about the central port registering with the fuel passageways in the tubular body, a mixing space for fuel and oxygen being provided in the annulus between said flange and the burner end of the torch tip, the tubular body having a coupling means at said opposite end for connecting it with a torch.



3,181,589
APPARATUS FOR THE STORAGE AND BURNING OF A FLUID UNDER PRESSURE
Rex V. Phelps, Tulsa, Okla., assignor to Warren Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Mar. 7, 1963, Ser. No. 263,639
8 Claims. (Cl. 158—32)

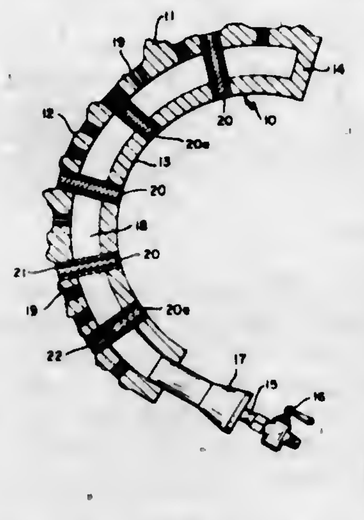


7. In combination a thin-walled vessel formed of a material adapted to maintain a fluid therein under pressure and capable of freely permitting heat transfer into the interior thereof, substantially rigid, shock-absorbent material substantially permanently attached to said thin-walled vessel and forming a polyhedron therewith having at least one outer plane surface forming a support, substantially the entire inner surface thereof following substantially the contour of the outer surface of said thin-walled vessel, said rigid, shock-absorbent material being provided with at least one substantial opening therein permitting free and direct communication from the atmosphere to the outer surface of said thin-walled vessel, whereby heat transfer between the atmosphere and the outer wall of said thin-walled vessel is permitted, and a burner means attached to said thin-walled vessel adapted to communicate with the interior of said thin-walled vessel.

3,181,590
SIMULATED LOG GAS HEATER
Raymond R. Dupler, 744 Euclid Ave., Toledo, Ohio
Filed Oct. 19, 1962, Ser. No. 231,640
2 Claims. (Cl. 158—100)

1. A gas heater comprising a hollow body providing an illuminating gas-receiving chamber and having spaced

front and rear walls, means for delivering an air-illuminating gas mixture to said chamber, gas-emitting burner openings arranged at spaced intervals along one wall of said body, and tubes extending transversely through said body, each tube having a row of relatively small open-ended passages extending end to end for enabling air to pass freely by convection in small streams from one side of the body to the other to augment the air supply to the burner openings.

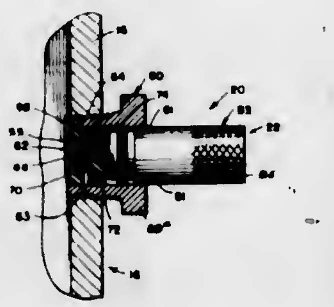


3,181,591
SHUT-OFF PLUG FOR A BLAST TIP

Robert Lund, Melrose Park, Ill., assignor to Pettibone Mulliken Corporation, Chicago, Ill., a corporation of Delaware

Filed May 2, 1962, Ser. No. 191,779

1 Claim. (Cl. 158—104)



In a low pressure gas burner assembly, the combination with a flame-producing blast tip in the form of a tubular sleeve having an axially extending smooth cylindrical bore therethrough, and a cylindrical head disposed within said bore and closing one end thereof, said head being formed with a plurality of gas passages therethrough, the forward face of said head terminating short of the other end of the sleeve so as to define within the bore a relatively deep cylindrical socket establishing a combustion chamber, of a shut-off plug assembly removably disposed within said socket and substantially filling the same when it is in use, said shut-off plug assembly comprising a composite laminated sealing plug proper consisting of a plurality of thin flexible flat annular washers formed of heat-resistant material and serially arranged in face-to-face coaxial abutting relationship, said washers each having an outside diameter slightly greater than the diameter of said bore, an elongated cylindrical rod-like handle for said sealing plug proper, coaxial with said washers and having a circular end face abutting the foremost washer of the series, said end face of the handle being provided with a threaded socket centrally thereof, and a clamping bolt projecting through said washers, having an end thereof threadedly received in said socket, and an enlarged head bearing against the rearmost washer of the series and serving to compress the medial regions of the washers together while allowing the peripheral regions thereof to remain free for sliding sealing engagement with the cylindrical bore, said shut-off plug assembly being adapted to be manually pushed into and pulled from said socket and adapted when in the socket to seal off said gas passages against the flow of fuel gas therethrough.

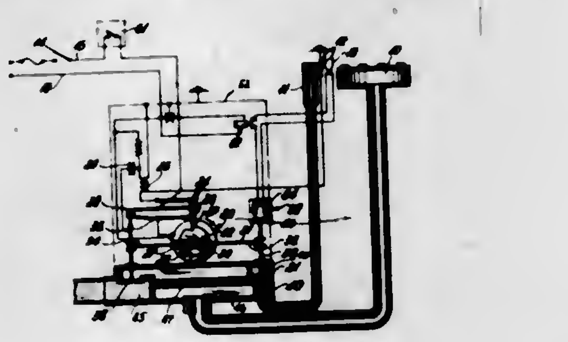
3,181,592
GAS BURNER CONTROL SYSTEM

Adolf Krajc and Andreas Pritzkow, Wernau (Neckar), Germany, assignors to Junkers & Co. G.m.b.H., Wernau, Germany

Filed Oct. 7, 1963, Ser. No. 314,282

Claims priority, application Germany, Oct. 6, 1962, J 22,471

12 Claims. (Cl. 158—124)



1. A gas burner control system, comprising, in combination, gas inlet means; main gas burner means; a main gas valve arranged between said gas inlet means and said main gas burner means for controlling the flow of gas to the latter; pilot flame gas burner means adjacent to said main gas burner means; a pilot flame gas valve arranged between said gas inlet means and said pilot flame gas burner means for controlling the flow of gas to the latter; electrical igniting means adjacent to said pilot flame gas burner means for igniting a pilot flame when said igniting means are energized while gas flows through said pilot flame gas valve to said pilot flame gas burner means; in circuit with said ignitor means for energizing the latter; electric valve control means including electromagnet means for holding when energized said pilot flame gas valve in open position once the latter has been moved to open position, and thermoelectric means responding to exposure to the heat of said pilot flame by energizing said electromagnet means so as to hold said pilot flame gas valve open as long as there is a pilot flame; and control means for controlling said main gas valve and said pilot flame gas valve and said igniting means, including electromotor means, ignition switch means in circuit with said igniting means for controlling the latter, rotary cam means rotatable by said electromotor means and actuating in different rotational positions said motor and ignition switch means, respectively, a mechanical actuating member cooperating with both said main gas valve and said pilot flame gas valve and movable by said electromotor means between a plurality of positions, in one of which positions said actuating member places both said main gas valve and said pilot flame gas valve in closed position, in a second one of which positions said actuating member places said pilot flame gas valve in open position while leaving said main gas valve closed, and in a third one of which positions said actuating member places both said main gas valve and said pilot flame gas valve in open position, and motor switch means in circuit with said electromotor means for maintaining said electromotor means energized as long as said main gas valve is in said closed position and for deenergizing said electromotor means when said electromagnet means are energized and both of said valve means are in said open position.

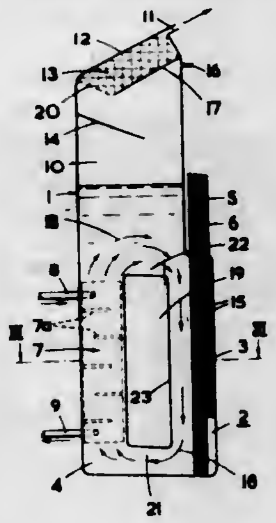
3,181,593
APPARATUS FOR CONCENTRATING SOLUTIONS

John Lindley, Thurso, Caithness, Scotland, assignor to United Kingdom Atomic Energy Authority, London, England

Filed July 5, 1960, Ser. No. 40,622

Claims priority, application Great Britain, July 21, 1959, 24,998/59

3 Claims. (Cl. 159—28)



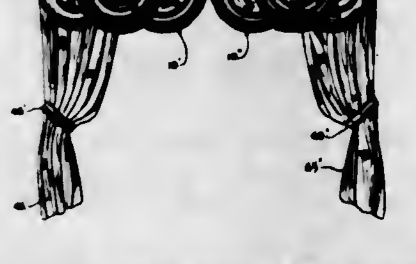
1. A complete evaporator for the evaporation of solutions of fissionable material comprising a slab-shaped evaporating vessel comprising two flat walls in upright closely spaced parallel relationship, peripheral walling interconnecting the parallel walls to define a vessel for the solution and a vapour collecting chamber within the vessel, a vapour outlet through the peripheral walling extending from the vapour collecting chamber, a liquid inlet through the peripheral walling into the vessel, an upright partition means interconnecting the parallel walls but spaced from the peripheral walling to divide the vessel internally into two upright legs which are open to each other at their ends and each has a cross section in the shape of a rectangle, such rectangular shape having the longer sides thereof formed by the parallel walls, and heating means contiguous and conductively associated with the external surface of the parallel walls in the region of one of the legs to cause circulation of the solution upwardly in said one leg and downwardly in the other leg.

3,181,594
TRIPLE FESTOON VALANCE

Sam Shapiro, Forest Hills, N.Y.
(261 5th Ave., New York 16, N.Y.)

Filed Apr. 4, 1963, Ser. No. 270,677

1 Claim. (Cl. 160—124)



A valance for dressing a window, comprising an elongated strip folded along a longitudinal line to define a tube for receiving a drapery rod therethrough, and three draped, folded festoons secured between facing edges of the folded strip, each of said festoons being formed from a flat circular quadrant of material, each flat quadrant having two straight radial edges terminating at one end in a rectangular notch and at the other end at opposite ends of a circularly curved edge, the two straight edges of each folded festoon being disposed in alignment between the edges of the folded strip, with the remainder of the festoon defining a generally semi-oval body, and with edges of the notch disposed perpendicular to the aligned straight edges in abutting engagement with each other, two of the folded festoons being disposed in a coplanar arrangement with one end of the curved edge of one of the two festoons disposed adjacent to an end of the curved edge of the other one of the two festoons, and with the third festoon centered on said strip and overlapping parts of both of said two festoons while other parts of the two festoons are free from the third festoon.

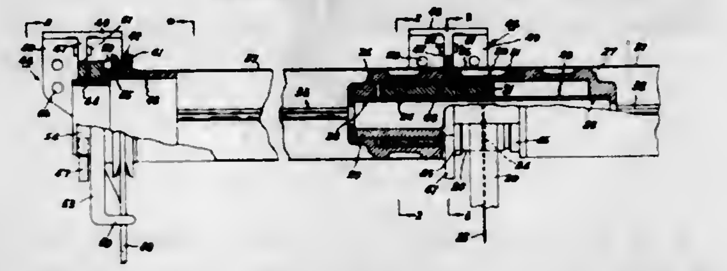
3,181,595
VENETIAN BLINDS

John Gerrit Pender, Rydalmere, near Sydney, New South Wales, Australia, assignor to Hunter Douglas International (Quebec) Ltd., Montreal, Quebec, Canada

Filed Mar. 16, 1962, Ser. No. 180,291

Claims priority, application Australia, Mar. 17, 1961, 2,644/61

4 Claims. (Cl. 160—171)



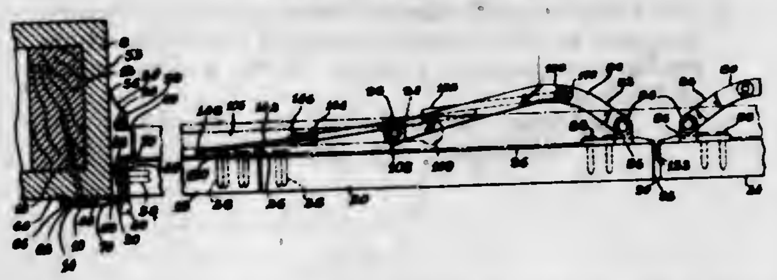
1. A unitary tilt control and slat raising-and-lowering mechanism for a Venetian blind, comprising a mounting spindle, an exteriorly screw-threaded cord spool slidably mounted on said spindle, means for preventing relative rotation between said spindle and said spool, an interiorly screw-threaded tilting drum supported by and co-axial with said cord spool and being in screw-threaded engagement with the latter, the screw thread of said tilting drum extending from one end thereof to a medial position thereon, a cord slot being formed in the wall of said tilting drum at a non-threaded portion thereof, and means for rotating said cord spool within said tilting drum, the screw-threaded cord spool being in screw-threaded engagement with an end cap, said end cap being rotatably supported by a mounting bracket, stop means being provided on said bracket and the tilting drum for limiting the angular movement of the tilting drum.

3,181,596
BI-FOLD DOOR UNIT

Russell M. Winnan, Miami, and William D. Porter, Hialeah, Fla., assignors to American Screen Products Company, Chicago, Ill., a corporation of Florida

Filed Nov. 29, 1962, Ser. No. 240,783

17 Claims. (Cl. 160—206)

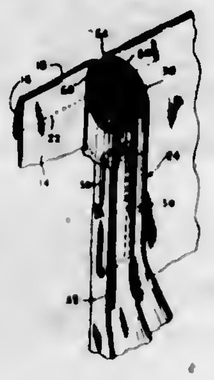


1. A bi-fold door unit including at least an inner door section adapted to be hinged to a door frame and an outer door section adapted for hinged movement relative to the inner door section, a movable door guide arm having adjacent one end thereof a pivotal connection to the outer door section for controlling the movement of the leading edge of the outer door section along a predetermined path as said door sections are moved between

opened and closed positions, means for controlling movement of the opposite end of the guide arm along a predetermined rectilinear path during movement of said door sections between said positions, and movable means operably connected to and carried between said guide arm and the inner door section for applying tension to said door sections when the door sections are in predetermined positions relative to each other.

3,181,597
PLEATING MEANS FOR FABRICS

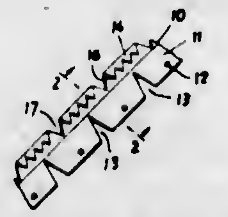
Abe Levine, Brooklyn, N.Y., assignor of one-half to Gerald L. Berkin, Tokyo, Japan
Filed Nov. 19, 1962, Ser. No. 238,512
2 Claims. (Cl. 160—348)



1. In a drapery pleat construction, a drape, a rectangular form of relatively stiff foldable material applied to a portion of the rear surface of said drape at the upper end thereof, said form having a plurality of spaced parallel vertically disposed pre-scored fold lines defining a pair of ends panels and a pair of intermediate panels, apertures in said panels, said panels and the said drape section applied thereto being folded accordion fashion along said fold lines, said end panels and the intermediate panels connected thereto providing a pair of rearwardly facing reentrant end angles and the connected intermediate panels providing an intermediate forwardly facing connecting reentrant angle, the section of said drape at each end of said form being folded back and forth upon itself into and back out of the adjacent reentrant end angle to form a pair of inner loops within said reentrant end angles and a pair of outer loops at the free ends of said end panels, horizontally disposed securing means extending from inner loop to inner loop through said panel apertures for maintaining said drape in folded condition, and a vertically disposed U-shaped spring clip having the legs thereof extending downwardly into said outer loops for maintaining the looped sections of said drape at each end of said form in firm contact with each other.

3,181,598
TACKING STRIP

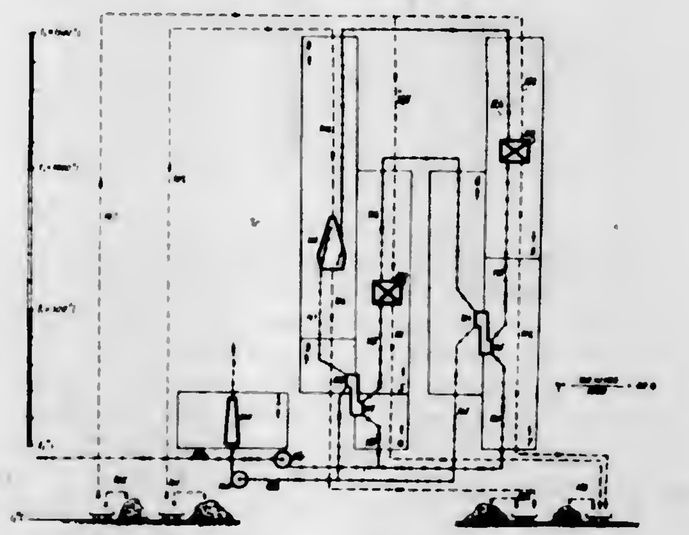
Herbert Schneider, Dusseldorf-Holthausen, Germany, assignor, by mesne assignments, to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Filed Mar. 28, 1962, Ser. No. 183,211
2 Claims. (Cl. 160—403)



1. A securing strip having a web, a first leg extending angularly from said web and having means thereon by which the strip is attached to a frame member, a second leg extending angularly from said web and having teeth therein for receiving a fabric material which is to be secured thereby, said first leg having notches therein extending substantially to the line of juncture of said first leg and said web, said second leg and said web having notches therein extending substantially to the line of juncture of said first leg and said web, said notches in said first leg being in offset relation to said notches in said second leg and said web and dividing said legs into sections of substantially equal length with the sections of one leg in offset relation to the sections of the other leg.

3,181,599
PROCESS TO RAISE COMBUSTION TEMPERATURES

Joseph N. Koehegyi, 310 Riverside Drive, New York, N.Y.
Filed Mar. 5, 1958, Ser. No. 719,309
4 Claims. (Cl. 165—1)



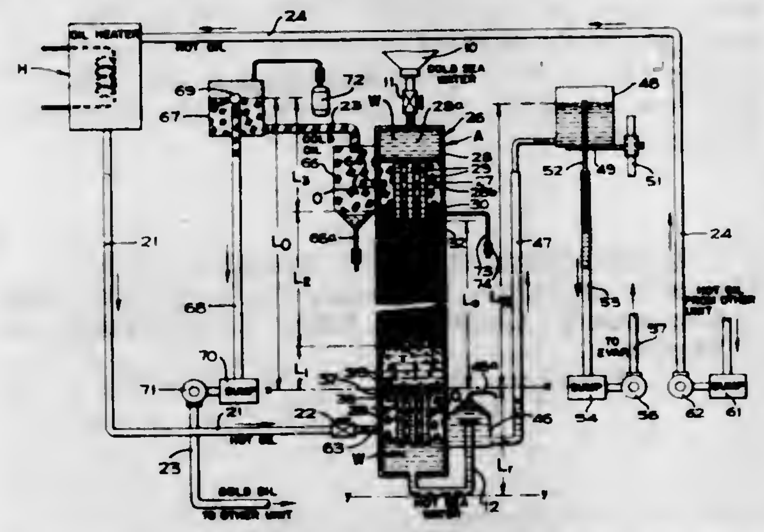
1. A process of heating materials to elevated temperature, which comprises performing a combustion of combustion participants, consisting of fuel and of oxygenous gas, whereby combustion products and heat are generated, which heat is sensible in said combustion products and is in the bulk transferable, eliminating said combustion products from the process after transferring their transferable heat to further combustion participants, whereby the temperature of said further combustion participants is increased correspondingly to the transferred heat, performing a further combustion of said further combustion participants, whereby the sum of the heat transferred from said former combustion and of the heat generated by said further combustion remains available as sensible heat of the combustion products of said further combustion at the elevated temperature of this further combustion, utilizing what is utilizable of this sensible heat, and transferring the transferable waste heat of said utilization to the first flow of combusiton participants, whereby said waste heat is recovered.

3,181,600
LIQUID TO LIQUID HEAT EXCHANGE

Henry Teynham Woodward, Los Altos, and William A. Shrode, San Jose, Calif., assignors to FMC Corporation, a corporation of Delaware
Filed Jan. 24, 1961, Ser. No. 84,652
19 Claims. (Cl. 165—1)

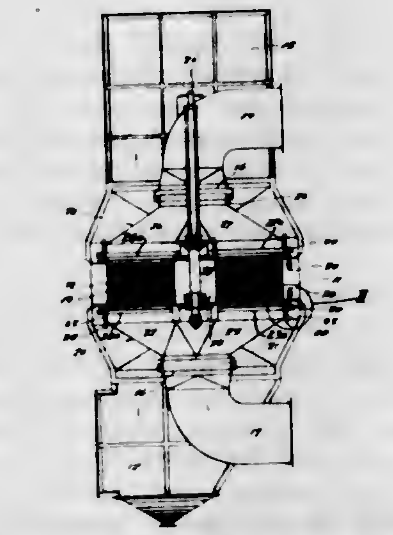
1. Apparatus for directly transferring heat between immiscible liquids of different densities comprising a vertical heat exchange vessel of substantially uniform cross-sectional area, an upper liquid inlet tube extending downwardly into said vessel and being formed with a restricted liquid outlet opening, a lower liquid separating wall extending across a lower portion of said vessel, a lower liquid outlet tube extending downwardly from said lower wall and having a liquid outlet opening formed

therein disposed above the bottom of said vessel, a plurality of orifices formed in said lower wall, means for admitting the denser of said liquids to said upper inlet tube, means for withdrawing the denser of said liquids from said vessel at a zone below the outlet opening in said lower tube, means for admitting the less dense liquid to said vessel at a zone between said lower wall and the outlet opening in said lower tube, means for withdrawing the less dense liquid from said vessel at a zone above the restricted outlet opening in said upper inlet tube, the orifices in said lower wall breaking the less dense liquid into discrete droplets as the liquid passes upwardly through said orifices, the discrete droplets moving into contact as they rise through the denser liquid, means for establishing a predetermined head on each of the liquids leaving the vessel, and means for adjusting the relative value of said heads for establishing a zone where the discrete droplets of less dense liquid become closely packed in the vessel as they rise in said vessel.



3,181,601
REGENERATIVE HEAT EXCHANGERS

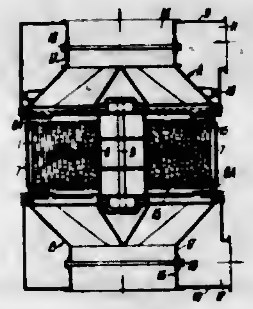
Herbert Brandt, Rothemuhle uber Olpe, Westphalia, Germany, assignor to Apparatebau Rothemuhle Dr. Brandt, & Co., Westphalia, Germany, a company of Germany
Filed Feb. 16, 1961, Ser. No. 89,815
Claims priority, application Great Britain, Dec. 5, 1960, 41,801/60
12 Claims. (Cl. 165—4)



1. A regenerative heat exchanger comprising a casing, a hot gas inlet chamber at the bottom of said casing, a gas outlet chamber at the top of said casing, a stationary regenerator with said casing between said chambers, a mass of plates in said regenerator providing a multiplicity of axial passages therethrough, an outlet air duct one open end of which is disposed within said gas inlet chamber, an inlet air duct one open end of which is disposed within said gas outlet chamber, rotatable air duct members above and below said regenerator having necks disposed in rotatable air and gas tight engagement with the open ends of the inlet and outlet air ducts, each rotatable air duct member having openings at its end adjacent the upper and lower faces of said regenerator whereby air emitted from said inlet air duct passes through said regenerator into said outlet air ducts, and sealing assemblies disposed around the peripheries of the openings of said rotatable air duct members comprising a sealing member, a frame attached to said sealing member, an expansion member between said rotatable air duct members and said frame, swivel joint means between said rotatable air duct members and frame for transmitting the rotational movement of said rotatable air duct members to said sealing member and resilient means urging said frame from said rotatable air duct members toward said regenerator.

3,181,602
HEAT EXCHANGERS

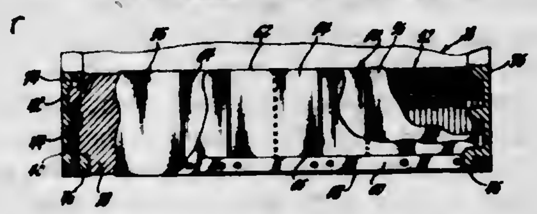
Archibald Johnstone, Garforth, England, assignor, by mesne assignments, to Davidson & Company Limited, Belfast, Northern Ireland
Filed June 5, 1961, Ser. No. 114,934
4 Claims. (Cl. 165—4)



1. A regenerative heat exchanger comprising a stationary cylindrical casing divided into segments, regenerative material in the said segments, a plurality of ducts at each end of the casing and rotatable with respect to the segments, an access opening to each segment in the periphery of the casing, a door to each said opening, and movable blanking-off plates for closing the ends of a selected segment, each said plate including means extending to and operable from the exterior of said casing for shifting its position to isolate that segment from the rotatable ducts before the door to that segment is moved to provide access to the segment.

3,181,603
REGENERATIVE HEAT EXCHANGER

William C. Bubniak, Warren, Robert J. Moffat, Oak Park, and James R. Mondt, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 4, 1961, Ser. No. 156,599
8 Claims. (Cl. 165—9)

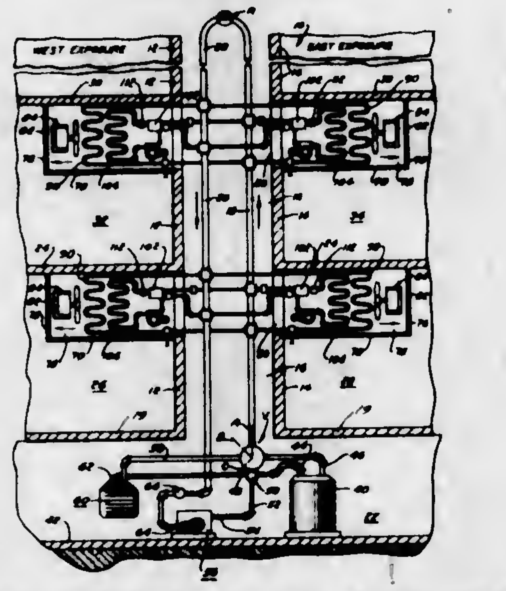


1. In a regenerative heat exchanger of the type having a housing forming heat transfer chambers separated from each other by wall structure and a rotary matrix in the chambers having hot and cold sides passing laterally through a closely fitting labyrinth sealing passage in the wall structure, the matrix having a structural framework formed by spaced rib interconnected rings and having heat transfer lamellations formed by lamellae stacked

between the rings to provide fluid transfer across the hot and cold sides and to prevent fluid transfer laterally of the sides, the improvement comprising labyrinth sealing lamellae alternated in each lamellation with hot and cold edges closely fitting in the labyrinth sealing passage and extending beyond the hot and cold edges of the remaining lamellae and isothermal sealing beams thick and narrow relative the lamellae and rigidly secured respectively along one edge only of each of the labyrinth sealing lamellae.

3,181,604
AIR CONDITIONING SYSTEM FOR SUB-DIVIDED INHABITABLE ENCLOSURES

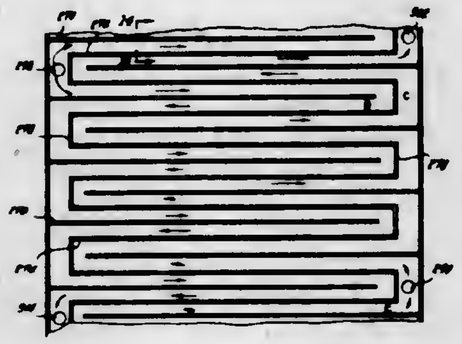
Richard W. Kritzer, Chicago, Ill., assignor to Peerless of America, Incorporated, a corporation of Illinois
Filed Jan. 8, 1962, Ser. No. 164,843
1 Claim. (Cl. 165—22)



In an air conditioning system of the character described, in combination, a multi-story building having a basement, superimposed floors, a ceiling above each floor defining, in combination with the floor immediately therebeneath, an inhabitable enclosure, a structural shaft extending upwardly through the building from the basement ceiling through the floors, there being a lateral opening in said shaft at each enclosure-level establishing communication between the shaft and the enclosure at said level, a water riser pipe and a water return pipe extending upwardly in said shaft from the basement to a region adjacent the uppermost enclosure-level, a heat exchange device in each enclosure, branch pipes extending through said lateral openings and connecting the heat exchange devices with the water riser and water return pipes, a shut-off valve for each heat exchange device and disposed in one of the branch pipes leading thereto, an air conditioning unit disposed in each enclosure and including a compressor, a condenser and an evaporator operatively connected together in a refrigerant circuit, an electric circuit for the motor, the condenser being of the water-cooled type, branch pipes extending through the lateral openings and connecting the condensers of the air conditioning units with the water riser and water return pipes for condenser-cooling purposes, a shut-off valve for each condenser and disposed in one of the branch pipes leading thereto, a thermostat responsive to the temperature of water in said riser pipe and individual to each electric circuit for disabling the same when the temperature of water is above a predetermined degree, said water riser and return pipes being operatively connected in a closed hydraulic circuit, a water circulating pump disposed in said hydraulic circuit and positioned in the basement, a water heater in said basement, a water cooler in said basement, a solenoid-actuated control valve operable selectively to connect the heater and the cooler in the hydraulic circuit, each to the exclusion of the other, and to exclude both the heater and the cooler from the hydraulic circuit, a thermostat responsive to the temperature of water in said return pipe, said latter thermostat being operable when the temperature of water in the return pipe falls below a predetermined degree to actuate the control valve to connect the heater in the hydraulic circuit and being operable when the temperature of water in the return pipe rises above a predetermined degree to actuate the control valve to connect the cooler in the hydraulic circuit, said heat exchange unit and evaporator being of the finned tubing type and being physically disposed in tandem, and an electrically operable fan in each enclosure common to the evaporator and heat exchange unit for drawing air successively through the same.

3,181,605
UNIFORMLY HEATED ROTARY DRUM

Horace L. Smith, Jr., Richmond, Va., assignor to Hupp Corporation, Cleveland, Ohio, a corporation of Virginia
Filed June 20, 1961, Ser. No. 118,439
5 Claims. (Cl. 165—90)



1. Heat exchange apparatus adapted to have a fluid heat transfer medium circulated therethrough to maintain an external surface of said apparatus at a uniform predetermined temperature, comprising:

(*a*) concentric, spaced apart, cylindrical inner and outer shells of substantially equal length, both of said shells having a substantially uniform thickness throughout and the radial distance between said shells being substantially greater than the thickness of either of said shells and substantially smaller than the inner radius of the inner shell;

(*b*) end walls fixed to said shells at the opposite ends thereof;

(*c*) longitudinally extending, radially oriented, equiangularly spaced partitions separating and spanning the space between the inner and outer shells, said partitions being first members distinct from said shells and fixed therebetween and the thickness of said members being substantially uniform and substantially less than the distance between adjacent partitions;

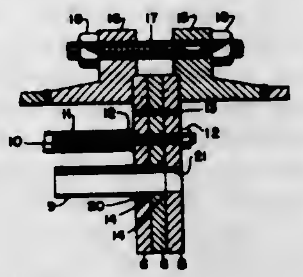
(*d*) means including second members distinct from said shells and said partition members and fixed thereto connecting the passages between said partitions into at least two independent, internested, labyrinthine flow channels extending longitudinally of and around the periphery of the heat exchange apparatus and having a length which is a multiple of the length of said shells; each of said passages being adjacent a passage in another of said channels;

(*e*) means comprising a heat transfer fluid supply and return system for introducing a heat transfer fluid into and causing it to flow in opposite directions through said channels; and

(*f*) means by which said apparatus can be rotated about an axis coincident with the centerline of said cylindrical inner and outer shells.

3,181,606
HEAT EXCHANGER BUNDLE

Celestin Victor Belanger, Beaumont, Tex., assignor, by mesne assignments, to Heat Exchangers Research and Development Company, Beaumont, Tex., a corporation of Texas
Filed July 9, 1962, Ser. No. 208,482
3 Claims. (Cl. 165—158)

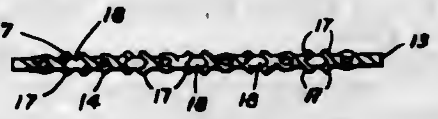


1. A fluid heat exchange device comprising, in combination, a casing having inlet and outlet connections for two fluids between which transfer of heat is to be accomplished, a tube bundle disposed for immersion in one of said fluids and through the tubes of which the other fluid is circulated, and means embodied in said bundle to support the tubes in spaced relation and to seal off the interior of the tubes from the first-named fluid, said bundle thus including the following: a tube sheet having holes therethrough through which the ends of said tubes pass, each of said holes being counterbored from the outside of the bundle to provide an annular cavity of rectangular cross-section taken axially of the tube which passes therethrough, a retainer plate applied to the outer face of the tube sheet to complete the enclosure of the cavity, the cavity thus comprising an axially inward wall at the bottom thereof, an outer cylindrical wall formed by the side wall of the counterbore, a radially inner wall comprised by the outer wall of the tube, and an axially outer wall comprised by the inwardly facing surface of the retainer plate; the retainer plate being provided with an opening to fit the tube end; the interfitting of the tube in the main bore of the hole in the tube sheet, the interfitting of the tube in the opening in the retainer plate, and the interfitting of the contacting faces of the tube sheet and the retainer plate all being of close tolerances; an elastic O-ring of uniform circular cross-section entirely contained within but of somewhat smaller cross-section than that of said annular cavity with its inner and outer diametric boundaries in contact respectively with the radially inward and outward walls of said cavity but free of any significant packing compression in the axial direction; whereby upon subjection of the bundle to a preponderance of fluid pressure from the inside of the tube system, the elastic O-ring will flow longitudinally of the cavity and effectively contact and seal the junction of the main bore of the tube hole in the tube sheet and the wall of the tube at the bottom of the cavity, and conversely upon subjection of the bundle to a preponderance of fluid pressure from outside of the tube system, the O-ring will flow longitudinally in the reverse direction and effectively contact and seal both the junction of the tube wall and the opening in the retainer plate and the junction of the faces of the tube sheet and retainer plate at the outer end of the cavity.

3,181,607
FINNED HOLLOW ARTICLE

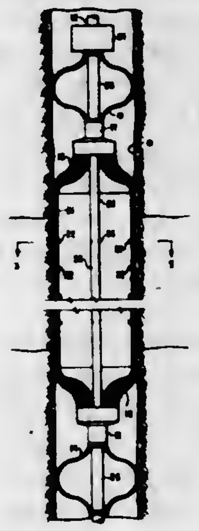
Jean Cospen, Cachan, France, assignor to Olin Mathieson Chemical Corporation, East Alton, Ill., a corporation of Virginia
Original application June 15, 1959, Ser. No. 820,244, now Patent No. 3,121,940, dated Feb. 25, 1964. Divided and this application Aug. 30, 1963, Ser. No. 318,462
2 Claims. (Cl. 165—170)

1. A hollow article comprising a solid, seamless, unitary metal sheet having within its interior a first unjoined portion defining a system of passageways, and a second unjoined portion terminating within all edges of said sheet and having complementary portions of said sheet integral with the entire sheet, adjacent said second unjoined portion, separated to extend in opposite directions out of the plane of said sheet to form an opening through said sheet.



3,181,608
METHOD FOR DETERMINING PERMEABILITY ALIGNMENT IN A FORMATION

John M. Palmer, Midland, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 11, 1961, Ser. No. 130,802
3 Claims. (Cl. 166—4)



1. A method for determining the alignment of lateral permeability variations in a formation penetrated by a borehole comprising: sealing off a section of the borehole including at least a portion of said formation; injecting a fluid into the sealed off portion of the formation in controlled directions; detecting the azimuth of the direction in which the fluid is injected; rotating the point at which the fluid is injected in increments of about 45° to attempt injection around the entire periphery of the borehole and recording the rate of injection and corresponding pressure as the fluid is injected in each direction increment.

3,181,609
OIL RECOVERY PROCESS

Albert K. Csaszar, Dundee, and George G. Bernard, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
No Drawing. Filed Nov. 6, 1961, Ser. No. 150,152
4 Claims. (Cl. 166—9)

1. The method of recovery of petroleum from underground reservoirs penetrated by an input well and a producing well comprising injecting through said input well into said reservoir about 0.05 to 0.25 reservoir pore volume of a normally liquid hydrocarbon oil, having a viscosity approximately the same as said petroleum, in which is dissolved about 0.5 to 2.0 percent by volume of a predominantly oil-soluble surfactant, then injecting about 0.05 to 0.25 reservoir pore volume of a water-miscible oxygenated hydrocarbon, driving said injected oil and oxygenated hydrocarbon toward said producing well by the injection of floodwater, and recovering petroleum from said producing well.

3,181,610

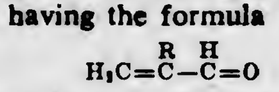
INORGANIC CEMENT CONTAINING A RETARDING AMOUNT OF A MODIFIED ALDEHYDE POLYMER

William C. Wiley, New Providence, N.J., assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Feb. 13, 1961, Ser. No. 88,773

10 Claims. (Cl. 166—31)

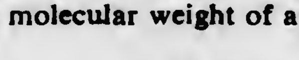
1. A composition comprising an inorganic cementitious material selected from the group consisting of mortar mixtures, chalcedony cement, magnesium oxychloride cement and Portland cement and a minor amount sufficient to retard the setting of said cementitious material of a modified polymer selected from the group consisting of a homopolymer of a monomer defined by the Formula A, a copolymer of at least two different monomers defined by the Formula A, and a copolymer of from about 70 to 99.9% by weight of a monomer defined by the Formula A and the balance B and mixtures thereof, said homopolymer and copolymers having a molecular weight of at least 500, A having the formula



$$H_2C=\overset{R}{C}-\overset{H}{C}=O$$

where R is selected from the group consisting of hydrogen, methyl and ethyl radicals and B being at least one olefinically unsaturated monomeric material other than A and copolymerizable with A, the modification of said polymer having been obtained by reaction of said polymer with a base having a disassociation constant greater than that of ammonium hydroxide at 25° C. to convert from about 70 to 95% of the theoretical aldehyde groups of said polymer to alcoholic hydroxy groups and carboxylic salt groups and subsequently with an acid to convert said salt groups to carboxy groups.

6. The method which comprises delivering to a zone to be sealed of a well a composition comprising an inorganic cementitious material selected from the group consisting of mortar mixes, chalcedony cement, magnesium oxychloride cement and Portland cement and a minor amount sufficient to retard the setting of said cementitious material of a modified polymer and curing said composition in said zone, said polymer being selected from the group consisting of a homopolymer of a monomer defined by the Formula A, a copolymer of at least two different monomers defined by the Formula A, and a copolymer of from about 70 to 99.9% by weight of a monomer defined by the Formula A and the balance B and mixtures thereof, said homopolymer and copolymers having a molecular weight of at least 500, A having the formula



$$H_2C=\overset{R}{C}-\overset{H}{C}=O$$

where R is selected from the group consisting of hydrogen, methyl and ethyl radicals and B being at least one olefinically unsaturated monomeric material other than A and copolymerizable with A, the modification of said polymer having been obtained by reaction of said polymer with a base having a disassociation constant greater than that of ammonium hydroxide at 25° C. to convert from about 70 to 95% of the theoretical aldehyde groups of said polymer to alcoholic hydroxy groups and carboxylic salt groups, and subsequently with an acid to convert said salt groups to carboxy groups.

3,181,611

SELECTIVE PREVENTION OF WATER AND BRINE INTRUSION INTO MINERAL PRODUCING STRATA

Francis E. Dollarhide, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 29, 1961, Ser. No. 120,531

6 Claims. (Cl. 166—33)

1. The method of sealing off water and brine zones to inhibit intrusion of water and brine therefrom into a mineral-producing zone in a subterranean formation penetrated by a borehole which consists of admixing: (*a*) a liquid polyurethane prepolymer prepared by reacting a compound having hydroxyl polyfunctionality with a compound having isocyanate polyfunctionality in amounts of each to provide an excess of isocyanate groups over the stoichiometric quantity required to react with the hydroxyl groups, of between about 5 and 20% by weight of the prepolymer, (*b*) a base catalyst, and (*c*) a monofunctional reactive hydrogen-containing compound, selected from the class consisting of aliphatic branched and straight chain monohydroxy alcohols having from 1 to 8 carbon atoms per molecule, phenol, and weakly ionized monocarboxylic acids, in an amount sufficient to provide at least the stoichiometric equivalent of reactive hydrogen atoms necessary to react with substantially all the unreacted isocyanate groups in the prepolymer, if the isocyanate groups were to react entirely with the monofunctional reactive hydrogen-containing compound; forcing the composition thus prepared down the borehole and back into the formation and into contact with water therein; closing in the well for a time sufficient for the water to react with the composition and produce, in the formation where contact with water is thus made, a substantially fluid-impermeable resin seal; and thereafter pumping from the well and formation at least a portion of the composition which has not been brought into contact with water and therefore has remained in a fluid state.

3,181,612

SELECTIVE PLUGGING OF SUBTERRANEAN FORMATIONS TO INHIBIT INTRUSION OF WATER INTO OIL-PRODUCING STRATA

Samuel R. West, Evansville, Ind., and Francis E. Dollarhide, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 7, 1961, Ser. No. 122,418

12 Claims. (Cl. 166—33)

1. The method of fracturing a well penetrating a subterranean formation into which water and brine intrude consisting essentially of admixing a particulated substantially dry water-swellable polyurethane polymer prepared by reacting a diisocyanate and a polyoxyalkylene glycol in a molar ratio of between 2 and 3 of the diisocyanate per mole of the glycol with an oil-base liquid, to form a suspension of the polymer in the oil-base liquid, said polymer being used in a ratio of between about 10 and about 400 pounds thereof per 1000 gallons of the oil-base liquid, having a swelled volume when brought in contact with a liquid selected from the class consisting of water and brine, obtained by dividing the swelled volume by the dry volume, of at least about 10 and injecting the resulting mixture down the well and back into the formation, where intruding water comes in contact therewith, at an injection pressure sufficient to create fractures in the formation.

3,181,613

METHOD AND APPARATUS FOR SUBTERRANEAN HEATING

Roland F. Krueger, Anaheim, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Original application July 20, 1959, Ser. No. 828,106, now Patent No. 3,113,623, dated Dec. 10, 1963. Divided and this application Apr. 23, 1963, Ser. No. 274,992

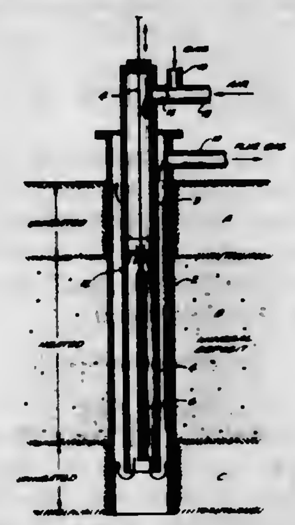
8 Claims. (Cl. 166—38)

7. A method of supplying heat substantially uniformly to an elongated region of subterranean oil-bearing mineral deposit which comprises:

boring a hole a substantial distance into said mineral deposit;

introducing a combustible gas mixture into a confined continuously elongated combustion zone located within and spaced apart from said hole;

positioning an ignition propagating rod within said combustion zone so that one end of said ignition propagating rod extends into an initial combustion zone;



igniting said combustible mixture within said combustion zone, said combustion zone having a length substantially greater than the flame of a jet of said combustible gas mixture and said combustion zone being substantially longitudinally and concentrically disposed within said hole and extending the length of said elongated region, said combustible mixture being ignited initially at the end of said combustion zone nearest the bottom of said hole to form said initial combustion zone;

and withdrawing combustion gases from said combustion zone through said hole to the earth's surface.

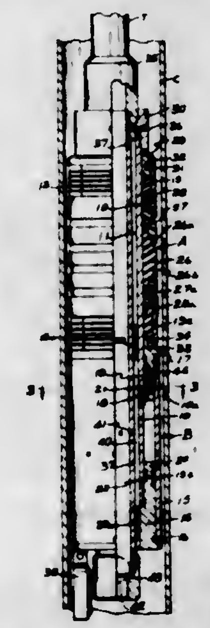
3,181,614

WELL PACKERS

Cicero C. Brown, 8490 Katy Road, Houston, Tex.

Filed June 20, 1960, Ser. No. 37,220

4 Claims. (Cl. 166—122)



2. A well packer for use in a well pipe including, a tubular support, a packing element assembly mounted on the support and including elastic packing means, anchoring members adjacent one end portion of said elastic packing means and co-acting therewith whereby deformation of the packing means of said assembly simultaneously moves the anchoring members into gripping position with the well pipe, means on the support confining one end of the assembly against upward movement, an abutment engaging the lower end of the assembly and movable on the support whereby upward movement of said abutment on the support will apply an endwise compressive force to the assembly to deform the elastic packing means thereof radially outwardly into sealing position with the well pipe, a cylinder and piston carried by the support below the abutment, means for directing pressure fluid into the cylinder to cause relative movement of the cylinder and piston, means for transmitting the relative movement of said cylinder and piston to the abutment to move the same upwardly and thereby deform the elastic packing means of the assembly into sealing position with the well pipe, said elastic packing means comprising an annular expander of deformable material and upper and lower annular sealing elements, an expander having upper and lower inclined external surfaces which are engaged by a complementary inclined surface on the bore of each sealing element, whereby endwise compressive force effects a radial deformation of the sealing elements as well as a radial deformation of the central portion of the expander.

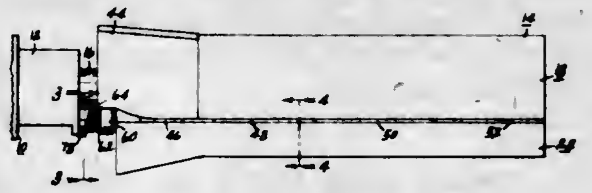
3,181,615

VARIABLE CAMBER PROPELLER BLADE

Joseph C. Medisch and Clifford B. Wright, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 7, 1963, Ser. No. 300,491

4 Claims. (Cl. 170—160.1)



1. A variable camber propeller blade comprising, a load supporting spar constituting a leading edge and the major portion of the thrust and camber surfaces of the blade, a trailing edge flap hingedly connected to said spar along a substantially straight line throughout its length, and spacer means loosely supported by the hinged connection between said flap and said spar for sealing the gap between said spar and said flap in both the low and high camber positions thereof.

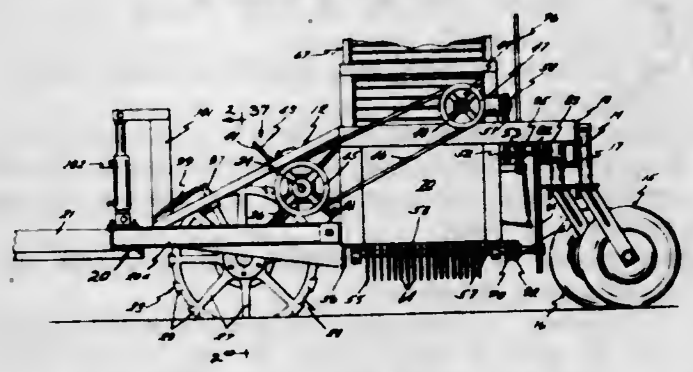
3,181,616

DIGGING WHEEL FOR SUGAR BEET HARVESTERS

Heinz Carl Oppel, 212 S. 5th St., Boise, Idaho

Original application Dec. 29, 1958, Ser. No. 784,841, now Patent No. 3,010,522. Divided and this application Aug. 14, 1961, Ser. No. 131,209

3 Claims. (Cl. 171—58)

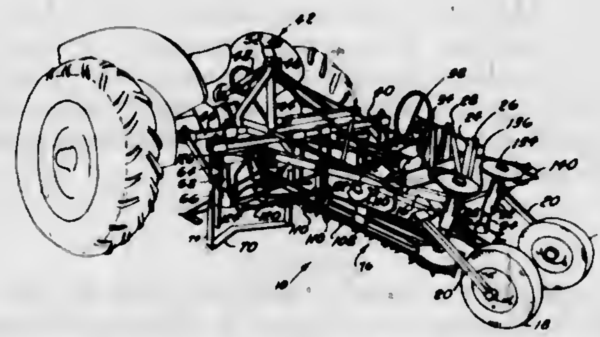


1. In a harvester for beets and like crops having a frame, a standard carried thereby, and a pair of laterally outwardly and downwardly extending axles fixed on said standard, digging wheels rotatably mounted on said axles, said wheels comprising a central portion, a plurality of radial spokes extending outwardly from the central portion, said spokes being trapezoidally shaped in cross section with wide flat faces facing inwardly and narrowing

in width to their outer faces, a rim integral with said spokes, said rim tapering outwardly to a thin peripheral edge, and a plurality of lugs on said rim extending radially beyond the outer peripheral edge thereof, said lugs being thicker than the rim and extending outwardly beyond the outer face of the rim.

3,181,617
PEANUT HARVESTER

Wilbur Wallace, 120 E. 18th St., Portales, N. Mex.
Filed Apr. 1, 1963, Ser. No. 269,638
1 Claim. (Cl. 171—61)



A peanut harvester adapted to be towed behind a tractor, comprising:

a carriage having a front end and a rear end;

connecting means mounted on the front end of said carriage for connection with the tractor;

a pair of spaced wheels pivotally supported on the rear end of said carriage;

means mounted on the carriage for pivoting the wheels including:

a rotatable shaft having the wheels mounted thereon supported by and extending transversely across said carriage,

an adjusting shaft rotatably mounted on said carriage and having one end threaded, and

an upstanding lever member connected at a lower end thereof with said rotatable shaft and having an upper end arranged to threadedly engage the threaded end of said adjusting shaft, whereby rotation of said adjusting shaft moves said lever member rotating said rotatable shaft to pivot said wheels and thereby varying the distance between the carriage and the ground;

at least one V-shaped digger mounted on the front end of said carriage;

at least one rear chain sprocket rotatably mounted on the rear end of said carriage;

a crossarm slidingly disposed on the front end of said carriage;

at least one front chain sprocket rotatably mounted on said crossarm relatively in front of and above said V-shaped digger;

a lug having a threaded bore mounted on said carriage behind said crossarm;

a threaded bolt engaging said threaded bore and having one end in engagement with said crossarm, thereby retaining said crossarm against rearward movement on said carriage;

chain means extending between said sprockets, said chain means including:

a plurality of link members interconnected to form an endless chain, each of said link members being engageable with said sprockets, and

a pair of spaced teeth portions projecting outwardly from a selected number of said link members and relatively away from said sprockets, said teeth portions having a rear edge extending perpendicular to said chain means and a front edge extending at an acute angle to said chain means, whereby said teeth have a sawtooth configuration;

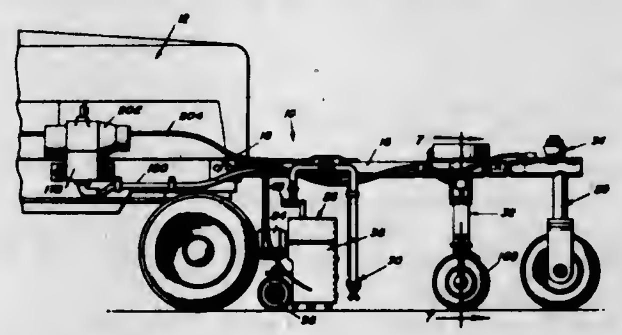
means for rotating said rear chain sprocket to drive said chain means;

guide means mounted on said carriage and projecting therefrom forwardly of said front chain sprocket, said guide means including a rod-like member extending along said chain means between said spaced teeth portions and terminating behind said rear chain sprocket, whereby the plants engaged by said teeth portions and guide means are retained therebetween until the plants are released behind the rear chain sprocket; and,

a pair of guide sprockets mounted on said carriage between said front and rear sprockets and engageable with said chain means, said guide means being positioned at an angle relative to said front and rear sprockets and relative to each other, whereby said chain means is crisscrossed.

3,181,618
ELECTRONIC COTTON CHOPPER

John M. Miller, 123 W. Ash St., Blytheville, Ark.
Filed Jan. 4, 1962, Ser. No. 164,294
16 Claims. (Cl. 172—6)

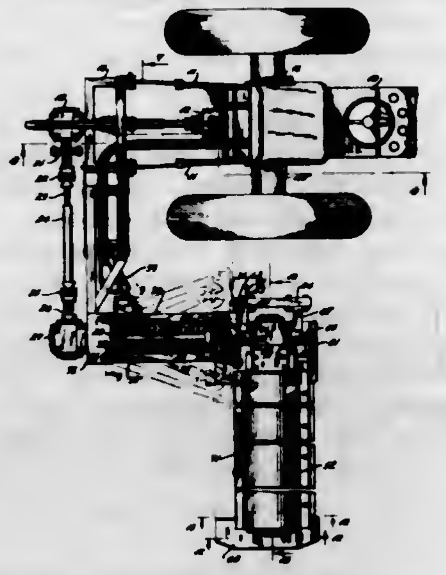


1. An electronic cotton chopper adapted to be mounted on a tractor vehicle or the like comprising, mounting means projecting forwardly of a vehicle for movement in parallel spaced relation to rows of plants, plant cutter means movably mounted by the vehicle in laterally spaced relation to a plant row on opposite sides thereof for displacement across the row, plant detecting means mounted on the mounting means forwardly of the cutter means for sensing plants a predetermined distance forwardly of the cutter means, spacing control means mounted on the mounting means and operatively connected to the detecting means for initiating overlapping operative cycles in response to said sensing of plants by the detecting means, and cutter operating means operatively connected to the cutter means and the spacing control means for sequential displacement of the cutter means during each of said overlapping cycles to chop plants forwardly and rearwardly of selected plants in the row, said cutter means comprising, a pair of independently displaceable plant chopper assemblies disposed on opposite sides of said row and spaced from each other in a forward direction a distance exceeding a single plant but less than two plants.

3,181,619
POWER DRIVEN LATERALLY SHIFTABLE CULTIVATOR

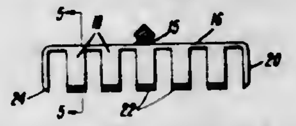
Alexander Smith, Box 1460, and Burton D. Baggs, 2429 Laurel Ave., both of Sanford, Fla.
Filed Apr. 3, 1962, Ser. No. 184,857
1 Claim. (Cl. 172—99)

A cultivator for attachment to a tractor in a manner to extend to one side thereof, said cultivator comprising a first frame connected to and extending transversely to one side of the tractor, a second frame pivotally connected to said first frame and extending forwardly therefrom on an axis generally parallel to the direction of travel for adjustment laterally in a horizontal plane, said second frame comprising a pair of parallel links disposed in a generally horizontal plane, a work unit mounted on the forward end of said second frame, driving means connected to transmit power to said work unit, and control means for producing lateral adjustment of said second frame and work unit.



3,181,620
PORTABLE CULTIVATING IMPLEMENT

Alexander B. Lowery, West Point, Va., assignor to Greenlife Products Company, West Point, Va., a corporation of Virginia
Filed Feb. 28, 1963, Ser. No. 261,704
8 Claims. (Cl. 172—375)



1. A hand cultivating implement comprising: An elongated handle means having a central axis, and a cultivating unit secured to said handle means; said cultivating unit including an elongated bar member having a longitudinal axis disposed perpendicularly to said handle means central axis; first and second groups of tines depending downwardly from said bar member during the normal use of said implement; said first group of tines including a plurality of spaced apart tines each having a sharpened cutting edge aligned along a bottom axis substantially parallel to the longitudinal axis of said bar member and hence substantially perpendicular to said handle means central axis; said second group of tines including at least two tines positioned respectively on opposite sides of said first group of tines; each tine in said second group of tines having a sharpened cutting edge lying in a plane perpendicularly disposed to a plane containing an axis parallel to said bar member longitudinal axis and containing said bottom axis along which said cutting edges of said first group of tines are aligned.

3,181,621
FLEXIBLE DISC HARROW

Merle H. Mortashed, Chattanooga, Tenn., assignor to The Harriman Manufacturing Company, Chattanooga, Tenn., a corporation of Tennessee
Filed Oct. 25, 1963, Ser. No. 318,885
9 Claims. (Cl. 172—455)

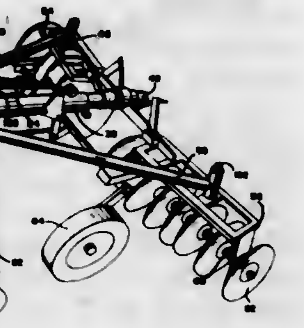
1. A flexible harrow comprising:

(*a*) a main hollow tubular beam having a hitch means;

(*b*) an axial shaft extending through said main beam;

(*c*) at least two fore gangs of ground cultivating means attached to and inwardly pivoted with respect to said main beam and outwardly connected to the fore end of said axial shaft, said gangs including means for independent pivoting in a vertical direction;

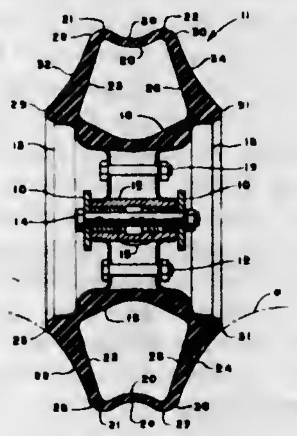
(*d*) at least two rear gangs of ground cultivating means pivoted to the rear end of said axially reciprocable shaft; and



(*e*) means reciprocating said axial shaft with corresponding means to pivot said gangs with respect to said main beam and vary the angle of attack of said ground cultivating means with respect to said main beam.

3,181,622
PRESS WHEEL

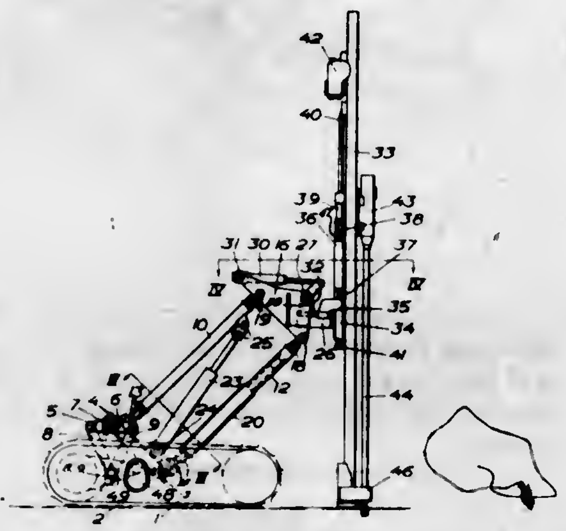
Charles B. Adams, New Holland, Pa., and Edward A. Silver, Columbus, Ohio, assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Dec. 31, 1963, Ser. No. 334,860
4 Claims. (Cl. 172—519)



1. A press wheel for planters and the like to pack and form the bottom and sides of a seed furrow after seeds have been deposited therein comprising a circular body having a central hub providing a horizontally extending axis about which said body rotates, said circular body having an outer peripheral wall generally concentric with said axis, said outer peripheral wall having axially spaced radial extremities of substantially equal diameter relative to said axis and a radially inwardly concave central portion therebetween, the radially outward surface between said axially spaced radial extremities of said outer peripheral wall constituting approximately one third of the total axial dimension of the press wheel, a pair of annular side walls extending radially inwardly and diverging axially from the respective extremities of said outer wall, each of said side walls having axially spaced radial extremities and an inwardly concave outer surface therebetween, the radially outward surface of each of said side walls constituting approximately one third of the total axial dimension of the press wheel, whereby upon rolling of said press wheel through a seed furrow said concave outer peripheral wall of said wheel packs and forms the bottom of said furrow into a convex longitudinally extending mound while the diverging concave side walls of said wheel simultaneously compress the sides of said furrow into upwardly diverging convex forms on opposite sides of said mound.

3,181,623
DRILL CARRIAGES

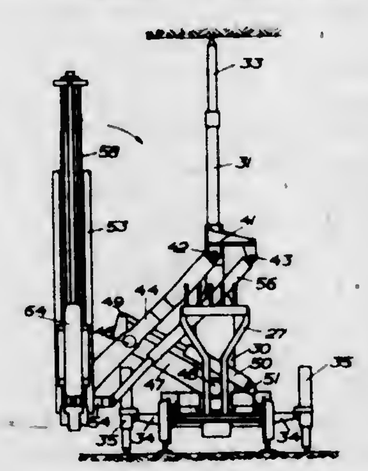
Carl Olov Lindgren, Nacka, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Dec. 15, 1959, Ser. No. 859,745
14 Claims. (Cl. 173—22)



1. A drill carriage comprising a transverse frame member, two elongated frame members pivotally mounted to swing on transverse axles disposed on the rearward half of said frames, one elongated frame member and axle at each side of said transverse frame member at the forward end thereof, ground engaging means on said elongated frame members for carrying the drill carriage on the ground, means for driving said ground engaging means, a transverse shaft in the transverse frame member offset to said axles of said elongated frame members horizontally as well as vertically for supporting said transverse frame member in inclined relationship with respect to said elongated frame members at the rear portions thereof, one arm directed in one direction and a second arm directed in the opposite direction longitudinally of the drill carriage on said transverse shaft, means for connecting said arms pivotally to said elongated frame members, a drill feeding mechanism and means on said transverse frame member for adjustably supporting said drill feeding mechanism.

3,181,624
ROCK DRILLING APPARATUS

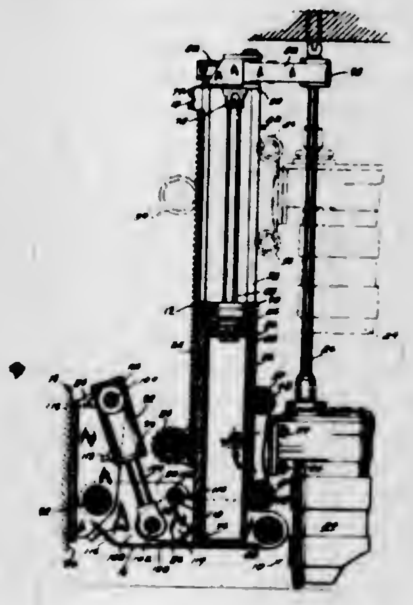
Göte Ragnvald Lindberg, Saltsjobaden, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Oct. 3, 1961, Ser. No. 142,618
14 Claims. (Cl. 173—43)



7. In an arrangement for supporting reciprocally fed rock drilling apparatus on a mobile carriage therefor and in a plurality of horizontal and angular positions substantially all of which lie substantially in a plane generally transverse of said carriage and at an angle to the horizontal axes thereof, the combination which comprises main support means on said carriage, translating means for carrying said rock drilling apparatus on said main support means for translating movement to said plurality of horizontal positions from one side of said carriage to the opposite side thereof and in said plane thereacross, first power means on said carriage and in driving engagement with said translating means for effecting said movement and positioning thereof, substantially horizontal pivotal mounting means between one end of said rock drilling apparatus and said translating means with the axis thereof parallel to said carriage axis for providing swinging and pivoting movement of said rock drilling apparatus with respect to said translating means and about an axis substantially perpendicular to both said rock drilling apparatus and said transverse plane in each of said plurality of said horizontal positions into which rock drilling apparatus is translated by said translating means, second power means in driving engagement with said rock drilling apparatus and said pivotal mounting means therefor for thus pivoting and swinging said rock drilling apparatus independently of the operation and positioning of said translating means and said first power means therefor, and third power means on said carriage and in driving engagement with said translating means for effecting tilting movement of said translating means longitudinally of said carriage to define the angle of said transverse plane with the vertical.

3,181,625
ROOF BOLTING DRILL

Neal W. Densmore, Franklin, Pa., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Substituted for abandoned application Ser. No. 712,476, Jan. 31, 1958. This application July 25, 1961, Ser. No. 135,392
15 Claims. (Cl. 173—44)

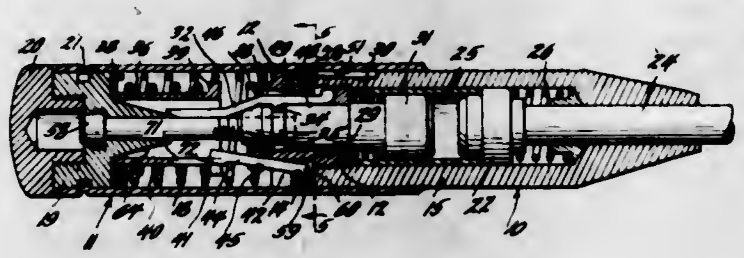


4. In combination, an upright column comprising relatively extendible telescopic parts which when the column is extended provide upper and lower parts and the upper part telescoping down along the lower part as the column is collapsed, said parts providing extensible guiding means arranged lengthwise of the column, a drilling tool mounted on said column for movement longitudinally along said guiding means, means for relatively extending said column parts to vary the effective length of said column, and means for feeding said drilling tool along its guiding means lengthwise of the column comprising a flexible feed rack attached to the upper part and extendable with the upper column of said rack extending longitudinally along said column and the latter providing a support for said flexible rack in all extended positions

thereof, said feeding means also including a motor driven pinion mounted to move with said drilling tool during feeding thereof along the column and engaging said feed rack.

3,181,626
IMPACT TOOLS

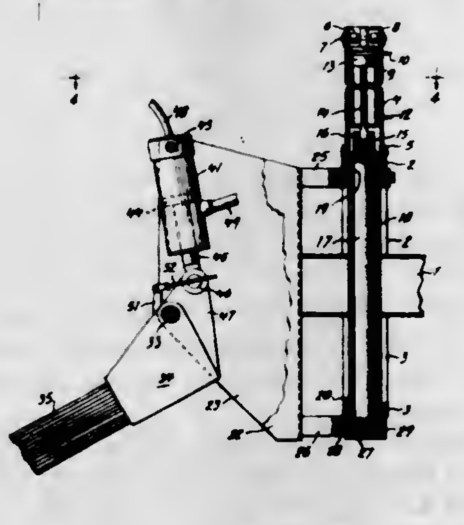
Ernst Sussman, Biery's Bridge Road, Bethlehem, Pa.
Filed Nov. 13, 1961, Ser. No. 151,970
11 Claims. (Cl. 173—53)



1. An impact tool comprising:
(*a*) a tubular handle
(*b*) a hollow body portion telescopically movable within said handle,
(*c*) an anvil slidably disposed within said body portion, and carrying a tool head projecting from said body portion,
(*d*) a hammer slidably disposed within said body portion
(*e*) resiliently compressible means interposed between said hammer and an abutment fixed on said body portion so as to normally urge said hammer toward said anvil,
(*f*) tractive means connecting said hammer to said handle whereby retractive movement of said handle along said body and away from said anvil will pull said hammer rearwardly and compress said resilient means between said hammer and said body portion abutment,
(*g*) latch means for engaging and holding said hammer in a cocked position when said resilient means has been compressed to the desired extent, and
(*h*) means on said handle for disengaging said latch means when said handle is moved along said body portion toward said anvil whereby said hammer delivers an impact to said anvil under the influence of said resilient means.

3,181,627
APPARATUS FOR TAMPING AND FOR BREAKING CONCRETE AND MASONRY

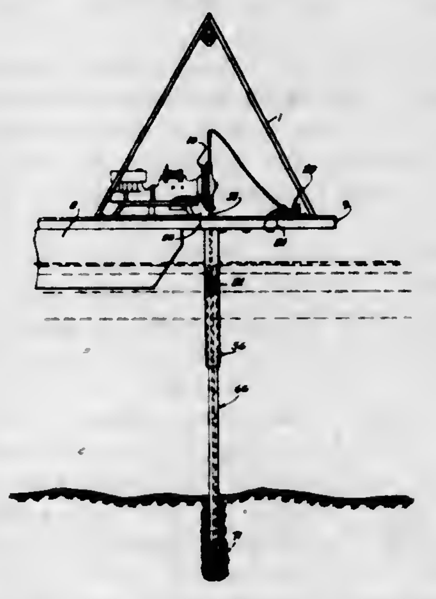
Walter V. Cornett, 2751 E. 11th St., Los Angeles 23, Calif.
Filed Nov. 22, 1961, Ser. No. 154,120
9 Claims. (Cl. 173—100)



1. An apparatus for tamping and other purposes comprising a frame, a vertical support on said frame, a shroud slidably connected to said support, a shroud cylinder on said support, a piston and rod in said shroud cylinder, said rod being operatively connected to said shroud, whereby the shroud is movable vertically, a swing cylinder having a piston and rod therein, said swing cylinder and rod being respectively pivoted to said shroud and frame, said shroud being swingable laterally about said support, a hammer holder mounted on said shroud, said holder being on a horizontal pivot for vertical movement, a bracket fixed to said holder and extending on the opposite side of said horizontal pivot from said holder, a hammer cylinder having a piston and rod, said hammer cylinder and rod being pivoted respectively to said bracket and said shroud, said holder having up and down movement about said horizontal pivot in a vertical arc.

3,181,628
CONDUCTOR SLEEVE AND PACKING GLAND FOR SUB-AQUEOUS MARINE DRILLING

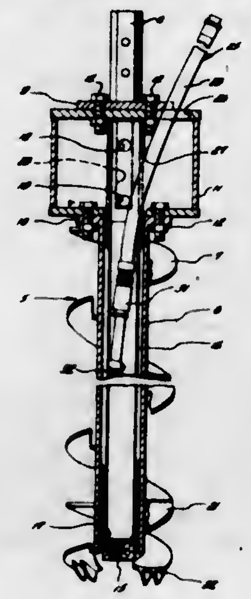
William P. Verville, Rte. 2, Concord, N.H.
Filed May 20, 1963, Ser. No. 281,846
4 Claims. (Cl. 175—10)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a subaqueous drilling rig comprising a floating support anchored on a body of water subject to tidal fluctuations and above a point on the marine bottom, a drill prime mover mounted on said support, and an opening in said support in proximity to said prime mover adapted to allow passage of a drill string through said support; the improvement which comprises a water level compensating drill casing assembly said assembly comprising:
(*a*) hollow conductor casing means mounted in said opening and depending from said support for a distance greater than the tidal variation in water level and less than the low tide depth of the body of water;
(*b*) a hollow pilot casing having an upper end and a lower end, said lower end being embedded vertically in the marine bottom and said upper end being in telescopic engagement with said conductor casing;
(*c*) flexible sealing gland means mounted on said pilot casing adjacent the upper end thereof, said gland means forming a sliding seal between said pilot casing and said conductor casing; and
(*d*) means for supplying drilling mud to said gland means comprising a mud pit, said mud pit being provided with an opening adapted to permit the passage of said drill string, said opening being superimposed on the opening in said floating support and means connecting said conductor casing to said mud pit, the interior of said conductor casing being maintained in fluid communicating relationship with the interior of said mud pit.

3,181,629
APPARATUS FOR GEOTHERMAL PROSPECTING

Joseph H. Birman, 5327 Ellenwood Drive,
Los Angeles, Calif.
Filed July 23, 1962, Ser. No. 211,765
8 Claims. (Cl. 175—40)

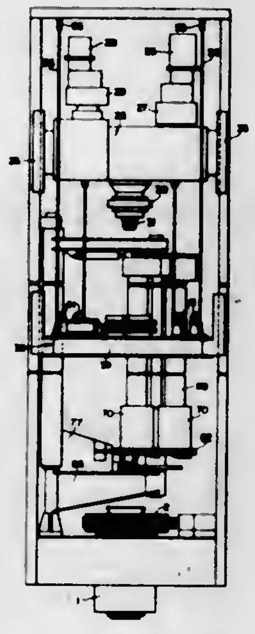


1. Apparatus for obtaining sub-surface temperature measurements in an earth formation comprising a rotatable auger for drilling a hole of predetermined depth in the earth formation and including an elongated hollow auger stem, a plug removably engaged in the lower end of the stem to close the same, selectively operable plug knock-out means carried by the auger in the stem and movable axially thereof for engaging the plug to dislodge the plug from the stem, a helical auger blade wound around the exterior of the stem and extending from the lower end of the stem therealong over a substantial portion of the length of the stem, means at the lower end of the auger blade for cutting through the earth, coupling means at the upper end of the auger stem adapted for engagement with a mechanism for rotating the auger stem to drill the hole, the coupling means having an opening communicating with the interior of the auger stem, and an elongated flexible temperature probe having a temperature sensing device located in the lower end thereof and a length substantially equal to the depth of the hole, the probe being configured and arranged to pass through the opening in the coupling means and into the interior of the auger stem and downwardly within the stem and out of the lower end of the stem after removal of the plug from the stem to remain in the hole after the auger is withdrawn from the hole, the auger blade being configured relative to the stem to produce a minimum disturbance of the earth formation adjacent the hole and to convey upwardly material severed from the formation by the lower end of the blade as the auger stem is rotated to drill a hole and to redeposit said material in the hole around the probe as the auger stem is rotated to withdraw the auger from the hole.

3,181,630
BLASTHOLE DRILL

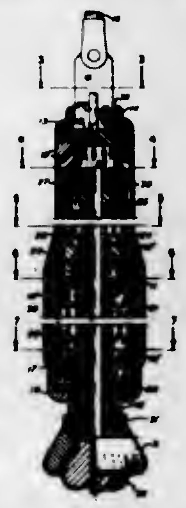
Robert S. Coburn, Oconomowoc, Wis., assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 3, 1962, Ser. No. 207,269
5 Claims. (Cl. 175—85)

1. A drilling apparatus having a base mounted on a crawler support, means for rotatably adjusting said base relative to said crawler support, a derrick adjustably supported on said base, means mounted on said base operatively connected to said derrick for adjusting the angular drilling position of said derrick relative to said base, power drill means mounted on said derrick for movement thereon, an indexable drill pipe storage rack mounted on said derrick for movement therewith, means operatively connected to said derrick and said rack for selectively positioning said rack into and out of position under said power drill means for selective coupling of pipe located in said storage rack to said power drill means, an auxiliary support longitudinally spaced from said power drill means and movably mounted on said derrick for selectively supporting such drill pipe held by said power drill means, and means connecting said auxiliary support to said power drill means and to said derrick for predetermined movement of said auxiliary support with and relative to said power drill means.



3,181,631
COUNTER-ROTATING EARTH DRILL

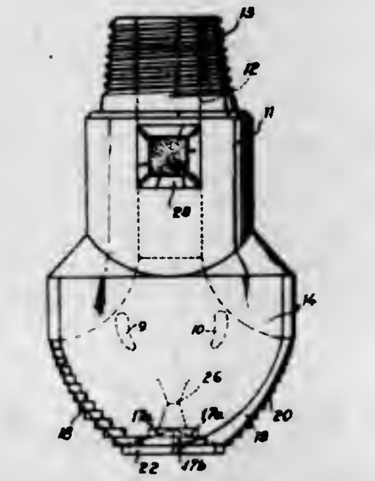
Irvin P. Nielsen, Glenwood Springs, Colo., assignor of one-half to Cameron and Jones, Incorporated, Denver, Colo., a corporation of Colorado
Filed Aug. 24, 1962, Ser. No. 219,268
5 Claims. (Cl. 175—96)



1. An earth drill comprising:
a hollow housing having an upper and a lower end and adapted to be suspended at its upper end to a flexible cable;
an elongated hollow sleeve having an upper end which is rotatably mounted within said housing and a lower end which projects beyond the lower end of said housing;
an elongated stem disposed within said hollow sleeve;
said stem having an upper end rotatably mounted within said housing and a lower end which projects beyond the lower end of said housing;
an inner bit member attached to the lower end of said stem;
an outer bit member attached to the lower end of said sleeve and surrounding said inner bit member;
said inner bit member projecting below said outer bit member;
a first electrically operable drive means disposed within said housing and attached to said sleeve;
a second electrically operable drive means disposed within said housing and attached to said stem;
said first and second drive means being operable to drive said sleeve and said stem in opposite directions and hence to set said inner and outer bit members into counterrotation to produce drilling of the earth;
said inner and outer bit members producing respectively a first and a second torque load due to rotation; and
control means connected to said electrically operable drive means to vary the voltage imparted to the respective drive means to vary the speed thereof to bring said first and second torque loads into balance during drilling to prevent any rotational movement of said housing.

3,181,632
DIAMOND DRILL BIT

Jean Raynal, Pau (Basses-Pyrenees), France, assignor to Societe anonyme dite: Societe Nationale des Petroles d'Aquitaine, Paris, France, a French company
Filed Dec. 13, 1961, Ser. No. 159,020
Claims priority, application France, Dec. 16, 1960, 847,086
9 Claims. (Cl. 175—329)

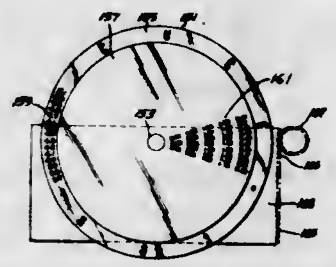


1. A rotary drill bit comprising stock means adapted to be attached to the lower end of a drill pipe and provided with a generally axial passage for the delivery of the drilling fluid and a head means secured to said stock means, said head means being constituted by at least two portions extending longitudinally of the axis of said drill pipe, each of said portions having at least one abrasive area on an outer surface of said head means and at least one surface defining a respective wall of a slot, extending at least from said axis, to the outer surface of said head, said walls being symmetrically disposed on opposed sides of a plane passing through said axis and being shaped so that, along at least a portion of said axis, the width of said slot, at any point in a plane perpendicular to said axial plane, is not greater than its width at said axis.

3,181,633
REGISTERING SCALE SYSTEM

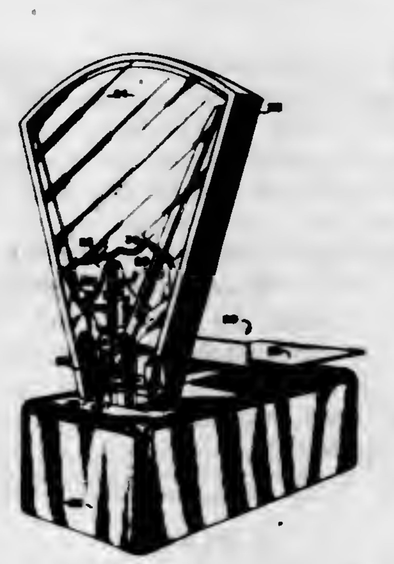
Marc T. Worst, 110 Russell Ave., Portola Valley, Calif.
Filed Sept. 23, 1960, Ser. No. 58,007
1 Claim. (Cl. 177—44)

A scale system comprising a scale, a rotatable disc cooperating with said scale and having a rotation proportional to weight of objects placed on the scale, said disc including indicia thereon indicative of said weight, means for reading said weight indicia, said disc also including indicia indicative of total price information arranged in concentric circles about said disc, each of said circles corresponding to the total prices of various weights at a particular unit price, manually operable means for entering pricing information comprising a plate disposed adjacent said disc, said plate including a first column of indicia thereon indicative of pricing weight and additional columns of indicia thereon indicative of price, a stationary light source disposed between said plate and said disc in registry with the indicia on said disc indicative of said weight and also in registry with said first column of indicia on said plate, means for moving said plate longitudinally of said columns, a movable light source disposed between said plate and said disc and in registry with the indicia on said disc indicative of total price and also in registry with said additional columns on said plate, said movable light source being movable across said concentric circles of indicia on the disc and across said additional columns of indicia on said plate, and means for developing a visible image of said weight, total price, pricing weight and price information from said light source and individual elements of said indicia.



3,181,634
WEIGHING SCALES

Lawrence S. Williams, Toledo, Ohio, assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Dec. 20, 1962, Ser. No. 246,026
16 Claims. (Cl. 177—169)

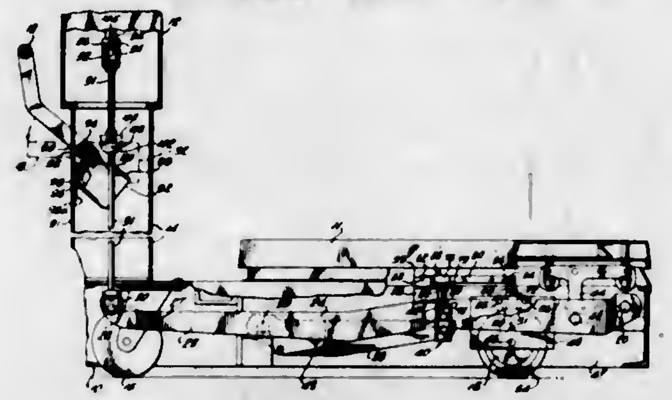


1. A fan spring weighing scale comprising, in combination, spring weighing mechanism, a stationarily mounted chart, a pivotally mounted indicator movable across the face of the chart, crank drive means operatively connecting the weighing mechanism to the indicator, resilient calibrating means operatively connected to the indicator, and means for selectively adjusting the calibrating means to so adjust the sensitivity of the scale that the indicator has a linear travel.

3,181,635
PORTABLE WEIGHING SCALE

John D. Hale, St. Johnsbury, Vt., assignor, by mesne assignments, to Fairbanks Morse Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 8, 1964, Ser. No. 336,455
12 Claims. (Cl. 177—264)

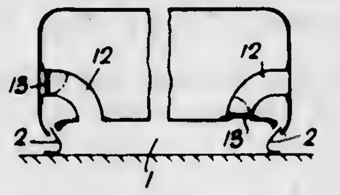


10. In a portable weighing scale including a frame, frame supporting wheels and a scale lever system carried by the frame, frame supported brake means for at least one of said wheels, said brake means being movable and normally biased to braking engagement with the wheel, and means including said scale lever system operable for effecting movement of said brake means away from wheel braking engagement.

3,181,636
GROUND EFFECT MACHINE HAVING HEAVE STABILITY FOR TRAVERSING ROUGH SURFACES

Christopher Sydney Cockerell, East Cowes, Isle of Wight, England, assignor to Hovercraft Development Limited, London, England, a British company

Filed Sept. 29, 1960, Ser. No. 59,306
Claims priority, application Great Britain, Oct. 2, 1959, 33,535/59
9 Claims. (Cl. 180—7)



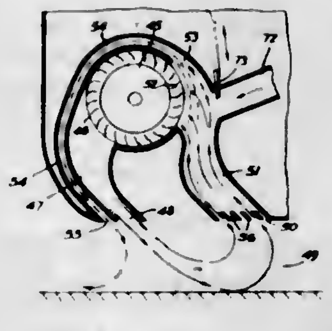
1. A vehicle for travelling over a surface comprising a body, means for forming and maintaining a cushion of pressurised fluid beneath said body by which said vehicle is at least partly supported above said surface as it travels thereover, and means carried by said body for reducing unacceptable vertical accelerations of said body, said means including means responsive directly to variations in the volume of said cushion from a predetermined value for automatically supplying fluid to and releasing fluid from said cushion and thereby reducing the variations in vertical thrust on the vehicle produced by variations in the cushion pressure resulting from said variations in volume of the cushion.

3,181,637
MEANS TO ELIMINATE FOREIGN MATTER FROM THE GASEOUS CURTAIN IN AIR SUPPORTED VEHICLES

Christopher Sydney Cockerell, Bassett, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company

Filed June 13, 1962, Ser. No. 202,256
Claims priority, application Great Britain, June 13, 1961, 21,274/61
7 Claims. (Cl. 180—7)

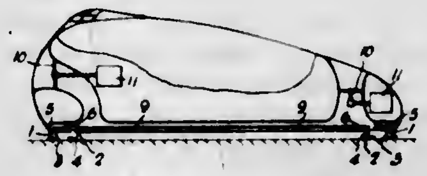
1. In a vehicle for operating over a surface of the type adapted to be supported above that surface by at least one cushion of pressurised gas formed and contained beneath the body of the vehicle, the combination of a supply port formed in the bottom of the vehicle body adjacent to the periphery thereof, fluid energising means having an inlet and an outlet for causing a fluid to issue from said supply port and form a curtain of moving fluid travelling across the gap existing between said vehicle body and said surface, said curtain in combination with said body and said surface effectively enclosing a gas-containing space between the bottom of said body and said surface wherein said cushion of pressurised gas is formed, a recovery port formed in the bottom of said vehicle body and extending substantially parallel to said supply port into which at least part of the fluid forming said curtain may flow back into said body, a recovery duct connecting said recovery port to the inlet of said energising means through which the recovered part of the curtain forming fluid may flow back to said energising means for recirculation in said curtain, said recovery duct including a curved portion having at least one outlet opening in the radially outer side thereof, an outlet port formed in the bottom of said vehicle body, and a further duct connected at one end to said outlet opening in the radially outer side of the curved portion of said recovery duct and at the other end to said outlet port, whereby foreign matter in the recovered part of said curtain forming fluid may be separated from said fluid as it flows through the curved portion of said recovery duct and discharged through said further duct and outlet port.



3,181,638
VEHICLES FOR TRAVELLING OVER LAND AND/OR WATER

Christopher Sydney Cockerell, Bassett, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company

Filed Jan. 28, 1963, Ser. No. 254,214
Claims priority, application Great Britain, Oct. 2, 1959, 33,535/59
15 Claims. (Cl. 180—7)

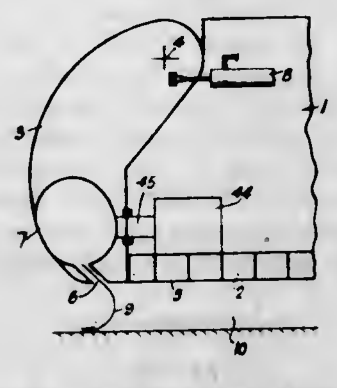


1. A vehicle for travelling over a surface comprising means for forming and maintaining a cushion of pressurized fluid beneath tthe vehicle by which said vehicle is at least partly supported above said surface, including means responsive to variations in the cushion pressure for varying the effective area of the cushion, said means being so constructed and arranged as to decrease the area when the cushion pressure tends to increase and increase the area when the cushion pressure tends to decrease whereby the variations in vertical thrust on the vehicle produced by variations in the cushion pressure are reduced.

3,181,639
VEHICLES FOR TRAVELLING OVER A SURFACE

David William Nicholas, Southampton, and Julian Thomas Everest, South Darenth, near Dartford, England, assignors to Hovercraft Development Limited, London, England, a British company

Filed Mar. 11, 1963, Ser. No. 264,271
Claims priority, application Great Britain, Mar. 12, 1962, 9,489/62
12 Claims. (Cl. 180—7)

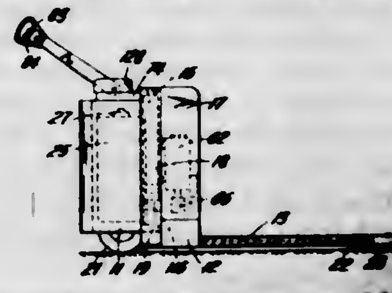


1. A vehicle for travelling over a surface of the type which in operation is supported above the surface by at least one cushion of pressurized gas formed beneath the vehicle, comprising a main body including a load bearing floor having a bottom surface against which the cushion pressure is exerted, means including a supply port positioned outboard of said floor adjacent the bottom surface thereof for causing at least one curtain of moving fluid to issue from the lower part of the vehicle for partially containing said cushion, a structure pivotally attached to said main body for upward movement about a horizontal axis to a raised position above said bottom surface, said pivoted structure normally closing an opening in the periphery of said main body through which loads may be conveyed on and off the vehicle and said axis being positioned a sufficient distance above the bottom surface of said main body that, when said structure has been moved to its raised position, such loads may pass through said opening beneath said structure, and means carried by said pivoted structure for supplying curtain-forming fluid to said supply port.

3,181,640
INDUSTRIAL TRUCKS

Cecil Goodacre and John Robert Vernon Dolphin, Basingstoke, England, assignors to Lansing Bagnall Limited, Basingstoke, England, a British company

Filed Apr. 10, 1963, Ser. No. 272,133
Claims priority, application Great Britain, May 12, 1962, 14,276/62
5 Claims. (Cl. 180—19)

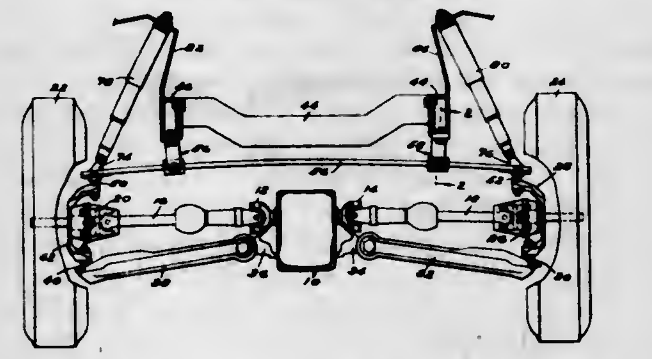


1. In an industrial truck the combination of a body portion of the truck, wheels beneath [illegible] portion which are spaced apart laterally, a [illegible] device having a root portion attached to the body portion by means which permit up and down movement relative thereto, the remainder of the load carrier device extending away from the body portion near ground level, means for raising and lowering the said root portion of the load carrier relatively to the body portion, two wheeled ground supports spaced apart laterally at the outer part of the load carrier, levers on the load carrier to which the ground supports are attached to raise and lower the outer ends of the load-carrier relatively to the ground-supports when the root portion is raised and lowered, a transverse balance-lever on the body portion of the truck and pivoted thereto between its ends, and linkage means on the load carrier extending between the said levers on the load carrier and the ends of the balance-lever whereby either side of the load-carrier can be further altered in height relatively to the ground support at the other side of the load-carrier when the truck is moved on to uneven ground.

3,181,641
VEHICLE SUSPENSION

Charles Haddad, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Jan. 2, 1962, Ser. No. 163,574
3 Claims. (Cl. 180—42)

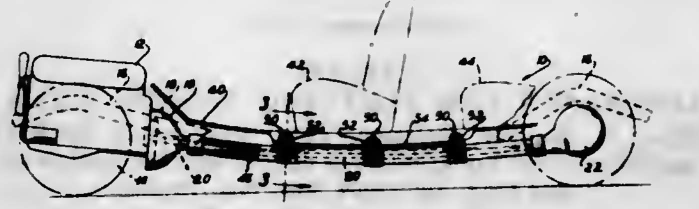


1. In a motor vehicle having a chassis frame, a drive aggregate resiliently mounted on said chassis frame, a pair of steerable road wheels laterally disposed relative to said drive aggregate, drive shaft means operatively interconnecting said wheels and said drive aggregate, a pair of wheel support members rotatably disposed relative to said wheels, a pair of laterally extending suspension arms interconnecting said drive aggregate and said wheel support members, transversely extending single leaf spring of uniform thickness interconnecting said wheel support members, said chassis frame being supported on said spring means at transversely spaced apart points, said spring means being connected to said chassis frame by mounting means adapted to permit deflection of said spring means without introducing a bending moment therein.

3,181,642
CURVED PROPELLER SHAFT ROTATABLY SUPPORTED ON A SEALED PLASTIC HOUSING CONTAINING A LUBRICANT

Clyde O. Damitz, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 31, 1959, Ser. No. 863,190
1 Claim. (Cl. 180—70)

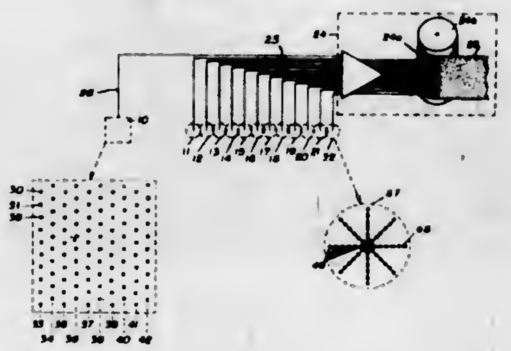


A passenger vehicle having a frame, a front mounted engine and a rear mounted transmission-differential secured to said frame, a floor pan connected to said frame, a passenger seat mounted on said floor pan, a drive shaft extending rearwardly from said engine to said transmission-differential, a tubular plastic drive shaft housing resiliently mounted in a fixed location to the underside of said floor pan and extending from said engine to said transmission-differential, said tubular housing having a generally arcuate shape, the central region of said tubular housing being in vertical proximity to said passenger seat, said drive shaft being formed of flexible material and being concentrically situated within said tubular housing, resilient bearing means secured to said housing and rotatably supporting said shaft in an arcuate configuration corresponding to the configuration of said tubular housing, said tubular housing having its ends sealed so as to form a closed container, a lubricant contained within said tubular housing.

3,181,643
COMBINING MULTIPLE SEISMIC RECORDS

Gilbert W. Ehlert, Albert W. Musgrave, Paul E. Nash, and Roderick M. Nugent, all of Dallas, Tex., assignors to Socony Mobil Oil Company, Inc., a corporation of New York

Filed July 29, 1959, Ser. No. 830,289
7 Claims. (Cl. 181—.5)

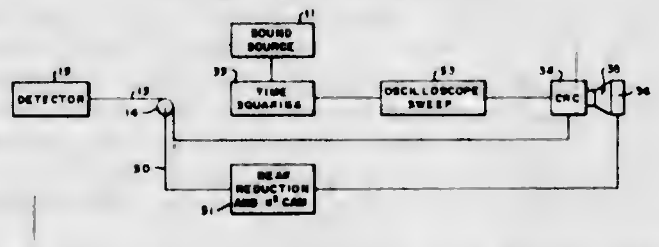


1. In a seismic exploration, the method which comprises sequentially generating seismic waves at each of a plurality of points spaced along a first line and at points spaced along a second line, following generation of said waves at each of said points simultaneously detecting and separately recording the resultant waves arriving at a plurality of detecting stations spaced one from another along a detecting spread extending perpendicular to said first and second lines to produce a plurality of multisignal records, directly combining, in the absence of any changes in relative time-phase relationships between them, the signals from each detecting station from the records of waves generated along said first line to produce a first multisignal composite record, directly combining, in the absence of any changes in relative time-phase relationships between them, the signals from each detecting station from the records of waves generated along said second line to produce a second multisignal composite record, adjusting the relative time-phase relationships of signals on said composite records for the differences in the distances between said first and second lines and said detecting stations to produce first and second corrected multisignal composite records, and combining the signals from each detecting station on said corrected composite records to produce a final multisignal composite record.

3,181,644
APPARATUS FOR PLOTTING SEISMIC DATA

William L. Roever, Bellaire, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 30, 1960, Ser. No. 79,843
2 Claims. (Cl. 181—.5)

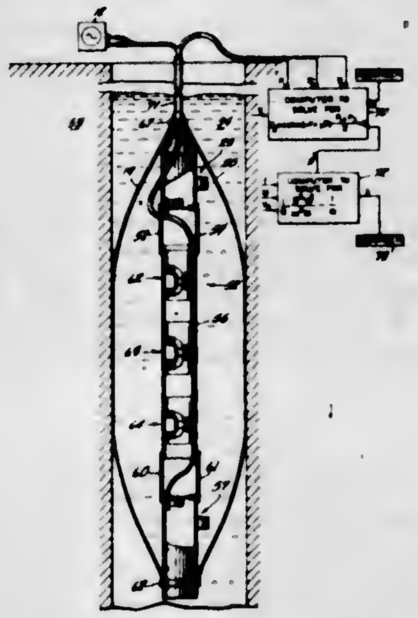


2. An apparatus for producing a time squared distance squared display of seismic data from water-covered areas, said apparatus comprising: a source of acoustical impulses disposed on a vessel; a detector capable of receiving acoustical impulses and converting them to related electrical signals; an anchoring means fastened to said detector to maintain said detector in a fixed location; a recording means disposed on said vessel; cable means connected to said detector for coupling said detector to said recording system as said vessel is moved away from said anchored detector; a circuit means disposed on said vessel to generate an output signal that is proportional to the square of elapsed time from the generation of an acoustical impulse; an oscilloscope, said circuit means being coupled to the sweep circuit of said oscilloscope; measuring means disposed on the vessel to measure and then square the distance between said source and said anchored detector, said measuring means supplying an output signal proportional to the squared distance; said measuring means being coupled to the record advancing means of said recording system and said recording system being disposed to record the events displayed on said oscilloscope.

3,181,645
ACOUSTIC WELL LOGGING APPARATUS

Robert B. Blizard, Littleton, Colo., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Original application Aug. 6, 1959, Ser. No. 832,048, now Patent No. 3,080,010, dated Mar. 5, 1963. Divided and this application July 25, 1962, Ser. No. 212,426
8 Claims. (Cl. 181—.5)



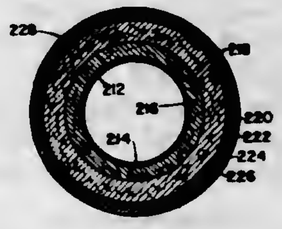
7. A method for exploring earth formations traversed by a bore containing a fluid medium, comprising the steps of inducing a pressure wave in the fluid medium at a first location in the bore, simultaneously obtaining indications of the instantaneous pressure of said medium at at least three other locations in the bore spaced apart from each other and from said first location in a longitudinal direction along said bore, and combining said pressure indications to produce a signal representative of the shear modulus of the earth formations surrounding the bore.

3,181,646
SILENCER HAVING CONTIGUOUS CONCENTRIC LAYERS OF SOUND ABSORBENT MATERIAL

Howard C. Edwards, 2443 Whipple Road NW., Canton, Ohio

Filed Apr. 15, 1963, Ser. No. 272,915
2 Claims. (Cl. 181—42)

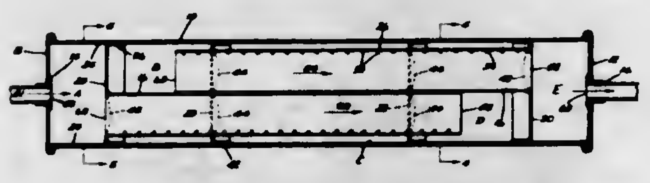
1. A silencer comprising the following elements in contiguous relationship: an outer shell comprising a first layer of porous sound absorbent material bounded by two rigid laminates, said outer shell being perforated with apertures; a second layer of loosely compressed sound absorbent material; a third layer of tightly compressed sound absorbent material; and an inner shell perforated with apertures, the apertures in said inner and outer shells being located so as to be misaligned with respect to each other.



3,181,647
APPARATUS FOR MUFFLING NOISE AND ENGINE EXHAUST GASES

Edward H. Schomburg, Rte. 2, Warren, Ind.

Filed Oct. 18, 1963, Ser. No. 317,186
6 Claims. (Cl. 181—54)

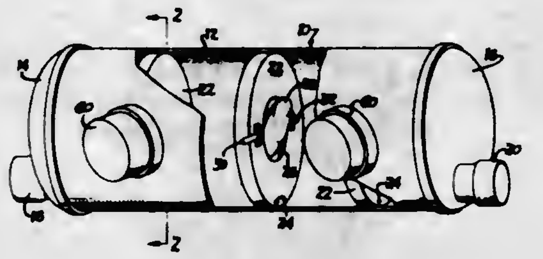


5. A three-pass engine muffler comprising an elongated barrel, first and second conduits having axes and being disposed within said barrel, said axes of said conduits being parallel and lying in a single plane which also includes the cross-sectional diameters of said barrel, said conduits being secured in longitudinally offset relation whereby one distal end portion of each conduit extends beyond the adjacent end of the other conduit, two closure plates on opposite ends, respectively, of said barrel, entrance and exhaust ducts secured to said two closure plates, respectively, communicating with the interior of said barrel, a first baffle plate being spaced from one of said closure plates, thereby forming a first compartment therewith, said first baffle plate having a first opening therein, said first opening receiving in sealing relation said distal end portion of one of said conduits, said first baffle plate being in sealing relation with said barrel, a second baffle plate being spaced from the other of said closure plates thereby forming a second compartment therewith, said second baffle plate having a second opening therein, said second opening receiving in sealing relation said distal end portion of the other of said conduits, said second baffle plate being in sealing relation with said barrel, both said conduit members having a plurality of longitudinally spaced apertures therein arranged in a straight line, said straight line being located in said plane of said conduit axes with both of said axes lying in said plane between said line of said first conduit and said line of said second conduit, said apertures extending from one end to the other end of each conduit and being adjacent the periphery of said barrel, a plurality of deflector tabs on said conduit members adjacent to said apertures, respectively, and extending inwardly of said conduit members and angling in a direction extending from said entrance duct toward said exhaust duct, there being one tab for each aperture, and at least one third baffle plate intermediate and spaced from said first and second baffle plates thereby forming additional compartments, said third baffle plate having a third opening therein, said first and second conduits passing through said third opening, said third baffle plate being secured to said barrel and said conduits.

3,181,648
ADJUSTABLE MUFFLER

Edward W. Bottum, 9357 Spencer, Brighton, Mich.

Filed Oct. 1, 1962, Ser. No. 227,439
3 Claims. (Cl. 181—63)

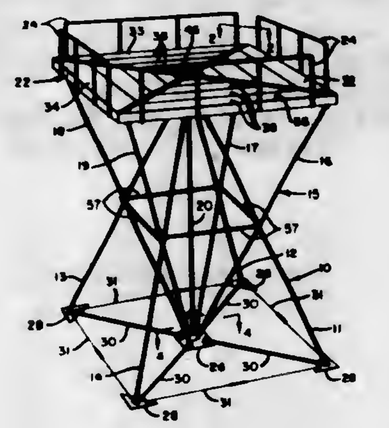


1. An adjustable muffler comprising a casing having an inlet and an outlet, at least one baffle in the casing, said baffle having an opening therein for the passage of gas thereby, a pivotally mounted closure member associated with said opening to form an adjustable orifice, said casing having an opening in the side wall thereof, a shaft extending through said opening into the casing from the exterior thereof, such shaft being operably connected to the closure member, rotation of said shaft being effective to pivot the closure member to different adjusted positions from fully closed to fully open to thereby adjust the size of said orifice, means to lock the closure member in any adjusted position from fully open to fully closed, sealing means between the shaft and casing forming a gas-tight seal, and a cap over the external portion of the shaft to effect an additional gas-tight seal.

3,181,649
PORTABLE TOWER CONSTRUCTION

James W. Cutter, Los Altos, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 23, 1963, Ser. No. 332,736
10 Claims. (Cl. 182—152)



1. A collapsible tower adapted to support objects at elevated positions above a supporting surface comprising

a first frame having side members supported by said surface and covering toward each other from a plane containing the ends of the members in a vertical direction,

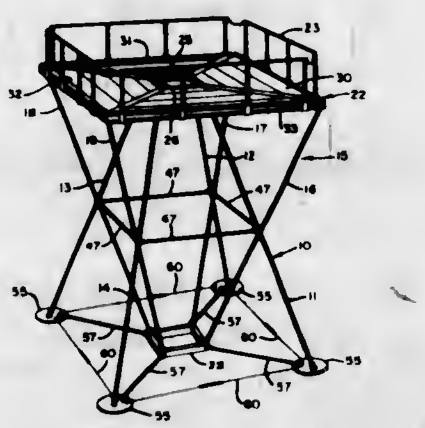
a second frame having side members supported by the surface within said first frame and diverging from said plane and from each other in a vertical direction, and

a platform supported by said frames at an elevated position above the surface, said platform comprising a plurality of sections detachably connected to each other and to said frames.

3,181,650

PORTABLE TOWER CONSTRUCTION

James W. Cutter, Los Altos, and Harold W. Kowal, Campbell, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,737
6 Claims. (Cl. 182—179)

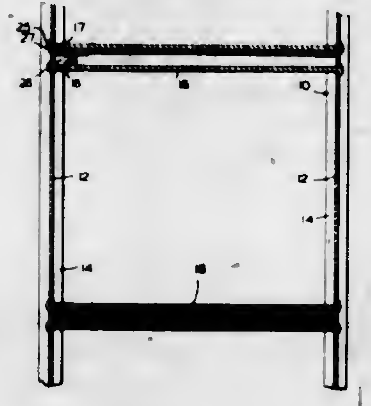


1. A tower adapted to support objects at an elevated position above a supporting surface and having a vertical axis comprising
- first and second coaxially disposed truncated pyramidal frames inverted relative to each other,
- upper and lower coaxial disposed open frames at said elevated position and at the supporting surface, respectively,
- means for connecting the convergent end of said first frame to said upper frame,
- means for connecting the convergent end of said second frame to said lower frame,
- means for connecting the divergent end of the first frame to the lower frame,
- a platform at said elevated position; and
- means for connecting said platform to the divergent end of the second frame and to the upper frame.

3,181,651

LADDER AND RUNG CONNECTION

Clayton E. Larson, Weston, Conn., assignor to White Metal Rolling & Stamping Corporation, Brooklyn, N.Y., a corporation of New York
Filed May 9, 1961, Ser. No. 108,895
3 Claims. (Cl. 182—228)

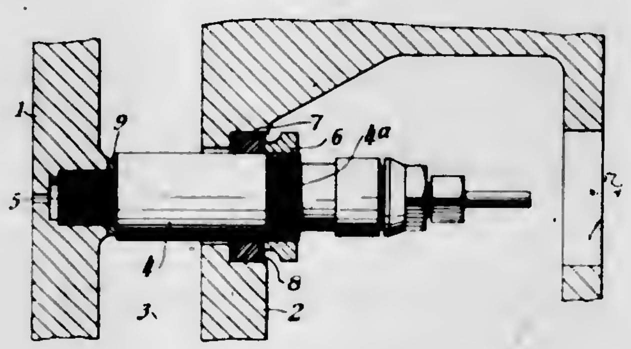


1. A ladder comprising in combination:
- a pair of side rails having sets of holes formed therein at longitudinally spaced intervals, each of said sets having at least two holes;
- and a plurality of rungs extending between said side rails, said rungs each including an extruded length of light metal of a generally circular cross section defining two rod-like rib portions, said rib portions being diametrically opposed and interconnected by semicircular wall portions, the wall portions at each end of said length being cut back to leave said rib portions extending as studs;
- said studs being received in said holes and expanded to connect said rungs to said side rails, said rib portions and said studs in each of said rungs being spaced along the length of said side rails to provide resistance to bending of said rungs together with resistance to bending between said rungs and said side rails in a direction of length of said side rails.

3,181,652

LUBRICATION OF INTERNAL COMBUSTION ENGINES AND THE LIKE

Frank Knight, Copster Green, Blackburn, and Richard R. Landless, Withnell, Blackburn, England, assignors to Loxhams Engineering Works Limited, a company of Great Britain
Filed July 16, 1962, Ser. No. 210,030
Claims priority, application Great Britain, July 18, 1961, 25,936/61, 25,937/61
6 Claims. (Cl. 184—6)

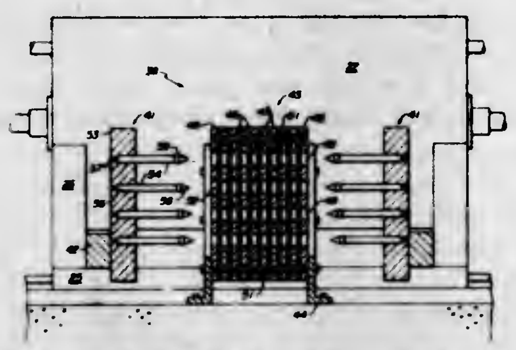


1. In an internal combustion engine having a cylinder characterized by a cylinder liner wall with a port therein, and a water jacket wall defining a water space between it and said liner wall, a lubricator quill for said cylinder, said quill comprising an elongated casing mounted in said walls and bridging said space, said casing having an open inner end communicating with said port, said casing also having an outer end projecting outside said water jacket wall, means sealing said casing to said water jacket wall whereby to prevent cooling water in said space from leaking out around said casing, a cartridge removably disposed in said casing and accessible from outside of said water jacket wall, a lubricant supply channel extending lengthwise along the interior of said quill from a point outside of said water jacket wall, said channel defined at least in part by said cartridge, means for connecting said channel to lubricant supply, said connecting means including a check valve interposed between said channel and said supply, said cartridge also comprising a chamber connecting with said channel and having a valve outlet communicating with said port, a valve seat surrounding said valve outlet, an axially movable valve in said chamber adapted to close off said outlet when seated on said seat, spring means normally biasing said valve into engagement with said seat, and a shoulder on said valve exposed to lubricant contained in said chamber, means for subjecting said lubricant supply to a pressure to open simultaneously said check valve and said axially movable valve to inject under pressure a selected amount of lubricant into said cylinder through said port, said injected amount being equal to the quantity of lubricant forced past said check valve by said pressure, said injected amount further being delivered in phase with said internal combustion engine cycle and at the same pressure as said supply means.

3,181,653

CRASH ENERGY ABSORBER FOR HEAVY APPARATUS

Jack A. Roskelley, Concord, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 29, 1963, Ser. No. 276,677
7 Claims. (Cl. 188—1)

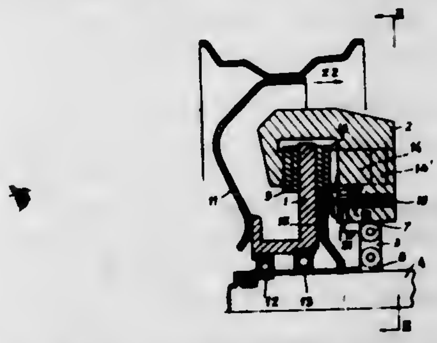


1. Apparatus for stopping unwanted motion of a heavy object relative to a stationary surface comprising, in combination, a first component device having a plurality of parallel pointed rods extending along the direction of said unwanted motion, said pointed rods being of different length, and a second component device having at least one plate formed of a material penetrable by said rods and disposed transversely with respect to said rods whereby said rods penetrate said plate at differing times in the course of said unwanted motion, one of said component devices being secured to said heavy object and the other of said devices being secured to said stationary surface.

3,181,654

DISC BRAKES

Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, Seine, France, a French works
Filed Sept. 17, 1963, Ser. No. 309,485
Claims priority, application France, Sept. 22, 1962, 910,205, Patent 1,344,975; June 26, 1963, 939,462, Patent 83,891
6 Claims. (Cl. 188—73)

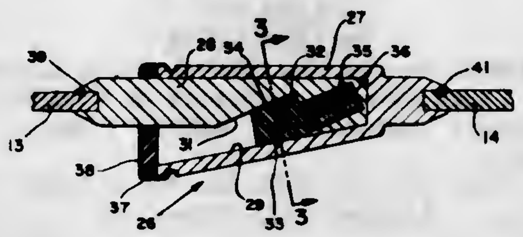


1. A disc-type brake structure used to brake rotary wheels and wherein a brake block straddles a disc which is integrally connected to a rotary wheel, said wheel being suitably supported by a wheel-supporting structure, said block comprising brake linings respectively adapted to press against opposite sides of said disc, said block being mounted for movement transversely of the plane in which said disc lies between braking and non-braking positions, the improvement comprising a damping means adapted to prevent said block from undergoing any said movement during periods when no braking action is desired, said damping means being associated with said block in such a manner as to continuously exert a force against said block tending to keep said block in its non-braking position, and wherein said damping means comprises a piston slidably mounted in a blind bore formed in said block and closed by a sealing cap, said piston having an extension bearing against a stationary member which is carried by the wheel supporting structure, said bore enclosing a coil compression spring urging said piston against said member and a high-viscosity fluid adapted to flow from one to the other side of the damping piston through a gauged clearance.

3,181,655

AUTOMATIC BRAKE ADJUSTOR

John V. Barnes, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Continuation of application Ser. No. 140,008, Sept. 22, 1961. This application Nov. 18, 1963, Ser. No. 325,210
5 Claims. (Cl. 188—79.5)

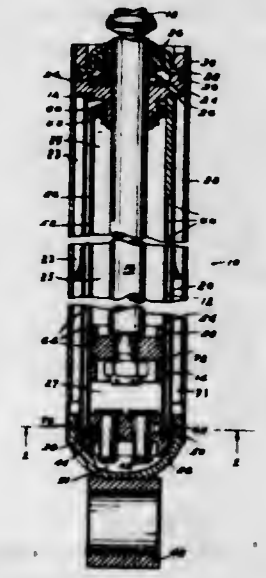


3. A brake assembly comprising a backing plate, a pair of arcuate brake shoes movably connected to said backing plate, said shoes having a pair of adjacent ends, an adjusting device interconnecting said ends of said shoes, said ends each having a flat web portion lying in a plane parallel to the general plane of said backing plate, a rim portion secured to each of said web portions, a tang extending radially inwardly from the end of each of said rim portions, said device including a first element having a first slot engaging one of said webs and a second slot generally perpendicular to said first slot engaging one of said tangs, said device also including a second element with a first slot engaging the other of said webs and a second slot generally perpendicular to said first slot engaging the other of said tangs, spring means interposed between said ends, said spring means applying a spring force urging said webs into engagement with the depths of said first slots, said spring means also maintaining said second slots in engagement with said tangs.

3,181,656

HYDRAULIC PLUNGER TYPE SHOCK ABSORBER HAVING SEPARATE JOUNCE AND REBOUND PASSAGES

James J. Damon, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 30, 1961, Ser. No. 120,992
4 Claims. (Cl. 188—88)



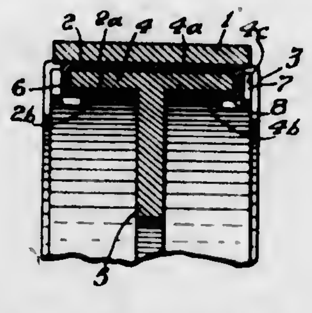
1. A hydraulic shock absorber having a pressure tube, a piston reciprocable within said pressure tube, said piston dividing said tube into rebound and compression chambers, mutually independent rebound and compression passageways communicatively interconnecting said rebound

and compression chambers, rebound and compression control orifices located in the wall of said pressure tube, said rebound and compression control orifices being in communication with said rebound and compression passageways respectively, said rebound passageway having control means permitting the controlled expulsion of fluid from said rebound chamber to said compression chamber, said compression passageway providing controlled communication from said compression chamber to said rebound chamber and to a sump.

3,181,657
BRAKE SHOE

Eduard Pelich, Prague, and Oldrich Vana, Jablonec, nad Nisou, Czechoslovakia, assignors to Vyzkumny ustav prislusenstvi motorovych vozidel, Prague, Czechoslovakia

Filed Nov. 15, 1962, Ser. No. 237,923
1 Claim. (Cl. 188—242)



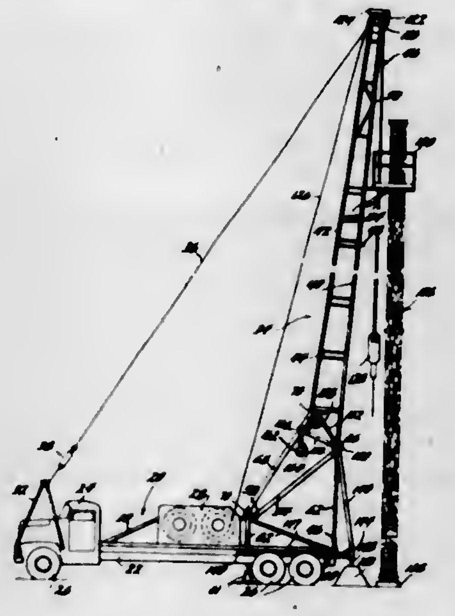
A brake shoe assembly comprising
- (*a*) a striplike support of arcuate shape, having a convex top face, a concave bottom face, and two spaced substantially lengthwise extending margins, and being provided at least at a single point of each of said margins with a radially open cutout, each of said margins consisting of at least two main portions and at least a single offset portion, said offset portion being intermediate of said two main portions, and forming a bottom of the respective cutout,
- (*b*) a backing member including
  - (1) a web portion having an upper side and underside and two spaced substantially lengthwise extending edges, being of the same width as said support, and being shaped to have said underside conformingly engage said top face, each of said edges having at least two first parts extending substantially coextensively with the respective main margin portions, and at least a single second part extending substantially coextensively with the respective offset margin portion,
  - (2) two flanges extending along said two first parts of each of said web portion edges, and being directed toward said bottom face to abut against the respective two main margin portions,
  - (3) a flange set inwardly of the respective two flanges to extend along the respective second part to be directed toward said bottom face, and to abut against the bottom of the respective cutout, and
  - (4) an edge portion extending from each of the inwardly set flanges toward the other inwardly set flange, and
- (*c*) a brake lining on said upper side.

3,181,658
WELL SERVICING RIG

Emil A. Bender, P.O. Box 52, Bakersfield, Calif.

Filed June 15, 1959, Ser. No. 820,330
5 Claims. (Cl. 189—11)

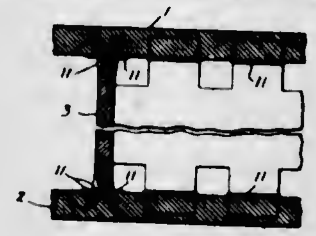
1. A truck-mounted well servicing rig comprising a pair of main hinge supports at opposite sides of the truck body adjacent the rear thereof each having two members pivotally connected together at their outer ends and pivotally connected at their inner ends to spaced points on the truck body, at least one of said members comprising a pair of telescopically arranged sections and limit stops providing limited extensibility, a mast of generally triangular cross-section having two front legs and a single rear leg interconnected by spaced girts, main hinges pivotally connecting the lower ends of each of said front legs to the respective hinge supports, an A frame pivotally mounted at its base on the truck body and having guides and a roller at its outer end engageable with said rear leg for raising and lowering said mast, latch means at the outer end of said A frame for releaseably connecting the latter to said rear leg when said mast is in fully raised, over-center position, a draw works on said truck body, a crown block assembly and travelling block on said mast, fast and dead lines interconnecting said draw works, said crown block assembly and said travelling block, and means including a plurality of sheaves rotatably mounted at the lower end of said mast and a raising line extending from said travelling block over said sheaves to the outer end of said A frame whereby operation of said draw works first retracts the extensible sections of said members to elevate said main hinges and thereafter causes said A frame to raise said mast into operating position.



3,181,659
PANELS

Everard F. Kohl, 16920 Edgewater Drive, Lakewood 7, Ohio

Filed Jan. 24, 1961, Ser. No. 84,628
7 Claims. (Cl. 189—34)

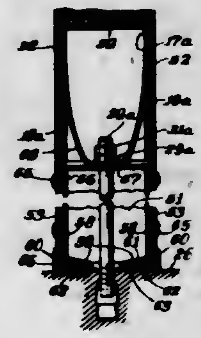


1. A panel including upper and lower thin metal sheets arranged in opposed relation to each other, a plurality of thin metal core strips interposed between said sheets which are spaced from each other throughout their length, each of which core strips is zig zag in shape and consists of a plurality of focal portions and side walls diverging from each focal portion which focal portions and diverging side walls are parallel to the focal portions and the diverging side walls of other core strips to provide a free space between proximate core strips and each of said core strips having spaced tapered projections in its upper margin which are arranged in close proximity to each other and which are harder than the metal of which the sheets is composed, some of which are tapered in one direction from the first side wall of each core strip to a plane extending beyond the second side wall of the same core strip and others of which are tapered in the opposite direction from the second side wall of the same core strip to a plane extending beyond the first side wall of the same core strip to provide angularly-shaped projections, each of which has an outer penetrating edge and in which each of the angularly-shaped projections is embedded in the metal of the upper sheet to provide a mechanical connection between the core strip and the upper sheet and each of said core strips having projections which are arranged in close proximity to each other in the lower margin, some of which are tapered in one direction from the first side wall of each core strip to a plane extending beyond the second side wall of the same core strip and others of which are tapered in the opposite direction from the second side wall of each core strip to a plane extending beyond the first side wall of the core strip to provide angularly-shaped projections, each having an outer penetrating edge portion and in which each angularly-shaped projection in the lower margin of each core strip is embedded in the metal of the lower sheet to provide a mechanical connection between each core strip and the lower sheet.

3,181,660
YIELDABLE PANEL STRUCTURE

Alfred L. Langtry, Jr., 1130 Parker Ave., Detroit 14, Mich.

Filed Aug. 16, 1961, Ser. No. 131,849
5 Claims. (Cl. 189—34)



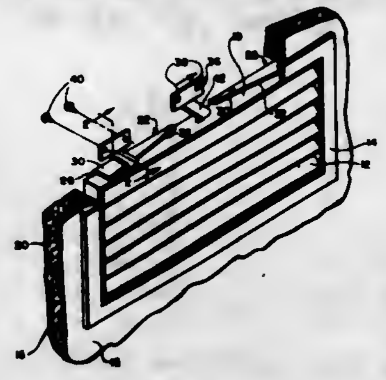
5. In a free standing panel structure, two spaced apart and substantially vertical side members, front and back facing panels respectively secured to and spaced apart by said side members, said panel structure having side openings remote from the upper ends of said side members and comprising an upper body portion above said openings and a lower portion, said body portion being of substantially greater height than said lower portion, and means connecting said upper body portion to said lower portion comprising resilient elements at the front and back sides of said openings and spring means cooperating with said resilient elements for normally holding said body portion upright while accommodating displacement thereof relative to said lower portion under pressure.

3,181,661
PANEL WALL LOUVERS

Thomas L. Cochran, Davenport, Iowa, assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed May 27, 1963, Ser. No. 283,162
5 Claims. (Cl. 189—54)

1. A louver and means for securing it in an opening in a wall, comprising:
- (*a*) an open-faced perimetric frame for said louver;
- (*b*) outwardly-directed flange means on the outer face of said frame adapted to seat against the outer face of said wall when said louver is installed;
- (*c*) wedging surfaces at spaced locations on the periphery of said frame, each said surface extending diagonally for at least part of the distance between the inner and outer faces of said louver; and

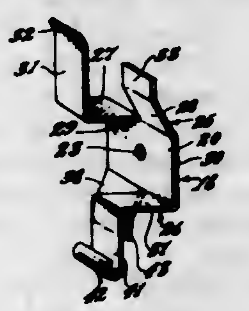


- (*d*) a separate and independent clip means for each of said surfaces, each of said clip means having a hook end engaging said surface extending diagonally, and a right angle flange portion engaging an inner face of said wall, surrounding said opening, as said hook end is forced along said surface extending diagonally, each of said clip means being independently attachable to its respective surface.

3,181,662
MOUNTING CONSTRUCTION FOR CHALK BOARDS, CORKBOARDS AND LIKE PANELS

Joseph N. Maertzig, Jr., 961 Granite St., Philadelphia 24, Pa.

Filed Dec. 23, 1960, Ser. No. 78,128
4 Claims. (Cl. 189—88)



2. A mounting construction for chalk boards, corkboards and like panels comprising a clip adapted to be mounted at an edge of a panel, said clip including a platelike back portion, a first wall section extending forward from one side of said back portion, a second wall section extending forward from said one side of said back portion adjacent to and terminating short of said first wall section, a resilient leaf extending from the distal end of each wall section laterally outward from said back portion, said leaves being offset from each other and adapted to receive therebetween and resiliently engage opposite sides of a panel, a first securing formation on the distal region of the leaf of said first wall section, a pair of additional wall sections extending forward from said other side of said back portion, an additional resilient leaf extending from each of said additional wall sections laterally outward away from said back portion, said additional leaves being offset from each other and adapted to receive therebetween and resiliently engage opposite sides of a second panel, and a second securing formation carried by the distal region of one of said additional leaves, said first-mentioned and additional leaves being diagonally positioned with respect to each other to effectively nullify forces imparted to said back portion, said first and second securing formations being adapted for engagement in a hollow trim for retaining the latter in position.

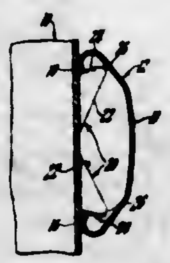
3,181,663

FASTENING MEANS

James L. Mason, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 13, 1962, Ser. No. 172,898

1 Claim. (Cl. 189—88)



A molding strip installation comprising:

a support panel having two parallel rows of triangular tabs struck therefrom and extending generally perpendicularly from the surface thereof, each of said tabs having a first edge extending angularly from the surface of said panel and a second edge extending from said panel and forming an acute angle with said first edge, the junction between said first and second edges of each of said tabs of one of said parallel rows of triangular tabs being more remote from the other of said parallel rows of triangular tabs than the junction between said second edge and said panel is from said other of said parallel rows of triangular tabs, said triangular tabs being struck from said support panel at an angle with a line parallel rows of said triangular tabs such that the opening resulting in said panel lies closer to the other of said parallel rows of triangular tabs than does said junction between said first and scond edges such that the openings lie between said parallel rows of triangular tabs and a portion of said panel member remains intact directly below the junction between said first and second edges of each of said tabs;

and a generally C-shaped molding strip having inturned flanges extending along the edges thereof, said molding strip being received over said two parallel rows of triangular tabs with one of said flanges engaging said second edges of said tabs in one of said parallel rows of triangular tabs and the other of said flanges engaging said second edges of said tabs in the other of said parallel rows of triangular tabs, said molding strip abutting said portion of said panel which remains below the junction of said first and second edges of each of said tabs.

3,181,664

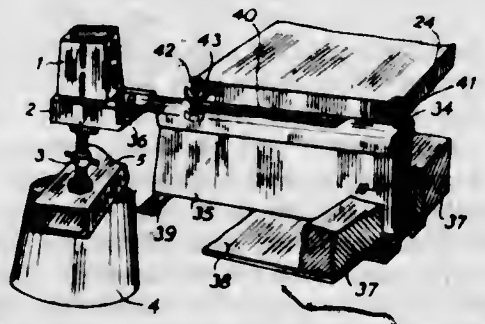
REMOVABLE PANELS

Georg Christian Schønberg Aagaard, 527 Roskildevej, Glostrup, Denmark

Filed July 3, 1962, Ser. No. 207,252

Claims priority, application Denmark, Sept. 13, 1960, 3,627/60

1 Claim. (Cl. 189—88)



In a building construction, a plurality of modules comprising rectangular plates mounted in contiguous relationship in a given pattern forming larger construction modules comprising ceilings, floors and walls, each plate having a plurality of arcuate recesses each having a longitudinal axis disposed on the four corners thereof and grooves along side edges in a plane normal to the longitudinal axis of said recesses, locking bolts rotatably mounted for releasably locking said plates in assembled relationship in said pattern, each of said bolts having a head provided with a slot for selectively rotating the bolt angularly, means mounting said bolts rotatably in position for said bolts to be received in the recesses of next adjacent ones of said plates, each locking bolt comprising a sector fixed thereon axially spaced from opposite ends of said bolt and received in respective grooves of adjoining plates for holding them releasably in fixed assembly in said pattern, each sector being in the order of 270° whereby four plates having contiguous corners are securable with a common sector and are releasable individually while the remaining plates remain secured.

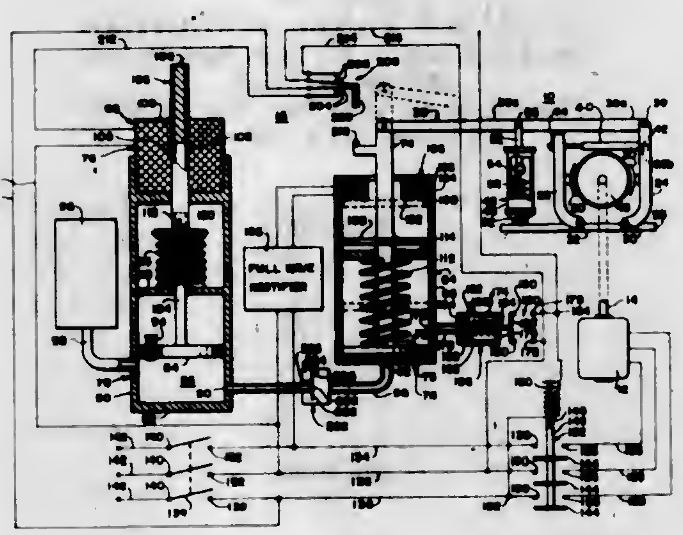
3,181,665

ELECTRICALLY CONTROLLED BRAKE

Panfilo Trombetta, 329 N. Milwaukee St., Milwaukee, Wis.

Filed Oct. 16, 1961, Ser. No. 145,390

11 Claims. (Cl. 192—2)



1. An industrial brake for controlling a prime mover and comprising a brake drum adapted to be coupled with said prime mover, brake means for frictionally engaging said drum, a control rod connected to actuate said brake means between a brake-set position and a brake-released position, spring means biasing said rod toward a brake-set position, an electrohydraulic motive unit for driving said rod to a brake-released position, said motive unit including an electrically actuated pump for supplying hydraulic fluid under pressure and a cylinder having a piston reciprocable therein and communicating with said pump, a piston rod interconnecting said piston and the first mentioned rod, means for applying power to said prime mover, and means responsive to the position of one of said rods and controlling said last mentioned means for applying said power to said prime mover after the last referred to rod has moved a predetermined distance.

3,181,666

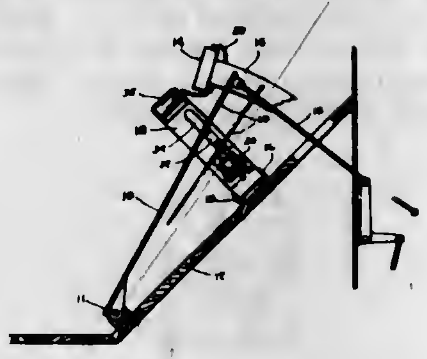
ACCELERATOR CONTROLLING DEVICE

Walter K. Dow, Longmeadow, Mass. (% Dow Mechanical Corp., Thompsonville, Conn.)

Filed Feb. 19, 1962, Ser. No. 174,056

3 Claims. (Cl. 192—3)

3. In a device of the character described, a base adapted to be secured to the floor of a vehicle or the like, an arm pivotally connected to said base and having a slot therein, an adjustable means carried by said arm and having a catch portion protruding through said slot and adapted to engage an accelerator pedal for retaining said accelerator pedal in desired adjusted position, said adjustable means comprising a threaded member carrying said catch member and an adjusting member operatively connected with said threaded member for adjusting the position of said catch member to desired position, and connecting means connecting the arm to the brake pedal of a vehicle whereby pressure on the brake pedal will release said catch member from the accelerator.



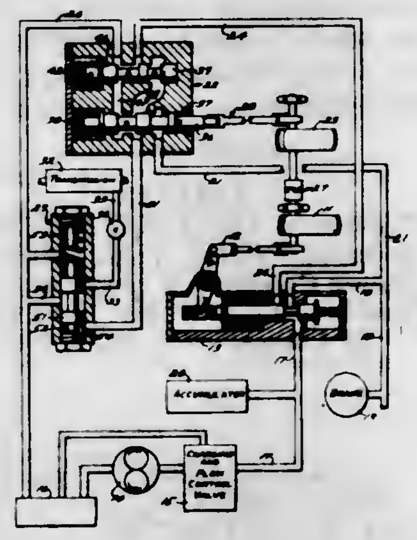
3,181,667

SYSTEM FOR AUTOMATICALLY NEUTRALIZING A VEHICLE TRANSMISSION UPON APPLICATION OF BRAKES

Kenneth R. Lohbauer, Joliet, Jimmy D. Myers, Morton, and Frank H. Winters, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Feb. 25, 1963, Ser. No. 260,487

4 Claims. (Cl. 192—4)



1. In a system for a vehicle having brakes and a transmission the combination comprising;

a first brake pedal;

first means mechanically associated with said first brake pedal and responsive to actuation thereof to engage the vehicle brakes, said means responsive to said pedal being released from an actuated condition to release the vehicle brakes without a delay;

a second brake pedal;

second means mechanically associated with said second brake pedal and responsive to actuation thereof to engage the vehicle brakes and neutralize the vehicle transmission, said second means responsive to release of said second pedal from an actuated condition to re-establish the transmission to a driving condition and disengage the brakes, said second means operable to delay the disengagement of the brakes until the transmission is in a driving condition.

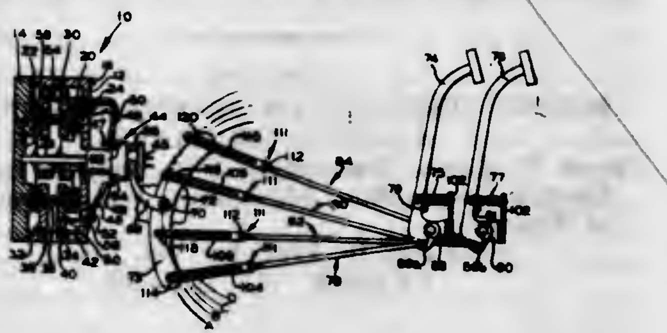
3,181,668

DOUBLE CLUTCH AND CONTROL LINKAGE THEREFOR

William H. Sink, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia

Filed Jan. 21, 1963, Ser. No. 252,769

11 Claims. (Cl. 192—48)



1. A mechanism for inducing motion to an element having a central location, first and second spring biased positions on opposed sides of the central location and first and second spring biasing positions on opposed sides of said central location comprising in combination, a first and a second linkage means operatively connected to said element and each including a lost motion device, said first linkage means being movable to a first position to position said element in said first spring biasing position while said element moves relative to said second linkage means as a result of the operation of the lost motion device therein and being movable to a second position whereby said element is free to move to its first spring biased position while moving relative to said second linkage means as a result of the operation of the lost motion device therein, said second linkage means being movable to a first position to position said element in said second spring biasing position while said element moves relative to said first linkage means as a result of the operation of the lost motion device therein and being movable to a second position whereby said element is free to move to its second spring biased position while moving relative to said first linkage means as a result of the operation of the lost motion device therein, whereby said linkages independently position said element.

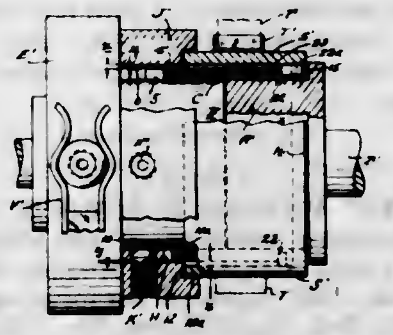
3,181,669

ON-OFF INDEXING TYPE SPRING CLUTCH

Wayne C. Kunde, Lakewood, and Donald R. Tomko, Euclid, Ohio, assignors to Curtiss-Wright Corporation, a corporation of Delaware

Filed Nov. 21, 1961, Ser. No. 154,935

6 Claims. (Cl. 192—81)

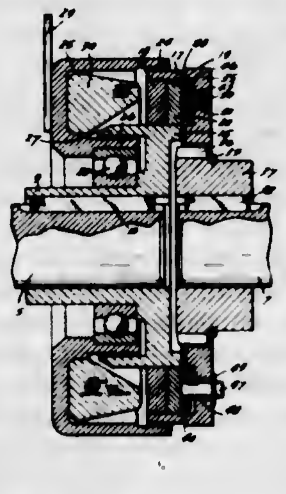


1. An on-off indexing type spring clutch mechanism comprising an input clutch drum adapted to be continuously driven and an output clutch drum coaxial therewith, a helical clutch spring having coil portions resiliently preloaded radially against respective drums and being otherwise unconnected with the input drum and being operatingly connected at the opposite end of the spring to turn with the output drum as though integral therewith, a control sleeve around the spring externally thereof connected thereto at an input-drum-associated

end coil of the spring, the connection between the spring and the output drum including a peripheral radially internal surface radially closer to an endmost output-drum-associated coil of the spring than the radial distance between adjacent coils of the spring and the control sleeve, and means operative to stop the control sleeve in a predetermined angular position to disengage the clutch.

3,181,670
SPRING DISENGAGED ELECTROMAGNETIC CLUTCH OR BRAKE

Ernest W. Leive, Wauwatosa, Wis., assignor to Stearns Electric Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 10, 1962, Ser. No. 165,433
3 Claims. (Cl. 192—84)

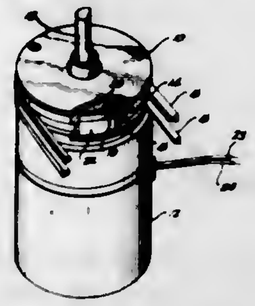


1. In a device of the character described,
first and second hubs,
radially spaced annular poles on the first hub,
means comprising an electromagnet fixed against rotation and having fixed poles lapping the annular poles on the first hub and having radial clearance accommodating relative rotation between the fixed poles and the annular poles for electromagnetically energizing the poles first mentioned,
an armature reciprocably splined on the second hub for movement to and from the annular poles,
a relatively non-magnetic filler between the annular poles and provided with a friction face,
a floating ring carried by the armature and engageable with said filler face,
compression spring means interposed between the ring and the armature and biasing the armature away from the ring, and
means for connecting the ring with the armature against rotation respecting the armature, and
means for limiting the separation of the armature and the ring.

3,181,671
MAGNETIC VARIABLE TORQUE CLUTCH

Klaus H. Gruenbeck, Costa Mesa, and Robert L. Brown, Torrance, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,403
7 Claims. (Cl. 192—84)

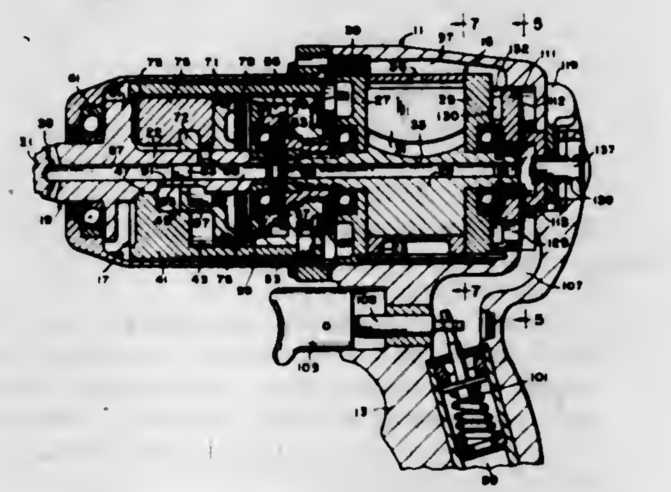
1. An electro-mechanical clutch comprising:
(*a*) an output shaft rotatably mounted at a fixed position along a predetermined axis, said output shaft being provided with a disc providing a surface of revolution about said shaft;
(*b*) an element rotatably mounted about said shaft with an axis of rotation along said predetermined axis, said element having an inner surface in a parallel plane spaced from said surface of revolution of said disc and having a portion thereof on the opposite side of said surface of revolution on said disc composed of material of permeability greater than unity;
(*c*) means including a permanent magnet attached to said disc on the side thereof opposite from said surface of revolution for generating a first magnetic field in a predetermined direction through said portion of said element thereby to normally maintain said inner surface of said element spaced from said surface of revolution of said disc;



(*d*) means disposed intermediate said surface of revolution of said disc and said inner surface of said element for providing a uniform drag in response to and in proportion to the magnitude of a force bringing said surface of revolution of said disc and said inner surface of said element together;
(*e*) means coupled to said element for rotating said element about said predetermined axis; and
(*f*) means including a solenoid for generating a second magnetic field through said portion of said element from the side thereof farthest from said permanent magnet and in a direction substantially orthogonal to said predetermined direction thereby to attract said element in a direction to move said inner surface thereof towards said surface of revolution of said disc whereby torque is transmitted to said output shaft in proportion to the intensity of said second magnetic field.

3,181,672
TENSION CONTROL WRENCH

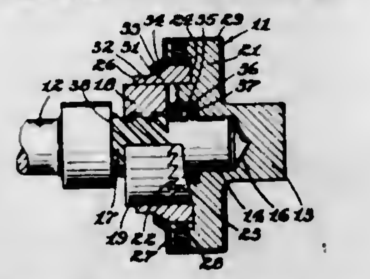
Roger I. Swanson, Spring Lake, Mich., assignor to Gardner-Denver Company, a corporation of Delaware
Filed June 20, 1961, Ser. No. 118,314
21 Claims. (Cl. 192—.096)



8. In an air operated rotary impact wrench:
an air motor; a rotatable body driven by said motor;
a rotatable anvil having an impact receiving surface lying in a generally radial plane;
an impact element, mounted for longitudinal rectilinear movement in said body, having an impact delivering surface lying in a generally radial plane relative to said body; pressure surface means associated with said element;
valve means defined by coacting valve elements rotated respectively with said body and said anvil, operative upon relative rotation thereof to alternately direct air to said pressure surface means, to extend said element for impact engagement with said anvil, and to vent air from said pressure surface means, to permit retraction of said element out of the path of said anvil; spring means for effecting said retraction of said element;
a valve positioned adjacent to said motor for controlling the flow and the velocity pressure of air directed to the motor, independently of the air directed to said pressure surface means, to provide constant energy input to said motor;
and means for supplying air to said valve means and to said motor valve.

3,181,673
SELF-ENERGIZING OVERRUNNING CLUTCH WITH SPEED RESPONSIVE RETARDER

Joseph W. Poliseo, Elmira, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed Feb. 11, 1963, Ser. No. 257,572
4 Claims. (Cl. 192—103)

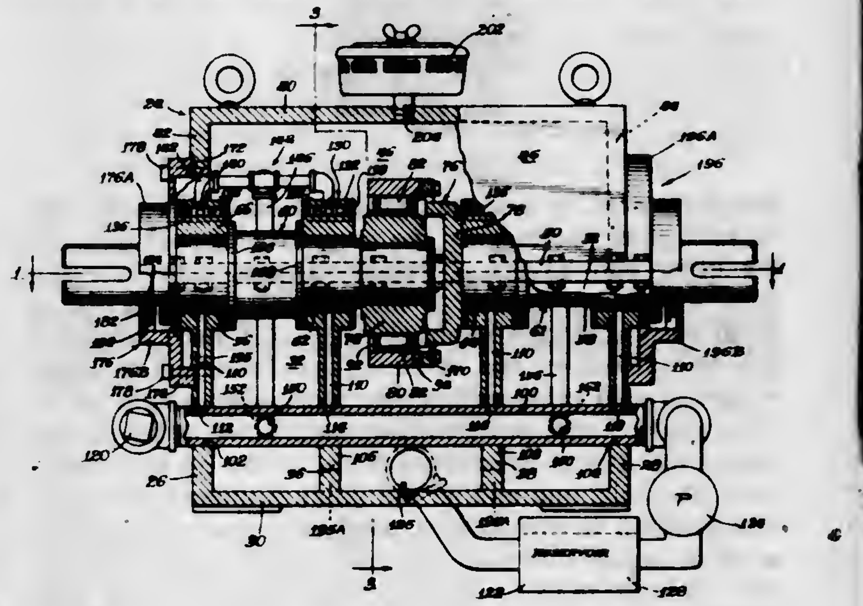


1. A self-energizing overrunning clutch comprising:
a driving shaft;
a driven shaft in axial alignment with the driving shaft;
a driving clutch member supported on the driving shaft adapted for movements toward and away from engagement with the driven clutch member, said clutch members having interengaging overrunning clutch teeth;
a spring urging the driving clutch member away from the driven clutch member;
means for transmitting torque to the driving clutch member and causing driving clutch member movements toward the driven clutch member;
retarder means including centrifugal means slidably supported on the driven clutch member and adapted below a predetermined speed to frictionally engage the driving clutch for assisting the means causing driving clutch movements to overcome the spring force and causing the driving clutch member to move into engagement with the driven clutch member, said retarder means further adapted at and above the predetermined speed to disengage from the driving clutch member to allow the spring to urge the driving clutch member away from the driven clutch member; and
said means for transmitting torque to the driving clutch member comprises helical splines, said helical splines being of a hand to combine with the inertia of the driving clutch member and the retardation of said retarder means to thread the driving clutch member toward engagement with the driven clutch member.

3,181,674
ONE-WAY CLUTCH, BEARING, AND COOLING MEANS THEREFOR

Joseph A. Marland, P.O. Box 308, La Grange, Ill.
Filed Feb. 26, 1962, Ser. No. 175,589
11 Claims. (Cl. 192—113)

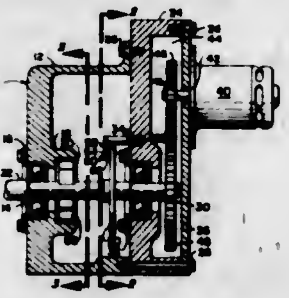
7. A one-way clutch coupler adapted to operate at high rotation rates comprising a housing having a bottom and a pair of parallel walls extending upwardly therefrom, the bottom having an orifice therein and the walls being constructed of material having the thermal conductivity of metals, each of said walls having a part cylindrical surface therein and said surfaces being on a common axis, a bearing cap constructed of material having the thermal conductivity of a metal mounted on each of the walls confronting the part cylindrical surface of said wall, each of said bearing caps having a part cylindrical inner surface confronting the part cylindrical surface of the confronting wall and forming therewith a cylindrical bearing surface, said bearing caps also having an outer surface sloping upwardly from the confronting wall, each of said bearing caps having a body disposed more remote from the confronting wall than the sloping surface of said bearing cap, each of said bodies being provided with a cavity therein and an opening communicating with the cavity positioned adjacent to the sloping surface of said bearing cap, a first shaft journaled within the bearing surface of one of said walls and confronting the bearing cap thereof, a second shaft journaled within the bearing surface of the other of said walls and confronting the bearing cap thereof, a one-way clutch having a cylindrical inner race mounted coaxially on the first shaft and a cylindrical outer race mounted coaxially on the second shaft, said one-way clutch having a plurality of driving elements disposed between the inner and outer race in communication with the atmosphere within the housing, a reservoir adapted to be positioned below the orifice in the bottom of the housing and in communication with the orifice, a body of liquid lubricant only partially filling the reservoir, a pump having an inlet connected to the reservoir and an outlet, means defining a first passage communicating with the outlet of the pump and the bearing surfaces for delivering a liquid lubricant to the bearing surfaces at a first high pressure, and means defining a second passage communicating with the outlet of the pump and the cavity of the bodies including a flow restricting orifice for delivering liquid lubricant to the cavity at a lower second pressure, the area of the flow restricting orifice being less than the area in the opening in the body so that liquid lubricant flows from the opening at a third and lowest pressure.



3,181,675
SHAFT INDEXING DEVICE

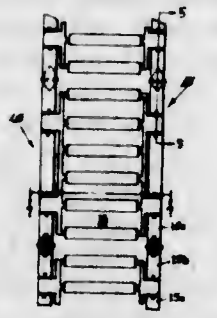
William F. Funnell, Glendora, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Feb. 26, 1962, Ser. No. 175,845
1 Claim. (Cl. 192—148)

An indexing device comprising a housing having a shaft rotatably mounted therein, means on said housing providing a friction surface adjacent said shaft, a spiral spring having its inner end fixed to said shaft and its outer end frictionally engaging said friction surface, driving means to rotate said shaft in one direction at relatively high speeds for winding said spiral spring tighter about said shaft to store energy in said spiral spring, said spiral spring being adapted to release the energy stored therein for rotating said shaft in a reverse direction at a relatively low speed when said driving means is inactivated and rotation of said shaft in said one direction stops, a disc mounted on said shaft and concentric therewith, a stop member on said housing near the periphery of said disc and extending into spaced overlying relationship to the periphery of said disc, a pawl, means pivotally mounting said pawl intermediate its ends on said disc near its periphery and for movement in a plane parallel to said disc, one end of said pawl overlapping the periphery of said disc and the other end having a weight thereon such that said pawl will lie contiguous to the periphery of said disc so as to clear said stop member when said shaft rotates in said one direction, due to centrifugal force acting on the weight at said other end of the pawl, said weight at the other end of said pawl causing said pawl to be pivoted due to the loss of centrifugal force acting on said weight such that said one end of the pawl is moved outwardly to a position in overlapping relation to said stop member so as to engage said stop member during a period of rotation of said shaft in said reverse direction, and limit means on said disc maintaining said one end of said pawl in said stop member engaging position during said period of reverse rotation of said shaft.



3,181,676
COLLAPSIBLE CONVEYOR

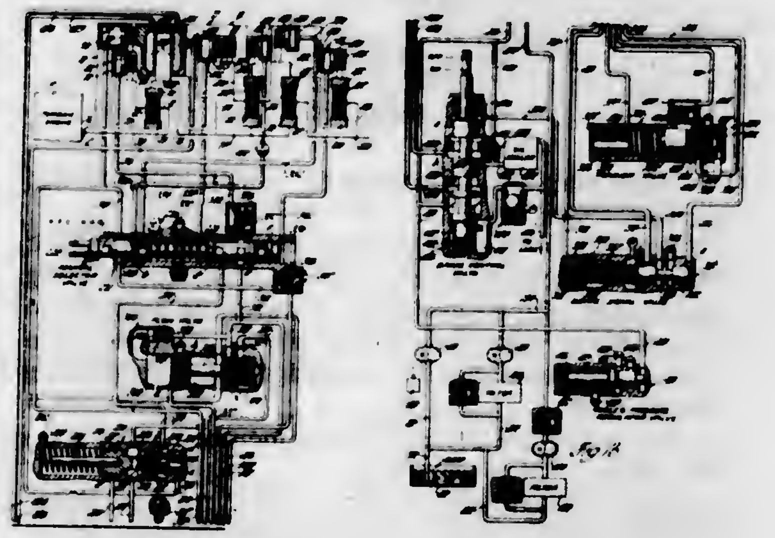
William R. Hire, Newark, Ohio, assignor, by direct and mesne assignments, to Research Manufacturing, Inc., Newark, Ohio, a corporation of Ohio
Filed Oct. 29, 1962, Ser. No. 233,958
3 Claims. (Cl. 193—35)



1. A collapsible conveyor comprising at least a pair of side rails having a spacing therebetween and each composed of a plurality of separate, adjoining straight sections, each section further comprising a plurality of segments, dowel pin means non-rotatively securing said segments; hinge means permanently connecting said sections to one another for movement between a folded position and a longitudinally extended position, said hinge means having lineal hinge axes disposed in perpendicular relation to the longitudinal axes of said sections; a plurality of roller sections extending transversely between said side rails, each of said roller sections comprising a plurality of transverse rollers, a pair of end pieces on opposite ends of said rollers and adapted to rotatively receive said rollers, a joining block formed with each of said end pieces in integral relation to said dowel pins joining said segments to provide for axial turning movement of each of said side rails as a unit when the sections of side rails occupy their relatively longitudinally extended positions, said hinge means being turnable with said side rails to positions in which the hinge axes thereof are disposed in perpendicular relation to both the longitudinal axes of said side rails and the longitudinal axes of said roller members to thereby rigidly lock the adjoining side rail sections against relative folding movement.

3,181,677
TRANSMISSION

Mark E. Fisher, Carmel, and Charles R. Copeland, Acton, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 3, 1960, Ser. No. 67,032
12 Claims. (Cl. 192—4)



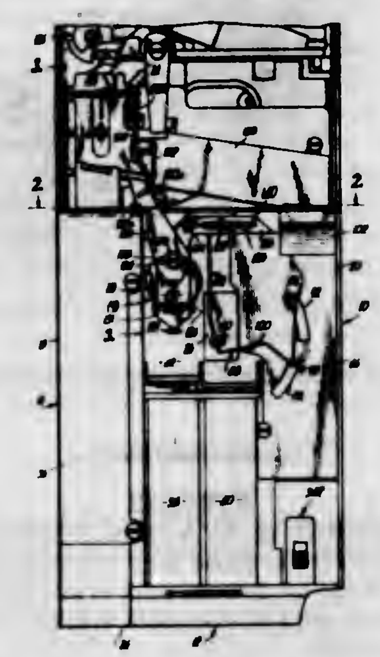
1. In a power plant, a turbine engine having an output, a multiratio transmission including a hydrodynamic brake driven by said engine output, said transmission having a plurality of ratio establishing devices, a source of fluid under pressure, shift control means operatively connected to said ratio establishing devices for selectively actuating said ratio establishing devices to selectively establish the ratios of said multiratio transmission, governor means operatively connected to said turbine output responsive to turbine output speed, brake control means connected to said source and said hydrodynamic brake having a brake on position connecting said source to said hydrodynamic brake to engage said brake and a brake off position draining said hydrodynamic brake to disengage said brake, and control means operatively connected to said governor means and brake control means operative in response to said governor operative at a speed in excess of the normal operating speed of said turbine engine to actuate said brake control means to move said brake control means to said brake on position.

ERRATUM

For Class 193—35 see:
Patent No. 3,181,676

3,181,678
COIN CHANGER APPARATUS

Merral P. Haverstick, St. Louis, and Joseph Allen Lotspeich, Florissant, Mo., assignors of one-half to The Vendo Company, Kansas City, Mo., and one-half to Coin Acceptors, Inc., St. Louis, Mo., both corporations of Missouri
Filed Feb. 19, 1962, Ser. No. 173,994
4 Claims. (Cl. 194—9)



1. In coin actuated apparatus for control of actuation of operable mechanism only after at least one coin of a first value and at least one coin of a second value have been inserted therein, said apparatus including:

means defining separate pathways for said coins of a first value and the coins of said second value respectively;

means adjacent the coin pathway defining means presenting coin reject passages leading from each of said coin pathways to a coin return area, and coin accept passages extending from respective coin pathways to a coin collection area;

first switch means associated with the coin accept passage for said first value coins and having a first movable switch arm portion extending into the coin accept passage for said first value coins for sensing passage of a first value coin therethrough, and a second switch arm portion in spaced relationship to said first switch arm portion;

second switch means associated with the coin accept passage for said second value coins and provided with movable switch arm means extending into the coin accept passage for said second value coins for sensing passage of a second value coin therethrough;

electrically operated blocking means having shiftable means in the coin pathway for said second value coins for preventing the latter from entering a corresponding coin accept passage and directing the second value coins to the reject passage therefor when the shiftable means is in one position thereof, and for permitting said second value coins to pass into the accept passage therefor when the shiftable means is in a second position thereof;

electrically operated retainer means operably associated with the switch arm means of said first switch means and including an electromagnet having armature means mounting hook means thereon normally disposed to operably engage said second switch arm portion of said first switch means to retain said first switch arm portion in the position assumed by the same upon passage of a first value coin through the coin passage therefor, when the retainer means is in one condition thereof;

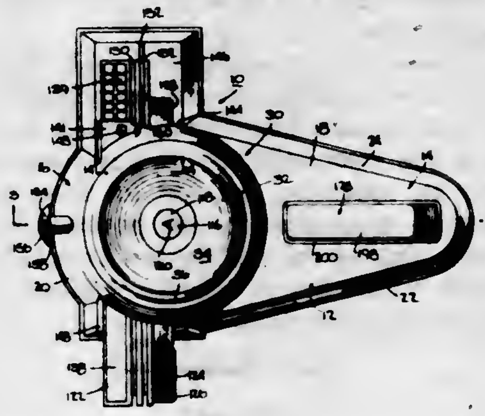
electrically operated control means operably coupled to said switch means and to said blocking means for maintaining the latter in a condition causing the shiftable means to be maintained in said one position thereof, until at least one coin of said first value has been inserted in the apparatus as sensed by the switch means associated with the coin accept passage for said first value coins, whereupon the condition of the blocking means is altered to effect shifting of the shiftable means into the second position of the same permitting second value coins to pass through a respective pathway into the coin accept passage therefor;

electrically operated means coupled to said control means and adapted to be connected to said operable mechanism for actuation of the latter and return of said blocking means to the initial condition thereof to cause said shiftable means to be returned to said one position thereof in direct response to passage of coins of preselected second value through said coin accept passage therefor as sensed by said second switch means; and

shiftable means operably coupled to said hook means positioned in the coin pathway for said first value coins for directing said first value coins into the coin accept passage therefor when the retainer means is in said one condition of energization thereof.

3,181,679
EMBOSSING TOOL

Albert Stubbmann, Flushing, N.Y., assignor to Kolmer Bros., Inc., New York, N.Y., a corporation of New York
Filed Sept. 26, 1963, Ser. No. 311,768
10 Claims. (Cl. 197—6.7)



1. A tool for embossing a length of flexible tape comprising:

(*a*) a housing having a tunnel,

(*b*) a carriage arranged and constructed to carry the length of tape, said carriage having a surface with a linear sequence of areas on which letters, numbers and the like can be removably inscribed,

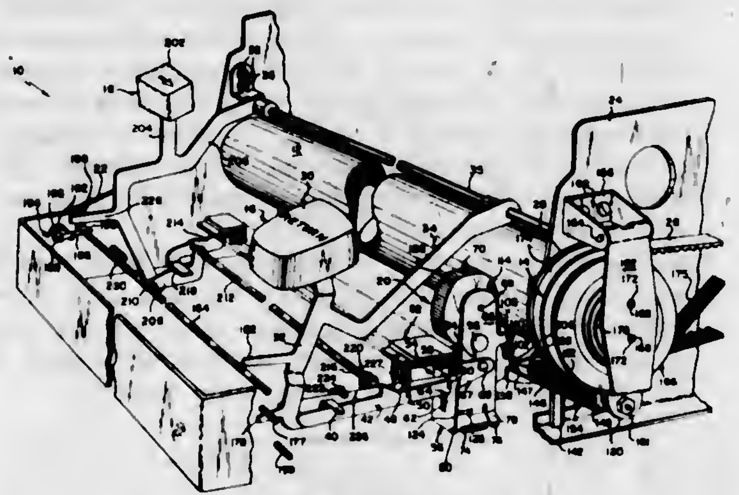
(*c*) drive means for advancing the carriage step by step by equal intervals through the tunnel,

(*d*) said housing having a viewing aperture adjacent the path of travel of the carriage through which the successive areas of the carriage are exposed one after another to view, whereby the carriage can be prepared by inscribing letters, numbers and the like one in a square which during operation of the tool will be presented seriatim through the aperture for observation,

(*e*) press assembly means mounted on the housing for impressing characters on the length of tape, said means including a character wheel having a spaced die and anvil between which the length of tape passes, said die and anvil including registered sets of associated male and female characters, and (*f*) actuating means for moving a selected portion of the die toward the anvil to emboss the tape with a selected character corresponding to the letter, number or the like observed in the aperture.

3,181,680
POWER CONTROL APPARATUS IN A DATA TRANSFERRING DEVICE

Samuel D. Cappotto, Syracuse, and Theodore S. Bolton, Fayetteville, N.Y., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Filed May 14, 1963, Ser. No. 280,385
12 Claims. (Cl. 197—17)

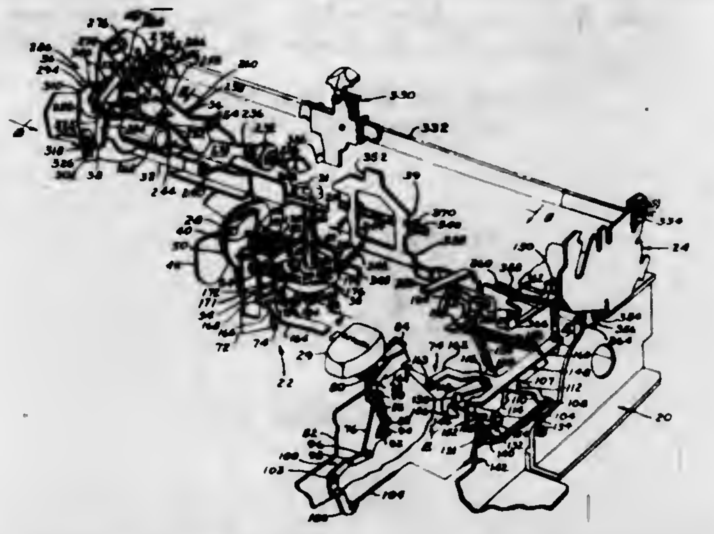


6. In a power operated data transferring device:
- (*a*) a plurality of function performing mechanism actuating links;
- (*b*) a continuously rotating power roll;
- (*c*) a single power arm mechanism;
- (*d*) a feature key for each of the function performing mechanisms; and
- (*e*) an independent interposer operably interposed between each function performing mechanism and the associated feature key and operable by the movement of the associated feature key from an inoperative to an operative position to drive connect the power arm mechanism to the power roll and to the actuating link of the mechanism associated with the operated feature key to displace said link in a mechanism actuating direction.

3,181,681
CARRIAGE RETURN MECHANISM HAVING CENTRIFUGAL AND FRICTION CLUTCHES IN SERIES

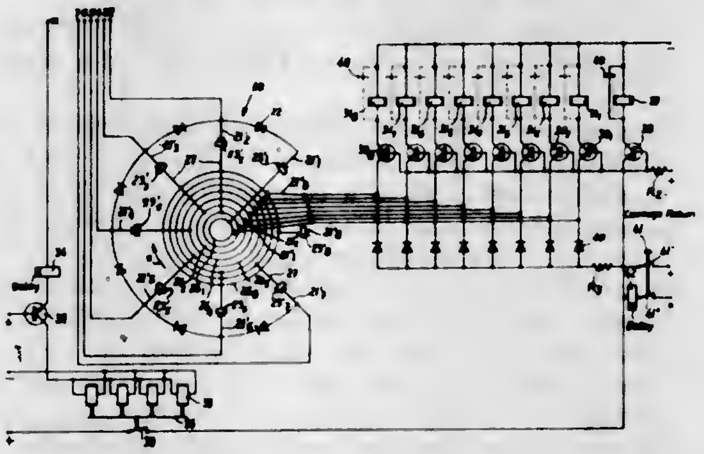
Joseph P. Barkdoll, De Witt, N.Y., assignor to SCM Corporation, a corporation of New York
Filed Oct. 31, 1961, Ser. No. 149,017
5 Claims. (Cl. 197—66)

1. Carriage return and line spacing mechanism for typewriters and the like having carriage means displaceable from an initial position and an angularly displaceable platen mounted on the carriage and comprising:
- (*a*) a continuously and unidirectionally rotating power member having a centrifugal clutch mounted thereon,
- (*b*) a single friction clutch means having input means and output means,
- (*c*) means operatively connected between the output means of the friction clutch and said carriage to advance said platen and return said carriage to its initial position, said last-named means being actuated solely by said friction clutch output means,
- (*d*) means for operatively connecting said centrifugal clutch to said friction clutch input means comprising a unitary member adapted to be selectively actuated by an operator-actuated carriage return actuating mechanism for simultaneously connecting said power member into operative engagement with said centrifugal clutch and the input means of said friction clutch.



3,181,682
PROPORTIONAL SPACING MECHANISM CONTROL FOR TYPEWRITERS

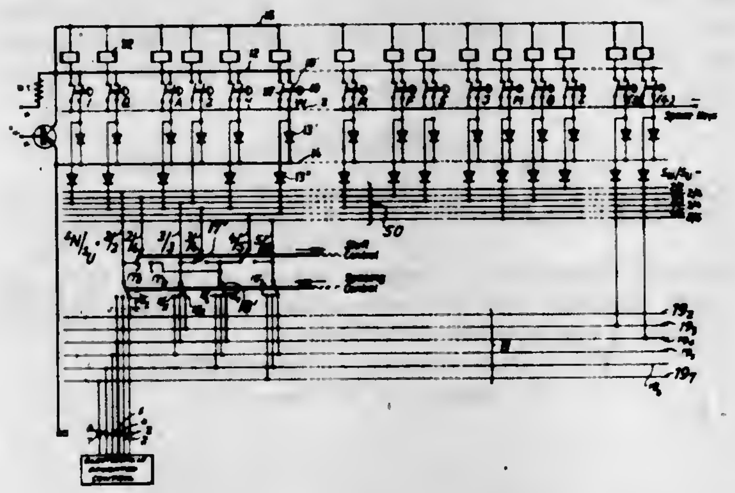
Hans Elsner, Wilhelmshaven, and Walter Behr, Villingen, Germany, assignors to Olympia Werke A.G., Wilhelmshaven, Germany
Filed Jan. 10, 1963, Ser. No. 250,587
Claims priority, application Germany, Jan. 18, 1962, O 8,486
19 Claims. (Cl. 197—84)



1. A proportional spacing mechanism control arrangement for typewriters having a plurality n of selectable and electromagnetically operable stop means for stopping after a key operation the typewriter carriage in a position spaced from the preceding position by a variable multiple of a predetermined fraction a/n of the standard carriage step a in proportion to the type width of the character printed upon such key actuation, and furnishing with each individual key actuation an electrical stop actuating pulse for setting respectively selected stop means, comprising, in combination, a plurality of input means for receiving said stop actuating pulses and respectively associated with different multiples of said predetermined fraction a/n of the standard carriage step; multipole distributor switch means cyclically turnable in one direction in synchronism with the carriage movement through a plurality of positions respectively corresponding in sequence to sequential positions of said carriage which are spaced from each other by said fraction a/n and which said carriage may assume in making a step after a key actuation, said distributor switch means having a plurality of input terminals respectively connected with said plurality of input means in sequential order corresponding to said different multiples of said fraction a/n and a plurality of output terminals respectively connected to said electromagnetically operable stop means, and said distributor switch means providing in any one of said sequential positions thereof an individual path from any one of said input terminals via a selectable one of said output terminals to the respectively connected stop means, the individual path to a selected output terminal and to the stop means connected therewith being determined by the position which said distributor switch means occupies at a given moment, so that in any position of said distributor switch means a stop actuating pulse applied to a particular one of said input terminals associated with a particular multiple of said fraction a/n is transmitted to said stop means in such a manner that irrespective of the existing position of said carriage the latter will carry out, after the printing of the character corresponding to the key actuation producing the particular stop actuating pulse, a step in the magnitude of that multiple of said fraction a/n with which the input terminal is associated to which the particular stop actuating pulse has been applied; and means for turning said distributor switch means in one direction cyclically through said sequential positions in synchronism with the carriage movement.

3,181,683
CARRIAGE STEP SELECTOR ARRANGEMENT FOR PROPORTIONAL SPACING CONTROL OF A TYPEWRITER

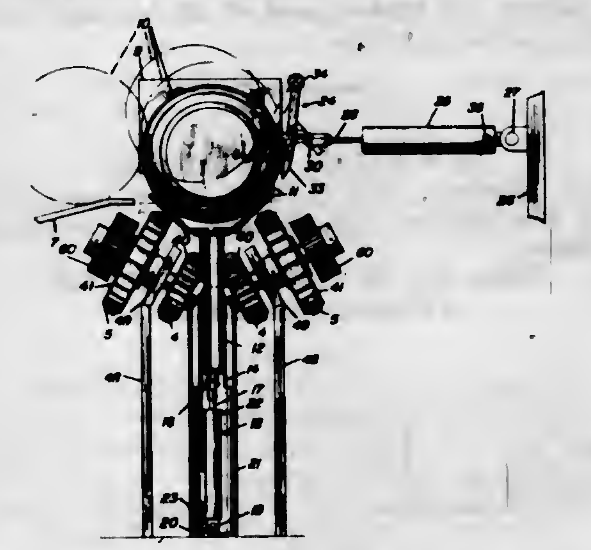
Hans Elsner, Wilhelmshaven, and Walter Behr, Villingen, Germany, assignors to Olympia Werke A.G., Wilhelmshaven, Germany
Filed Apr. 1, 1963, Ser. No. 275,178
Claims priority, application Germany, Jan. 19, 1962, O 8,488
11 Claims. (Cl. 197—84)



1. A carriage step selector arrangement for proportional spacing control of an electric typewriter including character keys individually assigned to different pairs of characters, respectively, and shift means for shifting between normal printing position and shifted printing position of type printing means, particularly the positions assigned respectively to a pair of upper case and lower case type faces of a particular letter, and having electrically operable control means for determining after a key actuation the selectable size of the type writer carriage step depending upon the width of the character printed upon such key actuation, comprising, in combination, a plurality of control contact means connected with a source of electric energy and respectively cooperating with said character keys for being moved to closed position when the respective key is actuated; a plurality of bus bar means each being assigned respectively to a different characteristic combination in a character pair of the width of the character printable by a key actuation in said normal printing position with the width of the other character of such pair printable in said shifted position, all these control contact means which are actuatable, respectively, by a key assigned to a pair of type faces of a particular combination of widths being connected with the respectively corresponding one of said bus bar means; a plurality of change-over switch means respectively assigned to different ones of said width combinations and having each a movable contact member connected with the bus bar means assigned to the respectively corresponding width combination and two stationary contacts of which the first one is assigned to the one character width of the particular width combination and the second one is assigned to the other character width thereof, said plurality of change-over switch means being jointly movable by said shift means between a first position in which said movable contact member engages said first stationary contact and a second position in which it engages said second stationary contact; and a plurality of output means for applying an electric potential appearing upon actuation of a character key at any one of said stationary contacts of said changeover switch means to those of said control means which are assigned to determine a carriage step of a size depending upon the type face width to which the respective stationary contact is assigned.

3,181,684
TRANSFER MECHANISM FOR CONVEYOR KEG PALLETIZING DEVICE

John Miller, Cambria Heights, N.Y., assignor to The F. & M. Schaefer Brewing Company, Brooklyn, N.Y.
Filed June 16, 1961, Ser. No. 117,720
5 Claims. (Cl. 198—24)



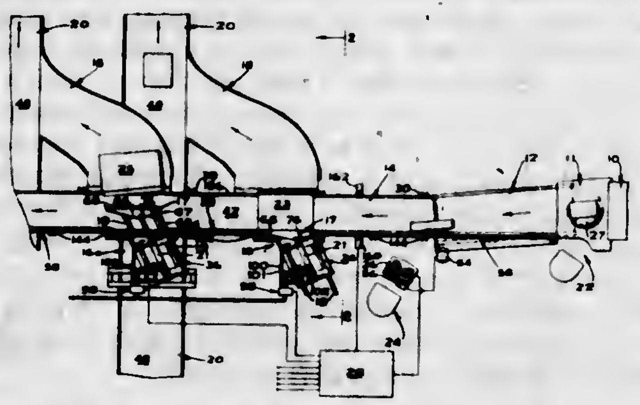
1. A transfer mechanism for an automatic conveying and tiering mechanism for palletizing unit loads of relatively heavy articles such as barrels, kegs and the like comprising a transfer station, a conveyor for conveying articles towards said station, a pick up conveyor travelling at a slightly higher speed for taking said articles from said first conveyor to said station, means for raising each article as it arrives at said station a predetermined distance, skids leading away from said station and means for moving said article when in raised position from said station to said skids.

3,181,685
ARTICLE SORTING SYSTEM

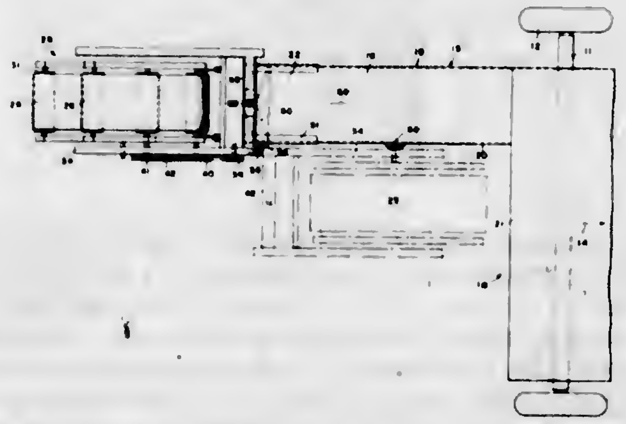
Jacques J. Brunner and William W. Collins, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 26, 1962, Ser. No. 190,421
6 Claims. (Cl. 198—24)

1. In a system for sorting articles, the combination of an elongate article conveying surface arranged to support and convey a succession of spaced irregularly shaped articles along a predetermined generally horizontal path, a longitudinally extending skirt board arranged to upstand

from the conveying surface and to lie substantially coplanar with a side boundary of said path, an article diverter blade normally forming a portion of said skirt board but mounted for rapid bodily movement across the article path from the plane of the remainder of the skirt board to shift a predetermined article from said path, and a power driven feeding and aligning conveyor arranged at the forward end of said conveying surface for depositing the articles in succession on said conveying surface adjacent said skirt board; the skirt board extending over the feeding and aligning conveyor, means mounting said feeding and aligning conveyor at an angle relative to said skirt board for positively moving articles placed thereon to a position against the skirt board, said conveying surface and path being transversely and downwardly inclined toward the skirt board so the articles conveyed thereby tend to gravitate toward the skirt board, articles arranged adjacent the skirt board will not roll or shift therefrom during conveyance, and so that articles will pass closely adjacent said blade.

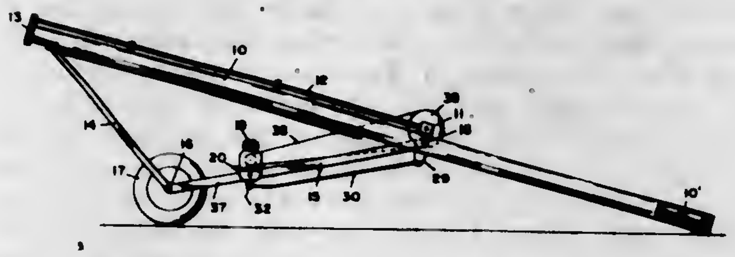


3,181,686
MOUNTING STRUCTURE
Joseph C. Hurlburt, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Apr. 29, 1963, Ser. No. 276,630
4 Claims. (Cl. 198—87)



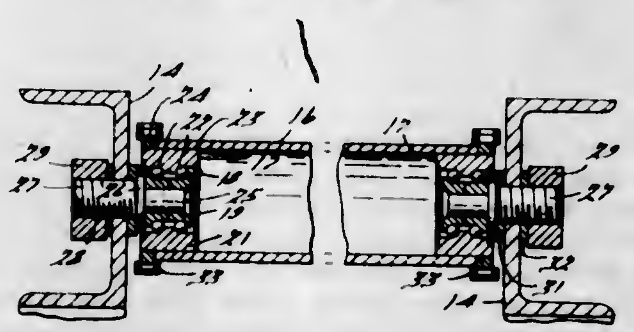
1. In combination, a hay baler having an elongated bale case which extends in a fore-and-aft direction relative to ground travel and along one side of the baler, said bale case having a vertical inside wall, a vertical outside wall, and a rearward end through which bales are discharged in a given path, a bale thrower, a frame on which said thrower is mounted, a first pivot means for connecting said thrower to said frame for lateral swinging movement about a vertical axis, and a second pivot means for connecting said thrower to said frame adjacent said vertical inside wall whereby said thrower may be selectively positioned in a first operative location in said path of discharged bales and in a second lateral location alongside said bale case inside wall wholly outside said path and forwardly of the bale case rearward end, said thrower being connected by said first pivot means when in said first operative location and the thrower being connected by said second pivot means when in said second location, said thrower receiving bales and trajecting them rearwardly from the baler when said frame is in said first position and when the frame is in said second position the baler being operable to discharge bales without using the thrower.

3,181,687
MOTOR MOUNT FOR GRAIN AUGERS AND THE LIKE
Peter Sakundiak, Rowatt, Saskatchewan, Canada
Filed June 22, 1962, Ser. No. 204,534
6 Claims. (Cl. 198—120.5)



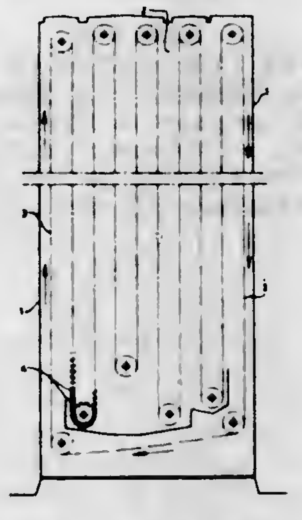
1. In a grain auger, the combination of an inclined auger tube, a supporting frame member pivotally connected to said auger tube and adjustable relative thereto whereby the angle of inclination of the auger tube may be varied, a motor mount, pivot means mounting said motor mount on said frame member for rocking movement in a vertical plane parallel to said auger tube, a levelling link pivotally connected to said auger tube and to said motor mount in parallel to said frame member whereby the motor mount may assume a horizontal position regardless of the angle of inclination of the auger tube, a motor on said motor mount, a belt drive extending from said motor to the auger tube, said belt drive being taut and operative when said mount is horizontal, and eccentric means carried by said pivot means and operatively engaging said motor mount whereby the latter may be tilted to a position wherein said belt drive is slack and inoperative.

3,181,688
ROLLER CONVEYOR WITH SPROCKETS ON BEARINGS
Nathan H. Schermer, Detroit, Mich., assignor to Acme Ball Bearing & Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 3, 1963, Ser. No. 327,676
5 Claims. (Cl. 198—127)



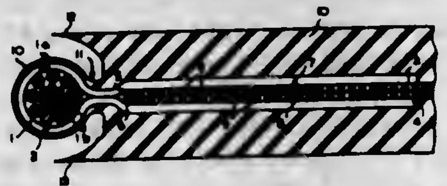
1. In a power driven roller conveyor, a frame having a pair of spaced parallel frame members, a series of cylindrical rollers in spaced parallel relation between said frame members, a pair of mounting subassemblies secured to the ends of each roller, each subassembly comprising a bearing having inner and outer races, a pin secured to the inner race and extending outwardly therefrom, means securing the outer end of said pin to the adjacent frame member, a smooth outer surface on the outer race, said outer surface being secured within the adjacent end of the rollers, a portion of the outer race extending outwardly from said end, and sprocket teeth carried by said outwardly extending portion of the outer race.

3,181,689
TUBULAR CARRIERS FOR THE STERILIZATION OF COMMODITIES IN CONTAINERS
Johannes Bernardus van der Winden, Amstelveen, Netherlands, assignor to Gebr. Stork & Co.'s Apparatenfabriek N.V., Amsterdam, Netherlands, a limited-liability company of the Netherlands
Filed July 9, 1963, Ser. No. 293,639
Claims priority, application Netherlands, July 10, 1962, 280,725
10 Claims. (Cl. 198—131)



1. A device for the treatment of commodities packed in cylindrical containers, said device comprising a casing defining a treatment space, a conveyor driven along a path within said space, horizontal rotatable tubular carriers secured to said conveyor for travel therewith along said path and being driven in rotation as they advance along said path, each carrier being provided with at least one annular constriction, which as viewed in an axial section through the carrier merges smoothly with the remaining wall of the tubular carrier, the containers being free for axial sliding movement on said constriction.

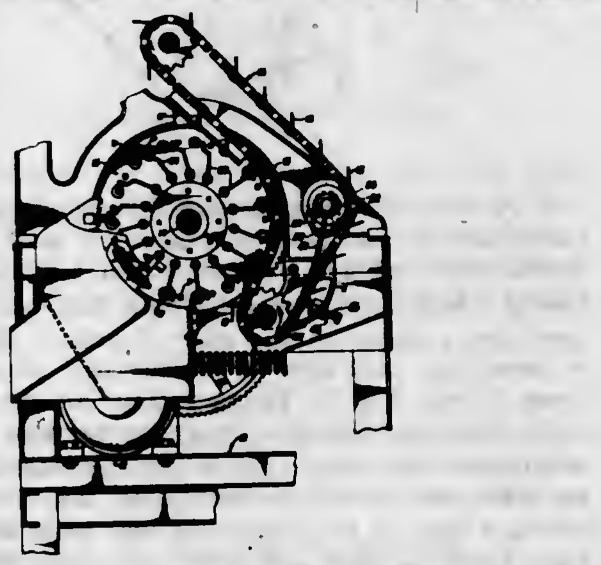
3,181,690
SEGMENTAL CONVEYOR BELT
Peter John Jenkins, Burscough, England, assignor to Dunlop Rubber Company Limited, London County, England, a British company
Filed Dec. 2, 1963, Ser. No. 327,190
Claims priority, application Great Britain, Dec. 2, 1962, 46,640/62
17 Claims. (Cl. 198—193)



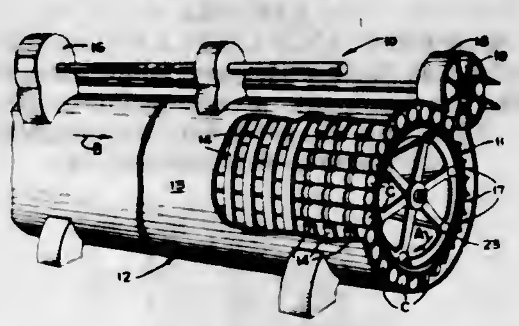
1. A belt segment member comprising a segment of flexible material, a reinforcement piece embedded within said flexible material and having at least two longitudinally extending plies of cords, a neck defined at each end of said segment of flexible material, a transverse bead disposed within and supported by said neck, a plurality of substantially inextensible cords enclosing said bead within said neck, arranged in a side-by-side relationship; and extending through a portion of length of said segment member.

3,181,691
AUTOMATIC CHAIN TENSIONING DEVICE
William Herbert Kagley, Dinuba, Calif., assignor to Lindsay Ripe Olive Company, Lindsay, Calif., a corporation of California
Filed Feb. 3, 1964, Ser. No. 342,138
6 Claims. (Cl. 198—208)

1. In an article handling machine comprising a frame, a rotatable drum mounted on the frame and embodying article contacting elements, an endless chain embodying fingers projecting outwardly therefrom and the outside of said chain traversing a peripheral arc of said drum whereby the fingers and contacting elements are successively brought into cooperative juxtaposition, rotary members oppositely spaced from said drum along extensions of a cord across the drum, the inside of the chain traversing said rotary members and being thereby confined to the path of the arc of the drum, and another rotary element mounted on said frame externally of the peripheral arc of the drum and on a radial line passing through said cord, the inside of the chain traversing said last named rotary element and the latter providing a spacer stretching the chain and maintaining generally opposed reaches of the chain separated, the mounting for the last named rotary element providing for lateral shifting of said element toward and from the axis of the drum, and resilient means of predetermined tension biasing said element in a direction away from said drum, said resilient means being constantly responsive to variations in pitch length of the chain enabling the rotary element to shift as necessary to maintain substantially a uniform tension in the chain as it travels over the drum.



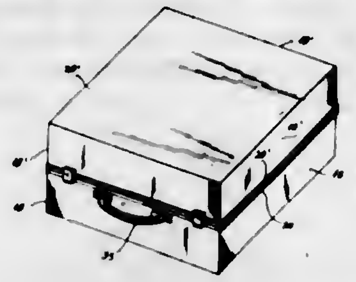
3,181,692
APPARATUS FOR HEAT TREATING CONTAINERS
Samuel A. Mencacci, St. Nicolas-Waas, Belgium, assignor to International Machinery Corporation S.A., St. Nicolas-Waes, Belgium, a corporation of Belgium
Filed Feb. 19, 1963, Ser. No. 259,527
10 Claims. (Cl. 198—211)



1. In a heat treatment apparatus, a horizontally disposed reel, a plurality of carriers on said reel for supporting containers, and a spiral track surrounding and spaced from said reel for advancing the containers longitudinally of said reel, each of said carriers having a concave and a convex surface terminating at a distal end disposed closely adjacent said spiral track and cooperating with adjacent carriers to define a plurality of discontinuous pockets of compound arcuate from, said compound arcuate pockets being adapted to effect a gentle transfer of the containers between a position wherein they are solely supported by said carriers to positions wherein they are partly supported by said spiral track.

3,181,693
CARRYING CASE INSERT FORMED WITH LOCKED-IN POLYURETHANE FOAM

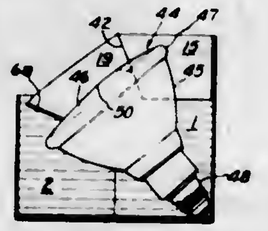
Alfred A. Freistat, 1348 Leonard Way,
Valley Stream, N.Y.
Filed Dec. 18, 1963, Ser. No. 331,587
8 Claims. (Cl. 206—1)



6. A case of the kind described having a pair of similar parts, each of said parts comprising a shell body having bottom, end and side walls with open top, said side walls having a peripheral edge all around the shell body at the open top, a frame on said edge all around the shell body to strengthen said edge, a molded nest plate having recesses in one side for fitting various articles therein, the other side of the nest plate having projections at said other side of the nest plate, a fabric member completely covering said one side of the nest plate, said fabric member having a free lip all around the nest plate and extending away from the other side of the nest plate, said nest plate being disposed in the open top of the shell body with said lip facing an inner side of said frame all around the nest plate, and an expanded foam plastic body filling said shell body, said plastic body abutting and engaging said other side of the nest plate and the projections therefrom, said plastic body pressing laterally outward on said lip of the fabric all around said frame and securing said lip against the inner side of the frame all around the nest plate, whereby the nest plate and cover are locked in place in the top of the shell body on said foam plastic body, and the plastic body is held against displacement, the frame on one of the shell bodies having a channel all around the frame, the frame on the other shell body having a ridge all around the frame for fitting into said channel, and hinge means pivotally securing the shell bodies together so that the nest plate and cover of one shell body will face the nest plate and cover of the other shell body when the ridge of the frame on the other shell body is fitted into the channel in the frame of said one shell body.

3,181,694
SHIPPING AND DISPLAY CARTON

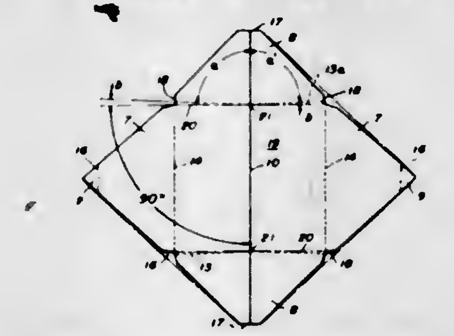
Earl B. Candell, Shaker Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed Aug. 22, 1963, Ser. No. 303,748
11 Claims. (Cl. 206—45.14)



9. In combination, a paperboard shipping and display carton having a plurality of side walls defining an enclosure, bottom closure means, and an open top, two adjacent side walls having oblique upper edges extending downwardly at acute angles to the horizontal from remote diagonal corners toward the common corner of said two adjacent side walls, oblique flaps hingedly connected to respective said oblique edges and connected together at their proximate ends adjoining said common corner, said oblique flaps projecting laterally and downwardly into the interior of the carton from said oblique edges, inner flap extensions hingedly connected to the free remote ends of respective oblique flaps and each lying flat against the inner surface of a remaining side wall of the carton, and means to retain each of said inner flap extensions in place against said remaining side wall, and an article disposed in said carton and confined longitudinally between the bottom closure means and the inwardly projecting edges of said oblique flaps.

3,181,695
PACKAGE FOR SURGICAL GLOVES

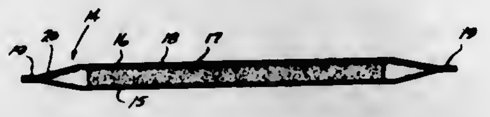
Michael Taterka, Glendale, and Stuart M. White, La Canada, Calif., assignors to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Oct. 17, 1963, Ser. No. 316,859
9 Claims. (Cl. 206—63.2)



9. A package for sterile, surgical gloves comprising:
(*a*) a sealed outer envelope;
(*b*) a folder within said envelope, said folder opening into a thin, flat sheet having a generally rectangular shape with four corners and four peripheral edges, and including;
  (1) a generally rectangular floor member positioned diagonally within the generally rectangular flat sheet, said floor member having four corners, two opposed end edges, and two opposed side edges, the corners of said floor member being positioned substantially adjacent the middle of but spaced inwardly from the peripheral edges of the flat sheet;
  (2) generally V-shaped notches near the middle of each of the peripheral side and end edges of the flat sheet, said notches extending inwardly from said edges to the respective corners of the floor members;
  (3) generally triangular side flaps, each having an apex and a base, said base being attached along a weakened fold line to the respective side edge of the floor member;
  (4) a weakened fold line transversely across the apex of each of said side flaps to provide a triangularly shaped projecting tab thereon;
  (5) two generally triangular shaped end flaps, each having an apex and a base, said base being attached to each of the end edges of the floor member along a weakened fold line, two portions of which meet to form an obtuse angle less than 180°, whereby when the side and end flaps are folded inwardly the end flaps overlap the side flaps to provide two separate and completely closed glove receiving chambers; and
  (6) a weakened fold line extending lengthwise through the center of the floor member and the center of the end flaps along a diagonal of the rectangular folder to the apex of each of said end flaps, whereby when the two glove receiving chambers are folded toward each other along the central fold line a book-shaped receiving folder is formed which folder snaps open said end flaps as it unfolds about this weakened fold line through the center of the floor member; and
(*c*) a sterile surgical glove held securely in each of said glove receiving chambers.

3,181,696
APPLICATOR BANDAGE FOR TOPS OF POLES

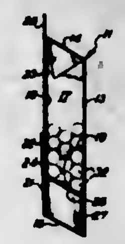
Robert M. Reddin and Robert E. Branch, Memphis, Tenn., assignors to Chapman Chemical Company, Memphis, Tenn., a corportion of Illinois
Filed June 2, 1961, Ser. No. 114,548
6 Claims. (Cl. 206—65)



5. A wood pole treating bandage construction comprising a supporting layer of water soluble film for dissolving when exposed to precipitation, a circular shaped deposit of wood preservative-protective grease material at the center of said layer, a layer of porous material over said grease material, and a protective layer of water soluble film positioned over said porous layer and readily separable therefrom for removing the center portion of said protective layer for placing the grease material over the top of a pole with the porous material facing downwardly with the edge of the protective layer and the supporting layer remaining on the pole, said film layers being sealed to each other in face to face relationship outwardly of the grease deposit presenting a flange for gripping the bandage radially outwardly of the grease material.

3,181,697
PENCIL BOX

George Reiner, New York, N.Y., assignor to Venus Pen & Pencil Corporation, New York, N.Y., a corporation of New York
Filed Nov. 19, 1963, Ser. No. 324,663
11 Claims. (Cl. 206—67)

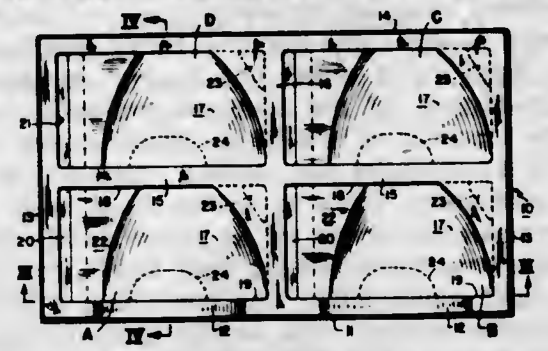


1. A paperboard box for a plurality of elongated writing instruments and formed from a single blank comprising spaced front and rear panels; parallel top and bottom panels and parallel side panels joining said front and rear panels, the spacing between said front and rear panels being substantially less than the spacing between any other parallel panels and substantially greater than the diameter of said writing instruments; and said front panel and one of said side panels being provided with a joint aperture extending only partially into the respective panels for the removal and insertion of said writing instruments.

3,181,698
PACKAGING AND DISPLAY DEVICE

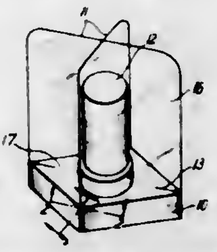
Eugene J. Knapp, Corning, and Harry P. Laffkas, Addison, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 31, 1962, Ser. No. 220,842
2 Claims. (Cl. 206—72)

1. An improved lightweight receptacle for packaging and displaying a plurality of frangible cup-shaped articles comprising, a unitary body of foamed plastic material having a bottom portion and upwardly-extending wall portions, a pair of intersecting wall portions cooperating with said first-mentioned wall portions to form and bound four separate spaced-apart upwardly-open cup-retaining cavities; each of such cavities having a frusto-paraboloidal surface to conform to the contour of side portions of a cup-shaped article to be retained therewithin, a substantially horizontal planar base portion extending along the base of one of said bounding wall portions for facilitating the positionment of the outer edge of a handle on such cup-shaped article, and an inclined planar surface portion communicating at its upper end with said frusto-paraboloidal surface and at its lower end with said substantially horizontal base portion for supporting the handle on such cup.



3,181,699
PACKAGING METHOD AND PRODUCT

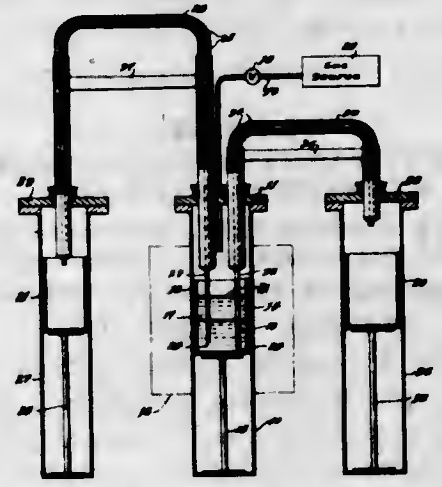
James L. Armentrout, San Francisco, Calif., assignor to Avery Industries, Incorporated, San Mateo, Calif., a corporation of California
Filed Sept. 21, 1961, Ser. No. 139,695
9 Claims. (Cl. 206—80)



1. In a package wherein an object is enclosed at [illegible] in part in a plastic skin, a base pad, web supporting strut means carried by the pad and extending from one face of the same, and a plastic film having wall portions forming an envelope which envelops and retains the object, and also having wall portions folded about the strut means and bonded together to form web portions extending outwardly from the envelope to the strut means, said film also having wall portions that are bonded to the base.

3,181,700
IMMISCIBLE LIQUIDS SEPARATOR

James C. Hesson, Riverdale, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 26, 1962, Ser. No. 190,508
2 Claims. (Cl. 210—175)

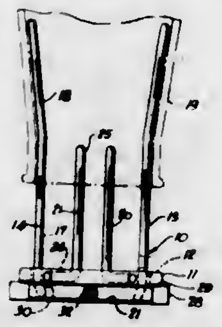


1. Apparatus for separating a fixed volume of a mixture of immiscible liquids comprising a closed mixture-

containing vessel having a single opening for the admission of the materials to be separated, means for sealing the opening, a heavy liquid-receiving vessel and a light liquid-receiving vessel, a heavy liquid outlet line having an opening adjacent the bottom of the mixture-containing vessel leading upwardly therefrom to a maximum height and thence downwardly into the heavy liquid-receiving vessel, a light liquid outlet line having an opening adjacent the bottom of the mixture-containing vessel and above the opening of the heavy liquid outlet line, the said light liquid outlet line leading upwardly out of the mixture-containing vessel to a maximum height higher than the maximum height of the heavy liquid outlet line, and thence downwardly to the light liquid receiving vessel, the light liquid outlet line containing a portion of enlarged cross-sectional area extending from a point adjacent the point of said light liquid outlet line maximum height and downwardly toward the light liquid outlet line opening in the mixture-containing vessel, and means for increasing the pressure in the mixture-containing vessel.

3,181,701
DEVICE FOR HOLDING CONTAINERS DURING WASHING

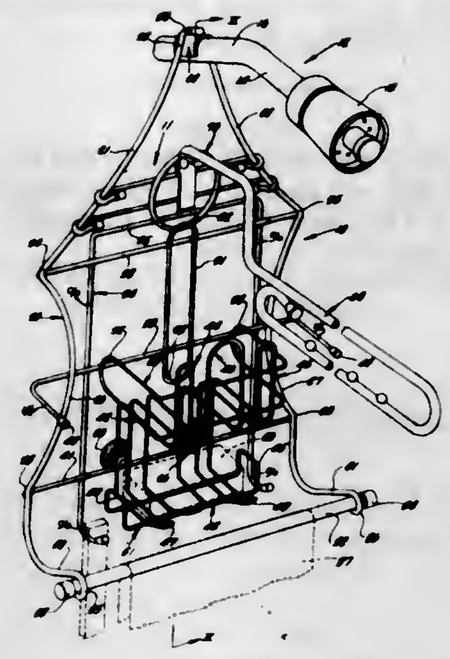
Manny Cole, 54 Kosciusko St., Brooklyn 5, N.Y.
Filed Jan. 14, 1963, Ser. No. 251,367
6 Claims. (Cl. 211—74)



1. A holder assembly for supporting bottles and the like for washing, said holder assembly comprising a support base having a central opening and parallel upper and lower surfaces, a plurality of prong-like holding members supported loosely in said support base and extending upwardly therefrom, another plurality of smaller holding members, said other holding members having a lower portion firmly connected with said support base and extending radially inwardly thereof, and an integral upper portion extending upwardly relatively to said support base and substantially parallel to the first-mentioned holding members, and clamping means carried at the lower surface of said support base for preventing removal of the first-mentioned holding members from said support base.

3,181,702
HANGER FOR USE IN COMBINATION WITH SHOWERS AND THE LIKE

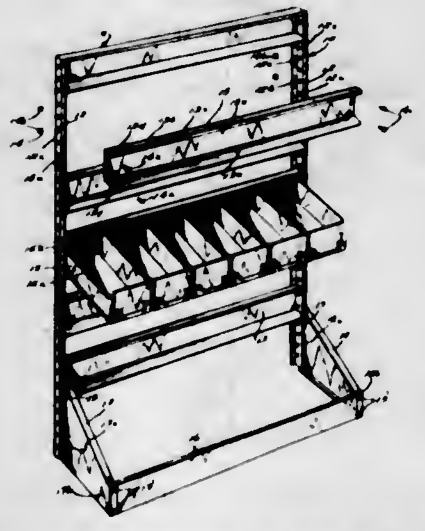
Julius Raphael, Altadena, Calif., assignor to Al-Ray Mfg. Co., Pasadena, Calif., a partnership
Filed Mar. 25, 1963, Ser. No. 267,484
10 Claims. (Cl. 211—119)



1. Apparatus for holding bathers' articles comprising a framework, the framework including a substantially planar base having an upper end, means at the base upper end for supporting the framework, a plurality of article support means extended from the base out of the plane thereof, and means removably secured to the base and extended from the base for supporting a plurality of garment hangers in spaced apart relation laterally of each other at locations spaced from the base.

3,181,703
STORAGE AND DISPLAY SHELVING STRUCTURE

John C. Dunham, Aurora, Ill., assignor to Aurora Equipment Company, Aurora, Ill., a corporation of Illinois
Filed Aug. 14, 1962, Ser. No. 216,870
10 Claims. (Cl. 211—126)

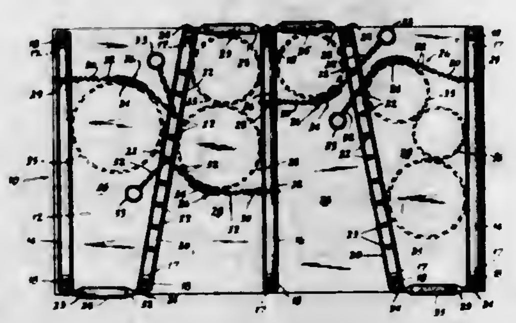


1. In a shelving structure a drawer rack for suspending drawers therefrom comprising:
a pair of uprights,
a series of channel brackets having means securing them to said uprights in vertically spaced relation,
each of said brackets haivng a downwardly projecting drawer support channel bracket flange at its upper end and a forwardly and downwardly sloped channel bracket leg at its lower end,
a series of vertically spaced rows of side by side mounted drawers angled downwardly from said uprights with each drawer suspended from an upper end from one of said channel brackets and with each of said drawers having a bottom and a rear drawer flange projecting upwardly from the bottom,
said rear drawer flange having a vertical dimension in excess of a vertical distance from a lower edge of said drawer support flange to said downwardly sloped channel bracket leg and with the bottoms of said drawers being supportingly engaged on said forwardly and downwardly sloped channel bracket legs and with said rear drawer flange being engaged behind said downwardly projecting drawer support flange,

and means attached to said rack and to said uprights for holding the uprights in an upright position and against tipping due to the end suspension of said drawers on said channel brackets.

3,181,704
CARRIER

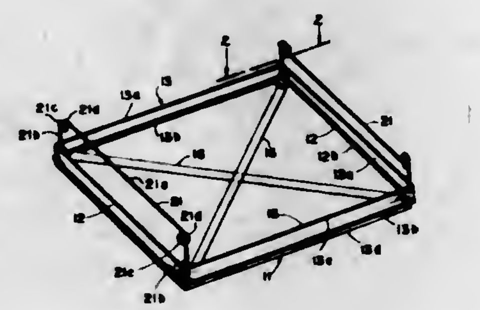
Claud F. Thomas, 6329 Pinefield Road, Columbia, S.C.
Filed Nov. 13, 1962, Ser. No. 237,117
2 Claims. (Cl. 211—126)



1. In combination, a portable carrier for transporting vases of flowers, and the like, comprising a base adapted to receive one or more units in supported relation thereon, a plurality of railings supported on said base, said railings being spaced from said base and being positioned to define a plurality of compartments having converging sides and open at the larger ends, flexible members for closing the open ends of the compartments, and means on certain railings to anchor one end of a flexible member, the other end of each flexible member being mounted on a railing for movement therealong.

3,181,705
FOLDING TRAY CONSTRUCTION

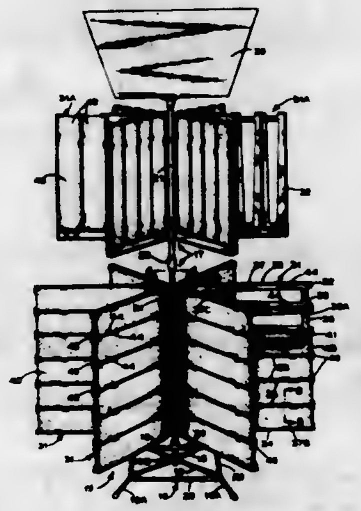
Rollie B. Nawman, Piedmont, Calif., assignor to Benner-Nawman, Inc., Oakland, Calif., a corporation of California
Filed Mar. 8, 1962, Ser. No. 178,297
5 Claims. (Cl. 211—132)



1. In a folding tray, a framework comprised of a pair of spaced parallel substantially vertical side walls and a pair of spaced parallel substantially vertical end walls, the framework also being comprised of bottom wall portions extending around the entire perimeter of the framework and having substantially continuous runner-like means depending from the same, the runner-like means being positioned inwardly from the side and end walls, and a pair of spaced substantially U-shaped bails pivotally mounted in the framework adjacent two of the spaced parallel walls for movement between upright and folded positions towards and away from said adjacent walls, the outer extremities of the bails being formed to provide runner receiving means extending the length of said adjacent walls to permit stacking of the trays one above the other when the bails are in an upright position, said runner receiving means being in the form of curved spaced pairs of portions with each of said pairs forming a runner-receiving recess extending in a direction parallel to said adjacent walls.

3,181,706
DISPLAY STAND AND ARTICLE HOLDING RACK THEREFOR

Marvin Mandel, Short Hills, N.J., assignor to Topps Products Corp., Jersey City, N.J., a corporation
Filed Oct. 30, 1962, Ser. No. 234,040
12 Claims. (Cl. 211—163)



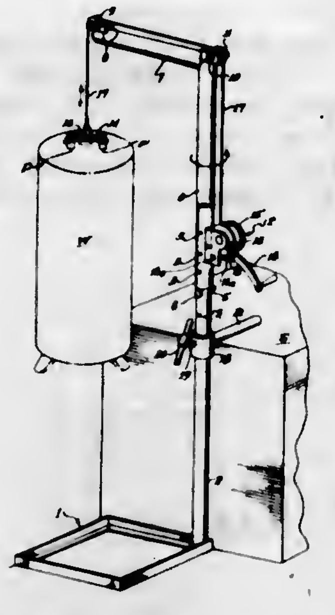
5. A display stand of modulator construction for displaying a plurality of items packaged on cards comprising:
(*a*) a base, said base including a pair of similarly V shaped rods having laterally offset end portions to define a pair of leg portions, and a rectangular reinforcing ring connected to said leg portions,
(*b*) a plurality of similarly constructed modular frame sections which are adapted to be connected end to end relationship with the lowermost section connected to said base,
(*c*) each of said modular frame sections including a central elongated standard,
(*d*) a circular rim cage connected intermediate the ends of each of said standards,
(*e*) said cage including an upper mounting ring and a lower mounting ring spaced therefrom,
(*f*) a plurality of rib members interconnected between said rings and circumferentially spaced therearound,
(*g*) a sleeve connector connecting each of said standards end to end in stacked position one on the other,
(*h*) and a rack detachably connected to said cage for holding thereon a plurality of the items to be displayed.

3,181,707
HOISTING APPARATUS

Robert V. Janssen, 1215 N. Everett St., Glendale, Calif.
Filed Aug. 12, 1963, Ser. No. 301,286
2 Claims. (Cl. 212—8)

1. In a hoisting apparatus, a base adapted to rest directly on a floor, a cylindrical column mounted on and rising from said base at an edge thereof, a hoisting unit mounted on the upper end of said column for free rotation thereon, adjustable means for determining the vertical position of said unit on said column, and means providing support for said hoisting apparatus when said hoisting apparatus is carrying a load disposed outside a vertical plane defining the perimeter of said base by engagement of said support providing means with a surface other than the floor, said support providing means comprising a rigid arm projecting laterally from said column with capacity for movement rotatively about and longitudinally of said column, and a

manually operable clamp means for releasably securing said arm on said column in any desired rotative position

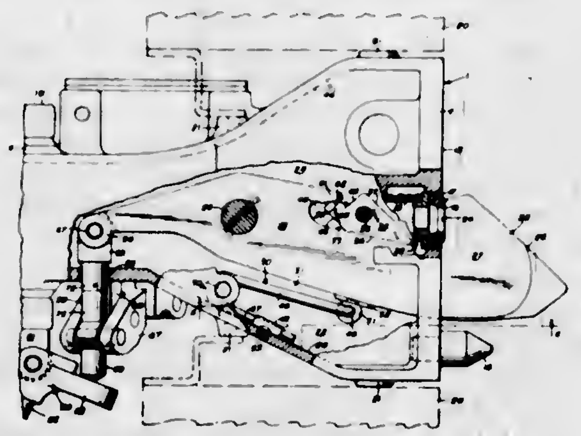


about said column and at any desired elevation thereon above said base.

3,181,708
AUTOMATIC COUPLER

Geoffrey W. Cope, Williamsville, N.Y., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland

Filed May 27, 1963, Ser. No. 283,395
15 Claims. (Cl. 213—104)



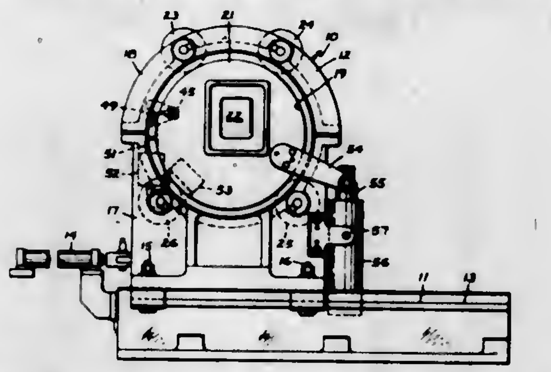
1. An automatic coupler comprising a body having a forwardly opening cavity therein, a hook projecting into said cavity and pivotally connected therewithin to said body, spring means acting between a side of said body and said hook for urging said hook toward an opposite side of said body, and means mounted on said body and interconnected with said hook for transmitting an unlocking force applied to said hook in opposition to said spring force to a hook of another coupler mated with said first named coupler.

3,181,709
TURNOVER APPARATUS FOR BILLETS AND THE LIKE

Roger Kinnicutt, Jr., Worcester, Mass., and Alfred G. Stauble, Nashua, N.H., assignors to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts

Continuation of application Ser. No. 752,088, July 30, 1958. This application Nov. 8, 1961, Ser. No. 151,063
3 Claims. (Cl. 214—1)

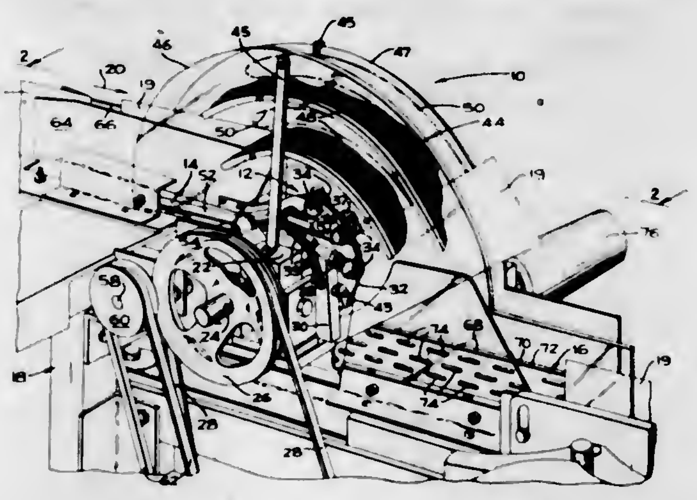
3. An apparatus for turning a running bar comprising a drum having a hollow axial passage therethrough for receiving longitudinally said running bar from a roller table, said passage of substantially larger transverse dimensions than the transverse dimensions of said bar, a block and a plate mounted within said passage on opposite sides of the axis of said drum to form spaced parallel walls in said passage, the spacing between said walls normally being substantially larger than the corresponding transverse dimension of said entering bar, means supporting said plate for movement from a first position remote from said axis to a second position intersecting said axis subsequent to the entrance of said bar in said passage, means for supporting said bar to travel through said passage with one surface of said bar in the plane normal to said walls and intersecting said axis, means for moving said plate to said second position intersecting said axis to displace said bar in order to have a corner thereof located on the axis of rotation, and means for rotating said drum in order to rotate said bar without vertically displacing said corner, the spacing between said walls when said plate is in said second position being slightly greater than said corresponding transverse dimension of said bar to permit the bar to be turned while running through said apparatus.



3,181,710
ARTICLE HANDLING APPARATUS

Dieter K. Schmidt, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Feb. 26, 1962, Ser. No. 174,970
13 Claims. (Cl. 214—1)

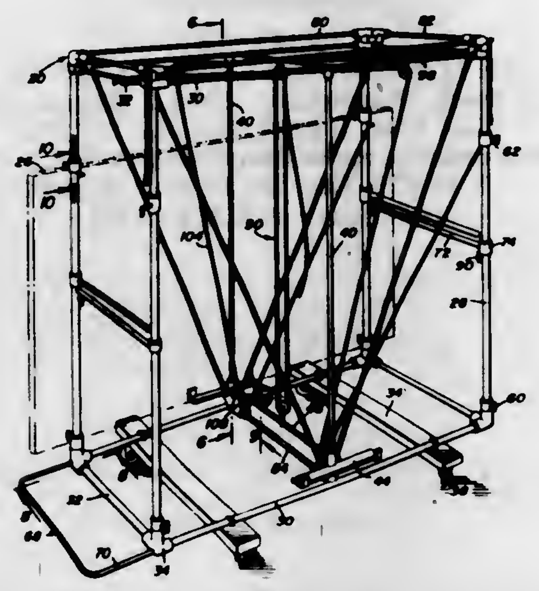


1. Mail orientation apparatus comprising a feed conveyor, a discharge conveyor positioned at an elevation below said feed conveyor, and a letter inverting device including a pair of flexible discs mounted for rotation on a common shaft positioned below said feed conveyor and having upper peripheral portions which extend above said feed conveyor and move in a direction away from said feed conveyor towards said discharge conveyor, a pair of spread rollers positioned between lower peripheral portions of said flexible discs at a point between said feed conveyor and said discharge conveyor to maintain the upper portions of said flexible discs adjacent said feed conveyor in spaced relationship to receive a letter therebetween, and a plurality of rollers resiliently urged against the upper portions of said flexible discs and spaced from said feed conveyor, said rollers forcing said flexible discs to move in close contact whereby a letter is grippingly engaged between said flexible discs and swung upwardly from an inverted position on said feed conveyor through an arc of 180° to an upright position whereupon it is released to fall to said discharge conveyor.

3,181,711
WALLBOARD POSITIONING DEVICE

Samuel W. Stockton, 317 Shelton St., Abilene, Tex.

Filed July 19, 1963, Ser. No. 296,231
6 Claims. (Cl. 214—1)



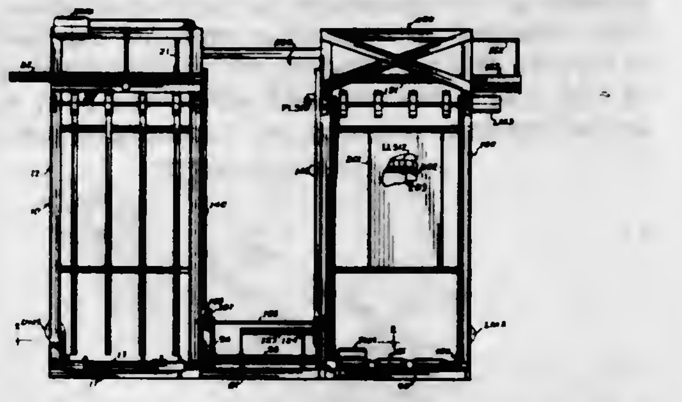
1. In a wallboard positioning device, an upright base, a lift frame mounted on and vertically adjustable relative to said base, said lift frame having a substantially flat wallboard receiving upper surface, wallboard support means on at least one side of the device, means for vertically moving said supporting means, with a vertically positioned wallboard thereon, relative to the lift frame so as to assist in positioning the wallboard on the lift frame upper surface, and means for enabling a vertical adjustment of the lift frame relative to the base so as to enable a raising of the wallboard, said base including vertical guide means, said supporting means being slidably mounted on said guide means, said means for vertically moving the supporting means being operatively connected between a fixed portion of the base and the supporting means, said lift frame including a depending portion rigid therewith and located below the supporting means, said means for enabling a vertical adjustment of the lift frame comprising means selectively and releasably interconnecting said support means and the lift frame depending portion whereby the means for vertically moving the support means will also effect a movement of the lift frame.

3,181,712
COMBINATION LOADER AND UNLOADER MACHINE

George E. Von Gal, Jr., 3048 Thomas Ave., Montgomery, Ala.

Filed May 10, 1961, Ser. No. 109,052
8 Claims. (Cl. 214—6)

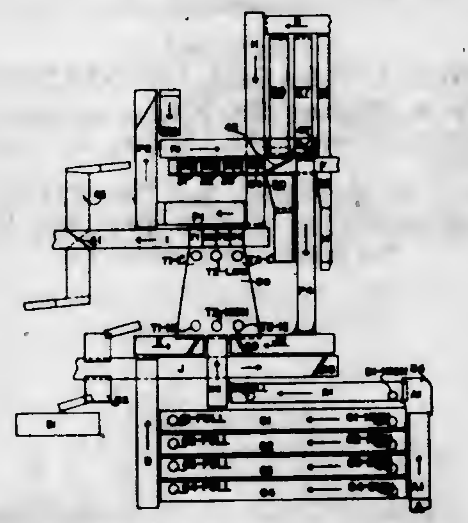
2. In a machine of the class described, an unloader of the type having an infeed conveyor which feeds a loaded pallet to an unloader elevator for unloading articles from said pallet, the unloader elevator incidentally moving within said unloader during the unloading operation, a loader position adjacent said unloader, said loader being of the type having a loader elevator which receives a pallet on which layers of articles are to be loaded, said elevator incidentally moving within said loader during the loading operation, a magazine between said loader and said unloader, and means operatively associated with said unloader, said loader and said magazine for receiving the empty pallets successively from said unloader and for selectively feeding said empty pallets to said magazine and to said elevator of said loader.



3,181,713
ARTICLE HANDLING SYSTEM

Edward H. Abbe, Max Berman, Arthur B. Blankenship, Jr., and Earl H. Sills, all of Roanoke, Va., assignors to General Electric Company, a corporation of New York

Filed Apr. 17, 1962, Ser. No. 188,175
4 Claims. (Cl. 214—11)



1. An article handling system comprising:
- (*a*) a slide for receiving articles for distribution,
- (*b*) first means for sensing the level of articles on said slide,
- (*c*) means for distributing said articles according to preselected designations,
- (*c*1) means for transferring articles to said distribution means from said slide,
- (*d*) a storage conveyor,
- (*e*) means under the control of said first sensing means for diverting articles to said storage conveyor when the level of articles on said slide exceeds a predetermined level,
- (*f*) second sensing means for sensing when articles are diverted to the input end of said storage conveyor for regulating the storage of articles thereon,
- (*g*) and means under the control of said first sensing means for delivering articles to said slide from said storage conveyor when the level of articles on said slide falls below a predetermined level.

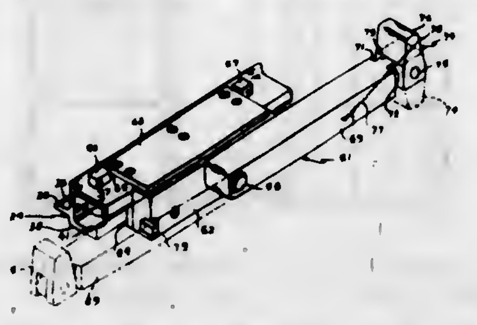
3,181,714
MATERIAL HANDLING APPARATUS

John W. Kappen, 243 Kenwood Ave., Dayton, Ohio; Frieda E. Kappen, administratrix of the estate of John W. Kappen, deceased

Filed Sept. 7, 1962, Ser. No. 222,091
8 Claims. (Cl. 214—16.4)

1. In a storage compartment, longitudinally movable conveyor means in said compartment, a plurality of lat-

erally spaced apart carriage devices incorporated in and moving with said conveyor means, adjustable pawl means on each of said devices, pallet supports in said compartment arranged in conjunction with said conveyor means to support pallets for movement thereover by engagement of said pawl means with said pallets, said pawl means being adjustable to engaging and nonengaging positions relative to supported pallets, said pawl means including a pivotally adjustable arm having an upstanding pawl element thereon, said arm in one position of pivotal adjustment presenting said pawl element for engagement with a supported pallet and in another position of pivotal adjustment moving said coveyor means in by-passing relation to the pallets, said pawl element being angularly adjustable relative to said arm in either adjusted position of said arm.

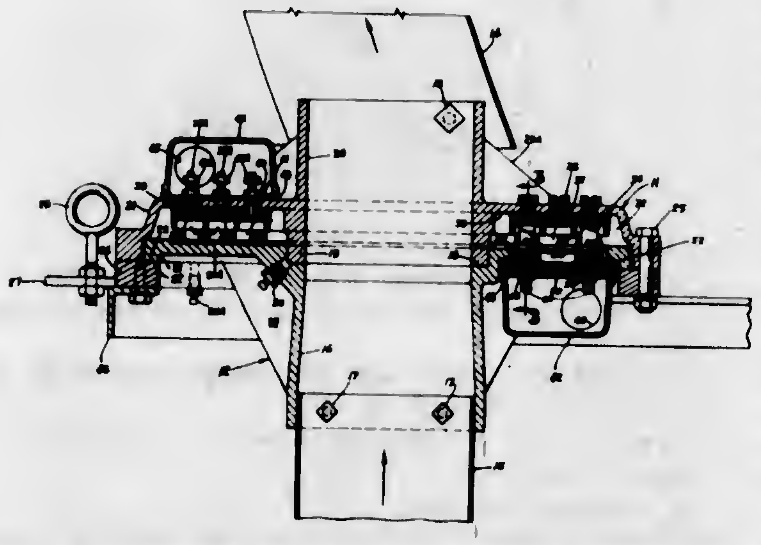


3,181,715
SILO UNLOADER CONNECTION

Earl G. Olson, Minneapolis, Minn., assignor to Vandale Corporation, Long Lake, Minn., a corporation of Minnesota

Continuation of application Ser. No. 814,915, May 21, 1959. This application Mar. 14, 1963, Ser. No. 266,140

9 Claims. (Cl. 214—17)



1. A silo unloader transition assembly comprising a first conduit means, said first conduit means having a central conduit surrounded by an annular top housing, said annular top housing providing annular substantially planar internal space, an electrical contact ring supporting assembly secured thereto and therein, said electrical contact ring supporting assembly including a synthetic resinous means providing a plurality of downwardly directed concentric channels positioned in substantially a horizontal plane, a plurality of current conducting rings, one disposed in each of said concentric channels and providing annular electric power transmitting rings each having a downwardly exposed surface, means for providing a source of electric current to a plurality of said current conducting rings, a second conduit means, first cooperating surfaces joining said first and second conduit means to provide a continuous conduit, a peripheral retaining ring means secured to said top housing and therebeneath and providing an annular upwardly directed machined surface, said second conduit means providing an annular bottom housing, said last housing having a downwardly directed machined surface adapted to be positioned on said upwardly directed machined surface and an annular periphery adapted to be positioned within said peripheral retaining ring means of said top housing, means joined to said first conduit means permitting cable support of said first and second conduit means, said second conduit means being provided with a brush retaining means, and a plurality of electric power transmitting brushes each having an upwardly exposed surface for engaging the downwardly exposed surface of its respective ring means.

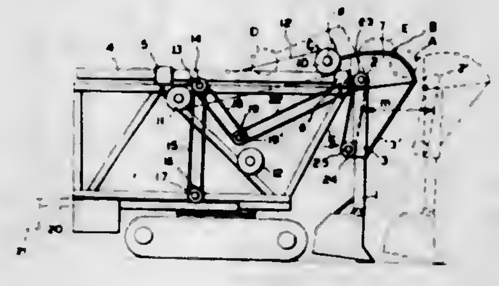
3,181,716
LEVER-SHOVELLING MACHINES

Ignacy Brach, Pulawska St. 1A–32, Warsaw, Poland

Filed Mar. 4, 1959, Ser. No. 797,274

Claims priority, application Poland, Mar. 5, 1958, P 88,675; Dec. 24, 1958, P 90,410

3 Claims. (Cl. 214—142)



1. A lever shovelling machine comprising a frame, the bottom member of which frame being in a plane parallel to the plane of the ground upon which the machine stands, a beam slidable forwardly and backwardly with respect to said frame as well as parallel to said bottom member, a pivot mounted on said beam, said pivot being positioned in a plane parallel to said bottom member, a hollow member attached to said pivot and adapted to be pivoted thereabout, a shovel shank slidable axially in said hollow member, a shovel connected to the end of said shovel shank distant from said pivot, in combination with a cam pivoted to said pivot and extending transversely from and beyond said hollow member, a draw member extending from said cam member connected to a point on said cam farthest from said pivot, to the end of said hollow member distant from said pivot, a system carried by said frame for causing said shovel to pivot about said pivot, thereby causing a shoveling operation, and a flexible drawing element connected to said system and to said cam at the same point as said draw member is connected, whereby when the greatest force opposes said shovel, the greatest lever arm about said pivot is created by said cam to said flexible drawing element, and when the smallest force opposes said shovel, the smallest lever arm about said pivot is presented by said cam to said flexible drawing element.

3,181,717
OPENABLE REAR BEAM

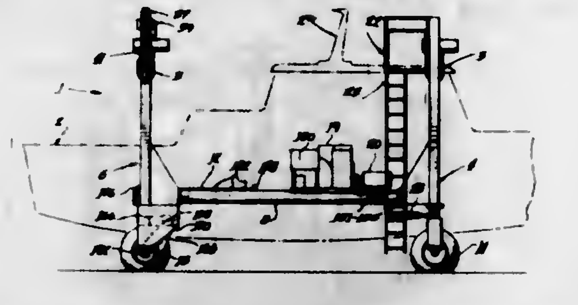
Robert P. Kumferman, Menomonee Falls, Wis., assignor to Renner Manufacturing Company, Milwaukee, Wis.

Filed Oct. 16, 1961, Ser. No. 145,225

11 Claims. (Cl. 214—394)

9. A straddle truck construction having an openable horizontal beam that spans the distance between a pair of vertical columns at one end thereof, comprising

- an openable beam having first and second cantilever beam portions each pivotally connected to the vertical columns for vertical motion in a common vertical plane, so that they connect with each other midway between said vertical columns, when they lie in a common horizontal plane,
- interengaging means secured to the free end of each cantilever beam portion,
- hydraulic motor means connected between the straddle truck and the supported end of each cantilever beam to swing the free end of each cantilever beam in a vertical arc into and out of engagement with said interengaging means, and
- lock means for selectively locking said first and second cantilever beam portions together when said interengaging means are engaged thereby to form a solid beam extending across said span.

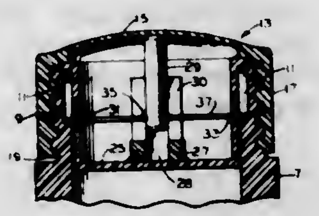


3,181,718
BOTTLE STOPPER

Roy D. Chancellor, 1266 Naglee St., San Jose, Calif.

Filed May 10, 1963, Ser. No. 279,437

2 Claims. (Cl. 215—9)



1. A bottle and safety closure therefor including in combination:

(*a*) a bottle having a cylindrical neck, said neck having screw threads about the exterior thereof and at least two indentations in the interior thereof, said indentations being discontinuous and lying in about the same radial plane of said neck;

(*b*) a cap having a cylindrical collar portion with interior screw threads mating with the said screw threads of the said neck and a normally horizontal top portion integral with the said collar, said normally horizontal portion being flexible and resilient;

(*c*) a pillar extending downward from about the center of the said flexible top portion;

(*d*) pins extending radially from at least two points adjacent the base of the said pillar toward the said collar of said cap, the said pins extending a distance in excess of that required to contact the internal portion of the neck of the said bottle when the said cap is in place upon the said bottle, said pins each terminating in an end of a size adapted to register with one of the said indentations in the said neck, said pins being flexible; and

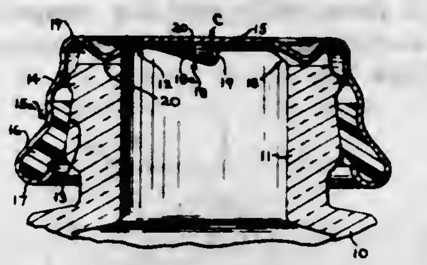
(*e*) a sleeve extending downwardly from and secured near the marginal edge of said top portion, the sleeve having apertures therethrough on the same plane as the pins, with the terminal ends of the pins extending in sliding relationship through the apertures and into said indentations, said sleeve being sufficiently rigid to cause the said pins to deflect to an arcuate shape, disengaging the ends of said pins from the said indentations in the bottleneck and releasing the same cap when downward pressure is exerted near the center of the flexible, normally horizontal top portion.

3,181,719
CONTAINERS AND CLOSURE CAPS FOR SAME

Wilbur A. Schaich, Maumee, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed Feb. 8, 1963, Ser. No. 257,159

5 Claims. (Cl. 215—46)



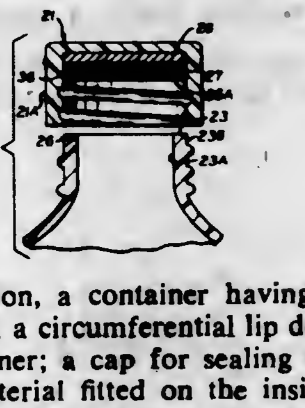
2. In combination a container having a mouth defining wall terminating in a rim and formed exteriorly with an annular side-sealing surface axially spaced from the container rim, a closure cap telescoped over at least a portion of said wall and having an annular gasket sealingly engaging said side-sealing surface, an annular series of cams formed on the mouth defining wall axially outward of said sealing surface, and bosses provided on the closure cap for respective engagement with the cams, said cams and bosses operating in response to relative rotation of the closure cap and container wall about their common axis for axially shifting the closure cap toward the rim.

3,181,720
PRESSURE OR VACUUM RELEASE CLOSURE FOR A CONTAINER OR THE LIKE

Norman M. Caisie, Cedar Grove, and Leroy C. Hofmann, Saddle River, N.J., assignors, by meme assignments, to Armour and Company, Chicago, Ill., a corporation of Delaware

Filed July 5, 1962, Ser. No. 207,666

16 Claims. (Cl. 215—56)



1. In combination, a container having a walled portion terminating in a circumferential lip defining an opening to said container; a cap for sealing said opening, a liner of foam material fitted on the inside of said cap, and a notch formed in said lip, said notch being shaped for varying the density of the liner within said notch when said cap is disposed in sealing relationship on said lip whereby the variation in the density of said liner permits gases to vent from inside out or from outside into the container depending on the relative pressure within and without said container.

3,181,721
PACKING OF PRODUCE

George W. Starkey, Whittier, and Walter A. Caskey, Visalia, Calif., assignors to The Flintkote Company, New York, N.Y., a corporation of Massachusetts.

Filed Oct. 23, 1963, Ser. No. 318,419

2 Claims. (Cl. 217—42)

1. In combination,

(I) a lug or the like comprising:

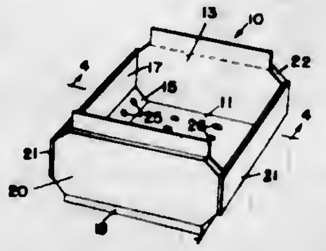
  (*a*) a quadrangular bottom member,

  (*b*) a pair of substantially rectangular upright end members secured to said bottom member, the lower corner portions of said end members being cut at an angle of between 30 degrees and 60 degrees, and

(c) upright side members extending between said end members and having their lower edges spaced above and outside said bottom member to leave a continuous opening between the lower edge of each side member and the adjacent side edge of said bottom member,

(II) and a liner within said lug comprising:

(a) a bottom panel sheet covering the bottom of the lug,



(b) relatively narrow, intermediate, perforated panels integral with said bottom panel and extending therefrom upwardly and outwardly within and along the length of said openings at an angle substantially the same as the angle of said lower corner portions of said end members,

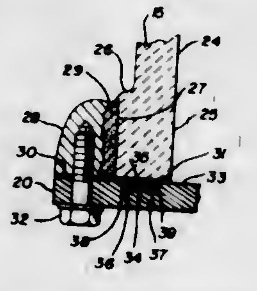
(c) side panels integral with the last-mentioned panels and extending vertically therefrom along the insides of said side members, and

(d) end panels integral with said bottom panel and extending vertically along the insides of said end members.

3,181,722
ELECTRICAL APPARATUS HOUSING AND JOINT THEREFOR

Elmo F. Huston, Akron, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey

Filed July 12, 1960, Ser. No. 42,410
8 Claims. (Cl. 220—2.3)

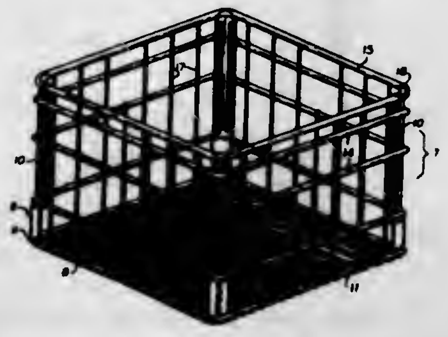


7. In a housing assembly comprising a tubular ceramic member having a face at one end thereof, a metal end plate arranged across the said end of the ceramic member, and means drawing the end plate against the said face, means between the end plate and the face of the ceramic member comprising a bearing ring of rigid material engaged with the radially central portion of the said face of the ceramic member about the circumference thereof, the said bearing ring acting upon the end plate below the face and normally projecting above the face thereof, such that a substantial portion of the compressive force exerted by the drawing means is transmitted between the ceramic member and the end plate by elastic deformation of the said bearing ring, and the bearing ring and two O-rings, one interiorly of the bearing ring and one exteriorly of the bearing ring, disposed in a circumferential groove having a radial extent less than the radial thickness of the ceramic member at the end face thereof, for transmitting the remaining portion of the compressive force by engagement of the ceramic member with the end plate interiorly of and exteriorly of the groove.

3,181,723
DAIRY CASES

Walter H. Schray, Battle Creek, Mich., assignor to United Steel & Wire Company, Battle Creek, Mich., a corporation of Michigan

Filed Feb. 15, 1963, Ser. No. 258,790
1 Claim. (Cl. 220—19)



An upwardly opening, rectangular case, comprising:

a plurality of substantially identical, rectangular and wire-like frame members arranged in spaced and substantially parallel relationship;

four similar, transversely curved and relatively thin corner posts disposed in upright positions along the inner surfaces of the corners of said frame members, each corner post having an offset portion projecting into the space between the two lowermost frame members, the offset portions forming at their upper and lower ends shoulders disposed snugly adjacent said two lowermost frame members, the part of each corner post located above said offset portion being inwardly of plural frame members, said offset portions extending at least to the planes defined by the outer surfaces of the adjacent elements of said frame members;

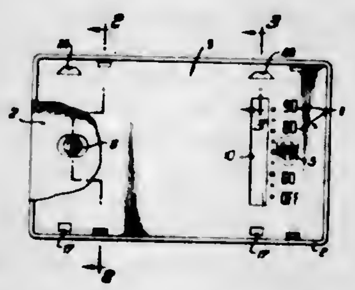
a bottom wall having a plurality of spaced rod elements arranged substantially parallel with said frame elements of said frame members; and

a plurality of side bars secured to most of said frame members and extending substantially parallel with said corner posts from said bottom wall to the uppermost frame member, said side bars being arranged between and spaced from adjacent posts.

3,181,724
THERMOSTAT CASE

Robert Rosen, Los Angeles, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, Baltimore, Md., a corporation of Maryland

Filed Sept. 4, 1962, Ser. No. 221,017
14 Claims. (Cl. 220—31)



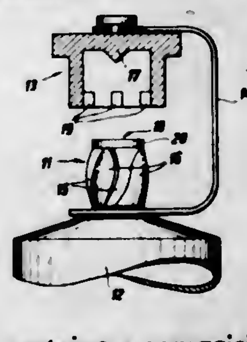
1. In a thermostat case: a moldable base member having an aperture and a substantially semi-circular lug formed lug integrally with the base member and extending from one side of the aperture to the other with the intermediate portion of the lug spaced outwardly from the end of the aperture of the base member, said lug having an inner surface opposed to the end of the aperture and lying entirely within the axial projection of said aperture; said lug surface terminating at arcuate bearing edges on opposite sides of the lug; and a moldable cover member having a pair of hinge arms formed integrally with the cover member, and capable of resilient flexure

toward and away from each other, said arms having opposed trunnions respectively seated at said arcuate bearing edges.

3,181,725
MULTIPLE THREAD PLUG CLOSURE

Otto Friedl, Sudliche Romerstrasse 18, Altenstadt, Upper Bavaria, Germany

Filed Mar. 26, 1963, Ser. No. 268,113
15 Claims. (Cl. 220—39)

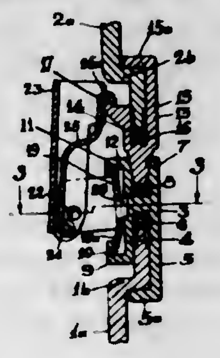


1. A closure for containers comprising, in combination, a hollow fixed closure part of undivided cylindrical shape disposed on said containers; a fully detachable closure part of undivided cylindrical shape fitting said fixed part; one of said parts being provided with a plurality of bosses; the other with a corresponding number of grooves substantially running the length of said part forming, in their totality, a screw and having widened outer ends, a steep pitch at said outer ends, and a decreasing pitch toward their inner ends; said grooves approaching a vertical direction; said bosses engaging without probing, in said grooves upon placement of said detachable part on said fixed closure part and, by exertion of but slight axial pressure on said detachable closure part, being driven into said grooves and being wedged therein near said inner end, due to said decreasing pitch, thereby providing the actual closure of said container and insuring a tight seal.

3,181,726
FASTENING AND SEALING MEANS FOR CONTAINERS

George K. Parker, Woodside, Calif.
(1649 Old County Road, San Carlos, San Mateo County, Calif.)

Filed May 1, 1962, Ser. No. 191,466
16 Claims. (Cl. 220—46)

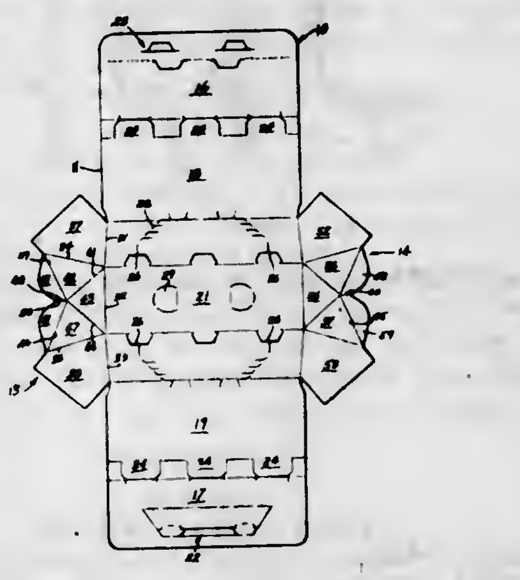


1. In fastening and sealing means for containers of the type having upper and lower complementary hollow sections formed with opposed edges, a continuous female strip secured over the edges of one of the container sections, a continuous male strip secured over the edges of the other container section and having a continuous outwardly and upwardly disposed flange, the female strip having a continuous groove facing the male strip, a continuous resilient sealing strip supported in the groove of the female strip, the male strip having a lower edge portion adapted to extend into the groove of the female strip and engage with the sealing strip, the female strip having an outwardly and downwardly extending continuous flange and also an outwardly and upwardly continuous flange, the said flanges of the female strip forming opposed continuous grooves, the female strip having a perimetric groove on its outer side between the flanges thereof, a plurality of bracket plates having upper and lower edge portions extending into the opposed grooves of the female strip, and resilient tongue means on the bracket plate extending into the perimetric groove of the female strip, a pair of outwardly extending flanges on each of the bracket plates, and adjustable clamping means mounted on the flanges of the bracket plates, the clamping means having hooks engageable with the flange of the male strip.

3,181,727
CARTON BLANK AND METHOD OF FOLDING

Earl J. Graser and Richard L. Schuster, Monroe, La., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Aug. 26, 1963, Ser. No. 304,448
2 Claims. (Cl. 220—115)



1. A wrap around carton blank for encircling a plurality of articles arranged in rows to combine the blank and the articles into a unitary assembly comprising a generally rectangular body portion having side edges, wing elements hinged to opposite side edges of the body portion, each wing element being scored to form fold lines defining end wall panels and tuck panels, at least two end wall panels straddling three intermediate tuck panels, two of said tuck panels having hinged thereto mating tuck flaps, said tuck panels being operative when said blank is converted into said unitary assembly to form a centrally disposed pyramid shaped indentation between said end wall panels with said tuck flaps in face-to-face contact and with said tuck flaps projecting inwardly between adjacent rows of articles.

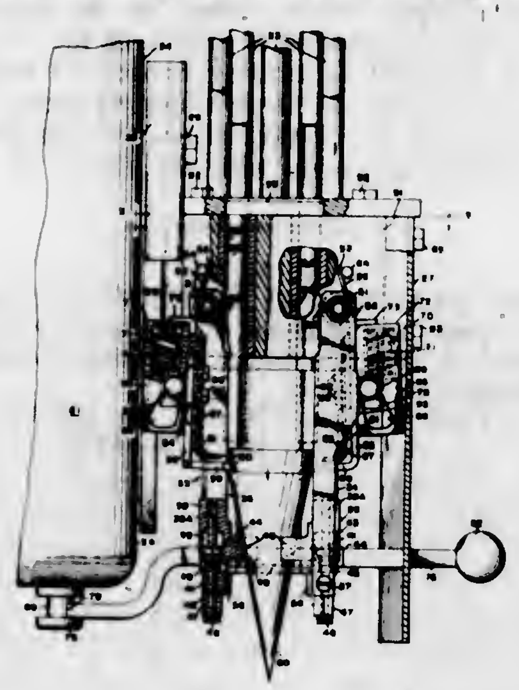
3,181,728
CONTAINER FEEDING MACHINE

John B. West and William R. Wills, Baltimore, Md., assignors to Maryland Cup Corporation, Owings Mills, Maryland, a corporation of Maryland

Filed July 10, 1963, Ser. No. 294,089
4 Claims. (Cl. 221—221)

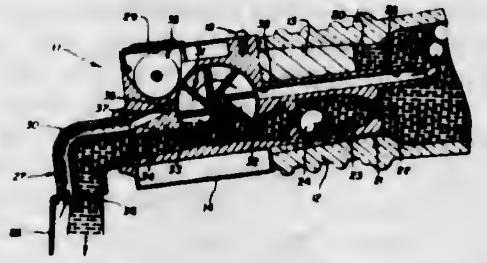
1. A container feeding device comprising a stationary member having a vertical aperture for the disposition and passage of a nested stack of the containers therethrough, vertical arms hinged to the stationary member for oscillating movement in a vertical plane on opposite sides of the aperture, jaws carried by a first pair of said arms for engaging the bottom container of a nested stack of the containers extending through the aperture, means for oscillating said arms, the said first pair of arms being coordinated with each other to alternately support and release the stack, jaws carried by a second pair of said arms coordinated with the movement of the said first pair of arms for alternately grasping and supporting the penulti-

mate container of the stack when the said first pair of arms are in their released position and for releasing the grip of the penultimate container when the first pair of arms are in stack-supporting position and stripping means slidably attached to the said second pair of arms for exerting a downward force against the bottom container of the stack when the said first pair of arms are in the released position and the penultimate container is supported by said second pair of arms.



3,181,729
FLUID METER DEVICE

Timothy S. Milonas and Henry Woodsford, San Francisco, Calif.; said Woodsford assignor to said Milonas
Filed Oct. 31, 1962, Ser. No. 234,429
3 Claims. (Cl. 222—36)

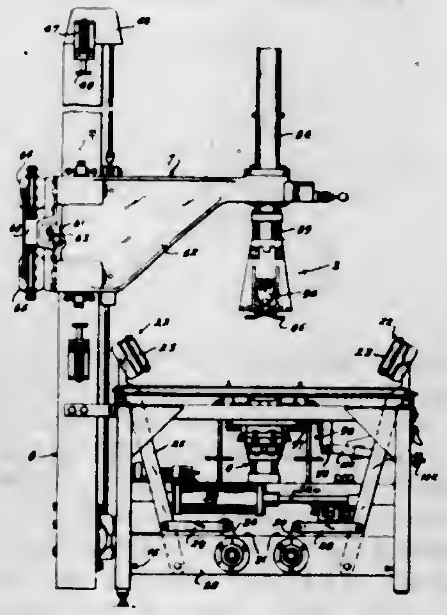


1. In a fluid meter for use in connection with a fluid container having a portion through which fluid is dispensed the combination comprising;

a housing having a fluid passage therethrough;
mounting means associated with said housing by which said housing is connected to the container dispensing portion such that fluid dispensed from the container passes through the fluid passage in said housing;
a rotor operatively disposed within said housing, said rotor responsive to fluid leaving the container and flowing through the housing passage by rotating about its axis, the number of revolutions of said rotor being a function of the quantity of fluid passing through said housing, said rotor comprising a plurality of vanes disposed between a pair of generally circular end plates;
a plurality of magnets embedded in one of said end plates wherein some of said magnets are oriented in one polarity and the others in an opposite polarity;
a magnetic gear in spaced facing relation to the end of said rotor, said gear having a magnetic force pattern established thereon whereby said gear is coupled to said rotor to rotate therewith;
a counter; and
counter drive means connected to said magnetic gear whereby rotation of said gear operates said counter.

3,181,730
HIGH SPEED TABLE STAPLING MACHINE

Werner Schafroth, P.O. Box 247, Herrin, Ill.
Filed May 16, 1963, Ser. No. 280,850
5 Claims. (Cl. 227—7)



1. An air operated table stapling machine comprising a frame having front, rear, and end units, a work surface supported by said units for supporting a carton to be stapled, means for orienting and centering a carton on said work surface, an upstanding mast connected to said frame, said mast having front and rear walls parallel to the rear unit of said frame, a vertically movable carriage slidably connected to said mast above said work surface, said carriage having an actuator and an upper stapling head hingedly connected thereto, a lower stapling head mounted on said frame for stapling the bottoms of cartons on said work surface, said stapling heads provided with anvil adjustment means thereon, said lower stapling head provided with means extending from said anvil adjustment means to the front unit of said frame so as to be accessible to the operator, each of said anvil adjustment means comprising a pivotally mounted cam on said lower stapling head, said cam having a connecting rod connected thereto, said connecting rod connected to a control positioned at the front of said machine, said stapling heads having a stapling mechanism therein which is projected and retracted by an air cylinder thereon, an air valve connected to said air cylinder for controlling same, said upper stapling head having a trip mechanism thereon for actuating said air valve, air cylinders for actuating said carton centering means and said actuator, and means for supplying air under pressure to each of said air cylinders and air valve.

3,181,731
LIQUID PROPORTIONER

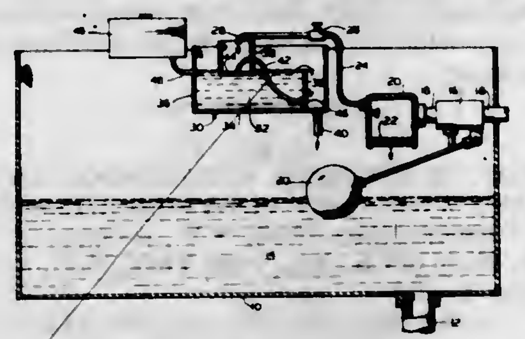
Charles A. Ellis, Portola Valley, Calif., assignor to Skasol Incorporated, San Francisco, Calif., a corporation of California
Filed Apr. 12, 1963, Ser. No. 272,773
5 Claims. (Cl. 222—57)

1. Reservoir means for displacing a quantity of a first liquid equal to the quantity of a second liquid delivered thereto without mixing said liquids which comprises:

(A) an outer reservoir containing a quantity of said first liquid with said outer reservoir having an overflow permitting displacement of said liquid therefrom,

---

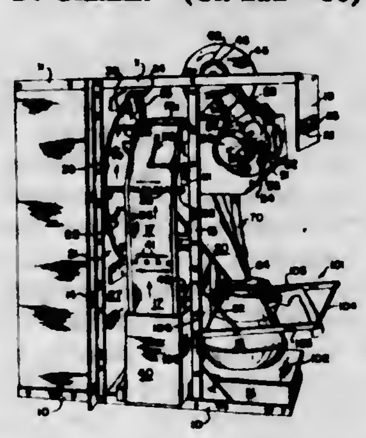
(B) first liquid supply means for adding said first liquid to said outer reservoir automatically when the liquid level therein falls below a first predetermined level,
(C) an inner reservoir floating in said outer reservoir and positioned to receive the second liquid delivered to said reservoir means to displace said first liquid from said outer reservoir responsive to sinking of said inner reservoir in said outer reservoir, and



(D) second liquid removal means for automatically emptying said inner reservoir periodically when the liquid level therein rises to a second predetermined level,
(E) the volume of said inner reservoir which is submerged in said outer reservoir when said inner reservoir is filled up to said second predetermined level being greater than the volume of said outer reservoir above first predetermined level.

3,181,732
BEVERAGE APPARATUS

Milton Immermann, Piermont, Robert H. Ensign, Bronxville, and George H. Woods, New York, N.Y., assignors, by mesne assignments, to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Jan. 26, 1961, Ser. No. 85,080
14 Claims. (Cl. 222—80)

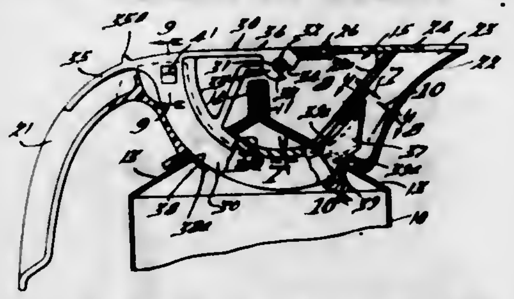


9. A device for releasing material from a package, comprising a reel rotatable to bring successive points on its periphery to a predetermined location, means on the periphery of said reel for holding said package, cutting means movable across said location to completely sever said package, and means for first rotating said reel to move said package to said location and then moving said cutting means across said location to release said material from said package.

3,181,733
COMBINED HANDLE AND POURING SPOUT

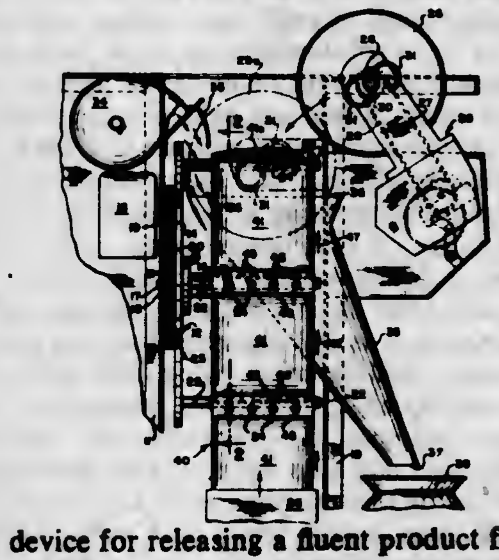
Arnold H. Marler, 8 Wendell Ave., Weston, Ontario, Canada
Filed Apr. 8, 1963, Ser. No. 271,256
11 Claims. (Cl. 222—83)

1. A device of the class described for milk cartons and the like having a top fold and triangular end folds, said device comprising, a body portion provided with channel-shaped portions adapted to embrace said top and end folds of the carton, a pouring spout on one end of said body in contact with said carton, a handle portion on the other end of said body, an arcuate-shaped member having a piercing end, and means for rotatably mounting said member on said body intermediate said spout and handle for movement from a position substantially perpendicular to said body to a position substantially flush therewith, whereby said piercing end will enter the carton at a point spaced from said spout and will subsequently pierce the carton from the inside thereof and extend into said spout to form a dispensing opening in alignment with said spout.



3,181,734
CONTAINER STRUCTURE

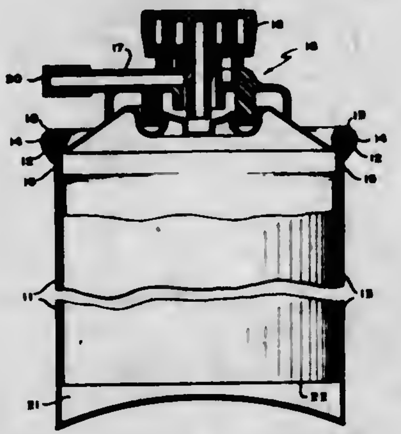
Robert H. Ensign, Bronxville, N.Y., assignor, by mesne assignments, to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed May 14, 1962, Ser. No. 194,498
12 Claims. (Cl. 222—83.5)



10. A device for releasing a fluent product from a package, comprising a reel rotatable to bring successive points on its periphery to a predetermined location; package holding means on the periphery of said reel; a package for retaining said product, said package including a belt formed from material having an inherent resilience, said belt having disposed along its length a plurality of holding means in the form of closed pouches each of which is adapted to retain a quantity of said product, said holding means being spaced from each other to form a flexible resilient belt portion between each of said holding means, said belt at said portion having a weakened discontinuous zone extending generally laterally across said portion and marked by spaced cut lines disposed endwise across said zone, said portion being adapted for bending at said weakened zone, said weakened zone being deformed at said cut lines by said bending to mitigate the resilience of said belt at said portion so that when said belt is bent at said zone it will tend to retain its bent position instead of returning to its original shape; cutting means movable across said location, means for moving said cutting means across said location to sever said package at said holding means and release said product therefrom, and means moving with said cutting means to bend said belt at said weakened zone of a belt portion adjoining said cutting means as it severes said holding means so that said last-named portion will not resiliently resume its original position.

3,181,735
PRESSURIZED DISPENSER

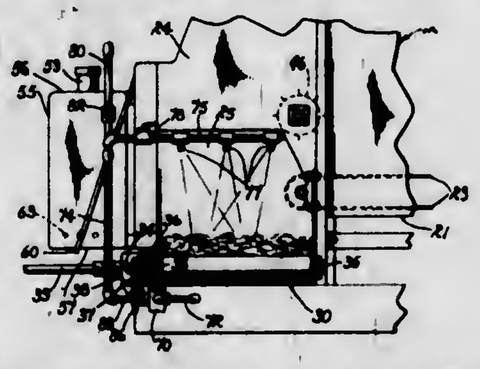
John J. Miskel, East Orange, and George A. Bailey, Mountainside, N.J., assignors to White Laboratories, Inc., Kenilworth, N.J., a corporation of New Jersey
Filed Aug. 14, 1962, Ser. No. 216,785
4 Claims. (Cl. 222—95)



1. A pressurized dispenser especially adapted for viscous material comprising a cylindrical open-mouthed outer casing having an annular flange thereon, a metal sterilizable semi-rigid collapsible cylindrical and open-mouthed inner casing filled with viscous material to be dispensed mounted concentrically within said outer casing having a rigid circular base of slightly smaller diameter than said outer casing, and an enlarged neck portion adjacent the open mouth of said inner casing, said enlarged neck portion being of substantially the same outer diameter as the inner diameter of said outer casing and frictionally engaging said outer casing and spacedly supporting said inner casing within said outer casing, said inner casing being of shorter length than said outer casing and having an annular flange surrounding said open mouth engaging said annular flange on said outer casing; open and close type valve means double-seamed over said annular flanges of said outer and inner casings sealingly closing said inner casing and forming a sealed chamber between said outer and inner casings, said chamber being filled with a measured amount of liquefied propellent, whereby a uniform propellent gas pressure is constantly and continually exerted on the base and side walls of said semi-rigid collapsible inner casing thereby dispensing said viscous material from said inner casing when said valve means are opened by gradually collapsing the side walls which then contract along the longitudinal axis of said inner casing causing the circular base to rise and squeeze out the desired quantity of viscous material to be dispensed.

3,181,736
FEED WAGON SPRAY ATTACHMENT

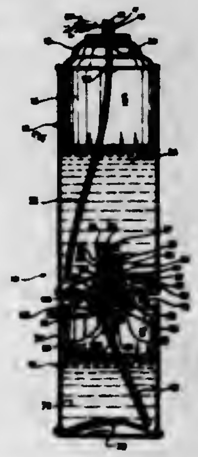
Anthony R. Santos, 3298 Ave. 192, Tulare, Calif.
Filed May 13, 1963, Ser. No. 279,942
5 Claims. (Cl. 222—135)



1. A feed wagon attachment to be mounted on a feed wagon adapted for earth traversing movement therewith comprising a conveyor having a discharge end for discharging feed from the wagon, powered means having driving connection to said conveyor, a tank mounted on the wagon for containing liquid feed supplement, liquid discharge means mounted on the wagon adjacent to the discharge end of the conveyor, said discharge means having connection to the tank, pumping means on the wagon disposed in liquid communication between the discharge means and the tank, and drive means connecting said pumping means with the conveyor for synchronous operation therewith incident to movement of the conveyor so as to motivate and disperse such feed supplement outwardly of the discharge means against feed synchronously with its discharge from the discharge end of the conveyor.

3,181,737
METHOD OF STORING, COMBINING AND APPLYING TWO-PART POLYMER MIXTURES

Daniel Chaucer, Rego Park, N.Y., assignor of one-half to R. H. Macy & Co., Inc., New York, N.Y., a corporation of New York
Filed Sept. 30, 1963, Ser. No. 312,533
10 Claims. (Cl. 222—136)

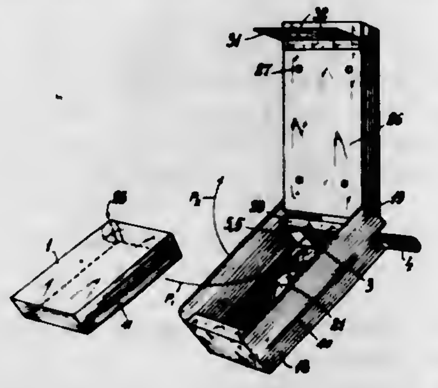


1. A dispenser assembly for liquids, comprising a first cylindrical container for a first liquid under high gas pressure, said container having top and bottom end closures, a first valve in the top end closure for discharging the first liquid in a gas propelled spray from the container, and a first siphon tube in the container connected to said valve for conveying said first liquid to the valve, said tube having an open end located near the bottom end closure; a second cylindrical container for a second liquid under low gas pressure, said second container having other top and bottom end closures, a second valve in said other bottom end closure for passing the gas propelled first liquid into the second container, a third manually operable valve in said other top end closure for passing a gas propelled spray of a mixture of the first and second liquids from the second container, another siphon tube connected to the third valve for conveying a mixture of the first and second liquids to the third valve; and means for detachably securing the containers together with the first and second valves in communication with each other, whereby the first liquid in a gas propelled spray is discharged into the second container through the second valve, and whereby a gas propelled spray of a mixture of the first and second liquids is discharged from the second container through the third valve.

3,181,738
DISPENSING DEVICE

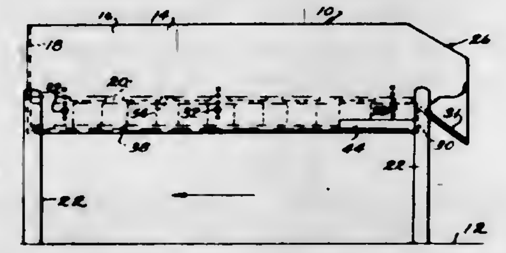
Leif Hartvig-Johansen, Ellisenbergvein 35A, Oslo 2, Norway
Filed Oct. 18, 1961, Ser. No. 145,869
Claims priority, application Norway, Nov. 4, 1960, 137,880; July 5, 1961, 140,798
7 Claims. (Cl. 222—156)

4. A dispensing device for powder material comprising a housing adapted to accommodate a self-contained carton containing powder material and having an opening through which said material is dispensible, a flat plate adapted for being mounted vertically in a fixed position, said housing being a hollow element pivotally connected to said flat plate for movement between a downwardly pivoted position in which the interior of the hollow element is exposed and an upwardly pivoted position in which the housing is vertical and is closed; dispensing means including a tray-shaped casing supported in said housing and a plunger slidably supported in said casing, said dispensing means being disposed in said housing to support the carton therein with the latter resting directly on said plunger and with the opening in the carton facing downwardly into the casing when the housing is in vertical position, the carton projecting beyond said casing and being accommodated within said housing, spring means associated with said plunger to urge the latter to an initial position whereat the opening of the carton is exposed and powder material is deposited into said casing, said casing having an outlet for the discharge of material by displacement of the plunger, a dispensing aperture being provided in said housing in registry with said outlet of the casing and through which material in said casing is dispensed as said plunger is moved in said casing against the action of the spring means.



3,181,739
ICE DISPENSER

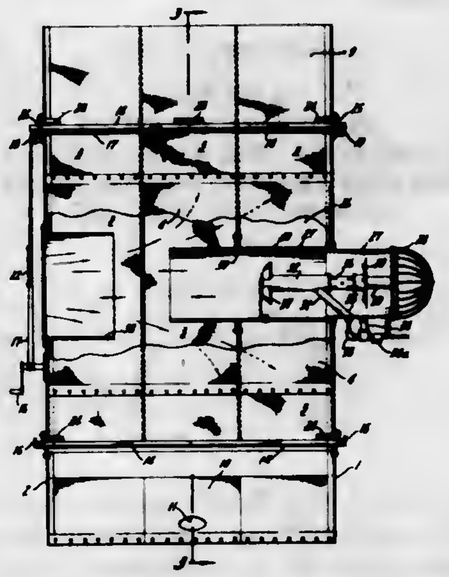
James E. Dye, Athens, Ga., assignor to Dye Sheet Metal Products, Inc., Athens, Ga., a corporation of Georgia
Filed Mar. 29, 1963, Ser. No. 269,058
9 Claims. (Cl. 222—158)



1. An ice dispenser comprising a substantially rectangular hopper having side walls and a bottom plate, said bottom plate having a plurality of substantially circular apertures therethrough; first means secured to said hopper supporting the hopper above a work surface; second means supporting a substantially rectangular slide member for reciprocal movement beneath the apertured hopper bottom plate in a plane substantially parallel to said bottom plate, said slide having substantially circular apertures therethrough arranged on said slide in a pattern substantially identical in size and shape to the pattern of apertures in said hopper bottom plate; said apertured slide being reciprocable between a dispensing position wherein each slide aperture is directly beneath a hopper bottom plate aperture and a loading position wherein each slide aperture is entirely non-coextensive with each hopper bottom aperture, said bottom plate apertures and said slide member apertures being arranged in substantially identical rectangular patterns and the slide member being reciprocable diagonally of said bottom plate in a plane substantially parallel thereto.

3,181,740
CROP DRYERS

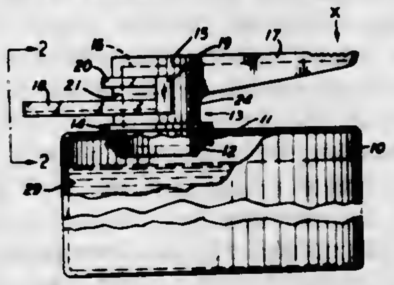
Arthur Andersen, Jr., Fort Myers, Fla., assignor to American Farm Equipment Co., Crystal Lake, Ill., a corporation of Illinois
Filed May 9, 1962, Ser. No. 193,394
1 Claim. (Cl. 222—503)



Downwardly and inwardly tapered bin walls defining a downwardly tapered bin which terminates in a horizontally disposed discharge port, two parallel generally horizontal spaced tracks on opposite sides of the port, two opposed slide gates mounted for movement toward and from one another along said tracks, the tracks and the gates extending outwardly beyond the bin at both ends of the port, the gates being of such length that when their inner ends are in port closing contact adjacent the center of the port, their outer ends are masked by the bin walls, a fixed shield intermediate the ends of the port, overlying and out of contact with the gates and masking the area where they come into port closing contact with one another, the movement of the gates toward and from one another defining variable discharge apertures beyond both ends of the shield, the vertical clearance between the shield and the gates being greater than the maximum size of the particles to be discharged through the port, the shield extending in both directions along the port from the area of contact of the gates a distance such that the angle of repose of the grain limits grain movement under bin pressure between the gate and the shield to an area short of the point of closing contact of the gates.

3,181,741
CLOSURE MEANS

Helmut Karl Bross, Altenberg uber Nurnberg, Germany, assignor of fifty percent to Frank T. Johmann, Berkeley Heights, N.J.
Filed Sept. 5, 1962, Ser. No. 221,507
8 Claims. (Cl. 222—517)

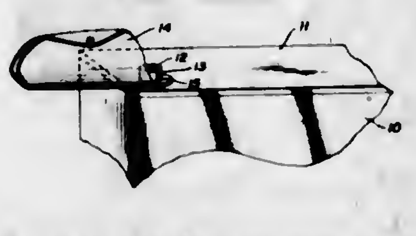


1. A dispenser for a container comprising a resilient tubular portion having a closed end; spaced parallel flanges extending outwardly from sides of said tubular portion to define a plane of incision and to serve as guides for a knife in making an incision in said plane partly through said tubular portion to thereby form in the front of said tubular portion a closure portion including a first jaw and

a second jaw; limiting flanges extending outwardly from said tubular portion proximate said parallel flanges to limit the travel of said knife in making said incision; and a handle integral with said first jaw and extending rearwardly whereby said handle opens said closure portion upon application of force to the rearward portion of said handle, said closure portion being self-closing upon release of said force.

3,181,742
POURING DEVICES

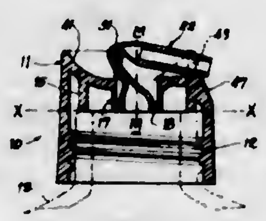
John Kebert, 818 S. 89th St., West Allis 14, Wis.
Filed June 18, 1962, Ser. No. 203,128
1 Claim. (Cl. 222—527)



A funnel formed of a flexible plastic sheet blank having an aperture adjacent one edge thereof to receive the short threaded spout of a conventional fluid container, integral wing portions of said blank tapered inwardly toward the edge of said blank opposite to said aperture for folding into a frustro-conical form, and an integral upstanding rivet on one face of one wing for engagement in an eye provided in the opposed wing to releasably maintain the open end frustro-conical formation for pouring the contents of a container.

3,181,743
DISPENSING CLOSURES OF THE COLLAPSIBLE WALL TYPE

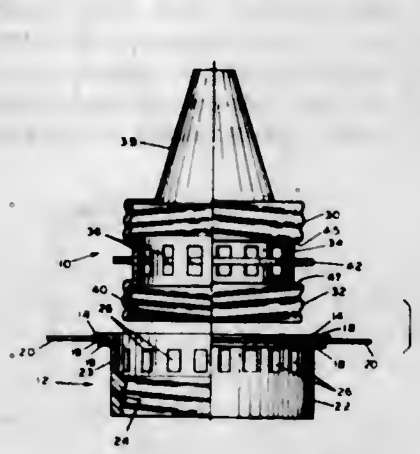
Sidney M. Libit, 441 Lakeside Terrace, Glencoe, Ill., and Arthur Wesley Newby, 1265 Schaumburg Road, Elgin, Ill.
Filed June 19, 1961, Ser. No. 117,901
9 Claims. (Cl. 222—528)



1. A dispensing closure comprising a base, means forming part of said base for attaching the closure to a receptacle to dispense the fluent contents thereof, said base having portions defining a well therein including a bottom wall and a lateral wall, a nozzle of resilient but generally shape-retaining material extending from said bottom wall and spaced away from said lateral wall, said base having a passage in fluid communication with the bore of the nozzle adapted to communicate with the interior of the receptacle when the closure is attached to the receptacle, the bore of said nozzle, when the same is deformed by bending the same upon itself along a line intermediate its length to collapse the wall thereof being pinched closed to interrupt flow from the receptacle to the exit end of the nozzle, means intermediate said lateral wall and nozzle to rigidify said nozzle over a region thereof substantially coextensive with said lateral wall, and releasable latching means coactive with the nozzle when in bent condition to maintain closed condition of the nozzle, the force exerted by the latching means, when released, permitting the nozzle, by virtue of its inherent resiliency, to restore itself to open condition for flow therethrough.

3,181,744
REVERSIBLE DISPENSER AND CLOSURE FOR CONTAINERS

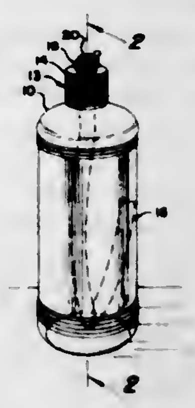
Carlos J. Hales, 5512 E. 5th St., Tulsa, Okla.
Filed Apr. 15, 1963, Ser. No. 273,108
6 Claims. (Cl. 222—539)



1. A flow dispenser and closure for fluid containers comprising in combination,
- a tubular adaptor internally recessed from a wall of said container to receive a reversible dispenser and closure member;
- said adaptor including:
  - (*a*) an internal bore terminating with an internally threaded portion adjacent the innermost end of said adaptor, and
  - (*b*) said adaptor perforated in that portion between said container wall and said threaded portion;
- said reversible dispenser and closure including:
  - (*a*) a first externally threaded portion terminating its end with a dispensing means,
  - (*b*) a second externally threaded portion closed at its end,
  - (*c*) said first and second portions spaced by and retained to an intermediate perforated tubular member; and
- a gasket coaxially received about said intermediate member to move between said first and second portions and seal one of said first and second portions to said adaptor when the other of said first and second portions is in threaded engagement with said internally threaded portion of said adaptor.

3,181,745
COMBINATION LIQUID CONTAINER AND FILLING AND DRAINING CONDUIT

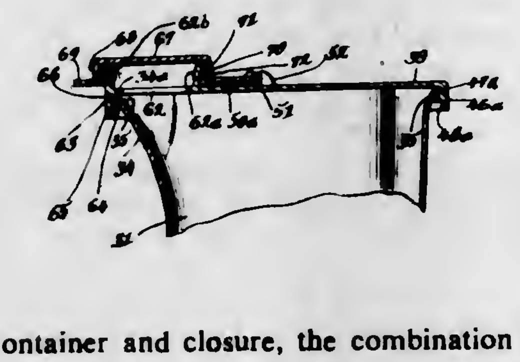
Ben T. Grobowski, Newark, Ohio, assignor to The E. T. Rugg Company, Newark, Ohio, a corporation of Ohio
Filed May 14, 1963, Ser. No. 280,309
3 Claims. (Cl. 222—539)



1. In combination, a container having a tubular neck of annular cross section with an outer extremity and with an exterior threaded surface and an interior unthreaded surface, and a closure and conduit device mounted on the neck; said closure and conduit device comprising a cap with a depending skirt of annular tubular cross section having a threaded inner surface adapted to be screwed onto said neck so as to surround and engage the threaded exterior surface of the neck, said cap having an inwardly-directed, annular clamping flange surrounding a central opening, a conduit tube having an axially-aligned, threaded nipple on one end of annular cross section with an annular sealing flange surrounding the nipple at a position spaced axially inwardly from its extremity and projecting peripherally therefrom, said nipple being of less diameter than said cap opening and said unthreaded neck interior, said conduit tube being positioned with its annular sealing flange in engagement with the outer extremity of the neck and clamped thereagainst by the clamping flange on the cap and with its threaded nipple projecting outwardly through said opening and with the conduit tube extending into the interior of the container, said conduit tube being adapted to be repositioned with the flange and the nipple reversed so that the nipple extends into said unthreaded interior of the neck without engagement therewith and the annular sealing flange thereof is again in engagement with the outer extremity of the neck and clamped thereagainst by said clamping flange on the cap and with the conduit tube extending outwardly through said opening exteriorly of the container.

3,181,746
PITCHER AND COVER

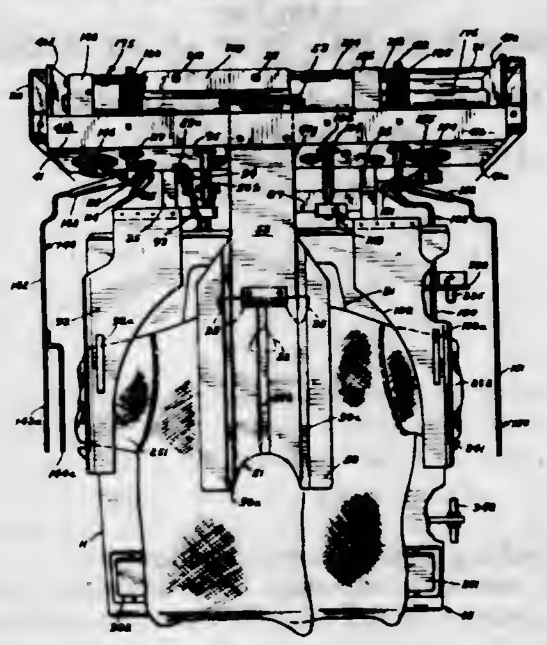
Earl S. Tupper, Esmond, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Original application Jan. 4, 1960, Ser. No. 297, now Patent No. 3,081,010, dated Mar. 12, 1963. Divided and this application May 16, 1962, Ser. No. 205,140
7 Claims. (Cl. 222—545)



1. A container and closure, the combination comprising:
- (*a*) a container having side and bottom walls and an open top defined by an upper edge of the side wall,
- (*b*) the upper end of the side wall being flared outwardly,
- (*c*) a closure having a substantially flat body portion covering at least part of said open top and located wholly above the container upper edge,
- (*d*) a downwardly extending flange integral with said closure,
- (*e*) said flange having a substantially continuous rib extending inwardly therefrom and spaced from said body portion,
- (*f*) the container edge having a periphery greater than the periphery at the juncture of said flange and body portion and greater than the inside periphery of said rib, and
- (*g*) said container upper edge being engaged with the underside of the closure body portion and the periphery of the container edge being located at the juncture of said flange and body portion, with said rib located below the container edge.

3,181,747
FOLDING TABLE

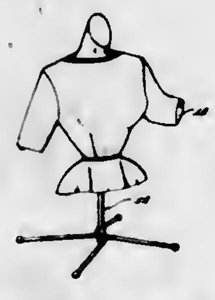
Donald B. Lucius, Bloomington, and Virgil R. Carpenter, St. Paul, Minn., assignors to The Unipress Company, Incorporated, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 18, 1963, Ser. No. 265,830
19 Claims. (Cl. 223—37)



1. A shirt folding machine comprising a frame, a table having opposite edges mounted on said frame, transverse support means mounted on said frame for rocking movement at one end of said table between a datum position and a lowered position, a size plate mounted on said support means in overhanging relation to said table, a pair of shirt fold members swingably mounted on said support means, said shirt fold members mounted to extend over the table with one on either side of said size plate in a datum condition, a pair of sleeve folding arms also swingably mounted on said support means, said sleeve arms having longitudinally elongated portions and mounted on the support means to normally have said longitudinal positions at an elevation below said table and underlying opposite adjacent table edge portions when said support means is in its datum position, third and a fourth sleeve folding arms each having longitudinally extending portions and being swingably mounted on said support means to have their respective longitudinal portions located transversely horizontally outwardly of the adjacent table opposite edge and generally at a lower elevation than paid pair of sleeve arms longitudinal portions, first operating means for rocking said support means to lower the size plate to a position adjacent the table top second operating means for sequentially moving said sleeve folding arms and shirt fold members through folding paths to fold a shirt about the size plate after the support means has been moved to a lowered position, a power source, control means connected to said lower source for activating said first and second operating means, said control means, including a first operator control having an on position for conducting power from the power source and an off non-power conducting position, first means connected in series with said first operator control for activating said first operating means to rock said support means to its lowered position upon operating said first operator control to an on position, a second operator control having an on position for conducting power from the power source and an off non-power conducting position, sensing means connected in series with said second operator control for sensing a sleeve of a shirt positioned on said table in condition to be pressed that extends below more than a predetermined distance below the table top and conducting power passing through said second operator control only as long as the sleeve of the thus positioned shirt is located above

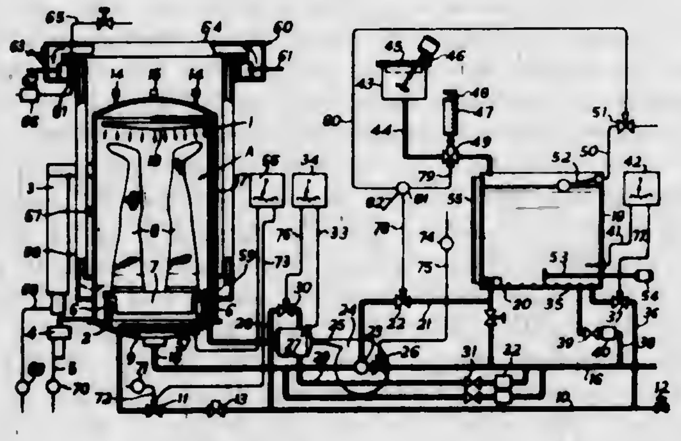
said predetermined distance and means connected in series with the second operator control and the sensing means to activate the second operating means when no shirt sleeve is being sensed by said sensing means, the support means is in a lowered condition and the second control is in on position.

3,181,748
MANIKIN FOR THE DISPLAY OF BLOUSES AND THE LIKE
Morris A. Wolf, 225 S. Los Angeles St.,
Los Angeles 12, Calif.
Filed May 31, 1962, Ser. No. 198,797
4 Claims. (Cl. 223—68)



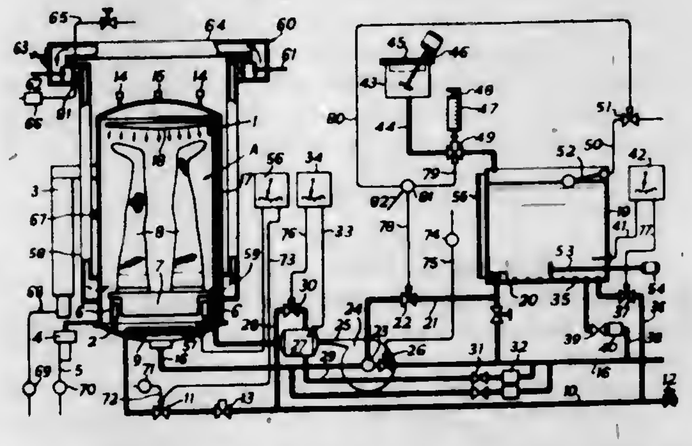
1. A clothing display manikin comprising:
- a body structure including neck, shoulder, bust and hip portions adapted to receive corresponding portions of a garment and, also, including a narrow waist portion;
- a generally U-shaped structure with upright ends having one upright end secured to said body structure and having the other upright end disposed to the rear and outside of said body structure, the rear hip portion of said garment being receivable between said upright ends of said U-shaped structure;
- and a belt-like member having opposite ends connected to said other upright end of said U-shaped structure and substantially completely encircling said waist portion of said body structure,
- said belt-like member being of a length to gather the waist portion of a garment against said waist portion of said manikin to a girth less than the girth of said garment around said hip portion to display waist and hip portions of said garment with substantially natural fullness.

3,181,749
DYEBOARDING METHOD
Guy Storr Helliwell, Kirby Muxloe, and Leslie John Swindall, Humberstone, England, assignors to Samuel Pegg & Son Limited, Leicester, England, a British Company
Filed Dec. 18, 1961, Ser. No. 160,222
Claims priority, application Great Britain, Dec. 23, 1960, 44,256/60
4 Claims. (Cl. 223—76)



1. A method of finishing textile goods, in which these goods, mounted on a plurality of forms, are successively subjected to separate treatment steps comprising (*a*) preboarding the goods by exposure to steam at superatmospheric pressure in a single closed chamber, (*b*) then showering the pre-boarded goods in said chamber with heated dye liquor, said dye liquor having been heated without introducing steam thereinto, at substantially atmospheric pressure to dye said goods and (*c*) drying the dyed goods, the forms being immobile and maintained immobile in a single treating zone throughout the successive treatment steps.

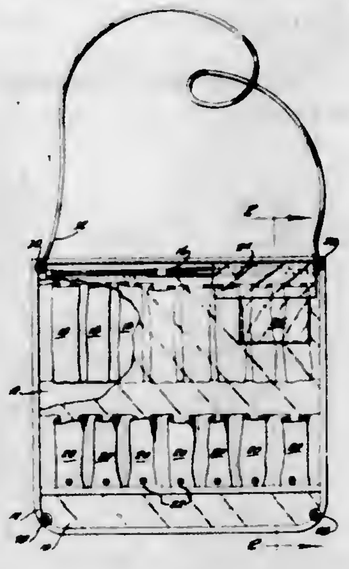
3,181,750
DYEBOARDING PLANT
Guy S. Helliwell, Kirby Muxloe, and John L. Swindall, Humberstone, England, assignors to Samuel Pegg & Son Limited, Leicester, England, a British company
Original application Dec. 18, 1961, Ser. No. 160,222. Divided and this application July 18, 1963, Ser. No. 295,942
Claims priority, application Great Britain, Dec. 23, 1960, 44,256/60
6 Claims. (Cl. 223—76)



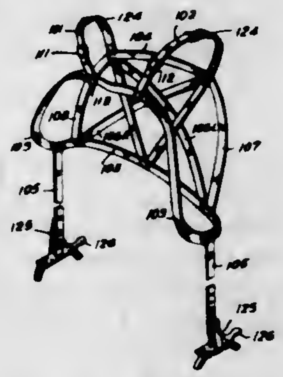
1. A plant for finishing textile garments comprising a two-part retort defining a treating chamber and comprising a fixed base with a drain outlet, a bell, and means for lowering and raising said bell respectively into engagement with and away from said base, a drain conduit connected to said outlet, at least one carriage with garment forms thereon, a trackway on said base for supporting said carriage, means for transferring said carriage from the exterior to the interior of said chamber, a steam admission means mounted on said base, showering means affixed to and upstanding from said base above said trackway, a liquor-recirculation conduit between said drain conduit and said showering means, liquor heating means located externally of said retort, a liquor storage vessel connected to said drain conduit, and hot air blowing and evacuating means positioned adjacent said carriage-supporting means.

3,181,751
FISHING TACKLE BAG
Claudia Jean Wilson, Fayetteville, Ark., assignor of fifty percent to John Vernon Wilson, Fayetteville, Ark.
Filed June 5, 1963, Ser. No. 285,807
2 Claims. (Cl. 224—5)

1. A fishing tackle bag comprising a flexible back wall member having a bottom edge, a top edge, and spaced side edges, a flexible front wall member having a bottom edge fixedly secured to said back wall member bottom edge, and side edges secured one each to said back wall member side edges to form with said back wall member an open top bag, there being a plurality of vertically disposed first pleated pockets arranged in side by side abutting relation on the upper half portion of the face of said back wall member adjacent said front wall member, there being a plurality of vertically disposed second pockets arranged in side by side abutting relation on the outside face of said front wall member, at least some of said outside pockets being transparent, a zipper closure assembly extending over the top edges of said back wall member and said front wall member for releasably securing said top edges together, said pockets on said outside face having drain openings in the bottom thereof.



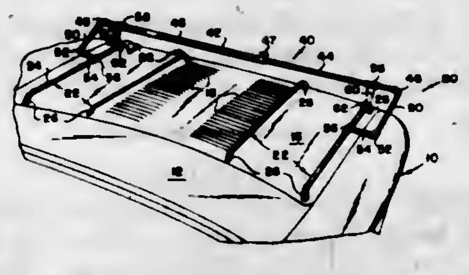
3,181,752
MEANS FOR CARRYING LUGGAGE, BAGS, AND THE LIKE
Alice Porter Seltzer and Abraham Frank Seltzer, both of 292 Garfield Place, Brooklyn, N.Y.
Filed May 27, 1964, Ser. No. 370,417
6 Claims. (Cl. 224—5)



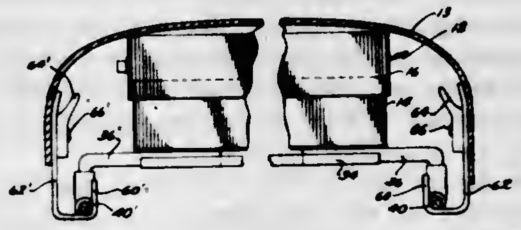
1. A concealed carrying harness for assisting a user in transporting loads such as luggage, bags and the like, adapted to be worn on the body underneath at least one conventional outergarment comprising,
- (*a*) a horizontal band secured around the torso at chest level and passing underneath the armpits,
- (*b*) a pair of right and left elements passing over the respective shoulders and connecting to said band at the front and at the back,
- (*c*) a pair of right and left appendage members, each attached to said horizontal band at a point underneath the respective armpit and passing downwardly underneath said outergarment and then outside through situated openings provided in the side of said outergarment below armpit level to hang down alongside the body, the exposed terminal portion of each of said appendage members being concealed by the user's arm when downwardly extended, and
- (*d*) means for coupling said terminal portion of each of said members to a load of the type described.

3,181,753
STOWABLE LUGGAGE RACK
John C. Fitch, Lime Rock, Conn.
Filed July 27, 1962, Ser. No. 212,946
1 Claim. (Cl. 224—29)

A stowable luggage rack for a vehicle having an exterior body surface comprising, a plurality of elongated longitudinal load supporting bed bar members extending along the exterior of the body surface, said bed bar members having end portions connected to the exterior of the body surface of the vehicle to support said bed bar members in raised relation thereto; an elongated transverse load bracing cross bar comprising telescopic sections and locking means to secure said sections in fixed telescopic relation, and means detachably securing said cross bar to said bed bar members to permit manual movement of said cross bar to an inoperative stowed position comprising spacing arms and end bars extending from said cross bar, said spacing arms and said end bars having fittings to selectively engage said bed bar members, said fittings being engaged with said bed bar members when said cross bar is extended whereby said fittings may be selectively engaged with said bed bar members and tightly secured thereto by manual telescopic movement and locking of said cross bar.

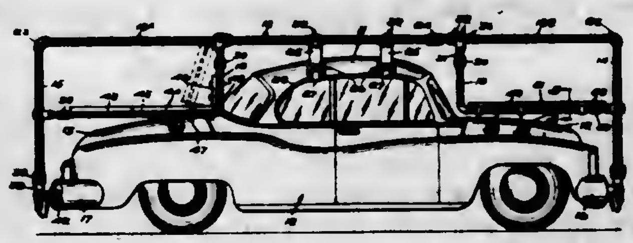


3,181,754
CAR SUIT CARRIER
Lester D. Best, 117 Youell SE., Grand Rapids, Mich.
Filed May 17, 1962, Ser. No. 195,496
15 Claims. (Cl. 224—29)



1. An article carrier for carrying articles within an automobile along the underside of its roof, comprising: a relatively flat article-supporting surface of substantial area; bracket means releasably attachable to the coat hangers of an automobile; and extensible support means attached to the underside of said surface and arranged to be supportingly engaged by said bracket means when deposited thereon.

3,181,755
CARRIER FOR ATTACHMENT TO A MOTOR VEHICLE
Theodore R. Lingley, 17 Warren Lane, Weston, Mass.
Filed Aug. 13, 1963, Ser. No. 303,467
7 Claims. (Cl. 224—42.03)

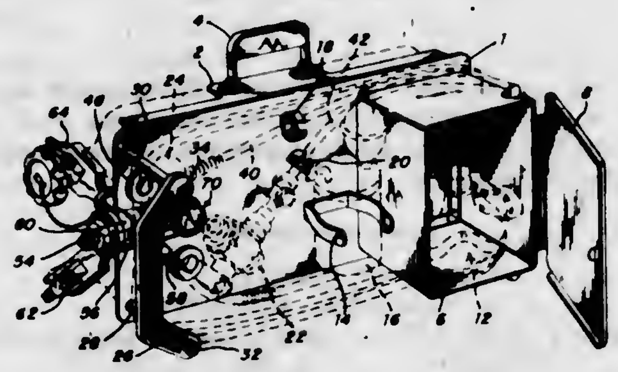


1. A carrier for attachment to a motor vehicle having at least one bumper provided with a pair of carrier supports, said vehicle also having supporting structure on its roof, said carrier including a pair of side sections each including an upright end member attachable to a support, a horizontal member joined to the upper end thereof

and of sufficient length to extend beyond said supporting structure when said upright is attached to a support, and a brace including two angularly disposed arm members, one arm member locked to said upright member between the ends thereof and the other locked to the horizontal member between its junction with said upright member and the zone of the supporting structure when the carrier is attached to the vehicle, transverse members interconnecting the horizontal members of the sections, at least one of said transverse members being engageable with said supporting structure and being slidable relative to said horizontal members, and means to lock said slidable transverse member to said horizontal members.

3,181,756
CARRIER FOR RESUSCITATOR EQUIPMENT

Benjamin Smilg, Dayton, Ohio, assignor, by mesne assignments, to Globe Safety Products, Inc., Dayton, Ohio, a corporation of Ohio
2 Claims. (Cl. 224—45)

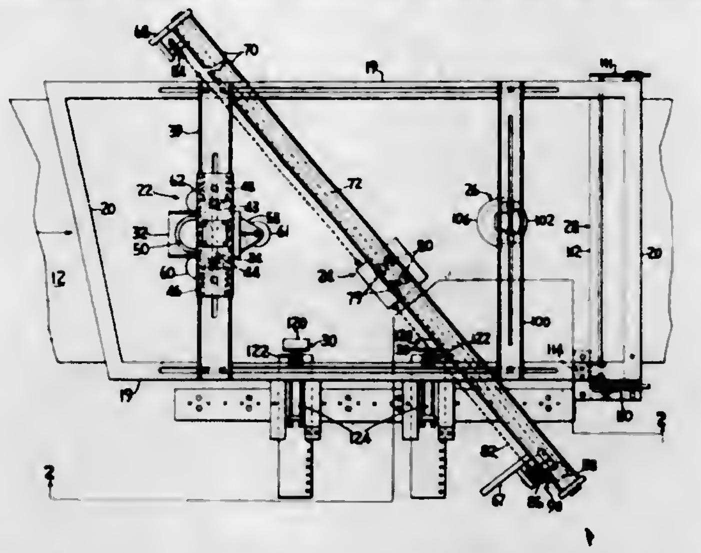


1. A carrier for resuscitation equipment comprising a plate-like member, means on one side thereof for retaining a plurality of oxygen cylinders in side-by-side relationship, means on the opposite side thereof for retaining resuscitation valves, aspirators, hoses, and the like, including an accessory box;
- handle means offset from said plate-like member and extending on the side thereof to which said oxygen cylinders are supported;
- said handle means being so located as to be vertically above the center of gravity of the carrier when the resuscitator equipment is mounted thereon;
- means for mounting an air regulator juxtaposed to one end of said oxygen cylinders;
- and a pair of yokes mounted at approximately 45° to said plate-like member and adapted to be affixed to said regulator for clamping one end of a pair of oxygen cylinders in spaced side-by-side relationship, whereby a small and balanced resuscitator kit is obtained.

3,181,757
APPARATUS FOR FABRICATING GLASS

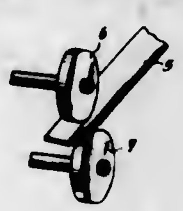
Richard C. O'Dell, Crestline, and Larry Allen Crum, Bucyrus, Ohio, assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 19, 1962, Ser. No. 245,797
10 Claims. (Cl. 225—96.5)

1. Apparatus for cutting and handling glass which comprises a cutting and handling station, means to convey glass sheets to and from said cutting and handling station and to support said sheets in a stationary position at said station while the sheets are cut, means at the cutting and handling station to position said sheets in a predetermined location, means at said cutting and handling station to cut said sheets into two pieces along a predetermined line at an angle other than 90 degrees to the sides of said glass sheets, handling means to engage, lift from the conveying means, rotate and replace to the conveying means one of said pieces, and control means for moving the other of said pieces on said conveyor means from said cutting and handling station while said one piece is lifted, so as to space the two sheets from each other, on the conveying means.



3,181,758
MACHINE FOR CUTTING BRITTLE SYNTHETIC SHEET MATERIAL

Karl König, Seesen, Harz, Germany, assignor to Hans Kolbe and Hans Köhler
Filed Apr. 23, 1962, Ser. No. 189,589
Claims priority, application Germany, Apr. 28, 1961, F 33,795
5 Claims. (Cl. 225—103)



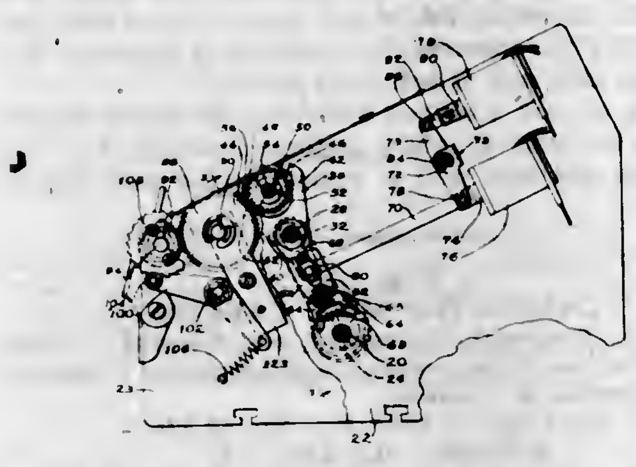
1. In a machine for cutting sheets of brittle material along a cutting line, in combination, a pair of rollers adapted to engage opposite face portions of a sheet to be cut, each of said rollers having a cylindrical surface and an end face, said end faces being respectively arranged at opposite sides of the cutting line in such a manner that the cylindrical surfaces of said rollers slightly overlap each other in axial direction in the region of the cutting line; and means for rotatably supporting said rollers at a distance from each other to form a minimum radial gap between said rollers smaller than the thickness of the sheet to be cut, whereby during feeding of a sheet through said radial gap said sheet will be fractured along said cutting line while detrimental bending stresses on said sheet during said fracture will be prevented due to said slight overlap of said roller surfaces.

3,181,759
PUNCHED TAPE DRIVING MECHANISM

Richard E. Maples, Chicago, Ill., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed July 24, 1963, Ser. No. 297,394
4 Claims. (Cl. 226—51)

3. In a tape feeding mechanism having a sprocket wheel adapted to engage successive feed holes in a tape for moving the tape either in an advancing or a retracting direction, the combination comprising, a Y-shaped yoke member having a pawl at the end of each upwardly extending arm, means for pivotally supporting said yoke member, drive means for continuously reciprocating said yoke member and pivotal support along a straight line, ratchet means straddled by said pawls, means biasing said yoke member to a neutral position wherein neither

pawl engages said ratchet means during reciprocation of said yoke member and pivotal support, a link pivotally connected to said yoke member for pivoting said yoke member against the force of said biasing means in opposite directions to engage one or the other of said pawls with said ratchet means while said pawls are reciprocated in one direction along said straight line to operate said ratchet means in a direction corresponding to the engaging pawl, and means connecting said ratchet means with the sprocket wheel for moving the sprocket wheel in response to the rotation of said ratchet means thereby to move said tape in either an advancing or a retracting direction dependent on the direction of operation of said ratchet means.

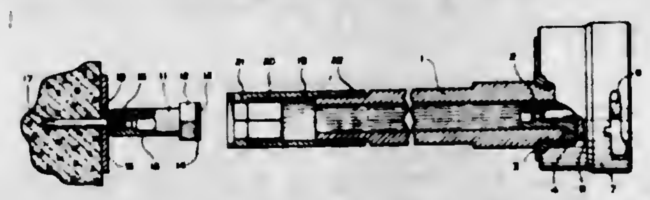


ERRATUM

For Class 227—7 see:
Patent No. 3,181,730

3,181,760
CAPTIVE PISTON STUD DRIVER

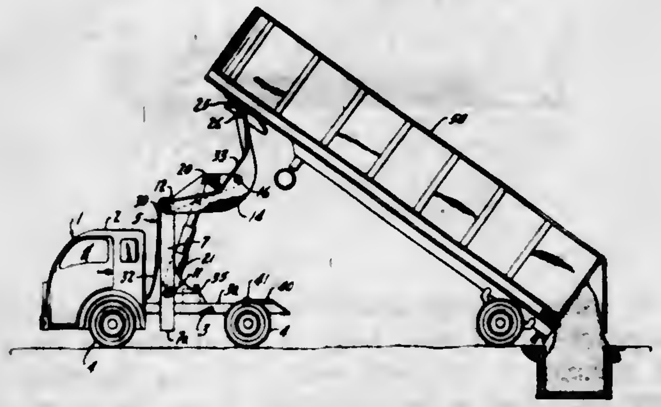
Robert T. Catlin, Trumbull, Conn., and John Clarke Sinex, Ilion, N.Y., assignors to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Mar. 29, 1956, Ser. No. 574,677
12 Claims. (Cl. 227—10)



1. A tool for driving fastening devices with the power derived from an explosive cartridge comprising in combination a barrel having a bore of non-circular cross-section, a chamber in said barrel in which an explosive cartridge can be fired, a driving piston slidable in said bore and fitted with a non-circular head having substantially gas tight engagement with the bore, manually releasable means resistant to any force in either tension or compression resulting from the inertia of the fastener, said releasable means acting to secure together said driving piston and a fastener in spite of inertia and other forces resulting from the explosive driving of said piston or from interception and stopping of said driving piston, and a muzzle cap secured to the end of said barrel, said muzzle cap having formed therein an aperture through which the fastening device may be driven and with means to intercept the non-circular head of the driving piston and prevent the explosive expulsion of said driving piston and the fastener secured thereto as free ballistic missiles, said muzzle cap having therein a non-circular aperture of the same form as the non-circular bore, the muzzle cap being so oriented with respect to the bore of the barrel that the projections of the major axis of the bore of the barrel oppose the minor axis of the non-circular aperture in the muzzle cap so that the head of the piston may not pass through the cap without reorientation after emerging from the muzzle of the barrel.

3,181,761
SEMI-TRAILER LIFT

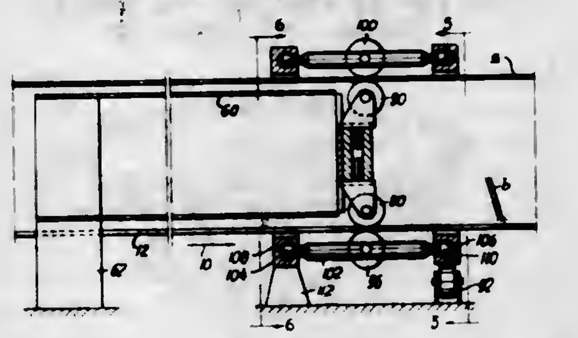
Percy H. Bartlett, Riverside, Ill., assignor to Bartlett Trailer Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 16, 1963, Ser. No. 251,844
14 Claims. (Cl. 298—20)



1. A lifting structure for a tractor-trailer combination, including a support adapted for mounting on the tractor, said support including a pair of spaced members with their upper ends terminating at a point adjacent the roof of the tractor cab, a pair of L-shaped arms pivotally mounted at one of their ends to said support upper ends, a fifth wheel pivotally mounted on the opposite ends of said L-shaped arms, and a fluid power mechanism pivotally secured to said support and said L-shaped arms, kingpin engaging jaws carried by said fifth wheel and means carried by said support and operable in response to initial movement of said arms by said power mechanism to prevent opening of said jaws.

3,181,762
GUIDE DEVICE FOR TUBES DURING WELDING OPERATION

Knut Axel Waldemar Persson, Trollbacken, Sweden, assignor to AB Broderna Hedlund, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 11, 1961, Ser. No. 82,003
Claims priority, application Sweden, Jan. 14, 1960, 320/60
2 Claims. (Cl. 228—49)

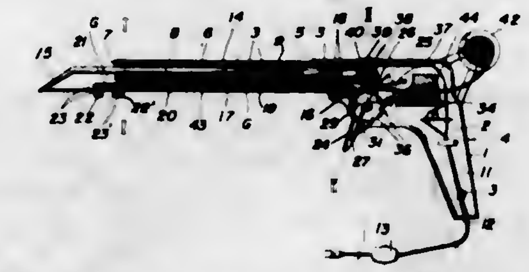


1. Apparatus for guiding a tube blank relative to a welding member for welding longitudinal edges of said blank to each other to form a tube, comprising first roll means positioned to bear against the exterior of the tube blank and rotatable about at least one axis disposed in a plane perpendicular to the axis of the tube blank, second roll means positioned to bear against the interior of the tube blank adjacent said first roll means and rotatable about at least one axis disposed in a plane perpendicular to the axis of the tube blank, said second roll means having convex outer peripheral surfaces, and means for

bodily rotating one of said first and second roll means relative to the other of said first and second roll means about the axis of said tube blank.

3,181,763
SOLDERING IRON

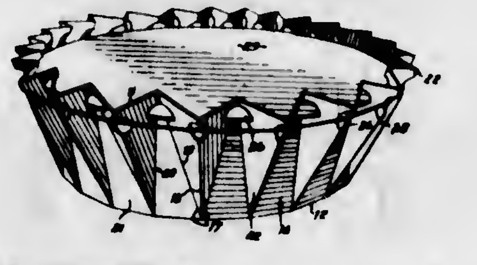
Motoyuki Koga, 966 4-chome, Shimo-Meguro, Meguro-ku, Tokyo, Japan
Filed Dec. 6, 1961, Ser. No. 157,414
Claims priority, application Japan, Sept. 6, 1961, 36/45,060, 36/45,061, 36/45,062
2 Claims. (Cl. 228—53)



1. A soldering iron operative by one hand, comrpising a pistol-shaped main body, a barrel fitted in the forward opening at one end and extending therefrom, a heating rod fitted in and extending from the barrel and bent slopewise at its forward portion, a guiding shelter fitted in a lower opening of said body and extending therefrom in parallel with the barrel, said guiding shelter confronting with the forward portion of the heating rod, and a feed gear whereby stringy solder is advanced, said feed gear comprising a trigger pivotally mounted on an axle which is secured to the body, a ratchet wheel pivotally mounted on said axle, a click pivotally connected with the lower portion of the trigger at one end and adapted to engage with the ratchet of the wheel, a longitudinally extending pressing plate positioned over the ratchet with one end pivotally secured to the body on a transversely extending pivot rearwardly of said ratchet and with its other end being free and extending forwardly of said ratchet, an adjusting bore vertically provided on the body over said pressing plate so that it will intersect with the center line of the barrel, an adjusting screw movably threaded into the adjusting bore, and a coil spring positioned between the screw and the pressing plate.

3,181,764
COLLAPSIBLE ORNAMENTAL BOX

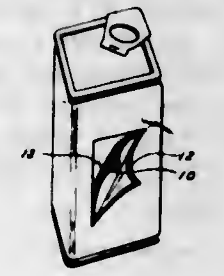
Ronald E. Lowry, 5871 Montfort Hills Ave., Cincinnati, Ohio
Filed Feb. 25, 1963, Ser. No. 260,645
2 Claims. (Cl. 229—1.5)



1. A package comprising,
a circular one piece blank,
a generally circular fold line spaced inwardly from and concentric with the edge of said blank,
a plurality of radial fold lines extending between said circular fold line and the edge of said blank and uniformly spaced around said blank,
V-shaped fold lines spaced around said blank in alternating relation to said radial fold lines, said V-shaped fold lines having their apexes on the edge of said blank midway between the points at which said radial fold lines meet the edge of said blank, said V-shaped fold lines having their opposite extremities terminating at the intersection of said circular fold line and said radial fold lines,
said fold lines cooperating to provide an accordion folded side wall constituted by the portion of said blank between said circular fold line and the edge of said blank, said radial fold lines comprising the outermost projections of said side wall when said wall is accordion folded and said V-shaped fold lines defining the innermost projections of said side wall when said wall is accordion folded,
one leg of said V-shaped fold lines being less flexible than the other to urge a uniform direction of folding when said side wall is folded against said bottom wall.

3,181,765
LAMINATED MILK CARTON

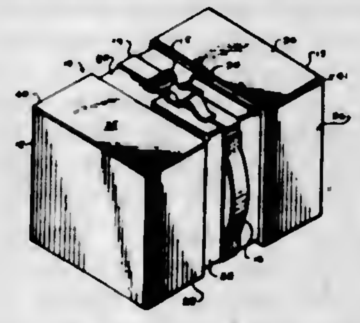
Francis A. Bonzagni, Springfield, and Oscar P. Cohen, Longmeadow, Mass., assignors to Monsanto Company, a corporation of Delaware
Filed Jan. 3, 1961, Ser. No. 80,336
3 Claims. (Cl. 229—3.5)



1. A laminated structure having improved lactic acid resistance and improved adhesion consisting essentially of a plurality of cellulosic paper sheets bonded together by a petroleum wax adhesive composition and carrying on at least one exposed surface thereof a petroleum wax coating composition; said petroleum wax adhesive composition and said petroleum wax coating composition consisting essentially of 98–90% by weight of a petroleum wax and, correspondingly, 2–10% by weight of a copolymer of 65–70 weight percent of ethylene and, correspondingly, 35–30 weight percent of vinyl acetate and wherein said copolymer has a melt index of about 1–250 and has a cloud point of about 75–130° C.

3,181,766
CUSHIONED PACKAGE

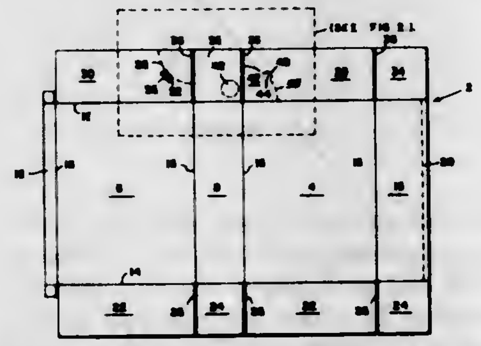
James T. Kane, 121 Wright Road, Rockville Centre, N.Y.; Harry W. Dayton, 184 Bay Drive, Massapequa, N.Y.; and James H. Allison, 18 Lark Lane, East Northport, N.Y.
Filed Apr. 10, 1962, Ser. No. 186,391
9 Claims. (Cl. 229—14)



1. A flat unfolded carton blank generally rectangular in shape, scored to provide a plurality of panels and having an inner surface and an outer surface with a layer of three dimensional deformable resilient material having dimensions of length, width and thickness secured to the said inner surface of the blank, said layer of deformable resilient material being relatively as wide as the said blank and as long as the said blank, less one thickness of the said layer, in which the said deformable resilient layer has one end contiguous to one end of the said blank, and the other end one of said thicknesses away from the opposite end of said blank, and a plurality of cuts along its surface, said opposite end of said blank forming a pair of shoulders and a flap portion extending therefrom; in combination with at least one end closure and at least one fastening means, in which said end cover is provided with a centrally located block of deformable resilient material adapted to fit into an open end formed when the said flat blank is folded and held in folded position by the said fastening means.

3,181,767
RECLOSABLE BOX STRUCTURE

George W. Starkey, Whittier, Calif., assignor to The Flintkote Company, New York, N.Y., a corporation of Massachusetts
Filed Nov. 7, 1963, Ser. No. 322,138
3 Claims. (Cl. 229—17)

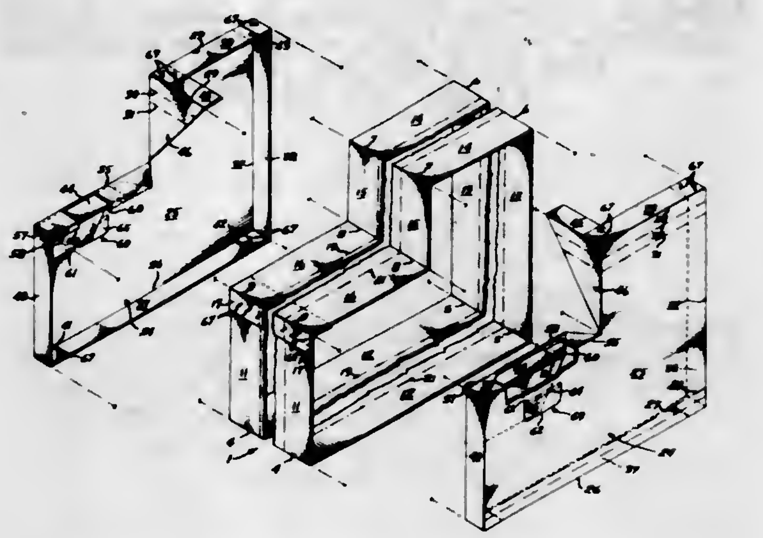


1. In a box of the type having four side walls and a bottom, a reclosable contents dispensing structure at the top of the box comprising panels folded inwardly across the top in mutually flat overlapping relation and being connected with said side panels along scored fold lines, said flaps including two panels folded inwardly from opposite side walls and a panel folded across from an adjacent intermediate side wall, a closure flap in the uppermost panel defined by a tear line and being hingedly movable about its associated fold line, the lowermost panel having a relatively small pour opening adapted for pouring of granulated and powdered products, the last-mentioned opening being beneath said closure flap, and the intermediate panel between said uppermost panel and lowermost panel, having a removable portion defined by a tear line to define an opening covering a substantial area beneath said closure flap and over the portion of said lowermost panel having the pour opening therein, said closure flap having a tab portion protruding beyond said tear line defining the opening in the intermediate flap, said tab being adapted to be tucked beneath the edge of the last-mentioned opening and over the surface of the underlying lowermost panel to hold the closure flap in closed position over said pour opening.

3,181,768
SHIPPING CONTAINER FOR FURNITURE OR THE LIKE

Thomas W. Flynn, Elmhurst, and Barton K. Smith, Winnetka, Ill., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed July 1, 1963, Ser. No. 291,878
4 Claims. (Cl. 229—23)

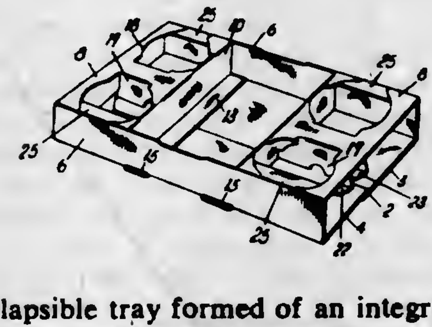
1. A three-piece shipping container, comprising: a generally L-shaped tubular body; a pair of end closure means for closing each end of said tubular body; each of said end closure means having elongated edge tabs folded along score lines and extending into said tubular body; reinforcing means extending into said tubular body; said reinforcing means comprising a swinging tab folded along a vertical score line supporting the upper longitudinal portion of said L-shaped tubular body and a folding tab folded along a horizontal score line that intersects said vertical score line supporting the lateral portion of said L-shaped tubular body; said swinging and folding tab formed by a diagonal cut line extending between the intersection of said vertical and horizontal score lines and the upper end of said end closure means; said folding tab provided with first, second and third score lines forming two laterally extending panel portions positioned adjacent each other and another panel portion extending vertically downwardly along the inner surface of said end closure means.



3,181,769
WITHDRAWN

3,181,770
COLLAPSIBLE SERVING OR CARRYING TRAY

Merrill J. Coe, Kalamazoo, Mich., assignor to KVP Sutherland Paper Company, Kalamazoo, Mich.
Filed Sept. 28, 1962, Ser. No. 226,796
3 Claims. (Cl. 229—30)

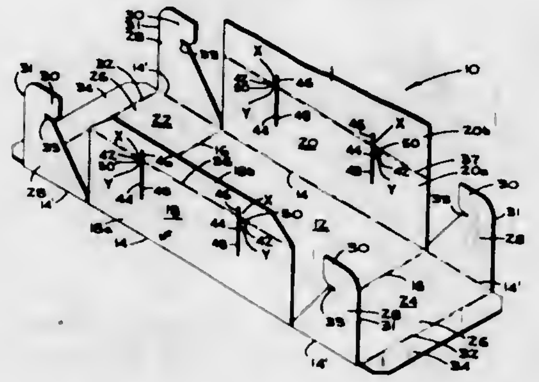


3. A collapsible tray formed of an integral blank comprising a bottom, side walls hingedly connected to opposed side edges of the bottom, laterally spaced top members hingedly connected to the side walls, transverse strut members of a length corresponding to the width of the tray hingedly connected to the inner edges of the top members and disposed when in erected position with their end edges in supporting engagement with the inner sides of the side walls and having laterally projecting lugs thereon, said side walls having keeper openings therein with which said lugs are engaged when said transverse strut members are in erected position, said top members having receptacle receiving openings and having pairs of integral bottom engaging longitudinally extending laterally spaced strut elements hingedly connected to the portions of the top members between the receptacle receiving openings therein, each pair of said longitudinal strut elements having inter-engaging parts when the tray is in erected position which coact to hold them in substantially parallel laterally spaced relation when the tray is erected, one only of said inter-engaging strut elements

being fixedly and hingedly connected to the bottom said strut elements being portions of the top struck out therefrom to provide said receptacle receiving openings.

3,181,771
FOLDING BOX

Robert K. Galloway, Hoopeston, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 9, 1963, Ser. No. 293,636
1 Claim. (Cl. 229—35)

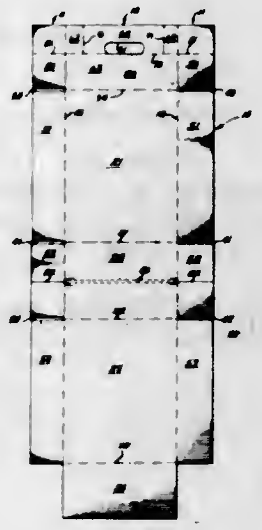


In a folding box having a bottom and integral upwardly extending walls, said walls having score lines adjacent their upper edges to form upper flaps, tabs extending outwardly from each of the vertical edges of one pair of opposite walls, each of said tabs having an upper edge in the plane of the score lines of said walls and a hook-shaped end portion, means defining incisions formed in the other pair of opposite walls for receiving said hook-shaped end portions of the tabs, each of said incisions including a substantially vertically extending incision extending across the associated score line and into the associated flap, and a substantially horizontally extending incision extending along the score line, said horizontal incision extending from the intersection of the associated vertical incision with the score line outwardly toward the one wall that carries the associated tab, said vertical and horizontal incisions defining upper and lower deflectable flap and wall portions, the initial insertions of said hook-shaped tab portions through the associated vertical incisions causing deflection of said flap and wall portions toward the interior of said box, continued movement of said tabs to their final position with the upper edges of the tabs aligned with the score line, causing return of the previously deflected flap portions to their non-deflected positions in the planes of their associated flap, the portions of the upper flaps that extend between said vertical incisions providing locking engagement with the upper edges of their respective tabs when the flaps are folded in along their score lines.

3,181,772
CARTON

Vernon H. Collins, Merchantville, and William J. Goetschius, Delair, N.J., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed May 21, 1962, Ser. No. 196,138
4 Claims. (Cl. 229—52)

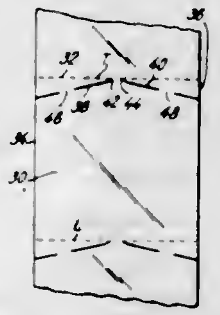
1. A carton comprising
top and bottom walls;
a first end wall extending between said top and bottom walls,
said first end wall having a transverse score line therein dividing said first end wall into top and bottom sections,
said first end wall comprising inner and outer panels, one of said panels extending from said top wall and the other of said panels extending from said bottom walls, each of said panels extending to a position beyond said transverse score line,
the section of said inner panel beyond said transverse score line being affixed to said outer panel,
said outer panel having a pair of longitudinal slits therein extending from the outer edge of said panel to said transverse score line, said slits defining a central handle portion and a pair of side tabs,
said side tabs being affixed to said inner panel;



a second end wall opposite said first end wall and extending between said top and bottom walls,
said second end wall being divisible into top and bottom sections by a tear strip in said second end wall, said tear strip being parallel to said transverse score line;
side walls extending between said top and bottom walls and between said end walls,
said side walls having a line of demarcation extending between said tear strip and said transverse score line.

3,181,773
BAG AND BAG SUPPLY

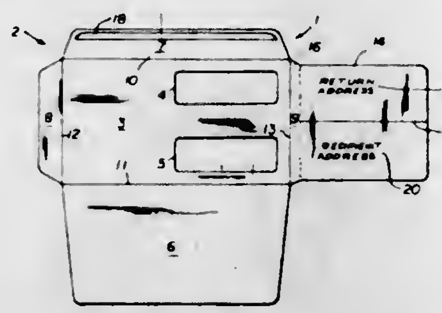
Murray Jelling, 21 Spring Hill Road, Roslyn Heights, N.Y., and Michael Friedman, 1178 E. 23rd St., Brooklyn, N.Y.
Original application Oct. 10, 1962, Ser. No. 229,630. Divided and this application Oct. 3, 1963, Ser. No. 313,593
7 Claims. (Cl. 229—69)



1. An article of manufacture comprising an elongated flat tube of pliable material including substantially parallel front and back walls, said tube further having opposite lateral edges whereat said walls are connected and being provided with transverse lines of openings extending between said edges and dividing said tube into separable sections serially connected at said transverse lines, each of said sections having seams connecting said walls and extending, from respective of said edges towards spaced positions on a related one of the said lines, said seams being provided between their respective edges and associated of said positions with an opening approximately equal in size to the distance between said positions.

3,181,774
ENVELOPE AND CARD UNIT

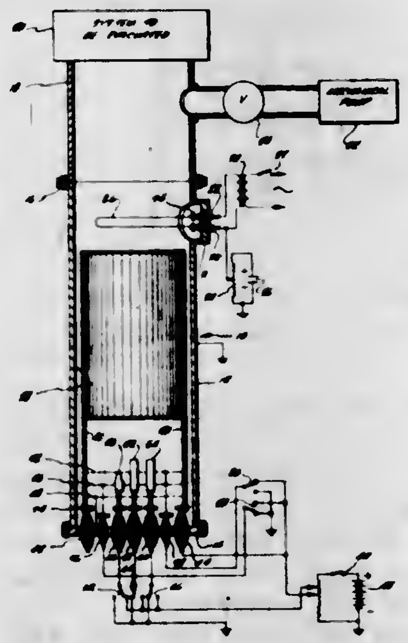
Alan L. Littman, Shaker Heights, Ohio, assignor to The Wolf Envelope Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 26, 1963, Ser. No. 333,293
5 Claims. (Cl. 229—70)



1. An envelope and card combination comprising: a front panel having a pair of spaced apart but vertically aligned window cut-outs, a bottom flap integrally connected by a fold line to said front panel along one edge thereof, a top flap provided with an adhesive surface integrally connected by a fold line to said front panel along the opposite edge thereof, a pair of side flaps integrally connected by fold lines to said front panel along the other edges thereof, a detachable card means integrally connected by a score line to one of said side flaps, said card means containing the address of the recipient and the address of the sender, said one flap when folded along its fold line into juxtaposition with the front panel positioning the address of the recipient in alignment with one window cut-out and the address of the sender in alignment with the other window cut-out, the other of said side flaps being adapted to be folded along a fold line against the front panel, said bottom flap being adapted to be folded along its fold line against the front panel over the side flaps, said top flap being adapted to be folded along its fold line and in sealing engagement with the bottom flap.

3,181,775
PUMPING APPARATUS

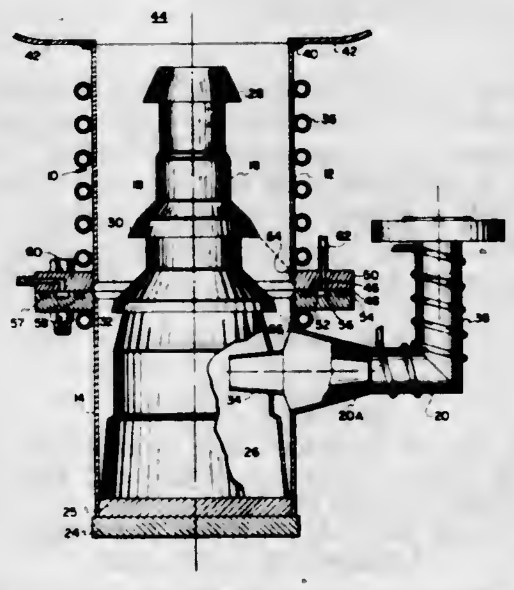
Raymond G. Herb, Madison, Wis., assignor to Wisconsin Alumni Research Foundation, Madison, Wis., a corporation of Wisconsin not for private profit
Filed Mar. 20, 1962, Ser. No. 180,954
13 Claims. (Cl. 230—69)



1. A vacuum pump comprising a metal housing having a chamber therein and an input port for connecting the chamber with a vessel to be evacuated, a heater filament positioned in the chamber, a grid extending around the sides of the chamber but spaced therefrom, the grid surrounding a large region within the chamber, means for applying a large positive potential on the grid relative to the filament for drawing electrons into the region surrounded by the grid to ionize the gas therein by electron bombardment and thereby produce a low density plasma and a substantially equal density of electrons, a piece of gettering metal located in the chamber, and means applying a positive potential to the piece of gettering metal relative to the grid for providing a flow of electrons from the region surrounded by the grid to the piece of gettering metal to heat the gettering metal to a temperature sufficiently high to produce sublimation thereof but below the melting point of the gettering metal.

3,181,776
SPLIT BODY DIFFUSION PUMP

Marsbed Hablanian, Waltham, and Jonathan R. Roehrig, Sudbury, Mass., assignors, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed July 13, 1962, Ser. No. 209,507
9 Claims. (Cl. 230—101)



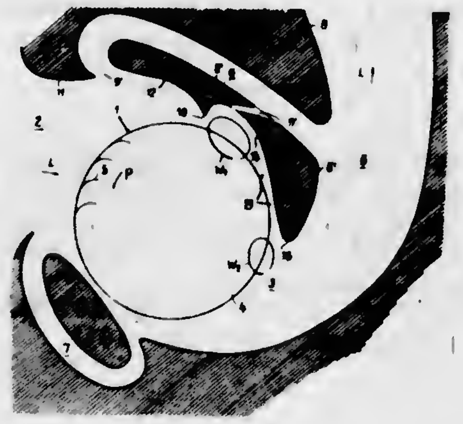
1. An improved oil diffusion pump comprising a vertical pump body and a vapor jet assembly positioned therein, the pump body comprising upper and lower tubular wall portions surrounding the vapor jet assembly, the upper and lower wall portions being connected by a demountable vacuum seal for assembling and disassembling the pump, the seal being positioned at a point on the pump body adjacent the high pressure area whereby gases entering the pump body at the seal are removed by operation of the pump, said seal being the sole demountable seal of the pump body, and means for cooling the seal.

3,181,777
TRANSVERSE-FLOW BLOWER

Robert Coester, Haldenstrasse, Zumikon, Zurich, Switzerland
Filed Nov. 27, 1962, Ser. No. 240,310
Claims priority, application Switzerland, Nov. 29, 1961, 13,940/61
6 Claims. (Cl. 230—125)

1. The combination in a transverse-flow blower of a rotor rotatable in one direction and a housing means, said housing means defining a low pressure inlet chamber for a generally radial supply flow of air into the rotor and a high pressure outlet chamber for a generally radial flow of air outwardly from the rotor, said housing means serving also to define with the rotor and adjacent its periphery an arcuate convergent-divergent slot, said slot being convergent-divergent in the direction of rotation of the rotor and being disposed adjacent and in communication with said high pressure chamber at a portion of the

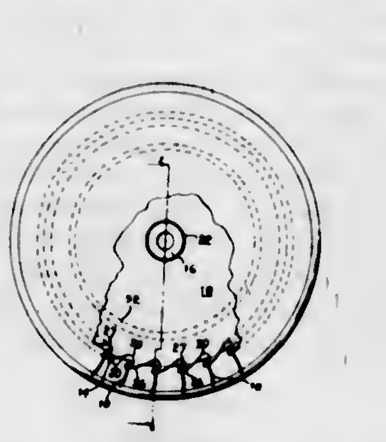
later whereat the rotor leaves the same in rotation, said housing means serving also to define a rounded inlet surface for said slot which extends generally away from the rotor periphery in the high pressure chamber, said housing means serving also to define a first air flow passageway which communicates with said low pressure chamber so as to discharge a supplementary air stream thereto approximately tangentially with respect to supply air flow therein and which is connectible with a supply of air under pressure, and said housing means serving also to define a second air flow passageway having a discharge end in communication with said slot and which is connectible with a supply of air under pressure, said discharge end of said second passageway being in communication with the slot in the divergent portion of the latter.



3,181,778
BLOWER WHEEL

Robert A. Mayne, deceased, late of Oakwood, Ohio, by Ruth D. Mayne, executrix, Oakwood, Ohio (42 W. Forrer Road, Dayton 19, Ohio)

Filed Mar. 13, 1961, Ser. No. 95,456
1 Claim. (Cl. 230—134)

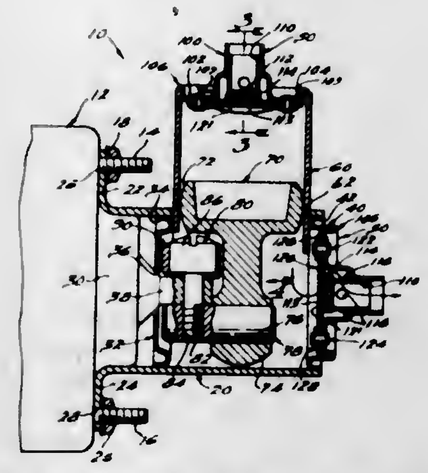


In a blower wheel, the combination including a hollow cylindrical body member having a plurality of spaced axially disposed blades, said blades each having an aperture, a center support comprising a hub, means for attaching the blades in fixed relation to the hub, said means including two unlike discs, one of said discs being fixedly mounted on said hub, said one disc having a generally circular outer margin engageable with the innermost margin of said blades, the second of said disc being fixedly mounted on said hub adjacent said first disc, said second disc having interlock hook portions on the outer periphery thereof projecting radially outwardly beyond the margin of said first disc interengageable with the apertures in said blades, the interlocked hook portions of the second disc and the outer margin of the first disc positively clamping the intermediate portions of the blades.

3,181,779
COMPRESSOR

Keith H. Rhodes, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware

Filed Sept. 6, 1962, Ser. No. 221,729
1 Claim. (Cl. 230—172)

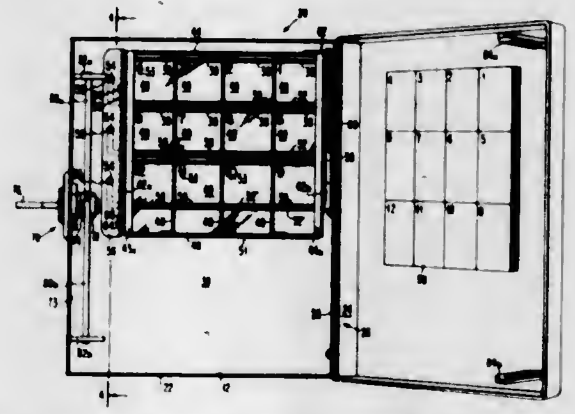


A positive displacement piston-type air compressor for attachment directly to a rotatable shaft, said compressor comprising a cylinder, a one-piece molded plastic piston in said cylinder, said piston having a spherical head portion at one end thereof and a bore in an opposite end portion thereof extending transversely to the central axis of said cylinder and parallel to the central axis of said rotatable shaft in abutting parallel relationship, a cylindrical crank pin having one end portion secured directly to said rotatable shaft whereby the central axis of said crank pin is radially spaced from the central axis of the shaft, the other end of said crank pin being journaled directly in the bore in the opposite end portion of said piston, and an intake and an exhaust valve in said cylinder whereby rotation of said shaft effects reciprocation and articulation of said piston and induction and compression of air in said cylinder.

3,181,780
COLLECTION DEVICE FOR PARKING FEES

Elbert V. Abbott, 96 Vicksburg St., San Francisco, Calif.

Filed Aug. 19, 1963, Ser. No. 302,892
1 Claim. (Cl. 232—1)

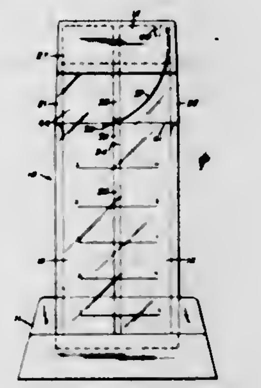


A fee collection device for parking lots and like establishments comprising a strong box having a front wall containing an array of vertically superposed and horizontally juxtaposed coin-receiving slots; associated with said slots on the outer surface of said front wall identifying marks corresponding to the identifying marks of the individual stalls of a parking lot; within said box adjacent the inner surface of said front wall vertical partitions at either side of the vertical rows of coin-receiving slots, horizontally disposed hinge rods rotatably supported adjacent said partitions below each horizontal row of coin-receiving slots, plates secured to said hinge rods between said partitions, means coupling said hinge rods for rotation in unison, means yieldably urging said rods into a rotary position wherein said plates are horizontally disposed to form with said partitions individual coin-receiving compartments for said slots, a transparent rear wall for said compartments adjacent said partitions, and for each of said compartments an identifying mark on said transparent rear wall corresponding to the identifying mark associated with the coin-receiving slot leading into the compartment, and means on one of said hinge rods for manipulating said rod to turn all the hinge rods in unison and thus cause all of said plates to tilt and discharge coins deposited into said compartments in unison; at the back of said strong box a door of such size and location as to permit, upon opening, a view of the transparent rear wall of all the compartments comprised in the device, and means for locking said door in closed position; said box being constructed to form a space behind the rear wall of said compartments and having a top wall containing above said space a slot of a size adapted to receive an envelope.

3,181,781
INCENTIVE SAVINGS BANK

Wilbur W. Randall, 747 N. Main St., West Hartford, Conn., and Julia Rubenstein, New York, and James F. Fulton, Mamaroneck, N.Y., assignors, by direct and mesne assignments, to said Randall

Filed May 10, 1963, Ser. No. 279,570
4 Claims. (Cl. 232—5)

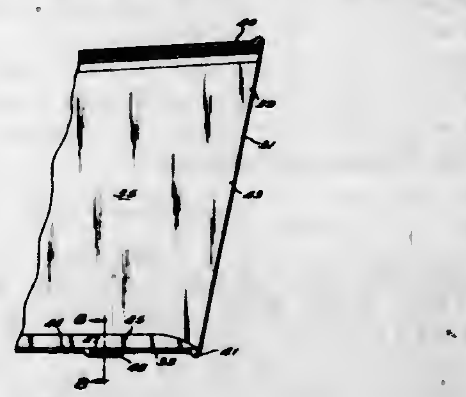


2. A savings bank for coins of one denomination comprising in combination; two adjacent, vertically disposed parallel tubes having side walls and being closed at the bottom to provide two flatwise coin holding compartments, a common wall between said tubes, a top closure wall for said tubes, a coin receiving foyer in the upper part of one of said tubes, a slot in one of said walls thereof arranged to admit a coin to said foyer in a vertical position transverse to the said common wall, means providing an obstruction isolating said coin in said vertical transverse position in said foyer from the compartment beneath it, a slot in a side wall of the second tube for receiving a second coin in a vertical position, means positioned to be engaged by said second coin and connected to withdraw said obstruction toward said common wall to release the first coin for delivery into the compartment beneath said foyer and means guiding said second coin into the other compartment, said common wall being provided with a narrow slot which extends below the level of the foyer, a bowed leaf spring having an end narrow enough to pass through said slot to form said coin obstruction, the remainder of the spring being wider and housed in the upper part of the tube without the foyer, shoulders at the junction of the wide and narrow parts of said spring engaging the common wall to fulcrum said spring at said junction, and said spring remainder having an end engaging the top closure wall to flex said spring to maintain said shoulders substantially engaged with the common wall at the top of said slot at all times.

3,181,782
NEWSPAPER DELIVERY TUBE

Meade Monroe, Cleveland, Ohio, assignor to Newspaper Enterprise Association

Filed June 11, 1962, Ser. No. 201,631
4 Claims. (Cl. 232—17)



1. A newspaper delivery tube designed to be affixed to a support bracket therefor comprising:

(*a*) a one-piece elongated hollow body generally rectangular in cross section and having a closed end substantially perpendicular to the longitudinal axis thereof, an open end, and a bottom wall having a substantially smooth upper surface,

(*b*) spaced-apart ribs within said body and integral with said bottom wall and extending upwardly therefrom and from adjacent the open end of the body to adjacent the closed end thereof,

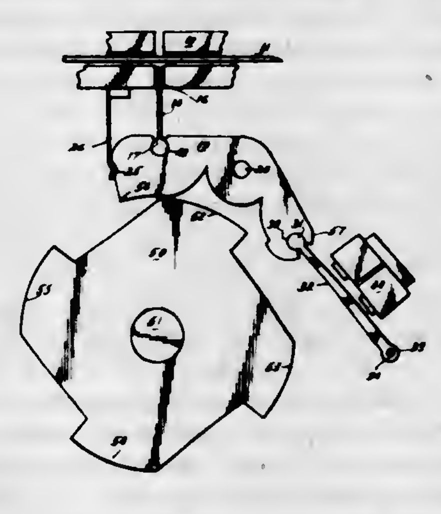
(*c*) the said ribs being substantially rectangular in cross section and of sufficient vertical height to support a newspaper out of contact with water on the said upper surface of said bottom wall, and

(*d*) at least one drainage opening through the said bottom wall and adjacent to each rib, each said opening extending beneath the adjacent rib and opening into the spaces on opposite sides of such rib so that the water on either side of a rib may drain through the opening beneath that rib.

3,181,783
HIGH SPEED PERFORATOR

Leo Rosen, 9414 St. Andrews Way, Silver Spring, Md.

Filed Apr. 3, 1962, Ser. No. 184,899
13 Claims. (Cl. 234—119)



1. In a device of the character described, a rotatable cam having a plurality of radially extending lobes and relatively depressed peripheral areas therebetween, a lifter pivoted in cooperable relation to said cam said lifter having end portions extending from said pivot said end portions having surfaces normally held adjacent the radial

extremities of said cam lobes, means operable in timed relation with the rotation of said cam for turning said lifter on its pivot thereby to depress one of said end portions into a said depressed peripheral area the striking of said last mentioned end portion by the succeeding said lobe being effective to thrust said last mentioned end portion outwardly from said cam and simultaneously depress the other of said end portions into a said depressed peripheral area the striking of said other of said end portions by the following said lobe being effective to urge the said surfaces of said end portions of said lifter toward their normal positions.

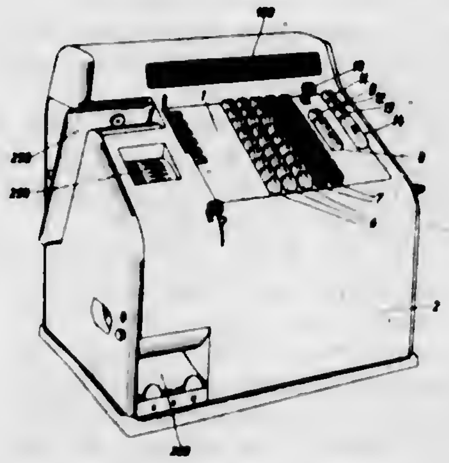
3,181,784
BUSINESS MACHINE HAVING A CONTROL DEVICE FOR THE AUTOMATIC CONTROL OF TOTALIZING MACHINE RUNS

Gerhard Becker, Bielefeld, Germany, assignor to Anker-Werke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany

Filed Jan. 30, 1962, Ser. No. 169,761

Claims priority, application Germany, Feb. 3, 1961, A 36,645

23 Claims. (Cl. 235—2)



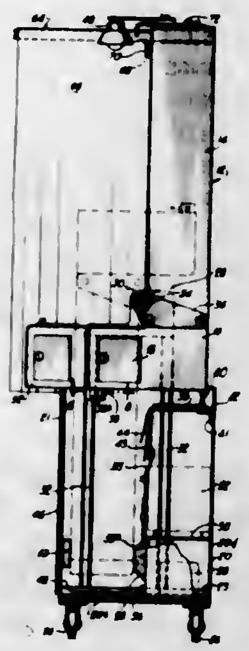
1. A business machine, comprising amount posting means, control key means for initiating a machine run to enter an amount tendered, computer means selectively operable in an additive and subtractive sense, transfer means operatively connecting said amount posting means with said computer means and selectively controllable by said control key means for entering into said computer means respective amounts posted by said amount posting means; selectively actuable automatic machine run control and release means including adding mechanism selector members under control by said control key means for setting said computer means, a differential mechanism having a mode switching bank slider member, rotatable control cam means arrestable at variable set positions at the end of respective machine runs and operably geared with said differential mechanism for actuation by said differential mechanism so as to be rotated thereby an amount determinative of one of said variable set positions, said rotatable control cam means being arrestable at said variable set positions at the end of respective machine runs dependent upon the position of said bank slider member, machine run mode selector means, detent means arranged for arresting said control cam means in one of said variable set positions, and discriminating release control means arranged for adjusting the position of said mode switching bank slider member and for controlling said adding mechanism selector members as well as said mode selector means in order to initiate a number of said variable series of machine runs, said number being at least one machine run and being determined by the arrested position of said control cam means as set by a preceding machine run.

3,181,785
PACKAGING UNIT FOR VOTING MACHINE

Ira G. Laws, Tulsa, Okla., and Charles Emmett Wilson, Leawood, Kans., assignors to Seismograph Service Corporation, Tulsa, Okla., a corporation of Delaware

Filed Apr. 19, 1962, Ser. No. 188,691

4 Claims. (Cl. 235—51)



1. A package combination comprising a voting machine and a transport case for housing said machine and accessories comprising a compartment having a movable wall and a pair of side walls, means carried by said side walls for pivotally mounting said machine to allow said machine to pivot between an upright voting position and a downward storing position when said movable wall is opened, latch means engageable with said machine and said side walls for latching said machine in said upright voting position, cushioning means on said movable wall and within said compartment for holding said machine in said downward storing position when said movable wall is in place, means including shelf means within said lower compartment for fixedly securing accessories to said machine within said lower compartment, and a top cover means engageable with said lower compartment to form a closed container for housing said machine and accesories when said machine is in its downward storing position.

3,181,786
CALCULATING MACHINE WITH CONTROL OF DECIMAL PLACES

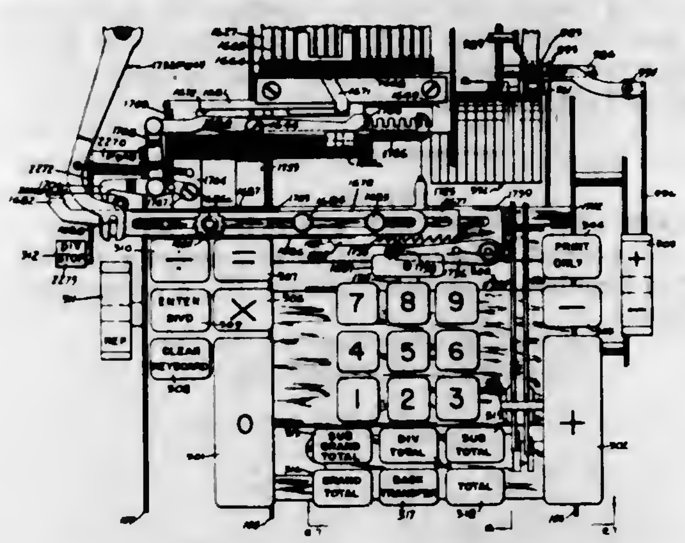
Teresio Canevari, deceased, late of Turin, Italy, by Annita Gianott, ved Canevari, sole heiress and legal representative, Turin, Italy, assignor, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware

Continuation of application Ser. No. 753,316, Aug. 5, 1958. This application July 3, 1961, Ser. No. 123,085

Claims priority, application Italy, Jan. 5, 1957, 69/57, 70/57, 71/57

18 Claims. (Cl. 235—60.15)

1. In a calculating machine having manually operated input selection mechanism, accumulator mechanism, printing mechanism, and manually controlled actuating mechanism effective to transmit values between said selection mechanism, said accumulator mechanism and said printing mechanism, means mounting said accumulator mechanism for movements transordinally of said selection and printing mechanisms, power-operated means effective to impart transordinal movements to said accumulator mechanism, and control means manually settable for selecting the number of decimal places in a printed value, said control means being operable in response to the setting thereof for controlling said power operated means for moving said accumulator to the transordinal position so set for thereby providing said selected number of decimal places in the printed value.

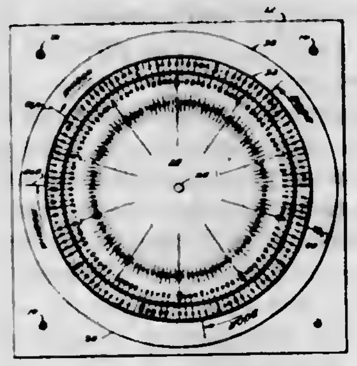


3,181,787
WALL CONSTRUCTION COMPUTER DEVICE

Robert W. Burns, 918 59th St., Des Moines, Iowa

Filed Oct. 3, 1962, Ser. No. 228,130

5 Claims. (Cl. 235—78)



1. In a wall construction computer device,
a base plate,
a disc rotatably secured by its center to said base plate,
said disc having a reduced thickness portion adjacent its periphery,
a layer of felt secured to said disc on said reduced thickness portion, said material possessing a high friction coefficient, a support plate on said base plate outwardly of said disc, and having a circular center opening larger than the diameter of said disc,
a scale ring mounted on said support plate and overlapping said disc to engage said layer of material in said reduced thickness portion,
a scale disc on said disc and extending over the inner periphery of said scale ring,
a ring detachably mounted on said support plate around the periphery of said scale ring,
support means for rotating said disc and said scale disc with respect to said base plate, said layer of felt and said first scale ring.
and registering indicia marks on the peripheries of said scale ring and said scale disc.

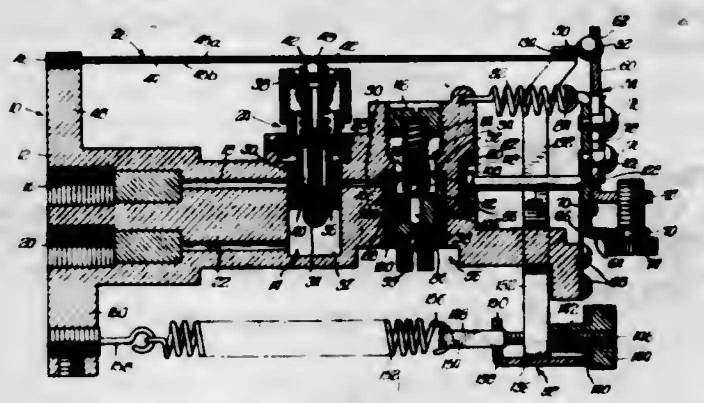
3,181,788
TEMPERATURE SENSING DEVICE

Robert J. Norman, Chicago, Ill., assignor to The Powers Regulator Company, Skokie, Ill., a corporation of Illinois

Filed June 26, 1962, Ser. No. 201,443

22 Claims. (Cl. 236—1)

1. In a pneumatic relay assembly adapted to control the supply of the heating and cooling medium in an air conditioning system in accordance with the temperature of the ambient atmosphere, the pneumatic relay assembly including a relay which is adapted to generate a pneumatic signal proportional to an input signal, the relay being connected to a first supply pressure when the system is heating and to a second supply pressure when the system is heating and to a second supply pressure when the system is cooling, one of the supply pressures being higher than the other, the combination comprising a bimetallic element for sensing the temperature of the ambient atmosphere and adapted to deflect from a reference configuration in accordance with variations in temperature, said bimetallic element having first and second ends and engaging the relay at a point intermediate said ends for imposing thereon an input signal of a magnitude commensurate with the temperature of the ambient atmosphere, first means for mounting said bimetallic element adjacent said first end to prevent movement of said first end due to changes in temperature, second means adapted to selectively engage said bimetallic element at a point spaced from said first means for restraining said point of engagement against deflection when in engagement therewith whereby when said second means is disengaged from said bimetallic element said intermediate point is caused to move in a predetermined direction relative to said first end by a predetermined change in temperature and when said second means is engaged with said bimetallic element said intermediate point is caused to move relative to said first end in a direction other than said predetermined direction by said predetermined change in temperature, third means sensing the supply pressure connected to said relay and being driven by a higher of the first and second supply pressures to disengage said second means from said bimetallic element, spring means biasing said second means into engagement with said bimetallic element when the lower of the supply pressure is communicated to the relay, and means for imposing a moment on said bimetallic element to establish an equilibrium temperature for said air conditioning system.



3,181,789
CONTROL SYSTEM FOR MODULATING GAS BURNER OPERATION ON FORCED AIR HEATING SYSTEMS

Harold G. Hill, 530 Lacroix St., Chatham, Ontario, Canada

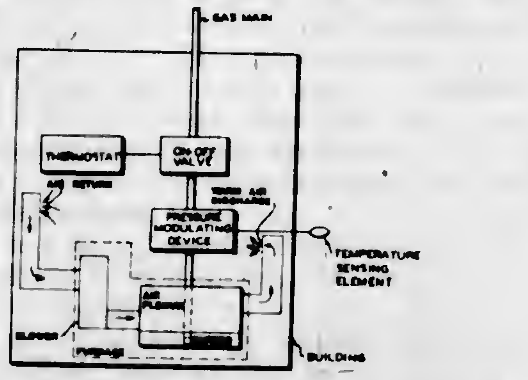
Filed Jan. 11, 1961, Ser. No. 81,971

Claims priority, application Great Britain, Jan. 13, 1960, 1,197/60

10 Claims. (Cl. 236—10)

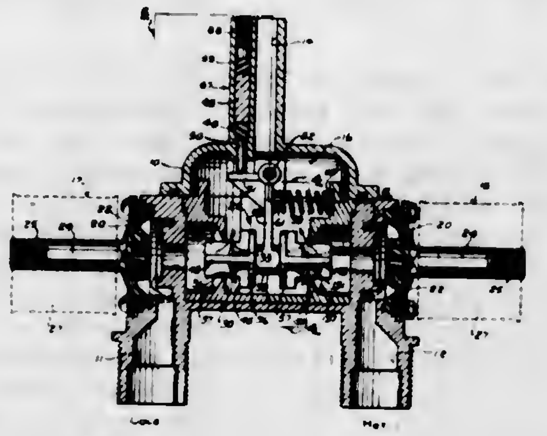
1. In a forced air heating system for a building including a gas furnace equipped with a burner connected by building piping to a supply of gas and an automatic on-off gas supply valve interposed between said burner and said supply, said gas supply valve being responsive to the temperature within said building to open at a predetermined lower inside temperature and close at a predetermined higher inside temperature, the improvement comprising, in combination therewith, a gas supply modulating device interposed inside said building between said

gas supply and said burner to modulate the rate of gas flow to said burner, said modulating device being responsive to the temperature outside of said building to vary said rate of gas flow in the range from a pre-determined maximum at not greater than a lower predetermined outside temperature to a predetermined minimum at not less than a higher predetermined outside temperature.



3,181,790
FLUID FLOW CONTROL DEVICE

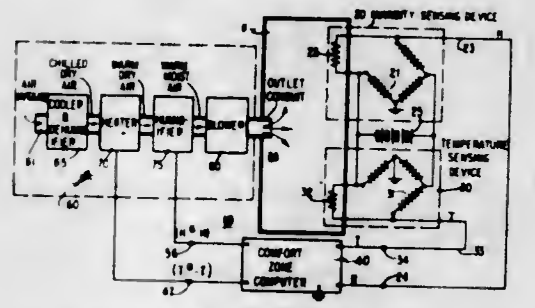
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Continuation of abandoned application Ser. No. 790,725, Feb. 2, 1959. This application July 12, 1963, Ser. No. 294,591
7 Claims. (Cl. 236—12)



1. In combination with a mixing chamber, means defining an effluent port for delivering fluids therefrom; a pair of conduits, each of said conduits defining an influent port for admitting sensibly different fluids to said mixing chamber; an on-off valve in each of said conduits for controlling fluid flow therethrough; a regulating valve in one influent port defined by one of said conduits and in downstream series with its on-off valve, said regulating valve including an orifice and a valve member disposed to restrict, without completely closing, said orifice when positioned to effect conditions of minimum flow, said valve member being afforded movement in both directions past said orifice so as to open the latter to maximum passage at positions of maximum offset with respect thereto in either direction; sensing means located at the effluent port; an actuator for controlling the position of said valve member connected to said sensing means and governed thereby; said valve member normally being positioned to one side of said orifice by said actuator with said sensing means and both on-off valves set to deliver fluids to and from the mixing chamber in a preselected proportion of mixture, the construction and arrangement of parts being such that when the fluid entering through the regulating valve predominates over that entering through the other influent port causing a departure from the preselected proportion, the sensing means detects the change and responds to move the actuator and valve member to restrict the flow through the orifice until the preselected proportion of mixture is restored; except that when the fluid flow through the orifice predominates perforce of the on-off valve of the other of said conduits being closed, then said sensing means and actuator continue to move said valve member past said orifice to open the latter so as to permit the relatively unrestricted flow of fluid to and through said effluent port.

3,181,791
AUTOMATIC COMFORT CONTROL SYSTEM

Leslie R. Axelrod, Highland Park, Ill., assignor to The Powers Regulator Company, Skokie, Ill., a corporation of Illinois
Filed Mar. 9, 1960, Ser. No. 13,779
3 Claims. (Cl. 236—44)

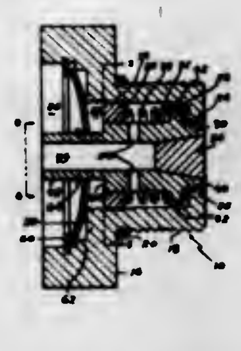


1. In an arrangement for controlling a first physical condition and a second physical condition and a third physical condition including the temperature and the humidity and the rate of movement of a mass of air in an enclosed environment and provided with first conditioner means for regulating a first physical condition of said mass of air, second conditioner means for regulating a second physical condition of said mass of air, and third conditioner means for maintaining a third physical condition of said mass of air; the combination of a control system for said arrangement comprising means for sensing a first physical condition of said mass of air, means for sensing a second physical condition of said mass of air, means responsive to each one of a multiplicity of sensed first physical conditions for determining a preferred second physical condition, means responsive to each one of a multiplicity of second physical conditions for determining a preferred first physical condition, means for deriving a first signal from the difference between said sensed first physical condition and said preferred first physical condition, means for deriving a second signal from the difference between said sensed second physical condition and said preferred second physical condition, means for applying said first signal to said first conditioner means for regulating the first physical condition of said mass of air, and means for applying said second signal to said second conditioner means for regulating the second physical condition of said air mass, whereby said first conditioner means and said second conditioner means are continuously directed to reduce said first signal and said second signal to a predetermined minimum.

3,181,792
THERMAL-PRESSURE RELIEF DEVICE

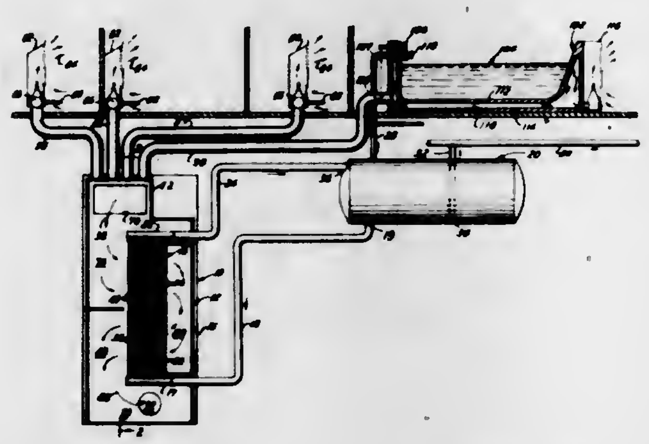
Herman R. Chandler, 31 Shafor Circle, Dayton, Ohio
Filed Aug. 30, 1963, Ser. No. 305,893
8 Claims. (Cl. 236—92)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A thermal-pressure relief device for relieving a closed vessel of gas under excessive pressure or temperature and comprising: a body for joining to said closed vessel, said body containing a cavity having an open end and an inlet passage into the cavity in said body for admitting gas from said closed vessel; a valve seat joined to the bottom of the cavity in said body to encompass the inlet passage into the cavity in said body; a valve plug operable within the cavity in said body to be openable from and closable against said valve seat in said body to control the gas flow entering the cavity in said body, said valve plug having a plurality of flow passages one of which communicates with the inlet passage in said body and the other flow passages communicating with the cavity in said body; a thermal plug within and blocking the flow passage in said valve plug communicating with the inlet passage in said body, said thermal plug being transformable from a solid state to a liquid state at a predetermined temperature to thereby unblock the flow passage; a pressure sensitive biasing means within the cavity in said body and acting against and biasing said valve plug against the said valve seat in said body; and a temperature sensitive actuating means retained within the cavity of said body and operably joined to said valve plug for opening said valve plug at a predetermined temperature of said body.



3,181,793
INTEGRAL HOT AIR SPACE HEATING AND WATER HEATING SYSTEM

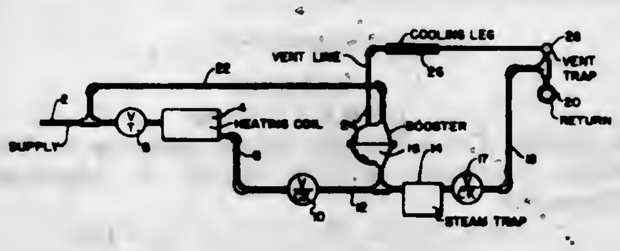
Calvin D. MacCracken and George N. Miles, Tenafly, N.J., assignors to Jet-Heet, Incorporated, Englewood, N.J.
Filed Oct. 23, 1961, Ser. No. 146,829
18 Claims. (Cl. 237—2)



10. A hot air space heating and hot water heating system utilizing a common source of heat comprising a hot air heating furnace including a fuel burner and a blower for moving the hot air at high velocity to the rooms to be heated, a hot water heater having water conducting means and a hot air circulation passage for conducting hot air from the furnace into heat exchange relationship with said water conducting means, expansible thermostatic means for sensing the temperature of said water conducting means, damper means having an open and a closed position, operating means for said damper means for opening and closing said damper means, and a mechanical connection from said thermostatic means to said operating means for controlling the flow of hot air through said circulation passage in accordance with the temperature of said water conducting means.

3,181,794
CONDENSATE DISCHARGE BOOSTER

Gordon N. Baustian, Bettendorf, Iowa, assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Sept. 24, 1962, Ser. No. 225,506
3 Claims. (Cl. 237—67)



1. The combination of:

(*a*) a condensate accumulating device which is subject at times to accumulating condensate under a pressure condition inadequate to effect the discharge of said accumulated condensate;

(*b*) a condensate discharge booster device for supplementing the discharge of condensate from said condensate accumulating device comprising,

  (1) a casing,

  (2) partition means dividing the lower part of said casing into a float chamber and a condensate inlet-outlet chamber, said partition means including aperture means in the lower part thereof placing said chambers in restricted communication with each other therethrough,

  (3) a steam inlet in said casing,

  (4) valve means for said steam inlet, and

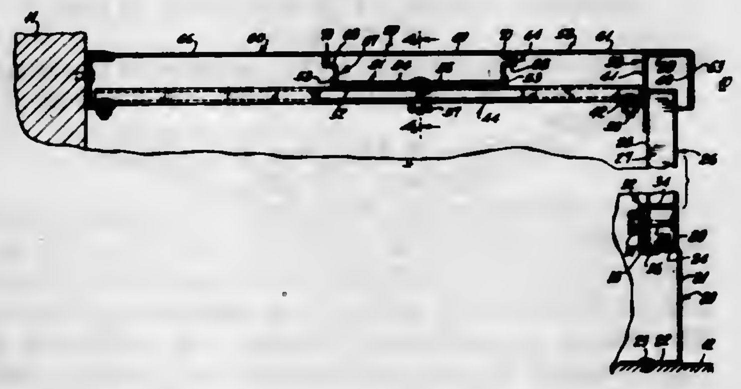
  (5) float means in said float chamber connected to control said valve means to admit steam in accordance with the level of condensate in said float chamber;

(*c*) means connecting said casing steam inlet to a source of steam under a pressure adequate to effect the discharge of said condensate from said accumulating device; and,

(*d*) means connecting said condensate inlet-outlet chamber to said accumulating device.

3,181,795
ENCLOSURE STRUCTURE

Leonard R. Phillips, Whitestone, New York, N.Y., assignor to Triangle Sheet Metal Works, Inc., New Hyde Park, N.Y., a corporation of New York
Filed Oct. 17, 1961, Ser. No. 145,650
21 Claims. (Cl. 237—79)



16. An enclosure structure field assembled from a plurality of separate units for use along a corner delineated by a floor and a vertical wall comprising a first bracket unit connected to said wall above said floor, a second bracket unit fastened to said floor forward of said wall,

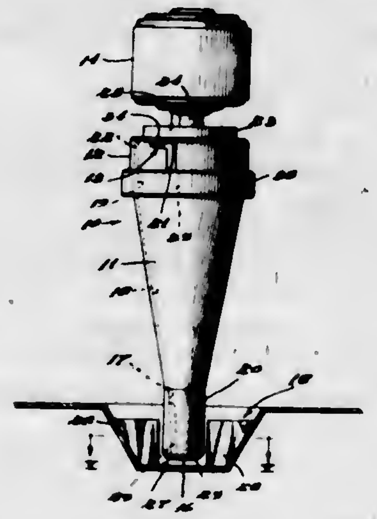
a plurality of laterally spaced mullions mounted on said second bracket, a third bracket extending longitudinally at substantially the tops of said mullions, a plurality of laterally spaced transverse reinforcing ribs extending between said first and third brackets, a laterally extending horizontal top panel separably mounted on said ribs, and front panels located and releasably supported between successive of said mullions.

3,181,796
SPRAY PUMP

Paul Keller, Coon Rapids, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota

Filed July 1, 1963, Ser. No. 291,752

6 Claims. (Cl. 239—216)



1. A spray pump comprising:

(*a*) a hollow member;

(*b*) said member having an apertured lower end with an upwardly diverging interior conical surface for being disposed in a liquid;

(*c*) said member having a larger diameter interior surface with which said interior conical surface communicates and extending upwardly therefrom;

(*d*) a cap adapted to be rotatably driven and closing the upper end of said larger diameter surface; and

(*e*) means comprising a bayonet connection between said member and said cap, said connection constructed as to define a radially directed liquid-discharge aperture.

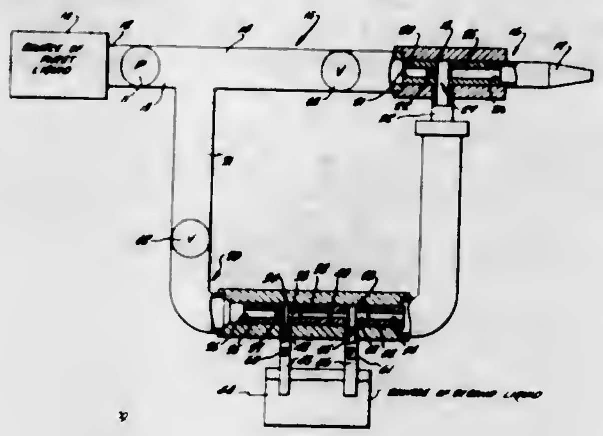
3,181,797
MIXING APPARATUS HAVING PLURAL EDUCTORS

Stanley A. Hayes, Arcadia, Calif., assignor to Hayes Spray Gun Company, Pasadena, Calif., a corporation of California

Filed Apr. 3, 1963, Ser. No. 270,316

4 Claims. (Cl. 239—317)

1. In a liquid mixing apparatus for mixing a second liquid with a first liquid from a source of the first liquid under pressure, the combination which comprises first and second eductors, each of the eductors having an inlet passage, an aspiration chamber and a diffusion passage arranged in series relationship in that order, conduit means for connecting the inlet passage of the first eductor to the source of the first liquid, conduit means for connecting the diffusion passage of the first eductor to the inlet passage of the second eductor and conduit means for connecting the aspiration chamber of each of the eductors to a source of the second liquid, the diffusion passage of the first eductor having a larger cross sectional area than the inlet passage of the first eductor, the diffusion passage of the second eductor having a larger cross sectional area than the inlet passage of the second eductor and the diffusion passage of the second eductor having a larger cross sectional area than the diffusion passage of the first eductor.

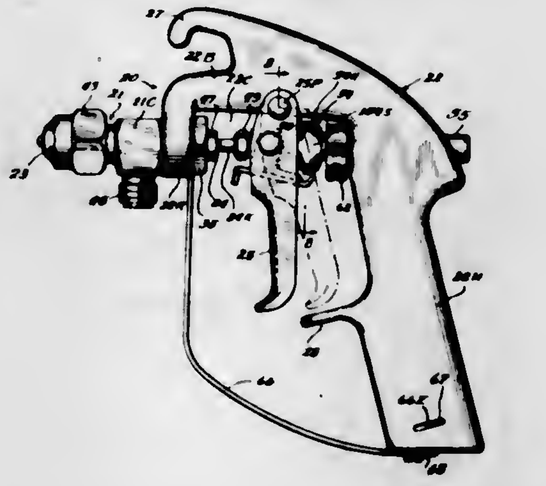


3,181,798
AIRLESS SPRAY GUN HAVING SPRAY AND VALVE SAFETY MEANS

Fred W. Wahlin, St. Charles Township, Kane County, Edward J. O'Brien, Glen Ellyn, and Robert P. Williams, Naperville, Ill., assignors to Spraying Systems Co., a corporation of Illinois

Filed July 18, 1962, Ser. No. 210,746

15 Claims. (Cl. 239—499)



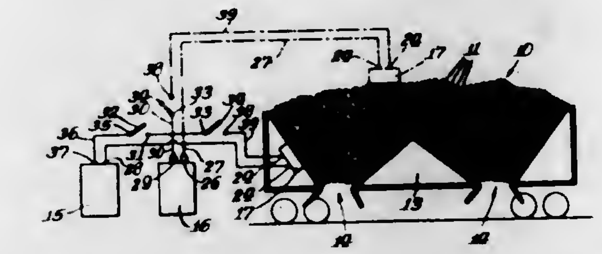
6. In an airless spray gun of the kind that operates at extremely high pressure, a gun body having a tubular barrel at one end and a handle at the other end, a spray tip removably secured on the end of the barrel remote from the handle, an annular valve seat member fixed axially in position in said end of the barrel closely adjacent to said spray tip and in position to have one end of the valve seat member exposed when the spray tip is removed, a valve rod reciprocable in said barrel for cooperative engagement with said valve seat member at the other end of such member, spring means urging the valve rod to its closed position, means including a trigger pivoted on said body for actuating said needle valve in a valve-opening direction, means on the body settable in a safety position wherein movement of the trigger in said valve-opening direction is blocked, and transverse slot means formed in said one end of said valve seat member to produce a spreading action on liquid that passes through the valve seat member while said spray tip is removed.

3,181,799
METHOD FOR LOOSENING FROZEN ORE BEDS

Warren F. Wurzburg, Wheaton, and Jack M. Reid, Villa Park, Ill., assignors, by mesne assignments, to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois

Filed Sept. 6, 1962, Ser. No. 221,802

6 Claims. (Cl. 241—1)



3. A method for separating lumps of ore which have become joined together by ice bonds in a frozen glomerate comprising the steps of creating an electrical charge, discharging the electrical charge within a liquid maintained separate from the glomerate for establishing a shock wave therein, and transmitting the shock wave as a vibrational wave to the glomerate for fracturing the ice bonds.

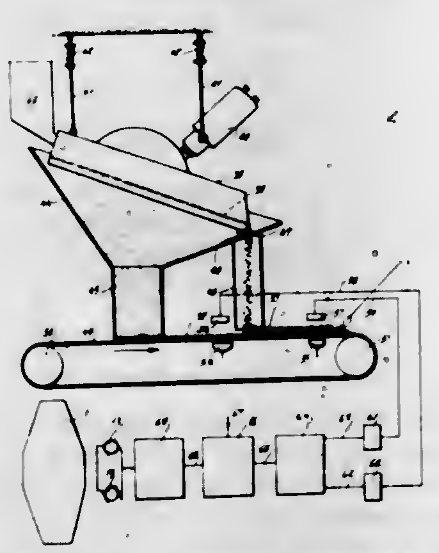
3,181,800
METHOD OF COMMINUTING MATERIALS BY AUTOGENOUS GRINDING IN A CONTINUOUS GRINDING MILL

Anders Bertil Norén, Djursholm, and Per Anders Herman Henningsson Fahlström and Jonas Columbus Burström, Boliden, Sweden, assignors to Bolidens Gruvaktiebolag, Skelleftehamn, Sweden, a joint-stock company limited of Sweden

Filed Sept. 25, 1961, Ser. No. 141,261

Claims priority, application Sweden, July 26, 1957, 6,977/57

2 Claims. (Cl. 241—24)



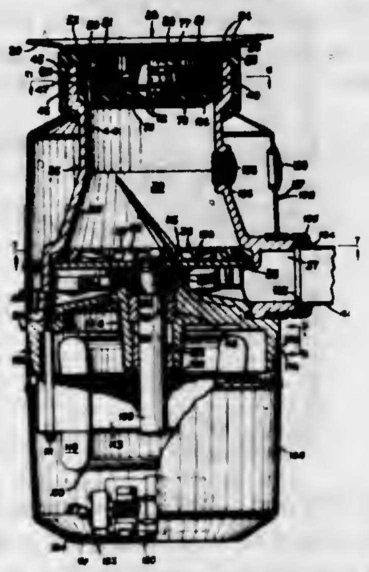
1. The method of comminuting materials by autogenous grinding in a continuous grinding mill to a desired screen analysis, said material varying in dimensions between substantial limits, comprising the steps of feeding a material to be ground to the mill at a substantially predetermined weight per unit of time, comminuting said material by the autogenous grinding action caused by the interaction of the tumbling mass of bodies to be ground, continuously discharging the ground product from the mill, continuously screening and analyzing the ground product, continuously controlling the screen analysis of the ground product by increasing the r.p.m. of the mill drum when the particle size of the ground product is finer than said desired screen analysis, and by decreasing the r.p.m. of said mill drum when the particle size of the ground product is coarser than said desired screen analysis.

3,181,801
MOUNTING AND SPLASH GUARD STRUCTURE FOR WASTE GRINDER

Kenneth R. Lung, Morehead City, N.C., and Anthony J. Lotspih and Edmund H. Schieve, Dayton, Ohio, assignors to The Tait Manufacturing Company, Dayton, Ohio, a corporation of Ohio

Original application Dec. 28, 1961, Ser. No. 162,780. Divided and this application Dec. 17, 1962, Ser. No. 245,219

6 Claims. (Cl. 241—100.5)



3. In a waste grinder adapted for mounting on a domestic sink having an aperture therein, mounting means adapted to be inserted through said aperture to engage said waste grinder for supporting said grinder on the sink, a splash guard adapted to be mounted internally of said mounting means, means for maintaining said splash guard in said mounting means, said splash guard including a tubular body portion adapted to fit snugly within said annular mounting means, a plurality of substantially antisplash elements extending radially inward from an integral connection with the inside surface of said tubular body to cover substantially the entire area of the inlet to said grinder, and a resilient vertical rib formed integrally and centrally on the lower side of each of said antisplash elements and extending from the apex thereof to a connection with said body portion, said ribs being relatively thin so that they act in tension to provide a relatively large resistance to upward movement of said antisplash elements to resist movement of waste material from the grinder and so that said ribs buckle in response to downward movement to provide a substantially reduced resistance to downward movement for ease of inserting the waste material into the grinder.

3,181,802
WASTE GRINDER

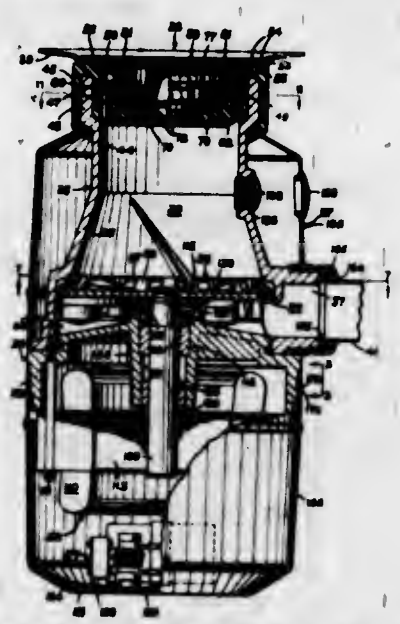
Kenneth R. Lung, Morehead City, N.C., and Anthony J. Lotspih and Edmund H. Schieve, both of Dayton, Ohio, assignors to The Tait Manufacturing Company, Dayton, Ohio, a corporation of Ohio

Filed Dec. 28, 1961, Ser. No. 162,780

15 Claims. (Cl. 241—257)

1. A waste grinder adapted for domestic use, comprising an annular cast metallic housing defining a grinding chamber, a shredder ring formed in said housing at the base of said chamber having a first cylindrical section with essentially the same internal diameter as the adjacent portion of said chamber, a tapered section adjacent said first cylindrical section extending downwardly to a diameter greater than the diameter of said first section, a second cylindrical section adjacent the lower side of said tapered section, a plurality of spaced axially extending channels in said shredder ring including a first portion having constant width and gradually increasing depth extending through said first cylindrical and said

tapered sections and a second portion having downwardly increasing depth and width extending through said second cylindrical section, and a motor driven rotor mounted for rotation about a vertical axis in said housing and having cutting means thereon for close cooperation with said shredder ring.



11. A waste grinder adapted for domestic use comprising, a housing defining a grinding chamber, a shredder ring including a series of alternate ribs and grooves positioned at the base of said chamber, a disk shaped rotor mounted for rotation in cooperation with said ring and having a substantially flat top surface which defines the bottom of said grinding chamber, at least one elongated pivotal cutter having a leading end and a trailing end, a cutting edge on the leading side of said cutter spaced above and generally parallel to said flat top surface of said rotor, said cutter having a leading side surface extending from said cutting edge downwardly at an acute angle with said top surface so that said cutting edge overhangs said leading side surface, mounting means for securing said cutter on said rotor for pivotal movement of said cutter to an advanced position wherein said cutting edge is exposed to the direction of travel of said rotor for effecting a cutting and slicing action of said waste material and to a retracted position wherein less of said cutting edge is exposed in said direction of rotation to prevent jamming of waste material between said cutter and said shredder ring, and means for yieldingly urging said cutter to said advanced position.

3,181,803

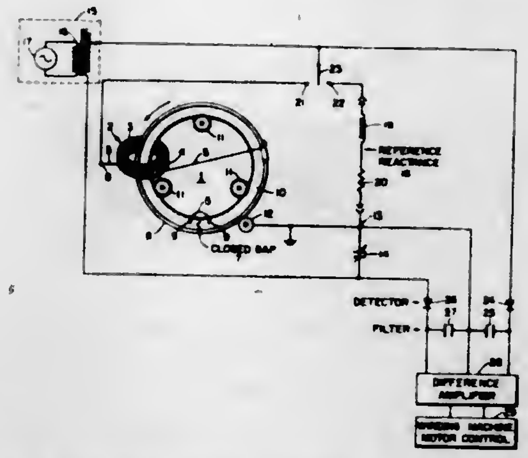
TOROIDAL CORE WINDING MACHINE

Peter H. Warburton, East Rochester, and Benjamin F. White, Rochester, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed Feb. 14, 1962, Ser. No. 173,280

3 Claims. (Cl. 242—4)

1. A toroidal coil winding machine comprising a rotatable ring-shaped electrically conducting split shuttle having means for carrying a given number of turns of insulated wire thereon, a toroidal core interlinking said shuttle and arranged to have said insulated wire wound thereon to form a toroidal coil in response to rotation of said shuttle, means for electrically short-circuiting the split in said shuttle at all times while it is rotating, drive means coupled to said shuttle for rotating said shuttle, a source of constant frequency alternating voltage, a capacitance having a particular value, means for connecting in a series circuit said source, said capacitance and said insulated wire, whereby said circuit has an inductance which is a single-valued function of the number of turns of said insulated wire wound on said core and whereby said shuttle forms a single shorted turn which is magnetically coupled to said coil and reflects an appreciable resistance effectively in series with said coil in said circuit which reflected resistance is a single-valued function of the number of turns of said insulated wire wound on said core, first signal means for continuously deriving as said shuttle rotates a first signal proportional in magnitude to the peak amplitude of the potential difference across said insulated wire, second signal means for continuously deriving as said shuttle rotates a second signal proportional in magnitude to the peak amplitude of the potential difference across said capacitance, and means coupled to said first and second signal means for disabling said drive means to prevent further rotation of said shuttle in response to the difference in magnitudes of said first and second signals achieving a predetermined value.



3,181,804

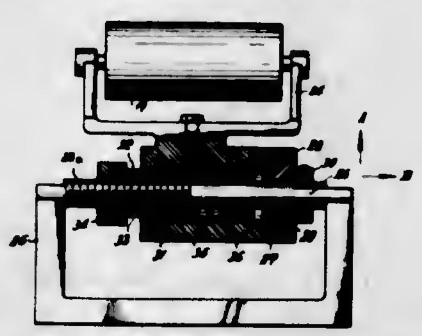
SPOOL-HOLDER FOR WINDING MACHINES

Karl August Müllers, Monchen-Gladbach, Rhineland, and Josef Mehl, Wegberg, Rhineland, Germany; said Mehl assignor to said Müllers

Filed Dec. 4, 1962, Ser. No. 242,266

Claims priority, application Germany, Aug. 13, 1962, M 53,880

2 Claims. (Cl. 242—18)



1. A spool holder unit receiving the winding spool on automatic winding machines, comprising

a spool holder adapted to support a winding spool,

a bearing bushing secured to said spool holder,

said bearing bushing having a conical bearing surface formed at one end thereof,

a bearing immovable relative to said bearing bushing and having a complementary bearing surface engaging said bearing surface of said bearing bushing,

said bearing bushing being axially movable toward and from, respectively, said bearing surface of said bearing, and

spring means urging said bearing surfaces into engagement with each other, thereby providing automatic adjustment of said bearing bushing,

a spring means adjustment member disposed opposite said bearing and controlling the force of said spring means, and

said bearing bushing riding at the other end thereof on said adjustment member for axial movement toward said bearing.

3,181,805

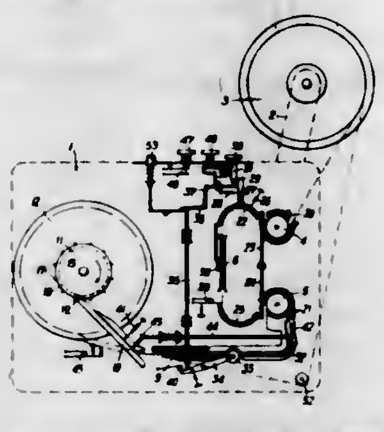
PROJECTOR FOR SUBSTANDARD FILM

Eduard Keznickl and Otto Freudenschuss, Vienna, Austria, assignors to Karl Vockenhuber and DDr. Raimund Hauser, Vienna, Austria

Filed Mar. 29, 1963, Ser. No. 269,081

Claims priority, application Austria, Apr. 4, 1962, 2,738/62

19 Claims. (Cl. 242—55.11)



1. In a motion picture projector for substandard film, a housing, a driving mechanism comprising a motor provided within said housing and adapted to drive a film strip, a self-threading device having an inlet for a film strip and an exit, further comprising loop forming means movable in an operative position for forming loops in a film strip and in an inoperative position, and film guiding means arranged behind said loop forming means with respect to the advance direction of the film movement, an axle rotatably mounted on said housing and driven by said driving mechanism, a take-up reel comprising a hub being fixed on said axle, film latching means on said hub, a film feeding arm pivoted close to said take-up reel and opposite the exit of the said film guiding means, said arm being adapted to guide a film strip to said hub, a lid provided on said housing of the projector adapted to cover and protect both the take-up reel and the film guiding arm, and further comprising sensing means determining if there is a film strip wound up on the hub of the take-up reel.

3,181,806

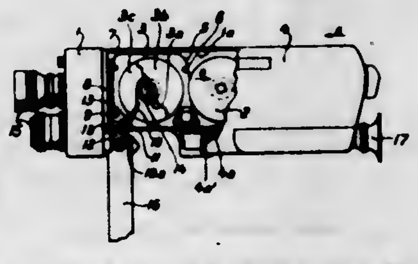
AUTOMATIC FASTENING DEVICE FOR FILM TAKE-UP REELS

Wilhelm Schäfer, Wetzlar (Lahn), Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar (Lahn), Germany

Filed Mar. 11, 1963, Ser. No. 264,317

Claims priority, application Germany, Sept. 1, 1962, L 42,853

4 Claims. (Cl. 242—71.2)



1. Automatic fastening device for films on a take-up reel in movie cameras or the like comprising: a take-up and a feed reel; a casing therefor; a cover for said casing; guide pulleys in said camera for guiding the film from said feed reel to said take-up reel; a guide plate in said casing; means mounting said guide plate for movement about a pivotal axis; spring biasing means in said casing for urging said guide plate about said pivotal axis into a position between the flanges of said take-up reel so that the film end when passing along said guide plate is guided towards the core of said take-up reel, whenever said cover is removed; means limiting movement of said guide plate about said pivotal axis; a lever arm rigidly connected to said guide plate and projecting from said pivotal axis and operating to rock said guide plate about said pivotal axis, said lever arm projecting from said casing when said cover is removed; and means on said cover engaging said lever arm when said cover is placed on said casing for pivoting said lever arm so that said guide plate disengages from the film and pivots out from between said reel flanges.

3,181,807

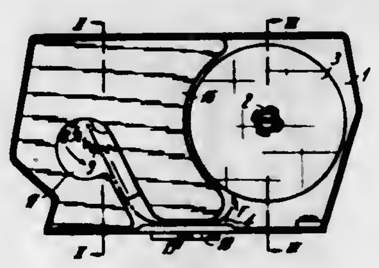
CINEMATOGRAPHIC CAMERA

Jean Thévenaz, Grandson, Switzerland, assignor to Paillard S.A., Vaud, Switzerland, a corporation of Switzerland

Filed Mar. 12, 1963, Ser. No. 264,494

Claims priority, application Switzerland, Mar. 31, 1962, 3,916/62

2 Claims. (Cl. 242—71.2)



1. A motion picture camera having support means for a film feeding spool and take-up means for the film which has been fed by the feed spool, said take-up means comprising; a circular cheek plate rotatably mounted upon said support means, a plurality of outstanding elements each mounted on one of their ends to one side of said plate and disposed equidistantly from the center axis of said plate, said elements spaced from each other to provide therebetween a plurality of slots parallel to the plate center axis, a fixed plate supported opposite the free ends of said elements, said fixed plate provided with a slot extending from a point adjacent said elements to a point beyond the periphery of said cheek plate and to the periphery of the fixed plate to permit the lateral introduction of the film into one of said slots.

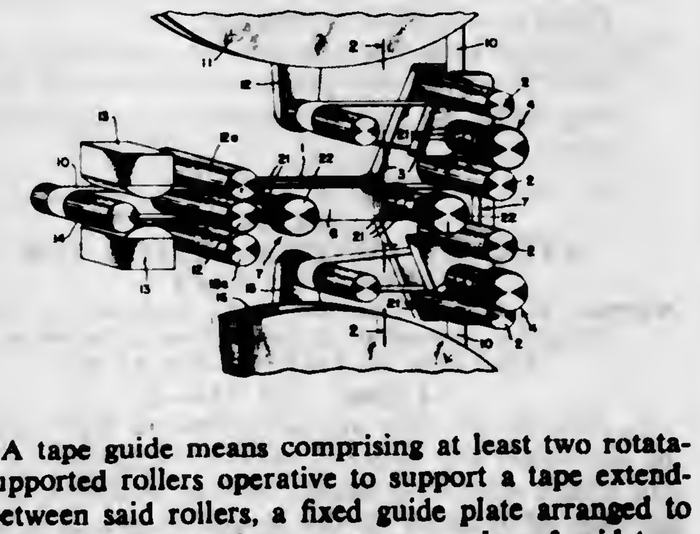
3,181,808

TAPE GUIDE

Paul E. Ireland, Hyattsville, Md., assignor to Honeywell Inc., a corporation of Delaware

Filed June 8, 1961, Ser. No. 115,640

4 Claims. (Cl. 242—76)

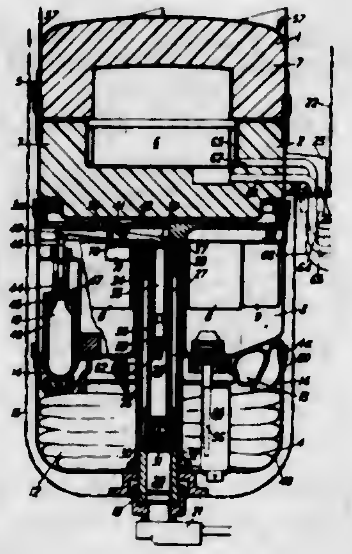


4. A tape guide means comprising at least two rotatably-supported rollers operative to support a tape extending between said rollers, a fixed guide plate arranged to support said rollers and to contact one edge of said tape along a path between said rollers, a movable guide plate, a plurality of fixed supports mounted on said fixed plate and including means for supporting said movable guide plate in contact with the other edge of said tape between

said rollers, and spacing means on said fixed supports for selectively spacing said movable plate with respect to said fixed plate to accommodate different tape widths.

3,181,809
AIRCRAFT CRASH RECORDER UNIT

Marcel Jules Odilon Lobelle, Slough, England, assignor to M. L. Aviation Company Limited, Slough, England, a British company
Filed July 29, 1963, Ser. No. 298,224
Claims priority, application Great Britain, Aug. 2, 1962, 29,766/62
5 Claims. (Cl. 244—1)

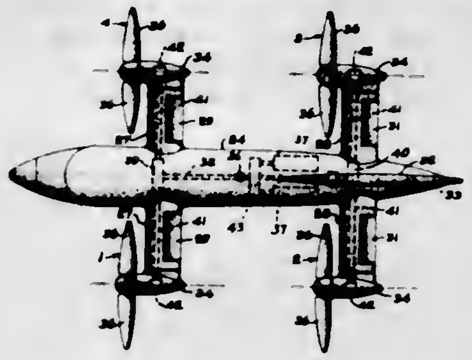


1. In combination:
an aircraft crash recorder unit including a buoyant canister which is ejectable from an aircraft, the contents of said canister being on a common support and comprising:
a recorder;
a time delay mechanism initiated by ejection from the aircraft;
a parachute including a release linked to said delay mechanism;
a flotation bag positioned on said cannister so as to insure upright attitude flotation in water and at least partially upright attitude on land;
a source of compressed gas connected to said bag;
release means linking said source and said delay mechanism;
a radio transmitter;
a switch linked to said delay mechanism for controlling said transmitter;
an automatically extensible antenna for said transmitter linked to said delay mechanism;
the linkages being operable only when the delay is complete to deploy said parachute, inflate said flotation bag, switch on said transmitter and extend said antenna.

3,181,810
ATTITUDE CONTROL SYSTEM FOR VTOL AIRCRAFT

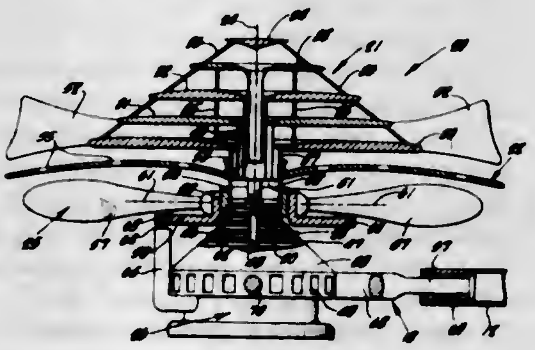
Norman C. Olson, Denville, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Feb. 27, 1961, Ser. No. 91,683
15 Claims. (Cl. 244—7)

3. Aircraft for vertical and horizontal flight comprising quadrilaterally disposed variable blade angle propellers, jointly selectively tiltable between positions in which the axes of rotation of the propellers are in predetermined nearly vertical positions and positions in which the axes of rotation of the propellers are in substantially horizontal positions, means driving said propellers in unison, power means for tilting said propellers to desired tilt angles, fixed airfoil means including control surfaces in the slipstreams of said propellers, normally operable for control of the aircraft in horizontal flight, and mechanism connected with said control surfaces and operable by said power means for moving the control surfaces, during tilting of the propellers toward the said nearly vertical positions of the propeller axes, to positions whereat they present minimum surface area to the slipstreams of the propellers.



3,181,811
CIRCULAR AIRFOIL AERODYNAMIC LIFT MECHANISM

John Maksim, Jr., 8165 Cornwall Ave., Etiwanda, Calif.
Filed Jan. 27, 1964, Ser. No. 341,837
14 Claims. (Cl. 244—12)

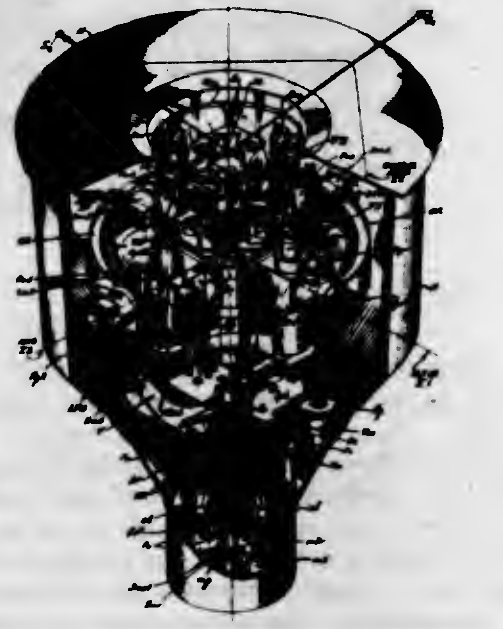


1. Aerodynamic lift apparatus comprising
(1) a plurality of annular coaxially aligned baffle means spaced apart from each other along an axis, the baffle means decreasing in diameter progressing along the axis from a first to a last baffle means,
(2) a perforated circular wing disposed concentric to the axis adjacent the first baffle means,
(3) rotatable variable lift means disposed concentric to the axis opposite the circular wing from the first baffle means,
(4) means for moving air radially through the baffle means to generate lift across the baffle means and to induce air flow past the variable lift means through the circular wing, and
(5) means for rotating the variable lift means about the axis in the stream of induced air flow to generate lift supplemental to the lift across the baffle means.

3,181,812
AIRCRAFT SEXTANT MOUNTING

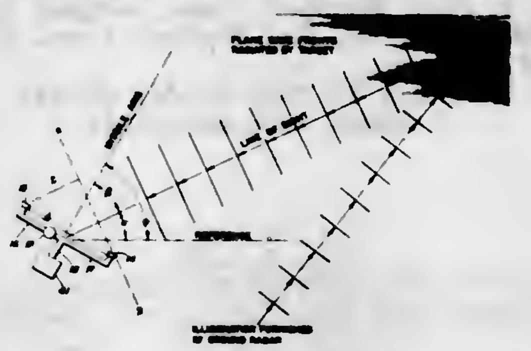
Bruce E. Dixson, Vashon, Wash., assignor to Northrop Corporation, a corporation of California
Filed Dec. 8, 1952, Ser. No. 324,811
9 Claims. (Cl. 244—14)

1. In an instrument for measuring the vertical and horizontal angles of incidence of rays from a distant source of radiant energy that impinge upon a platform which is held in a horizontal reference plane containing a reference line in said plane and serves as a support for said instrument, and which is, in turn, vertically pivoted in a rigid enclosure that surrounds said platform and said instrument and is impervious to said radiant energy, a planar circular opening being provided in said enclosure above said instrument to admit said radiant energy therethrough along a straight-line path, and said enclosure being tiltable, in unison with the pivotal support of said platform, through limited angles against said horizontal reference plane and from a reference position in which the plane of orientation of said circular opening is parallel to said horizontal reference plane and the axis of said pivotal support is vertical with respect to ground, the platform being furthermore rotatable in its pivotal support throughout 360 degrees; means of extending the range of said instrument to rays entering over the rim of said circular opening from any direction throughout 360 degrees at a specified low limiting angle against the plane of orientation of said opening when said opening and the clearance sphere for the operational radius of said instrument below said opening are reduced to the smallest size compatible with said tilt limits and with other criteria inclusive of the largest desirable angle of incidence to be measured (i.e., the smallest desirable angle against said platform plane which is reduced to said specified low limiting angle against said plane of orientation of said opening if the latter is inclined through its maximum tilt angle towards the line of direction of incoming rays that form said desirable smallest angle against said platform plane), comprising a vertical pivotal support for said platform in said enclosure whose extended axis passes through the center of rotation of said platform, which is located in the center of and within the reference plane of said platform, in a fixed direction normal to the plane of orientation of said circular opening and through the center thereof; a planar reflecting element, rotatable about an axis that is parallel to the reflecting surface of said element and that is supported above said reference platform in a direction parallel thereto and therefore adaptable for positioning such as to reflect said radiant energy in a direction normal to said platform plane and for calibrating the inclination angle of said reflecting element in terms of angles of incidence against said platform, said reflecting element being held above said platform in the vicinity of, and below, a point that lies anywhere along a circular line which runs parallel to the plane of said platform about a center located perpendicularly above said platform rotation center, and which is formed by the progressive points of intersection between said extended pivotal axis and the plane of orientation of said opening as said rigid enclosure is tilted at its maximum permissible tilt angle against said platform plane and horizontally rotated through 360 degrees about its pivotal support against said reference line in said platform plane, said reflecting element being further oriented in a manner so that a perpendicular upon its axis of rotation that emerges from the center of its reflecting surface in the direction of said opening always crosses a vertical upon the plane of said platform that passes through said platform rotation center, the minimum vertical distance of said reflecting element from and below said circular line of intersection being determined by the clearance requirements for said reflecting element.



3,181,813
INTER-FEROMETER HOMING SYSTEM

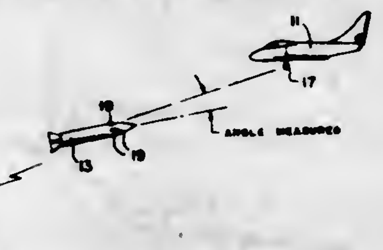
Joseph F. Gulick, Jr., Silver Spring, Thomas D. Jacot, Spencerville, and Harlan H. Knapp, Jr., and Hilary H. Nall, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 10, 1956, Ser. No. 603,460
7 Claims. (Cl. 244—14)



4. A homing system for guiding an aerial vehicle toward a radiating object, comprising, a pair of spaced antennae mounted on the vehicle for receiving signals from the radiating object, means for continuously shifting the phase of the signal received by one of said antennae, means for combining said phase shifted signal with the signal from the other of said antennae to provide a signal containing information of the bearing of said radiating object in terms of phase, means for detecting said combined signal, a generator coupled to said phase shifter for generating a reference voltage, means for altering the phase of said reference voltage, a stable element for controlling said phase altering means in accordance with the rotation of said vehicle in the plane containing said pair of antennae, means receiving said phase altered reference voltage and said detected signal and including a servo motor for providing rotation proportional to the phase difference between said phase altered voltage and said detected signal, and means for differentiating said servo motor rotation to provide guidance signals for said vehicle.

3,181,814
MISSILE TARGET INTERCEPT ANGLE MEASURING SYSTEM

Charles W. Pittman, Norfolk, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 7, 1961, Ser. No. 150,848
2 Claims. (Cl. 244—14)
(Granted under Title 35, U.S. Code (1952), sec. 266)

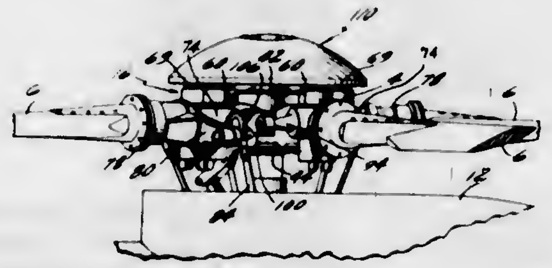


1. A system for measuring the intercept angle between a flying target and a missile in flight, comprising, in combination: a missile having a longitudinal axis; a circular series of light sensitive devices carried by said missile spaced circumferentially thereabout and oriented to sense light in a wide angle ahead and to the side of the missile;

each device having a casing, a wide angle lens supported in one end of said casing and having an axis intersecting said missile axis, a light sensitive photocell supported in the other end of said casing and adapted in response to light to generate signals indicative of the angle which the light makes with the lens axis, each photocell including a plate having thereon a plurality of discrete strips of light responsive material arranged in parallel; a source of light carried by said target; means carried by said missile for transmitting signals generated by passage of light across the strips as the missile approaches and passes by the target; and means on the ground for receiving and recording said signals.

3,181,815
ROTOR VIBRATION REDUCTION CAP

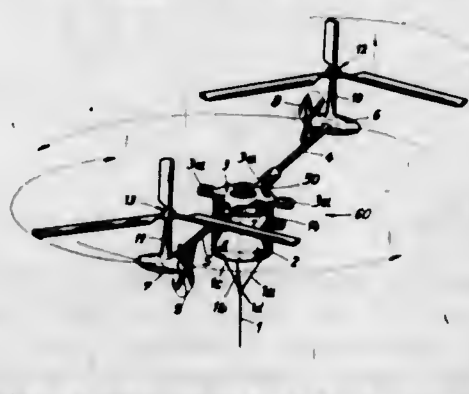
William F. Paul, Trumbull, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 27, 1962, Ser. No. 190,745
6 Claims. (Cl. 244—17.11)



1. In a helicopter,
(*a*) a fuselage,
(*b*) a rotor head,
(*c*) said fuselage extending rearwardly of said rotor head,
(*d*) means mounting said rotor head on said fuselage,
(*e*) portions of said rotor head being non-tilting with relation to said fuselage,
(*f*) blades attached to said rotor head for pitch changing movement,
(*g*) means for controlling pitch changing movement of said blades, and
(*h*) means for reducing vibration in said fuselage,
(*i*) said means comprising a cap fixed to the non-tilting part of said rotor head,
(*j*) said cap being spaced from said rotor head and said control means with the bottom of said cap terminating in a position above said control means.

3,181,816
FETTERED ROTARY WING AIRCRAFT

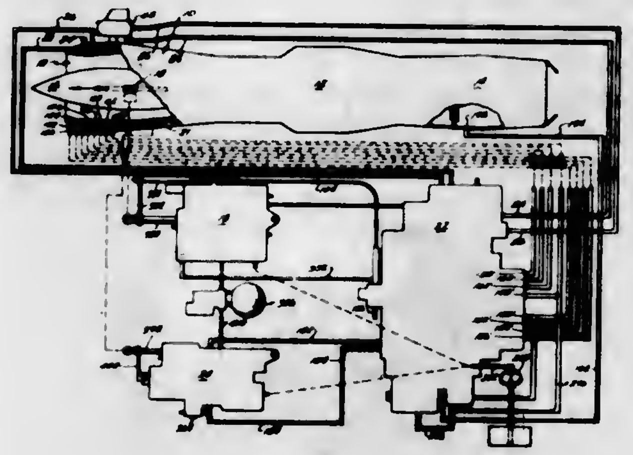
Kurt Pfleiderer, Munich, Germany, assignor to Firma Bolkow-Entwicklungen Kommanditgesellschaft, Ottobrunn, near Munich, Germany
Filed Sept. 3, 1963, Ser. No. 306,246
Claims priority, application Germany, Sept. 12, 1962, B 68,814
17 Claims. (Cl. 244—17.17)



1. A captive or fettered rotary wing aircraft comprising a central body adapted to be connected to a fettering cable, a rotary body rotatably mounted on said central body and having at least two carriers extending outwardly in opposite directions in respect to each other, at least one of the carriers having at its free end propulsion means for rotating said carrier about its mounting on said central body, and a flight sustaining rotor rotatably mounted adjacent the end of each of said carriers for rotation about a vertical axis.

3,181,817
AIR INLET CONTROL

Milton Marcus, West Hartford, Robert D. Porter, Simsbury, and David R. Pearl, West Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 19, 1962, Ser. No. 245,709
20 Claims. (Cl. 244—53)

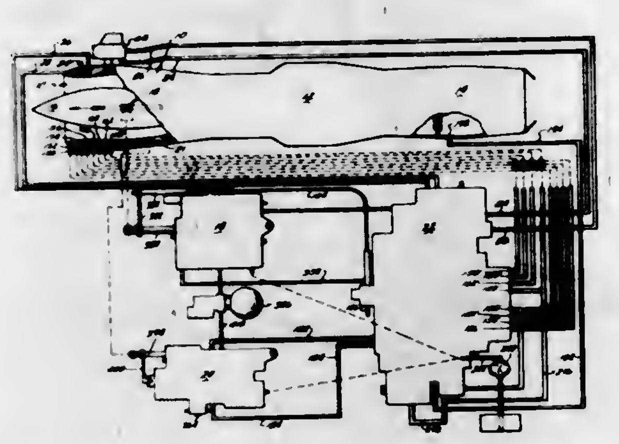


5. In combination with a supersonic aircraft and the like having an air-breathing power plant propulsive system, an inlet where a shock wave is formed and a duct interconnecting the power plant and inlet, bypass means in the duct for discharging air of the inlet for positioning the shock wave, cam means movable in an axial and rotatable direction for scheduling the position of the shock wave, said cam means being movable in one of said directions in response to the aerodynamic conditions of the inlet and being movable in the other of said directions in response to the flight Mach number, means for sensing the shock wave, control means responsive to said scheduling means and said sensing means for controlling said bypass so that the bypass will cause the shock wave to move in a position corresponding to the position scheduled.

3,181,818
SHOCK WAVE POSITION CONTROLLER

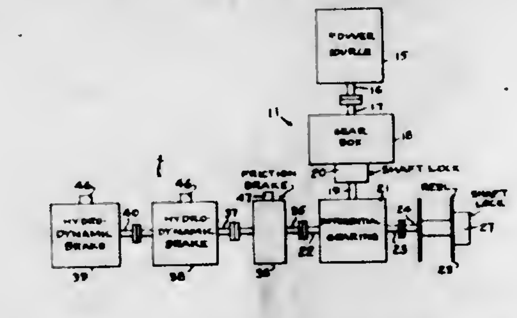
David R. Pearl, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 19, 1962, Ser. No. 245,913
12 Claims. (Cl. 244—53)

1. A control for a supersonic inlet having a bypass for bleeding the inlet air, said inlet during operation having a pressure gradient along the axis of flow, sensing means for sensing said pressure gradient, simulating means connected to said sensing means and located externally of the inlet for generating a plurality of simulated pressures corresponding to but on a reduced scale of said gradient, means connected to said simulating means for selecting a desired position of a particular pressure gradient condition, means operatively connected to said simulating means for sensing the selected pressures, means for comparing the desired position of the pressure gradient condition and the selected pressures to produce an error signal, and means receiving said error signal for varying the bypass.



3,181,819
AIRCRAFT ARRESTING AND LAUNCHING SYSTEM

Charles T. Hayes, Coffeyville, Kans., assignor to Parkersburg-Aetna Corporation, Coffeyville, Kans., a corporation of Kansas
Filed July 22, 1963, Ser. No. 296,786
6 Claims. (Cl. 244—63)

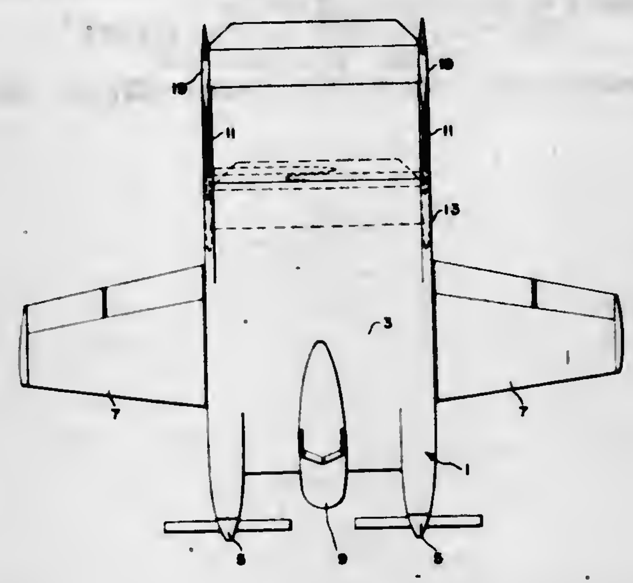


1. An airplane launching mechanism comprising a differential gearing having an input shaft and a pair of output shafts, a motor connected to said input shaft to transmit driving forces through said differential gearing to said output shafts, a hydro-dynamic brake having a stator, and a rotor connected to one of said output shafts, and a reel connected to the other output shaft and having a line adapted for connection with an airplane to transmit a pulling force thereto upon rotation of said reel, said rotor being normally relatively freely rotatable whereby said other output shaft is adapted normally to remain stationary, said brake being adjustable as to braking effort to progressively decelerate the associated output shaft whereby said other output shaft will be progressively accelerated so that the winding of said line on said reel progressively accelerates movement of the airplane to assist in launching it.

3,181,820
RETRACTILE TAIL

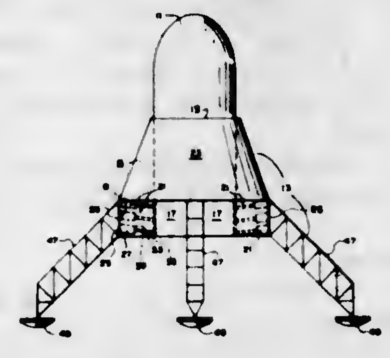
Vincent Justus Burnelli, 9250 Piney Branch Road, Silver Spring, Md.; Hazel G. Burnelli, executrix of said Vincent Justus Burnelli, deceased
Filed Feb. 17, 1964, Ser. No. 345,496
9 Claims. (Cl. 244—87)

1. An airplane including, in combination, a wide airfoil body section having a pair of booms extending rearwardly from opposite sides thereof, a vertical fin slidably mounted on each boom, a horizontal and vertical tail group assembly mounted on and extending between said vertical fins and movable therewith, drive means connected with said vertical fins and said booms and operable to move said fins and said tail group assembly to retracted position and to operative projected position, and said pair of booms being movable out of normal operative position into position reducing the length of the airplane when the fins and tail group assembly are in retracted position.



3,181,821
SPACE CRAFT SOFT LANDING SYSTEM

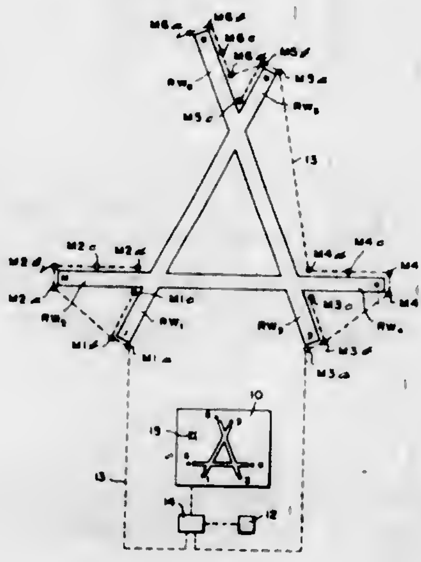
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Timothy O. Eddins
Filed June 4, 1964, Ser. No. 372,727
13 Claims. (Cl. 244—100)



1. In a spacecraft having a base and adapted to perform soft landings on lunar and other terrestrial surfaces, said landings to be performed with the spacecraft in a base downward attitude, a landing gear system comprising:
(*a*) a shroud extending circumferentially around but spaced apart from the spacecraft having an exterior and an interior surface;
(*b*) a plurality of retractable landing legs attached at one end to and positioned around the exterior surface of the shroud and extendable to a landing configuration in preparation to landing, each of said legs having attached at the other end thereof a landing foot; and
(*c*) a plurality of energy absorbers positioned in the space between the shroud and the spacecraft one end of which is attached to the spacecraft and the other to the shroud interior surface, whereby energy is absorbed by said energy absorbers when the landing feet come in contact with a lunar or other terrestrial surface upon which a soft landing is being performed causing a relative movement of the shroud with respect to the spacecraft.

3,181,822
"WHEELS-UP" FLARE WARNING SYSTEM

Sanford Russell Allen and Kenneth R. Foote, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 13, 1963, Ser. No. 323,512
5 Claims. (Cl. 244—114)
(Granted under Title 35, U.S. Code (1952), sec. 266)



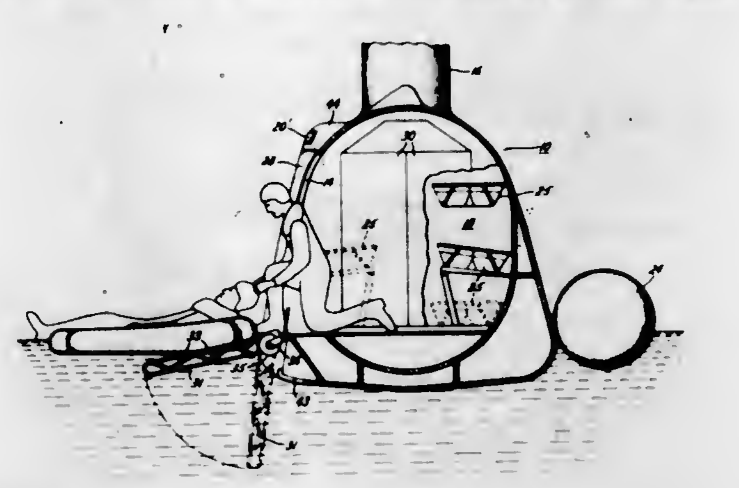
1. A pyrotechnic signaling system for an airfield having a control tower and a plurality of designated runways for recovering piloted aircraft, comprising:

a control tower situated control panel having on its face an airfield replica including a miniaturized runway layout corresponding in detail to the disposition of the runways of an associated airfield;
a plurality of electrically actuated flare firing mortars having an electrically actuated means associated therewith and singularly disposed in juxtaposed relationship with preselected portions of the runways of said airfield;
a plurality of parallel circuits electrically connecting preselected groups of said actuating means in circuit parallel;
a voltage source;
a plurality of voltage source connecting means singularly connecting said parallel circuits in circuit series with said voltage source through said control panel; and
a plurality of panel-mounted, normally open firing switches singularly connected in circuit series between each parallel circuit and said voltage source and arranged within said voltage source connecting means for maintaining an open-circuit condition within each of the voltage source connecting means, whereby a closing of a selected firing switch serves to electrically connect a preselected group of electrical actuating means for a preselected group of mortars with the voltage source, for thereby initiating an electrical actuation of the mortars.

3,181,823
RESCUE SYSTEM

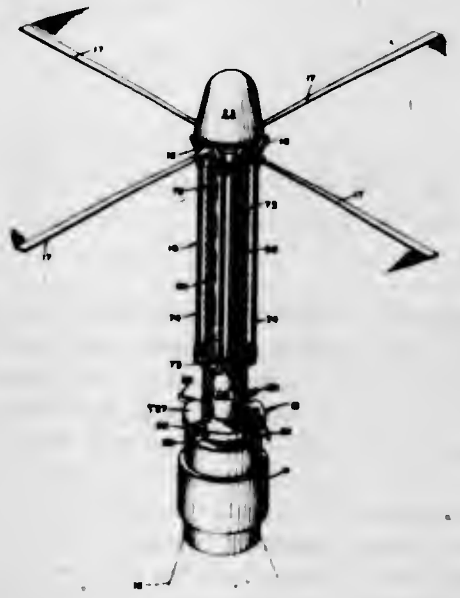
Kenneth B. Gillmore, Havertown, Pa., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Nov. 13, 1963, Ser. No. 323,326
16 Claims. (Cl. 244—137)

10. A helicopter, a watertight rescue compartment located at approximately the mean water line of said helicopter, said rescue compartment having access openings to the interior and to the exterior of the helicopter, closure means for sealing the access openings to the interior of the helicopter during rescue operations so that water entering the helicopter during rescue operations cannot spread throughout the ship.



3,181,824
SPACECRAFT RE-ENTRY RETARDING MEANS

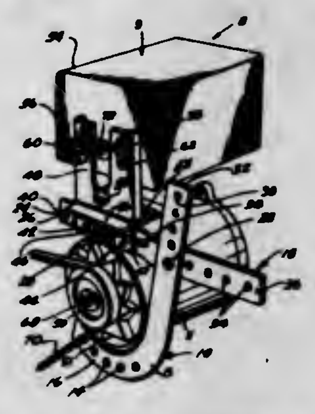
James A. Anania, Newark, N.J., assignor of thirty-three percent each to Frederick Carlton Holle, Hasbrouck Heights, and Otto Sass, Irvington, N.J., and two percent each to Vincent Flaherty and Doris Marie Flaherty, both of Orange, N.J.
Filed Oct. 22, 1963, Ser. No. 318,017
5 Claims. (Cl. 244—138)



1. In a spacecraft mechanism, means to retard descent thereof upon re-entry into the earth's atmosphere, said means comprising the combination of: a space capsule, a tubular element extending upwardly from said capsule, opposed rotatable plates adjacent the upper and lower ends of said element, a plurality of spaced rods interconnecting said plates, a plurality of blades mounted for alternate positioning against said element and outward, extended operative position, means to release said blades to said operative position, means to lock said blades in said operative position, means comprising a bias spring element upon each of said rods arranged to exert thrust upon the inner ends of said blades to extend said blades to operative position upon actuation of said release means, and means within said capsule to rotate said plates, said rods and said blades, said locking means comprising a movable collar on the lower end of each rod adapted to bear against said spring bias element, a downwardly depending spring element on the lower end of each of said collars, said spring element having a catch on the lower end thereof, and a catch receiving depression adjacent said lower plate to receive said catch.

3,181,825
GENERATOR PUMP AND BRACKET ASSEMBLY

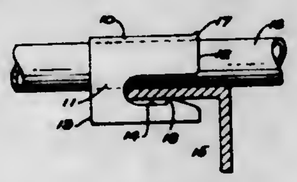
Edward W. Jackoboice, Grand Rapids, Mich., assignor to Monarch Road Machinery Company, Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 8, 1963, Ser. No. 301,936
10 Claims. (Cl. 248—16)



1. A vehicle generator and pump mounting bracket assembly, comprising: a generator having at least two radially projecting mounting lugs; a pump mounting bracket assembly including a pair of bracket legs, one being secured to one of said lugs, and the other being secured to the other of said lugs; said legs also being attached together with a removable connection; one of said legs having a portion extending around a peripheral portion of said generator to connect to its generator lug, and a second portion extending away from said generator and intersecting the other leg; and a pump mount secured to one of said legs for supporting a hydraulic pump.

3,181,826
FRICTION PIPE STRAP

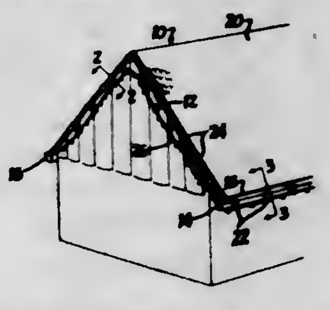
Orlan C. Kindorf, 500 Mountain Ave., Piedmont, Calif.
Filed Oct. 14, 1963, Ser. No. 315,879
6 Claims. (Cl. 248—72)



1. A pipe strap comprising a metallic member of U-shaped cross section having substantially rectangular flat side walls, said side walls having openings entering them from one of their edges in positions to embrace a flat supporting member against one side of which a pipe rests while the member embraces, the pipe, and a barb extending from an edge of each opening for engagement with the other side of said flat supporting member.

3,181,827
CLIP STRUCTURE FOR HANGING WIRE

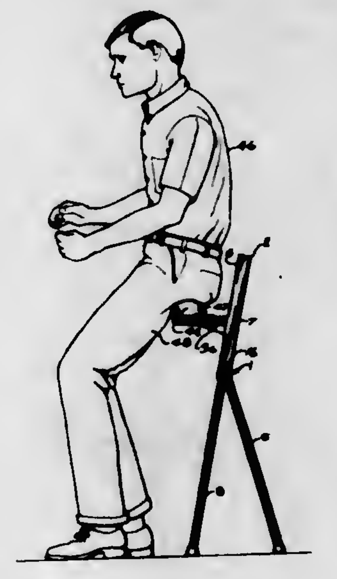
Anthony J. Sassin, 27735 Roy, St. Clair Shores, Mich.
Filed Dec. 20, 1962, Ser. No. 246,130
3 Claims. (Cl. 248—74)



1. In a building having a roof with a gable and with gutters secured adjacent the side edges of the roof, a plurality of gutter clips attached in spaced apart relationship to the gutters and a plurality of gable clips attached in spaced apart relationship to the gable, said gable clips and gutter clips being provided for hanging a wire, each of said gutter clips comprising a wire retaining portion, an upwardly extending portion continuing from the wire retaining portion, said upwardly extending portion having a curved configuration to match the configuration of the upper outer wall portion of the gutter, and a hook portion continuing from the upwardly extending portion, said hook portion being in engagement with the lip of the upper end of the outer wall of the gutter, each of said gable clips comprising a wire retaining portion, an upwardly extending portion continuing from the wire retaining portion, and a shingle engaging portion continuing from the upwardly extending portion and received beneath a roof shingle, said shingle engaging portion having an upwardly extending prong structure in engagement with the underside of the roof shingle.

3,181,828
RESTING SUPPORT

Harold W. Cramer, 8421 Oldham Road, Kansas City, Mo.
Filed Sept. 18, 1963, Ser. No. 309,811
9 Claims. (Cl. 248—125)



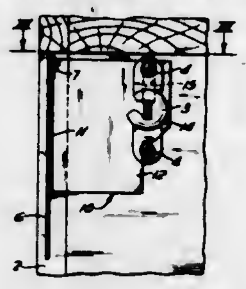
1. A resting stand of the character described comprising,

(*a*) a pair of spaced legs having a bent portion to flare the lower portion outwardly of each other, said legs having upper portions above said bent portions, said legs having transverse aligned openings above said bent portions,
(*b*) a channel-shaped frame member having a front face and side portions engaging said upper portions of said legs, said side portions having aligned openings near their lower ends,
(*c*) a pin extending through said openings in said side portions of the frame and said legs,
(*d*) a sleeve rotatable on said pin between said legs,
(*e*) a third leg rigidly secured to said sleeve,
(*f*) means carried by said sleeve and the upper portion of one of said pair of legs to lock the third leg in stand supporting position,
(*g*) a bracket member having a front portion and a rear portion,
(*h*) a seat member on the front portion of said bracket member, and
(*i*) means on the rear portion of said bracket member cooperating with means on said frame member for vertically adjustably attaching said bracket member to said frame member.

3,181,829

VALANCE-SUPPORTING BRACKET

Henry A. Larsen, 232 McKnight Circle, Pittsburgh, Pa.
Filed Jan. 28, 1964, Ser. No. 340,676
4 Claims. (Cl. 248—264)

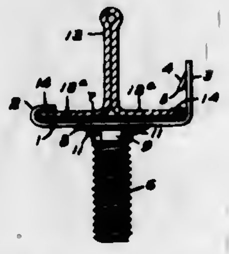


1. An assembly comprising a window shade roller bracket, a side of a window frame, a pair of vertically spaced fasteners attaching said bracket to said side of the frame, and a valance-supporting bracket in the form of a sheet metal plate provided with at least one vertical right-angle bend forming a rear portion and a front portion, said rear portion projecting between said fasteners between the shade bracket and window frame and clamped against the frame by the shade bracket, said front portion projecting toward an opposite side of the window frame and having an upper edge adapted to support one end of the lip extending along the top of a sheet metal valance, and said rear portion of the plate being shaped so that it was insertable edgewise between the shade bracket and window frame when said fasteners were loose.

3,181,830

HANGER DEVICE AND INSTALLATION

Thomas Newbold, Lincoln, Mass., assignor to United-Carr Incorporated, a corporation of Delaware
Filed Nov. 8, 1962, Ser. No. 236,201
1 Claim. (Cl. 248—318)



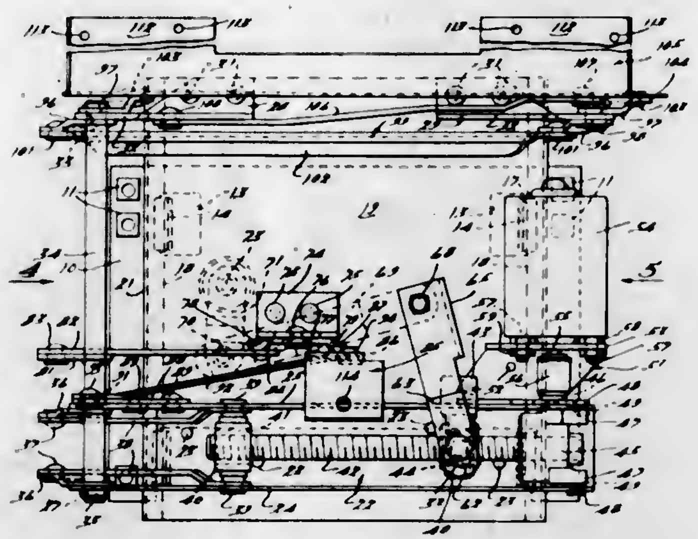
A ceiling lamp installation comprising, in combination, a ceiling stringer having a flange with a bead-like edge, a lamp housing having an aperture therethrough and a hanger for suspending said housing from said stringer; said hanger including a base portion underlying the flange of said stringer at right angles thereto, a plurality of hook shaped portions extending from said base and overlying the flange of said stringer, at least one of said hook shaped portions having an integral tang extending at an angle thereto, said tang being in biting engagement with the bead like edge of said stringer flange whereby said hanger is locked to said flange in a predetermined position relative thereto; and a fastener member permanently secured to said base and extending outwardly therefrom through the aperture in said lamp housing and co-operating with a mating fastener member to secure said housing to said hanger.

3,181,831

SEAT SUPPORTING MECHANISM

Raymond C. Posh, Garden City, Mich., assignor to American Metal Products Company, Detroit, Mich., a corporation of Michigan
Filed Sept. 26, 1962, Ser. No. 226,254
9 Claims. (Cl. 248—421)

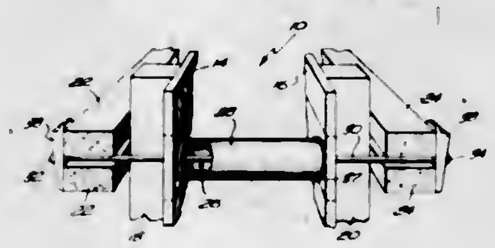
1. In a seat supporting structure, a base member, a supporting element mounted on said base member for forward and rearward movement, an operating mechanism disposed transversely at the forward portion of the supporting element, means connecting said base member and said supporting element and embodying a vertical shaft operably connected to and operated by said mechanism, said mechanism being operably to rotate said shaft and move said supporting element on said base member forwardly and rearwardly thereof.



3,181,832

APPARATUS FOR PREPARING CONCRETE FOUNDATION

Augustine S. Chianese, 120 Pleasant View Ave., Manville, R.I.
Filed May 21, 1962, Ser. No. 196,378
2 Claims. (Cl. 249—43)



1. In apparatus for preparing a concrete foundation, a pair of panels located in spaced parallel relation, openings formed in said panels in opposed relation, means for positioning said panels in the spaced position thereof prior to pouring of concrete therebetween, said positioning means including an elongated tie rod having a disc secured thereto as a permanent part thereof and being located more closely adjacent one end thereof, the portion of said tie rod on the outer side of said disc being insertable through an opening in one of said panels, the location of said tie rod that is inserted in the last-named panel being fixed by the engagement of said disc with the inside surface of said last-named panel, a tubular member surrounding the major portion of said tie rod in coaxial relation, one end of said tubular member engaging said disc, the other panel engaging the other end of said tubular member and being spaced thereby from the panel engaged by said disc, said panels thereby being located in their spaced relation, the other end of said tie rod extending through the opening in said other panel, and means for locking the outer ends of said tie rods to said panels prior to the pouring of concrete therebetween.

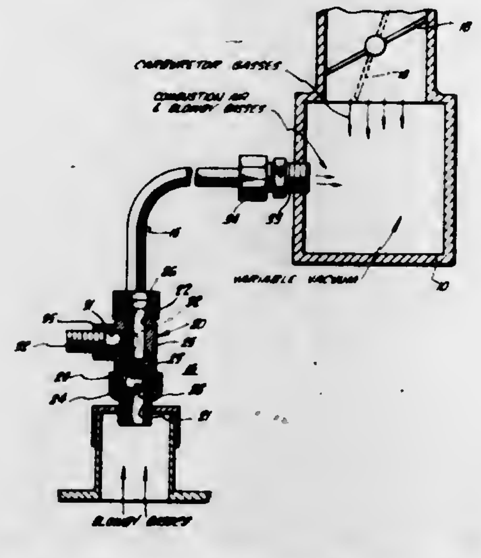
ERRATUM

For Class 251—121 see:
Patent No. 3,182,334

3,181,833

CRANKCASE VENTILATION SYSTEM CONTROL DEVICE

Harold A. Adams, Lake Isabella, and James K. Coates, Bakersfield, Calif., assignors to Electro-Smog Corporation, Las Vegas, Nev., a corporation of Nevada
Filed Dec. 18, 1961, Ser. No. 159,960
1 Claim. (Cl. 251—121)

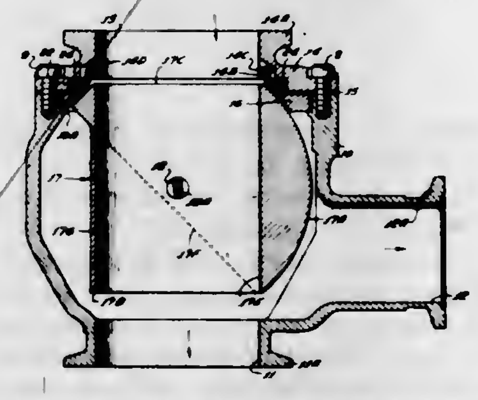


In a check valve having a body member defined with inlet and outlet passageways and a control member mounted intermediate the inlet and outlet passageways for controlling the fluid passing through the check valve, the improvement comprising the control member is a ball check valve and a threaded member mounted adjacent the outlet end of the control member including a nose having cylindrical sides terminating in a hemispherical end disposed transverse to the outlet passageway having a shape to mate with the outlet passageway and being manually adjustable to vary the fluid capacity of the outlet passageway and thereby the capacity of the check valve.

3,181,834

BIASED SEAL STRUCTURE FOR BALL VALVES

Norman T. Jennings, North Hollywood, and John P. Etcheverry, Burbank, Calif., assignors to International Telephone and Telegraph Corporation, Baltimore, Md., a corporation of Maryland
Filed June 9, 1961, Ser. No. 116,113
10 Claims. (Cl. 251—172)

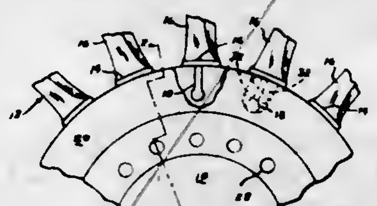


7. In an arrangement of the character described, a casing, a generally ball-shaped element mounted in said casing, an annular ring-shaped gasket which is generally L-shaped in cross section and which has an annular land contacting said ball-shaped element, a collar-like element mounted on said casing and securing the horizontal portion of said L-shaped gasket to said casing, the upper portion of the vertical of said L-shaped gasket contacting said collar member whereby an intermediate portion of said gasket element serves as a diaphragm, and means acting between said collar and said gasket serving to press said land into engagement with said ball-shaped element.

3,181,835

BLADE VIBRATION DAMPING DEVICE

Carroll C. Davis, Hartford, Conn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 7, 1964, Ser. No. 336,321
4 Claims. (Cl. 253—77)

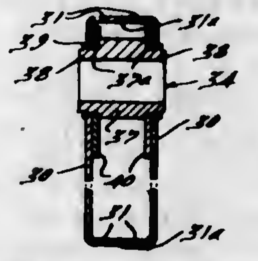


1. The combination in a fluid transfer machine comprising: a rotor wheel having axially spaced end faces and axially extending dovetail slots in the periphery of said rotor wheel; a plurality of axially detachable fluid engaging blades radially extending from the periphery of said rotor wheel, each of said blades having a platform extending between the axially spaced end faces of said rotor wheel and protruding over one end face with the radially inner surface of the platform slidably engaging the peripherey of said rotor wheel, a blade extending radially outward from the outer surface of the platform and a dovetail root portion slidably engaging one of said axially extending dovetail slots to retain said blade from radial separation from said rotor wheels; a disk member having a plurality of radial slots open at the periphery of said disk member; means joining said disk member to said rotor wheel to be adjacent to the protruding end of each of said blade platforms whereby the protruding ends overlie said radial slots; and two flat sided weights movable within each of said radial slots in said disk member, each of said weights having an oblique edge engaging the oblique edge of the other weight, each of said weights under a condition of rapid wheel rotation being cooperatively acted upon at their engaging oblique edges by centrifugal force acting to force one side of each of said weights into engagement with opposing sides of the radial slot in said disk member containing said weights and with one of said weights being simultaneously brought into engagement with the lower side of the protruding blade platform on said blade to thereby dampen the vibration of said blade.

3,181,836

WHEELED FLOOR JACKS

Lyle L. Arnes, Racine, and James R. Uhen, Burlington, Wis., assignors to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Sept. 12, 1962, Ser. No. 223,107
3 Claims. (Cl. 254—8)



1. In a jack having side frame members and movable jack actuating parts pivotally supported thereon, that improvement which comprises, a pair of laterally spaced sideplates constituting said frame members, each sideplate comprising a pair of sheet metal panels having opposed peripheral flanges abutting to form a box-like structure, a plurality of bushing members adapted to provide bearings for said movable jack parts, each bushing member being located within said box-like structure and being provided with reduced shouldered ends protruding

outwardly through apertures in said panels with the shoulders thereof engaging the inner surfaces of said panels to space the same with the flanges of the panels abutting, the protruding reduced ends of said bushing members being upset to form rivets to initially hold said panels in assembled relation for a subsequent welding operation, and welds along the seam between said abutting peripheral flanges to rigidly secure said panels together.

3,181,837

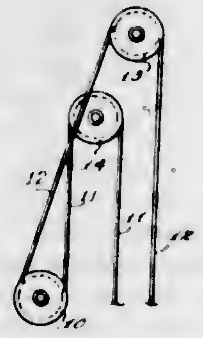
WINDING INSTALLATIONS

Paul Cuvinot, Fontainebleau, Seine-et-Marne, France, assignor to Préparation Industrielle des Combustibles, Fontainebleau, France, a French concern

Filed Feb. 19, 1962, Ser. No. 174,058

Claims priority, application France, Feb. 25, 1961, 854,031, Patent 1,282,436

1 Claim. (Cl. 254—188)



A multi-rope winding apparatus for hoisting a pair of skips comprising a winding drum, a pair of parallel grooves about the periphery of said drum, a first pair of sheaves, a second pair of sheaves, first shaft means supporting said first pair of sheaves, second shaft means supporting said second pair of sheaves, said first shaft being in spaced relationship above and vertically offset from said winding drum, said second shaft being in nonaligned spaced relationship between said winding drum and said first shaft, the axes of said winding drum, said first and said second shafts being mutually parallel, dual rope means leading from one skip over said first sheaves, around said winding drum and over said second sheaves to the other skip, said ropes means being following paths parallel to each other except during travel between said first sheaves and said winding drum when their paths are converging, one of said pairs of sheaves being spaced apart at a distance no greater than said grooves about said winding drum and the other of said pairs of sheaves being spaced apart at a distance no less than said grooves about said winding drum.

3,181,838

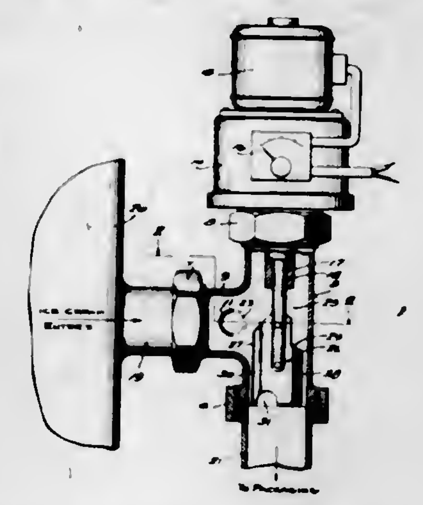
APPARATUS FOR INTRODUCTION OF FLAVORING MATERIAL INTO ICE CREAM

Frank M. Johansen, 2702 Hoard St., Madison, Wis.

Filed Oct. 19, 1959, Ser. No. 847,423

2 Claims. (Cl. 259—8)

1. A device for introducing discrete bodies of flavoring material throughout plastic ice cream, said device comprising a distributing chamber having a distributor mounted for rotation therein, power means for rotating the distributor, said chamber having an outlet substantially aligned with the axis of distributor rotation, a lateral ice cream inlet to admit a stream of ice cream into the chamber on a path lateral to the axis of distributor rotation, a lateral flavoring material inlet to admit flavoring material into the chamber on a path lateral to the axis of distributor rotation, said distributor having axially elongated blade means extending transversely substantially completely across said chamber and including an axially elongated edge movable laterally across the paths of movement of the ice cream and the flavoring material for intercepting the flavoring material and segregating it into discrete bodies and distributing said bodies in the stream of ice cream without diffusing the flavoring material in the ice cream, said blade means comprising a pair of axially elongated oppositely directed blades having side margins projecting forwardly in the direction of blade rotation, the respective blades having portions of their opposite upper and lower margins relieved.



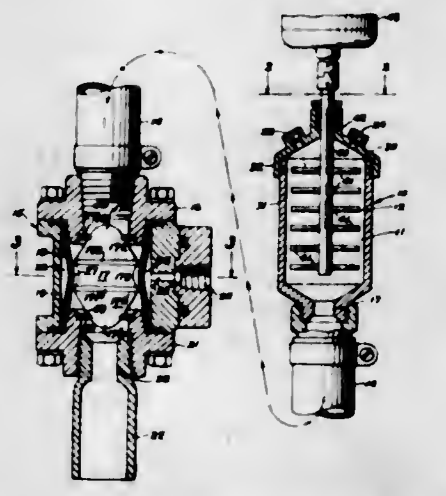
3,181,839

METHOD AND APPARATUS FOR PRE-EXPANSION OF PLASTIC FOAMS

Roger G. Jennings, Berkeley, Calif., assignor to Pacific Vegetable Oil Corporation, San Francisco, Calif., a corporation of California

Filed Aug. 13, 1963, Ser. No. 301,821

8 Claims. (Cl. 259—8)



1. A method for preparation of plastic foam by the pre-expansion technique, comprising
- feeding liquid and gaseous ingredients at constant flow under pressure to a mixing zone,
- mixing said ingredients in said mixing zone,
- conducting the mixed ingredients from said mixing zone to a dispensing zone through a restriction zone passage in close proximity to said dispensing zone,
- pneumatically regulating the width of said passage of said restriction zone so as to control the pressure of said mixing zone,
- pneumatically closing said passage so as to shut off the flow of ingredients at said restriction zone between applications, for times short of the setting time for said plastic, while simultaneously shutting off the flow of said ingredients to said mixing zone, so as to retain a bead of mixed material and so as to minimize wasting said material,
- said pneumatic closing and said shutting off of the flow being accomplished automatically after a predetermined time interval.

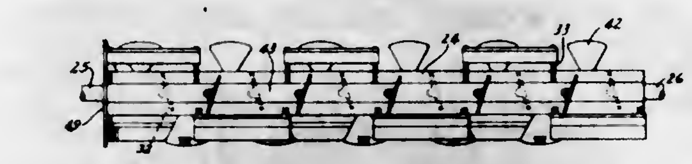
3,181,840

MIXING APPARATUS

Carl A. Rietz, San Francisco, Calif., assignor to Rietz Manufacturing Co., Santa Rosa, Calif., a corporation of California

Filed Apr. 12, 1962, Ser. No. 186,969

2 Claims. (Cl. 259—9)



1. In apparatus of the character described, a tubular member for supplying feed material to one end portion of said member and for removing material from the other discharge end, a rotary shaft extending axially of the chamber, a plurality of scraper blades, means for mounting said scraper blades in regions distributed along the length of the shaft and spaced circumferentially, each scraper blade being adapted to engage and scrape over a portion of the inner surface of said member, and a plurality of paddle-like blades carried by the shaft in regions occupied by the scraper blades, said blades serving to act upon material being treated, certain of said paddle-like blades being inclined with respect to the axis of rotation of the shaft, thereby serving to urge the material toward the discharge end of the same, other ones of said paddle-like blades being disposed to urge the material outwardly against the inner periphery of said tubular member, each scraper blade having an inclined paddle-like blade preceding the same and one of said other blades following the same.

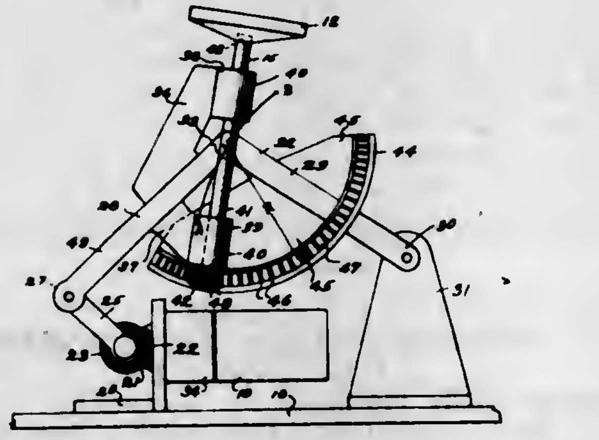
3,181,841

AGITATING MIXER

Josef Boehm, 1311 Hermitage Ave. SE., Huntsville, Ala.

Filed Aug. 9, 1962, Ser. No. 215,887

4 Claims. (Cl. 259—72)



3. A device for mixing and agitating a fluid comprising a drive motor, reduction gear means secured to the shaft of said motor, a cranking member connected to said reduction gearing means said motor rotating said cranking member, a coupler member pivotably connected to said cranking member, said coupler member oscillating in a plane said plane being parallel to the longitudinal axis of said coupler member, a follower member pivotably connected at one end to said coupler member and pivotably connected at the other end to a stationary follower support, said follower member oscillating in a plane parallel to said coupler member, bearings supported by said coupler member, a bevel gear secured to said follower member, a shaft mounted in said bearings, said shaft oscillating with said coupler member, a bevel pinion mounted on said shaft, said bevel pinion being, coaxial with said shaft, said bevel gear cooperating with said bevel pinion rotating said shaft, a fluid filled container removably secured to said shaft, said container oscillating and rotating with said shaft thereby mixing and agitating said fluid.

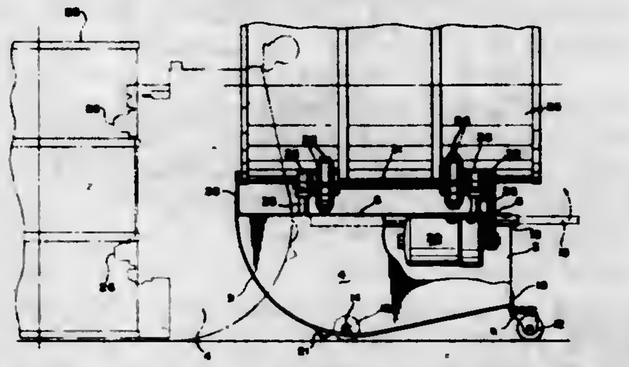
3,181,842

PORTABLE DRUM ROTATOR

John S. Eckert, Silver Lake, Ohio, assignor to The United States Stoneware Company, Tallmadge, Ohio, a corporation of Ohio

Filed Dec. 23, 1963, Ser. No. 332,762

1 Claim. (Cl. 259—89)



A portable drum rotator which comprises
- (1) an integral frame of sheet metal with a top portion and sides bent down therefrom,
- (2) rollers fastened to the upper surface of the top which are positioned to support a drum,
- (3) drive means fastened to the frame and connected with at least one of said rollers for rotation of a drum supported thereon,
- (4) the front edge of each side being rounded downwardly toward the rear and slanting upward from the rear of the rounded portion,
- (5) the bottom edge of each side being flanged to strengthen it,
- (6) an axle which extends between said sides in the forward portion of the rotator,
- (7) a wheel on each end of the axle inside of the sides, the wheels and axle supporting the sides,
- (8) an angle iron across the back of the sides with one flange upright and fastened to the edges of the backs of the sides near the bottoms thereof to brace the sides,
- (9) the other flange of the angle iron extending horizontally to the rear of the rotator with a caster fastened to the bottom of each end thereof to support the rear of the rotator, and
- (10) an angle iron immediately in front of said wheels the open side of which is attached to the bottoms of the sides, with the corner of the angle iron just above the bottoms of the wheels when the rotator is in the upright position whereby said corner is available to serve as a pivot on which the rotator can be upended from the rear and returned to its upright position.

3,181,843

CARBURETOR

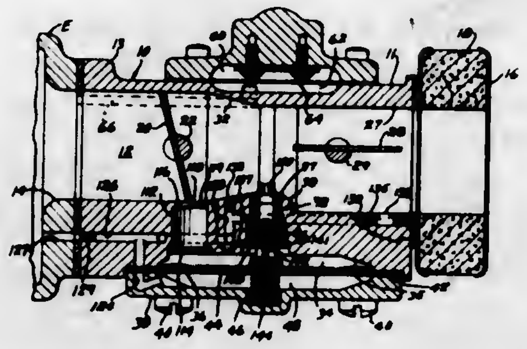
Morris C. Brown, St. Louis, and Eldon A. Johnson, Sunset Hills, Mo., assignors to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey

Filed Dec. 17, 1962, Ser. No. 245,172

3 Claims. (Cl. 261—67)

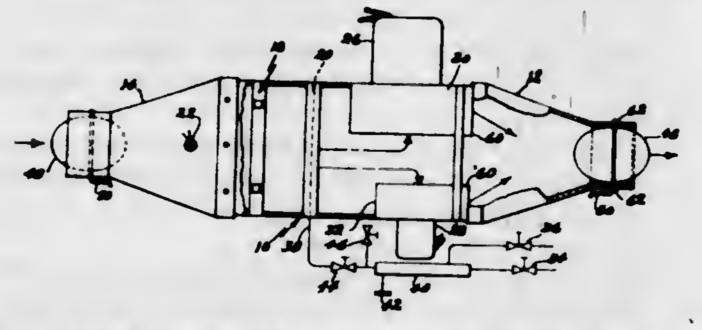
1. A carburetor connected to the manifold of an internal combustion engine, said carburetor comprising a body, a fuel and air mixture conduit through said body, said body formed with a fuel chamber, said mixture conduit having an inlet and an outlet and a restricted portion intermediate said inlet and outlet and having a skirt portion, a fuel inlet and a fuel passage extending from said fuel inlet to said fuel chamber, an inlet valve in said fuel passage between said fuel inlet and said fuel chamber, said body having a fuel connection from said fuel chamber to

said mixture conduit at said restricted portion, means for operating said inlet valve, said operating means including a diaphragm operatively connected to said inlet valve and sealed at its periphery to said body across said fuel chamber to form a wall thereof, means forming a single closed air chamber enclosing the side of said diaphragm opposite to said fuel chamber, said body including a first air passage means connecting said mixture conduit inlet to said air chamber to provide air at substantially atmospheric pressure in said air chamber, a second air passage means connecting said skirt portion to said air chamber to modify the pressure of air in said air chamber in accordance with the pressure of air flowing through said skirt portion, and a third air passage means connecting said manifold to said air chamber to modify the pressure of air in said air chamber in accordance with the pressure within said manifold.



3,181,844
PORTABLE HUMIDIFIER

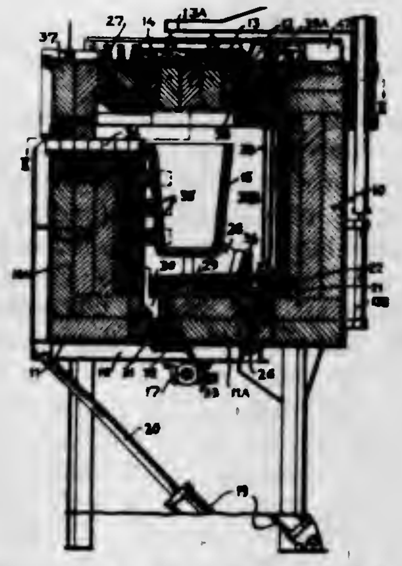
Thomas C. Glaze, Lancaster, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 10, 1961, Ser. No. 94,951
2 Claims. (Cl. 261—130)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A portable humidifier capable of furnishing air at a temperature from 50° F. to 180° F. and up to 95 percent relative humidity comprising, a casing mounted on wheels and having an inlet and an outlet, a pair of motors in said casing, fans connected to said motors adjacent said outlet and in communication with said inlet to draw air from said inlet to said outlet through said casing in varying amounts, an electric heating element fixed in said casing adjacent said inlet and interposed in said air to heat said air, thermostatic means responsive to the temperature of the air in said inlet for controlling said heater for outlet temperatures of up to 180° F., a humidity pad interposed in said air downstream of said heating element and upstream of said fans to humidify said heated air, said pad comprising water absorbent material and a frame of wire mesh for holding said material, means to supply water to saturate said pad, heating means for controlling the temperature of said water to said pad, the amount and temperature of said water together with said heated air allowing for up to 95 percent relative humidity and settable damper means at said inlet and said outlet for controlling the air flow through said casing to facilitate the control of temperature and relative humidity.

3,181,845
CRUCIBLE FURNACE

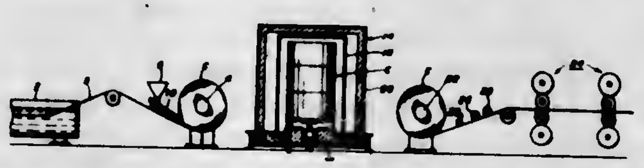
Anders Ewert Malm and Rolf Birger Thorselius, Hallstahammar, Sweden, assignors to Aktiebolaget Kanthal, Hallstahammar, Sweden, a corporation of Sweden
Filed Apr. 2, 1962, Ser. No. 184,215
Claims priority, application Sweden, Apr. 21, 1961, 4,199/61
6 Claims. (Cl. 263—12)



1. A crucible furnace having a vertical side wall, a bottom and a top cover, said parts defining a furnace chamber, an upwardly-opening crucible disposed in said chamber and containing material to be heated, the side wall including a stationary upstanding major portion, heating means disposed in the fixed portions of the furnace chamber for heating the crucible, said stationary side wall portion being formed integrally with a fixed portion of the bottom, the side wall having a movable smaller wall portion formed integrally with the remainder of the furnace bottom, said movable wall portion and the part of the bottom carried by it carrying the crucible in an upright position, said movable wall portion and the part of the bottom carried by it being swingable together, means carrying said movable wall portion and the part of the bottom to cause said wall portion and the bottom part to be tiltable around a substantially horizontal axis for emptying the crucible, and power means connected to the smaller wall portion and its connected bottom portion for effecting the tilting to empty the crucible while the major stationary wall portion and the part of the bottom formed integrally therewith remains stationary.

3,181,846
METHOD AND APPARATUS FOR OPEN COIL ANNEALING

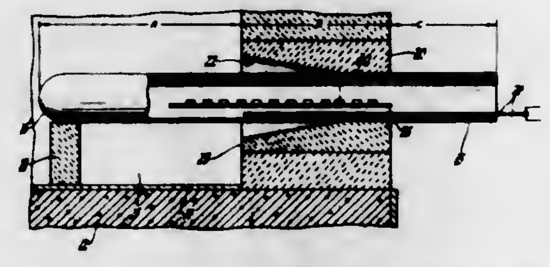
Alfred Teplitz, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Apr. 5, 1963, Ser. No. 270,976
8 Claims. (Cl. 263—40)



2. The method of heat treating a coil of strip which comprises feeding a length of strip toward a coiler having a generally horizontal axis, feeding granular material to the surface of said length of strip, said granular material being of the class consisting of vermiculite, sand, steel and magnesium oxide, then coiling said length of strip with the granular material thereon to form an opened coil, then placing said opened coil in a heat treating furnace, then heating said coil of strip and passing a heat treating atmosphere between the convolutions of the opened coil, then removing the opened coil from the furnace, then uncoiling the heat treated coil, and removing the granular material from the surface of the heat treated strip as it is being uncoiled.

3,181,847
TEMPERATURE GRADIENT FURNACE APPARATUS, AND METHOD OF FORMING SAME

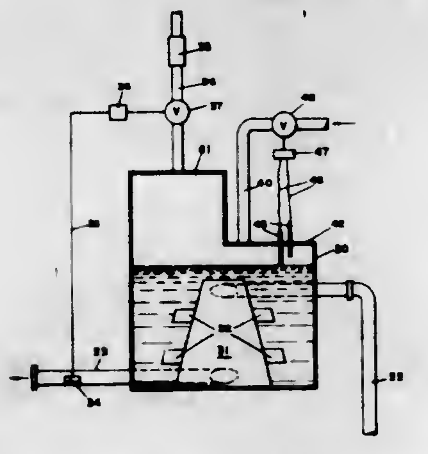
Willard E. Hauth, Jr., Flint, and Arthur V. Somers, Flushing, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 10, 1963, Ser. No. 279,509
4 Claims. (Cl. 263—41)



2. A furnace for simultaneously heating a plurality of articles to a plurality of different known temperatures along a temperaure gradient curve comprising refractory walls forming a heating chamber, one of said walls having an opening therethrough, a refractory tube having a closed end extending through said opening with said closed end extending into said enclosure, said opening having a frusto-conical portion with the widest diameter thereof being located adjacent said chamber and the smallest diameter thereof closely surrounding said tube, the space within said frusto-conical portion between said tube and said one wall being free of obstruction and completely exposed to said enclosure, said frusto-conical portion establishing an area within said tube having a predetermined temperature gradient for a predetermined enclosure temperature, an elongated tray within said tube extending along said frusto-conical portion for supporting articles to be heated at predetermined points along the length thereof, the said space within said tube within said frusto-conical portion being temperature calibrated along the length thereof whereby the temperature at each of said points is known for said predetermined enclosure temperature.

3,181,848
AMALGAM REGENERATOR FOR PRIMARY BATTERY SYSTEM

Kenneth D. Miller, Jr., Princeton, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 23, 1962, Ser. No. 190,205
1 Claim. (Cl. 266—34)



In a primary battery system wherein amalgam of standard alkali metal concentration is admitted to a fuel cell for producing electrical energy and amalgam of reduced alkali metal concentration is removed from the cell and sent to regeneration apparatus for receiving additional alkali metal to bring the reduced amalgam up to standard concentration, the improvement in regeneration apparatus which comprises,

(*a*) a close vessel having top and bottom walls interconnected by a cylindrical side wall,

(*b*) an upright cone shaped device having its lower base end positioned on the bottom wall of the vessel and its upper end spaced from the top wall of the vessel,

(*c*) upper baffle means and lower baffle means secured to the cone shaped device and extending laterally therefrom toward the side wall of the vessel,

(*d*) a supply conduit for the amalgam of reduced concentration having a tangential connection with the side wall of the vessel in a plane above the upper baffle means and a removal conduit for amalgam of standard concentration having a tangential connection with the side wall of the vessel in a plane below the lower baffle means,

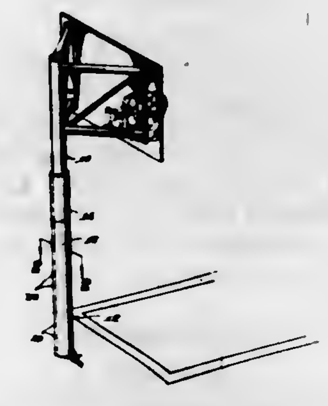
(*e*) means for maintaining the amalgam in the vessel at a level above the tangential connection of the supply conduit and below the upper end of the vessel,

(*f*) a conduit communicating through the upper end of the vessel for feeding molten alkali metal by gravity to the upper surface of the amalgam,

(*g*) said tangential connection of the amalgam supply conduit and said tangential connection of the amalgam removal conduit effecting a swirled flow path for the amalgam between said connections and about the cone shaped device whereby the laterally extending baffle means provide and intimate mixture of the molten alkali metal with the amalgam.

3,181,849
SHOCK ABSORBING GUARD

Chester L. Mitchell, Lakeview Terrace, Calif., assignor to Amerco Incorporated, Los Angeles, Calif., a corporation of California
Filed Sept. 3, 1963, Ser. No. 306,241
7 Claims. (Cl. 267—1)



3. A shock absorbing guard, comprising:

a resilient, cylindrical base layer having an inner face and a smooth outer face;

a plurality of radially extending, longitudinal ribs having parallel longitudinal axes and integral with said inner face of said base layer for absorbing a first degree of shock by undergoing distortion;

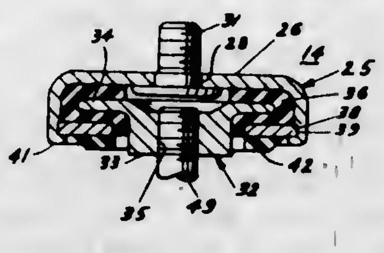
and a plurality of frusto-conical bosses integral with said inner face of said base layer and located between said ribs for absorbing a second degree of shock greater than said first degree of shock, the frustum surfaces of each of said bosses being spaced a lesser distance away from said inner face than the outermost ends of said ribs.

3,181,850
VIBRATION ISOLATING DEVICE

Jacques Bajer, Grosse Pointe, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 20, 1962, Ser. No. 246,100

4 Claims. (Cl. 267—1)



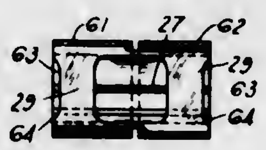
1. A vibration isolating device for mounting a vehicle component that produces noise and vibration to a structural component of a vehicle comprising, a cup-shaped housing including a planar body and a peripheral flange, said cup-shaped housing being adapted to be affixed to one of said components, means adapted to be affixed to the other of said components, said means including a peripheral plate and an axially extending boss that extends beyond the peripheral flange of said cup-shaped housing and is adapted to engage the other of said components, said peripheral plate being positioned within said cup-shaped housing, an elastomeric material substantially enveloping said peripheral plate, and a pressure plate, said peripheral flange of said cup-shaped housing having a shoulder for receiving said pressure plate, the distance between said shoulder and said planar body being such that said elastomeric material is subjected to a predetermined preload, means on said housing for securing one face of said pressure plate against said shoulder, and an elastomeric washer secured to the other face of said pressure plate, said elastomeric washer having a thickness less than the distance between the peripheral flange of said cup-shaped housing and the other of said components, whereby said elastomeric washer is normally not in engagement with the other of said components, but will prevent the peripheral flange of said cup-shaped housing from engaging the other of said components when said vibration isolating device is subjected to high twisting loads.

3,181,851
FLEXURAL PIVOT

Henry Troeger, Cooperstown, N.Y., assignor to The Bendix Corporation, a corporation of Delaware

Original application Oct. 3, 1961, Ser. No. 142,724, now Patent No. 3,124,873, dated Mar. 17, 1964. Divided and this application June 17, 1963, Ser. No. 295,857

3 Claims. (Cl. 267—1)



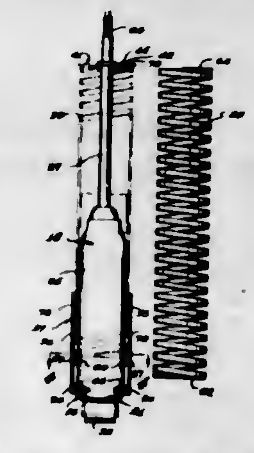
1. A flexural pivot comprised of a pair of flat crossed springs, each of said crossed springs having at least one side projection at each end, each said side projection extending perpendicularly from the side end of its spring and being the same thickness as said spring to provide connecting segments, two arcuate quadrant elements and two arcuate divided-quadrant elements positioned alternately between said connecting segments and connected thereto to provide a tubular assembly having two semi-circular-like members interconnected by crossed flat springs and spaced at the lengthwise edges thereof, first outer sleeve means connected to one of said semi-circular-like members and radially spaced from the other member, second outer sleeve means connected to the other of said semi-circular-like members and radially-spaced from the one member, whereby said first outer sleeve means can be fixed and said second outer sleeve means can be rotated with flexing of said crossed springs.

3,181,852
SHOCK ABSORBER SPRING UNIT

Frederick C. Paller, Northridge, Calif., assignor to Superior Industries, Inc., North Hollywood, Calif., a corporation of California

Filed Mar. 8, 1963, Ser. No. 263,862

9 Claims. (Cl. 267—8)



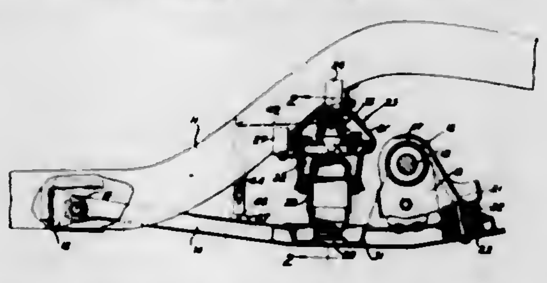
1. In a suspension system including a shock absorber, a booster spring unit for said shock absorber, comprising:
- a sleeve surrounding said shock absorber;
- first retaining means engaging a portion of said shock absorber, said first retaining means including a retaining ring having a plurality of tabs extending perpendicular to said retaining ring and offset inwardly from the outer edge periphery of said retaining ring, said tabs engaging the inner surface of said sleeve at one end thereof and thereby center said sleeve with respect to said retaining ring;
- second retaining means engaging a portion of said shock absorber spaced apart from the portion of said shock absorber engaged by said first retaining means;
- a coil spring in coaxial alignment with said sleeve and having one end in abutment with said second retaining means, the other end of said spring being inserted into said sleeve through the end of said sleeve opposite that in abutment with said first retaining means;
- and means within said sleeve for variably limiting the depth of insertion of said spring into said sleeve.

3,181,853
MOTOR VEHICLE AIR SUSPENSION

Carl A. Howell, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Continuation of application Ser. No. 96,853, Mar. 20, 1961, which is a continuation of application Ser. No. 703,475, Dec. 13, 1957, which in turn is a continuation of application Ser. No. 689,289, Feb. 11, 1957. This application July 25, 1963, Ser. No. 298,003

11 Claims. (Cl. 267—15)



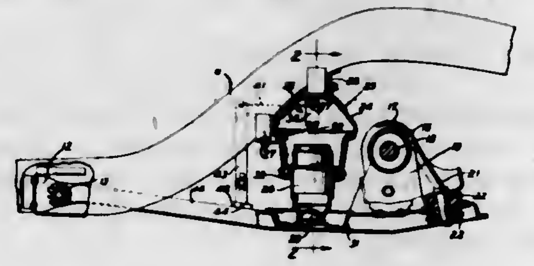
2. In a motor vehicle having a chassis member resiliently supported upon a road wheel member by means of an air spring, a source of air under pressure for said air spring, a leveling valve assembly including a valve housing mounted within the interior of said air spring, a port in said valve housing opening directly into the interior of said air spring, a spring biased valve normally closing said port, an actuating shaft journaled in said housing and extending through a wall of said air spring and operatively connected exteriorly of said air spring to one of said members to be responsive to relative movement between said road wheel and said chassis, and means on said actuating shaft engageable with said valve to unseat the latter.

3,181,854
MOTOR VEHICLE AIR SUSPENSION LEVELING VALVE

Sven Backlund, St. Paul, Minn., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Continuation of application Ser. No. 639,290, Feb. 11, 1957. This application Oct. 19, 1959, Ser. No. 847,428

14 Claims. (Cl. 267—65)



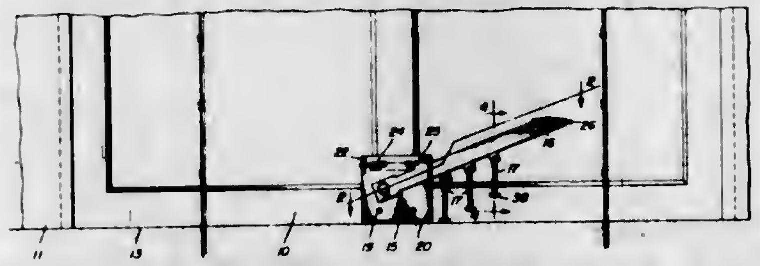
1. In a motor vehicle having a chassis member resiliently supported upon a wheel member by means of an air spring, and a source of air under pressure for charging said air spring, a leveling valve assembly having a housing mounted in fixed relationship to one of said members, valve mechanism within said housing, an actuating member, means operatively connecting said actuating member to the other of said members to be responsive to relative movement between said members and arranged to operate said valve mechanism, said valve housing having a fluid chamber, a vane type damping member movable in said fluid chamber upon movement of said actuating member, said damping member being considerably smaller in effective area than the cross-sectional area of said chamber taken along a plane perpendicular to the direction of movement of said damping member, and an auxiliary vane type damping member having a larger area only slightly smaller than the cross sectional area of said chamber, said auxiliary damping member being positioned adjacent one side of said damping member and movable therewith in one direction to retard the movement of said damping member but separable therefrom in the other direction to permit an independent and faster return of said damping member.

3,181,855
FOOT PEDAL OPENER FOR GARAGE DOOR

Louis Henry Willenbring, R.R. 4, Enid, Okla.

Filed Apr. 24, 1963, Ser. No. 275,310

6 Claims. (Cl. 268—42)



1. A foot operated device for starting the opening movement of a vertically movable garage door or the like, comprising in combination,

(*a*) a foot operated lever,

(*b*) means for pivotally mounting one end of said lever on a vertically movable door near the bottom of the latter with the lever extending in a generally horizontal direction and swingable vertically in a plane substantially parallel with that of the door,

(*c*) upper and lower stop means coacting with the lever to limit its swinging movement,

(*d*) spring means normally holding the lever in engagement with said upper stop means, and

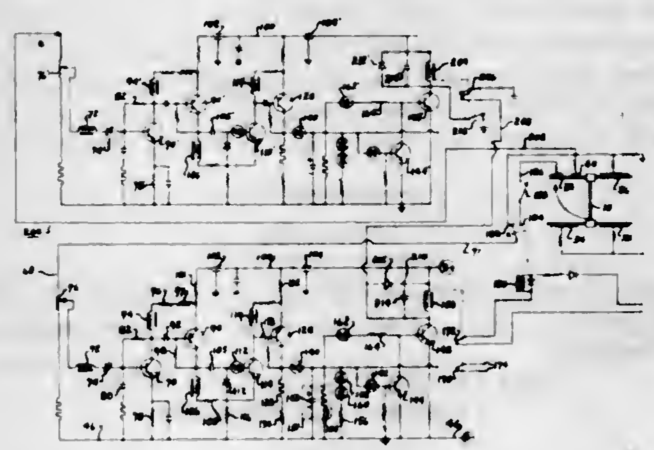
(*e*) at least one fulcrum pin pivotally suspended from an intermediate portion of the lever and having its lower end rockably engageable with the floor, said pin serving as a fulcrum for said lever when its free end is depressed by the foot of the user.

3,181,856
DOOR CONTROL MECHANISM

Jerry F. Dyben, South Bend, Ind., assignor to Communications Research, Inc., South Bend, Ind., a corporation of Indiana

Filed Dec. 13, 1962, Ser. No. 244,378

11 Claims. (Cl. 268—65)



10. In a control mechanism for use with a door having an entrance side and an exit side and being mounted to swing away from the entrance side: a transmitter and receiver antenna on opposite sides of the entrance of the door, a transmitter and receiver antenna on opposite sides of the exit of the door, a circuit for said transmitter antennas for creating an electrical field between the respective transmitter and receiver antennas, a circuit for opening and closing the door, a relay having contacts for controlling the last mentioned circuit, a circuit responsive to the electrical field between the antennas on the entrance side of the door for energizing said relay, and a holding circuit for said relay having a reed relay for operating said first mentioned relay on one-half of the combined energy from the electrical fields between the respective transmitter and receiver antennas at the entrance and exit of the door.

3,181,857
MOTOR VEHICLE DOOR

Johannes Werner, Offenbach (Main), Germany, assignor to H. T. Golde G.m.b.H. & Co. K.G., Frankfurt am Main, Germany

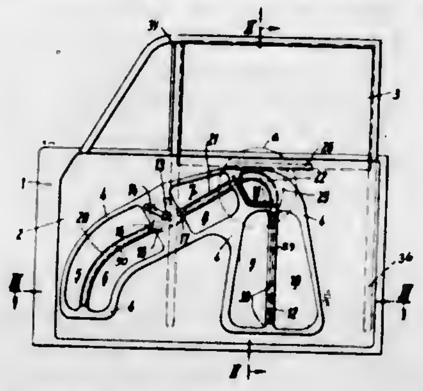
Filed Oct. 10, 1962, Ser. No. 229,639

Claims priority, application Germany, Oct. 14, 1961, G 33,349; Mar. 10, 1962, G 34,453

4 Claims. (Cl. 268—122)

1. A motor vehicle door comprising an outer panel, an inner panel connected to said outer panel and defining a space therebetween, a window frame connected to the panels and defining a window aperture, window guide means disposed at opposite locations and extending in said aperture in the window frame and in said space between the panels, a window slidably supported in said guide means for movement between a raised position in which the window fills said aperture and a lowered position in

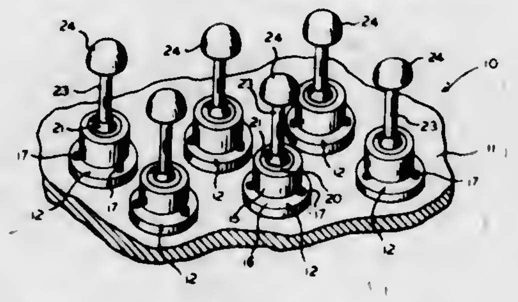
which the window is accommodated in the space between the panels, said window having a lower edge, connecting means attached to the lower edge of the window, a driving cable of determinable length engaged with the connecting means, said inner panel being provided with a plurality of apertures, said inner panel including an integral web portion remaining between adjacent apertures with free remote edges, said web portions including upturned flanges extending in a direction towards the outer panel to define a duct extending along a particular path on said inner panel, said driving cable being guidably supported along substantially its entire length in said duct for longitudinal displacement, and means engaging said cable for displacing the same lengthwise through said duct in opposite directions for raising and lowering the window.



3,181,858
WORK SUPPORT

Dennis Daniels, Williamsville, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan

Filed Apr. 26, 1962, Ser. No. 190,434
7 Claims. (Cl. 269—296)



1. Work support means comprising:

(*a*) rigid base means; and

(*b*) a plurality of support members extending upwardly from said base means in spaced apart relation to each other and each cooperative with the other members only when erect to support an article, each of said support members being individually tiltable away from the article in response to a lateral force less than its individual maximum supporting force.

3,181,859
SIDE REGISTER MEANS FOR CLOTH SPREADING APPARATUS

Raymond E. Sayles, Kansas City, Mo., assignor to Pennway Garment Company, Kansas City, Mo., a corporation of Missouri

Filed Dec. 31, 1962, Ser. No. 248,763
2 Claims. (Cl. 270—31)

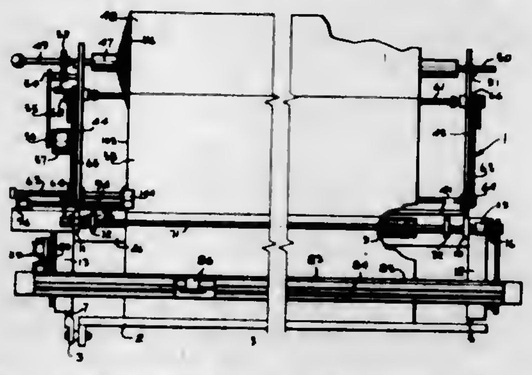
1. Apparatus for spreading a roll of cloth in multiple pair-faced layers on an elongated horizontal table comprising:

(*a*) a carriage, wheels supporting said carriage for reciprocal guided travel longitudinally of said table,

(*b*) a frame support on said carriage and adapted for lateral movement with respect to said carriage, a frame adapted to support said cloth roll horizontally transversely of said table for unrolling, bearing means between said frame and frame support for supporting said frame while permitting selective rotation thereof for rotating said cloth roll 180° about a vertical axis independently of said lateral movement,

(*c*) driving apparatus mounted on said carriage and connected to said frame support for selectively laterally positioning said cloth roll with respect to said carriage, and

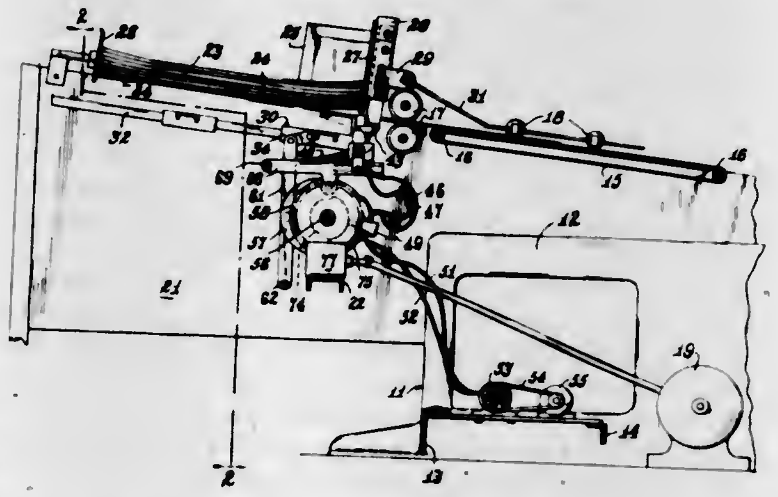
(*d*) edge scanning means secured to said carriage and adapted to monitor the lateral position of one edge of the unrolled cloth downstream from the cloth roll, said scanning means being operably connected to said driving apparatus for correcting the position of the cloth edge by laterally shifting said cloth roll during spreading.



3,181,860
SHEET FEEDING MECHANISM

Julius Gustave Liebenow, 1536 Cuyler, Berwyn, Ill., and Gilbert I. Liebenow, 400 N. Main St., Mount Prospect, Ill.

Continuation of application Ser. No. 41,932, July 11, 1960. This application Jan. 16, 1963, Ser. No. 252,277
10 Claims. (Cl. 271—32)



1. A mechanism for feeding both flat and warped paperboard blanks from a pile of blanks, comprising in combination:

(*a*) an elongated bar arranged transversely of said feed pile;

(*b*) a pair of vertically guided and movable slide blocks rotatably supporting the ends of said bar for rocking movement with respect to said blocks about the longitudinal axis of said bar;

(*c*) means operative to move said slide blocks vertically and other means for moving said slide blocks horizontally in both a feed stroke and in a return stroke in which strokes said bar is normally not rocked;

(*d*) at least one suction cup supported on said bar and directed to engage the surface of an adjacent blank during a feed stroke, and operative to transmit a rocking force to said bar in response to non-seated engagement of said cup with a warped blank;

(*e*) a source of negative pressure; and

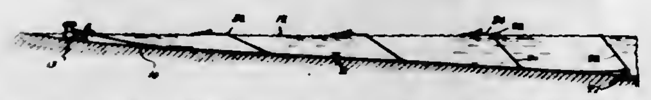
(*f*) conduit means operative to periodically connect said source with said suction cup;

whereby any tendency for warpage-induced leakage past said cup during a feed stroke will be eliminated by the rocking movement of said bar to enable substantially leak-free seating of said cup against the warped blank.

3,181,861
TOWING SYSTEM FOR SURFBOARDS AND THE LIKE

John S. Wilkinson, Seattle, Wash., assignor to Surf Tow, Inc., Honolulu, Hawaii

Filed May 23, 1962, Ser. No. 197,157
4 Claims. (Cl. 272—32)

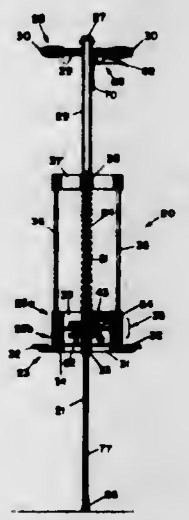


2. A towing system for surfboards and the like, and riders comprising; a driven cable winding drum supported at an inshore position on a fixed pedestal closely adjacent the shore line and ground level, cable guiding sheaves mounted for rotation on fixed pedestals at off-shore positions adjacent the bottom surface, a continuous submarine cable passed about said cable guiding sheaves and about said drum and driven by said drum, tow lines attached to said continuous cable at intervals spaced therealong, floats attached to said tow lines and tag lines attached to and trailed by said floats, said cable being of sufficient weight to sink to the bottom level and be supported between said drum and said sheaves on said bottom surface so as to be located sufficiently below the water surface to avoid contact with floating objects.

3,181,862
POGO STICK

William John White, 991 S. State Road 7, Fort Lauderdale, Fla.

Filed Nov. 9, 1962, Ser. No. 236,507
13 Claims. (Cl. 272—57)

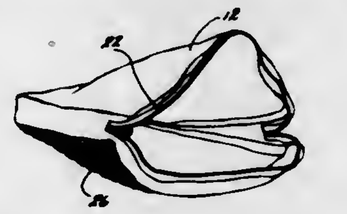


1. A pogo stick comprising: a vertically disposed shaft having a series of tooth-like elements defining a rack therealong, a tubular member snugly telescopically slidable down over the upper portion of said shaft, a horizontally disposed treadle member mounted for vertical reciprocation on and along said shaft, said treadle member extending laterally from opposite sides of said shaft and having foot rest portions adjacent the ends thereof, a pair of parallel support rods extending upwardly from said treadle member on opposite sides of said shaft, a transverse member interconnecting the upper ends of said support rods, said transverse member being vertically slidably mounted medially thereof on said shaft and forming with said treadle member and support rods a rectangular frame, a compression spring surrounding said shaft and bearing at its upper end against a portion of said transverse member, progressively movable mechanism vertically movably mounted on said shaft and engaging under the lower end of said compression spring, toothed means fixed to said mechanism and engageable with said rack, and means automatically operated in response to vertical reciprocation of said treadle member for causing said toothed means to sequentially engage successive tooth-like elements of said rack, whereby said mechanism is caused to move along said shaft in successive steps correlated to jump cycles of said pogo stick.

3,181,863
INDOOR BASEBALL BAG

Donald A. Nellermoe, 311 Morrison Ave., Big Rapids, Mich.

Filed June 20, 1963, Ser. No. 289,375
5 Claims. (Cl. 273—25)

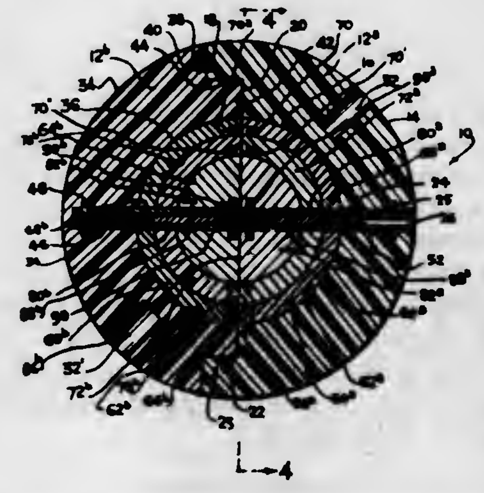


1. A base bag jacket adapted to convert an outdoor baseball bag into an indoor bag comprising: a three-dimensional jacket of flexible material; an opening in said jacket to receive an outdoor base bag; and a non-slip, high friction surface on the bottom of said jacket to form a gripping relationship with a floor surface.

3,181,864
ADJUSTABLE WEIGHT BALL FOR BOWLING

Albert A. Rolke, 2764 Creston Ave., Bronx, N.Y.

Filed Oct. 31, 1962, Ser. No. 234,453
2 Claims. (Cl. 273—63)



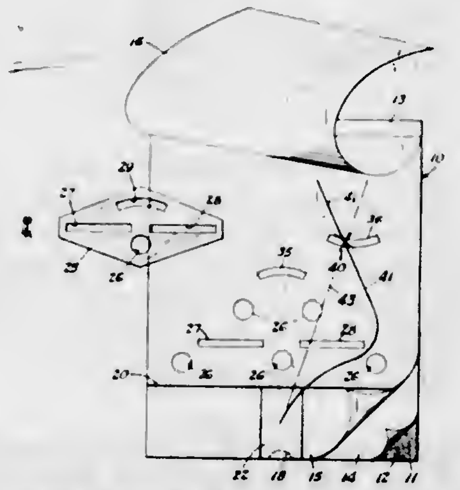
1. A bowling ball construction of the character described comprising a pair of similar hemispherical body parts each of which is provided with a concentric hemispherical cavity, interlocking means between the opposed faces of said parts, one of said parts having an axial bore extending through the wall thereof, a tube secured in said bore with the inner end thereof extending in the cavity in the said one of said parts, the other of said parts having an internally threaded tube secured therein in axial alignment with said tube with the inner end thereof extending into the cavity in the said other of said parts; a first pair of similar hemispherical weights each of which is provided with a concentric hemispherical cavity, one of said weights being nested in each of said body parts with the outer surfaces thereof abutting the inner surfaces of said body parts; a second pair of similar hemispherical

weights each of which is provided with a concentric hemispherical cavity, one of said second pair of weights being nested in each of said first pair of weights with the outer surfaces thereof abutting the inner surfaces of said first pair of weights; a pair of similar hemispherical flat-faced solid weights, one of said solid weights being nested in each of said second pair of weights with the outer surfaces thereof abutting the inner surfaces of said second pair of weights; said weights having axially aligned bores therein into which the inner ends of said tubes extend, and an externally screw-threaded rod disposed in said aligned tubes for removably holding said body parts together, said rod being provided with a reduced noncircular end for the reception of a turning tool, and said weights being selectively removable for adjusting the weight of said ball.

3,181,865

FOOTBALL SIMULATING DEVICE

Francis H. Tout, 250 Emporium Ave., Buffalo, N.Y.
Filed Nov. 5, 1962, Ser. No. 235,208
5 Claims. (Cl. 273—94)

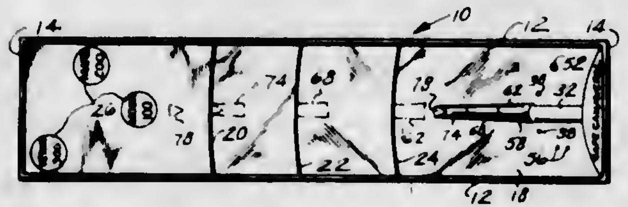


5. A football simulating game comprising a tablet device having surface means adapted to receive an impression by inscribing directly thereon, an opaque overlay sheet and means for producing on said impression receiving surface means indicia inscribed on said opaque overlay sheet, whereby one player inscribes a defensive football position on the impression receiving surface means and a second player inscribes a course of attack on said opaque overlay sheet without reference to the inscribed defensive position, said course of attack being automatically superposed on the inscribed defensive position on the impression receiving surface means, said surface means and said overlay sheet having registering scrimmage lines thereon, a plurality of measuring devices of different scales for measuring distances from said scrimmage line, and chance means for determining the applicable measuring device in a given instance.

3,181,866

SURFACE PROJECTILE ROCKET GAME

Ralph E. Clochesy, 596 E. 9th St., Fond du Lac, Wis.
Filed July 22, 1963, Ser. No. 296,851
6 Claims. (Cl. 273—126)

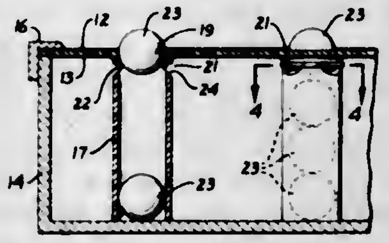


1. In a rocket game comprising, in combination, a base of rectangular configuration, a pair of parallel side walls and a pair of parallel end walls carried by said base providing confinement means for a multi-stage missile, a launcher and a playing surface provided with arcuate steps carried by said game board, means on said missile cooperating with said steps of said playing surface for separation of each stage of said missile, a rubber band cooperating with said launcher and fastener means carried by said game providing thrust means for said missile, a pair of serrated blocks carried by said game providing stationary holding means for said launcher and said missile, and means comprising an elongated bar carried by said device for disengagement of said serrated blocks.

3,181,867

MEMORY GAME APPARATUS

Allen F. Dreyer, Richmond, Calif., assignor to Universal Research, Berkeley, Calif., a partnership
Filed Jan. 14, 1963, Ser. No. 251,079
8 Claims. (Cl. 273—131)

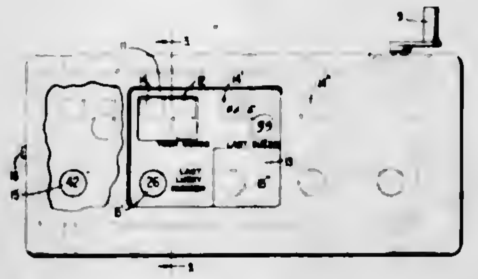


8. A game comprising a board having a playing surface equipped with a plurality of openings, a plurality of tubular containers attached to the playing surface at the openings in the board, said tubes being open at both ends whereby playing pieces may be inserted into each container from its corresponding opening in the board and removed therefrom through the opposite opening in the container, closure means relatively movable with respect to the containers for closing the ends opposite the ends attached to the playing surface, a plurality of balls of a size sufficient to fit closely within said tubular containers, and holding means on each container for releasably holding a ball at an opening in the board, each of said holding means constructed to support a ball thereon while in normal position and releasable by application of a force in excess of the weight of the ball to allow the ball to be pushed therethrough and into the associated container.

3,181,868

COMBINATION SALES REGISTER AND GAME

Jacob E. Markle, 1333 Dickerson Road, and Robert L. Whitcomb, Jr., 1714 Linden Ave., both of Nashville, Tenn.
Filed Apr. 11, 1963, Ser. No. 272,422
1 Claim. (Cl. 273—139)

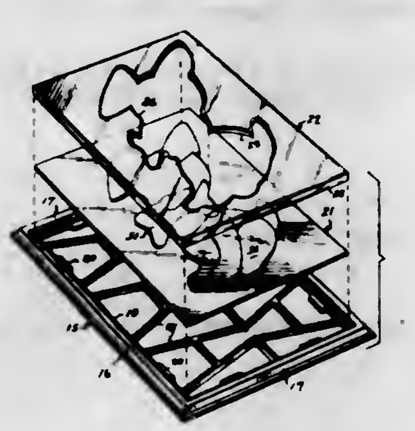


A combination game and accounting register comprising a casing including a plurality of walls, a record sheet, means within said casing to support the record sheet, means to advance the record sheet a measured distance from a rearward position to a forward position in the casing, means to prevent reverse movement of the record sheet, one wall of the casing having an opening therein, a shield attached to said wall and disposed across the opening therein with the record sheet being positioned between the support and the shield, said shield being of transparent material and including a rearward record access opening area and a forward opaque area laterally offset from each other, said record sheet including a plurality of longitudinally spaced recording areas to be moved into alignment with the shield access opening and a plurality of longitudinally spaced symbols laterally offset from and trailing associated recording areas, whereby a symbol becomes visible on record sheet advance after the recording area associated therewith has moved forwardly of the access opening beneath the transparent shield and the previous symbol has been moved beneath the opaque area of the shield.

3,181,869

PUZZLE BOARD TOY ASSEMBLY

Robert I. Genin, New Rochelle, and Leon S. Wirch, Forest Hills, N.Y., assignors to Child Guidance Toys, Inc., Bronx, N.Y., a corporation of New York
Filed Apr. 4, 1962, Ser. No. 185,026
1 Claim. (Cl. 273—157)



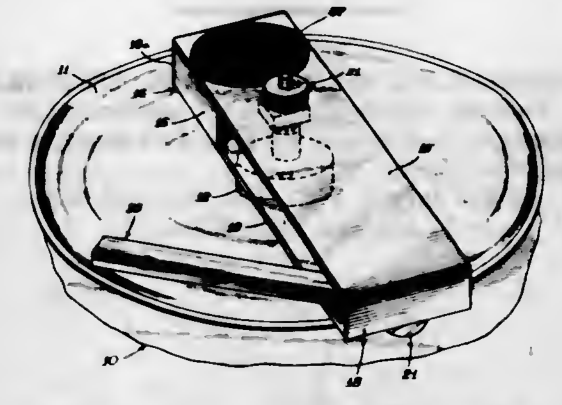
A magnetic puzzle plaque toy assembly comprising a holder frame having side and end members defining an opening, a foraminous grill extending across said opening, a continuous internal ledge having upright walls lextending around the inner sides of the side and end members, lugs extending from said ledge into said opening, a ferrous metal, colored backing sheet seating on said lugs and said ledge within said upright walls, a transparent puzzle outline sheet conforming in external dimensions to said backing sheet seated on top of said backing sheet within said upright walls, said puzzle outline sheet having an internal opening of irregular configuration defining a puzzle outline, depending outer and inner flanges defining the outer perimeter of said puzzle outline sheet, and said puzzle outline opening respectively, said outer flange having a tight flush fit with the opening defined by said upright walls, the color of said backing sheet being visible through said transparent sheet, and a plurality of soft molded plastic puzzle pieces, defining, when properly assembled, a figure conforming to the puzzle outline opening, each of said pieces comprising a colored sheet of irregular configuration having a depending peripheral flange, and an internal flange defining a pocket well, and a compressible magnet, force fitted into said well.

3,181,870

PHONOGRAPH

Fred D. Lasswell, Jr., 329 Bayshore Blvd., Tampa, Fla.
Filed June 7, 1962, Ser. No. 200,810
16 Claims. (Cl. 274—9)

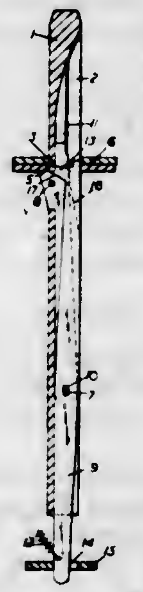
2. In a phonograph arrangement, a stationary substantially horizontal record carrying surface, a phonograph mountable on the center of a record carried on said surface, drive means at one end of said phonograph engaging said surface for rotating said phonograph about a vertical axis through the center of said record, a tone arm carried on said phonograph and engaging said record, said tone arm pivotally carried at one end thereof on said one end of said phonograph for rotation about a substantially vertical axis with said tone arm extending from the trailing side of said phonograph in the rotation thereof.



3,181,871

MAGAZINE SPINDLES FOR AUTOMATIC RECORD CHANGING GRAMOPHONES

Kenneth Charles Goulding, Dagenham, Essex, England, assignor to The Magnavox Electronics Company Limited, Barking, Essex, England, a British company
Filed Dec. 19, 1962, Ser. No. 245,710
Claims priority, application Great Britain, June 14, 1962, 22,937/62
6 Claims. (Cl. 274—10)



1. In an automatic record changing mechanism the improvement which comprises a magazine spindle having a cylindrical outer surface extending throughout the length thereof on which the records slide and formed with a transverse recess extending from one side of said spindle to the other, a shelf mounted in said recess for movement between a retracted position entirely within said recess and a supporting position in which it projects outwardly from said cylindrical surface to support a stack of records encircling the spindle, a push-off lever within said recess positioned to engage the hole in the lowermost record supported on said shelf and mounted to move away from a retracted position within said recess to an extended position in which it projects to the end of and just above said shelf when said shelf is in its supporting position, driving mechanism adapted to rock said push-off lever from its retracted to its extended position and thereby push said lowermost record laterally off said shelf so that it falls down said spindle, a fixed abutment a record's thickness above said shelf and on the opposite side of said spindle from said shelf which prevents lateral movement of any record other than the lowermost record by said pushoff lever, said shelf being formed with an inclined under-

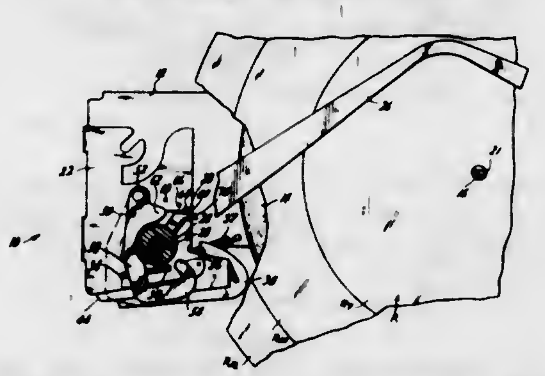
surface so that when a stack of records positioned on the spindle below the shelf is lifted up, said stack engages said inclined surface and moves said shelf to its retracted position.

3,181,872
RECORD CHANGER CONTROL ASSEMBLY

Martin Dvorin, Rochester, N.Y., assignor, by mesne assignments, to General Electric Company, a corporation of New York

Filed July 9, 1962, Ser. No. 208,263

12 Claims. (Cl. 274—15)



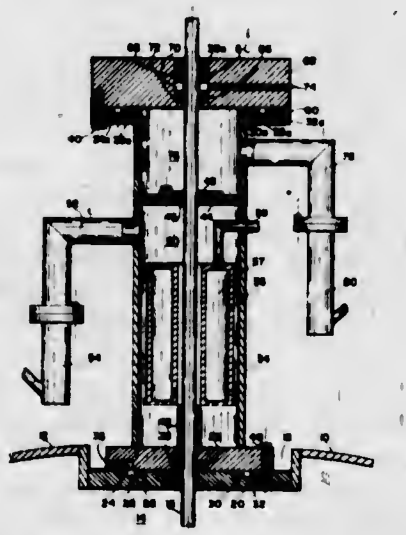
11. In a record changer including a base, a turntable, a tone arm, means for successively dropping records onto the turntable, means for selectively setting down the tone arm on the lead-in grooves of the records on the turntable, a balance arm movable between a balance position over said turntable and a rest position removed from said turntable, an index finger in position to be deflected by records as they are dropped onto the turntable, and means interconnecting said index finger and the set-down means for selecting the set-down location in response to the amount of displacement of said index finger, the improvement comprising a control element movably mounted on said base and positioned to engage and deflect said index finger, and means interconnecting said balance arm and said control element for moving said control element and deflecting said index finger in response to movement of said balance arm to said rest position.

3,181,873
HIGH TORQUE, HIGH SPEED ROTARY FEED-THROUGH SEAL FOR ULTRAHIGH VACUUM CHAMBERS

Malcolm E. Reed, Westwood, Mass., assignor, by mesne assignments, to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Jan. 25, 1962, Ser. No. 168,627

4 Claims. (Cl. 277—3)



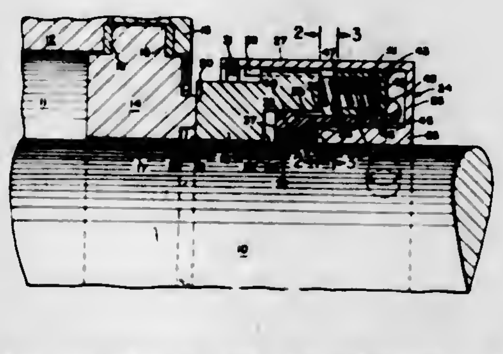
1. An apparatus for providing rotary movement of a drive shaft at high torque and high speed through the defining wall of a vacuum chamber, comprising a rotatable shaft extending through an opening in the wall of said vacuum chamber, a first means for sealing the clearance between the rotatable shaft and the wall of said vacuum chamber, a housing adjacent said opening and surrounding said shaft, a second seal means mounted around said shaft in spaced relation with said first sealing means, said two seal means and said housing defining a first sealing chamber, means connected with said first sealing chamber to maintain said first sealing chamber at a low pressure, a cold surface in said first sealing chamber for adsorbing condensable gases, means for maintaining a cryogenic fluid in cooling relationship with said surface to lower the temperature thereof, a third seal means around said shaft, said third seal means being in spaced relation with said second seal means, said second and third seal means defining a second sealing chamber with said housing and means connected with said sealing chamber to maintain said second sealing chamber at a low pressure, whereby the apparatus permits operation of the chamber at ultrahigh vacuum.

3,181,874
OUTSIDE MOUNTED BALANCED SEAL

Elmer W. Conklin, Barrington, Ill., assignor to Crane Packing Company, Morton Grove, Ill., a corporation of Illinois

Filed Dec. 3, 1962, Ser. No. 241,686

9 Claims. (Cl. 277—86)



1. A rotary mechanical seal for effecting a fluid-tight running seal between relatively rotatable devices, said seal comprising a rigid sealing washer encircling one of said relatively rotatable devices and having a counterbore in one end thereof, a rigid abutment on said one of said relatively rotatable devices axially spaced from the sealing washer, a spring retainer axially spaced from the sealing washer, said retainer being axially movable relative to said rigid abutment, a cylindrical secondary sealing element, means interlocking said cylindrical secondary sealing element and said spring retainer in an axial direction to cause said secondary sealing element to move axially with said retainer, spring means compressed between said sealing washer and said spring retainer, and wedge means in the counterbore contacted by said cylindrical secondary sealing element and reacting axially against said abutment for expanding the secondary sealing element radially against the sealing washer counterbore when said cylindrical secondary sealing element is moved axially against said wedge means.

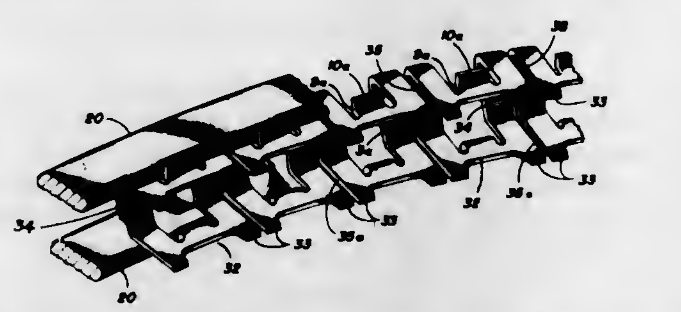
3,181,875
PISTON RINGS

Ralph M. Shepard, Muskegon Heights, Mich., assignor to Muskegon Piston Ring Company, Muskegon, Mich., a corporation of Michigan

Filed June 30, 1958, Ser. No. 745,448

8 Claims. (Cl. 277—140)

6. A spacer for a piston ring comprising: a plurality of rectangular annuli bent into a generally U-shape with the legs of said U forming spaced rail seats; said annuli being joined to each other along the base of said U, said base forming the radially outer periphery of said spacer and opposed sides of said annuli forming the radially inner periphery of said spacer; rail stop means integral with said opposed sides intermediate the inner and outer peripheries of said spacer.

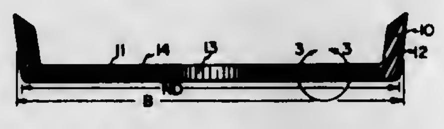


3,181,876
PISTON CUP

Maurice D. Felt, Murray, Utah, assignor to Packing Supply Company, Salt Lake City, Utah, a corporation of Utah

Filed May 22, 1963, Ser. No. 282,273

3 Claims. (Cl. 277—212)



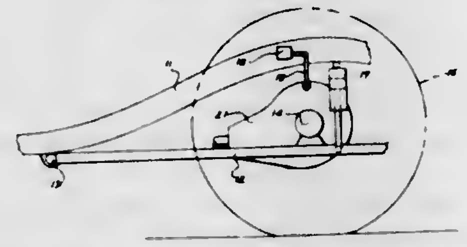
1. A piston cup including, in combination, a disc-configured base provided with mounting aperture means; a peripheral flange integral with, extending laterally from, and circumscribing said base, said base and peripheral flange being integrally cast of a pre-liquified, castable plastic material; and flat, washer-configured, reinforcing web means imbedded solely in said base for impeding material flow thereat under pressure imposition.

3,181,877
CLOSED HYDRAULIC LEVELING SYSTEM FOR MOTOR VEHICLE

Raymond R. McHenry, West Seneca, N.Y., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Mar. 1, 1962, Ser. No. 176,720

13 Claims. (Cl. 280—6)



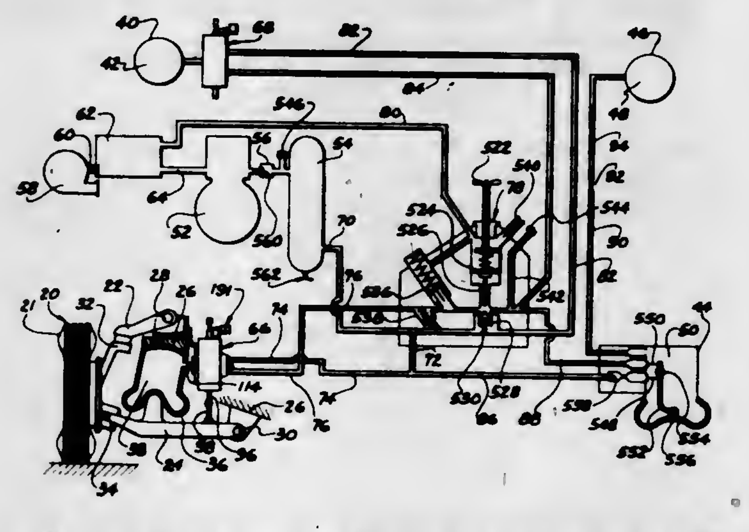
1. A suspension system for a motor vehicle having sprung and unsprung components, first and second fluid controlled suspension means interconnecting said components, said suspension means having spring means adapted for the resilient support of said sprung components upon said unsprung components, fluid control means adapted to control the loading of said suspension means responsive to the spacing of said sprung and unsprung components, said control means including a high pressure fluid source, a low pressure fluid source, and fluid passage means providing communication between said suspension means and said sources, pressurized fluid in said suspension means, the fluid in said first suspension means being under a greater pressure than the fluid in said second suspension means during both dynamic and static conditions, said control means also including valve means interposed in said fluid passage means between said first suspension means and said second suspension means and constructed to isolate said suspension means one from the other, said valve means including a check valve means responsive to the pressure differential between said first and said second suspension means.

3,181,878
ELECTROMAGNETIC CONTROL SYSTEM FOR FLUID ACTUATED SUSPENSION SYSTEM

Arthur E. Vogel, Columbus, Ohio, assignor, by direct and mesne assignments, of one-half to Dawson-Vogel Engineering Company, a partnership, one-fourth to Warren H. F. Schmieding, and one-fourth to Palmer Fultz, all of Columbus, Ohio

Filed Dec. 15, 1959, Ser. No. 859,611

34 Claims. (Cl. 280—6.1)



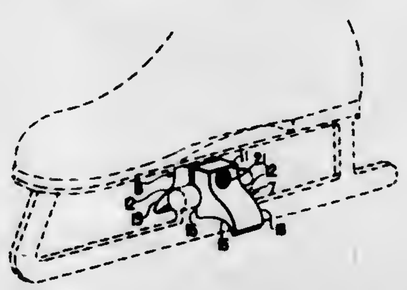
1. A control system for a vehicle suspension of the type that includes sprung and unsprung weight portions with a resilient means interposed between said weight portions, said control system comprising, in combination, valve means mounted on one of said weights for controlling the flow of fluid to and from said resilient means and including a flow control element moveable between a "centered" position, an "up" position, and a "down" position; said flow control element including a first electro-magnetic coupling portion; an actuator element connected to the other of said weights and including a second electro-magnetic coupling portion; means forming a source of electrical energy; and switch means in circuit with one of said electro-magnetic coupling portions for magnetically connecting and disconnecting said coupling portions.

3,181,879
STABILIZING DEVICE FOR ICE SKATES

Robert T. Hodges, 556 Logan Ave., Bronx, N.Y.

Filed Sept. 24, 1963, Ser. No. 311,047

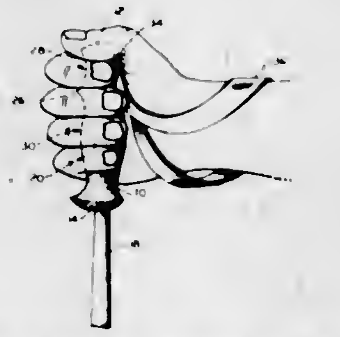
1 Claim. (Cl. 280—11.12)



A stabilizing device for ice skates comprising a pair of transverse opposed similar shaped blocks, each block having an upright portion square in cross-section with four flat sides, said upright portions having aligned openings extending therethrough, opposed flat sides having opposed semi-circular recesses therein adjacent one end of said opposed flat sides, the other opposed sides having laterally extending curved extensions, said extensions having concave bottom surfaces, said lateral extensions terminating in inwardly slanting edges, the opposed semi-circular recesses adapted to receive the convex structure of an ice skate, the flat sides of said adjacent one end thereof adapted to engage the flat structure of the ice skate, and a screw extending through the aligned openings in said upright portions for clamping the walls of the recesses around the convex structure of an ice skate and for clamping the flat one end against the flat structure of the ice skate, whereby the device may be adjustably slid along the ice skate structure.

3,181,880
GRIP FOR SKI POLES AND THE LIKE

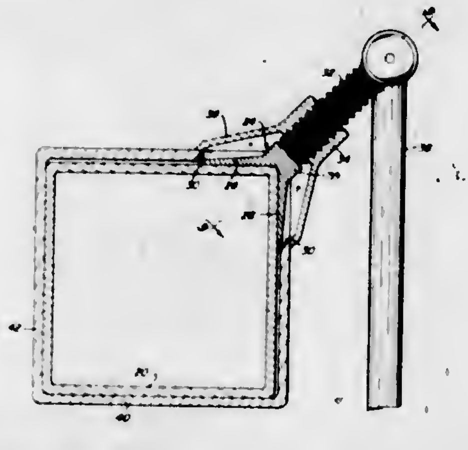
William M. Cameron, Lafayette, and Lawrence G. Powers, Hayward, Calif., assignors, by mesne assignments, to Henry D. Whittlesey, doing business as Whittlesey, Powers and Cameron, Hayward, Calif.
Filed Jan. 18, 1963, Ser. No. 252,508
5 Claims. (Cl. 280—11.37)



1. A contoured hand grip for ski poles and the like which comprises an elongated body having top and bottom ends with generally opposed palm engaging and finger engaging sides extending between said ends with said finger engaging side having a contoured surface containing a single outward projection thereon in the area thereof which receives the user's fingers with said projection dividing said surface into an upper pocket adjacent to said upper end for receiving the user's index finger and a lower pocket adjacent to said lower end for receiving the user's other three fingers.

3,181,881
CLAMP FOR TRAILER REACH

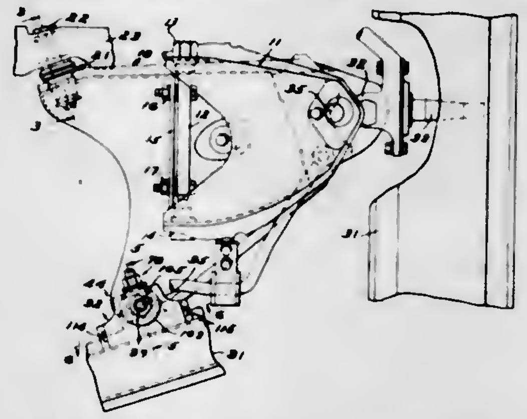
Frederick F. Van Raden, Hillsboro, Oreg., assignor to Peerless Trailer and Truck Service, Inc., Portland, Oreg., a corporation of Oregon
Filed June 7, 1963, Ser. No. 286,258
3 Claims. (Cl. 280—34)



1. In a trailer reach,
a first, elongate hollow reach member of rectangular cross section,
a second, elongate hollow reach member of complementary rectangular cross section to said first reach member,
said second reach member extending into said first reach member,
a clamp means comprising a rigid plate having two portions extending at right angles to one another mounted within said first reach member with said portions extending parallel to adjacent walls of said first reach member,
and releasable means operatively arranged between said plate and said first reach member for moving said plate diagonally of said first reach member into engagement with the adjacent corner of said second reach member to clamp the latter against movement relative to said first reach member.

3,181,882
INDEPENDENT SUSPENSION SYSTEM

Frederick Rosky, Dearborn, and Carl P. Wenzel, Garden City, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Continuation of application Ser. No. 59,979, Oct. 3, 1960. This application May 31, 1963, Ser. No. 286,103
14 Claims. (Cl. 280—96.2)

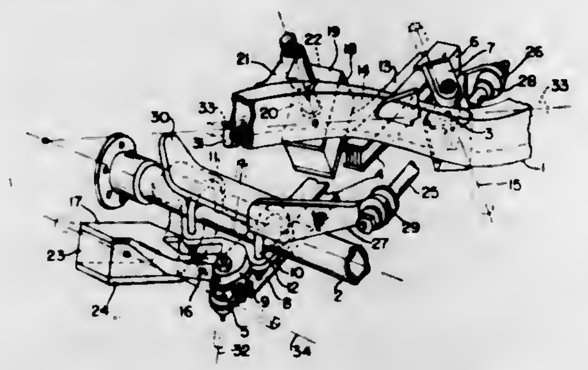


1. In an automotive vehicle, the combination comprising a support member, a road wheel, a suspension arm rotatably supporting said road wheel, spring means positioned between said support member and said suspension arm, means coupled to said support member and said suspension arm for permitting upward movement of said road wheel relative to said support member and for permitting road wheel recession relative to said support member against the force of said spring means, said means comprising a resilient bushing interconnecting said support member and said suspension arm at one location on said suspension arm, and a crank mechanism interconnecting said suspension arm and said support member at a location spaced from said resilient bushing, said crank mechanism being constructed and arranged to permit transverse movement of that portion of the suspension arm positioned adjacent thereto about said resilient bushing and upward movement of that portion of the said suspension arm positioned adjacent thereto against the force of said spring means when said road wheel recedes relative to said support member.

3,181,883
VEHICLE WITH CURVE-BANK SUSPENSION

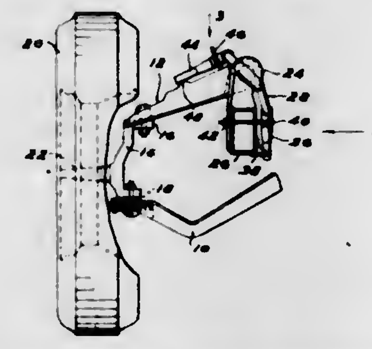
Joachim Kolbe, N64 W19425 Mill Road, Menomonee Falls, Wis.
Filed Jan. 15, 1963, Ser. No. 252,017
24 Claims. (Cl. 280—112)

1. In a device of the class described having a torsion spring with its opposite ends secured to corresponding support members by universally movable ball joints and lever arms connecting the spring to the corresponding support member in a manner to effect torsional actuation of the spring by relative movement of the support members in a plurality of directions, one of said support members constituting an unsprung mass disposed to be driven over a road having straight and curved portions therein, and the other of said support members constituting a sprung mass carried by said first named support members and subjected to forces arising from acceleration and deceleration, uneven roadbeds and from curves in the road, a multi-turn cushion incorporated in at least one of said lever arm connections to reduce the tendency for distortion of the torsion spring, and comprising a rubber block normally compressed in a direction of torsion spring load by said support members and resiliently yieldable in directions other than said compression direction to provide for guiding relative movement of said support members.



3,181,884
VEHICLE SUSPENSION SYSTEM HAVING TORSION BAR SPRING

Jesse W. Richards, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 10, 1961, Ser. No. 130,584
8 Claims. (Cl. 280—124)

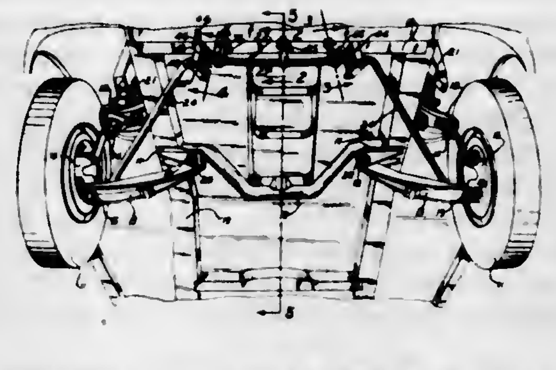


1. In a vehicle suspension system having sprung and unsprung suspension components, an upstanding frame bracket connected to said sprung component, a pivotally mounted suspension arm connected to said frame bracket, a torsion bar with diverging legs straddling said pivotal connection, the pivot axis of said pivotal connection bisecting the angle between the legs of said torsion bar, said torsion bar being connected to said suspension arm and to said sprung components.

3,181,885
ANTIHARSHNESS INDEPENDENT FRONT WHEEL SUSPENSION SYSTEM

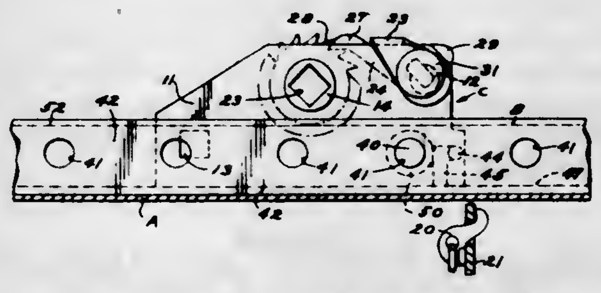
Nick Baracos and Frederick Rosky, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 31, 1962, Ser. No. 198,906
8 Claims. (Cl. 280—124)

1. In a motor vehicle suspension system having sprung and unsprung components, suspension means interconnecting said components, said means being adapted to support said unsprung components for longitudinal movement relative to said sprung components, torsion spring means interposed between said components, and means for mounting said torsion spring means on said sprung component, one portion of said mounting means further being constructed and arranged to preload said torsion spring means in bending, the other portion of said mounting means countering the longitudinal movement of said unsprung components with an increasing rate upon increasing longitudinal displacement of said unsprung components relative to said sprung components.



3,181,886
VEHICLE TIE-DOWN STRUCTURE

Donald J. Blunden and William E. Widener, Detroit, and Robert J. Haggarty, Trenton, Mich., assignors to Whitehead & Kales Company, River Rouge, Mich., a corporation of Michigan
Filed Nov. 14, 1962, Ser. No. 237,572
9 Claims. (Cl. 280—179)



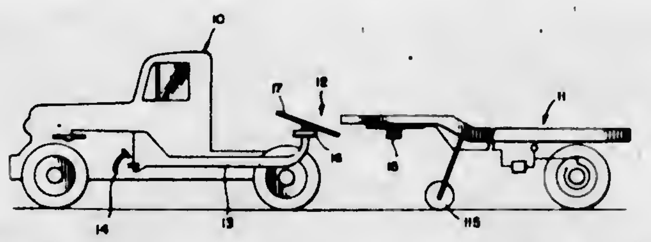
1. A motor vehicle tie-down structure, comprising a longitudinally extending channel-shaped rail adapted to be anchored lengthwise upon a longitudinally extending deck of a transport vehicle and having a plurality of longitudinally spaced openings in the outer upright side wall thereof, a carriage carried by and adjustable lengthwise of said rail, said carriage having laterally spaced upright inner and outer side walls, a rotatable stub shaft extending transversely of said carriage, a second stub shaft movable transversely of said carriage to engage a selected opening in the outer upright side wall of said rail to hold said carriage in adjusted position, means upon said transversely movable stub shaft adapted to be positioned between and adjacent to the spaced upright side walls of said carriage to hold said transversely movable stub shaft against accidental displacement after it has been moved transversely of said carriage into a selected opening in the outer upright side wall of said rail, and means for tying down and holding a motor vehicle after said carriage has been held in adjusted position, including a flexible element connected to the rotatable stub shaft and adapted to be connected to a part of the motor vehcile, said flexible element being adapted to be wound on said rotatable stub shaft and tensioned thereby during rotation thereof.

3,181,887
SERVICE SYSTEM AND COUPLING MECHANISM FOR TRACTOR-TRAILER VEHICLES

Edward B. Boylan, 4541 S. Le Claire, and Herman J. White, 6033 S. Dorchester, both of Chicago, Ill.; Bernard P. Boylan, 529 Congress, Hillside, Ill.; and George J. Pyre, 4928 N. Francisco, Chicago, Ill.
Filed Aug. 15, 1960, Ser. No. 49,781
25 Claims. (Cl. 280—421)

5. In a tractor-trailer vehicle combination an automatic connector mechanism in combination with a service system for coordinating the control of retractible trailer dolly wheels with the trailer brakes when in a connected relationship with a tractor comprising a first connector

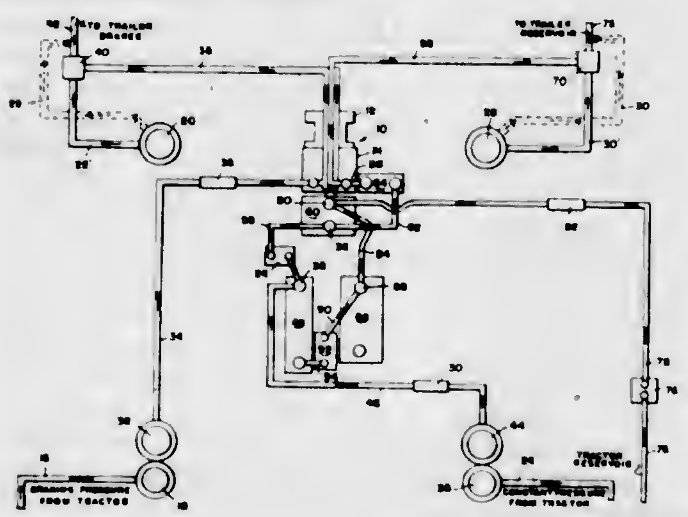
member in the form of a fifth wheel secured to the tractor, a second connector member in the form of a king pin secured to the trailer, a protractible connector block mounted on said first connector, an air pressure and electrical power source secured to the tractor, control means mounted within the tractor, first conduit members secured to the tractor interconnecting said power sources with the tractor brakes, the connector block and the control means, second conduit means secured to the trailer interconnecting the trailer brakes with the second connector member, locking means to secure the second connector member in a locked relationship with the first connector member, coupling means to couple said connector block with said second connector member, and means secured within said connector block and said second connector member to provide straight through communication from the power sources to the trailer brakes to effect coordinated control of the braking power, said control means including a dolly position responsive mechanism interlocked with said locking means to render it inoperative to release when the dolly wheels are in retracted position.



3,181,888
AUTOMATIC COUPLING MECHANISM FOR TRACTOR-TRAILER VEHICLES

Edward B. Boylan and Herman J. White, Chicago, Bernard P. Boylan, Hillside, and George J. Pyre, Chicago, Ill., assignors to Peer Cartage Co., Inc., Chicago, Ill., a corporation of Illinois

Filed Sept. 25, 1961, Ser. No. 140,536
13 Claims. (Cl. 280—421)

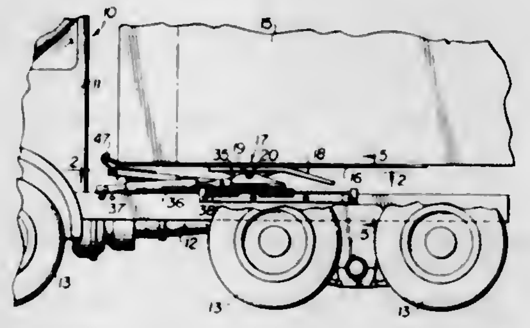


1. A coupling mechanism for securing a tractor to a trailer and automatically connecting power service lines therebetween comprising a kingpin rigidly secured to the trailer, a fifth wheel pivotally secured to the tractor for receipt of said kingpin, an insert member reciprocably mounted beneath said fifth wheel, said insert member disposed in alignment with said kingpin when said kingpin is received in said fifth wheel, a retractible cover plate disposed over said insert member when disengaged from said kingpin, a first fluid pressure actuated piston secured to said cover plate to effect upper terminal movement thereof for removal of said retractible cover from over said insert member, a plurality of tractor service lines connected to said insert member extending through said insert member including a conduit connected to a source of air under constant pressure on the tractor and to said first piston, a plurality of trailer service lines connected to said kingpin, a second fluid pressure actuated piston secured to said insert to effect reciprocation thereof to engage and disengage said insert member with said kingpin in sealing relationship to interconnect the service lines from the tractor to the trailer, and valve means in said conduit actuated by said piston for admitting air from said conduit to actuate said second piston to engage said insert member with said kingpin.

3,181,889
TRAILER CLEARANCE DEVICE

Bert C. Harris, Chagrin Falls, Ohio, assignor to The White Motor Company, Cleveland, Ohio, a corporation of Ohio

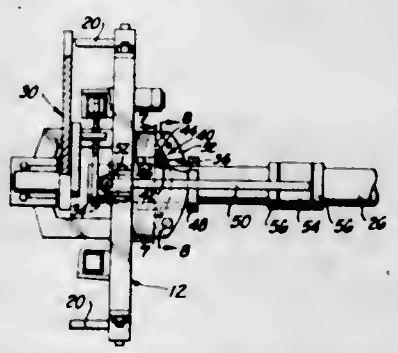
Filed June 4, 1962, Ser. No. 199,928
24 Claims. (Cl. 280—438)



7. In a highway tractor trailer assembly a fifth wheel construction comprising:
- (*a*) a fifth wheel slidably mounted on the tractor for longitudinal reciprocal movement;
- (*b*) power means interposed between the tractor and the fifth wheel for selectively causing relative reciprocation;
- (*c*) a power means control mounted on the tractor and controllably connected to the power means; and,
- (*d*) sensing means secured to the fifth wheel and connected to the trailer and the control for actuating the control and thereby actuating the power means to cause relative reciprocation between the fifth wheel and the tractor whenever predetermined relative movement of the tractor and trailer occurs.

3,181,890
TRAILING IMPLEMENT WITH SWING JOINT

William Fisk Mellen, Anaheim, Calif.
(P.O. Box 2032, Fullerton, Calif.)
Filed May 4, 1962, Ser. No. 192,425
5 Claims. (Cl. 280—447)



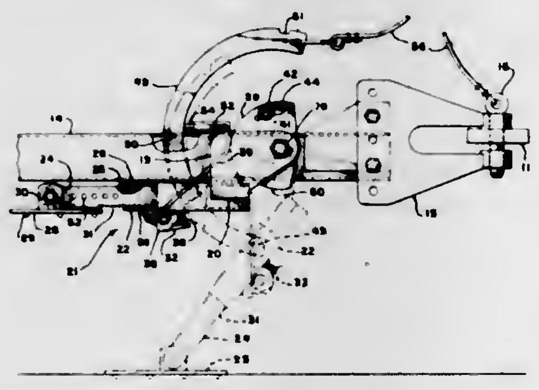
1. In a trailing implement to be drawn by a tractor, or the like, the combination of:
- (*a*) a frame connectible to the tractor;
- (*b*) a beam extending rearwardly from said frame;
- (*c*) an upright, forwardly concave, cylindrical bearing segment carried by said frame;
- (*d*) said bearing segment having an opening through which said beam extends and which is laterally wider than said beam so that said beam can move laterally therein;

- (*e*) bearing means on said beam forwardly of said bearing segment and seated against said bearing segment at laterally spaced points on opposite sides of said opening therein; and
- (*f*) said bearing means being movable laterally relative to said bearing segment to render said beam laterally swingable relative to said frame about an upright pivot axis coinciding with the axis of said bearing segment and through an angle dependent on the difference between the lateral widths of said beam and said opening.

3,181,891
SUPPORT STAND

Earl W. Moats, Brownstown, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed July 5, 1963, Ser. No. 292,872
8 Claims. (Cl. 280—475)



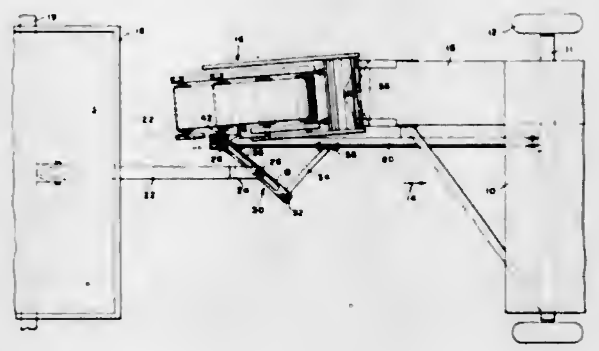
1. A stand for supporting the draft tongue of a vehicle comprising a support leg, pivot means mounting said support leg on a vehicle draft tongue for vertical swinging movement between a raised, generally horizontal transport position and a lowered, generally vertical support position, said support leg having a plurality of sections, means connecting one of said sections to another of said sections for slidable extension and retraction relative thereto, the length of said support leg when said one section is fully extended being greater than the normal vertical distance between said draft tongue and the ground, a releasable lock member engageable with said one leg section to normally prevent retraction thereof relative to said other of said sections when said support leg is in said support position, cam means operatively associated with said lock member to release the lock member upon movement of said support leg from said support position toward said transport position and to maintain said lock member released until the support leg is returned substantially to its generally vertical support position, and means connected to said support leg for raising and lowering the leg between said transport and support positions.

3,181,892
HITCH

James H. Hollyday, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Apr. 29, 1963, Ser. No. 276,599
4 Claims. (Cl. 280—477)

1. A hitch device whereby a forwardly extending tongue of a wagon or other vehicle may be conveniently connected to a baler or other implement and towed in trailing relation thereto comprising a hitch member located at a rearward portion of the implement and affixed thereto, said hitch member having a rigid immovable end portion, said end portion having an inlet slot therein, said inlet slot extending diagonally rearwardly to a location within the hitch member end portion and forming a vertical opening, a bracket on said implement having a guide slot elongated in a horizontal and fore-and-aft direction, said guide slot having a rearward portion in alignment with said open end of said inlet slot, said tongue being positionable over said bracket and along said guide slot, a hitch pin extendible vertically through and loosely connectable to said tongue and adapted to be projected

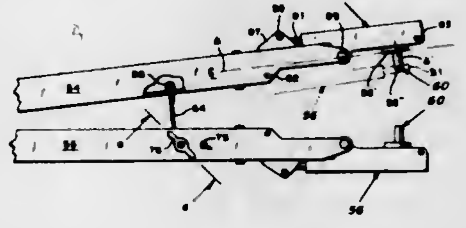


through any portion of said guide slot after said tongue is positioned to provide a slidable connection of said tongue to said bracket, said bracket moving relative to said pin on forward travel of said implement and said pin being guided to said inlet slot and deposited in said hitch member opening, and latch means projectable across said inlet slot for holding said pin in said opening after the pin is guided thereto.

3,181,893
UNIVERSAL TOW BAR

Howard B. Jopson, Warrington, Harold V. Yentzer, Huntingdon Valley, and Paul Karnow, Glenside, Pa., assignors to the United States of America as represented by the Secretary of the Navy

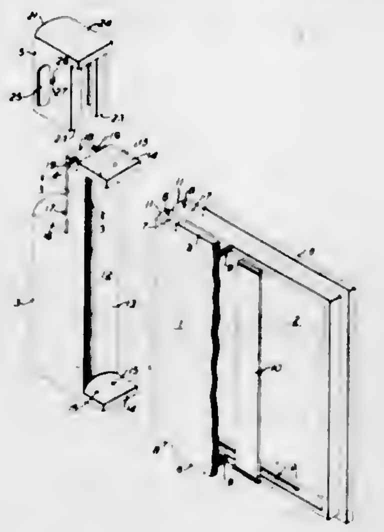
Filed Sept. 27, 1962, Ser. No. 227,666
2 Claims. (Cl. 280—494)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A towing apparatus for devices having various types of tow fastenings comprising:
- a pair of rigid legs pivotally joined at one end of each for articulation therebetween,
- attachment means fixed to said junction for coupling a towing vehicle thereto,
- a shaft rotatably mounted on one of said legs,
- a spool coaxially secured to said shaft,
- spring means operatively connected between said leg and said spool for rotating said shaft and said coaxial spool,
- strap means having one end thereof wound about said spool and having the other end connected to the other leg,
- and selective fitting means pivotally connected to the other end of said legs for engaging a particular type of connection provided on the devices.

3,181,894
AUDIO BOOK JACKET

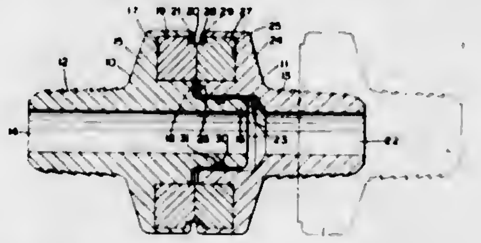
Eugene S. Holtzman, 312 E. 80th St., New York 21, N.Y.
Filed June 14, 1963, Ser. No. 287,893
3 Claims. (Cl. 281—31)



1. Apparatus for providing a correlated audio-visual presentation comprising, in combination, a book jacket having a spine member with upper and lower portions and a pair of cover flaps affixed by hinged connection to said lower portion, a stepped recess in the upper portion of said spine member, said recess forming a cavity extending from an intermediate location in the upper portion of said spine member to an end thereof, a cartridge shape to fit said cavity, means for slidably receiving said cartridge in said cavity, means for detachably securing said cartridge in said cavity, a book disposed in said jacket, and an audio device removably contained in said cartridge, said audio device being constructed to provide sounds correlated to the information contained in said book.

3,181,895
QUICK-CONNECT MAGNETIC COUPLINGS

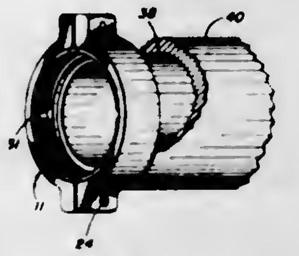
Edward J. Cator, Rochester, N.Y., assignor to Crawford Fitting Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 27, 1960, Ser. No. 58,742
2 Claims. (Cl. 285—1)



1. A coupling for use in a pressure line comprising male and female members, axial faces on each of said members, said male member having a reduced cylindrical portion projecting from said axial face, said reduced cylindrical portion being received in a co-operating bore in said female member when said members are coupled, each of said axial faces having a recess therein, a ring magnet in each of said recesses, means to secure said magnets in said recesses, said magnets being engaged each with the other when said male and female members are brought into coupling relationship, each of said magnets having a plurality of magnetic fields with the opposed magnetic fields of the engageable portions being of opposite polarity when said members are coupled and freely rotatable to a position of like polarity to be easily uncoupled, said magnets exerting a predetermined holding force to keep the members in coupled relationship with an area on the end of said cylindrical portion exposed to the line pressure serving to exert a force to uncouple said members when the line pressure exceeds the predetermined holding force of said magnets.

3,181,896
COUPLING NUT

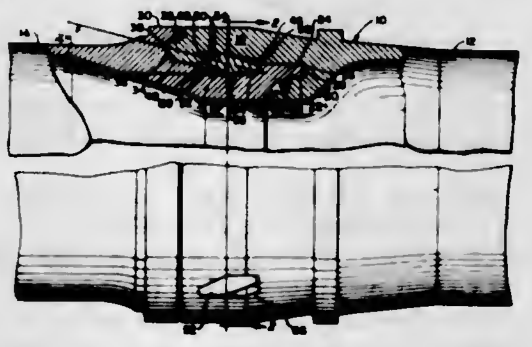
Clifford M. Russell, 1475 Eastwood Drive, Muskegon, Mich.
Filed Oct. 24, 1962, Ser. No. 233,203
2 Claims. (Cl. 285—15)



1. A heavy duty removable, adjustable hose connector capable of sealingly connecting a threaded male hose fitting directly to a sleeve and hose combination without additional fittings, comprising, a pair of identical half nuts; each of said half nuts having internal threads and a gasket retaining groove formed about its entire inner periphery to receive a gasket and seal the connection even with repeated adjustments, and shoulder means formed on said half nuts on the side opposite said threads to engage a flange on said sleeve; each of said half nuts having a pair of radially extending ears for mating with the ears of the other half nut; alignment means between said ears to match the threads of said half nuts; said ears having orifices therethrough receiving bolt connectors; a plurality of shim elements between said ears and receiving said bolts to allow repeated contractual adjustment of said half nuts to accommodate thread wear; a plurality of grooves formed in said threads, parallel with the axis of the assembled nut, and extending to a depth of substantially the base of said threads and extending axially from the wall of said groove adjacent said threads to the outer face of each half nut to scrape and collect dirt in said threads during connection and disconnection of said threads, and with at least one groove in each half nut being spaced 90° from the ears thereof to enable circumferential contraction of said half nut around the periphery thereof.

3,181,897
MECHANICAL JOINT FOR CONNECTING MEMBERS TOGETHER

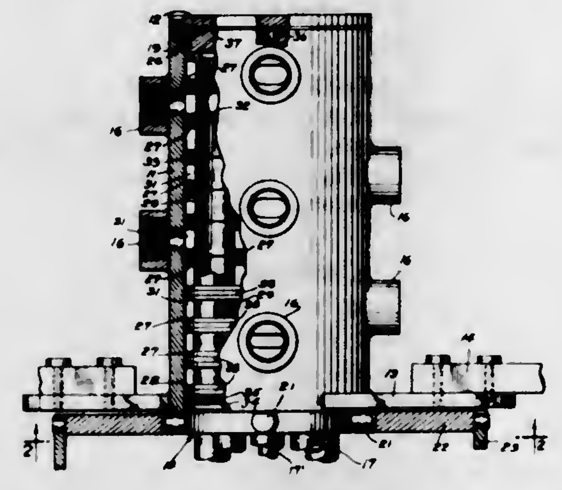
Harold A. Krayenbuhl, Fair Oaks, Edward A. Stirnaman, Carmichael, and Charles R. Smola, Sacramento, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Apr. 16, 1962, Ser. No. 188,925
1 Claim. (Cl. 285—81)



In combination, a first member, a second member coaxial with said first member, said first member having an axially extending tubular portion surrounding an end portion of said second member, said axially extending tubular portion and said end portion having continuous grooves formed in their inner and outer peripheries, respectively, for defining a common groove therebetween, said axially extending tubular portion of said first member having a plurality of openings therethrough in radial alinement with said common groove to provide access thereto, said openings being spaced about the periphery of said axially extending tubular portion and extending tangentially with respect to said common groove, a plurality of removable elongated elements equal in number to said plurality of openings lying in said common groove for retaining said first and second members in fixed relation, the rear end of each of said elongated elements protruding through the opening corresponding thereto and thereby lying in a tangential direction with respect to said common groove, and the forward outer periphery of each of said elongated elements having formed thereon latching means consisting of at least two oppositely sloping faces and the rear inner periphery of each of said elongated elements having latching means thereon formed complementary to said first mentioned latching means so that the forward and rear end portions of adjacent elongated elements are releasably interlocked in snugly fitting relationship when forced into overlapping position.

3,181,898
MULTI-CONDUIT HYDRAULIC SWIVELS

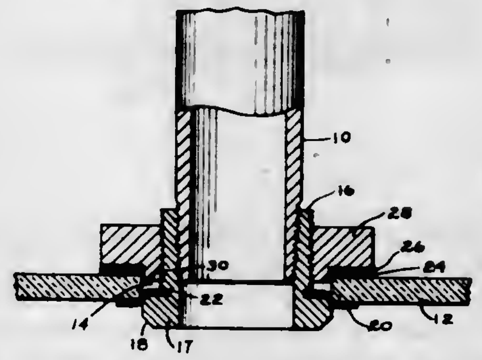
Wilburn Kelly Brown, Morton Grove, Ill., assignor to Pettibone Mulliken Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 5, 1959, Ser. No. 844,391
3 Claims. (Cl. 285—137)



1. A hydraulic swivel including a shell having a plurality of conduit fittings disposed at different locations axially of the shell and communicating with the interior of said shell through radial openings defined by the shell, and a core within the shell in relatively rotatable relation thereto; said core comprising a plurality of tubular spacer spools and a plurality of axially spaced annular plates having inter-plate spaces therebetween, said core having a plurality of longitudinally extending passageways defined by a plurality of said tubular spools disposed in axial alignment between and rigidly spacing adjacent pairs of said plates and axially aligned apertures formed in the intervening plates, said passageways communicating with conduits through apertures formed in a plate at one end of the core; different inter-plate spaces communicating with different passageways through an aperture formed in the spool defining the appropriate passageway and each inter-plate space being radially aligned and in communication with a conduit connection on the shell; the radially outer periphery of each of said plates having means forming a rotary seal with the inner surface of said shell; said spools each having on each end shoulders in radial planes, said shoulders bearing on said plates; and said spools and plates being sealed and secured with respect to one another; and said shell having a cylindrical inner surface closley spaced from said spools, the spaces between the plates being open except for said spools.

3,181,899
ASSEMBLY FOR CONNECTING PIPE TO AN APERTURED TANK

William H. McKnight, Jr., Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Continuation of application Ser. No. 84,425, Jan. 23, 1961. This application Jan. 27, 1964, Ser. No. 341,487
1 Claim. (Cl. 285—161)



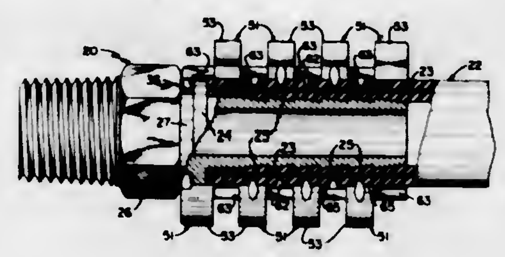
An assembly useful in connecting a length of pipe to an apertured tank comprising a bushing internally threaded for receipt of such pipe and being also externally threaded, said bushing having an outwardly extending flange at one end of substantially the same diameter as the tank aperture and passable through said aperture into the interior of the tank, a thin, flat, sheet-like, resilient sealing gasket having an outer diameter larger than said aperture and a thickness greater than the difference between the radii of said aperture and flange, said gasket being thin in relation to its breadth, closely arranged about said bushing adjacent said flange, and distortable to the extent required to pass it through such aperture for its arrangement between such flange and the aperture bordering wall region of the tank interior, means for retaining said sealing gasket about said bushing adjacent said flange, a resilient cushioning member arranged about said bushing adjacent the aperture bordering region of the tank exterior of an inner diameter substantially the diameter of the tank aperture, a rigid leveling washer arranged about said bushing adjacent said cushioning member of an inner diameter substantially the diameter of the tank aperture, a nut threaded onto said bushing clamping said sealing gasket between said flange and the aperture bordering wall region of the tank interior and also clamping said cushioning member and leveling washer between said nut and the aperture bordering wall region of the tank exterior, and shoulder means fixedly associated with said nut disposable within a portion of said aperture, said shoulder means having an outer diameter substantially that of said tank aperture for maintaining said bushing centered therewithin, whereas said assembly is self sealing when pressure is applied to the tank interior.

3,181,900
HOSE COUPLING HAVING WEDGED CLAMPING MEANS

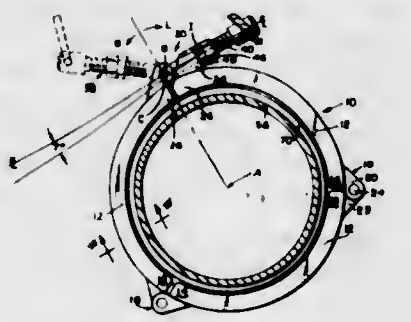
Walter W. Hayward, Jr., Denver, Colo., assignor to The Gates Rubber Company, Denver, Colo., a corporation of Colorado
Filed Sept. 19, 1963, Ser. No. 312,822
8 Claims. (Cl. 285—243)

1. In a reusable coupling for connecting an end portion of a resilient hose wherein a tubular stem is inserted in a hose end portion and a ferrule surrounds and engages said end portion, said ferrule comprising: a plurality of rigid arcuate members; axially spaced apart projections on the lateral edge portions of said arcuate members, said projections having enlarged end portions and disposed

from one another whereby said projections mesh with projections on adjacent members; circumferentially extending ribs on the inner surface of said arcuate members circumferentially extending onto said projections, said ribs having lateral edge portions displaced circumferentially from said lateral edge portions of adjacent ribs; means to receive pressure on the peripheral surface of adjacent rigid arcuate members to force said arcuate members into an encompassing relation around said resilient hose; radially inclined faces on the rear surface of said enlarged end portions of said projections said faces defining a plane which converges in a radially outward direction toward a plane defined by opposed radially inclined faces on adjacent meshing projections; freely insertable and removable locking pins engaging said inclined faces to align and lock said arcuate members in an encompassing relation around said hose.

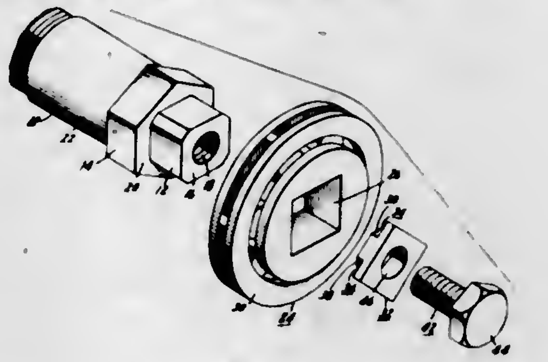


3,181,901
INSTANT RELEASE CONNECTION WITH A REDUCED EFFECTIVE ANGLE OF FRICTION
John D. Watts, P.O. Box 2291, Houston, Tex.
Filed May 3, 1962, Ser. No. 192,278
6 Claims. (Cl. 285—367)



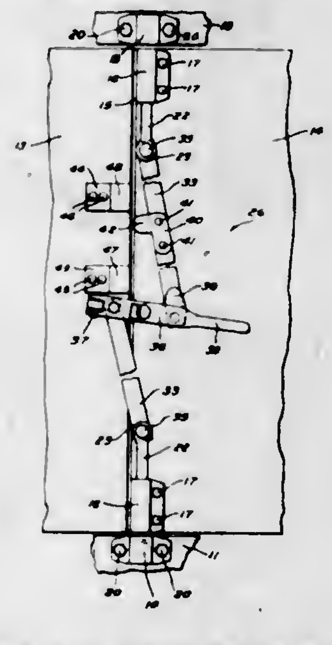
1. An instant release connection for peripheral engagement with adjacent flanged ends of pipe and the like comprising: a plurality of arcuate segmental clamping elements pivotally connected to define an annular clamping assembly, said clamping elements having a circumferential recess for peripheral engagement with said flanged ends and having adjacent free ends; a shoulder member extending from one of said free ends; a threaded connecting bolt pivotally secured at one end to said other free end for movement about an axis substantially parallel to the longitudinal axis of the clamping assembly; an adjusting member threadably secured to said connecting bolt; a releasable locking member carried by said connecting bolt between the pivotal axis thereof and said adjusting member, said shoulder member and locking member having complementary arcuate bearing surfaces formed thereon and aligned to freely engage one another in overlapping, interlocked relationship, said bearing surfaces having a common axis of curvature offset towards the longitudinal axis of said annular clamping assembly with respect to the pivotal axis of said connecting bolt an amount sufficient to reduce the effective angle of friction therebetween when said bearing surfaces are engaged.

3,181,902
SPROCKET RETAINING MEANS
William H. Aitken, Park Forest, Ill., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Jan. 23, 1962, Ser. No. 168,119
6 Claims. (Cl. 287—53)



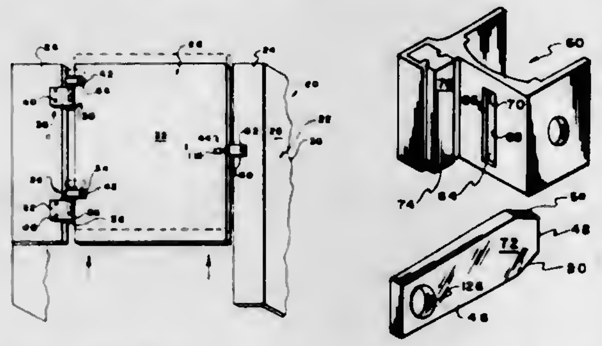
1. In a locking means for mounting a member on a shaft, the combination comprising, a shaft end portion, an opening through said member in which said end portion moves axially to mount said member on said end portion, means limiting inward axial movement of said member on said end portion, means preventing relative rotational movement of said shaft and said member, retaining means clamped against said shaft end portion by a clamping means, said retaining means including flange portions spaced from said member when said member is in abutting relationship with said inward limiting means, thus permitting limited outward axial movement of said member on said shaft end portion.

3,181,903
DOOR FASTENER
Roland J. Olander, La Grange, Ill., assignor to W. H. Miner, Inc., Chicago, Ill., a corporation of Delaware
Filed June 18, 1962, Ser. No. 203,096
5 Claims. (Cl. 292—5)



1. For use with a door frame having upper and lower elements and first and second doors each having a vertical edge hinged to the frame, the combination of vertically movable bolt means carried on the first door one each at the top and bottom thereof, first keeper means mounted on the upper and lower elements of the frame and adapted to receive said bolt means, a toggle lever pivotally mounted intermediate of its ends to the first door, toggle bars connected at their one ends to the ends of said toggle lever and connected at their other ends so said bolt means, said toggle lever upon pivotal movement being adapted to move said toggle bars whereby said bolt means are moved into and out of engagement with said first keeper means, said bolt means when in locking engagement with said first keeper means serving to retain the top and bottom of the first door within the plane of the frame, second and third keeper means mounted on the second door intermediate of the top and bottom thereof, said second and third keeper means each having a wall parallel to and spaced from the plane of the second door, said toggle lever having a lateral projection at one end thereof, at least one of said toggle bars having a lateral projection intermediate of the ends thereof, said lateral projections of said toggle lever and said toggle bar being adapted to be swung into and out of locking engagement with said second and third keeper means intermediate said walls of said second and third keeper means and the second door as said bolt means is moved into and out of locking engagement with said first keeper means, and said lateral projections when in locking engagement with said second and third keeper means serving to retain the intermediate parts of the first and second doors together within the plane of the frame.

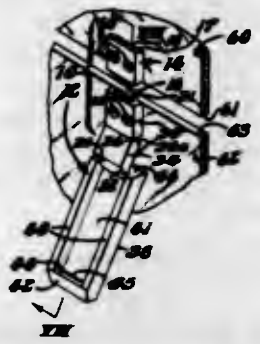
3,181,904
LATCH WITH EMERGENCY RELEASE MEANS
James V. Fallarino, Bayside, and Edward Buksbaum, Oceanside, N.Y., assignors to Metpar Steel Products Corporation, Westbury, N.Y., a corporation of New York
Filed Nov. 7, 1963, Ser. No. 322,159
6 Claims. (Cl. 292—93)



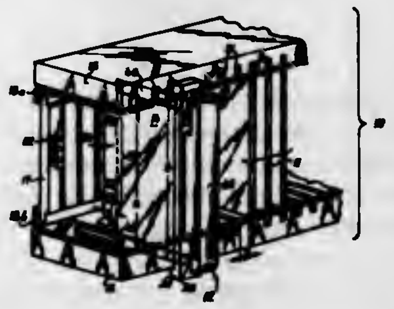
1. In an emergency release for a partition door lock set, the combination of a door comprising latch construction having a bolt mounted for linear movement from a first position within the door to a second position protruding from the door, said latch bolt comprising an upper edge with at least a portion thereof which protrudes from the door in the said second position having a bevel, and said door having attached to it a leaf of at least one hinge comprising a pair of leaves connected by pintle means, and in which said pintle means are adapted for both radial and axial movement of the said leaves with relation to each other; whereby when the said latch bolt is in the said second position and the said door is moved axially with relation to the said pintle means in the direction of the said upper edge of the said latch bolt, the said bevel of the said latch bolt is adapted to engage strike means and be thereby forced back from the said second position to the said first position.

3,181,905
DRAW PULL CATCH
Robert H. Bisbing, Upper Darby, Pa., assignor to South Chester Corporation, Lester, Pa., a corporation of Delaware
Filed Apr. 2, 1963, Ser. No. 270,067
12 Claims. (Cl. 292—109)

1. In a catch for securing two members together, the combination comprising a part adapted for being affixed to one of said members and a one-piece part including base, locking and intermediate segments, said base segment being adapted for being affixed to the second one of said members, said intermediate segment being flexibly connected to said base and locking segments for pivotal movement of said segments about transverse axes, and when in the locked condition said intermediate segment being disposed substantially in coplanar relation to said base segment and said locking segment being disposed in overlying relation to said base and intermediate segments and to the first mentioned part, said locking segment being detachably connected to the first mentioned part, and the flexible connection between said intermediate and locking segments being closer to said second member than the flexible connections between said intermediate and base segments.

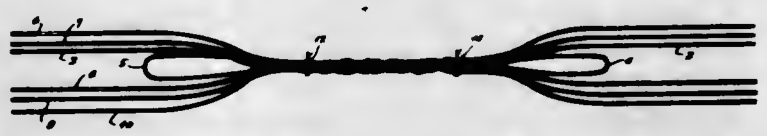


3,181,906
HAND TOOL FOR EXTRACTING PRINTED CIRCUIT CARDS FROM LIBRARY RACKS
Ralph A. De Rose, Villa Park, and Joseph M. Leo, Evergreen Park, Ill., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed May 22, 1961, Ser. No. 111,507
10 Claims. (Cl. 294—16)



1. An extractor tool for removing printed circuit cards from card library racks comprising base plate means, handle means mounted on one side of said base plate, extractor means extending from the opposite side of said base plate, said extractor means having hook means at the end furthest from said handle, force multiplying linkage means operated responsive to an actuation of said handle means toward said base for moving said extractor means in a direction opposite the direction of motion of said handle to shorten the distance from said hook means to said base plate means.

3,181,907
ROPE SLINGS
John J. O'Donnell, 1139 Oran, St. Louis, Mo.; Mabel O'Donnell, surviving spouse of said John J. O'Donnell, deceased
Filed Aug. 9, 1962, Ser. No. 215,875
2 Claims. (Cl. 294—74)



1. In a sling having a body portion composed of a plurality of side by side ropes twisted together for a portion of their length between their opposite ends to form a body portion for said sling with ropes projecting

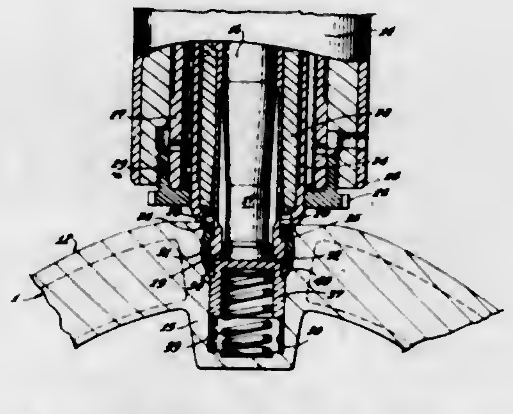
at each end of said body portion, and eyes for said sling formed by twisting said projecting ropes, the improvement comprising,

(*a*) a core for each eye formed by rope doubled upon itself and extending through the body portion of said sling to provide a projecting bend at each end of the body portion for the rope core for each eye and free ends projecting beside each bend, and

(*b*) said projecting ropes and free ends being divided into groups at each end of said body portion and wrapped about one of said bends in a consecutive manner and in opposite directions to form eyes of cable-laid ropes.

3,181,908
SINGLE-POINT LAUNCHING DEVICE

John R. Clark, Rolling Hills Estates, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Sept. 28, 1961, Ser. No. 141,410
4 Claims. (Cl. 294—83)

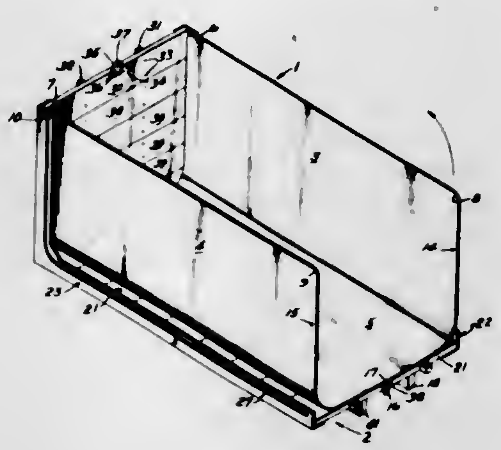


1. A single-point launching device comprising an airborne store to be launched, a launcher to carry said store, a socket assembly substantially at the center of gravity in said store containing a self-aligning bearing universally movable in said socket assembly, holding means in said bearing whereby said store is suspended by said bearing, releasable tension means in said launcher fitting into said holding means, and sway brace means on said launcher bearing on the outer surface of said store to steady it in installed position, said self-aligning bearing allowing sufficient rocking and pitching of said store while said sway brace means are being tightened to prevent misalignment stresses between said store and said launcher.

3,181,909
CONVERTIBLE TRUCK BOX

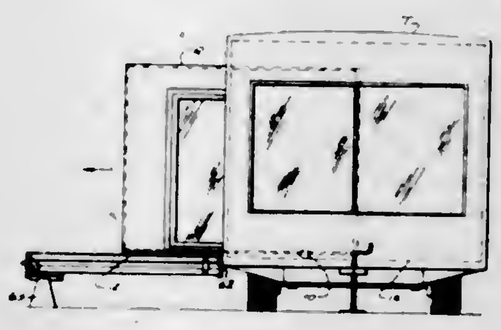
Glenn E. Wise, 2415 39th Place NW., Washington, D.C.
Continuation of abandoned application Ser. No. 47,075, Aug. 2, 1960. This application Mar. 23, 1964, Ser. No. 354,509
2 Claims. (Cl. 296—10)

1. In a load-carrying vehicle, in combination: a bed including an upper surface; a box; said box including a pair of spaced vertically extending opposite side portions of substantially equal lengths and height having upper and lower ends, and a connecting portion extending between and joined to the lower ends of said side portions, said connecting portion being substantially coextensive in length with said side portions and having a bottom surface; and means for guiding said box to and fro between a first upright load-carrying orientation wherein the bottom surface of said box engages said upper surface of said bed and supports said box atop said bed and a second inverted load-protecting orientation wherein said upper ends of said side portions engage said upper surface of said bed and supports said box atop said bed, said means including track-forming means attached to said bed and track-following means attached to said box, said track-forming means comprising a pair of spaced mirror-image tracks each of which includes a horizontal run continuing at one end in a vertical run, one of said tracks being located outboard of and parallel to each of said side portions, said track-following means comprising a single track follower extending outwardly from the outboard side of each side portion, one of said track followers being continuously engaged with one of said tracks and the other of said track followers being continuously engaged with the other of said tracks during movement of said box from said first orientation to said second orientation.



3,181,910
PLATFORM FOR EXTENSIBLE TRAILERS

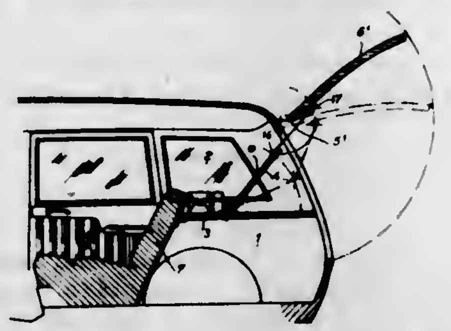
Erwin S. Thomas, 1987 Via Santiago, Corona, Calif.
Filed Jan. 29, 1962, Ser. No. 169,262
2 Claims. (Cl. 296—23)



1. A trailer platform of the type supported by pillar means at its outer end for receiving and supporting the extensible housing section of trailers having a main housing portion on a frame and a laterally extensible housing section on rollers, comprising, a pair of spaced, longitudinal frame members each capable of connection at their inner ends by attachment bolts to the trailer frame and connected at their outer ends by a spacer bar, a pair of spaced, longitudinal platform members each superimposed on said frame members and connected at their inner ends to the inner ends of said frame members by a pair of pivoted levers and connected at their outer ends to the outer ends of said frame members by a second pair of pivoted levers, said platform members having runways on their top sides to receive said rollers, a pair of handle members each rigidly mounted between said second pair of pivoted levers for raising and lowering said platform members, and a pair of detachable stabilizer members each diagonally connected from the outer ends of said platform members to the outer ends of said frame members to maintain the platform members in raised position.

3,181,911
MEANS FOR CONVERTING A TAIL-GATE ESTATE CAR INTO A LIGHT DELIVERY VAN OR A PASSENGER CAR

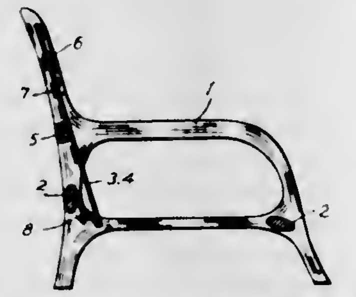
Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed June 19, 1963, Ser. No. 288,984
Claims priority, application France, June 26, 1962, 902,009, Patent 1,334,445
5 Claims. (Cl. 296—37)



1. In an automobile having at least one seat and a tailgate and a rear compartment behind the rearmost seat, partition means extending substantially horizontally between said rearmost seat and said gate and dividing said compartment into a lower and an upper chamber, means detachably securing said partition means in said dividing position, said partition means being formed of a first and a second panel, link means connected between said tailgate and said second panel and being provided to pivot said second panel in an upward direction with respect to said first panel when said tailgate is opened.

3,181,912
FRAME FOR UPHOLSTERY IN PIECES OF SITTING FURNITURE

Jens Georg Martinus Nielsen, 27 Ved Bommen, Gentofte, Denmark
Filed Aug. 23, 1963, Ser. No. 304,024
5 Claims. (Cl. 297—445)

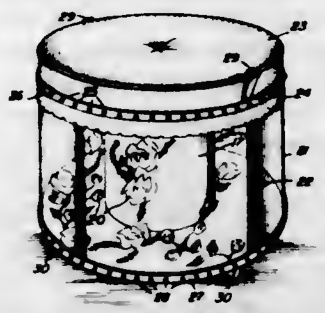


1. A frame for supporting upholstery in a standing piece for sitting furniture, comprising a framework composed of longitudinal and transverse frame members of elastic spring material; brackets for rigid mounting to said standing piece; said longitudinal frame members anchored in said brackets at places lying proximate the middle of the longitudinal members, said transverse members interconnecting the free ends of the longitudinal frame members and being free of the standing piece.

3,181,913
DISPLAY HASSOCK

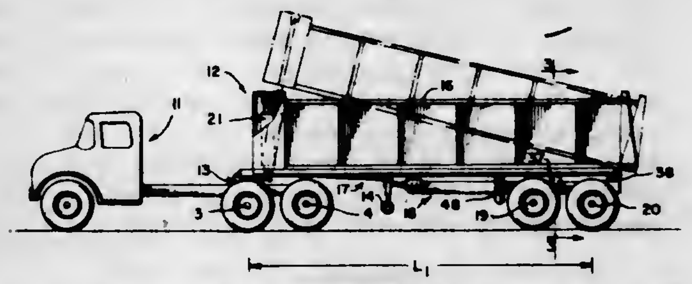
Lewis Guido, 6406 C St., Seat Pleasant, Md., and Earl S. Wedding, 4103 Crittenden St., Hyattsville, Md.
Filed Mar. 27, 1964, Ser. No. 355,206
7 Claims. (Cl. 297—462)

1. A hassock comprising a supporting member having a central core with an end plate on each end of said core, said end plates being larger transversely than said core with portions overhanging exteriorly of said core, means securing said core and end plates in assembled relation, a cushion mounted on one of said end plates, a transparent side wall casing separate from said cushion and extending around said end plates and spaced outwardly from said core providing an enclosure therebetween, means for removably securing said casing to said end plates, and decorative members mounted within the enclosure of said casing around said core.



3,181,914
TRUCK ASSEMBLY

Carl E. Humes, 907 Franklin Ave., Steubenville, Ohio
Filed Mar. 5, 1963, Ser. No. 262,976
3 Claims. (Cl. 298—17)



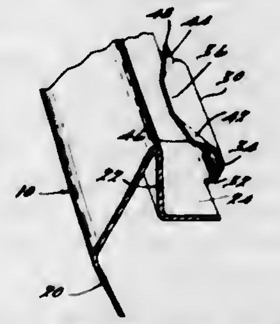
1. A dump truck comprising a dump body that is adapted to be raised and lowered at one end for dumping a load from the rear of said body, a chassis having a main frame and a sliding sub-frame, means for mounting said dump body upon said main frame, means for mounting rear wheels upon said sliding sub-frame, means for locking said sub-frame in one position axially of said main frame so that said rear wheels are beneath said dump body, and means for locking said sub-frame in another position axially of said main frame so that said rear wheels are beyond the rear of said dump body.

ERRATUM

For Class 298—20 see:
Patent No. 3,181,761

3,181,915
WHEEL COVER

Edward G. Spisak, Wayne, Mich., assignor to Gar Wood Industries, Inc., Wayne, Mich., a corporation of Michigan
Filed Mar. 10, 1961, Ser. No. 94,737
1 Claim. (Cl. 301—37)



A wheel cover for disposition on the axially outer face of a vehicle wheel having an annular axially extending wheel flange, said wheel cover comprising:

an annular axially extending retainer flange receivable radially inwardly of the wheel flange on the vehicle wheel, and a plurality of circumferentially spaced cantilevered retaining fingers extending from an axially inner edge portion of said retainer flange, each of said retaining fingers having

a cantilevered axially inwardly extending portion of uniform circumferential width,

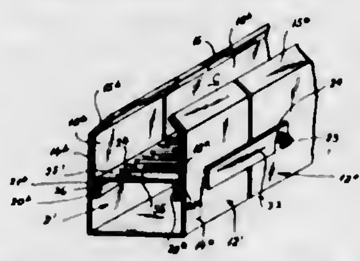
a reentrantly folded portion at the inner end of said axially inwardly extending portion of circumferential width substantially equal to the width of said axially inwardly extending portion, and

a cantilevered axially outwardly extending portion of circumferential width substantially equal to said axially inwardly extending portion and extending from said reentrantly folded portion in radially outwardly spaced generally parallel relation to said retainer flange,

said axially outwardly extending portion having a generally rectangular axially outer end thereon,

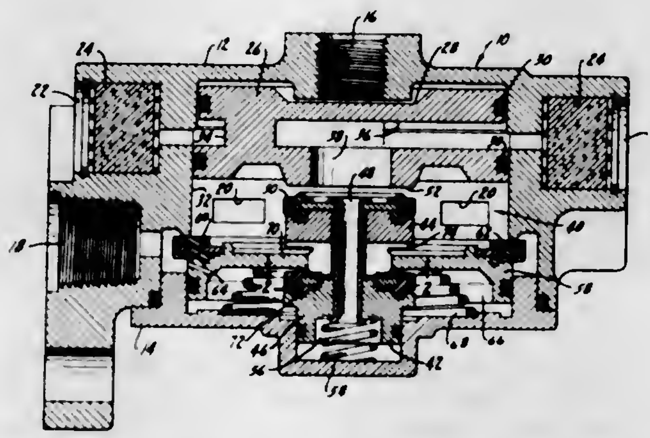
and a pair of generally triangular circumferentially spaced angularly radially and axially outward and oppositely circumferentially extending teeth defined by the adjacent normally orientated axially and circumferentially extending edge faces on said axially outer end portion, the junctures of the axially and circumferentially extending edge faces on said outer end portion defining relatively sharp points at the apexes of said teeth, respectively, engageable with the axially extending flange on the vehicle wheel in biting engagement, whereby said retaining finger comprises a pair of radially spaced cantilevered portions spaced axially inwardly from said retainer flange.

3,181,916
AIR CONVEYOR OR PNEUMATIC CONVEYOR FOR LIGHT MATERIALS, PLASTICS ETC.
Ralph Epstein, 12 Roger Ave., Lincroft, N.J.
Filed Nov. 4, 1963, Ser. No. 321,142
2 Claims. (Cl. 302—29)



1. A conveyor assembly comprising a long open top trough made of thin, light sheet metal material having high heat conductivity, said trough having a flat bottom wall and two integrally formed upstanding vertical side walls at lateral edges of the bottom wall, means to direct light weight articles through the open top of the trough, said side walls being bent inwardly at their upper edges to define two inclined side walls for holding the articles in the trough while permitting air to circulate through the open top, inner sides of said walls being bent to define two grooves extending substantially the entire length of the trough and located a fixed distance above said bottom wall; and a partition made of thin, light sheet metal material constituted by wall and a pair of depending side walls, the side walls of the partition being engaged removably in said grooves, said partition wall having a series of transverse slits therein spaced apart longitudinally of said partition wall to define passages for air, said partition walls with the bottom and side walls of the trough defining a duct, said duct extending substantially the entire length of the trough, said partition wall and said side walls of the trough defining a channel above said duct extending substantially the entire length of the trough, baffles at opposite ends of the duct; and means for blowing a forced air stream into the duct at one end thereof, whereby air streams pass through said slits and along said channel to move said articles along the trough from front to rear ends thereof, said slits having lips at rear edges thereof bent inwardly and forwardly of the duct toward said bottom wall in planes inclined not more than 10° to said top wall so that said air streams pass along the bottom of said channel in a direction rearwardly of said channel, one of said baffles at the rear one of said baffles at the rear end of the duct being curved inwardly at its upper end for deflecting air toward the forward end of the duct, the other one of said baffles extending upwardly at the forward end of the duct into said channel and bent rearwardly to deflect articles downwardly at the front end of the channel.

3,181,917
RELAY VALVE
Harold L. Dobrikin, Highland Park, and Charles Horowitz, Chicago, Ill., assignors to Berg Airlectro Products Co., Chicago, Ill., a corporation of Illinois
Filed July 26, 1962, Ser. No. 212,542
7 Claims. (Cl. 303—40)



1. In a relay valve a housing, a pressure inlet in said housing, a pressure outlet in said housing, a seat between said pressure inlet and said pressure outlet, a valve piston in said housing, said valve piston being held against said seat by a first yielding means and by pressure delivered to one side of said valve piston from said pressure inlet, a passage through said valve piston, a pilot piston positioned in said housing to control said passage and having a diameter less than that of said valve piston, a second yielding means urging said pilot piston toward its passage-closing position, and means for operating said relay valve including a ported piston freely reciprocal in said housing and movable against said pilot piston in response to service pressure entering said housing, said freely reciprocal piston having a diameter less than that of said valve piston but greater than that of said pilot piston, initial movement of said freely reciprocal piston being effective to move said pilot piston toward its passage-open position to equalize pressures on opposite sides of said valve piston, continuing movement of said freely reciprocal piston being effective to cause said pilot piston to engage said valve piston and to move said valve piston off said seat.

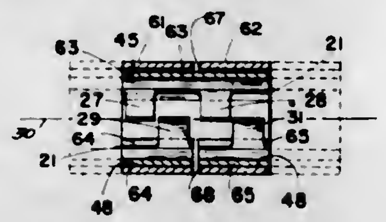
3,181,918
FLEXURAL PIVOT
Henry Troeger, Cooperstown, N.Y., assignor to The Bendix Corporation, Utica, N.Y., a corporation of Delaware
Filed June 29, 1962, Ser. No. 206,462
6 Claims. (Cl. 308—2)

1. A flexural pivot comprised of:

an elongated floating member having first ends of a first crossed flat spring means attached thereto and first ends of a second crossed flat spring means attached thereto and spaced longitudinally from said first crossed spring means,

mounting means for a limitedly-rotatable device connected to the other ends of said first crossed spring means,

support means for attachment to a fixed support device connected to the other ends of said second crossed spring means and being free of any connection to said mounting means except for said spring means and said floating member,

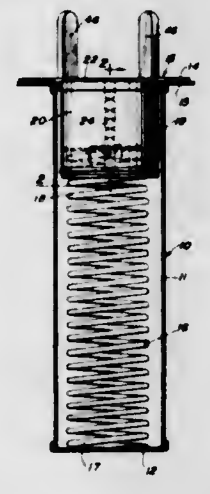


said crossed spring means providing for said mounting means an axis of rotation along the projected line intersecting said crossed spring means,

said floating member having structure spaced from said mounting means and support means to provide respectively a first travel gap and a second travel gap,

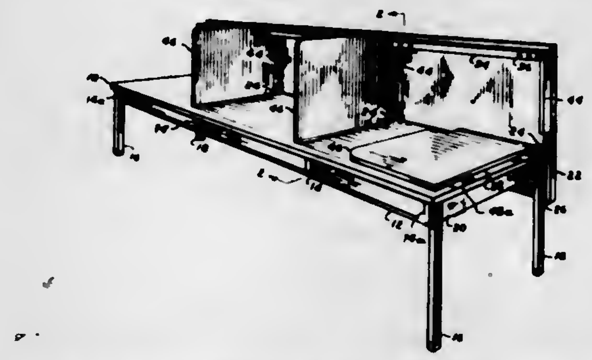
said travel gaps providing an angular clearance for said mounting means, whereby said mounting means can be rotated about said axis.

3,181,919
TUBULAR DISH-DISPENSING APPARATUS
Robert J. Shelley, 7009 SW. 62nd Court, Miami, Fla.
Filed Mar. 31, 1964, Ser. No. 356,121
8 Claims. (Cl. 312—71)



1. A dish-dispensing apparatus comprising a tubular housing having a closed bottom wall and an open upper end portion, a coil spring arranged in the said tubular housing and having the lower end portion thereof resting upon the said bottom wall of said tubular housing, and a dish-dispensing and dish-supporting head unit arranged in the upper end portion of the said tubular housing and resting upon the said upper end portion of the said coil spring, said dish-dispensing and dish-supporting head unit comprising a tubular body having an open lower end portion adapted to receive the said upper end portion of the sail coil spring and having a closed top wall providing a dish-supporting platform, a vertically extending supporting member arranged centrally within the said tubular housing of the said dish-supporting and dish-dispensing head unit and having its upper end portion attached to the said top wall or dish-supporting platform thereof, said centrally arranged vertically extending supporting member having a series of vertically spaced annular latching recesses in the form of a series of vertically spaced annular latching grooves formed at vertically spaced intervals in the said vertically extending supporting member, an adjustable plate member arranged within the said tubular housing of the said dish-supporting and dish-dispensing head unit and adjustable vertically therein relative to and upon the said centrally arranged vertically extending supporting member, means including a manually operable latch plate member slidably mounted upon the said adjustable plate member, upon the upper surface thereof, and including a latching portion selectively engageable in any one of the said latching recesses in the said centrally arranged vertically supporting member for latching the said adjustable plate member in a pre-selected position upon said centrally arranged vertically extending supporting member between the said open lower end portion of the said tubular housing of the said dish-supporting and dish-dispensing head unit and the said top wall or dish-supporting platform thereof, and the said manually operable latch plate member having a latching slot formed therein and including a portion adapted to receive the said centrally arranged vertically extending supporting member at its maximum diameter and the said latching slot having a reduced portion adapted to receive those portions of the said centrally arranged vertically extending supporting member which define the marginal edge portions of the said spaced annular latching grooves therein.

3,181,920
CARREL-DESK STRUCTURE
Alan Carleton Burr, East Norwalk, Conn., assignor to Howe Folding Furniture Inc., New York, N.Y., a corporation of Connecticut
Filed Mar. 15, 1963, Ser. No. 265,380
16 Claims. (Cl. 312—223)



15. A folding structure adapted for use as a carrel comprising, a top, a back, support means for the top and back and partition members hinged on the top, and means for inter-relating the top partition members, back and support means for movement of the partition members back and support means between an operative position in which the partition members, the support means and the back are substantially normal to the top and the partition members are also normal to the back, and a position in which the top partition members, back and support means are disposed in adjacent and substantially parallel planes.

3,181,921
SAFETY AND CONTROL MECHANISM FOR POWER-OPERATED STRUCTURE
Fred W. Moore, Louisville, and Robert C. Pressley, Jr., Anchorage, Ky., assignors to General Electric Company, a corporation of New York
Filed Feb. 3, 1964, Ser. No. 341,877
9 Claims. (Cl. 312—223)

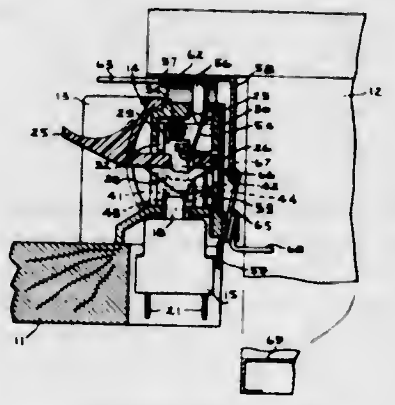
1. For use with a power-operated device, a combination control and safety mechanism to operate a control switch for the device comprising:

(*a*) a manually-operated first member to close the switch to start the device,

(*b*) a second member to open the switch to stop the device when said second member is in a first position, (*c*) biasing means to bias said second member to said first position,

(*d*) means interconnecting said first member and said second member so that movement of said first member to close the switch causes said second member to move to a second position and comprising:

- (*aa*) a trip member pivoted intermediate its ends,
- (*bb*) one end of said trip member being engageable by said first member, and
- (*cc*) the other end of said trip member being engageable by said second member,
- (*dd*) whereby movement of said first member to



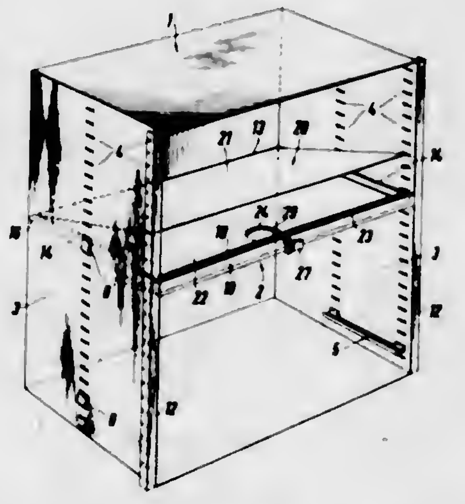
close the switch effects pivoting movement of said trip member to move said second member to said second position and movement of said second member to said first position resets said first member,

(*e*) a latch engaging said second member to secure said second member in said second position, and

(*f*) a pressure-responsive release mechanism to disengage said latch from said second member,

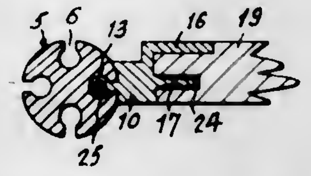
(*g*) said biasing means being effective, upon disengagement of said latch from said second member, to move said second member to said first position to open the switch and stop the device.

3,181,922
FILING APPARATUS
David Henry McBean, 4 Tilney St., Park Lane, London W. 1, England
Filed Aug. 9, 1962, Ser. No. 217,250
Claims priority, application Great Britain, Aug. 14, 1961, 29,227/61
3 Claims. (Cl. 312—234.1)



1. Filing apparatus comprising a cabinet closed by walls except at the front, at least one filing tray slideably supported therein, runners attached to side walls of said cabinet for supporting said tray, each of said runners being provided with a horizontal surface and a pair of upstanding lugs one at each end of said surface which removably engage a corresponding pair of slots provided in the side walls of the cabinet, the upper and lower portions of each of said upstanding lugs resting against the outer and inner faces respectively of the side walls of the cabinet in order to allow the normally horizontal surface of the runners to be rotated upwardly to provide extra clearance between two runners attached to the same side wall, said tray being provided with a front edge member of transparent material, a retainer bar and releasable locking means rigidly positioning said retainer bar behind said edge member such that information written on an indexing strip of a folder secured between said bar and said edge member may be seen without withdrawing said tray from said cabinet.

3,181,923
FURNITURE ASSEMBLING DEVICE
Jacques Silas Guillon, Westmount, Quebec, and Christen Wilhner Sorensen, Montreal, Quebec, Canada, assignors to Art Woodwork Limited, Montreal, Quebec, Canada
Filed Feb. 19, 1962, Ser. No. 174,154
3 Claims. (Cl. 312—255)



1. In an article of furniture or the like, in combination, one or more cylindrical supporting leg or post members of extruded manufacture, each of the said post members having four longitudinal grooves of circular cross section located at 90 degree intervals to each other in the plane of the cross section of each leg or post member and extending the full length of the leg or post member, each of the said grooves having a restricted lip opening at the surface of the leg or post member, one or more assembly members each having a locking rib of circular cross section extending the full length of the assembly member at one edge thereof for sliding engagement in a longitudinal groove of said leg or post member, each of the said locking ribs having a longitudinal groove of generally circular cross section extending the full length thereof, the said latter groove having a restricted lip opening and forming a pair of spring members engaging with adjacent surfaces in the longitudinal groove of the said leg or post members when the said assembly member is slidably engaged therewith, and a taper pin axially aligned in one end of the longitudinal groove of the said locking rib, the said taper pin expanding the end portions of the said spring members to frictionally lock the said assembly member in a set position lengthwise of the leg or post member.

3,181,924
RACK ARRANGEMENT FOR DISHWASHER
Lauren W. Guth, 3210 Rock Creek Drive, Louisville, Ky.
Filed Jan. 17, 1964, Ser. No. 340,589
2 Claims. (Cl. 312—330)

1. A dishwasher comprising:

(*a*) a washing compartment,

(*b*) an upper rack disposed within said compartment,

(*c*) said upper rack having a first part formed to provide a relatively large vertical dish-receiving space between said upper rack and the top of said compartment,

(*d*) means on said first part of said upper rack to support large dishes in an attitude to facilitate washing thereof,

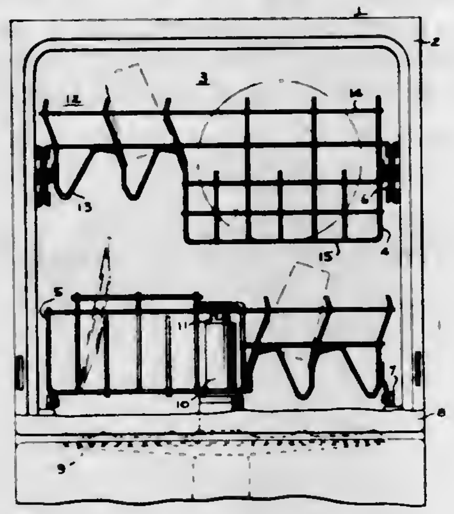
(*e*) said upper rack having a second part formed to provide a relatively small vertical dish-receiving space between said upper rack and the top of said compartment,

(*f*) means on said second part of said upper rack particularly adapted to support glasses, cups and small dishes in an attitude to facilitate washing thereof, and

(*g*) a lower rack spaced below said upper rack and disposed within said compartment,

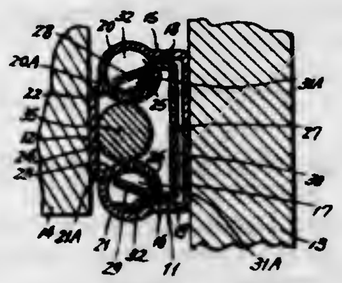
(*h*) said lower rack having means directly below said first part of said upper rack particularly adapted to support glasses, cups and small dishes and further having means directly below said second part of said upper rack to support large dishes,

(*i*) each of said means on said lower rack being formed to support said glasses, cups and dishes in an attitude to facilitate washing thereof.



3,181,925
DRAWER SLIDE
Henry C. Fischer, 257 Oaklee Village, Baltimore, Md.
Filed Feb. 13, 1962, Ser. No. 173,000
5 Claims. (Cl. 312—339)

1. A drawer slide construction comprising an elongate outer channel-shaped slide member, said slide member having a pair of side walls, each of said side walls having an arcuate bearing track formed along the outer marginal portion thereof, a floating carrier slidably mounted within the side walls of said outer slide member, said carrier including a channel-shaped member having side flanges spaced from the side walls of said outer slide member, a plurality of ball bearings carried by each flange of said carrier, each of said flanges having formed therein a bearing retainer defined by inwardly bent strike-up portions for retaining and preloading each of said ball bearings between the bearing track formed in the side walls of said outer slide member and the strike-up portions of said carrier, the outer surface of said ball bearings projecting beyond the free edge of the carrier flanges, and an inner slide member slidably carried between the flanges of said carrier, said inner slide including a channel-shaped member having side walls each formed with a complementary bearing track therein, the complementary bearing track of said inner slide being disposed in rolling engagement with the ball bearings carried by said carrier, means formed in said outer slide to form a stop for limiting movement of said carrier relative to said outer slide member, and the arcuate bearing track along the respective side walls of the outer slide member extending about a substantial portion of circumference of the bearing disposed in rolling engagement therewith and beyond the free edges of the carrier flanges carrying said bearings.



CHEMICAL

3,181,926
COLORING OF POLYMERIC SHAPED STRUCTURE SURFACES
Robert Marion Busche, North Graylyn Crest, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 20, 1961, Ser. No. 153,697
9 Claims. (Cl. 8—4)

1. An abrading-coloring process for shaped polymeric surfaces comprising subjecting shaped polymer surface to a high velocity bombardment of finely-divided abrasive particles suspended in a carrier liquid which contains therein an organic polymer-dye of a type selected from the group consisting of direct, vat, solvent, disperse, acid and base type organic dyes.

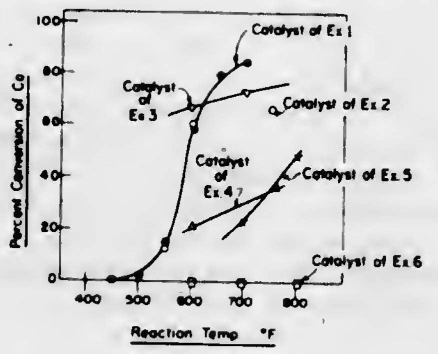
3,181,927
PROCESS OF WET AND DRY WRINKLEPROOFING CELLULOSE FABRIC WITH AN AMINOPLAST RESIN AND ZINC CHLORIDE
Philip B. Roth, Somerville, and Leonard Brooks Hallows, New Brunswick, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Nov. 16, 1959, Ser. No. 852,975
2 Claims. (Cl. 8—116.3)

1. An aminoplast crease-proofing process for treating cellulose textile fabrics, at least 50% of the fibers of which are selected from the group consisting of cotton and viscose rayon, which consists in applying to said fabrics a single aqueous solution containing a water-soluble aminoplast textile crease-proofing resin and also containing from about 10% to about 50% by weight of zinc chloride, based on the volume of the aqueous solution without the aminoplast resin, said application being such as to impart from 2% to about 15% of said water-soluble aminoplast resin to the cellulose textile fabric based on its dry weight, and thereafter heating the fabric containing the aminoplast resin at a temperature and for a time period sufficient to cure said resin and within the range of from about 225° F. for about 2 minutes to a minute and a half at 350° F. after the fabric has been dried to impart a high order of wet and dry wrinkle recovery.

3,181,928
PROCESS FOR PURIFYING GASES
Vincent J. Frilette, Erlton, N.J., and Paul B. Weisz, Media, Pa., assignors to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Jan. 26, 1960, Ser. No. 4,797
2 Claims. (Cl. 23—2)

2. A process for catalytically oxidizing exhaust fumes from an internal combustion engine which comprises contacting the same at a temperature within the approximate range of 200 to 1500° F., with an atmosphere containing free oxygen in the presence of a catalyst of a solid porous crystalline aluminosilicate having rigid three-dimensional networks made up of unit cells characterized by the

substantial absence of change in unit cell dimensions upon dehydration and rehydration and possessing a uniform effective pore diameter within the approximate range of 3 to 15 Angstrom units.



3,181,929
METHOD OF INHIBITING CORROSION IN PURIFYING GASES

Joseph H. Field and Daniel Bienstock, both of Pittsburgh, Pa., assignors to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed Dec. 1, 1961, Ser. No. 157,053
11 Claims. (Cl. 23—3)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. In the process for removing slightly acidic gases selected from the group consisting of carbon dioxide and hydrogen sulfide from gas mixtures with aqueous potassium carbonate solutions, the method of inhibiting the corrosion of steel surfaces in contact with said solution comprising the step of incorporating in said potassium carbonate solution a small amount of a metavanadate salt at least slightly soluble therein.

3,181,930
PROCESS FOR PRODUCING ANHYDROUS AMMONIUM CARNALLITE

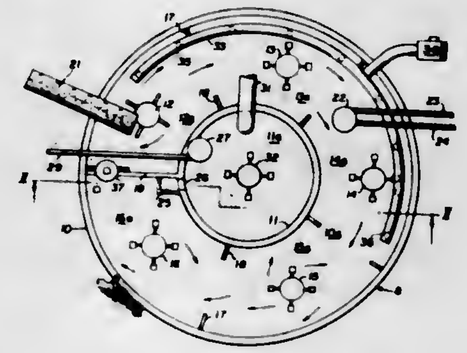
Orrie C. Olsen, Baton Rouge, La., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
No Drawing. Filed Sept. 17, 1962, Ser. No. 224,222
17 Claims. (Cl. 23—91)

1. Method for producing anhydrous ammonium carnallite which comprises forming a slurry of hydrated ammonium carnallite in a water-immiscible organic liquid partially vaporizable at the temperature of operation, heating and agitating said slurry to a temperature below that at which said carnallite melts and coalesces, continuing said heating and agitation until at least about 25% of the combined water is removed from said carnallite, then heating said partially dehydrated carnallite at a still higher temperature but below the temperature at which ammonia and hydrogen chloride are substantially evolved to remove the remainder of said combined water and produce a dehydrated ammonium carnallite containing not over about 5% water, in said last-mentioned heating step said partially dehydrated carnallite being in slurry in a water-immiscible liquid partially vaporizable at the temperature of heating.

3,181,931
PROCESS FOR PRODUCING PHOSPHORIC ACID

William C. Weber, Westport, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 173,919
Claims priority, application Great Britain, Feb. 17, 1961, 5,887/61
6 Claims. (Cl. 23—165)

1. Process for continuously producing phosphoric acid by reacting phosphate rock with sulfuric acid comprising the steps of, establishing a confined substantially unobstructed cyclic stream of a reaction slurry obtained by acidulating phosphate rock with acid, establishing along said cyclic stream a plurality of successive continuous reaction zones comprising at least a feed zone wherein phosphate rock and acidulating acid is introduced into said stream, an intermediate reaction zone wherein the reaction between said rock and said acid initiated in said feed zone is permitted to continue, and a discharge zone wherein reaction slurry is discharged from said stream, said discharge zone being preferably adjacent said feed zone but functionally remote therefrom, introducing phosphate rock into said feed zone, separately introducing acidulating acid into said feed zone for reaction with said rock, allowing said rock to react with said acid while circulating in said stream from said feed zone to said discharge zone whereby a slurry of gypsum and phosphoric acid is formed, discharging the thus produced slurry from said discharge zone and separating said discharge zone from said feed zone whereby a unidirectional flow pattern of the reaction slurry from the feed zone to the discharge zone is maintained.



3,181,932
PROCESS FOR THE PRODUCTION OF CYANAMIDE

Robert W. Foreman, Chagrin Falls, and Franklin Veatch, Lyndhurst, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 12, 1961, Ser. No. 137,524
14 Claims. (Cl. 23—190)

1. The process for the production of cyanamide from cyanogen halide and ammonia, which comprises reacting the cyanogen halide with ammonia at a temperature at which the reaction proceeds within the range from about —40° C. up to about 100° C., in solution in an inert solvent for cyanogen halide and cyanamide, in which cyanamide is soluble in an amount of at least 50 grams per liter and ammonium halide is soluble in an amount not in excess of about 5 grams per liter at the reaction temperature, and selected from the group consisting of cyclic ethers having an ether oxygen in the ring and at least one ether oxygen for each five carbon atoms, polyoxyalkylene ethers having at least one ether oxygen for each five carbon atoms, sulfones having from four to twelve carbon atoms, esters of aliphatic fatty acids and aliphatic alcohols having from three to about ten carbon atoms, and aliphatic nitriles having from two to about ten carbon atoms.

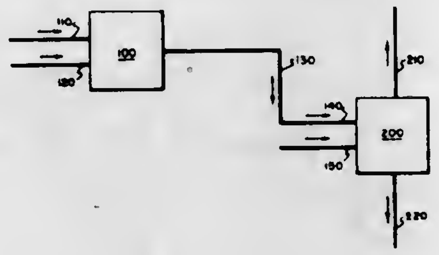
3,181,933
RADIOACTIVE DIAMOND AND PROCESS FOR THE PREPARATION THEREOF

Robert H. Wentorf, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 28, 1961, Ser. No. 92,357
5 Claims. (Cl. 23—209.1)

1. A process for making man-produced radioactive diamonds having a radioactivity which is both (1) coextensive with the mass of the diamond and (2) exceeds that of known diamond, which process comprises heating at a temperature in excess of 1200° C. and at a pressure in excess of 40,000 atmospheres in the diamond-forming region, a man-produced carbonaceous material rendered radioactive by bombardment with high energy radiation in combination with a catalyst for diamond formation.

3,181,934
PROCESS FOR RECOVERY OF ELEMENTAL BROMINE FROM AN AQUEOUS BROMINE SOLUTION

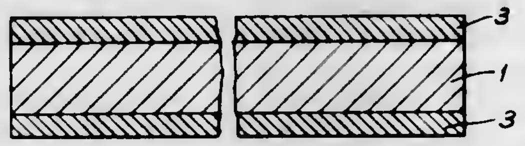
Wayne T. Davis, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Continuation of application Ser. No. 176,380, Feb. 28, 1962. This application Feb. 17, 1964, Ser. No. 345,406
3 Claims. (Cl. 23—218)



1. A process for the extraction of elemental bromine from an aqueous brine solution, the steps comprising (*a*) contacting together in a first zone hydrogen chloride and an oxygen-containing gas in the presence of a variable state oxidation catalyst so that a portion of the hydrogen chloride is oxidized to elemental chlorine to form an effluent consisting essentially of chlorine, unreacted hydrogen chloride and other inert gases, (*b*) mixing together the effluent and the brine solution, which contains from about 55 to about 2500 parts of bromine, per million parts of solution, to liberate elemental bromine, and then (*c*) stripping out and recovering elemental bromine; said unreacted hydrogen chloride serving to effect at least partial acidification of the brine solution and said inert gases serving to effect at least partial stripping out of the elemental bromine from the brine solution.

3,181,935
LOW-MELTING POINT MATERIALS AND METHOD OF THEIR MANUFACTURE

Brian C. Coad, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 21, 1960, Ser. No. 16,517
12 Claims. (Cl. 29—183.5)



1. A low-melting point composite product useful for brazing, soldering and the like, comprising adhered components of gold and tin, the weight ratio of said gold or tin being such as to provide a eutectic when said product is alloyed upon suitable heating, and at least one of said gold and tin components including a minor constituent effective to increase the tensile strength of said one component.

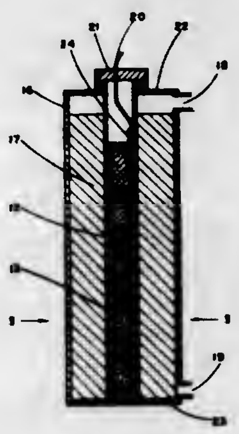
3,181,936
SUPERCONDUCTORS AND METHOD FOR THE PREPARATION THEREOF

John P. Denny, Shillington, Pa., and Richard W. Hardt, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 30, 1960, Ser. No. 79,513
4 Claims. (Cl. 29—194)

1. An improved superconductor which comprises a niobium wire having a surface layer of the crystalline reaction product of niobium with tin, said superconductor having superconductivity characteristics improved as compared to those of niobium.

3,181,937
ROCKET HYDROFUEL CONTAINER WITH CHEMICAL HEATING DEVICE

Robert B. Cox, Pomona, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Dec. 14, 1954, Ser. No. 475,053
2 Claims. (Cl. 44—2)



1. A fuel unit for rockets which comprises a container substantially filled with normally solid metal rocket hydrofuel, an inlet and an outlet in said container, a heating tube within said container, a solid self-sustaining heating composition within said container, means for igniting said heating composition and pressurization means communicable with said inlet for pumping said hydrofuel out of said container after it has been converted to molten state by combustion of said self-sustaining heating composition.

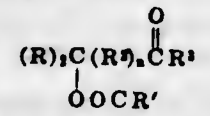
2. A fuel unit for a normally solid metallic rocket propellant fuel which comprises a container for said fuel, an inlet and an outlet in said container, a heating tube within the said container, said heating tube containing a solid self-sustaining heating composition and means for igniting said heating composition, said composition comprising a uniform mixture and stoichiometric proportions of clay, copper oxide, aluminum, and an oxidizer selected from the group consisting of potassium perchlorate and ferric oxide.

3,181,938
MOTOR FUEL CONTAINING OCTANE APPRECIATOR

George W. Eckert, Wappingers Falls, and Harry Chafetz, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 13, 1959, Ser. No. 826,474
9 Claims. (Cl. 44—69)

1. A hydrocarbon fuel in the gasoline boiling range containing an organo-lead anti-knock agent, at least 10 volume percent high octane components selected from the group consisting of olefinic hydrocarbons, aromatic hydrocarbons and mixtures thereof, and an ester of a

keto alcohol and a hydrocarbyl monocarboxylic acid, said ester having the general formula:



$$(R)_2\underset{\substack{|\\ OOCR'}}{C}(R^2)_n\overset{\substack{O\\ \|}}{C}R^3$$

wherein R is an aliphatic hydrocarbyl radical containing 1–8 carbon atoms, R′ is a hydrocarbyl radical containing 1–12 carbon atoms, R^2 is a divalent aliphatic hydrocarbyl radical containing 1–6 carbon atoms, R^3 is an aliphatic hydrocarbyl radical containing 1–8 carbon atoms and *n* is an integer selected from the group consisting of 0 and 1 and being present in a concentration between 0.1 and 5.0 volume percent.

3,181,939

FUSED ALUMINA-ZIRCONIA ABRASIVES

Douglas W. Marshall, Niagara Falls, Ontario, and Steven J. Roschuk, Fonthill, Ontario, Canada, assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts

No Drawing. Filed Jan. 27, 1961, Ser. No. 85,201

4 Claims. (Cl. 51—309)

1. A fused abrasive material consisting essentially of a mixture of alpha-alumina and zirconia and containing less than 0.1% soda, said zirconia being present in an amount from about 10 to 60% by weight of said mixture, said mixture consisting of portions (*a*) and (*b*), portion (*a*) of said abrasive material being an alumina-zirconia eutectic and portion (*b*) being crystals of a member selected from the group consisting of alpha-alumina and zirconia, said crystals having an average size not greater than 300 microns, said abrasive material having a high impact strength whereby it is suitable for snagging stainless steel.

3,181,940

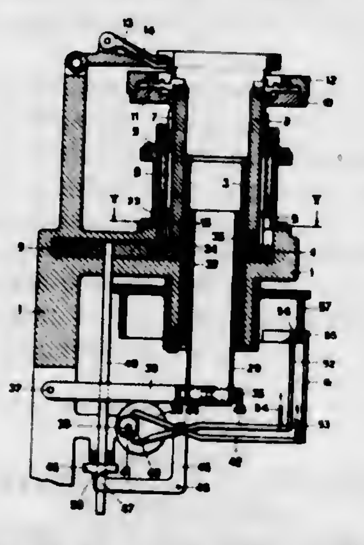
DEVICE FOR FORMING THE SHAPED REINFORCED PARTS OF STOCKINGS ON CIRCULAR MACHINES FOR THE MANUFACTURE OF STOCKINGS OR SOCKS

Riccardo Tenconi, Varese, Italy, assignor to Marcella Sessa Moretta, Varese, Italy

Filed Sept. 13, 1961, Ser. No. 137,887

Claims priority, application Italy, Sept. 13, 1960, 15,924/60, Patent 636,624

15 Claims. (Cl. 66—49)



1. In a circular knitting machine for the production of stockings or socks and having a rotatable cylinder with axial slots in which needles are slidable for gripping a normal thread fed to the needles by a normal thread guide at a feed of the knitting machine; a device for forming shaped reinforced parts of the stockings or socks, said device comprising a supplementary thread guide at said feed placed at a higher level than said normal thread guide for feeding a reinforcing thread, lifters disposed in said slots of the cylinder below at least certain of said needles and being selectively movable between inoperative and operative positions, a non-rotatable cam engageable by those lifters in the operative positions of the latter and effecting upward movement of the engaged lifters to an extent causing lifting of the corresponding needles sufficiently to grip the reinforcing thread, as well as the normal thread, at said feed, control means for selectively moving said lifters from said inoperative positions to said operative positions, said control means being rotatable with said needle cylinder, and actuating means located within said cylinder for actuating said control means.

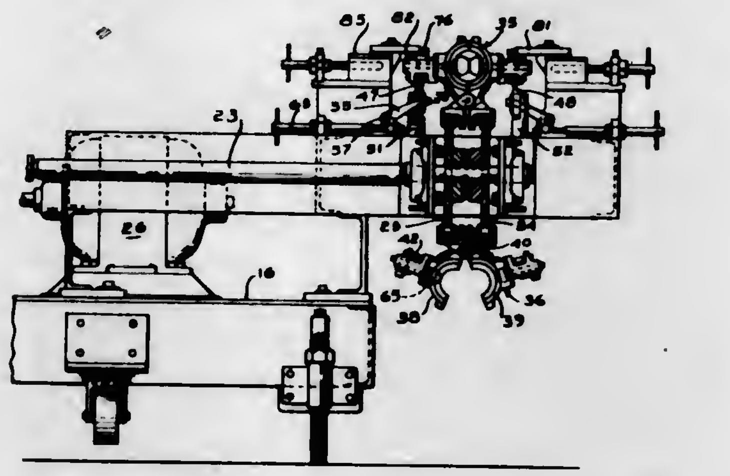
3,181,941

GLASS TUBE FORMING

Norman Moreau, Lincoln, and John A. Seifert, Cranston, R.I., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Oct. 27, 1960, Ser. No. 65,339

3 Claims. (Cl. 65—187)



1. An apparatus for shaping a cylindrical glass body during its travel from its source of formation to a delivery position to provide aligned re-entrant spaced apart grooves extending longitudinally along at least one side of the body, comprising axially separable molds having tubular cavities with transverse passages through their walls, means for conveying said molds coaxially along the path of such body, means for closing said molds about such body while coaxial therewith, means for reopening said molds, tools for introduction through such passages to form such spaced apart grooves in the body, means for projecting such tools through the mold passages while the molds are closed about the body to form such re-entrant spaced apart grooves therein and means for restoring said tools to their initial positions while such molds are still closed about such body.

3,181,942

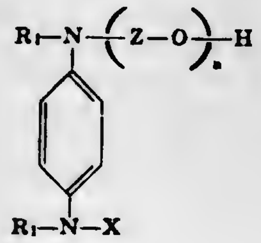
METHOD OF CONTROLLING PLANT GROWTH

Ivan C. Popoff, Ambler, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 15, 1961, Ser. No. 152,668

9 Claims. (Cl. 71—2.3)

1. The method of controlling plant growth which comprises bringing into contact with said plant in an amount sufficient to control said growth, a compound having the formula



where R_1 is a hydrocarbon member selected from the group of alkyl, cycloalkyl, and aryl, said hydrocarbon member containing up to eighteen carbon atoms, Z is a saturated divalent hydrocarbon containing two to three carbon atoms, X is a member selected from the group consisting of H and

$$-(Z-O)_n-H$$

and *n* is an integer from 1 to 4.

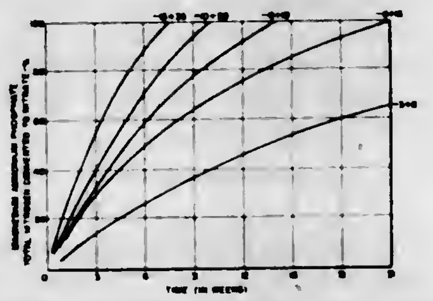
3,181,943

METHOD OF SUPPLYING NITROGEN AND PHOSPHORUS NUTRIENTS TO PLANTS

Grover L. Bridger, Baltimore, Md., and Raymond W. Starostka, Winnetka, Ill., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Dec. 2, 1963, Ser. No. 327,472

1 Claim. (Cl. 71—36)



A method of supplying nitrogen and phosphorus nutrients to plants in continuing amounts coinciding substantially with the growing life of the plant, said life ranging between about 4 weeks and about 4 years, said plants being in a soil having a pH between about 4.5 and 7.5 and a soil moisture content between the plant wilting point and field capacity under non-leaching conditions, said method comprising fertilizing said plants with granules of magnesium ammonium phosphate, the mesh size of which is selected to correspond with the known growing time of the plant in accordance with the following schedule:

Plant growing time—	Mesh size
4 weeks	−16 +35
10 weeks	−10 +20
14 weeks	−8 +10
21 weeks	−6 +16
1 year	−3 +6
4 years	−1 +3

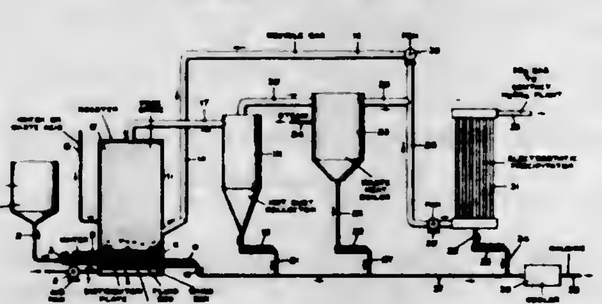
3,181,944

ZINC CALCINE FOR HYDROMETALLURGICAL PROCESS

Maxwell J. Brooks, New York, N.Y., and Robert I. Newman, Allendale, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed May 7, 1962, Ser. No. 192,661

4 Claims. (Cl. 75—9)



1. A process for the production of zinc calcine characterized by low ferritization ratio, low zinc sulfide, low zinc sulfate and high solubility of the zinc content of the calcine in leach liquor, which comprises maintaining at a temperature within the range of 1500–1650° F. a fluidized bed containing particles of partially roasted ore finer than 100 mesh and particles of substantially completely roasted ore larger than 100 mesh, introducing iron containing zinc sulfide ore containing particles finer than 100 mesh and coarser than 100 mesh into the fluidized bed at a point below the top surface of the fluidized bed and about ½–3 feet above the bottom surface of the bed, passing an oxygen containing gas in an amount at least sufficient to convert the sulfide ore to the corresponding oxide up through the bed to maintain the bed in fluidized condition and to partially oxidize the feed sulfide ore and to entrain and carry out of the fluidized bed partially roasted particles of ore finer than about 100 mesh, passing the suspension of partially roasted feed ore in gas from the top of the bed into a free space thereabove having a height at least seven times the height of the fluidized bed, passing the partially roasted ore suspended in the gas through the free space to effect substantially complete oxidation of the sulfide ore to the corresponding oxide, maintaining the temperature of the free space thereabove within the range of 1500–1800° F., discharging the substantially completely roasted ore and gas from the free space, separating roasted ore particles from the gas while maintaining a temperature of at least 1450° F. prior to and during separation of the roasted ore particles from the gas, discharging the separated roasted particles from the separator and discharging the gas from the separator.

3,181,945

HIGH STRENGTH STEEL

Arthur R. Elsea, Columbus, Ohio, assignor, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

No Drawing. Filed Oct. 5, 1961, Ser. No. 143,066

6 Claims. (Cl. 75—123)

1. Ultrahigh-strength steel compositions consisting of from about 0.45 to about 0.60 percent carbon, about .4 to 1.25 percent manganese, about 2.0 to about 2.2 silicon, about 1.2 to about 1.8 nickel, about 0.16 to about 0.35 vanadium. balance essentially iron.

3,181,946

COLUMBIUM BASE ALLOYS

Joseph B. McAndrew, Chicago, Ill., Arthur G. Metcalfe, San Diego, Calif., and Charles R. Simcoe, Evergreen Park, Ill., assignors to IIT Research Institute, a corporation of Illinois

No Drawing. Filed Nov. 9, 1961, Ser. No. 151,200

3 Claims. (Cl. 75—174)

1. An alloy consisting essentially of from 0.25 to 0.50% oxygen a metal selected from the group 1.5% titanium and from 1% to 3% zirconium, balance columbium, wherein the ratio by weight of oxygen to titanium or zirconium ranges from 3 to 1 to 12 to 1 and wherein alloy strengthening is obtained by interstitial solute oxygen and by the dispersion strengthening effect of oxide phase.

3,181,947

POWDER METALLURGY PROCESSES AND PRODUCTS

Milton Bernard Vordahl, Beaver, Pa., assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey

No Drawing. Original application Jan. 15, 1957, Ser. No. 634,156, now Patent No. 3,066,391, dated Dec. 4, 1962. Divided and this application June 21, 1962, Ser. No. 204,055

7 Claims. (Cl. 75—206)

1. The process which comprises: applying to finely divided particles of a metal selected from the group consisting of titanium, zirconium and base alloys of said metals, a surface coating of a metal oxide which is stable in con-

tact with and substantially insoluble in said metal at sintering temperatures, and consolidating the so-coated particles into an integral mass with the application of pressure and heat at sintering temperatures.

3,181,948

METHOD FOR OPTICAL BLEACHING OF COATED PAPERS AND RESULTANT PRODUCT

Willem Karel Koerber and Ferdinand Leonard Schouteden, Wilrijk-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company

No Drawing. Original application June 2, 1958, Ser. No. 739,211, now Patent No. 3,047,390, dated July 31, 1962. Divided and this application June 11, 1962, Ser. No. 201,298

4 Claims. (Cl. 96—82)

1. A light-sensitive photographic paper comprising a paper support, a white pigmented coating on a surface of said support, and a superposed light-sensitive silver halide emulsion layer, said white pigmented coating containing discrete fluorescent particles obtained by heating an aqueous suspension of finely divided cellulose through which suspension is uniformly distributed an optical brightening agent selected from the group consisting of:

(1) 1,2-bis-[2-(5-methyl-benzimidazolyl)]-ethylene,
(2) 1,3-dioxo-2-butyl - 6-acetylamino-2,3 - dihydro-1H-benz[de]-isoquinoline,
(3) 2,2'-di-sulfo-4,4'-bis-[2-(4-hydroxy-6-anilino)-s-triazinyl]-stilbene di-sodium salt,
(4) 2,2'-di-sulfo-4,4'-bis-[2-(4-amino - 6-hydroxyethylamino)-s-triazinyl]-stilbene di-sodium salt,
(5) 2,2'-di-sulfo-4,4'-di-amino-stilbene,
(6) 2,2'-disulfo-4,4'-bis-{2-[4,6-di-(ω-n-butoxypropylamino-)-s-triazinyl]}-stilbene,
(7) 2,2'-di-sulfo-4,4'-bis-{2-[4,6-di-(p-1,1,3,3-tetramethyl-butyl-phenoxy-ethoxy-propylamino-)]-s-triazinyl}-stilbene,
(8) 2,2'-di-sulfo-4,4'-di-(phenylureido-)-stilbene di-sodium salt,
(9) 1,3,5-tri-phenyl-Δ^2-pyrazoline,
(10) 1,2-bis-[2-benzimidazolyl]-ethylene,
(11) 1,2-bis-[2-(5-methyl-benzoxazolyl]-ethylene.

3,181,949

LIGHT SENSITIVE ELEMENTS HAVING OPTICAL BLEACHING COMPOSITIONS COATED THEREON

Willem Karel Koerber and Ferdinand Leonard Schouteden, Wilrijk-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a company of Belgium

No Drawing. Original application June 2, 1958, Ser. No. 739,211, now Patent No. 3,047,390, dated July 31, 1962. Divided and this application June 11, 1962, Ser. No. 201,299

Claims priority, application Netherlands, June 6, 1957, 217,900

4 Claims. (Cl. 96—82)

1. A light-sensitive photographic paper comprising a paper support, a white pigmented coating on a surface of said support, and a superposed light-sensitive silver halide emulsion layer, said white pigmented coating containing discrete fluorescent particles obtained by heating an aqueous suspension of finely divided polyamide resin through which suspension is uniformly distributed an optical brightening agent selected from the group consisting of:

(1) 1,2-di(5-methylbenzimidazolyl-2)-ethylene
(2) 2,2'-di-sulfo - 4,4'-bis[2(4-hydroxy-6-anilino)-s-triazinyl]stilbene disodium salt.
(3) 1,2-di(5-methylbenzoxazolyl-2)-ethylene.

3,181,950

METHOD FOR OPTICAL BLEACHING OF COATED PHOTOSENSITIVE PAPERS AND RESULTANT PRODUCT

Willem Karel Koerber and Ferdinand Leonard Schouteden, Wilrijk-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belginm, a Belgian company

No Drawing. Original application June 2, 1958, Ser. No. 739,211, now Patent No. 3,047,390, dated July 31, 1962. Divided and this application June 11, 1962, Ser. No. 201,300

Claims priority, application Netherlands, June 6, 1967, 217,900

8 Claims. (Cl. 96—82)

1. A light-sensitive photographic paper comprising a paper support, a white pigmented coating on a surface of said support, and a superposed light-sensitive silver halide emulsion layer, said emulsion layer containing discrete fluorescent particles obtained by heating an aqueous suspension of a finely-divided, water-swellable, water-insoluble, urea-formaldehyde resin, through which suspension is uniformly distributed an optical brightening agent selected from the group consisting of:

(1) 1,2-di(5-methylbenzimidazolyl-2)-ethylene,
(2) 4,5-diphenylimidazolone-2.

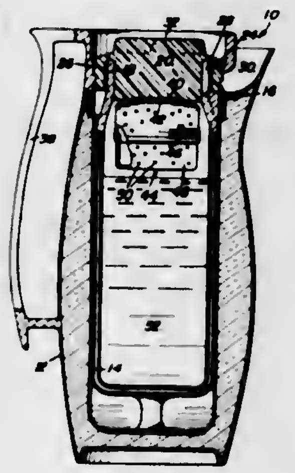
3,181,951

COFFEE BREWING METHOD

George B. Gronvold, P.O. Box 727, Vancouver, Wash.

Filed Sept. 28, 1960, Ser. No. 58,955

5 Claims. (Cl. 99—71)



1. A method for brewing coffee by contact of water with solids comprising the steps of: establishing contact between the solids and the water at an ideal maximum temperature to form a brewing liquid; reducing the rate of heat transfer from the brewing liquid for a gradual reduction in temperature thereof and preventing escape of volatiles from the brewing liquid released by contact thereof with the solids; said ideal maximum temperature being 186° F. above which significant amounts of undesirable materials are released into the brewing liquid but below which the desirable materials are released into the brewing liquid; stopping the brewing when the temperature of the brewing liquid has fallen to a minimum temperature above drinking temperature, said minimum brewing temperature being those temperatures at which the desirable materials condense into the brewing liquid.

3,181,952

ENHANCING THE AROMA OF FOODS

Sebastian V. R. Mastrangelo, Brandywine Hundred, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 25, 1961, Ser. No. 112,540

2 Claims. (Cl. 99—71)

1. A process for enhancing the aroma of powdered instant food selected from the group consisting of coffee, tea, soups and citrus juices, which process comprises contacting said food in the dry phase at about one atmosphere pressure for at least one minute with the vapors of a stable, non-toxic, tasteless, water-insoluble saturated fluorinated hydrocarbon selected from the group consisting of perfluoropropane, perfluorocyclopropane, perfluorocyclobutane, chloropentafluoroethane, perfluorobutane and perfluoropentane.

3,181,953

COLD WATER SOLUBLE COMPOSITIONS

John H. Van Ness, Kirkwood, and Darwin O. Stephens, Affton, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 25, 1963, Ser. No. 267,844

15 Claims. (Cl. 99—78)

1. A cold water soluble acid composition storable at ambient and high humidity conditions comprising a milled admixture of an acid selected from the group consisting of fumaric acid and adipic acid, from about 0.1 to 2.0% by weight of said acid of a partial long chain fatty acid ester of a polyoxyethylene derivative of a hexitol anhydride derived from sorbitol and from about 0.1 to 1.0% by weight of said acid of a dialkyl ester of sodium sulfosuccinate containing between 7 and 11 carbon atoms, said composition having an average particle size of about 20 to 50 microns.

11. A method of preparing a cold water soluble beverage mix storable at ambient and high humidity conditions which comprises admixing from about 0.25 to 4 parts by weight of a beverage base comprising by weight from about 0.5 to 3.0 parts color and flavoring and from about 68 to 86 parts crystalline sugar with one part by weight of an acid composition comprising an acid selected from the group consisting of fumaric acid and adipic admixed with, by weight of said acid, from about 0.1 to 2.0% of a partial long chain fatty acid ester of a polyoxyethylene derivative of a hexitol anhydride derived from sorbitol and from about 0.1 to 1.0% of a dialkyl ester of sodium sulfosuccinate containing between 7 and 11 carbon atoms, milling said beverage base and acid composition, and mixing sufficient additional beverage base into said milled product to yield a dry cold water soluble beverage mix comprising from 0.5 to 3.0% color and flavoring, from 68 to 86% sugar, and from 14 to 29% acid composition, said composition having an average particle size of about 20 to 50 microns.

3,181,954

FUMARIC ACID-CONTAINING COMPOSITION

Yukio Inoue and Masaki Mitsuno, Hikari, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Sept. 30, 1963, Ser. No. 312,353

Claims priority, application Japan, Oct. 2, 1962, 37/43,884

3 Claims. (Cl. 99—78)

1. A fumaric acid-containing composition soluble readily in cold water, which comprises 0.5–1.50 parts by weight of a 30 to 85% solution of sorbitol and one part by weight of 200 to 500 mesh fumaric acid powder.

3,181,955

METHOD OF COOKING GRAIN IN A CLOSED SYSTEM

Russell Stacy Altman, 404 Ridge Ave., Troy, Ohio

Original application Apr. 7, 1961, Ser. No. 101,432. Divided and this application Dec. 8, 1961, Ser. No. 158,087

3 Claims. (Cl. 99—80)

1. A method of continuously cooking grain in a closed system comprising a feeder section, a trap section following the feeder section, and a cooker section following the trap section which comprises; moving uncooked grain continuously from a supply thereof into and through the feeder section to the trap section, moving quantities of the uncooked grain downwardly through the trap section and into the inlet end of the cooker section, moving the grain continuously and substantially horizontally through the cooker section, discharging quantities of grain from the discharge end of the cooker section, continuously supplying steam at a pressure greater than atmospheric pressure to said cooker section to maintain therein an atmosphere of steam to accomplish cooking of the grain during movement thereof through the cooker section, and continuously supplying air to said trap section at pressure at least equal to the steam pressure in said cooker section whereby the air so supplied will move through the trap section and feeder section and prevent steam from the cooker section from moving into the trap and feeder sections and the grain being supplied to the cooker section via said feeder section and trap section will thus be maintained substantially unchanged as to moisture content prior to the entry of the grain into said cooker section.

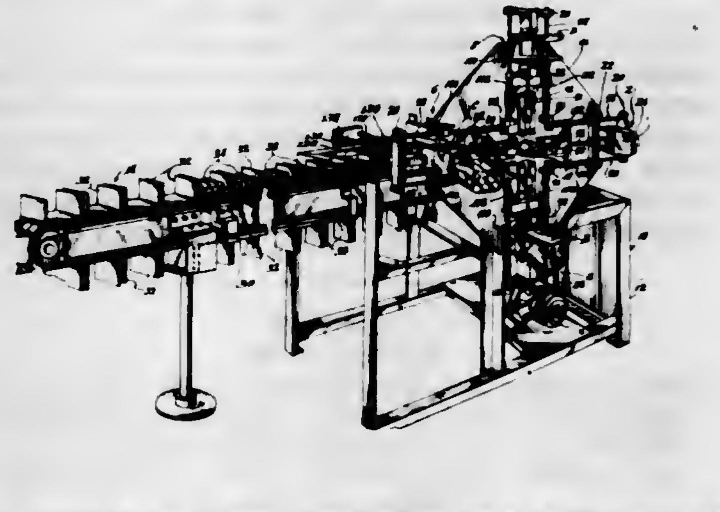
3,181,956

PACKAGING METHOD AND MACHINE

Kenneth G. Clark, Homewood, Michael J. Myles, Downers Grove, and Harry P. Eichin, Western Springs, Ill., assignors to Union Carbide Corporation, a corporation of New York

Filed June 13, 1962, Ser. No. 202,106

9 Claims. (Cl. 99—174)



2. Method of filling elastic film bags with contents the perimeter of which is greater than that of the bag, which comprises first stretching the bag about 15%–20% more than its original size, then relaxing by slightly releasing the stretching power on such bag, further stretching the bag an additional amount about equal to such first stretching, and finally filling the so-finally-stretched bag.

5. A packaging machine comprising, in combination, means for partially stretching an elastic film bag while indexing such bag from a loading station to a relaxing station, means acting to automatically relax the so-partially stretched bag in its partially stretched condition and simultaneously heat it, means for fully stretching the bag while indexing it to a content-filling station, and means for filling the so fully stretched bag and removing the so-filled bag from such content-filling station, so that the bag compresses the contents thereof.

3,181,957

TUNA PACKER

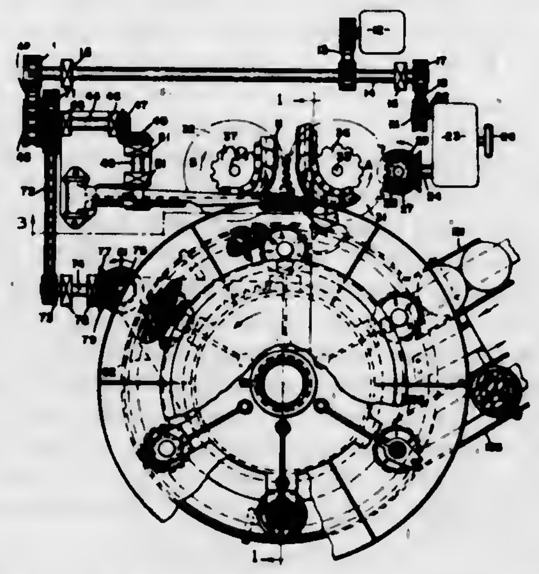
Eben H. Carruthers, Box 1332, Warrenton, Oreg.

Filed Sept. 6, 1960, Ser. No. 53,966

4 Claims. (Cl. 99—188)

3. A method of packing fish into containers which comprises forming loins of fish into solid pack cakes of fish of a diameter, thickness and weight desired to be placed in a single container, breaking up the solid pack

cake of tuna fish into pieces of tuna fish and reforming the so-measured quantity of pieces into a chunk pack



cake of fish into a single container by pressure only, thus retaining their chunk appearance.

3,181,958
REFRACTORY COMPOSITION

Everett A. Thomas, Cincinnati, Ohio, assignor to The Chas. Taylor's Sons Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 20, 1961, Ser. No. 146,446
8 Claims. (Cl. 106—57)

1. A slip cast and fired refractory article consisting essentially of between about 90 percent and about 60 percent zircon, between about 10 percent and about 40 percent chromic oxide, and between about 0.5 percent and about 5 percent titanium dioxide, the percentages being by weight of the composition, the particle size of said materials being less than about 45 microns.

3,181,959
REFRACTORY

Frank F. Raine and Roy Thomas Smith, Mexico, Mo., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed Feb. 12, 1962, Ser. No. 172,762
10 Claims. (Cl. 106—64)

9. A plastic refractory gunning composition consisting essentially of from 60% to 80% of at least one coarse hard refractory aggregate chosen from the group consisting of mullite, bauxite, hard burned alumina and calcined flint, said coarse aggregate being of particle sizing passing a 3 mesh screen, 15% to 30% of plastic clay passing 18 mesh, from 2.5% to 7.5% finely ground nonplastic refractory material chosen from the group consisting of burned clay brick, mullite, raw kyanite, calcined kyanite, calcined bauxite and alumina, and from 2.5% to 7.5% of a refractory cement chosen from the group consisting of Portland cement and calcium aluminate cement.

3,181,960
REFRACTORY PRACTICES

Donald F. King, Pittsburgh, and Thomas William Smoot, Bethel Park, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 24, 1963, Ser. No. 275,220
4 Claims. (Cl. 106—64)

1. The method of improving the carbon monoxide and natural gas resistance of certain refractories which comprises forming a refractory batch mixture of 0 to 90% of size graded non-basic filler material substantially chemically inert to the other ingredients in the batch, from 9.5 to 99.5% of calcium aluminate cement and from 0.5 to 7% of finely divided elemental sulfur, uniformly dispersing the finely divided sulfur throughout the dry solids batch, tempering the batch, forming the batch, heating the batch at a temperature of at least about 140° F. to chemically react the sulfur with iron oxide impurities and lime, whereby the resistance of the formed batch to carbon monoxide and natural gas attack is improved.

3,181,961
SELF-PROPELLING LIQUID TEXTILE SIZING COMPOSITION

Walter J. Katzbeck, Oak Park, and Ronald R. Gabel, Western Springs, Ill., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 2, 1962, Ser. No. 184,553
2 Claims. (Cl. 106—213)

1. A self-propelling liquid laundry starch consisting essentially of 4.1 percent starch, 0.8 percent dimethyl silicone emulsion, 0.4 percent borax, 0.1 percent polyethylene glycol, 0.01 percent lecithin, 0.01 percent silicone antifoam agent, 0.002 percent mixture of sodium tripolyphosphate and sodium silicate, 0.015 percent sodium-ortho-phenyl phenate, 6.3 percent dichlorodifluoromethane, 0.032 percent perfume, 0.08 percent sodium hydroxide, and 88.151 percent water.

3,181,962
CONVERSION OF NON-LEAFING TO LEAFING METALLIC PIGMENTS

Rolf Rolles, Allegheny Township, Westmoreland County, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 1, 1962, Ser. No. 176,763
5 Claims. (Cl. 106—290)

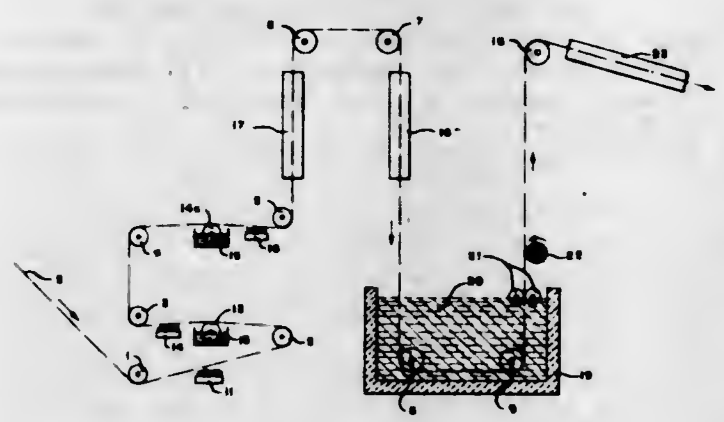
1. The method of converting a non-leafing metallic aluminum base flake pigment comprising metallic aluminum base flake particles bearing an initial adherent relatively thin film coating of a non-leafing agent, to a leafing metallic aluminum base flake pigment in which the flake particles are characterized by a relatively thin adherent film coating of a leafing agent in total amount of 1 to 7 percent by weight of the flake particles, the steps comprising, selecting a quantity of the non-leafing metallic pigment aluminum base flake, preparing a slurry of the selected non-leafing pigment in a solution of volatile hydrocarbon solvent containing a straight chain higher saturated aliphatic acid leafing agent dissolved therein, heating the slurry above room temperature for a period of time sufficient to replace a substantial quantity of the nonleafing agent on the metallic aluminum base flakes with and from the leafing agent in solution in the slurry, cooling the slurry to room temperature, and separating the solid and liquid portions of the slurry to provide the leafing grade metallic aluminum base flake pigment.

3,181,963
ALKALI METAL BORATE MASKING IN GALVANIZING PROCESS

Nelson E. Cook and Samuel L. Norteman, Wheeling, W. Va., assignors to Wheeling Steel Corporation, Wheeling, W. Va., a corporation of Delaware

Filed Nov. 8, 1960, Ser. No. 67,946
5 Claims. (Cl. 117—5.5)

1. A method of applying a protective metal coating to a portion only of a ferrous metal article while maintaining the remainder thereof substantially free from oxide, obviating a high temperature oxide-removing heat treatment, comprising coating with a solution of an alkali metal borate the portion of the article which is not to be metal-coated and dipping the article in molten coating metal whereby to metal-coat the portion of the article which is not coated with the alkali metal borate while the portion coated with the alkali metal borate remains uncoated with the coating metal and substantially free from oxide and limiting the temperature of the article and the bath during such treatment to a temperature



below the melting point of the alkali metal borate, thereby producing an article having a portion metal-coated and the remainder substantially free from oxide.

3,181,964
MAGNESIUM OXIDE COATING METHOD

Bruce E. Kramer, Loveland, and Eugene J. Fields, Cincinnati, Ohio, assignors to the United States of America as represented by the Secretary of the Navy

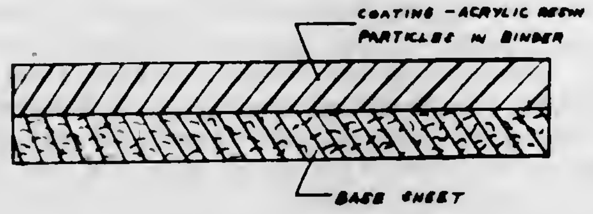
No Drawing. Filed Apr. 25, 1962, Ser. No. 190,185
6 Claims. (Cl. 117—23)

1. A method of applying a surface coating, containing at least 50% by weight of magnesium oxide and the balance being a refractory oxide of one from the group consisting of cerium oxide, chromium oxide, hafnium oxide, lanthanum oxide and zirconium oxide, to an article which comprises suspending a mixture of magnesium metal divided to a powder of between —200 and +325 mesh and at least one of the said refractory oxides in a fluid combustible mixture containing oxygen and hydrogen, the oxygen being supplied to the mixture at a rate of 40 cubic feet per hour, the hydrogen being supplied to the mixture at a rate of 120 cubic feet per hour, and the powder being supplied to the mixture at the rate of 12.5 cubic feet per hour; heating the coating mixture to a high temperature by burning the fluid combustible mixture wherein the magnesium metal is oxidized to magnesium oxide, and thereafter projecting the heated coating mixture from a spray nozzle disposed 3 to 4 inches from the surface of the article to be coated at at least its flowing temperature whereby an adherent coating of magnesium oxide and one of the said refractory oxide is formed upon the article.

3,181,965
HEAT-SENSITIVE COPYING SHEET AND METHOD OF MAKING

Francis W. Michelotti, Brooklyn, N.Y., assignor to Interchemical Corporation, New York, N.Y.

Filed Oct. 24, 1961, Ser. No. 147,153
10 Claims. (Cl. 117—36.7)



1. The method of making a heat-sensitive copying sheet adapted on being placed in contact with a graphic original and on irradiation of said graphic original with high intensity infrared radiation to provide an image on said copying sheet corresponding to the graphic original which method comprises mixing a latex comprising acrylic resin particles having a softening temperature within the range of 70° to 120° C. dispersed in water with a solution comprising a transparent film-forming organic binder infusible within said softening range dissolved in an organic solvent, said particles being insoluble in said solution, separating the water from the resulting mixture to produce an organic dispersion of said acrylic resin particles in said solution, coating said resulting dispersion on a non-metallic supporting base and drying said coating.

3,181,966
PROCESS FOR IMPARTING SOIL RETARDANCE TO THE PILE PORTION OF A TEXTILE MATERIAL

Elliot S. Pierce, Kensington, Md., and Stanley S. Slowata, Piscataway Township, Middlesex County, and Samuel James O'Brien, Dunellen, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Apr. 22, 1960, Ser. No. 23,923
2 Claims. (Cl. 117—37)

1. A process for treating pile textile material to reduce the adherence and attraction of soil to the pile portion thereof, which comprises applying to the pile portion thereof a stable aqueous dispersion having a pH of between about 4.5 and about 8 of a water insoluble basic aluminum sulfate composition, so as to apply between about 0.25 to about 5% based on the weight of the pile of said composition and thereafter drying the material, said basic aluminum sulfate composition being characterized in that upon being dried it may be readily redispersed from the dry state in water without the addition of dispersing agents to form a stable dispersion, said dispersion containing as a soil retardant an insoluble basic aluminum sulfate of the following formula:

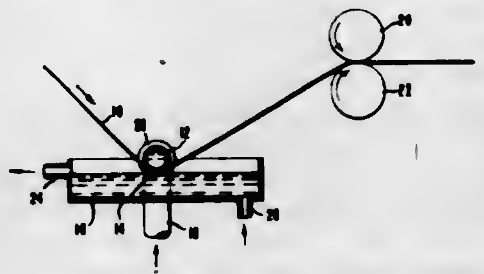
$$Al(OH)_{3-x}(SO_4)_{x/2}$$

wherein x is a value greater than 1.5, said basic aluminum salt composition having an ultimate particle size of substantially less than 0.5 micron.

3,181,967
PROCESS AND APPARATUS FOR TREATING TEXTILE MATERIALS

Charles A. Amos and Daniel J. Lovett, Camden, S.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 26, 1962, Ser. No. 233,256
3 Claims. (Cl. 117—67)



3. In a process for applying a uniform liquid finish to a moving filamentary tow, the steps of

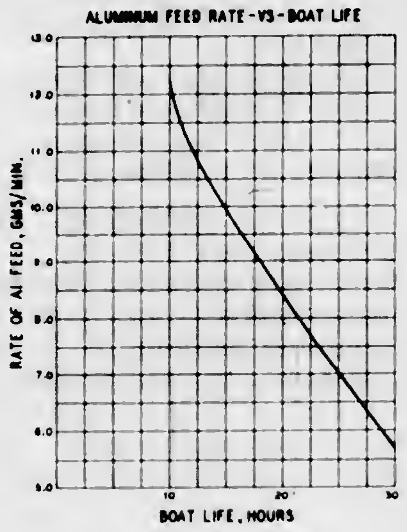
(*a*) passing said tow in arcuate contact with a hollow elongated guide having a narrow slot in the periphery thereof extending across the width of said tow, said tow being passed into contact with said guide at an angle between 5° and 180°, (*b*) simultaneously passing said tow in brushing contact with the surface of a reservoir containing liquid finish, and

(*c*) discharging a predetermined amount of liquid finish through said slot onto said tow in a direction substantially perpendicular to said surface.

3,181,968

METHODS FOR METAL VAPORIZATION

Victor Mandorf, Jr., Fostoria, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed July 25, 1960, Ser. No. 45,069
7 Claims. (Cl. 117—107)



1. In a method for continuously plating an object by the vacuum vaporization of aluminum from an evaporator vessel, the improvement consisting of using a heated evaporator vessel composed essentially of about 30 percent to about 70 percent by weight of boron nitride, the balance being a conductive refractory material selected from the group consisting of zirconium diboride, titanium diboride, titanium carbide and mixtures thereof said vessel being conductive prior to contact with the aluminum.

3,181,969

PROCESS OF RENDERING HYDROPHOBIC TEXTILE MATERIAL ANTISTATIC AND RESULTING PRODUCT

Reginald L. Wakeman, Philadelphia, Pa., assignor, by mesne assignments, to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Oct. 23, 1962, Ser. No. 232,574
24 Claims. (Cl. 117—138.8)

1. In a process for imparting to hydrophobic textile materials antistatic characteristics durable only to dry cleaning solvents, the steps of applying to said material an aqueous bath consisting essentially of a polymeric amino substituted ester dissolved in water, said ester being present in an amount of from about 1% to about 50% by weight of said bath, said ester essentially consisting of recurring radicals of at least one aliphatic dicarboxylic acid having from 4 to 10 carbon atoms, recurring radicals of an aliphatic compound bearing two hydroxyl radicals and selected from the group consisting of alkylene glycols and alkylene glycol ethers, and at least one amino radical selected from the group consisting of primary, secondary, and tertiary amino radicals attached directly to a carbon atom of a radical of an acid selected from the group consisting of aliphatic dibasic acids and aliphatic monobasic acids, said acid being esterified with the aforesaid aliphatic compound bearing two hydroxyl groups; and subsequently drying and heating the textile material having said bath applied thereto at an elevated temperature until said polymeric amino substituted ester imparts to said textile materials antistatic properties durable to dry cleaning solvents.

3,181,970

COATED WELDING ELECTRODE

James V. Peck, Plainfield, and Charles E. Witherell, Bound Brook, N.J., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 21, 1962, Ser. No. 239,337
7 Claims. (Cl. 117—205)

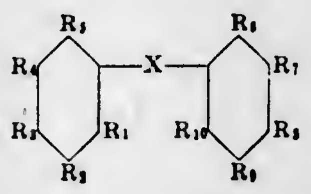
1. A welding electrode having a core containing, by weight, about 15% chromium, about 7% iron, about 3% tungsten, about 3% molybdenum, about 3% columbium, about 0.6% titanium, about 0.4% aluminum, about 0.2% manganese, less than about 0.05% silicon, about 0.02% magnesium, about 0.05% carbon, about 0.03% zirconium, about 0.005% boron, less than about 0.1% cobalt with the balance essentially nickel and having a flux containing, by weight, about 18% titania, about 18% manganese carbonate, about 25% calcium carbonate, about 10.8% columbium, about 7.2% iron, about 18% cryolite and about 3% bentonite.

3,181,971

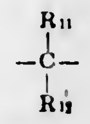
INSULATED COPPER ARTICLES

Laurence Stephen Rayner, Welwyn Garden City, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 29, 1961, Ser. No. 113,077
Claims priority, application Great Britain, May 30, 1960, 19,003/60
20 Claims. (Cl. 117—232)

1. Copper articles insulated with a polymeric composition comprising a solid polymer of propylene and as stabilizer therefor a mixture of (*a*) a phenolic antioxidant which has a boiling point of at least 200° C. at a pressure of 1 mm. of mercury and has the formula:



where X is selected from the class consisting of monosulfide groups, disulfide groups, and groups



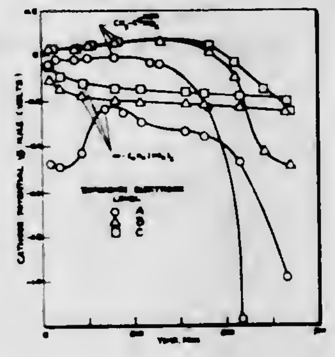
$$\begin{array}{c} R_{11} \\ | \\ -C- \\ | \\ R_{12} \end{array}$$

in which one of R_1 and R_3 and one of R_6 and R_8 is a hydroxyl group, and in which the remaining substituents are selected from the group consisting of hydrocarbon groups, alkoxy groups, and hydrogen atoms, there being in at least one of the positions ortho and para to each hydroxyl group a hydrocarbon substituent, and in which R_{11} and R_{12} are selected from the group consisting of alkyl groups, cycloalkyl groups, hydroxyaryl groups, hydroxyaryl-substituted hydrocarbon groups, hydroxyaryl-substituted oxa-cycloalkyl groups, hydrogen atoms, and groups forming, together with the carbon atom which joins them, a cycloalkane ring, and (*b*) a non-volatile amino-compound having a boiling point of at least 250° C., selected from the group consisting of primary aliphatic, primary cycloaliphatic and primary aromatic amino compounds, secondary aliphatic, and secondary cycloaliphatic amino compounds and secondary aromatic amino compounds having at least one nitrogen atom to which is attached at most one aryl group.

3,181,972

NITROL COMPOUNDS AS DEPOLARIZERS

John O. Smith, Swampscott, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
Filed Feb. 5, 1963, Ser. No. 256,473
4 Claims. (Cl. 136—90)



1. A primary cell having an anode formed by a metal standing high in the electromotive series, in combination with a cathode including a depolarizer consisting of a nitrol compound selected from the class consisting of nitrolic acids and pseudonitroles.

3,181,973

FUEL CELL ELECTRODE AND METHOD OF MAKING THE SAME

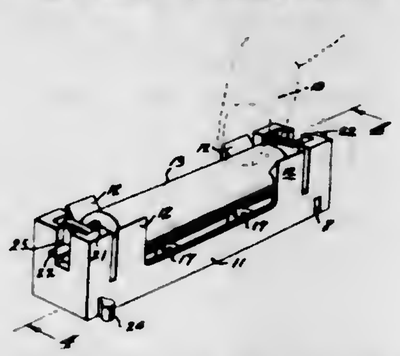
Joseph C. Duddy, Trevose, Pa., assignor to The Electric Storage Battery Company, a corporation of New Jersey
No Drawing. Filed Dec. 28, 1960, Ser. No. 78,833
11 Claims. (Cl. 136—120)

1. A method of manufacturing a fuel cell electrode which comprises intimately and homogeneously mixing a plasticized thermoplastic resin, plasticized polyethylene oxide in a ratio based upon parts by weight of said thermoplastic resin of between 1–3 and 3–1, a powdered electrically conductive electrode material selected from the group consisting of silver, nickel, mixtures of silver and nickel, copper, and graphite in an amount sufficient to be dispersed in a continuous phase throughout said intimately mixed thermoplastic resin and palladium oxide to produce a plasticized mass, said thermoplastic resin being insoluble in said polyethylene oxide and alkaline electrolytes, shaping said mass to produce a fuel cell electrode, and converting said palladium oxide to metallic palladium in an alkaline electrolyte.

3,181,974

RELEASABLE BATTERY CLIP

Mannie La Barbera, % La Barb, Inc., Armonk, N.Y.
Filed May 16, 1962, Ser. No. 195,158
1 Claim. (Cl. 136—173)

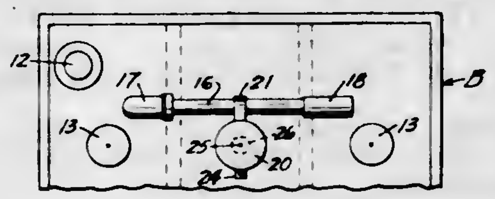


A molded plastic holder for electrical components comprising a longitudinal hollow body having end walls, a first pair of spring cantilever fingers molded integral with said body at one end and adapted to embrace said component at one end, a second pair of spring cantilever fingers molded integral with said body at its other end adapted to embrace said component at its other end, at least one fulcrum member molded integral with said body at a position intermediate between said first and second pairs of spring fingers, a first spring terminal contact having a clip member, and a second spring terminal contact having a clip member, said body having cavities in each end thereof for receiving said first and second spring terminal contacts respectively, and said body having cutouts in the end walls thereof communicating with the cavities for receiving the clip members of said contacts for connection to an electric circuit.

3,181,975

HYDROMETER ATTACHMENT DEVICE FOR BATTERIES

Carl F. Albrecht, St. Paul, Minn., assignor to Gould-National Batteries, Inc., St. Paul, Minn., a corporation of Delaware
Filed Feb. 27, 1961, Ser. No. 91,725
5 Claims. (Cl. 136—181)



1. In a battery cell having a filling neck projecting upwardly therefrom and a vent cap for said neck, the combination of a hydrometer having a tubular member and a device for attaching said hydrometer to said neck and cap comprising, a gasket fitting between the upper surface of said neck and abutting surface of said vent cap, a tongue member integral with said gasket and projecting laterally from one side thereof, and an elastic holder member integral with said tongue member and of such length as to embrace said tubular member and securely hold the hydrometer in a horizontal position adjacent to one side of said neck.

3,181,976

PHOSPHATING PROCESS AND COMPOSITION

George A. Yager, Long Beach, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
No Drawing. Filed Nov. 6, 1961, Ser. No. 150,128
21 Claims. (Cl. 148—6.15)

13. A process for phosphating metals selected from the group consisting of iron steel, aluminum, zinc and magnesium, which comprises contacting said metal with an aqueous solution consisting essentially of an effective amount of phosphate ion, an effective amount of a metal-containing ion of the group consisting of ferrous iron, zinc, manganese, magnesium, nickel and molybdenum-containing ions, and about .0010 to about 1% by weight of an ascorbic acid, said solution having a pH in the range of about 2.0 to about 4.0.

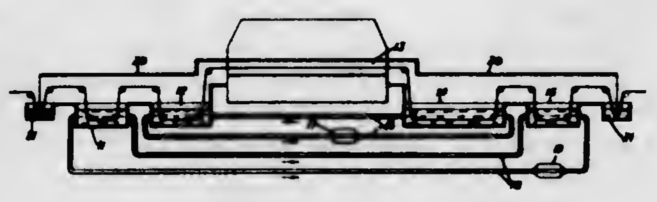
3,181,977

HEAT TREATMENT OF ELONGATE METAL MATERIAL

George McHardy Sturgeon, Dore, Sheffield, England, assignor to The British Iron and Steel Research Association
Filed Mar. 4, 1963, Ser. No. 262,564
9 Claims. (Cl. 148—13.1)

1. A method of patenting elongate metal material which comprises fluidising and heating a bed of particles to a temperature of the order of 1100° C. in association with an inert fluidising atmosphere, and recirculating said atmosphere through said particles; and treating the material by the successive steps of heating the material to an austenitising temperature by passage through said

particles, and thereafter rapidly quenching the material to a temperature between the lower critical temperature and the martensitic start temperature by passage through liquid metal moving in counterflow with the material.



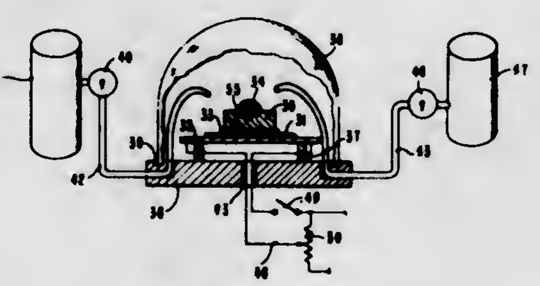
3,181,978
PROCESS FOR RESTORING DUCTILITY TO HYDROGEN ATTACKED STEEL

Lazarus C. Weiner, Great Neck, N.Y., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation of application Ser. No. 19,199, Apr. 1, 1960. This application Mar. 25, 1963, Ser. No. 267,806
3 Claims. (Cl. 148—14)

1. A process for restoring over 13.5% of the original ductillity to plain carbon steels of at least 0.10% carbon content containing methane generated by reaction between the carbon of said steel and a hydrogen environment at high temperature and high hydrogen partial pressure, the amount of methane being in the range between that which causes "irreversible" embrittlement typical of conditions of such carbon steel after along exposure to a hydrogen partial pressure of the order of at least 100 pounds per square inch and at a temperature of at least 550° F. and that which causes plastic deformation of the steel comprising heating said methane embrittled steel to a temperature over 1250° F. for a period exceeding ½ hour.

3,181,979
SEMICONDUCTOR DEVICE

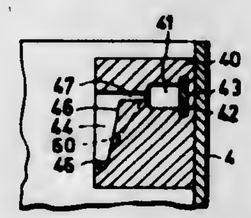
Paul L. Baron, Owego, Raymond W. Hamaker, Barton, and Angelo T. Romeo, Binghamton, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 18, 1961, Ser. No. 160,000
2 Claims. (Cl. 148—33.1)



1. A tunnel diode having a pair of regions of the opposite conductivity type and a junction between said regions comprising:
- a doped gallium arsenide host crystal with a carrier concentration of at least 5×10^{19} per cubic centimeter providing one of said regions;
- a carrier-dopant alloy providing the other of said regions; and
- said carrier-dopant alloy consisting of 5–15% copper and 85–95% indium by weight and sufficient traces of sulphur, selenium and tellurium to accomplish degeneracy.

3,181,980
METHOD OF MANUFACTURING SEMI-CONDUCTIVE DEVICES

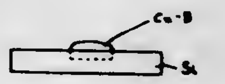
Frans Martinus Leopold, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 20, 1961, Ser. No. 90,477
Claims priority, application Netherlands, Mar. 12, 1960, 249,359
10 Claims. (Cl. 148—177)



1. In the manufacture of a semiconductor device, a method of alloying an electrode contact to a substantially monocrystalline semiconductive body portion, comprising providing within a centrifuge rotatable about an axis a substantially monocrystalline semiconductive body located remote from the said axis and providing spaced therefrom at least during rotation at least one mass of meltable contact material located closer to the axis of rotation than the semiconductive body, said mass when molten being a solvent for the semiconductive body and including at least one active substance selected from the group consisting of acceptors and donors, heating the said one mass of contact material until it melts, rotating the centrifuge at a high speed, when the said one mass is molten and the centrifuge has achieved a speed at which the centrifugal force acting on the mass substantially exceeds the force of gravity that would have acted on the mass had the mass been simply dropped on the semiconductive body from a height equal to its spacing from the latter, casting the entire said one molten mass onto the semiconductive body portion to cover uniformly, dissolve and alloy with a surface portion thereof, and thereafter cooling the melt to solidify the contact material alloyed to the body forming underneath a regrown semiconductive portion whose conductivity is modified by the absorption therein of the said active substance.

3,181,981
SEMI-CONDUCTOR DEVICE WITH COPPER-BORON ALLOYED ELECTRODE AND METHOD OF MAKING THE SAME

Alan Hugh Berger Benny and Albert Trainor, Southampton, England, assignors to North American Philips Company, Inc., New York, N.Y
Filed Oct. 30, 1961, Ser. No. 148,565
Claims priority, application Great Britain, Nov. 1, 1960, 37,513/60
5 Claims. (Cl. 148—185)



3. A method of making a semiconductor device, comprising forming an alloy mass consisting essentially of at least about 0.3% by weight of boron and copper, providing a semiconductive crystalline body, fusing and alloying at a surface portion of said body at least a portion of said alloy mass to form therein a recrystallized zone containing at least copper and boron, said recrystallized zone forming a p-n rectifying junction when said surface portion is of n-type conductivity and forming a p^+-p

junction when said surface portion is of p-type conductivity, the mean boron content of the said recrystallized zone being at least 5×10^{19} atoms per cubic centimeter.

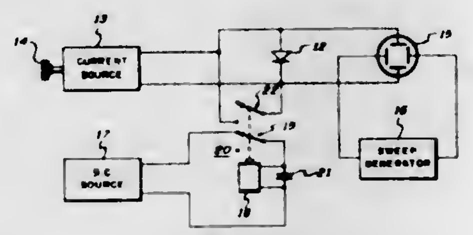
3,181,982
GEL PROPELLANTS COMPRISING HALOGEN-CONTAINING TERPOLYMERS

Charles H. Burnside and Claude G. Long, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Apr. 29, 1959, Ser. No. 809,873
19 Claims. (Cl. 149—19)

1. A gel propellant composition of matter consisting essentially of a mixture of, in weight percent: from about 5 to about 55 percent of a first oxidizer component selected from the group of polymers consisting of solid cross-linked terpolymers formed by copolymerizing from 35 to 70 mol percent of chlorotrifluoroethylene with from 10 to 35 mol percent vinylidene fluoride and 15 to 40 mol percent of hexafluoropropylene, based on total mols of combined monomers; from 40 to 90 percent of a second oxidizer component selected from the group consisting of normally liquid nitroalkanes containing from 1 to 4 carbon atoms per molecule and having an average of at least one nitro group per atom of carbon, and liquid mixtures of nitroalkanes containing from 1 to 4 carbon atoms per molecule where in the mixture there is an average of at least one nitro group per atom of carbon; and from 5 to 35 percent of a combustible fuel component capable of being oxidized by said oxidizer components, said fuel component being selected from the group consisting of elemental carbon and organic compounds.

3,181,983
METHOD FOR CONTROLLING THE CHARACTERISTIC OF A TUNNEL DIODE

Philip Bruce Lape, South Norwalk, and Max Kunz, Fairfield, Conn., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed Mar. 6, 1961, Ser. No. 93,765
8 Claims. (Cl. 156—17)



8. A method for controlliing the current-voltage characteristic of a tunnel diode comprising the steps of applying a current having a predetermined value to the terminals of said diode, said predetermined value substantially equaling the desired peak current value of said characteristic, continuously monitoring the potential which appears across said terminals, applying a solution for etching the junction surface of said diode, and stopping the etching action of said solution when a change is observed in the monitored value of the potential across said terminals.

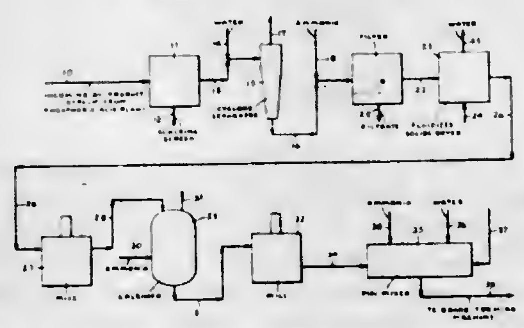
3,181,984
CLEANING AND BRIGHTENING OF SOLDER

William J. Tillis, Levittown, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 4, 1962, Ser. No. 192,317
10 Claims. (Cl. 156—20)

1. Method of cleaning and brightening lead-tin solder which has been modified by an aqueous persulfate solution, which comprises contacting said solder with an aqueous solution containing 5 to 15% by weight of thiourea and 5 to 50% by weight of fluoboric acid until the solder has a clean, bright surface, and removing the solder from said solution.

3,181,985
PROCESS FOR PRODUCING PAPER-LINED BY-PRODUCT GYPSUM PRODUCTS

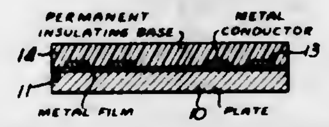
William H. Gates, Whippany, and Robert L. Harris, Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Sept. 7, 1960, Ser. No. 54,428
2 Claims. (Cl. 156—39)



1. In a process for producing paper-lined by-product gypsum products which includes calcining by-product gypsum containing residual phosphoric acid as an impurity, slurrying the calcined by-product gypsum with water, incorporating ammonia into the slurry prior to placing the slurry between paper liners to induce good bonding of the gypsum to paper, said ammonia being sufficient to bring the pH of the slurry prior to setting to between 6 and 10, applying a settable slurry of the ammonia treated gypsum and water between paper liners and allowing the slurry to set and form a strong bond of the gypsum to the paper liners, the combination therewith of milling said by-product gypsum containing residual phosphoric acid as an impurity prior to calcination to obtain a finely-divided gypsum and milling the calcined gypsum to obtain a finely-divided gypsum having a considerably increased Blaine surface area of at least about 4500 square centimeters per gram of the milled calcined gypsum and of improved water retentivity during setting without rejection of a material quantity of its water of crystallization with attendant migration of the rejected water to the surfaces of the paper-liners to wet the paper.

3,181,986
METHOD OF MAKING INLAID CIRCUITS

Nathan Pritikin, Santa Barbara, Calif., assignor to Intellux Inc., Santa Barbara, Calif., a corporation of California
Filed Mar. 31, 1961, Ser. No. 99,880
13 Claims. (Cl. 156—233)



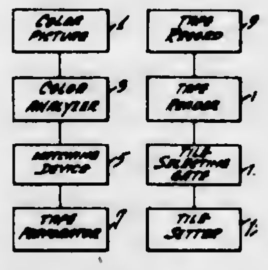
1. A method of making an inlaid circuit including the steps of:
- assembling a circuit carrier in the form of a relatively flexible metal film adhered to a relatively rigid plate;
- applying electrically conducting material in a predetermined circuit pattern upstanding from the surface of the metal film of the carrier;
- applying a layer of insulating material against all exposed surfaces of the circuit material and adjacent areas of said metal film to provide a permanent base;
- separating the plate from the film;
- and stripping the film from the circuit material leaving the circuit material inlaid in the base,

3,181,987

METHODS AND SYSTEMS FOR REPRODUCING COLOR PATTERNS IN MANUFACTURED ARTICLES, PARTICULARLY MOSAIC TILE

Igor B. Polevitzky, Miami, Fla., assignor to Image Designs, Inc., New York, N.Y., a corporation of New York

Filed May 8, 1961, Ser. No. 108,633
10 Claims. (Cl. 156—299)



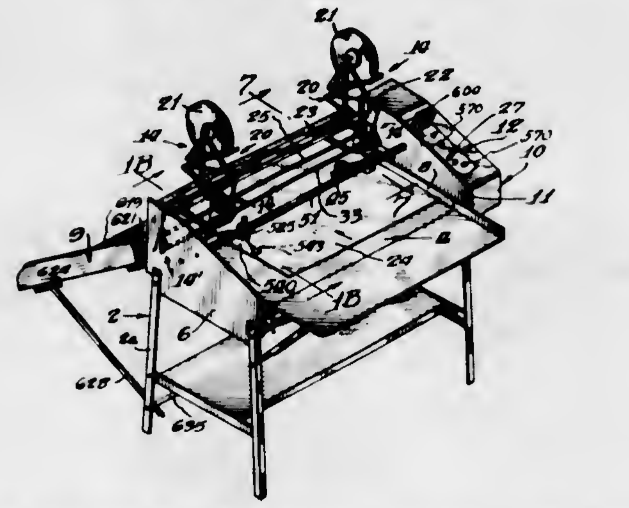
1. The process of producing a mosaic composition corresponding to an original color picture which includes the steps of analyzing said color picture by scanning the picture area by area concurrently to determine the color, chroma, and value of each of said areas as fixed by the proportions of its fundamental color components, deriving from the analysis of each of said areas a binary-coded signal representative of the color, chroma and value of that area, storing a plurality of moasaic tiles in groups having colors substantially matching the colors in said picture, sequentially releasing from said plurality of mosaic tiles a plurality of tiles with each tile having a solar chroma and value corresponding to the color analysis of the corresponding color picture area, and assembling said tiles in the order of said scanning whereby the mosaic composition corresponds to the original color picture.

3,181,988

TAPE APPLYING MACHINE

Caspar F. Engert, Northlake, Ill., assignor to Kleen-Stik Products, Inc., Chicago, Ill., a corporation of Illinois

Filed Jan. 3, 1961, Ser. No. 80,403
20 Claims. (Cl. 156—350)



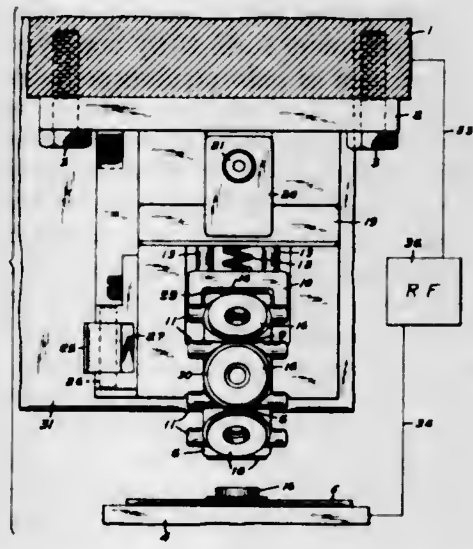
8. In an adhesive tape applying machine having sheet feeding means for feeding sheets of material to which the tape is to be applied through the machine, and tape applying means for applying adhesive tape to a portion of the sheet of material passing through the machine, the improvement in control means for operating said tape applying means, said control means comprising: tape spotting control means for operating said tape applying means, said tape spotting control means including a movably mounted timing means having a number of timing points, actuating means adjacent to said timing means and responsive to the passage of said timing points thereby by operating said tape applying means to apply spots of tape to a sheet, sheet responsive means responsive to the passage thereby of the leading and trailing edges of the sheet passing through said machine, and means responsive to passage of the leading edge of a sheet past said sheet responsive means for initiating movement of said movable timing means and, means responsive to the passage of the trailing edge of the sheet past said sheet responsive means for stopping the movement of said timing means.

3,181,989

SNAP FASTENER ATTACHING UNIT

Everett Melanson, Wakefield, and Walter S. Bachman, Arlington, Mass., assignors to United-Carr Incorporated, a corporation of Delaware

Filed May 11, 1962, Ser. No. 194,098
3 Claims. (Cl. 156—566)



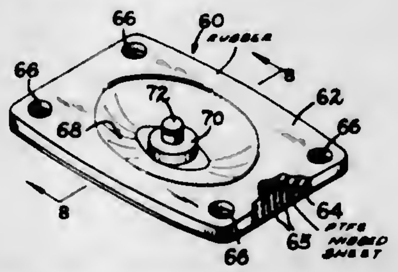
1. A fastener applying unit for use with a platen press comprising a frame having a surface adapted for attachment to a working face of a first platen of the platen press, a rotary fastener carrying member mounted on said frame, said rotary fastener carrying member having its axis of rotation lying parallel to the said surface of said frame and having a series of fastener carrying applier elements spaced around said rotary member, said rotary member mounted for reciprocal movement toward and away from said surface, a latch mounted on said frame, latch engaging means spaced around said rotary member for cooperation with said latch for causing rotation of said rotary member, said latch including a cam surface, and first urging means associated with said latch for maintaining said latch and returning said latch to an extended position.

3,181,990

SINTERED PLASTIC ARTICLES

Victor G. Reiling, Dayton, Ohio, assignor to The Duriron Company, Inc., Dayton, Ohio, a corporation of New York

Filed Dec. 30, 1960, Ser. No. 79,764
6 Claims. (Cl. 161—119)



1. An article of manufacture comprising a resinous plastic backing member and an overlying member of polytetrafluoroethylene mechanically and adhesively bonded thereto, said polytetrafluoroethylene member having a relatively low coefficient of friction and being relatively chemically inert, means defining a multiplicity of apertures over substantially the entire surface of said resinous

---

plastic backing member which faces said polytetrafluoroethylene member, said apertures in said resinous plastic backing member having a depth less than the cross-sectional thickness dimension of said resinous plastic backing member, a multiplicity of projections over substantially the entire surface of said polytetrafluoroethylene member facing said resinous plastic backing member and received by the apertures in the surface of said resinous plastic backing member, said projections having a density at the tip and base thereof greater than that at the midsection, each said projection having a cross-sectional dimension at the midsection which is less than that at the tip and base thereof, and an adhesive interposed between the facing surfaces of said members, said projections and apertures cooperating with said adhesive to provide a mechanical and chemical bond maintaining the facing surfaces of said members in intimate contact throughout the entire extent of facing contact thereof.

3,181,991

PIGMENTED PEROXIDE COMPOSITIONS

Newton G. Leveskis, Richmond, Calif., assignor to U.S. Peroxygen Corporation, Richmond, Calif.

No Drawing. Filed Aug. 7, 1961, Ser. No. 129,522
6 Claims. (Cl. 252—430)

1. A stable catalyst composition consisting of a liquid organic peroxide and a wholly compatible non-white color pigment selected from the group consisting of red iron oxide, black iron oxide, yellow iron oxide, chrome orange, phthalocyanine and ferric ferrocyanide with which the active oxygen content of said peroxide remains substantially constant, said pigment constituting about 1–25% by weight of said organic peroxide.

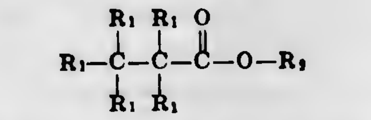
3,181,992

ANTIMICROBIAL LOWER ALKYL POLYHALOGENATED ESTERS OF ACIDS OF 1–6 CARBONS

Raymond J. Michalski, Riverdale, John R. Nelson, Park Forest, and Leonard L. Wolfson, Tinley Park, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 11, 1961, Ser. No. 123,120
18 Claims. (Cl. 167—38.6)

1. A composition substantially inhibited from chemical deterioration due to static microbic attack, which comprises an organic water-dispersible fermentable microorganism nutrient susceptible to said deterioration and at least a biostatic amount of a microbiocidal organic polyhalogenated ester of the formula:



$$R_1-\underset{R_1}{\overset{R_1}{C}}-\underset{R_1}{\overset{R_1}{C}}-\overset{O}{\overset{\|}{C}}-O-R_2$$

where R_1 is selected from the group consisting of lower alkyl, halogen and hydrogen and R_2 is a hydrocarbon radical containing from 1 to 6 carbons with the proviso that at least two occurrences of R_1 are halogen.

3,181,993

WATER-SOLUBLE SALICYLIC ACID DERIVATIVES AS ANALGESICS AND ANTIPYRETICS

Remsen T. Schenck, Bangor, Pa., assignor to Keystone Chemurgic Corporation, Bethlehem, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 17, 1959, Ser. No. 833,967
The portion of the term of the patent subsequent to Aug. 18, 1976, has been disclaimed
4 Claims. (Cl. 167—65)

2. A pharmaceutical preparation for internal administration in liquid form having analgesic and antipyretic properties consisting essentially of an edible sugar, water and a compound selected from the group consisting of sodium β-sulfoethylacetyl salicylate, sodium δ-sulfobutylsalicylate, sodium δ-sulfobutylacetylsalicylate and sodium o-benzylacetylsalicylate.

3,181,994

ANALGESIC BIPHENYL ACETIC ACID DERIVATIVES

Bernard Dubnick, Morris Plains, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Nov. 13, 1961, Ser. No. 152,003
4 Claims. (Cl. 167—65)

1. Method for the production of analgesia in mammals which comprises the administration to said mammals an effective amount of the 2-dimethylaminoethanol salt of 2-(4-biphenylyl)butyric acid.

3,181,995

ESTERS OF THIOSTREPTON

Miklos Bodanszky and Josef Fried, Princeton, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 30, 1962, Ser. No. 183,756
4 Claims. (Cl. 167—65)

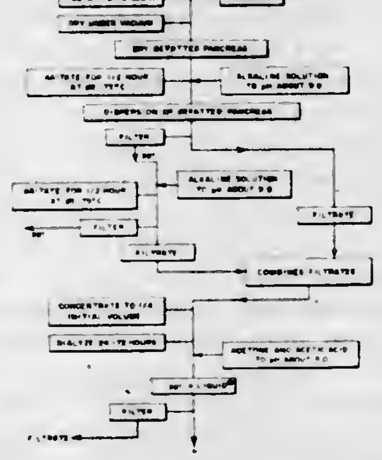
1. A compound selected from the group consisting of the half esters of dicarboxylic acids of less than twelve carbon atoms and thiostrepton, and the non-toxic, water-soluble salts thereof.

3,181,996

METHOD FOR THE PREPARATION OF A PANCREATIC HEPARINOID

Pietro Bianchini, Como, Italy, assignor to Crinos Industria Farmacobiologica S.p.A., Villaguardia, Italy

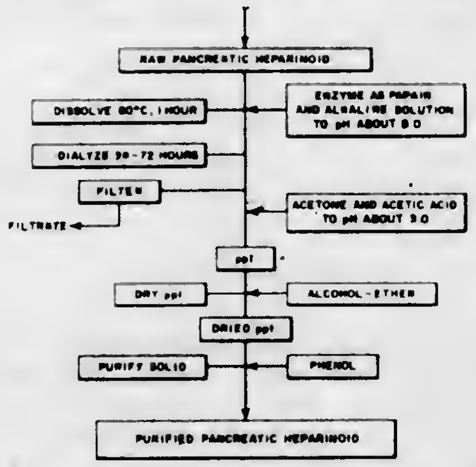
Filed May 25, 1962, Ser. No. 197,772
Claims priority, application Italy, May 25, 1961, 9,644/61
8 Claims. (Cl. 167—74)



1. A method for the preparation of a pancreatic heparinoid which comprises:

(*a*) removing the fat from a cake of pancreas by subjecting the cake to the action of an organic solvent;
(*b*) then drying the cake after separation from the organic solvent extract;
(*c*) dispersing the resultant powdered cake in an aqueous alkaline solution;
(*d*) agitating the resultant dispersion at an elevated temperature and filtering while hot;
(*e*) dispersing the resultant precipitate in an aqueous alkaline solution and agitating the resultant dispersion at an elevated temperature and filtering while hot;

(*f*) combining the alkaline filtrates from stages (*d*) and (*e*) and concentrating the combined alkaline filtrates to a substantially smaller volume than the initial volume;
(*g*) dialyzing the concentrate from stage (*f*);
(*h*) precipitating the liquid with a suitable organic solvent in the presence of a weak acid;


RAW PANCREATIC HEPARINOID
DISSOLVE 80°C, 1 HOUR
ENZYME AS PAPAIN AND ALKALINE SOLUTION TO pH ABOUT 8.0
DIALYZE 24-72 HOURS
FILTER
FILTRATE
ACETONE AND ACETIC ACID TO pH ABOUT 3.0
ppt
DRY ppt
ALCOHOL-ETHER
DRIED ppt
PURIFY SOLID
PHENOL
PURIFIED PANCREATIC HEPARINOID

(*i*) drying the resultant precipitate and dissolving it in water with addition of a small amount of a suitable protein-digesting enzyme and rendering the mixture weakly alkaline;
(*j*) dialyzing the solution from stage (*i*) and filtering;
(*k*) precipitating the filtrate from stage (*j*) with a suitable organic solvent in the presence of a weak acid;
(*l*) and drying the precipitate with a suitable organic solvent.

3,181,997
PROCESS FOR PREPARING PURIFIED SOLUTIONS OF KALLIKREIN INACTIVATOR

Fritz Schultz, Wuppertal-Sonnborn, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Sept. 20, 1962, Ser. No. 224,939
Claims priority, application Germany, Mar. 28, 1959, F 28,061; June 18, 1960, F 31,463
10 Claims. (Cl. 167—74)

1. In the process of preparing substantially pure solutions of kallikrein inactivator, the step which comprises extracting animal organ-containing kallikrein inactivator with a solution of up to 20% of an inorganic salt of a member selected from the group consisting of alkali metals, alkaline earth metals, zinc cadmium, mercury, aluminum, titanium, tin, lead, arsenic, antimony, bismuth, copper, chromium, molybdenum tungsten, uranium, selenium, tellurium, manganese, iron, cobalt, nickel and ammonium at a temperature ranging from 0 to 90° C. for from 5 minutes to 24 hours, said solution being formed by dissolving said salt in a member selected from the group consisting of water, water-miscible organic solvents and aqueous solutions containing a water-miscible organic solvent.

10. A pharmaceutical preparation comprising a substantially stabilized aqueous solution of a material capable of inactivating kallikrein produced by the process of claim 1.

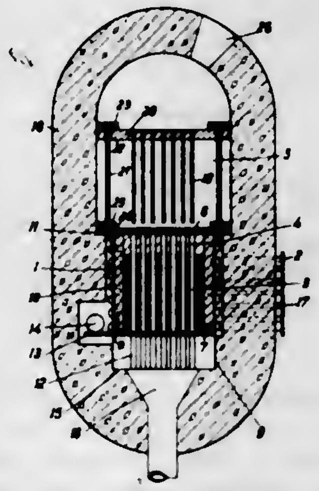
3,181,998
TABLET DISINTEGRATION

Joseph L. Kanig, 889 Baldwin Drive, Westbury, N.Y.
No Drawing. Filed Aug. 12, 1960, Ser. No. 49,140
6 Claims. (Cl. 167—82)

1. A compressed oral tablet adapted to be ingested intact without chewing or fracturing and prepared by admixing amylopectin, at least one specific enzyme known to react with said amylopectin upon activation with an aqueous media, and a non-enzymatic thereapeutic component, whereby disintegration of said tablet will be accelerated in the presence of said aqueous media.

3,181,999
HEAT TREATING METHOD AND MEANS UTILIZING NUCLEAR ENERGY

Rudolf Schulten, Lutzelsachsen an der Bergstrasse, Germany, assignor to Brown, Boveri & Cie Aktiengesellschaft, Mannheim, Germany, a corporation of Germany
Filed Mar. 23, 1960, Ser. No. 16,979
Claims priority, application Germany, Mar. 24, 1959, B 52,589
2 Claims. (Cl. 176—39)

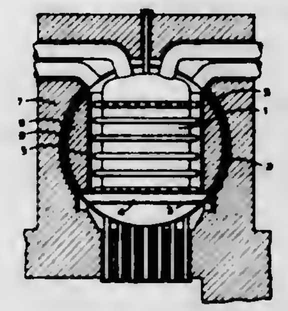


1. A process for heat treatment of material for performing a chemical endothermic reaction with the aid of nuclear fission energy to provide the reaction heat, comprising the steps of inserting nuclear fuel elements into a plurality of spaced bores of a graphite reactor moderator block to generate and store heat in said moderator block, retaining said fuel elements in said moderator block until said block reaches a predetermined temperature corresponding to that required for said chemical reaction, removing said fuel elements from said bores, subsequently introducing the material to be treated into spaced bores in said moderator block, and performing said chemical reaction of said material within said block by heating said material directly with heat stored in said moderator block, removing the products of the chemical reaction, re-inserting the fuel elements into said moderator block to re-heat the latter, and repeating the process, said material comprising calcium oxide and carbon, said products of the chemical reaction comprising calcium carbide, and said predetermined temperature being within the range of about 1620° C. to about 2200° C.

3,182,000
SHIELDING ARRANGEMENT FOR A SPHERICAL NUCLEAR REACTOR VESSEL

Hartwig Benzler, Oberhausen, Rhineland, Germany, assignor to Babcock & Wilcox, Limited, London, England, a corporation of Great Britain
Filed Feb. 20, 1961, Ser. No. 90,488
Claims priority, application Germany, Feb. 25, 1960, D 32,735
1 Claim. (Cl. 176—40)

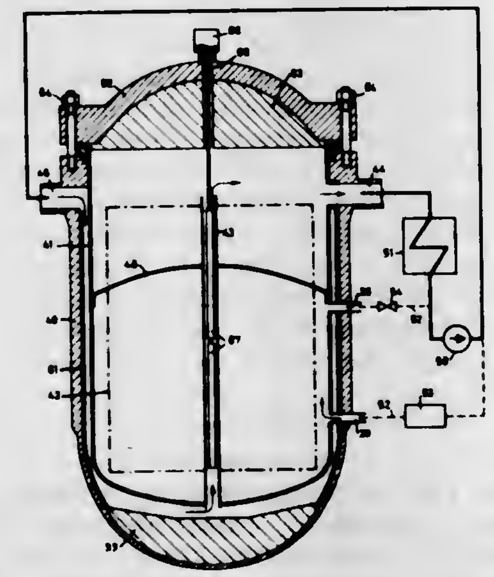
A nuclear reactor comprising walls forming a reactor vessel in the shape of a sphere, a vertically extending cylindrically shaped core disposed centrally within said vessel and spaced from the walls thereof, vertically extending biologica' shielding for said reactor comprising an inner shield formed of a solid material and having a varying horizontal cross section positioned within said vessel laterally enclosing said core and an outer shield formed of a solid material and having a varying horizontal cross section located laterally about said vessel and being coextensive with said inner shield, a cylindrically shaped wall closely spaced from the core and forming the inner surface of said inner shield, said wall containing a high neutron-absorbing cross-section material, the outer surface of said inner shield having a curved shape conforming to the adjacent wall of said vessel and spaced closely therefrom to form a coolant passageway therebetween,



said inner shield sealed to prevent the infiltration of gases therethrough, and the inner surface of said outer shield positioned opposite said inner shield having a curved shape conforming to the adjacent wall of said pressure vessel whereby the combined horizontal cross-section dimension of said inner and outer shield is substantially uniform throughout the extent of the height of said inner shield.

3,182,001
HETEROGENEOUS NUCLEAR REACTOR

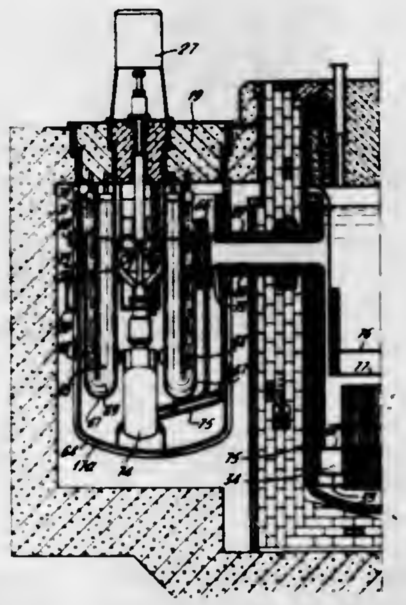
Hermann Kumpf, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed July 20, 1960, Ser. No. 44,074
Claims priority, application Germany, July 23, 1959, S 64,057
2 Claims. (Cl. 176—50)



1. A heterogeneous nuclear reactor comprising a reactor tank having a grid structure of parallel coolant channels for receiving nuclear fuel elements, a moderator space surrounding said channels and defined by the fuel-bearing portions of said channels, conduit means for moderator-type coolant defining together with said channels a circulatory coolant path through said channel, a coolant-impermeable partitioning wall structure dividing a portion of the moderator space from the rest of the space, said portion communicating with the hot region of said coolant path, said partitioning wall structure extending transversely to the axis of the respective channels across said moderator space at a location between the respective ends of the fuel-bearing portions of said channels and closer to the ends of said channels extending into the portion of said moderator space which communicates with the hot region of said coolant path whereby the greater length of said channels is in said rest of said moderator space.

3,182,002
LIQUID COOLED NUCLEAR REACTOR WITH IMPROVED HEAT EXCHANGE ARRANGEMENT

John Michael Laithwaite, Wilmslow, Leslie Charles Cole, Culcheth, near Warrington, and William George Hutchinson, Appleton, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Nov. 19, 1962, Ser. No. 238,440
Claims priority, application Great Britain, Oct. 17, 1962, 39,278/62
3 Claims. (Cl. 176—65)



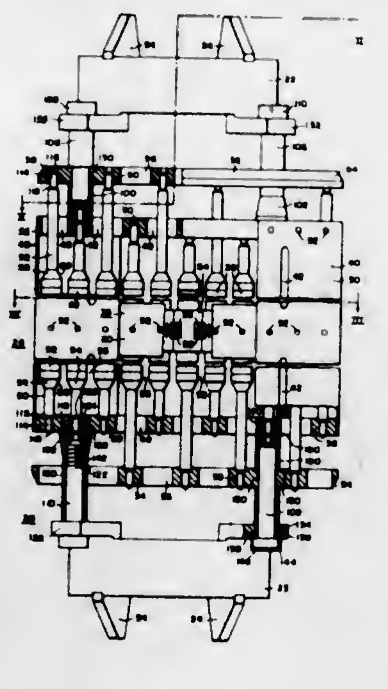
1. In a nuclear reactor of the kind having a core cooled by a liquid coolant, the combination comprising
(*a*) a core tank vessel housing the core,
(*b*) other separate tank vessels housing heat exchangers and coolant circulating means, each heat exchanger having an inlet to receive the coolant and an outlet to discharge the coolant directly to the interior of the respective vessel and each circulating means having an inlet open to the respective vessel interior and an outlet for delivery of coolant drawn from said interior,
(*c*) thermally insulating means surrounding the core to define with internal surfaces of the core tank vessel a free space for coolant,
(*d*) outer ducts establishing communication between said free space and the interior of each of said other tank vessels whereby a mass of liquid coolant constituting a coolant reservoir is common to all the vessels, and
(*e*) ducting extending through the outer ducts to connect the outlets of the circulating means to an inlet to the core and to connect an outlet from the core to the heat exchanger inlets.

3,182,003
MEANS FOR SUPPORTING FUEL ELEMENTS IN A NUCLEAR REACTOR

Arthur G. Thorp II, Pittsburgh, Thomas F. Widmer, Monroeville, and Erling Frisch, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 4, 1960, Ser. No. 19,760
5 Claims. (Cl. 176—78)

1. In a reactor fuel arrangement having a frame member, a plurality of elongated fuel rods supported by said frame member, means for laterally supporting said fuel rods, said lateral supporting means being supported at least partially by said frame member and including a grid formed from a lateraly extending layer of tubular elements, means for rigidly joining each of said tubular elements to the outer surfaces of adjacent tubular elements to form a rigid unitary structure for said grid, said fuel rods extending through said tubular elements respectively,

and said tubular elements each having arcuate spring means of generally opposed curvature relative to that of said rods for resiliently engaging the associated one of said fuel rods along at most a line contact and for holding said fuel rods against lateral movement relative to each other and to said frame but enabling differential longitudinal movement of said fuel rods relative to said tubular elements and to one another.

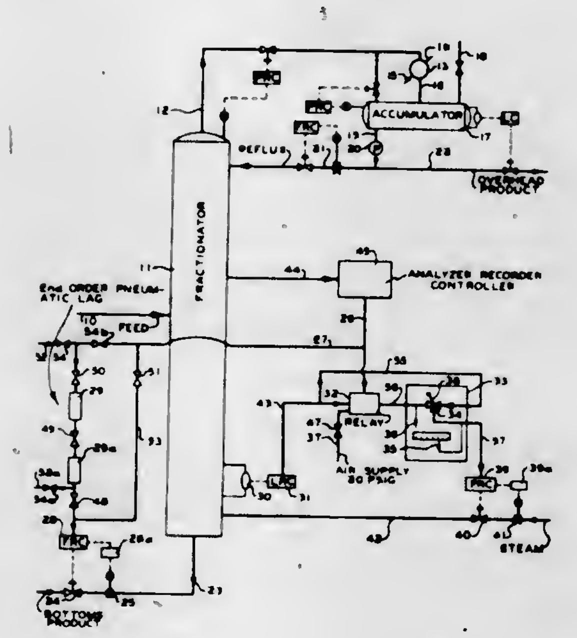


3,182,004
PRODUCTION OF FUNGIMYCIN
Lloyd E. McDaniel, Plainfield, Carl P. Schaffner, Somerville, and Edwin G. Bailey, Somerset, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Apr. 18, 1963, Ser. No. 273,857
5 Claims. (Cl. 195—80)

1. Process for the production of fungimycin which comprises inoculationg a fungimycin producing species of *Streptomyces coelicolor* var. *aminophilus* NRRL 2390 IMRU 3865 into an aqueous medium containing assimilable sources of carbon and nitrogen, allowing the growth to proceed at about 28° C. under submerged aerobic conditions until the concentration of fungimycin in the media is at least 230 to 300 μg./ml. extracting said fungimycin by the addition of n-butanol and subjecting the resulting mixture to a gravitational force to effect separation of the butanol fraction.

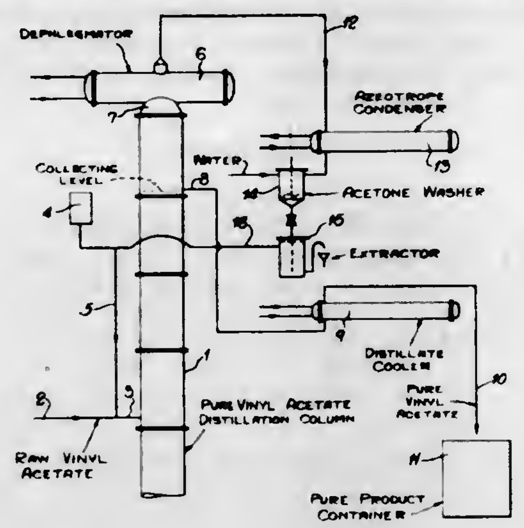
3,182,005
FRACTIONATOR REBOILER HEAT AND BOTTOMS PRODUCT CONTROL SYSTEM
Dale E. Lupfer, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 3, 1961, Ser. No. 80,462
5 Claims. (Cl. 202—40)

1. In a fractional distillation system comprising, in combination, a fractional distillation column; means for introducing into said column a fluid mixture to be fractionated; means for withdrawing from said column an overhead fraction; means for withdrawing from said column a bottoms fraction; and means for passing a heating fluid in heat exchanging relationship with the contents of the kettle section of said column; the improvement comprising means for withdrawing a sample stream of fluid from a predetermined point in said column above the point of introduction of said fluid mixture to be fractionated, analyzing the thus withdrawn sample stream and establishing a first signal representative of the concentration of a desired heavy component in said sample stream such that an increase in the concentration of said desired heavy component results in an increase in said first signal, means in operative communication with the kettle section of said column for establishing a second signal representative of the liquid level in said kettle section, means responsive to said first and second signals for establishing a third signal representative of said second signal minus said first signal so that an increase in said second signal causes an increase in said third signal while an increase in said first signal causes a decrease in said third signal, means responsive to said third signal for controlling the flow of said heating fluid in heat exchanging relationship with the contents of the kettle section of said column such that an increase in said third signal results in an increase in heat input to said column while a decrease in said third signal results in a decrease in heat input to said column, means responsive to said first signal for establishing a fourth signal representative of a lag function of said first signal, and means responsive to said fourth signal for controlling the rate of withdrawal of said bottoms fraction from said column such that an increase in said fourth signal causes an increase in the rate of withdrawal of said bottoms fraction from said column while a decrease in said fourth signal causes a decrease in the rate of withdrawal of said bottoms fraction from said column, thereby substantially eliminating variations in the liquid level in said kettle section resulting from a change in said first signal.

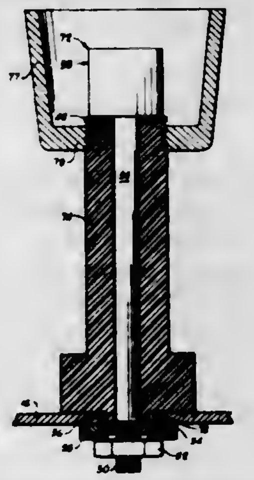


3,182,006
PROCESS FOR SEPARATING ACETONE AND OTHER CARBONYL COMPOUNDS WITH 3 CARBON ATOMS FROM VINYL ACETATE
Otto Fruhwirth, Burghausen, Upper Bavaria, Germany, assignor to Wacker-Chemie G.m.b.H., Munich, Germany, a corporation of Germany
Filed Dec. 7, 1961, Ser. No. 157,823
Claims priority, application Germany, Feb. 21, 1961, W 29,513
3 Claims. (Cl. 202—42)

1. Process for continuously separating small quantities of acetone and other carbonyl compounds having 3 carbon atoms from vinyl acetate by azeotropic distillation, which comprises azeotropically distilling said vinyl acetate in a distillation column with an additive whose azeotropic boiling point with acetone is about 5–50° C. below the boiling point of pure vinyl acetate and whose critical pressure differs from that of acetone by at least 3 atmospheres, said additive being selected from the group consisting of saturated and unsaturated aliphatic and cycloaliphatic hydrocarbons, chlorinated hydrocarbons and carbon disulphide, drawing off pure vinyl acetate as a liquid sidestream from the upper part of said column, distilling off the carbonyl compounds with the azeotropic mixture of acetone and additive, and removing the carbonyl compounds from the distilled azeotropic mixture by washing the latter with water.



3,182,007
ELECTRODE ASSEMBLY FOR THE ANODIC PASSIVATION OF METALS
Merle Hutchison, Olen L. Riggs, Jr., and John D. Sudbury, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Mar. 9, 1959, Ser. No. 797,985
3 Claims. (Cl. 204—147)



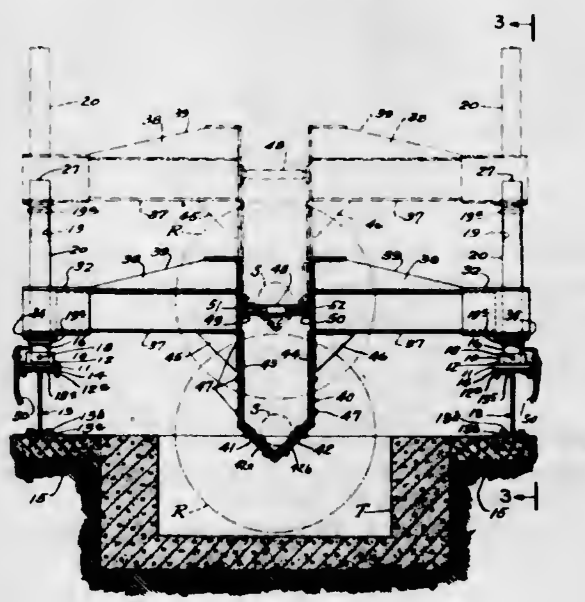
1. In an anodic passivation system containing a corrosive solution within a metallic vessel, wherein a direct current potenial is applied between a cathode disposed in said solution and said metallic vessel, and wherein said cathode is mounted in such proximity to the inner surface of said vessel that excessive positive potential is created at the inner surface of the vessel in the near proximity of said cathode whereby excessive corrosion of said vessel occurs, the improvement which comprises:

providing a zone of electrically insulating material disposed between said vessel wall and said cathode, said zone being adapted to shield said vessel from said cathode and thereby reduce said potential and said corrosion.

3,182,008
HYDROXYLATION OF ORGANIC COMPOUNDS
Donald L. Heywood, Charleston, Harry A. Stansbury, Jr., South Charleston, and Benjamin Phillips, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed June 14, 1961, Ser. No. 116,933
31 Claims. (Cl. 204—162)

5. A process which comprises reacting peracetic acid with a saturated aliphatic hydrocarbon having at least two carbon atoms, at a temperature between about −10° C. and +100° C. for a period of time sufficient to hydroxylate said saturated aliphatic hydrocarbon, wherein said process is carried out under irradiation with ultraviolet light.

3,182,009
ELECTROPLATING APPARATUS HAVING HYDRAULIC HEAVY ROLL SUPPORTING RACK
Thomas E. Nalband and Eugene R. Nalband, both of 23 Rutledge St., Cheshire, Conn.
Filed Jan. 14, 1963, Ser. No. 251,430
4 Claims. (Cl. 204—212)

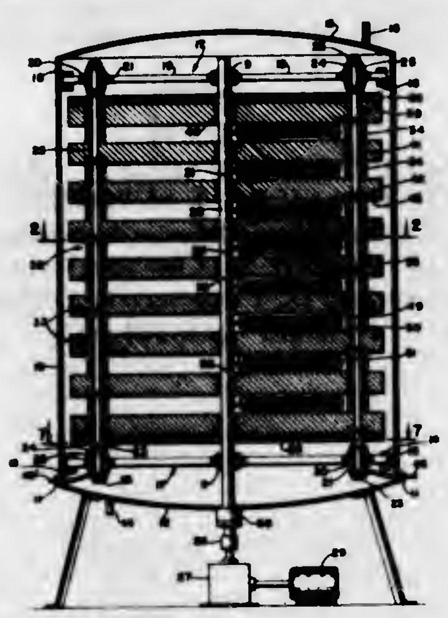


1. An electroplating apparatus comprising a tank and hoist means for raising and lowering rolls to be plated from and to said tank, said hoist means being mounted on a support disposed adjacent said tank and comprising a pair of horizontally extending racks each comprising first and second similar horizontal members spaced at their inner end portions to provide a central opening in said rack, horizontally spaced members secured to said horizontal members and depending vertically downwardly respectively from said inner end portions thereof, means connecting said vertical members at the lower ends thereof, said connecting means providing bearing surfaces for rotatively supporting said rolls to be plated, said connecting means including conductors for introducing electrical current to said rolls, means for rotating said rolls to be plated, and four similar vertical hydraulic cylinders, each cylinder being secured to an outer end portion of a horizontal member so as to provide for raising and lowering of said racks, said central openings permitting positioning of said roll onto said bearing surfaces.

3,182,010
ELECTROLYTIC METAL HYDROXIDE CELL
Paul S. Roller, 4021 9th St. NW., Washington, D.C.
Filed Mar. 24, 1961, Ser. No. 98,070
8 Claims. (Cl. 204—227)

1. An electrolytic cell for metal hydroxide production, comprising a plurality of parallel metal electrode plates, and a wiper assembly between each adjacent two said plates and including a support disposed parallel with and intermediate said plates, means for driving said support through a path parallel with and intermediate said plates, two resilient means carried by said support and respectively biased toward the opposed surfaces of said adjacent plates, and a wiper carried by each of said re-

silient means and resiliently urged thereby with substantially constant wiping pressure against the respective plate



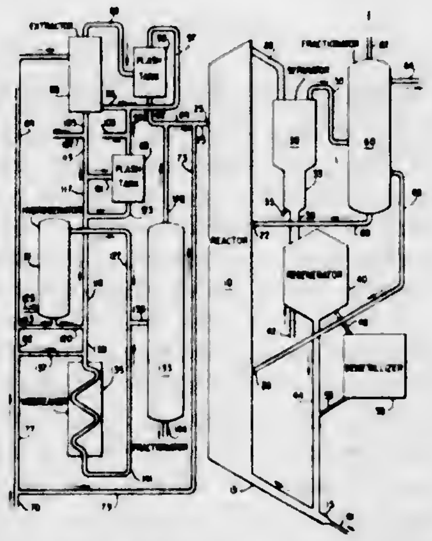
surfaces toward which the respective resilient means is biased.

3,182,011
CRACKING A PLURALITY OF HYDROCARBON STOCKS

Bernard S. Friedman, Chicago, Ill., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

Filed June 5, 1961, Ser. No. 114,994

14 Claims. (Cl. 208—78)



1. In the cracking of a plurality of mineral oil hydrocarbon charge stocks in the presence of a finely divided solid synthetic gel, silica-based cracking catalyst, at least one of said charge stocks being metal-contaminated and containing more than about 1.5 parts per million of vanadium and more than about 0.6 part per million of nickel and at least one of said charge stocks boiling in the gas oil range and being relatively metals-free, containing less than about 0.5 part per million of vanadium and less than about 0.2 part per million of nickel, the steps comprising conducting the cracking under flow conditions of progressive reaction in a reaction zone by contacting the catalyst under cracking conditions first with the said relatively contaminant-free charge stock in vapor form while flowing the catalyst and vapor in suspension through an elongated confined reaction flow path in the reaction zone, introducing said contaminated charge stock into the last one-fourth of said flow path to crack said contaminated stock and deposit metal poisons on the catalyst, separating catalyst from hydrocarbons at the end of the flow path and recovering hydrocarbon products, cycling the catalyst between the reaction flow path and a catalyst regeneration zone wherein carbon is burned from the catalyst, bleeding from the conversion system a portion of catalyst containing at least about 50 p.p.m. nickel and 50 p.p.m. vanadium, demetallizing bled catalyst and returning resulting dimetallized catalyst to the cracking flow path.

3,182,012
CATALYTIC HYDROCRACKING

Lewis M. Browning, Needham, Mass., and Carl W. Streed, Sewell, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York

Filed Sept. 12, 1958, Ser. No. 760,646

8 Claims. (Cl. 208—111)

1. A process for cracking hydrocarbon fractions which comprises contacting, in the presence of hydrogen, a hydrocarbon fraction having an initial boiling point of at least about 400° F., a 50 percent point of at least about 500° F. and an end point of at least about 600° F. and boiling substantially continuously between said initial boiling point and said end point with a catalyst consisting essentially of 15 to 40 percent by weight silica, 1 to 8 percent cobalt oxide, 3 to 20 percent by weight molybdenum trioxide and remainder alumina prepared by impregnating the alumina component with the cobalt oxide and molybdenum trioxide components, mechanically mixing the resulting impregnated product with the silica component, drying and calcining the resulting composite at an elevated temperature, said contacting being effected at a temperature between about 600° F. and about 950° F., a liquid hourly space velocity between about 0.1 and about 10, a hydrogen partial pressure between about 700 and about 3000 pounds per square inch gauge employing a molar ratio of hydrogen to hydrocarbon charge between about 2 and about 80.

3,182,013
ACTIVATION OF ISOMERIZATION AND HYDROCRACKING CATALYSTS

John W. Myers, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Mar. 5, 1962, Ser. No. 177,681

19 Claims. (Cl. 208—112)

1. A process for activating a moisture-free catalyst consisting essentially of a porous substantially water-free activated alumina-containing support calcined at a temperature above 900° F. having deposited thereon at least one member of the group consisting of nickel, cobalt, nickel molybdate, and cobalt molybdate, which comprises heating said catalyst at a temperature in the range of 900 to 1500° F. for a period in the range of 10 minutes to 24 hours in an anhydrous, vaporous ambient including a substantial and activating concentration of at least one gas selected from the group consisting of HCl, Cl, HBr, Br, and the Cl and Br derivatives of methane.

13. A process for hydrocracking a hydrocrackable hydrocarbon which comprises contacting said hydrocarbon in admixture with H_2 under anhydrous hydrocracking conditions including a temperature in the range of 400 to 750° F. with a catalyst activated by the process of claim 1.

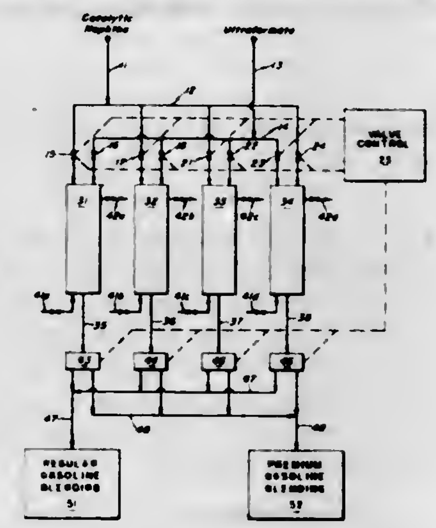
3,182,014
TRANSFERRING SULFUR BETWEEN GASOLINE POOL COMPONENTS

Herman S. Seelig, Valparaiso, John R. Coley, Ogden Dunes, and Harry M. Brennan, Hammond, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Mar. 22, 1962, Ser. No. 181,755

9 Claims. (Cl. 208—245)

1. A method of improving the lead susceptibility and blending octane of a sulfur-containing gasoline blending stock for use in leaded gasoline, which method comprises contacting said blending stock in the liquid phase with a solid adsorbent material capable of selectively absorbing organo-sulfur compounds, desorbing said adsorbent material with a second gasoline blending stock, recovering said second blending stock from said desorbing as a blending stock of increased sulfur content without material decrease in blending octane, and recovering the first blending stock from said contacting as a blending stock having increased lead susceptibility and blending said stocks into finished gasolines without additional sulfur removal from either of said stocks.



3,182,015
PROCESS FOR THE SELECTIVE HYDROGENATION OF LIQUID HYDROCARBONS OF THE GASOLINE BOILING RANGE

Walter Krönig and Hans-Joachim Müller, both of Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 25, 1961, Ser. No. 147,433

Claims priority, application Germany, Oct. 28, 1960, F 32,435

6 Claims. (Cl. 208—255)

1. In the process for the selective hydrogenation treatment of gum formers contained in gasoline boiling range hydrocarbon fractions in which the fraction treated is trickled through a bed of solid supported noble metal hydrogenation catalyst in contact with hydrogen, the improvement which comprises controlling the temperature so that the fraction treated is initially trickled over and in contact with the hydrogenation catalyst and hydrogen through at least ¼ of the hydrogenation catalyst bed at a temperature below 50 degrees C. and prior to completion of the hydrogenation as the fraction trickles down further through the catalyst bed, the temperature is increased to a value in the range from 50 degrees C. up to 100 degrees C.

3,182,016
HYDROGENATION PROCESS EMPLOYING TUBULAR CATALYTIC STRUCTURE

Edward L. Cole, Glenham, and Edwin C. Knowles, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 16, 1961, Ser. No. 96,079

9 Claims. (Cl. 208—264)

1. A process for the hydrogenation of hydrocarbons which comprises contacting said hydrocarbons with hydrogen at an elevated temperature and pressure in the presence of a catalytic structure consisting essentially of an extended substrate of length and surface area substantially greater than that of discrete particles, and a catalyst material deposited on said extended substrate by chemical reduction from a solution containing a soluble compound of said catalyst material in the presence of said substrate.

3,182,017
SEPARATION OF NAPHTHENES FROM HYDROCARBON MIXTURES USING 7 A. TO 12 A. MOLECULAR SIEVES

Raymond N. Fleck, Albany, and Carlyle G. Wight, Fullerton, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Apr. 5, 1963, Ser. No. 270,806

20 Claims. (Cl. 208—310)

1. A process for separating a fluid hydrocarbon mixture comprising naphthenic and non-naphthenic hydrocarbons which comprises: contacting said hydrocarbon mixture with a solid granular adsorbent comprising a partially dehydrated crystalline zeolitic metallo alumino silicate having pores of substantially uniform diameter between about 7 A. and about 12 A. whereby there is obtained a rich adsorbent containing adsorbed hydrocarbons and an unadsorbed fluid raffinate product; and separating said rich adsorbent from said unadsorbed liquid raffinate product, said unadsorbed liquid raffinate product being substantially leaner in non-naphthenic hydrocarbons than said hydrocarbon mixture.

3,182,018
INHIBITING CORROSION IN OIL WELLS

Joseph F. Chittum, Whittier, and Frederic W. Schremp, Fullerton, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed May 16, 1962, Ser. No. 195,337

6 Claims. (Cl. 252—8.55)

1. In the method of inhibiting corrosion of ferrous metal surfaces in contact with an oil field brine containing at least 5 p.p.m. of ferrous ion which comprises incorporating in said brine a water-soluble ferrocyanide in an amount sufficient to produce in solution in said brine a concentration of 5 to 140 p.p.m. of ferrocyanide ion and a water-soluble borate in an amount sufficient to produce a concentration of 5 to 140 p.p.m. of borate ion, the improvement for inhibiting said corrosion which comprises also incorporating in said brine antimony trisulfide in an amount sufficient to reduce substantially the tendency of ferrocyanide scale to be produced, and said amount being from 0.1 to 50 p.p.m.

3,182,019
PROCESS FOR PREPARING PETROLEUM OIL ADDITIVES

Gordon N. Wilks, West Wickham, and Aubrey T. Langton, Milton, England, assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 9, 1960, Ser. No. 74,760

Claims priority, application Great Britain, Dec. 15, 1959, 42,580; Feb. 8, 1960, 4,408

10 Claims. (Cl. 252—32.7)

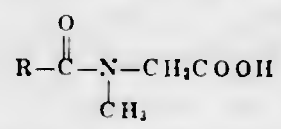
1. A process for preparing an additive for petroleum oils which comprises the steps of treating a mixture of from 1.5 to 24 parts by weight of a phosphosulfurized aliphatic hydrocarbon, 4 to 12 parts by weight of an alkyl phenol having a molecular weight in the range of 150 to 700, and 40 to 75 parts by weight of a paraffinic hydrocarbon diluent, with a metal base selected from the group consisting of the oxides, hydroxides, and hydrated hydroxides of alkali metals and alkaline earth metals, in an amount of said metal base less than that required to completely react with all the phenolic hydroxy groups and within a mole ratio of said metal base to said phenolic hydroxy groups of 0.5 to 1.0 and 0.9 to 1.0, at a reaction temperature in the range of 160° to 400° F., and thereafter passing carbon dioxide through the mixture at said reaction temperature while adding substantially stoichiometrical proportions of additional metal base until from 4 to 45 parts by weight of metal base (calculated as the hydroxide) and from 2 to 10 parts by weight of carbon

dioxide have been added, water being present during the reaction in an amount at least equal to the carbon dioxide present, on a molar basis.

3,182,020
STABILIZED CALCIUM ACETATE OIL DISPERSIONS

Robert H. Davis, Woodbury, N.J., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
No Drawing. Filed June 30, 1961, Ser. No. 120,938
5 Claims. (Cl. 252—40.7)

1. A lubricating composition comprising a base lubricant selected from the group consisting of lubricating oils and greases having dispersed therein up to about 50%, based on the weight of the total composition, of calcium acetate and an amount sufficient to maintain said calcium acetate in a dispersed state of an N-acyl-substituted sarcosine compound of the formula



$$R-\overset{\overset{O}{\|}}{C}-\underset{\underset{CH_3}{|}}{N}-CH_2COOH$$

where R represents an aliphatic hydrocarbon radical of from about 8 to about 24 carbon atoms.

3,182,021
LUBRICANTS CONTAINING PHOSPHORUS THIOIC DERIVATIVES

Peter A. Asseff, Euclid, Ohio, assignor to The Lubrizol Corporation, a corporation of Ohio
No Drawing. Filed Jan. 27, 1955, Ser. No. 484,594
6 Claims. (Cl. 252—46.6)

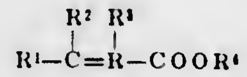
1. A lubricating oil composition comprising a major proportion of a mineral lubricating oil and an amount sufficient to improve the extreme pressure properties thereof, of a substantially neutral, phosphorus- and sulfur-containing material prepared by the process which comprises reacting a phosphorodithioic acid in which the organic radicals thereof are hydrocarbon radicals, with an approximately equimolar amount of an aliphatic epoxide.

3,182,022
ORGANIC ADDUCTS AND LUBRICATING COMPOSITIONS THEREOF

William R. Siegart, Poughkeepsie, Norman R. Odell, Wappingers Falls, and Herman D. Kluge, deceased, late of Fishkill, N.Y., by Hazel E. Kluge, administratrix, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 14, 1962, Ser. No. 237,730
21 Claims. (Cl. 252—46.6)

11. A lubricating composition of improved load bearing properties comprising a major proportion of lubricating oil and between about 0.2 and 10 wt. percent of an alkylene oxide adduct of hydrolyzed alkyl alkylacrylate-P_2S_5 reaction product produced by:

(1) contacting P_2S_5 with an alkylacrylate of the formula:



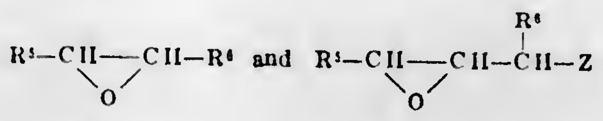
$$R^1-\overset{\overset{R^2}{|}}{C}=\overset{\overset{R^3}{|}}{R}-COOR^4$$

where R^1, R^2 and R^3 are selected from the group consisting of hydrogen and alkyl from 1 to 4 carbons and R^4 is alkyl from 1 to 24 carbons in a mole ratio of said P_2S_5 to said alkylacrylate of between about 1:1 and 4:1 in the presence of between about 1 and 5 wt. percent elemental sulfur based on the weight of the reactants at a temperature of between about 150 and 200° C. and in an inert atmosphere to form an alkylacrylate-P_2S_5 addition product;

(2) contacting said addition product with steam at a temperature between about 100 and 150° C. to form hydrolyzed alkyl alkylacrylate-P_2S_5 reaction product and inorganic phosphorus acids;

(3) separating out said inorganic phosphorus acids;

(4) contacting the residual hydrolyzed alkyl alkylacrylate-P_2S_5 reaction product with an alkylene oxide selected from the group consisting of the formulae:

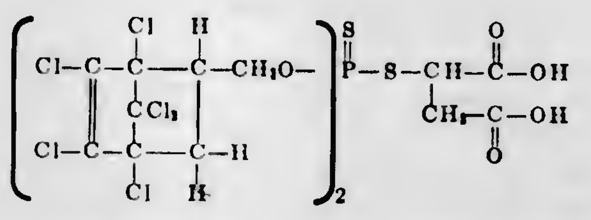


wherein R^5 and R^6 are selected from the group consisting of hydrogen and alkyl from 1 to 6 carbons and Z is halogen at temperature between about 60 and 150° C. in a mole ratio of said alkylene oxide to said hydrolyzed reaction product of between about 1:1 and 4:1 to form said alkylene oxide adducts of hydrolyzed hydrocarbon hydrolyzed alkyl alkylacrylate-P_2S_5 reaction product.

3,182,023
LUBRICANT COMPOSITIONS

John J. Plemich, Hammond, Ind., and Paul C. Vienna, Calumet City, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Aug. 8, 1962, Ser. No. 215,542
7 Claims. (Cl. 252—46.7)

1. A lubricant composition (A) a major proportion of a lubricating oil, (B) from about 0.05 to about 10% of a thiophosphoryl derivative having the formula



and (C) from about 25 to about 200%, based on the weight of said thiophosphoryl derivative, of an amine of the group consisting of 1-(2-hydroxyethyl)-2-heptadecenyl imidazoline, dehydroabietyl amine, dihydroabietyl amine, tetrahydroabietyl amine and mixtures of said abietyl amines.

3,182,024
POLYAMINOPYRROLIDINES IN LUBRICATING OILS

Frank A. Stuart, Orinda, and Robert G. Anderson, Novato, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Mar. 19, 1963, Ser. No. 266,160
10 Claims. (Cl. 252—50)

1. A lubricating oil composition comprising a major proportion of an oil of lubricating viscosity, and from 0.1% to 30% by weight, of 1-aminoalkyl-3-alkenyl pyrrolidine wherein the alkenyl radical has from 30 to 200 carbon atoms and the alkyl radical has from 2 to 6 carbon atoms.

3,182,025
CATALYST DEMETALLIZATION

Larry L. Simantel, Harvey, Ill., assignor, by mesne assignments, to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 23, 1961, Ser. No. 83,921
The portion of the term of the patent subsequent to Feb. 25, 1981, has been disclaimed
9 Claims. (Cl. 252—415)

1. In a demetallization method for the catalyst of a cracking system wherein a hydrocarbon feedstock heavier than gasoline and containing vanadium is contacted in a

cracking zone at an elevated temperature with a synthetic gel, silica-based cracking catalyst whereby gasoline is produced and vanadium deposits on the catalyst and in which system catalyst is cycled between said cracking zone and a regeneration zone in which carbon is oxidized and thereby removed from the catalyst and in which demetallization method a portion of the catalyst is bled from the cracking system, chlorinated with a chlorinating vapor, demetallized to remove vanadium and returned to a cracking system, the improvement in contacting with a chlorinating vapor which comprises introducing bled catalyst into a chlorinating zone where it is contacted at a temperature of up to about 1000° F. with an essentially anhydrous vapor formed by contacting one part of carbon disulfide with about 0.8 to 30 parts of a chlorine-containing gas selected from the group consisting of molecular chlorine and HCl in the chlorinating zone.

ERRATUM

For Class 252—430 see:
Patent No. 3,181,991

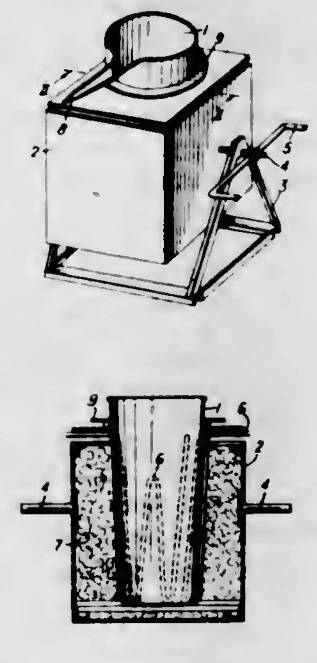
3,182,026
HOMOGENEOUS PIGMENTED PEROXIDE COMPOSITIONS

Newton G. Leveskis, Richmond, Calif., assignor to U.S. Peroxygen Corporation, Richmond, Calif.
No Drawing. Filed Mar. 14, 1962, Ser. No. 179,788
14 Claims. (Cl. 252—430)

1. A pigmented peroxide composition consisting essentially of a water-free intermixture of an organic peroxide, a pigment with which the active oxygen content of said peroxide remains substantially constant, and an activated gel in an amount sufficient to cause the composition to permanently homogenize, said gel comprising a gelable colloid activated with an organic polar compound having at least one hydroxyl group.

3,182,027
METHOD OF MAKING A K_2O–V_2O_5 GLASS CATALYST

Harry L. Riley, Barmoor, Sparken Hill, Worksop, England, assignor to United Coke and Chemicals Company Limited
Filed July 10, 1961, Ser. No. 122,981
Claims priority, application Great Britain, July 13, 1960, 24,428/60
6 Claims. (Cl. 252—439)

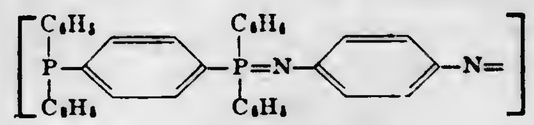


1. A process for the production of a glass useful as a catalyst comprising dissolving vanadium pentoxide in molten potassium pyrosulphate at a temperature at which substantially no SO_3 is evolved and in a molecular ratio of $K_2O:V_2O_5$ between 1:1 and 6:1 and cooling the solution to solidify and form a solid glass.

3,182,028
PREPARATION OF POLYMERIC MATERIALS BY THE REACTION OF ARYLDIPHOSPHINES WITH ARYL DIAZIDES

David L. Herring, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Apr. 19, 1962, Ser. No. 188,907
2 Claims. (Cl. 260—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)

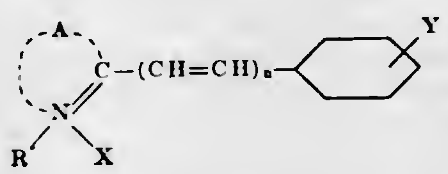
1. A benzene-insoluble polymer consisting of recurring units of the formula



3,182,029
POLYMERIC SALTS OF STYRYL DYES

Victor Fu-Hua Chu, East Brunswick, and Jacob Quentin Umberger, Holmdel, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 29, 1959, Ser. No. 823,310
4 Claims. (Cl. 260—8)

1. Polymeric addition salts of (*a*) water-insoluble styryl dyes of the formula:



wherein R is a radical taken from the group consisting of alkyl and aralkyl radicals of 8–20 carbon atoms, X is the negative radical of an acid, Y is a member taken from the group consisting of hydroxyl, alkoxy, alkyl, methylenedioxy, alkylamino, dialkylamino, halogen and nitro in which the alkyl radicals contain 1–8 carbons and A is the atoms necessary to complete a heterocyclic mononitrogen ring selected from the class consisting of pyridine, thiazoline, oxazoline, and selenazoline rings, and *n* is a positive integer from 1 to 2, with (*b*) an acetal of a hydroxyl polymer of high molecular weight containing a plurality of recurring intra-linear —CH_2CHOH— groups and an aldehyde containing a sulfonic acid group, 5–17% of the carbon atoms of the hydroxyl polymer containing the acetal groups with said sulfonic acid groups.

3,182,030
CORE BINDER COMPOSITION COMPRISING SUGAR, GUM ARABIC, UREA FORMALDEHYDE RESIN AND BORIC ACID

Eric Parkes, Olton, Solihull, England, assignor to Foseco Fordath AG, Zug, Switzerland, a Swiss company
No Drawing. Filed Aug. 4, 1961, Ser. No. 129,238
Claims priority, application Great Britain, Aug. 6, 1960, 27,351/60
7 Claims. (Cl. 260—17.3)

1. A dry binder of comminuted form for molding sand comprising a mixture of sugar, gum arabic, boric acid, powdered urea-formaldehyde resin and paraffin, the con-

stituents being present within the following range of proportions by weight:

	Percent
Sugar	20 to 50
Gum arabic	10 to 50
Powdered urea-formaldehyde resin	10 to 25
Boric acid	3 to 8
Paraffin	0 to 5

3,182,031
ADHESIVE COMPOSITIONS

Jordan V. Bauer and Lee H. Elizer, Keokuk, Iowa, assignors to The Hubinger Company, Keokuk, Iowa, a corporation of Iowa

No Drawing. Filed Feb. 8, 1962, Ser. No. 171,800

The portion of the term of the patent subsequent to Jan. 30, 1979, has been disclaimed

7 Claims. (Cl. 260—17.3)

1. A cooked "in situ" type, potentially water-resistant adhesive composition, consisting essentially of an alkaline mixture of ungelatinized starch, gelatinized starch, at least 0.5% by weight of the starch of a water-soluble polymeric methylol compound formed from formaldehyde which is capable of polymerizing to a water-insoluble state and at least about 0.5% by weight of the starch of a cyanamide compound selected from the group consisting of cyanamide and alkaline salts of cyanamide.

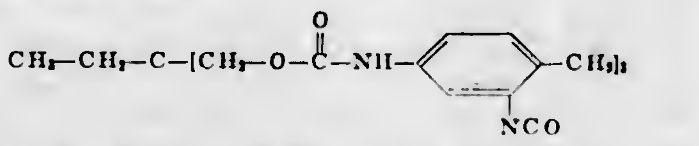
3,182,032
CROSS-LINKED TRIISOCYANATE-COAL TAR COATING AND SEALING REACTION PRODUCT

Francis R. Charlton, Pittsburgh, and Floyd D. Trischler, Bridgeville, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Aug. 22, 1961, Ser. No. 133,022

4 Claims. (Cl. 260—28)

1. A non-foamed coating and sealant capable of curing at ambient temperatures and characterized by flexibility, insolubility, infusibility, toughness, and resistance to chemicals, consisting essentially of the reaction product of a resin and coal tar, said resin being formed by the curing action of a cross-linking agent having a plurality of active hydrogens wtih a triisocyanate selected from the group consisting of an alkyl triurethane triisocyanate of the formula:



tris(4-isocyanatophenyl)methane, and 2,4,4′-triisocyanatodiphenyl ether, said cross-linking agent being selected from the group consisting of amines, amides, hydroxylated aliphatic polyesters and alkyl, aryl, aralkyl, and alkaryl polyols and being used to the extent of 0.5 to 1.4 equivalents of isocyanate groups of the triisocyanate to one equivalent of active hydrogen of the cross-linking agent, said resin being present in said coating and sealant in an amount of one part resin to 1.0 to 5.5 parts by weight of tar, and said coating and sealant being finally formed by the addition of said cross-linking agent to said tar and thereafter the addition of said triisocyanate thereto.

3,182,033
CROSSLINKED POLYETHYLENE WAX COMPOSITION

Razmic S. Gregorian, Silver Spring, Md., assignor to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Filed June 14, 1962, Ser. No. 202,398

4 Claims. (Cl. 260—28.5)

1. A crosslinked thermoplastic wax-polyethylene composition consisting essentially of 99.0 to 80% by weight polyethylene having a density in the range 0.95 to 0.97 and 1.0 to 20% by weight of a paraffin wax having a melting point in the range 47 to 65° C.

3,182,034
VINYL CHLORIDE RESINS PLASTICIZED WITH MIXED ESTERS OF SATURATED POLYHYDRIC ALCOHOLS ESTERIFIED WITH NAPHTHENIC ACID AND EPOXIDIZED FATTY ACIDS

John O. Van Hook, Abington, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 4, 1962, Ser. No. 199,601

6 Claims. (Cl. 260—30.4)

1. A plasticized resinous composition comprising a polymer selected from the group consisting of homopolymers of vinyl chloride and copolymers of vinyl chloride with an ethylenically unsaturated monomer copolymerizable therewith, said copolymer containing at least about 60% by weight of combined vinyl chloride, and said plasticized resinous composition having incorporated therein a plasticizing amount of a mixed ester composition consisting essentially of a mixed ester of a saturated aliphatic polyhydric alcohol esterified with naphthenic acid and an epoxidized fatty acid of 12 to 24 carbon atom content, said polyhydric alcohol having at least 2 and no more than 3 hydroxyl groups, the naphthenic acid and epoxidized fatty acid residues in the ester composition being present in the mole ratio of between 1 to 4 and 4 to 1.

3,182,035
VINYL CHLORIDE RESIN PLASTICIZED WITH AN EPOXIDIZED COPOLYMER OF BUTADIENE AND XYLENE

John A. Garman, Baltimore, Md., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 23, 1962, Ser. No. 239,773

10 Claims. (Cl. 260—30.4)

1. A resin composition which comprises 100 parts of a vinyl chloride polymer in which at least 50% of the polymer forming units are derived from vinyl chloride, and as plasticizer therefor, 1–100 parts by weight of an epoxidized copolymer of butadiene and xylene containing 10–50% by weight of xylene and at least 7% by weight of epoxy oxygen.

3,182,036
PLASTICIZED POLY-BETA-HYDROXYBUTYRIC ACID AND PROCESS

James N. Baptist, Clarksville, and Frank X. Werber, Kensington, Md., assignors to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Filed Aug. 20, 1962, Ser. No. 218,097

4 Claims. (Cl. 260—32.4)

1. A bacterial poly-beta-hydroxybutyric acid plasticized with a cyano compound selected from the group consisting of phenylacetonitrile and 1,8-dicyano-octane.

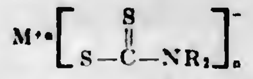
3,182,037
POLYURETHANE STABILIZED WITH TITANIUM DIOXIDE AND A DITHIOCARBAMATE

George R. Nelson, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Massachusetts

No Drawing. Filed June 1, 1962, Ser. No. 199,278

4 Claims. (Cl. 260—45.75)

1. A polyether polyurethane composition containing a synergistic mixture of titanium dioxide and a salt of a diester of dithiocarbamic acid having the general formula



$$M^{+n}\left[S-\overset{\overset{\displaystyle S}{\|}}{C}-NR_2\right]^{-}_{n}$$

wherein M is a cation selected from the group consisting of heavy metals and piperidinium, *n* is the cation valence value, and R is a radical selected from the group consisting of lower alkyl and aryl radicals, said mixture of materials being present in an amount effective to retard light discoloration of said polyurethane.

3,182,038
PROCESS FOR CONTROLLING THE BULK DENSITY OF POLYOXYMETHYLENE

Charles Richard Smoot, Vienna, W. Va.,

No Drawing. Filed Feb. 19, 1962, Ser. No. 174,293

6 Claims. (Cl. 260—67)

1. A process for preparing a high molecular weight polyoxymethylene having a bulk density in the range of 0.1 to 0.85 gram per milliliter which comprises producing high molecular weight polyoxymethylene in an inert solvent containing a polymerization catalyst and at least 5% by weight based upon the weight of said solvent of a solid preformed polyoxymethylene and thereafter recovering a high molecular weight polyoxymethylene having a bulk density in the range of 0.1 to 0.85 gram per milliliter.

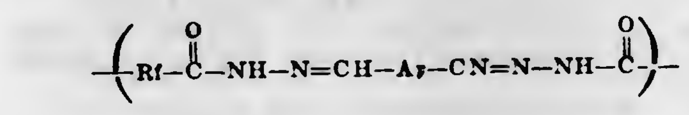
3,182,039
FLUORINATED POLYMERS CONTAINING HYDRAZIDE GROUPS

David C. Remy, Madison, Wis., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 31, 1961, Ser. No. 85,998

4 Claims. (Cl. 260—72)

1. Normally solid fluorinated polymers consisting essentially of a plurality of units having the following structure



$$-\!\left(Rf-\overset{\overset{O}{\|}}{C}-NH-N=CH-Ar-CN=N-NH-\overset{\overset{O}{\|}}{C}-\right)\!-$$

wherein Rf is a bivalent perfluoroalkylene radical having at least 3 carbon atoms and Ar is a bivalent aromatic hydrocarbon radical selected from the group consisting of a 6 to 18 carbon atom aromatic hydrocarbon radical, an alkyl substituted 6 to 18 carbon atom aromatic hydrocarbon radical and a halogen substituted 6 to 18 aromatic hydrocarbon radical.

3,182,040
AMIDE-CURED CARBOXYL-TERMINATED PREPOLYMERS

Nathaniel L. Watkins, Jr., Maplewood, and Richard M. McCurdy, East Oakdale Township, Washington County, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Apr. 2, 1959, Ser. No. 803,577

13 Claims. (Cl. 260—75)

1. A process for curing a carboxyl-containing polymer which comprises admixing an uncured, aliphatically saturated, substantially completely condensed, polymeric polyester of a polyhydric alcohol reactant and an acidic reactant selected from the group consisting of polycarboxylic acids and polycarboxylic anhydrides at least one of said reactants having at least three functional groups selected from the group consisting of carboxyl group, carboxylic anhydride group and hydroxyl group, said polyester being liquid at about 25° to 50° C., having an acid content in the range of about 0.1 to about 3 milli-equivalents per gram, having a molecular weight not higher than about 10,000, containing an average of more than 2 and not more than 15 carboxyl groups per molecule, and being free from hydroxyl groups, with at least a stoichiometric equivalent of an N,N′-bis-1,2-alkylenamide as a cross-linking agent and curing the admixture at a temperature above 10° C.

3,182,041
POLYESTER AND METHOD OF MAKING SAME

Nathaniel L. Watkins, Jr., Maplewood, and Richard M. McCurdy, East Oakdale Township, Washington County, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed May 13, 1960, Ser. No. 28,843

5 Claims. (Cl. 260—75)

1. A carboxyl-containing low molecular weight, aliphatically, saturated substantially completely condensed, polymeric polyester of a saturated aliphatic diol, a dicarboxylic acid free from ethylenic unsaturation, and a polyfunctional compound free from ethylenic unsaturation and containing at least three functional groups selected from the group consisting of polyols, polycarboxylic acids and polycarboxylic acid anhydrides, said polymeric polyester being liquid at a temperature between about 25° and about 50° C., having an acid content between about 0.1 and about 1.5 milliequivalents per gram, an average of between about 2.5 and about 15 carboxylic groups per molecule, an average molecular weight between about 700 and about 10,000 and free from hydroxyl groups.

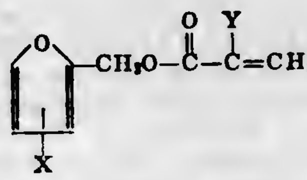
3,182,042
POLYMERIZABLE FURANSULFONIC ACID COMPOUNDS AND POLYMERS THEREOF

Edward M. La Combe and Walter P. Miller, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 12, 1962, Ser. No. 201,767

11 Claims. (Cl. 260—79.3)

1. The polymerizable furansulfonic acid compound of the formula:



wherein X is selected from the group consisting of —SO_3H and —SO_3M, M being an alkali metal atom; and Y is selected from the group consisting of hydrogen, chlorine, and methyl.

3,182,043
REMOVAL OF WATER FROM MONOCARBOXYLIC ACIDS BY MEMBRANE PERMEATION

Earl V. Kirkland, Millington, N.J., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

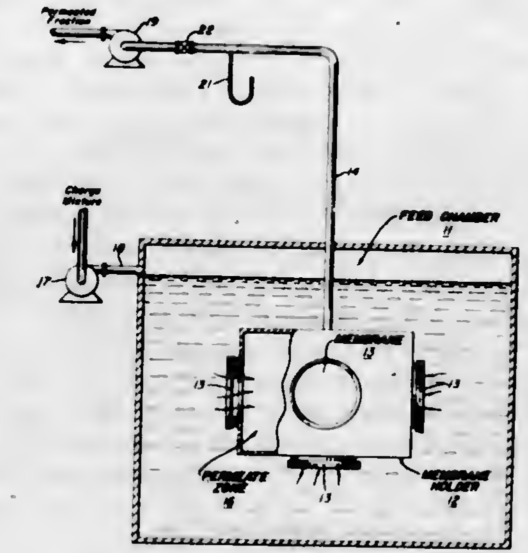
Filed Dec. 30, 1960, Ser. No. 79,802

12 Claims. (Cl. 260—87.1)

1. A process for separating water from an aqueous solution of a monocarboxylic acid having from one to about 3 carbon atoms, which process comprises introducing the aqueous solution into a feed zone of a permeation apparatus, said permeation apparatus being comprised of a permeate zone and a feed zone and said feed zone is separated from said permeate zone by a thin plastic membrane, permeating a portion of the water through the film into the permeate zone, rapidly withdrawing the permeated portion from the permeate zone and withdrawing from the feed zone a non-permeated portion which is enriched in the monocarboxylic acid, said thin plastic membrane having been prepared from a vinyl chloride-vinyl acetate copolymer of from 60 to 95% vinyl chloride and from 40 to 5% vinyl acetate sequentially modified by converting substantially all of the acetate groups through hydrolysis to hydroxy groups, converting from 25 to 95% of the hydroxyl groups formed during the hydrolysis to (2-cyano) ethoxy groups, and reacting substantially all of

the remaining 75 to 5% of the hydroxyl groups with a diisocyanate.

6. A modified vinyl chloride-vinyl acetate copolymer of 60 to 95% vinyl chloride and from 40 to 5% vinyl acetate produced by the steps of converting substantially all of the acetate groups through hydrolysis to hydroxy groups reacting with acrylonitrile from 25 to 95% of the resulting hydroxyl groups, and reacting the remaining 75 to 5% of the hydroxyl groups with a diisocyanate.



3,182,044
POLYMERIZATION OF UNSATURATED POLYMERIZABLE COMPOUNDS

Günter Messwarb, Kelkheim, Taunus, and Ludwig Orthner, Rudolf Reuber, and Max Grossmann, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

Filed Feb. 20, 1962, Ser. No. 174,432
Claims priority, application Germany, Jan. 5, 1956, F 19,237; Feb. 8, 1956, F 19,472
11 Claims. (Cl. 260—87.1)

1. In an aqueous emulsion polymerization process comprising agitating a mixture of an ethylenically unsaturated monomer, water, an emulsifier, and a radical-forming polymerization initiator, said mixture having a pH between 2 and 8, and subsequently separating the polymer product formed from the aqueous phase, the improvement comprising the steps of (A) using as the emulsifier a compound of the formula

$$X—(CH_2)_n—CO—O—R$$

wherein X is a member selected from the group consisting of the sulfonic acid group, the phosphonic acid group, alkali metal salts of said acid groups, and a trialkyl ammonium halide radical the alkyl groups of which have up to 6 carbon atoms each, R is an aliphatic hydrocarbon radical having 6 to 25 carbon atoms, and *n* is an integer from 1 to 2, and (B) decomposing the emulsifier by hydrolysis by raising the pH of the aqueous emulsion to at least 10 prior to separating the polymer product formed from the aqueous phase.

6. The process as in claim 1 wherein said ethylenically unsaturated monomer is at least one member selected from the group consisting of vinyl chloride, vinylidene chloride, styrene, itaconic acid, maleic acid, acrylic and methacrylic esters of an alcohol having up to 18 carbon atoms, and a vinyl ester of a carboxylic acid having up to 18 carbon atoms.

3,182,045
VINYLPYRIDINE POLYMERS HAVING A STERICALLY REGULAR STRUCTURE AND PROCESS FOR OBTAINING SAME

Giulio Natta, Giorgio Mazzanti, Paolo Longi, Gino Dall'Asta, and Francesco Bernardini, all of Milan, Italy, assignors to Montecatini, Società Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy

Filed June 24, 1960, Ser. No. 38,580
Claims priority, application Italy, June 25, 1959, 10,764/59
20 Claims. (Cl. 260—88.3)

1. A high molecular weight, highly-crystalline linear homopoylmer of vinyl pyridine having an isotactic structure prevailing in the macromolecules.

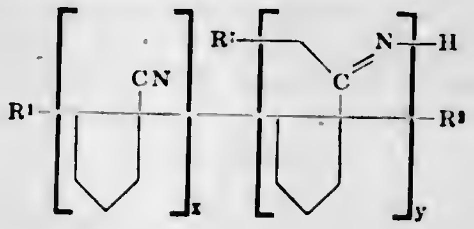
10. A method of polymerizing vinyl pyridine to a high molecular weight highly crystalline linear homopolymer containing macromolecules having an isotactic sterically-regular structure which comprises polymerizing said vinyl pyridine in the presence of an effective amount of a catalyst at a temperature ranging from about −20 to +100° C.; said catalyst consisting essentially of a cation selected from at least one of the metals of Groups I, II, and III of Mendeléeff's Periodic Table and an anion selected from the group consisting of alkyl radicals, aryl radicals, hydrides, alkyl amine radicals, aryl amine radicals, alkyl halides, aryl halides, mixtures of halides and alkyl amine radicals, mixtures of halides and aryl amine radicals, and mixtures of halides and alkyl aryl amine radicals.

3,182,046
POLYMERS OF 1-CYANOCYCLOPENTENES AND PROCESS FOR PREPARING THEM

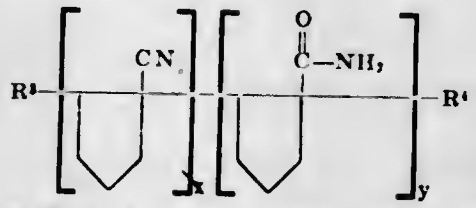
George J. Schmitt, Madison, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed May 26, 1961, Ser. No. 112,885
8 Claims. (Cl. 260—88.7)

5. A normally solid polymer from cyanocyclopentene as sole monomer consisting essentially of polymeric compounds selected from the group consisting of



and



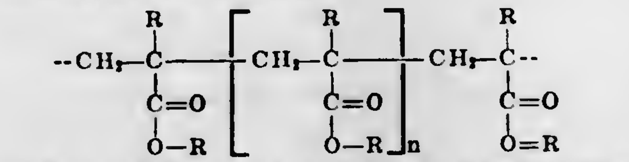
and mixtures thereof, wherein *x* and *y* are integers of at least 45 and 15 respectively, the ratio of *x* to *y* is at least 3:1, and the *y* groups occur in connected units of at least three members; R^1 represents a member selected from the group consisting of hydrogen, cyanocyclopentyl and iminocyclopentyl radicals, R^2 represents a member selected from the group consisting of hydrogen and a cyanocyclopentyl radical, and R^3 represents a member selected from the group consisting of hydrogen, cyanocyclopentyl and amidocyclopentyl radicals, R^4 represents a member selected from the group consisting of hydrogen and a cyanocyclopentyl radical, R^7 is a member selected from the group consisting of $—NH_2$ and the radical of an organic amine having a dielectric constant between about 15 and about 25; said polymers having infrared spectrograms characterized by absorption peaks at 3.35–3.43 microns; 4.44 microns; and 5.93 microns; said polymers being insoluble in any one of the compounds acetone, ethyl actate, benzene, toluene, methanol, ethanol, acetonitrile, carbon tetrachloride, and chloroform; said polymers being soluble in any one of butyrolactone, dimethyl formamide, ethylene carbonate, phosphoric acid, sulfuric acid and formic acid, and said polymers being resistant to decomposition on heating to temperatures up to about 300° C.

3,182,047
AMINO ALCOHOL MODIFIED POLYACRYLATES

Herbert L. Wehrmeister and Harold I. Yalowitz, Terre Haute, Ind., assignors to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

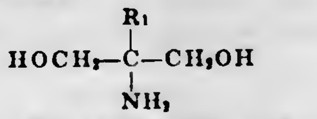
No Drawing. Filed June 2, 1961, Ser. No. 114,316
19 Claims. (Cl. 260—89.5)

1. A process for the preparation of modified polyacrylates which comprises interacting a polyacrylate selected from the group consisting of polyacrylates having the following general formula:



$$\text{--}CH_2-\overset{R}{\underset{\underset{O-R}{C=O}}{C}}-\left[CH_2-\overset{R}{\underset{\underset{O-R}{C=O}}{C}}\right]_n-CH_2-\overset{R}{\underset{\underset{O=R}{C=O}}{C}}\text{--}$$

wherein R is a lower alkyl radical and *n* is an integer of from 10 to 1,000 with an amino alcohol having the following general formula:



$$HOCH_2-\overset{R_1}{\underset{NH_2}{C}}-CH_2OH$$

wherein R_1 is a member selected from the group consisting of hydroxyalkyl, alkyl, and hydrogen in molar ratios of the polyacrylate to the amino alcohol of from about 500 to 1 to about 10 to 1 and at a temperature above 150° C. but below temperatures causing any substantial decomposition of the reaction product and the reactants.

3,182,048
METAL OXIDE POLYMERIZATION CATALYSTS

Ivor W. Mills, Glenolden, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Aug. 11, 1960, Ser. No. 48,835
12 Claims. (Cl. 260—93.7)

1. A process for producing a solid polymer of an aliphatic 1-olefin having up to and including 8 carbon atoms per molecule which comprises contacting said olefin at polymerization conditions including temperatures ranging from 100° F. to 450° F. and pressures ranging from atmospheric to 10,000 p.s.i.g. with a catalyst comprising a supported metal oxide the metal being in its highest valence state and selected from the group consisting of the metals of Groups VI*a* and VIII of the Periodic Table and the support material being selected from the group consisting of bauxite, alumina, silica, silica-alumina, zirconia and thoria, said catalyst having been prepared by oxidizing a salt of the metal at a temperature in the range of from 250° F. to 450° F. for a time ranging from 1 to 24 hours with an oxidizing agent selected from the group consisting of hydrogen peroxide and ozone.

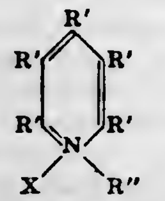
3,182,049
PRODUCTION OF SOLID OLEFIN POLYMERS

Charles W. Moberly, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

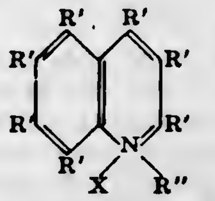
No Drawing. Filed Apr. 15, 1963, Ser. No. 272,854
16 Claims. (Cl. 260—93.7)

2. In a process for polymerizing propylene in the presence of a catalyst prepared by admixing at least two essential components, one of said components being a compound selected from the group consisting of halides of metals of Group IV–A, V–A, VI–A or VIII, and an admixture of aluminum with a halide of a metal of Group IV–A, V–A, VI–A or VIII, the other of said components having the formula R_nMX_m where R is selected from the group consisting of alkyl, cycloalkyl, aryl radicals and combinations thereof, X is selected from the group consisting of hydrogen and halogen, M is a Group III metal, *n* is from 1 to 3, inclusive, *m* is from 0 to 2, inclusive, and the sum of *m* and *n* is equal to the valence of metal M, the improvement which comprises contacting said catalyst with propylene in the presence of a heterocyclic nitrogen compound selected from the group consisting of compounds having the following structural formulae:

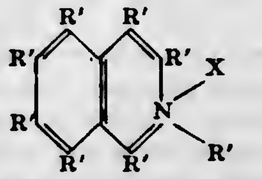
(1)



(2)



(3)

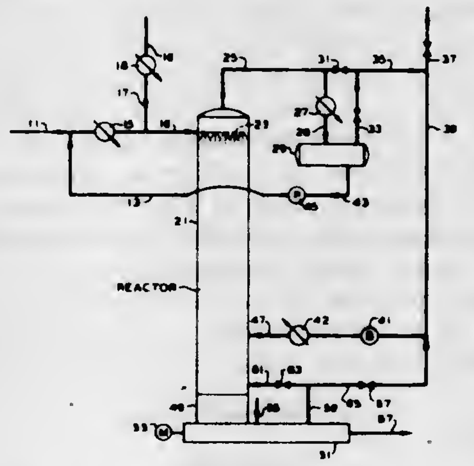


wherein R' is selected from the group consisting of hydrogen and alkyl radicals containing up to and including 6 carbon atoms; R'' is selected from the group consisting of alkyl, cycloalkyl and aryl radicals containing up to and including 20 carbon atoms; X is a halogen, and in the substantial absence of a hydrocarbon diluent other than propylene at a temperature in the range of −100 to 500° F. and at a pressure sufficient to maintain said propylene in the liquid phase; and recovering the solid olefin polymer so produced.

3,182,050
BULK POLYMERIZATION

Howard B. Irvin, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 19, 1962, Ser. No. 231,765
12 Claims. (Cl. 260—94.2)



1. A method for bulk polymerization of monomeric liquid material comprising cooling said monomeric liquid material to a temperature at which polymerization is relatively slow, admixing a suitable polymerization catalyst with said monomeric material at said temperature, spraying the admixture downwardly in the upper portion of an enclosed vertically elongated polymerization zone, simultaneously passing vapor of said monomeric material heated to at least polymerization temperature of said monomeric material and at a temperature higher than that of said admixture upwardly in said zone in direct contact with the gravitating admixture thereby heating said admixture to rapid polymerization temperature, thus promoting polymerization, forming polymer, and evaporating unpolymerized monomer from the polymer thereby leaving substantially polymer of relatively low monomer content, passing the latter polymer into a devolatilizer and thereby vaporizing remaining monomer and withdrawing polymer as the product of the operation.

3,182,051

POLYMERIZATION OF 1,3-BUTADIENE TO CRYSTALLINE POLYBUTADIENES HAVING A SYNDIOTACTIC 1,2-STRUCTURE

Gerlando Marullo, Umberto Maffezzoni, and Ermanno Susa, Milan, Italy, assignors to Montecatini Societá Generale per l'Industria Mineraria e Chimica, Milan, Italy

Filed Nov. 15, 1960, Ser. No. 69,346

Claims priority, application Italy, Nov. 18, 1959, 19,154/59; Apr. 5, 1960, 5,953/60

8 Claims. (Cl. 260—94.3)

1. A process for obtaining crystalline polybutadiene having a syndiotactic 1,2-structure, which comprises polymerizing butadiene-1,3, at a temperature of −25° C. to +30° C., in contact with a freshly prepared catalyst which has been aged at room temperature for not longer than one hour prior to use in said process, and prepared from a halide of a group 8 metal of the Mendeleeff Periodic Table and a mixture of compounds of the formulae AlR_3 and AlR'_2X in an AlR_3/AlR'_2X molar ratio of at least 0.8:1, wherein R and R′ each represents an alkyl group containing 1 to 5 carbon atoms and X represents a halogen atom, the aluminum/group 8 metal molar ratio in said catalyst being from 0.3 to 500.

3,182,052

PROCESS FOR PRODUCING CIS-1,4-POLYBUTADIENE OF REDUCED COLD-FLOW

Floyd E. Naylor, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 20, 1961, Ser. No. 153,354

5 Claims. (Cl. 260—94.3)

1. In the production of polybutadiene containing at least about 85 percent cis-1,4-addition in the presence of an initiator obtained by mixing at least an organometal compound as a first component and a second component containing titanium and iodine, the total amount of titanium used being in the range of 0.2 to 2 gram millimole per 100 grams of 1,3-butadiene, the improvement comprising charging a first amount of said initiator in an amount to provide 0.02 to 0.15 gram millimols of titanium per 100 grams of 1,3-butadiene and polymerizing 2 to 45 percent of said 1,3-butadiene to a polymer having an inherent viscosity in the range of 6 to 20, and thereafter adding the balance of said initiator without adding additional 1,3-butadiene while said polymerization continues to form a final polymer product having an inherent viscosity in the range of 2 to 5 and recovering a polymer product which contains high and low inherent viscosity fractions.

3,182,053

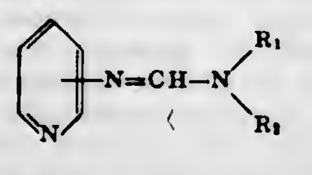
PYRIDINE FORMAMIDINES OF PRIMARY AMINES

Norbert Steiger, Nutley, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 20, 1961, Ser. No. 153,693

5 Claims. (Cl. 260—156)

1. A member of the group consisting of compounds represented by the formula



wherein R_1 and R_2 each represents a member of the group consisting of hydrogen and lower alkyl, monovalent radical-ring substituted derivatives thereof, said monovalent radicals being selected from the group consisting of formamidino, N-lower alkyl-formamidino, N-di(lower alkyl)-formamidino and phenylazo; and salts of said compounds.

5. Phenylazo - bis - (N,N-di-lower alkyl-formamidino)-pyridine.

3,182,054

BENZODIAZEPINE COMPOUNDS

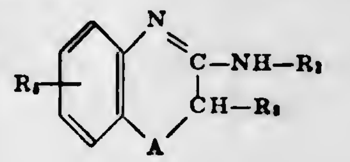
Leo Henryk Sternbach, Upper Montclair, N.J., and Gabriel Saucy, Riehen, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 23, 1962, Ser. No. 182,130

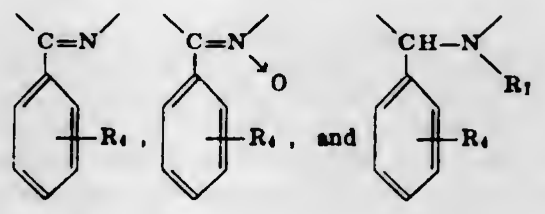
Claims priority, application Switzerland, Dec. 2, 1960, 13,490/60, 13,492/60, 13,493/60, 13,494/60, 13,495/60

6 Claims. (Cl. 260—239)

1. A compound selected from the group consisting of those of the formula



wherein A represents a carbon nitrogen grouping which completes the seven-membered diazepine ring and which is selected from the group consisting of



R_2, R_3 and R_7 each represent a member of the group consisting of hydrogen and lower alkyl; R_4 and R_5 are chosen from the group consisting of hydrogen, halogen, nitro, amino and trifluoromethyl and at least one of R_4 and R_5 is trifluoromethyl; and salts thereof.

3,182,055

REGENERATION OF e-CAPROLACTAM FROM POLYAMIDES

John H. Bonfield, East Aurora, N.Y., and Richard C. Hecker and Orvill E. Snider, Petersburg, and Basil G. Apostle, Richmond, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,346

5 Claims. (Cl. 260—239.3)

1. In a process for depolymerizing a polymer of e-caprolactam in presence of phosphoric acid and steam to obtain e-caprolactam monomer therefrom the improvement which comprises introducing said polymer and orthophosphoric acid, in proportions averaging between about 0.1 part and about 5 parts of orthophosphoric acid calculated on 100% acid per 100 parts by weight of said polymer, substantially continuously at substantially uniform rates into a depolymerization zone containing a pool of polymer from which monomer vapor is being formed; adjusting the rates of feed to maintain the pool at substantially constant volume; maintaining the pool at temperature between 220° C. and 375° C. and at absolute pressure between about ½ and about 6 atmospheres; passing steam through said pool at a rate to provide an evolved vapor mixture containing not above about 80% by weight of e-caprolactam; and condensing evolved vapor containing e-caprolactam.

3,182,056

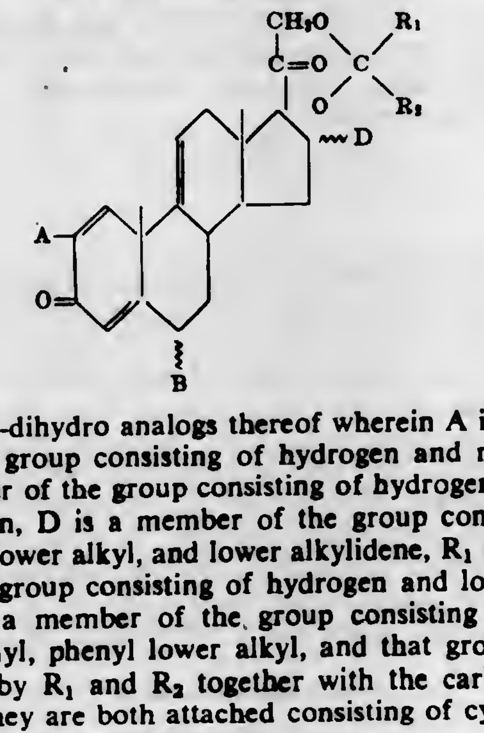
9(11)-DEHYDRO-17,21-ALKYLIDENEDIOXY PREGNENES

Masato Tanabe, Palo Alto, Calif., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed June 21, 1963, Ser. No. 289,708

7 Claims. (Cl. 260—239.55)

1. A compound of the group consisting of pregnenes having the structural formula:



and the 1,2-dihydro analogs thereof wherein A is a member of the group consisting of hydrogen and methyl, B is a member of the group consisting of hydrogen, methyl, and halogen, D is a member of the group consisting of hydrogen, lower alkyl, and lower alkylidene, R_1 is a member of the group consisting of hydrogen and lower alkyl and R_2 is a member of the group consisting of lower alkyl, phenyl, phenyl lower alkyl, and that group which is formed by R_1 and R_2 together with the carbon atom to which they are both attached consisting of cyclohexylidene and cyclopentylidene.

3,182,057

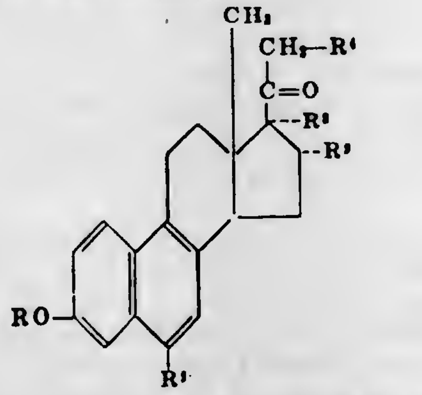
NEW 16-SUBSTITUTED-19-NORPREGNA-1,3,5(10), 6,8-PENTAEN-20-ONES

Milton David Heller, New City, N.Y., Robert Herman Lenhard, Ridgefield Park, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,559

9 Claims. (Cl. 260—239.55)

1. A steroid of the formula:



wherein R is selected from the group consisting of hydrogen and lower alkanoyl; R^1 is selected from the group consisting of hydrogen, fluoromethyl, difluoromethyl and trifluoromethyl; R^2 is selected from the group consisting of hydroxyl and lower alkanoyloxy; R^3 is hydroxyl and R^2, R^3 taken together represent lower alkylidenedioxy and R^4 is selected from the group consisting of halogen, hydroxyl, lower alkanoyloxy and lower alkylsulfonyloxy.

3,182,058

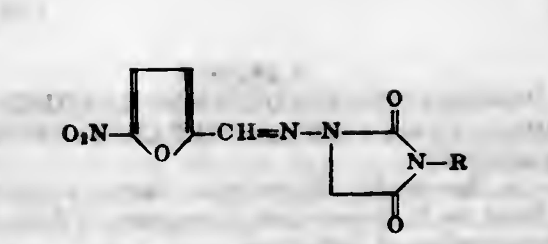
NITROFURAN DERIVATIVES

Lloyd H. Conover, Quaker Hill, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

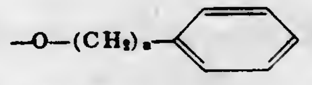
No Drawing. Filed Oct. 31, 1960, Ser. No. 65,964

7 Claims. (Cl. 260—240)

1. A N-substituted nitrofurantoin of the formula:



wherein R is a member selected from the group consisting of an acyl group of an alkane carboxylic acid having from 2 to 8 carbon atoms, citraconyl, benzoyl, phenylacetyl, carboxymethyl, carbalkoxymethyl, the alkoxy radical having up to 10 carbon atoms, and carbaralkoxymethyl, the aralkoxy radical corresponding to the following formula



$$—O—(CH_2)_n—C_6H_5$$

wherein *n* is an integer from 1 to 2.

3,182,059

METHOD OF PREPARING HALOGENOMETHYLATED DERIVATIVE OF α,β-(ARYLOXAZOLYL-(2))-ETHYLENE-ONIUM COMPOUND

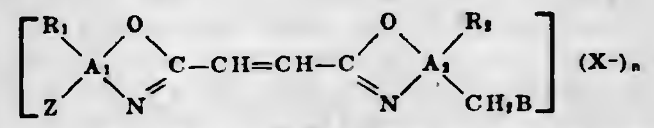
Kenzo Konishi, Nishinomiya, Minoru Furukawa, Kawachi, and Masatoshi Hirano, Ibaraki, Japan, assignors to Daito Chemical Industry Company, Limited, Daito, Japan, a juridical person under the law of Japan

No Drawing. Filed Dec. 27, 1962, Ser. No. 247,529

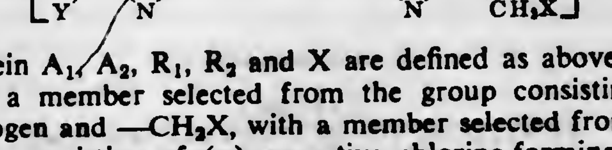
Claims priority, application Japan, Dec. 29, 1961, 36/48,289

1 Claim. (Cl. 260—240)

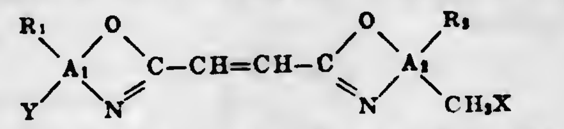
A process for producing a halogenomethylated derivative of α,β-(aryloxazolyl-(2))-ethylene-onium salt having the formula:



wherein each of A_1 and A_2 is a member selected from the group consisting of benzene and naphthalene nuclei; each of R_1 and R_2 is a member selected from the group consisting of hydrogen, methyl and ethyl; Z is a member selected from the group consisting of hydrogen and —CH_2B; B is a residual radical selected from the group consisting pyridine, picoline, lutidine and trialkylamine; X is a halogen atom, and n is a positive integer of up to 2 which comprises oxidizing at a temperature of between 50 and 150° C. a halogenomethylated compound having the formula:



wherein A_1, A_2, R_1, R_2 and X are defined as above, and Y is a member selected from the group consisting of hydrogen and —CH_2X, with a member selected from the group consisting of (*a*) an active chlorine-forming substance selected from the group consisting of chlorine, thionylchloride and sulfuryl chloride in the presence of a catalytic amount of iodine, and (*b*) a member selected from the group consisting of hydrogen peroxide, mercuric acetate, mercuric oxide and nitrobenzene, thereby producing a chloromethyl ethylene compound of the formula:



wherein A_1, A_2, R_1, R_2, Y and X are defined as above, then reacting at a temperature of about 80° C. said chloromethyl ethylene compound with an onium salt-forming compound selected from the group consisting of pyridine, picoline, lutidine and trialkylamine.

3,182,060

N,N'-DISUBSTITUTED DICARBOXAMIDES AND DITHIOCARBOXAMIDES PREPARED FROM MONOENAMINES

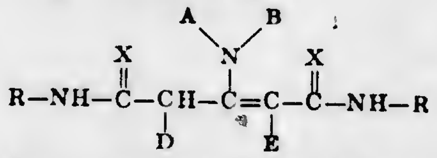
Glenn A. Berchtold, Watertown, Mass., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 21, 1961, Ser. No. 132,592

7 Claims. (Cl. 260—247.2)

1. N,N'-diphenyl - 2 - morpholino-1-cyclohexene-1,3-dicarboxamide.

6. A compound of the formula



wherein A, B, D and E are radicals, which are inert toward isocyanates and enamines, selected from the group consisting of hydrocarbon and substituted hydrocarbon radicals, said hydrocarbon radicals having from 1 to 18 carbon atoms and said substituents being selected from the group consisting of nitro, alkoxy, aryloxy, thioalkoxy, and thioaryloxy groups; R is a hydrocarbon aromatic radical which is inert toward isocyanates and enamines, said radical having from 6 to 22 carbon atoms; X is selected from the group consisting of sulfur and oxygen; with the proviso that (*a*) A is joined to the nitrogen atom bearing B through a carbon atom selected from the group consisting of primary aliphatic and secondary aliphatic carbon atoms; (*b*) at least one of the pairs A–B and D–E is joined together to form a 5 to 7 membered ring, said junctions being direct junctions of carbon atoms in the case of D–E and in the case of A–B said junctions are selected from the group consisting of direct junctions of carbon atoms and junctions through a hetero-atom, said hetero-atom being selected from the group consisting of sulfur, oxygen and a tertiary nitrogen atom having a hydrocarbon radical attached thereto, said hydrocarbon radical having from 1 to 12 carbon atoms; and (*c*) any aliphatic carbon atom joining B to the nitrogen atom bearing A is selected from the group consisting of primary and secondary aliphatic carbon atoms.

3,182,061

5-[4-(p-HYDROXYPHENOXY)PHENYL]-5-OXO-3-METHYLVALERIC ACID

Eric N. Goldschmidt, Hillside, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Mar. 20, 1961, Ser. No. 96,719

1 Claim. (Cl. 260—520)

5 - [4 - (p - hydroxyphenoxy)phenyl] - 5 - oxo - 3-methylvaleric acid.

3,182,062

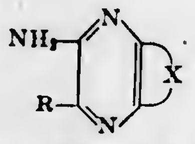
SYNTHESIS OF QUINOXALINES AND ANALOGUES THEREOF

Irwin J. Pachter, Erdenheim, and Joseph Weinstock, Phoenixville, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

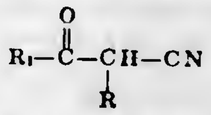
No Drawing. Filed Feb. 28, 1962, Ser. No. 176,444

10 Claims. (Cl. 260—250)

1. A method of preparing a heterocyclic compound of the structure:

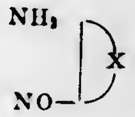


in which R is a member selected from the group consisting of lower alkyl, cyclohexyl, cyclopentyl, phenyl, thienyl, N-methylpyrrolidinyl, lower alkoxy, phenoxy, carbamyl and amino-lower alkyl; and X is a condensed aromatic residue which, when taken together with the two carbon atoms to which it is attached, is a member of the group consisting of phenylene, naphthylidene, pyrimidinediyl and pyridinediyl; comprising reacting an acylmethylene cyanide of the structure:



$$R_1-\overset{\overset{\displaystyle O}{\|}}{C}-\underset{\underset{\displaystyle R}{|}}{CH}-CN$$

in which R is as defined herebefore and R_1 is a member selected from the group consisting of phenyl, lower alkyl, carbo-lower-alkoxy and lower alkoxy, with a o-nitrosoamine of the structure:



in which X is as defined herebefore, at from about 65° C. to the reflux temperature of the reaction mixture in a solvent selected from the group consisting of ethanol, methanol, isopropanol and aqueous mixtures thereof in the presence of a basic agent selected from the group consisting of an alkali metal lower alkoxide, an alkali metal lower alkanoic acid and an alkali metal cyanide.

9. A method of preparing a 2,7-diamino-3-loweralkylquinoxaline comprising reacting an α-cyanoloweralkylpropionate with 2,4-diamino-1-nitrosobenzene in the presence of ~~an~~ alkali metal cyanide in an aqueous lower alkanol solvent at the reflux temperature of the reaction mixture.

3,182,063

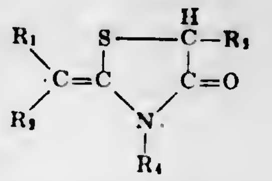
SUBSTITUTED 4-THIAZOLIDINONES AND PROCESS THEREFOR

Gerhard Satzinger, Memmingen, Allgau, Germany, assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

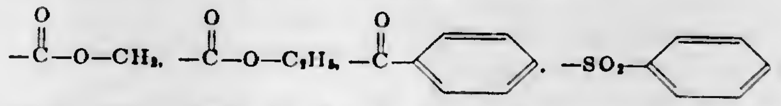
No Drawing. Filed Mar. 6, 1961, Ser. No. 93,318

10 Claims. (Cl. 260—293.4)

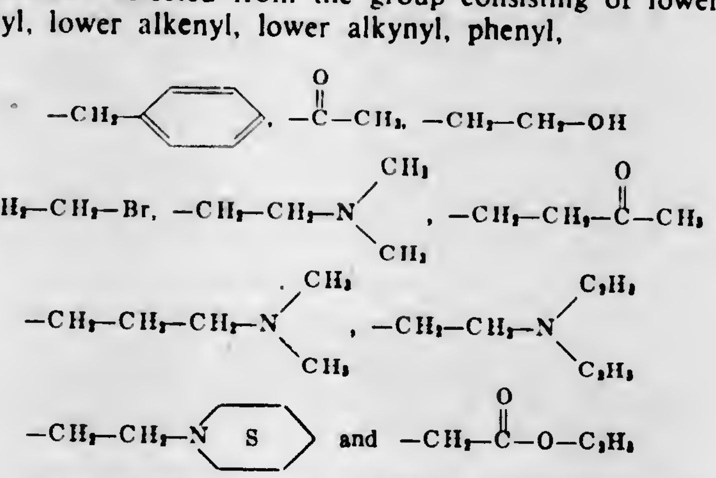
1. Compounds of the formula:



wherein R_1 is a member selected from the group consisting of hydrogen, lower alkyl, and phenyl; R_2 is a member selected from the group consisting of cyano,



and —SO_2—CH_3; R_3 is a member selected from the group consisting of hydrogen and lower alkyl; and R_4 is a member selected from the group consisting of lower alkyl, lower alkenyl, lower alkynyl, phenyl,



10. 2-carbethoxymethylene-3-(3-dimethylaminopropyl)-4-thiazolidinone.

3,182,064

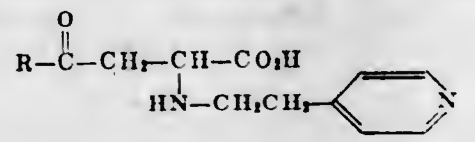
α-[2-(4-PYRIDYL)ETHYL]AMINOPROPIONIC ACID DERIVATIVES

Seymour L. Shapiro, Hastings on Hudson, Louis Freedman, Bronxville, and Marvin J. Karten, Yonkers, N.Y., assignors to U.S. Vitamin & Pharmaceutical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 24, 1961, Ser. No. 112,192

6 Claims. (Cl. 260—295)

1. The compound



wherein R is selected from the group consisting of lower alkoxy, cycloalkoxy having from 5 to 7 carbon atoms, benzyloxy, and phenethoxy.

3,182,065

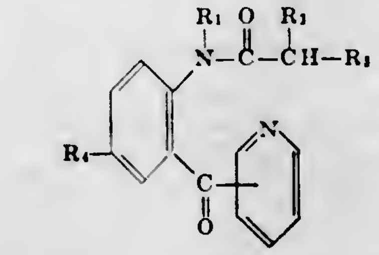
2-ACETAMIDOBENZOYL-PYRIDINES

Rodney Ian Fryer, West Orange, Robert August Schmidt, Wallington, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 9, 1964, Ser. No. 358,606

9 Claims. (Cl. 260—295)

1. A compound of the formula



wherein R_1 and R_3 are selected from the group consisting of hydrogen and lower alkyl; R_4 is selected from the group consisting of hydrogen, halogen, nitro, trifluoromethyl and and cyano and R_5 is selected from the group consisting of hydrogen, halogen, amino and carbobenzoxyamino.

2. 2-(2-acetamidobenzoyl)-pyridine.

3,182,066

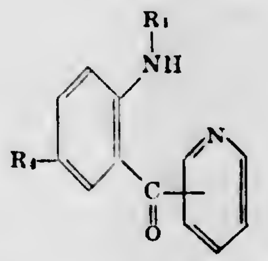
AMINOPHENYL-PYRIDYL KETONES

Rodney Ian Fryer, West Orange, Robert August Schmidt, Wallington, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 9, 1964, Ser. No. 358,611

8 Claims. (Cl. 260—296)

1. A compound of the formula



wherein R_1 is selected from the group consisting of hydrogen and lower alkyl and R_4 is selected from the group consisting of halogen, nitro, trifluoromethyl and cyano.

2. 2-(2-amino-5-halobenzoyl)-pyridine.

3,182,067

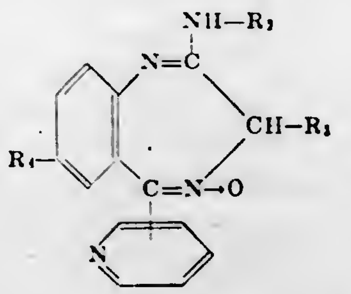
BENZODIAZEPINE COMPOUNDS

Rodney Ian Fryer, West Orange, Robert August Schmidt, Wallington, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 9, 1964, Ser. No. 358,613

8 Claims. (Cl. 260—296)

1. A compound of the formula



wherein R_2 and R_3 are selected from the group consisting of hydrogen and lower alkyl and R_4 is selected from the group consisting of hydrogen, halogen, nitro, trifluoromethyl and cyano.

2. 7-halo - 2 - methylamino-5-(2-pyridyl)-3H-1,4-benzodiazepine 4-oxide.

3,182,068

CERTAIN 3-ARYL-1,4,2-OXATHIAZOL-ONE-5-COMPOUNDS

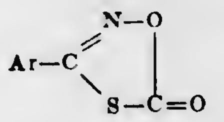
Klaus Sasse, Cologne-Stammheim, Richard Wegler, Leverkusen, and Ludwig Eue, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed May 1, 1963, Ser. No. 277,113

Claims priority, application Germany, May 9, 1962, F 36,748

8 Claims. (Cl. 260—306.7)

1. A 3-aryl-1,4,2-oxathiazol-one of the formula



in which

Ar stands for a member selected from the group consisting of phenyl, naphthyl and substitution products thereof which are substituted by at least one member selected from the group consisting of alkyl with 1–4 carbon atoms, alkoxy with 1–4 carbon atoms, alkylmercapto with 1–4 carbon atoms, the nitro group, chlorine and bromine.

3,182,069

NOVEL STEROID COMPOUNDS AND PROCESS FOR PREPARING SAME

Raphael Mechoulam, 86 Shlomo Hamelech St., Tel-Aviv, Israel

No Drawing. Filed May 3, 1963, Ser. No. 277,725

4 Claims. (Cl. 260—308)

1. 1' - H - tetrazolo - [1',5'-c] - 3 - aza - A - homo - 5 - alpha - androsta - 17 - beta - ol.

2. 1' - H - tetrazolo - [5',1'-c] - 4 - aza - A - homo - 5 - alpha - adrosta - 17 - beta - ol.

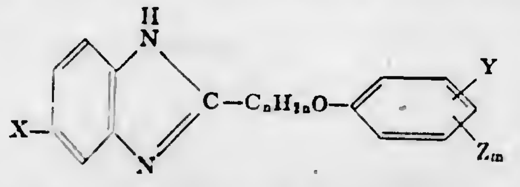
3. 1' - H - tetrazolo - [1',5'-c] - 3 - aza - A - homo-$\Delta^{4a(5)}$ - androsten - 17 - beta - ol.

4. A process for the production of tetrazolo-A-homoandrostanes which comprises reacting the corresponding steroid compound with hydrozoic acid and boron trifluoride etherate and working up by conventional means.

3,182,070
BENZIMIDAZOLE COMPOUNDS

Clarence L. Moyle, Clare, and Diomed M. Chern, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 24, 1962, Ser. No. 197,270
13 Claims. (Cl. 260—309.2)

1. A benzimidazole compound selected from the group consisting of (*a*) compounds having the formula

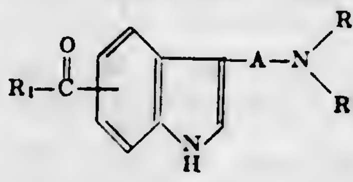


wherein X is selected from the group consisting of lower alkyl, chloro, bromo, nitro, amino, sulfamyl and phenyl; Y is selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, hydroxy, chloro and bromo; Z is selected from the group consisting of hydrogen, methyl, chloro and bromo; *m* and *n* are integers of from 1 to 2, inclusive; and (*b*) mineral acid salts of (*a*).

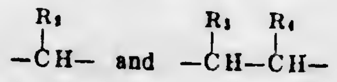
3,182,071
ACYLATED INDOLE DERIVATIVES

John Shavel, Jr., Mendham, Maximilian von Strandtmann, Rockaway Township, and Marvin P. Cohen, New Milford, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed June 27, 1961, Ser. No. 119,831
20 Claims. (Cl. 260—319)

1. A compound of the formula:



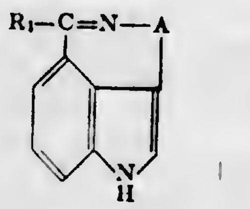
wherein R_1 is a member selected from the group consisting of lower alkyl, benzyl, chlorobenzyl and pyridyl and A is a member selected from the group consisting of



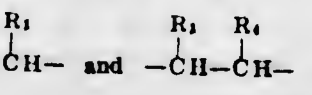
$$-\overset{\overset{R_3}{|}}{C}H- \quad \text{and} \quad -\overset{\overset{R_3}{|}}{C}H-\overset{\overset{R_4}{|}}{C}H-$$

in which R_3 and R_4 are members selected from the group consisting of hydrogen and lower alkyl and R_6 and R_7 are members selected from the group consisting of hydrogen and lower alkyl, and the pharmaceutically acceptable nontoxic acid addition and quaternary ammonium salts thereof with a compound selected from the group consisting of methyl iodide, ethyl bromide, n-hexyl-bromide, benzyl chloride, methyl sulfate, ethyl sulfate, and methyl-p-toluene sulfonate.

19. A compound of the formula:



wherein R_1 is a member selected from the group consisting of lower alkyl, benzyl, chlorobenzyl and pyridyl and A is a member selected from the group consisting of



$$-\overset{\overset{R_3}{|}}{C}H- \quad \text{and} \quad -\overset{\overset{R_3}{|}}{C}H-\overset{\overset{R_4}{|}}{C}H-$$

in which R_3 and R_4 are members selected from the group consisting of hydrogen and lower alkyl.

3,182,072
N-[(4-ANILINOANILINO)METHYL]MALEIMIDE

Elbert C. Ladd, Passaic, N.J., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed May 17, 1962, Ser. No. 195,408
1 Claim. (Cl. 260—326.5)

N-[(4-anilinoanilino)methyl]maleimide.

3,182,073
TRIMELLITIC ANHYDRIDE DERIVATIVES

Donald F. Loncrini, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Apr. 27, 1962, Ser. No. 190,807
5 Claims. (Cl. 260—346.3)

1. A polyanhydride selected from the class consisting of paraphenylene-bis(trimellitate)dianyhdride; 2,2-bis(p-trimellitoxyphenyl)propane dianhydride; paraphenylene-bis(trimellitamide)dianhydride; and paraphenylene(trimellitoxy, trimellitamide)dianhydride.

3,182,074
CUPRIC AND ZINC-BIS(TRIMELLITATE) DIANHYDRIDES

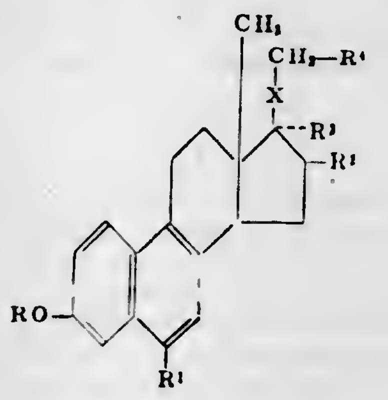
Donald F. Loncrini, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Original application Apr. 27, 1962, Ser. No. 190,807. Divided and this application July 14, 1964, Ser. No. 388,340
3 Claims. (Cl. 260—346.3)

1. A material selected from the group consisting of zinc-bis-(trimellitate) dianhydride and cupric-bis-(trimellitate) dianhydride.

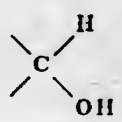
3,182,075
17-SUBSTITUTED 19-NORPREGNA-1,3,5(10),6,8-PENTAEN-20-ONES

Milton David Heller, New City, N.Y., Robert Herman Lenhard, Ridgefield Park, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Oct. 31, 1963, Ser. No. 320,499
14 Claims. (Cl. 260—397.45).

1. A steroid of the formula:



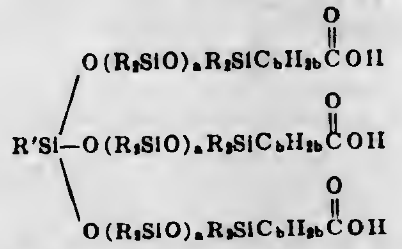
wherein R is selected from the group consisting of hydrogen and lower alkanoyl; R^1 is selected from the group consisting of hydrogen, methyl, fluoromethyl, difluoromethyl, trifluoromethyl and fluorine; R^2 is selected from the group consisting of hydrogen, (α)-methyl and (β)-methyl; R^3 is selected from the group consisting of hydrogen and hydroxyl; R^4 is selected from the group consisting of hydrogen, hydroxyl and lower alkanoyloxy and X is selected from the group consisting of >C=O and



3,182,076
CARBOXYALKYL ORGANOSILOXANES

Norman G. Holdstock, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed May 31, 1962, Ser. No. 198,725
4 Claims. (Cl. 260—448.2)

1. A carboxyalkylpolysiloxane fluid having the formula:

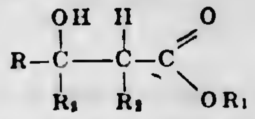

O
O(R₂SiO)ₐR₂SiC$_b$H$_{2b}$COH
O
R′Si—O(R₂SiO)ₐR₂SiC$_b$H$_{2b}$COH
O
O(R₂SiO)ₐR₂SiC$_b$H$_{2b}$COH

where R and R′ are monovalent hydrocarbon radicals, *a* has a value of about 2 to 40 and *b* has a value of from 2 to 3, inclusive.

3,182,077
DEHYDRATION OF HYDROXY ESTERS

James L. Dever, Ambler, Pa., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Aug. 7, 1962, Ser. No. 215,304
5 Claims. (Cl. 260—486)

1. The method of converting an α-alkyl-β-hydroxyalkanoic acid ester of the formula

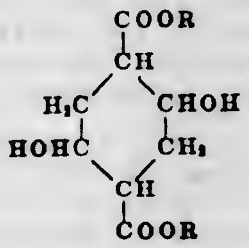


where R is selected from hydrogen and alkyl radicals and R_1, R_2 and R_3 are each alkyl radicals, said alkyl radicals containing from 1 to 12 carbon atoms, to a substantially pure α,β-unsaturated ester, which comprises mixing an α-alkyl-β-hydroxy ester of said formula with an excess of a molar equivalent of phosphorus oxychloride in a reaction medium comprising at least a molar equivalent of a weakly basic tertiary amine in which each substituent of the amine N atom is a hydrocarbon radical of up to 9 carbon atoms, said amine having a pK at least about 3.25, and heating the resulting reaction mixture to a temperature up to about reflux temperature until reaction of said ester with the phosphorus oxychloride is complete, separating the resulting ester product, and contacting said ester product with up to about one mole of an inorganic base more strongly basic than said amine, in an inert organic reaction medium, at a temperature below about 100° C., until the ester content of the reaction mixture consists substantially entirely of unsaturated ester.

3,182,078
PREPARATION OF 1,4-CYCLOHEXADIENE-1,4-DICARBOXYLIC ACID

Gerhard F. Ottmann, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of West Virginia
No Drawing. Filed May 3, 1962, Ser. No. 192,065
2 Claims. (Cl. 260—514)

1. A method for the preparation of 1,4-cyclohexadiene-1,4-dicarboxylic which consists in heating about 10 to about 20 moles of ethylene glycol with 1 mole of the compound:



wherein R is an alkyl group having 1 to 3 carbon atoms, at a temperature of from about 170° C. to about 250° C. and recovering 1,4-cyclohexadiene-1,4-dicarboxylic acid from the reaction mixture, said reaction being conducted in the presence of from 0.1 to about 1.0 percent by weight of a catalyst based on the weight of the said compound, the said catalyst being selected from the group consisting of methane sulfonic acid, benzene sulfonic acid, and p-toluene sulfonic acid, naphthalene disulfonic acid, phenylphosphonic acid, p-tolyl boronic acid and p-toluene sulfonyl chloride.

3,182,079
OPTICAL RESOLUTION OF DL-VALINE

Susumu Tatsumi and Ichiro Sasaji, Kanagawa-ken, and Ko Ohno, Tokyo, Japan, assignors to Ajinomoto Company, Inc., Tokyo, Japan
No Drawing. Filed Nov. 19, 1962, Ser. No. 238,774
5 Claims. (Cl. 260—534)

1. A process for resolving a DL-valine hydrohalide into the optically active enantiomorphs thereof which comprises:

(*a*) preparing a solution of said DL-valine hydrohalide from an amount of said DL-valine hydrohalide sufficient to at least saturate said solution with respect to said DL-valine hydrohalide, and a liquid selected from the group consisting of water, an alkanol having one to five carbon atoms, a beta-alkoxyethanol having one to two carbon atoms in the alkoxy group, a lower alkanone, an aqueous solution of halide ions, and mixtures of said liquids;

(*b*) contacting said solution with seed crystals of one optically active enantiomorph of said valine hydrohalide;

(*c*) permitting said one enantiomorph to preferentially crystallize from said solution in the presence of said seed crystals; and

(*d*) separating the crystals of the optically active enantiomorph of said valine hydrohalide from the remainder of said solution.

3,182,080
PROCESS FOR PRODUCING β-AMINO-γ-HYDROXYBUTYRIC ACID

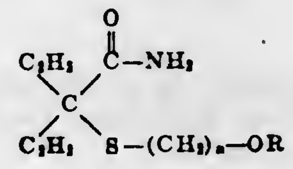
Sumio Sakai, Tokyo, Michio Tanaka, Saitama-ken, and Hirobumi Furuya, Chiba-ken, Japan, assignors to Kaken Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed June 17, 1963, Ser. No. 288,533
Claims priority, application Japan, June 19, 1962, 37/24,695
5 Claims. (Cl. 260—534)

1. A process for the production of beta-amino-γ-hydroxybutyric acid, which comprises the steps of reacting γ-chloro-β-hydroxybutyronitrile with liquid ammonia in a pressure vessel, and hydrolyzing the resulting β-amino-γ-hydroxy-butyronitrile while heating until the reaction is substantially complete.

3,182,081
SUBSTITUTED MERCAPTO-ACETAMIDES

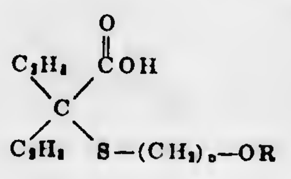
Moses Wolf Goldberg, Upper Montclair, and Hanns Hanina Lehr, Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Apr. 2, 1963, Ser. No. 269,871
6 Claims. (Cl. 260—535)

1. A compound of the formula



wherein R is selected from the group consisting of hydrogen, lower alkyl, and lower alkoxy lower alkyl, and *n* is a whole number in the range 2 through 6.

6. A compound of the formula



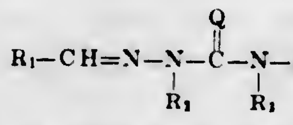
wherein R is selected from the group consisting of hydrogen, lower alkyl, and lower alkoxy lower alkyl, and *n* is a whole number in the range 2 to 6.

3,182,082
SALICYLALDEHYDE-SEMICARBAZONES

Walter J. Sydor, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 26, 1962, Ser. No. 190,257
8 Claims. (Cl. 260—552)

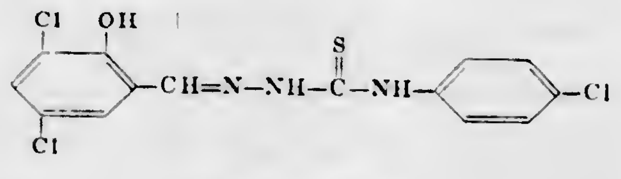
1. A compound of the formula:



$$R_1-CH=N-\underset{R_2}{\underset{|}{N}}-\overset{Q}{\overset{\|}{C}}-\underset{R_3}{\underset{|}{N}}-R_4$$

wherein R_1 is a halogenated ortho-hydroxy aryl radical of less than three 6-membered rings, in which the halogen has an atomic number between 16 and 36, R_2 is a member selected from the group consisting of hydrogen and lower alkyl, R_3 is selected from the group consisting of hydrogen, lower alkyl, cyclohexyl, monocyclic ar(lower alkyl) and monocyclic aryl, R_4 is aryl of less than three 6-membered rings, and Q is selected from the group consisting of O and S; and each aryl moiety in the compound if it is substituted beyond the required substitution in R_1 has the substituents chosen from the group consisting of lower alkyl, lower alkoxy, chloro, bromo and nitro.

2. The compound of the formula:

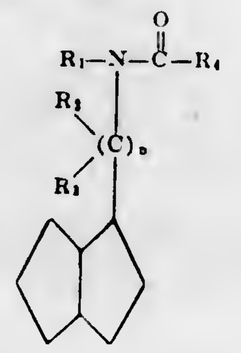


3,182,083
BICYCLO [3.3.0] OCTANE SUBSTITUTED AMIDES

Rostyslaw Dowbenko, Gibsonia, Pa., assignor to The Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 21, 1963, Ser. No. 260,314
8 Claims. (Cl. 260—561)

7. A compound of the formula:



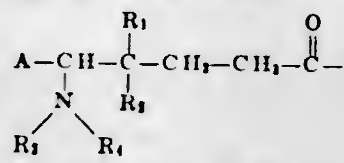
where R_1, R_2, R_3 and R_4 are selected from the class consisting of hydrogen and alkyl having up to 8 carbon atoms and *n* is an integer from 0 to 1.

3,182,084
AMINO KETONES AND THEIR METHOD OF PREPARATION

Armin G. Wilson, Highland Park, Leonard Weintraub, South River, and Daniel M. Kennedy, East Brunswick, N.J., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 6, 1961, Ser. No. 136,212
26 Claims. (Cl. 260—570.5)

7. A compound of the formula:



wherein each of R_1, R_2, R_3 and R_4 is an alkyl having from 1 to 3 carbon atoms and each of A and A′ is selected from the group consisting of aliphatic, cycloaliphatic, aryl, aralkyl and alkaryl radicals, each of which has a number of carbon atoms falling in the range of from 1 to 12.

3,182,085
PRODUCTS PREPARED FROM THE REACTION OF HALOMETHYLATED DIPHENYL OXIDE AND AMINES

Lehi L. Pitchforth, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 29, 1961, Ser. No. 99,075
6 Claims. (Cl. 260—570.9)

1. 2,2′,2″,2‴-(oxybis(p - phenylenemethylenenitrilo)) tetraethanol.

2. 2,2′-(oxybis(p - phenylenemethyleneimino))diethanol.

3. N,N′-(oxybis(p-phenylenemethylene))dianiline.

4. N,N′-(oxybis(p - phenylenemethylene))bis(dicyclohexylamine).

5. 2,2′ - (oxybis(p-phenylenemethylene(ethylimino))) diethanol.

6. N,N′ - oxybis(p-phenylenemethylene)bis(N-methylaniline).

3,182,086
CATALYTIC HYDROGENATION OF NITROSAMINES TO HYDRAZINES

Dewey Robert Levering, Fairfax, Wilmington, and Lucien G. Maury, Brookside, Newark, Del., assignors to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 20, 1955, Ser. No. 523,376
9 Claims. (Cl. 260—583)

1. A process for the preparation of an unsymmetrical hydrazine which comprises purifying a nitrosamine by fractional distillation of same at a distillation column efficiency of at least four theoretical plates, and recovering a purified nitrosamine as a product fraction of said distillation; reacting the said purified nitrosamine with molecular hydrogen, at a pressure above atmospheric in the presence of a catalytic material having a surface area of at least about 15 sq. m./g. and comprising, as the catalyst, a Group VIII metal selected from the group consisting of palladium, platinum, rhodium, nickel, cobalt and iridium, to form the corresponding hydrazine; and recovering an unsymmetrical hydrazine, so produced, as product of the process.

3,182,087
PROCESS FOR THE PREPARATION OF TRIMETHYLHYDRAZINE

David Horvitz, Cincinnati, Ohio, assignor, by mesne assignments, to FMC Corporation, New York, N.Y., a corporation of Delaware

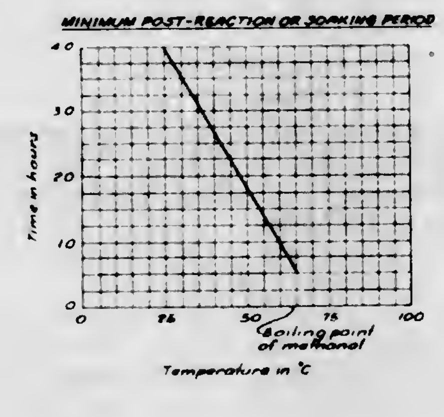
No Drawing. Filed Aug. 7, 1958, Ser. No. 753,613
6 Claims. (Cl. 260—583)

1. A process for the preparation of trimethylhydrazine which consists essentially of reacting methylenedimethylhydrazine with hydrogen at a temperature between about 0° and 100° C. in the presence of a metal catalyst selected from the group consisting of palladium, nickel, and platinum, and recovering trimethylhydrazine from the resulting reaction product mixture.

3,182,088
METHOD OF MAKING A TETRABROMOBISPHENOL

Henry E. Hennis, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 26, 1961, Ser. No. 112,770
9 Claims. (Cl. 260—619)



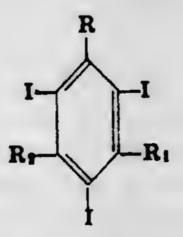
1. The method of making alkylidenebis(dibromophenol) of high purity and in good yield and by-product methyl bromide consisting essentially of dissolving an alkylidenediphenol in substantially pure methanol, adding bromine thereto in sufficient amount to provide the stoichiometric quantity thereof at a temperature of between about 20° and 25° C. over a period of at least about 1 hour, accompanied by moderate stirring, and, while continuing to stir, soaking the reaction mixture at a minimum temperature of between at least about 18° C. for at least about 4 hours and about 65° C. for at least about 0.5 hour, the time of the soaking period being inverse to the temperature, condensing methyl bromide evolving therefrom, during the soaking period, and thereafter, while continuing to stir, adding water thereto over a period of at least about 0.5 hour to precipitate substantially all the tetrabromobisphenol formed and recovering the tetrabromobisphenol from the water-methanol mixture.

3,182,089
METHOD OF PREPARING 2,4,6-TRIIODINATED AROMATIC COMPOUNDS

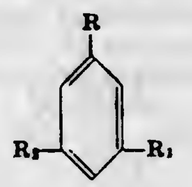
Godfrey Wilbert, Carmel, N.Y., assignor to Nepera Chemical Co., Inc., Harriman, N.Y., a corporation of New York

No Drawing. Filed Jan. 31, 1961, Ser. No. 85,961
5 Claims. (Cl. 260—623)

1. A method of preparing compounds of the formula



wherein R is a member selected from the group consisting of hydroxy and lower alkoxy and R_1 and R_2 are members selected from the group consisting of hydrogen, lower alkyl, hydroxy, lower alkoxy and the acyl radical of a lower alkyl carboxylic acid which comprises adding a solution of iodine in a solvent selected from the group consisting of dimethylformamide and dimethylacetamide to an aqueous alkaline solution of a starting compound of the formula



while maintaining the temperature of the reaction mixture between about 40° C. and about 60° C.

3,182,090
OXO PROCESS FOR PRODUCING ALCOHOLS FROM OLEFINS

Joseph Kern Mertzweiller, Baton Rouge, La., and Rhea N. Watts, deceased, late of St. Francisville, La., by Beulah Smith Watts, legal representative, St. Francisville, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 7, 1961, Ser. No. 94,082
6 Claims. (Cl. 260—638)

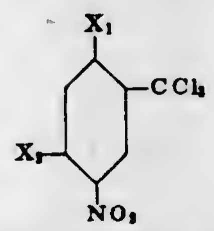
1. A process for producing alcohols which comprises carbonylating an olefin with hydrogen and carbon monoxide, having a molar ratio of H_2/CO of 1/1 to 5/1, in the presence of a dicobalt octacarbonyl catalyst at a pressure between 200 and 1500 p.s.i.g. and a temperature in the range of 200° to 350° to produce a reaction mixture comprising aldehydes, dissolved dicobalt octacarbonyl and less than 0.1 weight percent, based on said aldehydes, of acid radicals capable of forming soluble cobalt compounds in said aldehydes under process conditions, maintaining at least a portion of said reaction mixture at a pressure of 200 to 1500 p.s.i.g. but not substantially greater than employed in said carbonylating step and at a temperature sufficient to convert said dissolved cobalt carbonyl to cobalt metal and hydrogenating at least a portion of said heat-treated reaction mixture to alcohols in the presence of said cobalt metal at a pressure of 200 to 1500 p.s.i.g. but not substantially greater than said heat treating step and at a temperature in the range of 400 to 500° F.

3,182,091
NITROBENZOTRICHLORIDES AND PROCESS FOR THEIR MANUFACTURE

Otto Scherer, Bad Soden, Taunus, Helmut Hahn, Frankfurt am Main, and Norbert Münch, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 18, 1963, Ser. No. 259,405
Claims priority, application Germany, Feb. 24, 1962, F 36,119
9 Claims. (Cl. 260—646)

1. Nitrobenzotrichlorides having the formula



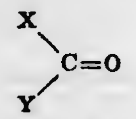
wherein X_1, X_2 represent members of the group consisting of hydrogen, chlorine and fluorine, not more than one of them being hydrogen.

3,182,092
PREPARATION OF TETRAHALOMETHANES

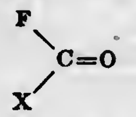
Robert Neville Haszeldine, Disley, England, and Hyman Iserson, Springfield Township, Montgomery County, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 21, 1959, Ser. No. 814,683
Claims priority, application Great Britain, Oct. 12, 1955, 29,117/55
4 Claims. (Cl. 260—653)

1. A method for making tetrahalomethanes which comprises reacting a carbonyl halide having the general formula



where X is selected from the group consisting of fluorine, chlorine and bromine and Y is selected from the group consisting of chlorine and bromine, with a fluorocarbonyl compound having the general formula



where X is as defined above, in the presence of an activated carbon catalyst containing the halide of a transition element, at a temperature at between about 250° C. and 1400° C.

3,182,093
PREPARATION OF 1,5-CYCLODODECADIENE

William E. Wellman, Edison, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

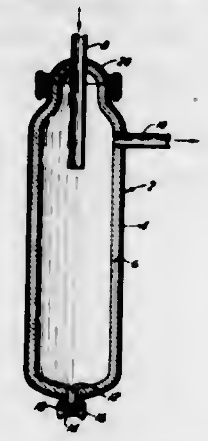
No Drawing. Filed Oct. 2, 1961, Ser. No. 141,966
3 Claims. (Cl. 260—667)

1. A process for selectively hydrogenating 1,5,9-cyclododecatriene to 1,5-cyclododecadiene which comprises mixing said cyclododecatriene and 2,3-butanediol in a molar ratio of 0.8 to 4:1 in the presence of Raney nickel catalyst and a low molecular weight mutual solvent selected from the group consisting of ketones, ethers and secondary alcohols at about 30 to 100° C. for up to about an hour and recovering the cyclododecadiene formed.

3,182,094
THERMAL HYDRODEALKYLATION PROCESS

Edwin M. Glazier, Fox Chapel, and Ralph W. Helwig and Vernon J. Yeakley, Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed July 13, 1961, Ser. No. 123,727
1 Claim. (Cl. 260—672)



A process for the thermal hydrodealkylation of an alkyl aromatic which comprises introducing a mixture of an alkyl aromatic and hydrogen having a temperature of about 1000° to 1100° F. through one end of an elongated reaction zone and discharging the same into said reaction zone at a point intermediate the ends thereof a distance from said one end of about $\frac{1}{10}$ to about $\frac{1}{4}$ of the free longitudinal distance of said reaction zone, continuing movement of said mixture longitudinally in said reaction zone down through the center thereof to form a path of movement toward the second end of said reaction zone, reversing the path of movement of said mixture, thereby forming eddy currents therein and obtaining mixing of said mixture in said reaction zone, concomitantly hydrodealkylating said alkyl aromatic and obtaining temperature of said reaction zone of about 1300° to about 1700° F., the reaction heat produced by said hydrodealkylation being maintained within said reaction zone to the extent required to obtain said latter temperature level, and thereafter recovering dealkylated alkyl aromatic from the reaction product obtained at a level intermediate the point of introduction of said reaction mixture into said reaction zone and said one end of said reaction zone. .

3,182,095
DISPROPORTIONATION OF ALKYLBENZENES

Richard F. Sullivan, San Francisco, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Feb. 9, 1962, Ser. No. 172,094
2 Claims. (Cl. 260—672)

1. A process for the disproportionation of alkylbenzenes which comprises contacting said alkylbenzenes, along with added hydrogen, in a reaction zone with a catalyst comprising from 1 to 25 weight percent nickel selenide and at least 0.5 weight percent fluoride disposed on an active siliceous cracking support, at a temperature of from about 500° to 800° F., a pressure of from about 200 to 2000 p.s.i.g., an LHSV of from about 0.3 to 10.0, and a hydrogen to feed ratio of at least one.

3,182,096
DIMERISATION OF PROPYLENE

Alan Arthur Yeo and James Keith Hambling, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed Aug. 29, 1961, Ser. No. 134,559
Claims priority, application Great Britain, Sept. 2, 1960, 30,331/60
7 Claims. (Cl. 260—683.15)

1. A process for the production of 4-methylpentene-1, comprising: dimerising propylene in the presence of a catalyst which consists essentially of a compound of general formula $A—(MR^1R^2R^3)$, where A is an alkali metal, M is selected from the group consisting of zinc, cadmium, lead and tin, and R^1, R^2, and R^3 are selected from the group consisting of hydrocarbon radicals and hydrogen.

3,182,097
HYDROCARBON CONVERSION PROCESS

Harry M. Brennan, Hammond, John R. Coley, Gary, Clifton G. Frye, Valparaiso, and Louis C. Gutberlet, Cedar Lake, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed May 31, 1961, Ser. No. 113,624
13 Claims. (Cl. 260—683.65)

1. A process for the production of branched-chain paraffinic hydrocarbons which process comprises contacting an olefinic hydrocarbon in a reaction zone with a catalyst in the presence of a hydrogen-affording gas under isomerization-hydrogenation conditions, including a temperature between about 400° F. and about 750° F., said catalyst being a composite catalyst which comprises a metallic hydrogenation component, a solid acidic component consisting essentially of a porous, high surface area material having sufficient acidity to promote isomerization of paraffins and which is selected from the group

consisting of mineral clays containing silica and alumina and synthetic silica-aluminas and from 0.03 to 5 atoms of a metal selected from the group consisting of copper, lead, silver and mercury per atom of said hydrogenation component.

3,182,098
PURIFICATION OF CRYSTALLINE SUBSTANCES

Hendrik Frederik van Wijk, Amsterdam, Netherlands, assignor to Nederlandse Centrale Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek, The Hague, Netherlands, a corporation of the Netherlands

No Drawing. Filed Mar. 18, 1960, Ser. No. 15,811
Claims priority, application Netherlands, Mar. 23, 1959, 237,385
8 Claims. (Cl. 260—707)

8. A process for purifying an organic crystalline substance comprising the steps of finely dividing the crystalline substance, forming a bed of the finely divided crystalline substance, and rinsing the bed in one direction with a substantially saturated solution of said crystalline substance in an organic solvent therefor, the moving velocity of the forefront of the solution during rinsing being not greater than one centimeter per minute.

3,182,099
PRODUCTION OF POLYMERIC MATERIALS FROM POLYOXYALKYLENE POLYOLS AND CYCLOALIPHATIC POLYEPOXY COMPOUNDS

Jared W. Clark, Charleston, and Alfred E. Winslow, Scott Depot, W. Va., assignors to Union Carbide Corporation, a corporation of New York

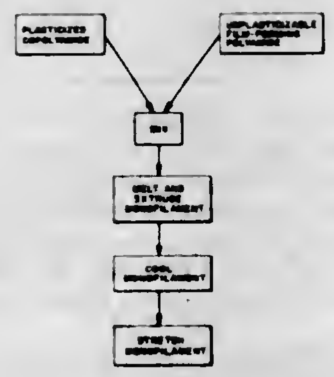
No Drawing. Filed Apr. 28, 1961, Ser. No. 106,153
22 Claims. (Cl. 260—830)

11. A composition comprising (*a*) a polyoxyalkylene polyol having an average molecular weight of at least 600, (*b*) an organic cycloaliphatic diepoxy compound having two oxirane epoxy groups in which the oxirane oxygen is bonded to adjacent carbon atoms of a cycloaliphatic ring and (*c*) catalytic amounts of a member selected from the class of Friedel-Crafts catalysts and alkali metal alcoholates of the polyoxyalkylene polyol, wherein the diepoxy compound is present in the composition in amounts from about 0.2 mole to about 20 moles per mole of the polyoxyalkylene polyol.

3,182,100
MONOFILAMENT POLYAMIDE FISHLINE COMPOSITION

Berkley W. Bedell, Spirit Lake, Iowa, assignor, by mesne assignments, to Berkley & Company, Inc., Spirit Lake, Iowa, a corporation of Iowa

Filed July 21, 1960, Ser. No. 44,244
13 Claims. (Cl. 260—857)



1. A strong and flexible oriented structure produced from a substantially externally unplasticizable synthetic linear polyamide mixed in homogeneous fusion with an externally plasticized polyamide copolymer.

3,182,101
BLENDS OF LINEAR POLYETHYLENE AND ETHYLENE-VINYL ACETATE COPOLYMER

Richard Watkin Rees, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

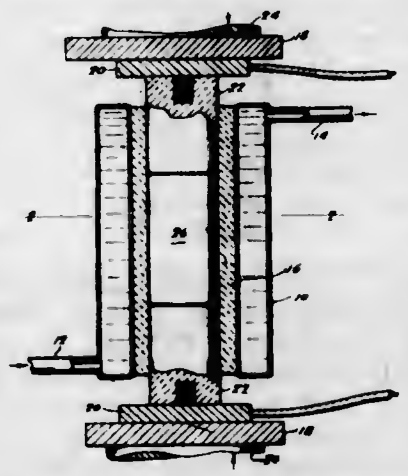
No Drawing. Filed Jan. 5, 1961, Ser. No. 80,745
4 Claims. (Cl. 260—885)

4. A composition of matter comprising a blend of 10 to 50% polyethylene having a density of .940 to .970 g./cc. and a melt index of from 1 to 20 g./10 minutes, and 50 to 90% copolymer of ethylene and vinyl acetate containing 1 to 15% polymerized vinyl acetate units, said copolymer having a melt index of from 0.1 to 30 g./10 minutes, and a density of from 0.910 to 0.940, said blend having a melt index up to 25 g./10 minutes and a density of 0.920 to 0.950 g./cc.

3,182,102
METHOD AND APPARATUS FOR MAKING DENSE BODIES OF REFRACTORY MATERIALS

Massoud T. Simnad, Wellesley, Mass., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 13, 1963, Ser. No. 258,309
3 Claims. (Cl. 264—21)



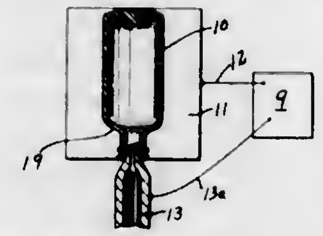
1. High pressure and temperature apparatus for forming very dense bodies from particles having relatively high electrical conductivity by simultaneous application of heat and pressure, said apparatus comprising a hollow thin-walled toroidal jacket adapted for fluid communication with a source of coolant, said jacket having an outer side wall and an inner side wall spaced inwardly therefrom, said inner wall being shorter in length than said outer side wall, and being formed with a slot extending between said outer side wall and said inner wall, said jacket also including upper and lower surfaces interconnecting said side walls and converging inwardly towards an axial opening defined by said inner side wall, a pair of high pressure plungers adapted to slidably fit respectively within said axial opening, electrically conductive elements disposed on the facing ends of said plungers, pressure means connected to the outer ends of said plungers and adapted to move each of said plungers axially of said sleeve for the exertion of elevated pressure upon a mass of particles disposed between said plungers within said opening, and electrical means disposed around said jacket and including an electrical conductor connected to an alternating current source which conductor is spirally coiled around said toroidal jacket and insulated therefrom, said coolant source causing sufficient coolant to pass through the jacket to maintain a condition such as to quickly dissipate the heat from said body and allow substantially continuous repetition of the forming procedure.

2. A method for forming a container for nuclear fuel material which method comprises mixing a binder with graphite particles, disposing the mixture in a hollow thin-

walled enclosure, initially compressing the mixture and passing an electrical current through the mixture sufficient to assure liquefaction of the binder, then compressing the mixture with a pressure of at least about 4,000 p.s.i. and simultaneously therewith passing a high amperage current directly through the mixture sufficient to produce a temperature of at least about 1800° C. therewithin, discontinuing said heating and said compressing after the mixture is formed into a uniformly strong dense graphite body having a very low permeability to gaseous fission products, continuously circulating sufficient coolant within the walls of said enclosure throughout the forming to rapidly cool said body and said enclosure so that said body can be removed from said enclosure shortly after said heating is discontinued and so that substantially continuous repetition of said forming method can be performed in a single enclosure.

3,182,103
PROCESS AND APPARATUS FOR TREATING HOLLOW THERMOPLASTIC ARTICLES

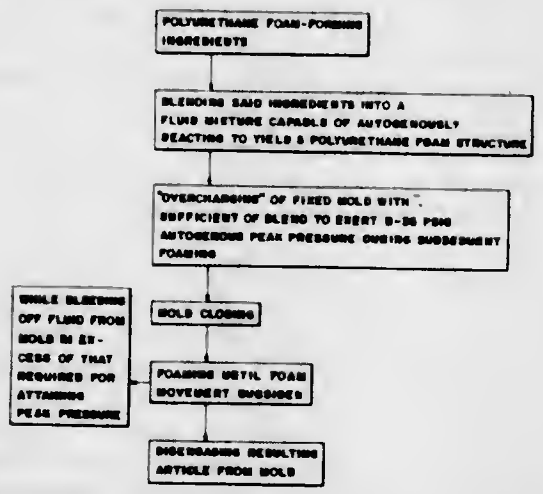
Spencer L. Blaylock, Jr., Toledo, and Wilbur A. Schaich, Maumee, Ohio, assignors to Owens-Illinois Glass Company, a corporation of Ohio
Filed Nov. 20, 1961, Ser. No. 153,622
12 Claims. (Cl. 264—22)



1. A process for forming and treating a hollow thermoplastic article comprising the steps of forming a hollow parison of the thermoplastic material, placing said parison in an electrically conducting mold, expanding said parison to the walls of said mold by introducing a fluid under pressure into the interior of said parison, said fluid consisting of an electrically conducting fluid, and imposing an electric potential between said mold and fluid to produce an electrostatic discharge through the surface of said article to be treated.

3,182,104
PROCESS FOR MAKING THICK-SKINNED ARTICLES COMPRISING POLYURETHANE FOAM

Lester L. Cwik, Chicago, Ill., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 14, 1962, Ser. No. 173,127
8 Claims. (Cl. 264—45)


POLYURETHANE FOAM-FORMING INGREDIENTS
BLENDING SAID INGREDIENTS INTO A FLUID MIXTURE CAPABLE OF AUTOGENOUSLY REACTING TO YIELD A POLYURETHANE FOAM STRUCTURE
"OVERCHARGING" OF FIXED MOLD WITH SUFFICIENT OF BLEND TO EXERT 8-35 PSIG AUTOGENOUS PEAK PRESSURE DURING SUBSEQUENT FOAMING
MOLD CLOSING
WHILE BLEEDING OFF FLUID FROM MOLD IN EXCESS OF THAT REQUIRED FOR ATTAINING PEAK PRESSURE
FOAMING UNTIL FOAM MOVEMENT SUBSIDES
DISENGAGING RESULTING ARTICLE FROM MOLD

1. A process for making an article comprising polyurethane foam which comprises:

(A) blending a polyurethane mixture having an ultimate free blow density from about 2 to 8 pounds per cubic foot, said mixture being capable of subsequently foaming into a final porous structure, said mixture comprising a polyisocyanate, an active hydrogen-containing organic substance capable of forming a polyurethane structure with said polyisocyanate, and a blowing agent;

(B) charging a fixed volume mold cavity with a quantity of said mixture in excess of that normally adequate to fill the whole mold cavity with foam generated against atmospheric pressure, said quantity charged being sufficient for exerting an autogenous peak pressure of about 8–35 p.s.i.g. in the mold cavity during subsequent foaming of said mixture;

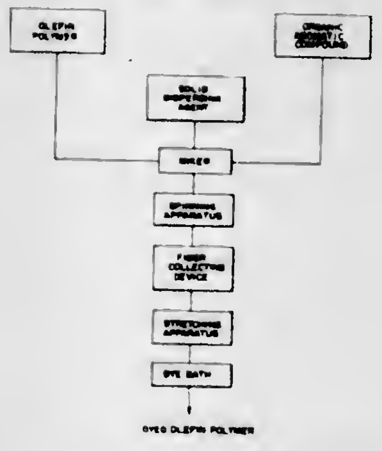
(C) closing the mold cavity;

(D) permitting said mixture therein to foam until movement of the foam subsides while bleeding off fluid from the mold cavity that is in excess of that required for attaining said peak positive pressure;

(E) disengaging the resulting article from said mold cavity.

3,182,105
PROCESS OF RENDERING POLYOLEFINS MORE DYE RECEPTIVE BY MIXING WITH ORGANIC COMPOUNDS HAVING PHENOLIC HYDROXY GROUPS

Alberto Bonvicini and Cornelio Caldo, Terni, Italy, assignors to Montecatini Societá Generale per l'Industria Mineraria e Chimica, Milan, Italy
Filed May 16, 1960, Ser. No. 29,139
Claims priority, application Italy, May 18, 1959, 8,372/59
11 Claims. (Cl. 264—78)



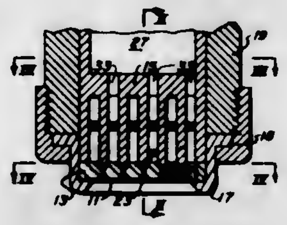
1. A method of rendering polyolefins dye-receptive which comprises melt-mixing with said polyolefin about 1–25%, based on the weight of said mixture of an organic compound selected from the group consisting of β-naphthol, β-hydroxynaphthoic acid, N-substituted amides of β-hydroxynaphthoic acid, and salts thereof and extruding said mixture in fibre form.

3,182,106
SPINNING MULTI-COMPONENT FIBERS

Yoshimasa Fujita, Keitaro Shimoda, and Keiichi Zoda, Saidaiji, Japan, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed July 10, 1962, Ser. No. 208,884
Claims priority, application Japan, July 14, 1961, 36/25,393
10 Claims. (Cl. 264—171)

1. In the method of spinning a composite fiber by extruding a plurality of different spinning solutions concurrently through a common orifice into a coagulating medium, the improvement comprising flowing such solutions separately as thin confined films moving in laminar flow towards a juncture thereof; flowing such solutions from

such juncture toward said orifice as a plurality of thin films moving in laminar flow with the adjacent faces of such films in non-mixing interfacial contact; and extruding such solutions continuously and concurrently through said orifice in side-by-side relationship into a suitable coagulating medium.



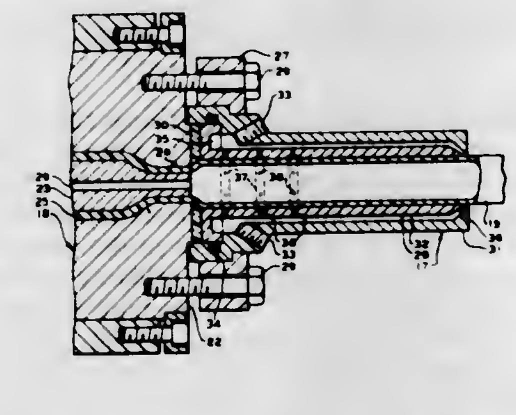
3,182,107
METHOD OF PRODUCING ALL-SKIN VISCOSE RAYON

John A. Howsmon, Wilmington, Del., and Byron A. Thumm, Swarthmore, Pa., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
No Drawing. Filed Dec. 18, 1956, Ser. No. 628,977
6 Claims. (Cl. 264—193)

1. In a method of producing shaped bodies of regenerated cellulose consisting substantially entirely of skin, the steps which include extruding a viscose having a salt index of at least 7 and containing from about 4 percent to 10 percent cellulose, from about 4 percent to 11 percent caustic soda, from about 32 percent to 60 percent carbon disulfide, based on the weight of the cellulose, and from about 0.5 percent to about 9 percent of a dissolved polyoxyalkylene glycol, based on the weight of the cellulose, into an aqueous spinning bath containing from about 10 percent to 25 percent sodium sulfate, from about 4 percent to 15 percent zinc sulfate and sulfuric acid, the percent sulfuric acid content of the spinning bath exceeding the slubbing point but not exceeding about 0.25 times the percent carbon disulfide content of the viscose.

3,182,108
EXTRUSION OF THERMOPLASTIC TUBING

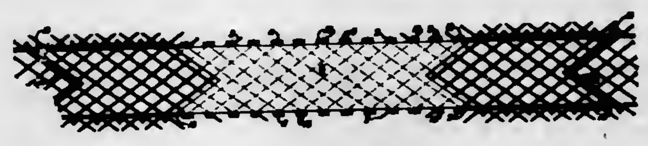
Tony E. Branscum, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 14, 1963, Ser. No. 251,271
6 Claims. (Cl. 264—209)



1. A method of extruding molten thermoplastic which comprises passing the latter from a die into a shaping passageway surrounded and confined by a cooling jacket, and directing a stream of liquid directly onto the resulting shaped thermoplastic article immediately as it issues from the confinement of said shaping passageway.

3,182,109
METHOD OF MAKING PRESTRESSED CONCRETE PAVEMENT

Gerald G. Greulich, 3018 NE. 20th Court, Fort Lauderdale, Fla.
Filed Aug. 17, 1962, Ser. No. 217,711
4 Claims. (Cl. 264—228)



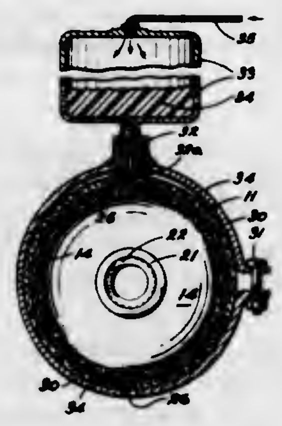
4. The method of making a prestressed continuous concrete pavement by post-tensioning, comprising laying two lines of parallel forms along the ground to define the sides of the pavement, placing two layers of parallel tendons having bond-preventing sheaths thereon between the forms with the tendons in one layer crossing those in the other and all of the tendons extending diagonally across the space between the forms and outward beyond them, placing a pair of V-shape forms between the side forms at longitudinally spaced points with the V-shape forms converging from the side forms toward each other to points substantially midway between the side forms, one side of each V-shape form being substantially parallel to the tendons in one of said layers and extending across some of the tendons in the other layer, the other side of each V-shape form being substantially parallel to the tendons in said other layer and extending across some of the tendons in said one layer, filling the space bounded by said forms with concrete to form a starting slab having fish tail ends and crossed tendons extending diagonally through it, allowing the concrete to harden, removing the forms from the slab, starting at approximately the middle of the slab and progressing toward both ends to permanently tension all of the tendons that are embedded in the slab throughout its width, pouring in engagement with the fish tail ends of the starting slab second slabs having fish tail free ends and crossed tendons provided with bond-preventing sheaths thereon extending diagonally through the second slabs, allowing the concrete in the second slabs to harden, starting at the starting slab ends of the second slabs and progressing outward toward their free ends to permanently tension all of the tendons therein except those projecting from said free ends, and adding onto said second slabs in the same way similar post-tensioned prestressed slabs in succession until the pavement has been extended substantially the desired distance in opposite directions from said starting slab.

3,182,110
METHOD AND APPARATUS FOR MAKING FIBER GLASS TANK

George A. Balcom, Cleveland, and Ralph L. Archbold, Euclid, Ohio, assignors to White Consolidated Industries, Inc., a corporation of Delaware
Original application Nov. 5, 1958, Ser. No. 772,026, now Patent No. 3,095,993, dated July 2, 1963. Divided and this application July 2, 1962, Ser. No. 207,118
2 Claims. (Cl. 264—263)

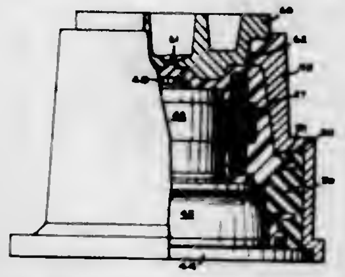
2. A method of securing together a tubular fiber glass body and a fiber glass end cap therefor comprising the steps of: forming in said body an annulair undercut extending from one end of said body at the interior thereof and having depressions in its surface; forming in said body a pair of diametrically opposed openings communicating with said undercut; forming said end cap with an annular flange having a pair of axially spaced annular portions shaped and dimensioned to have a sealing interference fit in said undercut and having between said pair of annular portions an external axially and circumferentially continuous annular recess with depressions in its

surface; positioning said flange on the end cap in said undercut in said body to provide an annular space between the body and the end cap at said annular recess in the end cap and an interference fit between said end cap and the body at opposite axial ends of said annular space; applying injection apparatus to one of said openings; forcing viscous plastic resin bonding material into said annular space through said one opening under sufficient pressure to cause resilient expansion of the walls of said annular space until said bonding material flows out of the other of said openings; removing said injecting apparatus; and immediately thereafter blocking both of said openings to prevent the loss of residual pressure in the bonding material and curing said bonding material while under pressure and enclosed within said annular space.



3,182,111
SUMP CONSTRUCTION FOR A FOOD WASTE DISPOSER

Marcus P. Hogue, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed July 31, 1962, Ser. No. 213,686
3 Claims. (Cl. 264—272)

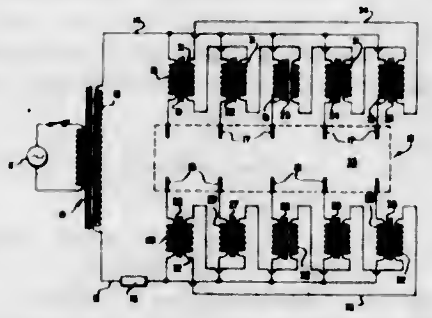


1. A method of molding a combined motor housing and sump for a food waste disposer where the housing has a motor stator encapsulated therein, comprising the steps of positioning the stator over a center plug assembly, placing a resilient insert within an outer mold shell along one side wall thereof, said insert being capable of sliding removal from the shell, placing the outer mold shell over the combined stator and center plug assembly, the insert being compressed between an outer surface of the center plug and the inner surface of the mold shell, introducing a fluid molding compound into the mold, and curing the mold to transform the compound into a solid casting, removing the mold shell from the casting, the insert being held to the casting and thereby stripped from the mold shell, removing the casting from the center plug and finally removing the insert from the casting so that a drain opening is formed in the side wall of the sump.

ELECTRICAL

3,182,112
CURRENT BALANCING MEANS FOR MULTIPLE ELECTRODES IN ELECTRICALLY HEATED GLASS MELTING UNITS

Julius J. Torok, Toledo, Ohio, assignor, by mesne assignments, to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed July 5, 1962, Ser. No. 207,652
13 Claims. (Cl. 13—6)

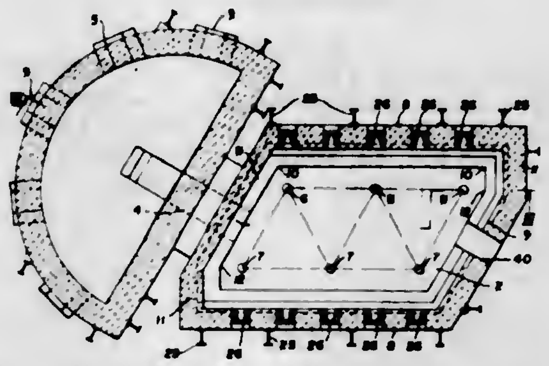


1. A device for equalizing the resistive heating in a molten mass of negative temperature coefficient material, comprising

a source of electrical current,
a plurality of electrodes immersed in said mass being energized in parallel from said source,
a plurality of primary transformer windings each in series with one said electrode and each energized in like phase from said source,
a plurality of secondary transformer windings individually associated with said primary windings, respectively, and
means connecting said secondary windings in a closed series circuit for like phase response to currents in said primary windings, whereby common secondary current flows in all said secondary windings.

3,182,113
ELECTRIC GLASS MELTING FURNACE

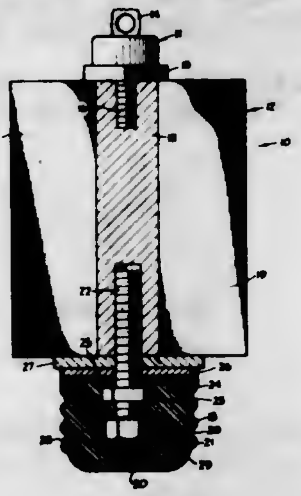
John Earl Frazier and Nelson L. Murphy, Washington, Benjamin A. Elia, Houston, and James C. McCreary, Washington, Pa., assignors to Frazier-Simplex, Inc., Washington, Pa., a corporation of Delaware
Filed Oct. 4, 1962, Ser. No. 228,365
13 Claims. (Cl. 13—6)



1. An electrically heated glass melting furnace utilizing submerged electrodes so positioned as to constitute two rows in which the electrodes of one row are equally spaced from each other and the distance between rows is equal to the spacing of the electrodes in the rows and the electrodes of one row are staggered midway between the electrodes of the other row, a melting tank having a bottom through which the electrodes extend up into the tank, the tank having vertical side and end walls describing a modified parallelogram having opposite long side walls parallel with the rows of electrodes, each side wall being spaced from the nearest row of electrodes a distance less than the spacing between electrodes, the tank having two ends walls comprising a long section and a short section, diagonally opposite ends of the two side walls being joined to the long section of an end wall forming an obtuse angle therewith and diagonally opposite ends of the short sections, forming right angles therewith, the long and short sections forming an obtuse angle at their junctions, the long end wall sections being parallel with a line of centers drawn from the end electrode in one row to the corresponding end electrodes in the other row, one vertical wall having a charging opening therethrough and another wall having a discharge throat leading therefrom, and a cover over the melting tank.

3,182,114
RECTIFIER UNIT WITH HEAT DISSIPATOR

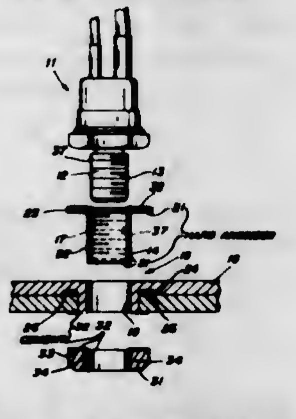
Thomas H. Burgess, Little Rock, Ark., and Maurits P. Kesnar, Granite City, Ill., assignors to Fan Tron Corporation, Little Rock, Ark., a corporation of Arkansas
Filed Jan. 4, 1963, Ser. No. 266,770
(Filed under Rule 47(a) and 35 U.S.C. 116)
3 Claims. (Cl. 174—15)



1. In a rectifier unit,
a heat radiating member having an elongated central portion and a plurality of fins projecting radially outwardly from said central portion,
a generally cylindrical base secured to one end of said heat radiating member in axial alignment with said central portion and adapted to be inserted in a socket,
and a solid state rectifier at the opposite end of said heat radiating member including a base portion having an integral screw projecting therefrom and threaded into said central portion.

3,182,115
LARGE-POWER DISSIPATING TRANSISTOR MOUNTING

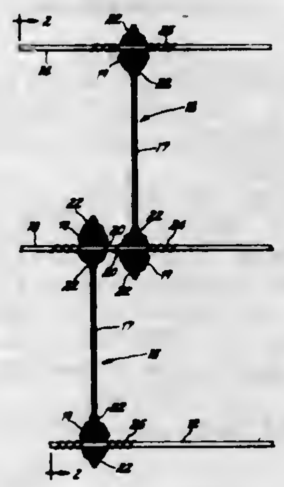
Stephen F. Moran and William E. Ballard, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 2, 1963, Ser. No. 299,675
5 Claims. (Cl. 174—15)
(Granted under Title 35, U.S. Code (1952), sec. 266)



4. A transistor mounting, adapted to support large-power-dissipating transistors of the type having a threaded base, which comprises:
a thermally-conductive mounting base having internal and external surfaces, said external surface being formed with at least one boss-like projecting portion and said internal surface having a receptacle hole extending into each of said boss-like portions,
a thermally-conductive metal bushing seated in each receptacle hole of said mounting base in an interference fit to prevent relative movement of said bushing with respect to its associated receptacle hole, said bushing being internally threaded to complementarily mate with the base of the transistor associated therewith and being hard-anodized on its outer surface along all points where said bushing is in thermal and possible electrical communication with said mounting base.

3,182,116
MID-SPAN SPREADER FOR TRANSMISSION LINES

Davis M. Phillips, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 23, 1963, Ser. No. 304,181
2 Claims. (Cl. 174—40)



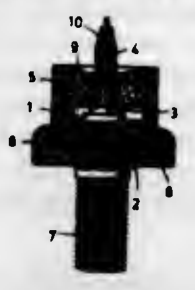
1. In combination with three spaced transmission conductors, a mid-span spreader comprising first and second substantially rigid glass fiber rod members, each of said rod members having a pair of glazed porcelain insulators secured about said rod respectively adjacent the ends thereof with said porcelain insulators each having a side wire groove and annularly undercut portions at each axial side of said groove; first tie means securing one of said conductors successively to one of each of said pairs of insulators at the respective side wire grooves thereof; second tie means securing a second of said conductors to the other insulator secured to said first rod member at the side wire groove of said insulator and third tie means securing the third of said conductors to the other insulator secured to said second rod member at the side wire groove of said insulator.

3,182,117
SEMICONDUCTOR DEVICE IN COLD-WELDED ENVELOPE

Wilhelmus Antonius Roovers, Mollenhutseweg, Nijmegen, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 19, 1961, Ser. No. 146,116
Claims priority, application Germany, Nov. 9, 1960, N 11,839
4 Claims. (Cl. 174—52)

1. A semiconductor device comprising a semiconductor element and an envelope hermetically sealing and enclosing the semiconductor element, said envelope comprising base and cap annular metallic members each having annular flanged portions cold-welded together to form a vacuum-tight seal, the cap flanged portion having an upper transverse surface and extending downward from its periphery outer and inner surfaces intersecting at a point

remote from the said flanged portion and defining a sharp edge, the semiconductor element being mounted at a central region of the base member and the base flanged portion having a recess surrounding and spaced from the semiconductor element and an upstanding outer wall portion defining said recess, the cap flanged portion fitting within the said recess with the sharp edge pressed deeply into the material underlying the said recess, the outer wall portion defining the recess being pressed over the said transverse surface of the cap flanged portion and tightly into engagement therewith thereby tightly embracing the cap flanged portion.



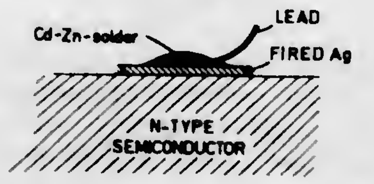
3,182,118
METHOD OF PROVIDING CONTACTS ON SEMI-CONDUCTIVE CERAMIC BODIES OF n-TYPE OXIDIC MATERIAL AND CONTACTS PRODUCED THEREBY

Roger Marie Albert de Proost and Christiaan Alfons Maria Klaassen, Brussels, and Jean Michel Baudry Ghislain Yperman, Sint-Steven-Woluwe, Belgium, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 17, 1963, Ser. No. 273,708

Claims priority, application Netherlands, Apr. 19, 1962, 277,479

8 Claims. (Cl. 174—94)



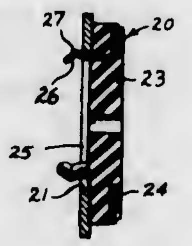
6. A semi-conductor component comprising a semi-conductive ceramic body of n-type conductivity oxidic material, a fired silver layer on a surface portion of said body, an electrical connection to the silver layer, and an element selected from the group consisting of zinc and tin being present at the interface of the silver and the body and having been provided thereat by diffusion through the silver layer to lower the contact resistance.

3,182,119
INSULATING GROMMETS

Phillip V. Millard, Detroit, Mich., assignor to Automotive Rubber Co., Inc., Detroit, Mich., a corporation of Michigan

Filed Jan. 3, 1961, Ser. No. 80,444

7 Claims. (Cl. 174—151)



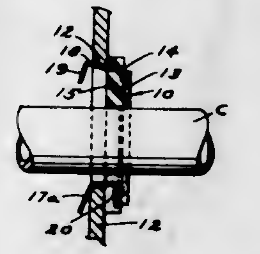
1. In an insulating grommet comprising a body of soft, resilient material including an opening and an annular portion, said annular portion having an annular substantially radial contacting surface extending from said opening to the periphery of said body, said surface lying in a plane which is at a generally right angle to the axis of the opening in said body, said opening in said body having a sealing surface for engaging a member supported by the grommet, and a plurality of resilient fingers embedded in said body and projecting axially outwardly through said contacting surface, at least one of said fingers being shaped in the form of a hook to engage the edge of an opening in a panel, others of said fingers being shaped in the form of spring members and having a portion shaped to resiliently snap by and engage the edge of said opening in a panel to pull said contacting surface of said body axially into sealing engagement with the edge of said opening in said panel.

3,182,120
SNAP-ON INSULATING GROMMETS

Jens William Duhn, Detroit, Mich., assignor to Automotive Rubber Co., Inc., Detroit, Mich., a corporation of Michigan

Filed Sept. 24, 1962, Ser. No. 225,503

7 Claims. (Cl. 174—151)



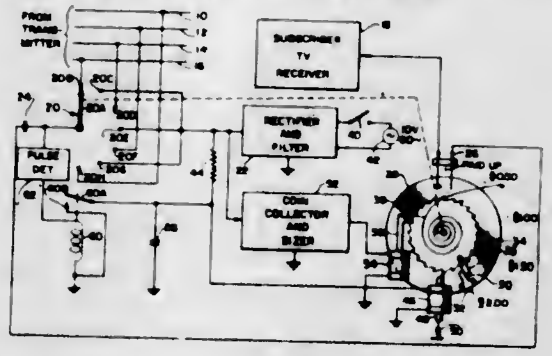
3. An insulating grommet comprising
a body of soft resilient material including an opening and an annular portion,
said annular portion having an annular contacting surface lying in a plane which is at right angle to the axis of the body,
a ring positioned in said annular portion in concentric relation thereto,
and a plurality of spaced spring fingers projecting axially through the annular surface and shaped to engage the edges of an opening in a panel and thereby compress the material of said annular portion against the edge of said opening in said panel,
said grommet having a slit extending radially from said body opening to the periphery thereof and through said body, ring and one of said fingers.

3,182,121
SUBSCRIPTION-TELEVISION RECEIVER HAVING RATE SET BY PROGRAM SELECTOR

William C. Rubinstein, Van Nuys, Los Angeles, Calif., assignor to Paramount Picture Corporation, New York, N.Y., a corporation of New York

Filed June 22, 1961, Ser. No. 118,857

8 Claims. (Cl. 178—5.1)



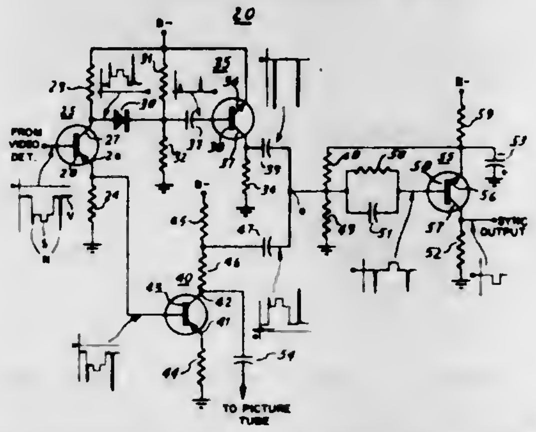
1. A pricing arrangement for a subscription-television system comprising a television transmitter, a subscription-television receiver, a plurality of television program transmission channels extending between said television transmitter and subscription-television receiver, means at said subscription-television receiver for selecting one of said plurality of television program transmission channels, and means operative solely in response to operation of said means for selecting and for establishing the cost for viewing said program in accordance with the one of said transmission channels selected by said means for selecting.

3,182,122
NOISE PROTECTION CIRCUIT

Lin Kao, Evanston, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware

Filed Sept. 22, 1961, Ser. No. 140,065

5 Claims. (Cl. 178—7.3)



1. In a television receiver; a video detector for developing a first polarity composite video signal including video components, synchronizing components having magnitudes greater than said video components and fortuitous noise components exceeding the magnitude of said synchronizing components; a transistor amplifier for amplifying said composite video signal; means including an emitter resistor in said transistor amplifier for developing a second polarity replica of said composite video signal; means including a collector resistor in said transistor amplifier for developing a first polarity replica of said composite signal; additional means for further amplifying said first polarity oriented replica; a transistor switch having an input circuit and an output circuit; network means interposed between said collector resistor and the input circuit of said transistor switch for maintaining said transistor switch in an "off" condition except during occurrence of said noise components, the output circuit of said transistor switch developing a large first polarity potential upon said switch being driven into an "on" condition, said transistor drawing substantially full collector saturation current responsive to said fortuitous noise components having magnitudes exceeding a certain level; a common junction coupling the output of said transistor switch with the output of said additional means; and separating means coupled to said common junction for separating said synchronizing components from said video components, whereby said separating means is disabled when said transistor switch is in an "on" condition to insure that ony separated reference components appear in the output of said separating means.

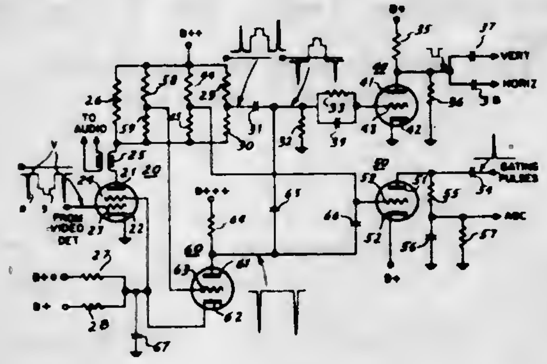
3,182,123
NOISE PROTECTION CIRCUIT

Lin Kao, Evanston, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 30, 1961, Ser. No. 148,402

5 Claims. (Cl. 178—7.3)

1. In a television receiver including means for developing from a received television signal a composite video signal including video components, synchronizing signal components and fortuitous noise components, said synchronizing components being greater in magnitude than said video components and said fortuitous noise components often exceeding the magnitude of said synchronizing components; a video amplifier for amplifying said composite video signal; a load impedance for said video amplifier; means for separating said synchronizing components from said video components on the basis of amplitude; means coupling said load impedance to said separating means; said video amplifier including an electron tube having a screen electrode; a high gain noise inverter tube having an anode, a cathode and a control grid; means coupling said load impedance to said control grid; means coupling said screen electrode to said cathode to thereby establish the conduction threshold of said noise inverter tube at a point a predetermined amount in excess of the amplitude of said synchronizing components; a high direct current voltage source; a relatively large load resistor connected between said high voltage source and said anode; and means for coupling said load resistor to said separating means whereby during occurrence of a fortuitous noise component having an amplitude exceeding the amplitude of said synchronizing components by said predetermined amount, said noise inverter tube is driven conductive to develop a potential for overcancelling said last mentioned fortuitous noise component.



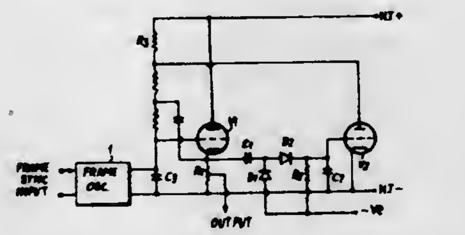
3,182,124
MULTI-FREQUENCY FRAME SCAN GENERATOR WITH BOOT-STRAP AMPLIFIER TO PROVIDE CONSTANT AMPLITUDE OUTPUT

Michael J. D. Nurse, Cambridge, England, assignor to Pye Limited, Cambridge, England, a company of Great Britain

Filed May 9, 1962, Ser. No. 193,582

Claims priority, application Great Britain, May 12, 1961, 17,411/61

8 Claims. (Cl. 178—7.3)



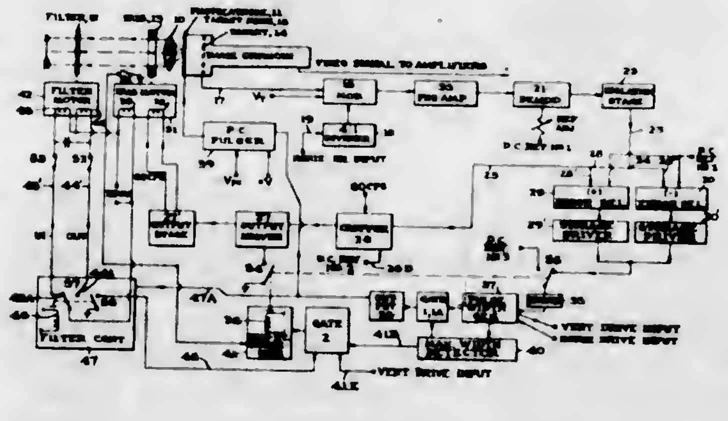
1. In a multi-frequency frame scan generator circuit for use in television receivers which are desired to operate at any of at least two different television scanning standards having different frame frequencies and comprising a frame oscillator adapted to be triggered by frame frequency synchronising pulses, a boot-strap amplifier stage for linearising the output waveform of the oscillator, means for feeding the output of said oscillator to the boot-strap amplifier stage and means for deriving a linearised output scanning waveform from the output of the boot-strap amplifier stage, the improvement which comprises means for deriving an auxiliary output from said boot-strap amplifier stage, means for rectifying said auxil-

iary output, an amplitude control circuit fed by said rectified auxiliary output, and means connecting said amplitude control circuit to control the amplitude of the output scanning waveform from the boot-strap circuit to maintain it at a substantially constant amplitude at each of the different frame repetition frequencies.

3,182,125
ILLUMINATION CONTROL SYSTEM FOR TELEVISION PICKUP TUBES AND THE LIKE

Roy A. Kampmeyer, Robert A. Lee, and Bayard F. Walker, Baltimore County, Md., assignors to The Bendix Corporation, Towson, Md., a corporation of Delaware

Filed Sept. 20, 1960, Ser. No. 57,292
22 Claims. (Cl. 178—7.92)



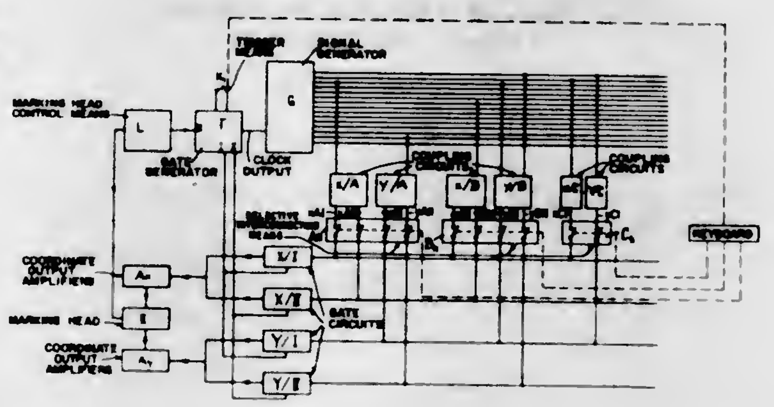
3. In a television system utilizing a signal pickup tube of the return scanning beam type having a photocathode onto which the optical image of the scene being televised is projected and a scanning target on which an electrical charge image is formed in proportion to the intensity of photocathode illumination by photoelectrons emitted from said photocathode, said tube also having video signal output means energized by the electrons in said return beam; electrically-operated means for controlling the intensity of light admitted to said photocathode including a null type reversible alternating current servo motor having a control winding, means for sensing an electrical current independently of the video output signal which varies with variations in photocathode illumination, a modulating device and amplifying means and means producing an alternating current carrier signal connected to said modulating device, means for applying the sensed current to control said modulating and amplifying means to produce an amplified modulator signal, demodulating means connected to receive said amplified modulated signal including means producing a direct current reference potential which is compared with the demodulated signal to produce an output which varies in magnitude from said reference potential with variaitons in photocathode illumination, means for converting the demodulated direct current output into an alternating current, said converting means operating to compare the demodulated output with a reference potential and produce an error signal proportional to the differential therebetween, and means for amplifying the error signal and applying it to said control winding of the servo motor to drive the latter in a null direction.

20. The method of attenuating the effect of high scenic illumination in a television system utilizing a television pickup tube having a photocathode and a target on which an electrical charge image is formed. in proportion to photocathode illumination, which comprises generating a pulse which varies in width as a function of photocathode illumination, and impressing said pulse on the normal photocathode supply potential in a manner such as to intermittently vary the said supply potential in a direction to reduce the charge on the target.

3,182,126
ARRANGEMENT FOR PRODUCING ELECTRIC SIGNALS CONTROLLING THE TYPING OF TYPEWRITER SIGNS DEFINED BY COORDINATES

Enzo Ascoli, Lausanne, Vaud, Switzerland, assignor to Paillard S.A., Sainte-Croix, Vaud, Switzerland, a corporation of Switzerland

Filed July 17, 1961, Ser. No. 124,631
Claims priority, application Switzerland, Aug. 10, 1960, 9,085/60
6 Claims. (Cl. 178—30)



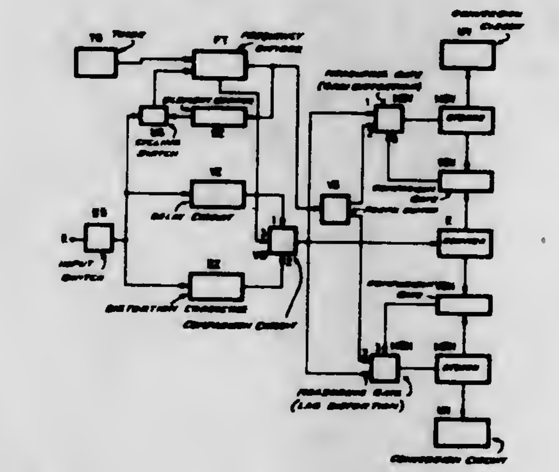
1. In a writing machine operating in accordance with a two coordinate system, to produce symbols from characteristic form combinations, and including a suitable keyboard means and coordinate controlled marking head therein; the combination of a signal generator having a plurality of signal outputs adapted to continuously emit a like plurality of preselected output waveforms at said outputs and a clock wave output, a gating signal generator synchronized with said signal generator by said clock wave output and including a second plurality of signal outputs, a plurality of gate circuits having input, output and gate terminals connected by the said gate terminals with selected ones of said second plurality of signal outputs, said plurality of gate circuits including gates representative of each coordinate in said two coordinate system, coupling circuit means for each of the signal outputs and respective preselected output waveforms of said signal generator, selective interconnecting means operated by said keyboard means for selectively interconnecting said coupling circuit means to said input terminals of said gate circuits in response to actuation of said keyboard means, and first and second coordinate output amplifiers, responsive to the respective coordinate outputs from said representative gate circuits, connected between said output terminals of said gate circuits and said marking head.

3,182,127
MEASURING REFERENCE DISTORTION OF TELEGRAPH SYMBOLS IN START-STOP TELEGRAPH OPERATION

Otto Wiese, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Aug. 28, 1961, Ser. No. 134,194
Claims priority, application Germany, Sept. 7, 1960, S 70,249
9 Claims. (Cl. 178—69)

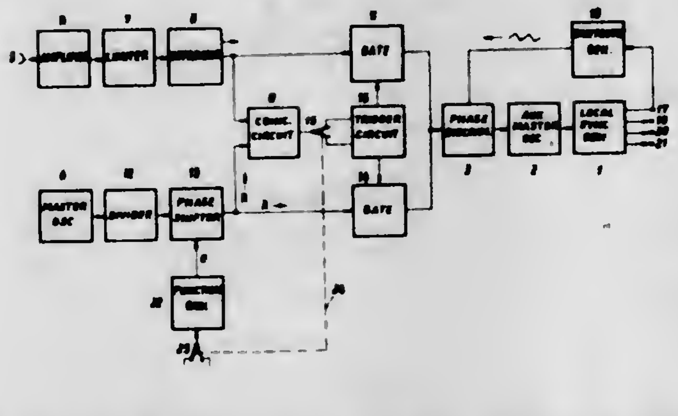
1. A circuit arrangement for measuring the reference distortion of telegraphic symbols which are transmitted in accordance with the start-stop principle, comprising distortion corrector means for sampling the polarity of telegraphic symbols to be measured at the center of the elements involved, referred to the inception of the start element and for correcting such symbols, delay means operable to delay an uncorrected symbol by one-half element length, each of said corrector and delay means having an input and an output, means for operatively conducting a received symbol to both of said inputs, a time measuring device comprising a timing impulse generator operable to produce timing impulses having a high frequency as compared with the element frequency of the telegraphic symbols, a comparison circuit having an output and respective inputs, the outputs of said corrector and delay means each being operatively connected to a respective input of said comparison circuit, said impulse generator being operably connected to said comparison circuit, the latter circuit being operative, responsive to element changes of the distortion-corrected symbol and the uncorrected symbol appearing at the inputs of said circuit, to control the passage therethrough of impulses from said generator, which impulses constitute a criterion for the degree of distortion.



3,182,128
SYNCHRONIZING REMOTE AND LOCAL TELEVISION SIGNALS BY SHIFTING ONE SIGNAL UNTIL COINCIDENCE IS OBTAINED

Ernst Legler, Darmstadt, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany

Filed Dec. 27, 1962, Ser. No. 250,731
9 Claims. (Cl. 178—69.5)

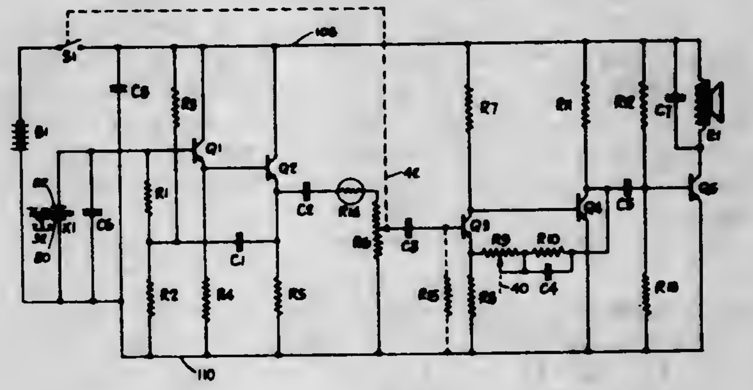


1. Method for changing-over from one television signal synchronized by a local sync generator to another television signal synchronized by a remote sync generator operating at practically equal synchronizing frequencies comprising, in combination, the steps of controlling the local sync generator either by local line synchronizing pulses or by remote line synchronizing pulses; initiating a change-over process from one television signal to the other television signal; shifting the phase of said local line synchronizing pulses over a range of at least one period; effecting automatically the actual change-over from one television signal to the other at the instant of phase coincidence between said local and remote line synchronizing pulses.

3,182,129
ELECTRONIC STETHOSCOPE

Winslow B. M. Clark, Van Nuys, and Wallace R. Spark, Venice, Calif., assignors to Douglas Aircraft Company, Inc., Santa Monica, Calif.

Filed Nov. 1, 1962, Ser. No. 234,684
8 Claims. (Cl. 179—1)



3. In an electronic stethoscope, a pickup head comprising:

a housing having a first and second open end, and including mounting structure therein affixed to said housing;

a piezoelectric crystal mounted to said mounting structure and adapted to be physically distortable to produce an output signal therefrom;

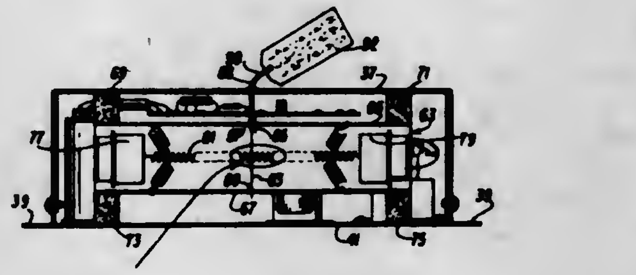
a diaphragm including an outer disc of plastic characteristics, an inner disc of metallic characteristics in juxtaposition with said outer disc, and a pressure centering element positioned between said outer and inner discs, said diaphragm being mounted to said first end of said housing and closing said first end; and

means for transmitting movements of said diaphragm to said crystal to distort the same and produce an output signal therefrom.

3,182,130
SHOCK MOUNTING

Ernest R. Zeiss, Lombard, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Mar. 12, 1963, Ser. No. 264,609
8 Claims. (Cl. 179—1)



5. Reverberation apparatus for use in a vehicle and which may be subject to vibration and shock during shipping prior to installation in a vehicle, including in combination, a supporting structure, an elongated channel member, input and output transducer means fixed to said channel member at opposite ends thereof, coil spring means transmitting vibration and connected between said input and output transducer means, said spring means mechanically imparting time delay and amplitude decay to signals passing therethrough between said input and output transducer means, a plurality of springs connecting said channel member to said supporting enclosure and suspending said channel member therein, said springs

being arranged to have mutually opposed tensional forces in all directions, thereby applying a resilient bias to displacement of said frame member due to external forces, foam damping pads between said channel member and said supporting enclosure at the ends of said channel member, said damping pads engaging both said channel member and said supporting enclosure and compressed therebetween to damp vibrations of said channel member within said supporting enclosure and to prevent excessive vibration of said spring means, and a shipping keeper comprising an elongated member removably secured to said channel member and passing therethrough and engaging said spring means to prevent excessive vibrational movement thereof, said shipping keeper being manually removable from said channel member and said spring means.

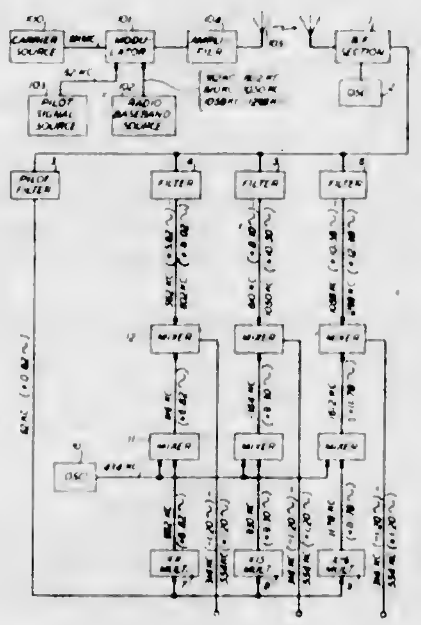
3,182,131

DOPPLER FREQUENCY SHIFT CORRECTION OF INFORMATION BAND FREQUENCIES IN A TRANSMITTED CARRIER SYSTEM USING A SINGLE PILOT SIGNAL

Richard R. Barnes, Stirling, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 17, 1962, Ser. No. 210,459

4 Claims. (Cl. 179—15)



2. In a communication system having a variable path length between a transmitting terminal and a receiving terminal, a carrier signal coupling said terminals, said carrier signal being modulated by a plurality of information-carrying signals occupying discrete frequency bands and a pilot signal frequency remote from said information bands of frequencies, said pilot signal and each information-carrying signal being shifted in frequency by an amount determined by the rate of change of said path length between said terminals and the frequency of said carrier signal and the frequencies of said information-carrying signals, said receiving terminal comprising, a filter means for separating each frequency band and said pilot signal and coupling them to individual channels, a plurality of multiplier circuits connected in the pilot signal channel for changing the shifted frequency of said pilot signal to preselected frequencies, and means in each information-carrying signal channel for combining the information-carrying signal of that channel with a preselected frequency from the output of a multiplier circuit having a multiple of the frequency shift of the pilot signal that is approximately equal to the average frequency shift of the information-carrying signals in the frequency band of that particular channel.

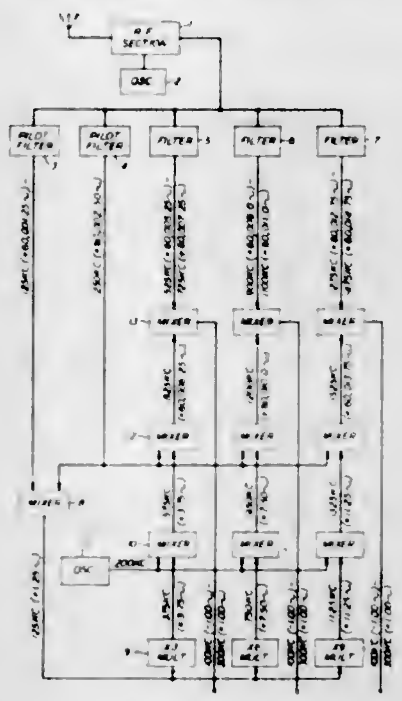
3,182,132

DOPPLER FREQUENCY SHIFT CORRECTION OF INFORMATION BAND FREQUENCIES IN A SUPPRESSED CARRIER SYSTEM USING A PAIR OF PILOT SIGNALS

Richard R. Barnes, Stirling, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 17, 1962, Ser. No. 210,460

6 Claims. (Cl. 179—15)



2. In a communication system having a variable path length between a transmitting terminal and a receiving terminal, a single sideband of a modulated carrier signal coupling said terminals, said carrier signal being modulated by a first pilot signal, a second pilot signal, and a plurality of information-carrying signals occupying discrete frequency bands, said single sideband being shifted in frequency by an amount determined by the rate of change of said path length between said terminals and the frequency of said carrier signal and the frequencies of said modulating signals, said receiving terminal comprising a filter means for separating each frequency band and each pilot signal and coupling them to individual channels, means for combining said first and said second pilot signals to remove the frequency shift determined by the frequency of said carrier signal, a plurality of multiplier circuits connected in the output circuit of said combining means for changing the combined frequency of the pilot signals to preselected frequencies, and means in each information-carrying channel for combining a preselected pilot signal frequency, said second pilot signal and the information-carrying signal in that channel.

3,182,133

CIRCUIT ARRANGEMENT FOR ATTENUATING AND DE-ATTENUATING TWO-CONDUCTOR LINES

Max Schlichte, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

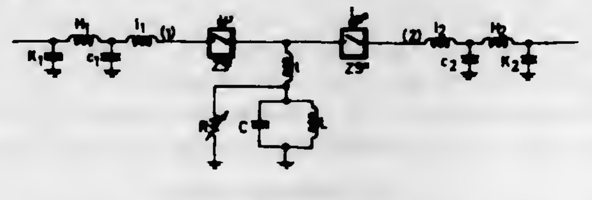
Filed Sept. 24, 1962, Ser. No. 225,722

Claims priority, application Germany, Sept. 26, 1961, S 75,937

7 Claims. (Cl. 179—15)

1. A circuit arrangement for the attenuating or de-attenuating of two-conductor lines, comprising two periodically actuated switches staggered in time with respect to each other, and inserted in series in the two-conductor line, an energy storer, connected at the junction point of said switches, and variable means operatively connected

to said energy storer, controllable by a control signal, for adjusting the time constant of said storer to a fixed value



at which the desired attenuation or de-attenuation is achieved.

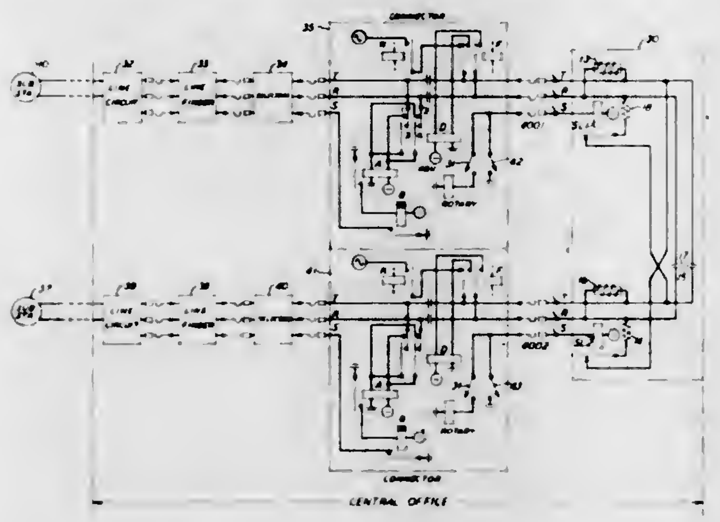
3,182,134

CIRCUIT FOR INTERCONNECTING A NUMBER OF CALLING LINES

Lester Hochgraf, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 11, 1959, Ser. No. 858,924

12 Claims. (Cl. 179—18)



1. An automatic telephone system for interconnecting a plurality of calling lines including a first group of terminals having a first number designation, a second group of terminals having a second number designation, connecting means permanently coupling said terminals to permit communication therebetween, means responsive to an idle condition on said first group of terminals and the transmission of signals representing said first number designation for connecting a calling line to said first terminals, means for applying ringing current to said first terminals, impedance means connected to said terminals and adapted to present a relatively low impedance to direct-current signals and a relatively high impedance to alternating-current signals for tripping said ringing means, and means responsive to the tripping of said ringing means for transmitting a signal to said calling line representing a revenue charge indication.

3,182,135

APPARATUS FOR CHECKING IMPERFECTIONS IN A RECORDING MEDIUM

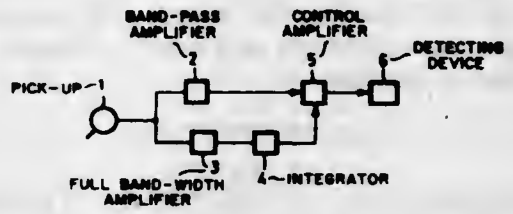
Gerrit Jan Siezen, Baarn, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 2, 1962, Ser. No. 184,246

Claims priority, application Netherlands, Apr. 4, 1961, 263,173

3 Claims. (Cl. 179—100.1)

2. Apparatus for detecting imperfections in a recording medium, comprising: means for recording on said medium a signal having a relatively wide frequency range from which a relatively narrow frequency band is substantially suppressed, the extent of said narrow band being such that its absence is substantially inaudible when reproduced, reproducing means for reproducing said signal, the reproduced signal being applied to a band-pass filter tuned to said narrow frequency band, the output of said band-pass filter being applied to a control amplifier, means coupled to said control amplifier for varying the amplification factor of said control amplifier responsive



to the amplitude of the signals from said reproducing means, and means for applying the signal band passed by said filter to a detecting device to detect the presence of imperfections in the recording medium lying in said narrow frequency band.

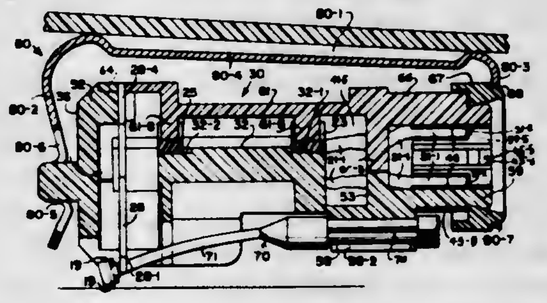
3,182,136

PHONOGRAPH PICKUPS WITH DETACHABLY REPLACEABLE STYLUS DRIVE STRUCTURE

Norman H. Dieter, Jr., Pleasantville, and Egon H. Bauer, Yonkers, N.Y., assignors to Sonotone Corporation, Elmsford, N.Y., a corporation of New York

Filed Nov. 19, 1962, Ser. No. 238,674

9 Claims. (Cl. 179—100.41)



1. A replaceable stylus holder for insertion through an elongated recess opening of narrow width into a wider parallel elongated seating recess between two retainer-recess wall portions of a phonograph pickup and driving mechano-electric transducer means thereof,

which stylus holder comprises an elongated stylus rod member arranged for detachable operative coupling to said transducer means and having a front end carrying at least one stylus extending in an axial plane of said rod member and,

a generally parallel, relatively stiff elongated seating member having a front seating end joined to the rear end of and carrying said rod member,

a handle formed integrally with and extending from said seating member in a handle plane inclined by a material angle to said axial plane for rotating said stylus holder about its axis to a groove-engaging stylus position,

said seating member having two axially spaced body portions and an elongated seating section rotatable in the pickup seating recess and of different cross-section circumference than said body portions for aligning the axial position of said seating member relatively to said retainer-recess wall portions,

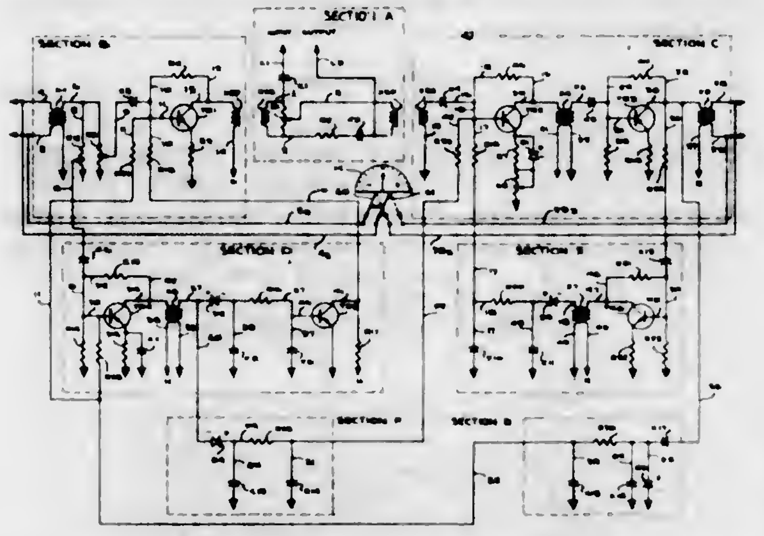
said elongated seating-member section having two opposite insertion wall segments extending generally parallel to said handle plane and having greater normal transverse width than said retainer-recess opening for retaining said stylus holder in said recess with said insertion wall segments extending generally parallel to said axial plane,

said two insertion wall segments having the property of being elastically compressible from said normal width to the narrower width of said recess opening for passing therethrough in the direction of said handle plane, said seating member having two other opposite wall segments extending generally parallel to said axial plane and having materially greater resistance against compression than said two insertion segments,

said other wall segments cooperating with the retainer recess wall portions for suppressing removal of said seating member from said seating recess in the stylus operative position.

3,182,137
GAIN-ADJUSTING AUDIO LEVEL TERMINATOR

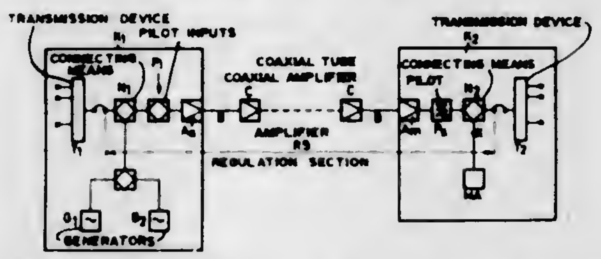
Donald C. Beatty, 2800 Overhill Road,
Birmingham 9, Ala.
Filed Aug. 2, 1961, Ser. No. 129,211
10 Claims. (Cl. 179—170.8)



1. In a terminator of the type designed for application in a communications system to connect a terminal facility to the receiving and transmitting channels of said system, the combination, with a common power supply, of: a receiving amplifier including a signal-receiving line; a transmitting amplifier including a signal-transmitting line, said amplifiers respectively including amplifier circuits connected to said lines thereof; a connecting circuit common to both amplifiers and including input and output lines adapted for coupling to the associated terminal facility so as to provide a path of signal transmission between the terminal facility and the respective amplifiers, said connecting circuit including means effective upon each of said amplifiers to at least partially isolate the same from the other amplifier in the presence of signal transmission between the connecting circuit and said other amplifier, the amplifier circuit of the receiving amplifier including an amplifying transistor and further including resistor means connected between the base element of said transistor and said power supply, the value of said resistor means being selected to normally maintain the transistor in a partially conducting amplifying condition, said amplifying circuit of the receiving amplifier additionally including a variable resistor having a connection with the signal-receiving line; a rectifier circuit connected between the variable resistor and said common power supply, said variable resistor being manually settable in selective positions effective to permit the passage thereby only of signals above a correspondingly selected audio level, said rectifier circuit including means responding to the input of signal current thereto from the variable resistor to impress amplifying current through the common power supply upon said transistor, at a value effective for transition of the transistor to a fully conducting status; attenuation means for the transmitting amplifier including a rectifying network connected between the rectifier circuit and the amplifying circuit of the transmitting amplifier, and attenuating the signal of said amplifier circuit of the transmitting amplifier in the presence of signal energy in the receiving amplifier of a magnitude above said selected audio level; and attenuation means for the receiving amplifier and rectifier circuit, including a rectifying network connected between the transmitting amplifier and said receiving amplifier and rectifier circuit, arranged to attenuate the signal of the receiving amplifier and rectifier circuit in the presence of signal energy in the amplifying circuit of the transmitting amplifier, having a value above a preselected minimum magnitude.

3,182,138
METHOD OF AND CIRCUIT ARRANGEMENT FOR SUPERVISING AND MAINTAINING COAXIAL LINES

Stig Janson, Stockholm, and Viking Stending, Tjadern, Sweden, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany
Filed Mar. 21, 1961, Ser. No. 97,199
Claims priority, application Sweden, Mar. 31, 1960, 3,176/60
10 Claims. (Cl. 179—175.31)

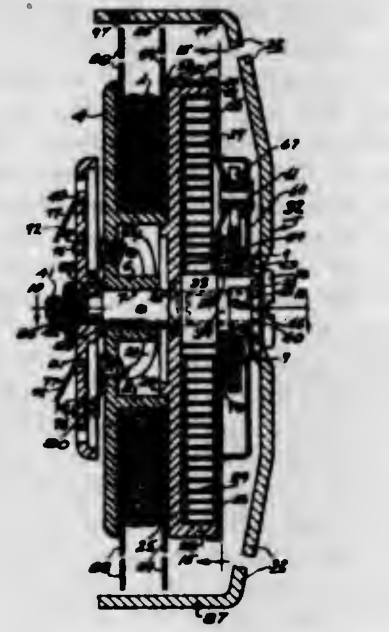


1. A method of supervising line sections forming parts of coaxial devices for telephone purposes, preferably regulation sections, comprising in each transmission direction a coaxial tube, with coaxial amplifiers inserted at approximately equal spacing, wherein the linearity of the section is determined by repeatedly applied measurement of intermodulation; comprising the steps of transmitting a plurality of signal frequencies over the section to be supervised, measuring at the receiving end the level of such intermodulation products of odd order of at least two signal frequencies which are transmitted over such section, adding up as to voltage the contributions of the individual amplifiers, which contributions arrive at the receiving end with practically the same phase.

6. A circuit for measuring the level of the intermodulation products of odd ordinal numbers of transmitted signals in connection with supervising and maintaining coaxial telephone sections which respectively comprise, in each communication direction, a coaxial tube having coaxial amplifiers inserted therein at approximately equally spaced distances therealong for the transmission of signals thereover from the transmitting side to the receiving side thereof, comprising a plurality of parallel connected bandpass filters operatively connected to the section of the coaxial line involved, at the receiving side thereof for filtering out the signal frequencies and intermodulation frequencies transmitted over the coaxial line, a harmonics generator for producing a signal with a given frequency, one of said filters having the output thereof operatively connected with the input of said harmonics generator, a first modulator, the output of said harmonics generator and the output of another of said bandpass filters being operatively connected to said modulator whereby the latter is operative to produce an intermodulation frequency, a second modulator to which the output of said first modulator is connected, a local generator for producing a signal of fixed frequency, having its output connected to said second modulator, whereby said second modulator is operative to produce a signal with another predetermined frequency, a third modulator to which the output of said second modulator is operatively connected, another of said bandpass filters having its output operatively connected to said third modulator for supplying the intermodulation product filtered out thereby to said third modulator, whereby said third modulator delivers a signal with a fixed frequency, a selectivity-determining bandpass filter to the input of which the output of said third modulator is operatively connected, whereby the signal generated by the local generator appearing at the output of said third modulator is filtered out, and a measuring instrument operatively connected to the output of said last mentioned bandpass filter for measuring the level of the intermodulation product appearing at the output thereof.

3,182,139
ELECTRIC CORD REEL

Adolph Meletti, Brigantine, N.J., assignor to Vacuum Cleaner Corporation of America, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 26, 1961, Ser. No. 112,821
12 Claims. (Cl. 191—12.4)

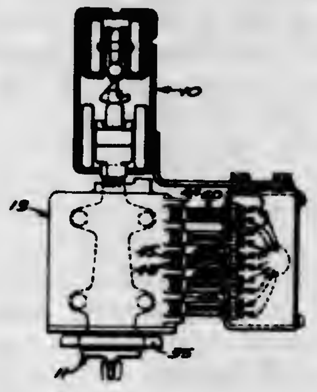


12. A cord reel including a stationarily fixed arbor, two separate molded non-metallic cord-flange members revolvably mounted on said arbor, each cord-flange member having a radially extending cord-confining flange integral therewith and at least one of said cord-flange members including a hollow cord-hub integral therewith and a cord-passage opening therethrough, cord-snubbing means within said cord-hub and integral with one of said cord-flange members for anchoring the inner end of a cord wound on said cord-hub and extending through said cord-passage, complementary inter-nesting means on said cord-hub and integral therewith and on the other cord-flange member and integral therewith, for maintaining said two cord-flange members in co-axial and non-revolvable relation to each other, a spiral spring disposed in proximity of the outer face of one of said cord-confining flanges and having its inner end anchored in relation to said arbor, and a generally radially extending sheet-metal member along the outer side of said spring-spiral, said sheet-metal member being secured to said last-mentioned cord-confining flange, resilient snap-fastener means carried by said sheet-metal member and complementary means on said last-mentioned cord-confining flange for securing the two to each other, said spring having its outer end anchored in relation to said last-mentioned cord-confining flange.

3,182,140
CODING UNIT FOR CONVEYOR SYSTEMS WITH READOUT MECHANISM

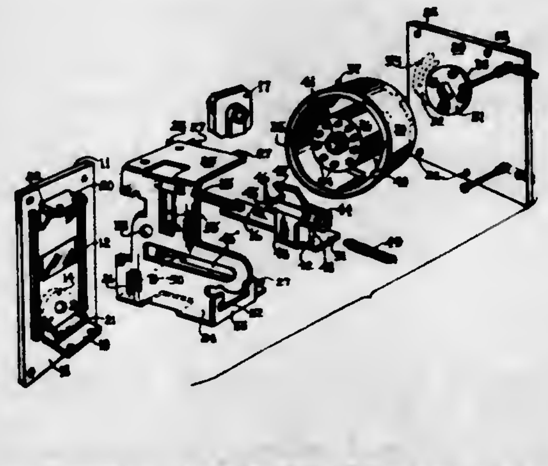
Humphrey F. Parker, Buffalo, N.Y., assignor to Columbus McKinnon Corporation, Tonawanda, N.Y.
Filed May 5, 1960, Ser. No. 27,133
3 Claims. (Cl. 200—9)

1. A coding unit for conveyor systems comprising a housing provided with a vertical shaft therein, means rotatably mounting said shaft within said housing, means affixed to said shaft externally of said housing for rotating said shaft to any one of a number of a predetermined fixed positions, a plurality of stacked coding members fixed to said shaft within said housing and rotatable in unison with said shaft, each coding member having actuating means disposed peripherally thereof within discrete areas and with the disposition of such means being different on each of said coding members from all of the other coding members, and with such discrete areas being disposed in predetermined vertical alignments corresponding in number to all of the possible combinations obtainable by such plurality of coding members, and a readout mechanism disposed adjacent to and separate from said coding assembly, the readout mechanism being engageable with any combination of said coding members in response to relative movement between said housing and said readout mechanism, each of said coding members being in the form of a drum with the stated discrete area thereof comprising metallic strips while the remainder of said drum in the peripheral area thereof is electrically nonconducting material.



3,182,141
ACTUATING MECHANISM FOR A THUMB-WHEEL TYPE SWITCH

Jerry C. Koci, Barrington, Ill., Stanford M. Heide, Kenosha, Wis., and Alfred Holz, Chicago, Ill., assignors to Chicago Dynamic Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed July 25, 1963, Ser. No. 297,568
5 Claims. (Cl. 200—17)



1. In combination a rotatable thumbwheel type electrical switch including a switch disc having contact fingers rotatable step by step over a printed circuit,

(*a*) a housing for said switch providing a front wall having a transparent window formed therein and one side wall supporting the switch disc and having on its exterior surface the printed circuit,
(*b*) a U-shaped mounting bracket connected to the one side wall of said housing,
(*c*) a switch disc position-indicating wheel within said housing between said U-shaped mounting bracket and the one side wall thereof,

(*d*) said wheel consisting of a hollow open sided drum provided with an enlarged hub,

(*e*) a rotatable shaft fixedly connected to said hub rotatably supporting said wheel within said housing between said mounting bracket and said one side wall,

(*f*) said hub providing radially disposed pins extending axially with respect to said shaft and in spaced relation to said drum,

(*g*) actuating means within said housing between said mounting bracket and said one side wall for rotating said wheel and said shaft in one direction,

(*h*) said means providing an elongated driving pawl having a wheel rotating portion and a wheel indexing portion, each of which is in contact with certain of said pins provided by said hub of said drum,

(*i*) said wheel rotating portion including a yieldable stepping pawl having its free end bent out of the longitudinal plane of said pawl in the direction of and in contact with one of said pins on said hub,

(*j*) said wheel indexing portion comprising a finger vertically disposed with respect to said stepping pawl engageable with another of said pins provided by said drum so as to control the distance of rotation of said wheel in one direction by said actuating means,

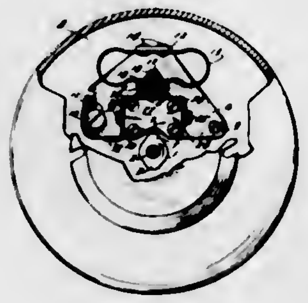
(*k*) and an actuator extending through the front wall of said housing and connected to said actuating means for reciprocally and simultaneously moving said wheel rotating portion and said wheel indexing portion of said actuating means in a lineal direction tangentially with respect to said hub into and out of engagement with successive pins thereof to step by step rotate said wheel in one direction through said housing.

3,182,142
IGNITION DISTRIBUTOR WITH SURFACE CHANGING CONTACTS

Frank W. Hartman, Jr., Oshkosh, Wis., assignor, by mesne assignments, to Kiekhaefer Corporation, Chicago, Ill., a corporation of Delaware

Filed Apr. 27, 1961, Ser. No. 106,029

9 Claims. (Cl. 200—30)



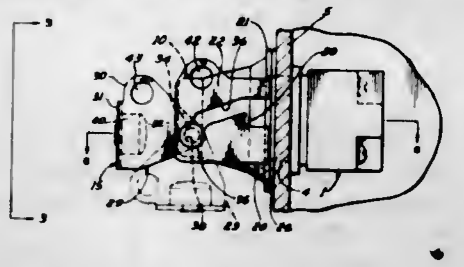
1. A contact breaker carried on a vibrating support and actuated to periodically open and close an ignition circuit for an internal combustion engine, comprising a disc-like contact mounted for free rotation about an axis perpendicular to the plane of the contact, a plurality of equicircumferentially distributed contacts of substantially smaller size than said disc-like contact and fixedly mounted about the rotational axis of the disc-like contact in facing relation to said disc-like contact and adapted to be connected in the circuit with the disc-like contact establishing conductivity therebetween, and cyclical drive means driven by the engine to rapidly and cyclically axially move the disc-like contact to engage and disengage the facing contact surfaces at a rate to produce firing pulses in the ignition circuit.

3,182,143
LOCKOUT DEVICE FOR PUSH BUTTON SWITCHES HAVING A MIGRATORY PIVOT MEANS

Earl F. Mekelburg, Wauwatosa, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed Feb. 21, 1962, Ser. No. 174,915

6 Claims. (Cl. 200—42)



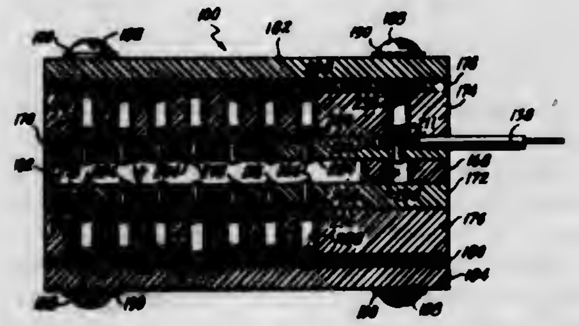
1. A lockout device for a push button, and comprising a stationary member having a base portion adapted to be connected to a support, a movable lockout member, migratory pivot means connecting the members together for rotation about the axis of the pivot means in different migrant positions of the pivot means, means supporting the pivot means for bodily migratory movement transversely of the pivotal axis to migrant positions wherein the migrant axes of rotation of the members are parallel to each other, and means for constraining the migratory movement of the pivot means to movement generally toward and away from said portion of the stationary member, additional means on the stationary member engageable with the pivot means when the pivot means is moved toward said portion to one migrant position and operative when engaged, to constrain the pivot means from movement away from said portion while permitting free relative rotation of the members about the axis of the pivot means in said one migrant position, and cooperable means on the members adapted to be secured in fixed position relative to each other when the pivot means is in said one migrant position and the members, while in said one migrant position, are in a predetermined relatively rotated position.

3,182,144
ELECTRIC LOCK HAVING SPACED APART CONDUCTIVE AREAS ADAPTED TO BE ELECTRICALLY CONNECTED WITH SPACED CONDUCTIVE AREAS ON AN INSERTABLE KEY

Theodore W. Shoe, 47 Tamplin Drive, Troy, Ohio

Filed Sept. 9, 1960, Ser. No. 54,899

14 Claims. (Cl. 200—46)



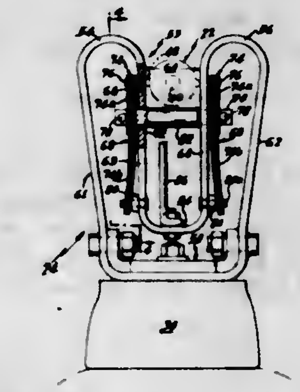
1. In an electric lock: a key plate having a slot extending through an edge therefor for the receipt of a key; nonconductive circuit plate means on each side of said key plate and secured thereto; each circuit plate means having a plurality of spaced conductive areas thereon; electrical conductors connected to each of said conductive areas and having contact portions projecting into said slot; the contact portion of each conductor connected to one of said circuit plate means being in aligned and opposed but in spaced relation to a contact portion of a conductor connected to the other circuit plate means; and a key of nonconductive material removably positioned in said slot, said key having a plurality of conductive inserts extending transversely therethrough and so positioned thereon that said inserts each engage predetermined opposed contact portions and electrically connecting the same, said predetermined opposed contact portions including portions connected to each of said conductive areas so that said inserts electrically connect all said conductive areas in series.

3,182,145
ELECTRIC SWITCH

Edmond B. Gorman, Campbell, Calif., assignor, by mesne assignments, to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed June 16, 1961, Ser. No. 117,674

17 Claims. (Cl. 200—48)



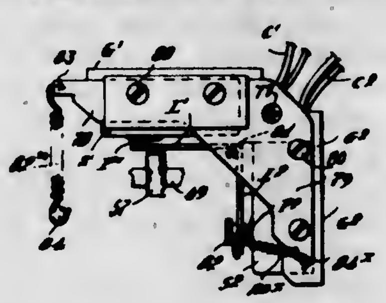
15. A fixed contact member for a blade-type disconnect switch including a base, a resilient contact element having a blade receiving pocket, an arcing horn, means for insulating said arcing horn from said base, and means for connecting said arcing horn electrically to the bight portion of the pocket of said contact element, the impedance of the current path through said arcing horn to said base thereby being greater than the impedance of the current path from said blade receiving pocket to said base.

3,182,146
TEMPERATURE RESPONSIVE CONTROL HAVING A BELL-CRANK LEVER AND A RIGID MOTION-TRANSMITTER PIVOTALLY MOUNTED THEREON

Henry G. Leupold, Arlington, Mass., assignor to United Electric Controls Company, Watertown, Mass., a corporation of Massachusetts

Filed Jan. 9, 1961, Ser. No. 81,311

6 Claims. (Cl. 200—56)



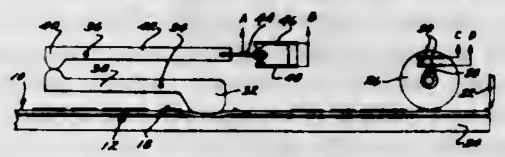
1. Control apparatus of the class described which includes, in combination, a supporting structure, a prime mover mounted thereon, said prime mover comprising a movable element whose position varies with variations in a certain physical condition, a main switch and a secondary switch, each of said switches being of the snap-action type and having a case from which an actuating pin is constantly urged outwardly toward circuit-closing position by spring means, a rigid bell-crank lever comprising two arms at right angles to each other, the fulcrum of said lever being approximately at the junction of said arms, means fixedly connecting one of said switches to each of said arms respectively, a rigid motion-transmitter, and means pivotally mounting the transmitter on said bellcrank lever, the transmitter being operative to transmit motion from said movable element of the prime mover to said bell-crank lever thereby, in response to variations in said physical condition, to change the relative positions of the actuating pins of said switches, said motion-transmitter including an adjustable contact which normally engages the actuating pin of the secondary switch and thereby breaks the circuit at said latter switch.

3,182,147
CONTROL DEVICE FOR LABEL CUTTING AND FOLDING MACHINE

Melvin E. Larson, Grand Rapids, Mich., assignor to Rose Patch & Label Company, Grand Rapids, Mich., a corporation of Michigan

Filed July 18, 1962, Ser. No. 210,741

1 Claim. (Cl. 200—61.13)



A device for controlling the flow of a woven label strip having spaced periodic extra thick woven areas, comprising: a machine for causing the flow of said strip; a means including a freely movable sensing finger forced against and riding on said strip and following the contour of the thickness thereof as it varies from woven area to nonwoven areas located between said woven areas, said finger being thus arranged to move up and down in accordance with the existence and non-existence of said woven areas as said strip flows past said sensing finger; electric contact means operatively connected to said sensing finger to close a continuously powered electric circuit whenever said sensing finger rides on a woven area; cammed contact means coupled to said machine for enabling current flow in said circuit only during the predetermined portion of he operating cycle of said machine when said sensing finger is on the strip between said extra thick woven areas; and means for stopping said machine when said electric contact means and cammed contact means are closed simultaneously causing current to flow in said electric circuit.

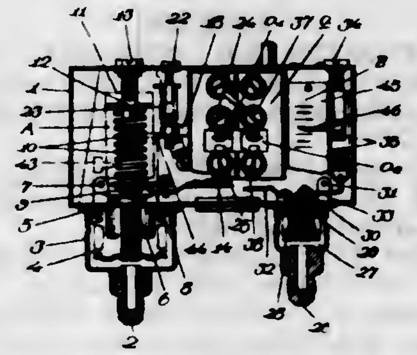
3,182,148
AUTOMATIC PRESSURE SWITCH FOR AUTOMATICALLY CONTROLLING THE COMPRESSOR USED IN VARIOUS REFRIGERATORS

Shigeo Mamiya, Saginomiya, Nakano-ku, Tokyo, and Takeshi Odashima, Narimune, Suginami-ku, Tokyo, Japan, assignors to Saginomiya Seisakusho Co., Ltd., Tokyo, Japan

Filed Sept. 7, 1961, Ser. No. 136,499

Claims priority, application Japan, Sept. 16, 1960, (utility model) 35/46,714

4 Claims. (Cl. 200—81)



1. Pressure-actuated switching apparatus comprising, in combination, means defining a low pressure chamber and a high pressure chamber; a first toggle switch operatively associated with said low pressure chamber; a second toggle switch operatively associated with said high pressure chamber; each of said toggle switches including a

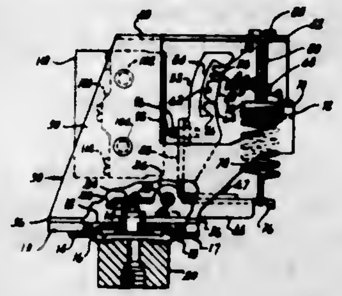
movable contact member operatively associated with a pair of fixed contacts, said movable contacts being constructed and arranged for snap disengagement of one fixed contact and snap engagement of the other fixed contact; a first switch operator operatively associated with the movable contact of said first switch; first pressure-responsive movable means subjected to the pressure in said low pressure chamber; a first intermediate operating member interposed between said first pressure-responsive movable means and said first switch operator and effective, upon an increase in pressure in said low pressure chamber to a predetermined value, to actuate said first switch operator to snap the movable contact of said first switch to the "make" position; first spring means operatively associated with said first intermediate operating member and opposing movement thereof by said first pressure-responsive movable means; first adjusting means operatively associated with said first spring means to adjust the bias thereof to, in turn, adjust the pressure at which said first switch is snapped to the "make" position; a first movable element engaged by the movable contact member of said first switch and moved by the latter when snapped to the "make" position; second spring means associated with said first movable element and resisting movement of the movable contact member of said first switch to the "make" position; a second movable element engageable by said first movable element after a predetermined movement of the movable contact member of said first switch; third spring means operatively associated with said second movable element and resisting movement thereof by said first movable element; second adjusting means operatively associated with third spring means and effective to adjust the bias thereof; fourth spring means operatively associated with said second movable element and opposing the bias of said third spring means; whereby all of said spring means are operative to control the force moving the movable contact member of said first switch to the "make" position, said fourth spring means rendering ineffective said third spring means after a predetermined movement of the movable contact member of said first switch toward the "break" position so that the biasing force toward the "break" position is determined solely by said first and second spring means; whereby the "make" bias and the "break" bias of said first switch may be independently preset; a second switch operator operatively associated with the movable contact of said second switch; second pressure-responsive movable means subjected to the pressure in said high pressure chamber; and a second intermediate operating member interposed between said second pressure-responsive movable means and said second switch operator and effective, upon a predetermined increase in pressure in said high pressure chamber, to actuate said second switch operator to snap the movable contact member of said second switch to the "make" position.

3,182,149
PRESSURE-OPERATED CONTROL HAVING MEANS FOR ADJUSTING THE ACTUATING PRESSURES OF A PLURALITY OF CONTROL SWITCHES

Thomas E. Noakes, Detroit, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 25, 1961, Ser. No. 147,557
10 Claims. (Cl. 200—81.5)

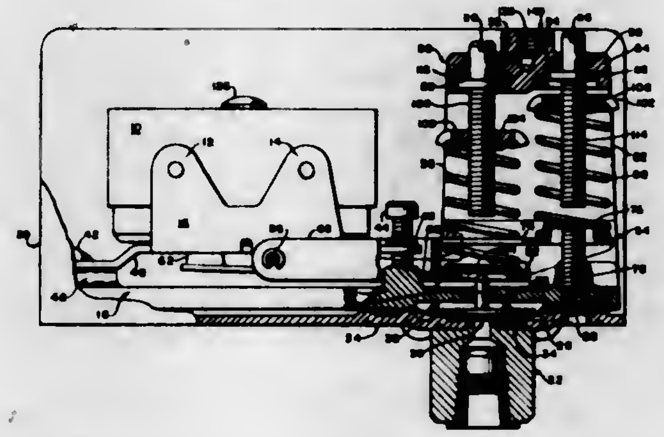
1. In a spring system, a series of stationary electrical snap switches; fluid pressure-operated lever means connected with the switches for actuating said switches at preselected fluid pressures; first adjustable spring means operatively connected with and working on the actuating means to determine the fluid pressure at which one of the switches is operated; and second rate adjustment spring means continuously connected with and working on the actuating means, and adjustable to various positions in which the spring rate of the system is caused to be varied from one position to another, to thereby determine the differential between the actuation points for the switches.



3,182,150
PNEUMATIC-ELECTRIC SWITCH

Larry Secor Smith, Goshen, Ind., assignor to Robertshaw Controls Company, a corporation of Delaware

Filed May 25, 1962, Ser. No. 197,730
7 Claims. (Cl. 200—83)

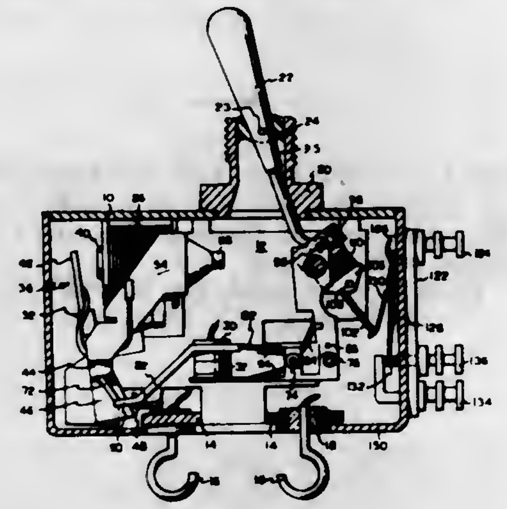


1. A pressure operated electric switch comprising switch means having first and second contact positions, said switch means comprising a pair of fixed contacts, a common contact normally closed with one of said fixed contacts and normally open with respect to the other of said fixed contacts, an elongated contact spring having a fixed end and a free end, said common contact being mounted on the said free end, said contact spring being biased to cause said common contact to make with said other of said fixed contacts and having an integral actuating link extending therefrom; displaceable means adapted to be connected with a source of control pressure and being proportionally responsive to said control pressure; and differential means, interengaging said displaceable means and said actuating link, actuating said switch means at a predetermined control pressure to cause said common contact to break with said one contact and subsequently cause said common contact to make with the other of said fixed contacts upon the occurrence of a predetermined pressure differential from a preselected control pressure, said differential means comprising, fixed pivot means, an actuating lever pivoted intermediate its ends to said pivot means engaging said displaceable means at one of its ends and said actuating link at its other end, first biasing means constraining said actuating lever to break said common contact with said one contact at said predetermined control pressure, and a differential lever pivoted at one of its ends on said pivot means coextensive with said actuating lever and having its other end free to move, and second biasing means constraining said differential lever to impose a differential constraining force on said actuating lever in the same direction as said first biasing means throughout the range of said pressure differential.

3,182,151
REMOTE INDICATING CIRCUIT BREAKERS

Thomas W. Coughlin, Cambridge, Md., assignor to Airpax Electronics Incorporated, Cambridge, Md., a corporation of Maryland

Filed Mar. 28, 1962, Ser. No. 183,109
2 Claims. (Cl. 200—87)



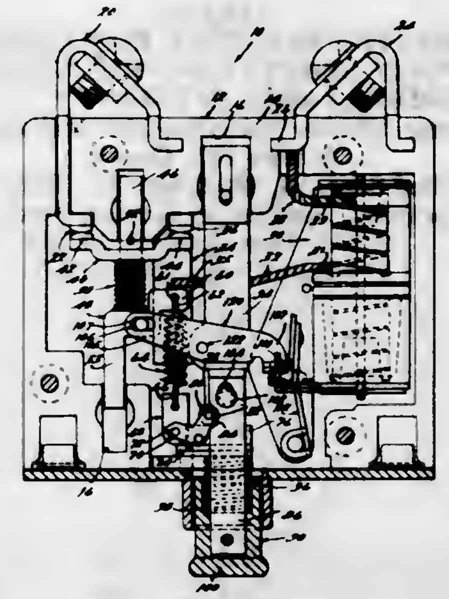
1. A circuit breaker comprising a mounting frame, a manually operable first lever pivoted intermediate its length on said frame, a second lever pivotally mounted intermediate its length on said frame in spaced relation to said manually operable lever, a link pivotally connected by means of pin means to an end of said second lever, said first lever and said second lever and link forming a floating toggle linkage, the said second lever being operably associated with releasable latching means whereby said second lever may be held in a fixed position, toggle actuating spring means mounted on the frame to thrust against said toggle linkage, said spring means moving said floating toggle linkage through a dead center position when the latching means operably associated with the said second lever is released, a guide arm mounted in said toggle spring means for traversing a path in response to actuation of the toggle linkage, switch means mounted on said frame including three terminals connectable to an external circuit, said switch means including a spring biased sheet to bridge a pair of the three terminals, a contact wiper arm having dimples to engage the biased sheet into displacement to bridge the other terminal of the three terminals with one of the pair of terminals when said guide arm traverses its path, so that two of the three terminals form a part of an indication circuit.

3,182,152
CIRCUIT BREAKER COMPENSATED FOR AMBIENT TEMPERATURE AND FOR THE ACTIVITY FACTOR OF THE CURRENT RESPONSIVE ELEMENT

Ray R. Jenner, Jackson, Mich., assignor, by mesne assignments, to Mechanical Products, Inc., Jackson, Mich., a corporation of Delaware

Filed May 16, 1961, Ser. No. 110,484
1 Claim. (Cl. 200—122)

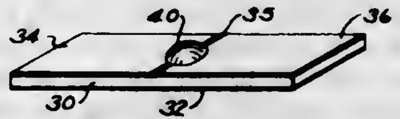
In an electric circuit breaker comprising a pair of separable contacts and a releasable operating mechanism for effecting separation of the contacts, an improved trip device for effecting release of the operating mechanism upon the occurrence of a predetermined electrical condition in an electrical circuit containing the circuit breaker comprising a helically wound current responsive bimetal having a fixed end portion secured to a calibration disc and a movable end portion secured to a movable intermediate disc, a helically wound ambient temperature compensating bimetal coaxially aligned with said current responsive bimetal, said compensating bimetal having one end secured to the intermediate disc so as to be movable thereby in direct relation to movement of the free end of said current responsive bimetal and another end secured to a rotatable insulating cup, said insulating cup substantially enclosing said compensating bimetal and being rotatable about the central axis thereof to reflect the condition of the electric circuit as compensated for ambient temperature, means connected to said cup to effect release of the operating mechanism, and means for rotating said calibration disc to effect calibration of said trip device.



3,182,153
ELECTRICAL EQUIPMENT PROVIDED WITH A VISUAL INDICATOR

Robert H. Postal, Clifton, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Aug. 15, 1962, Ser. No. 217,209
13 Claims. (Cl. 200—121)

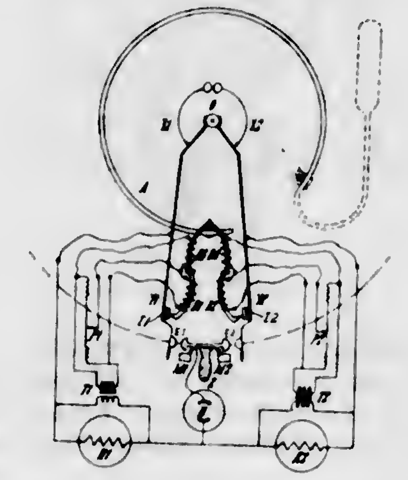


6. An indicator, for an electric device, which can respond to "opening" of said electric device to provide a visual indication of said "opening" of said electric device and which comprises:
- (*a*) an electric device,
- (*b*) terminals which can be connected to said electric device and which are normally in one state and which will respond to an appreciable flow of current therethrough in the presence of an electrolyte to electrolytically change to a visually different state to enable said indicator to sense changes in the condition of said electric device, and
- (*c*) an electrolyte which is in electrically-conducting relation with said terminals and which will respond to an appreciable flow of electric current through said terminals to cause the confronting edges of said terminals to electrolytically change from said one state to said second state,
- (*d*) said electrolyte being substantially insensitive to any voltage differentials between said terminals as long as said electric device is capable of conducting current, thereby enabling said indicator to have a predetermined appearance as long as said electric device is capable of conducting current,
- (*e*) said electrolyte responding to the voltage differential between said terminals, and to the resulting appreciable flow of electric current through said terminals when said electric device "opens," to cause the confronting edges of said terminals to electrolytically change from said one state to said second state and thus materially alter said predetermined appearance

of said indicator, thereby enabling said indicator to provide a visual indication of the "opening" of said electric device.

3,182,154
THERMOSTATIC ELEMENT INCLUDING A PAIR OF BOWED BIMETALLIC ELEMENTS AND A THERMODILATABLE ELEMENT

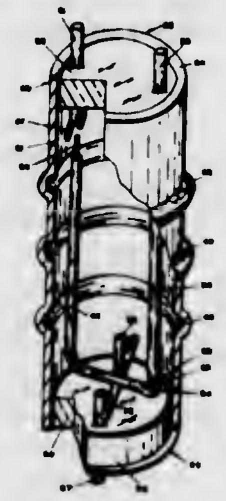
**Alexander Nicolas Karavias, 21a Aristotelous St.,
Athens 103, Greece
Filed Sept. 18, 1962, Ser. No. 224,331
Claims priority, application Greece, Sept. 23, 1961,
24,383; Dec. 7, 1961, 24,701
11 Claims. (Cl. 200—122)**



1. A thermostat for maintaining a body at a constant temperature, comprising a thermodilatable element responsive to the temperature to be controlled and having a fixed portion and a portion movable in accordance with said temperature, a first elongated bimetallic element having one end fixed to said movable portion of said thermodilatable element, a second elongated bimetallic element having one end fixed to the other end of said first bimetallic element, said bimetallic elements being temperature responsive to flex in response to temperature changes and being disposed opposite to one another so as to flex in opposite directions, contacts actuatable by the free end of said second bimetallic element, and means controlled by said contacts for separately heating said first and second bimetallic elements.

3,182,155
HERMETIC THERMOSTAT

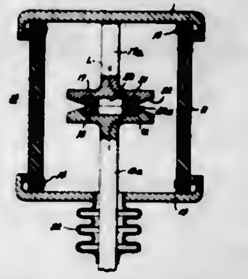
**Charles A. Ellis, Point Road, Box 145, Marion, Mass.
Filed Oct. 25, 1961, Ser. No. 147,612
4 Claims. (Cl. 200—137)**



1. An hermetically sealed electric switching device comprising in combination an electric switch together with an hermetic enclosure having an outer cylindrical wall of metallic material having a plurality of integral embossed circumferential bands of metal in which the majority of the band section lies outside of a surface the plane of the cylindrical wall, at least one of said bands serving as the point of application of force longitudinal of the enclosure body and adapted to being stretched or compressed beyond the elastic strength of the material under such force, whereby the length and hence the operating point of the device may be permanently adjusted without disturbance of the hermetic sealed condition of the enclosure.

3,182,156
VACUUM-TYPE CIRCUIT INTERRUPTER

**Thomas H. Lee, Media, and Harold N. Schneider, Springfield, Pa., assignors to General Electric Company, a corporation of New York
Filed Sept. 19, 1961, Ser. No. 143,170
18 Claims. (Cl. 200—144)**

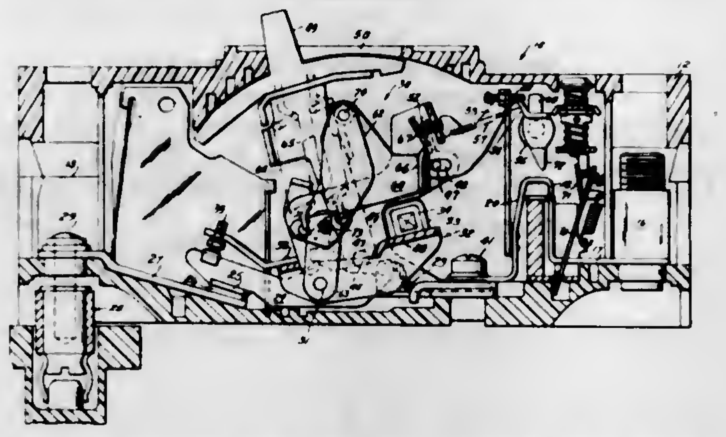


1. In a vacuum-type circuit interrupter, an envelope evacuated to at least about 10^{-4} mm. of mercury, a pair of separable electrodes disposed within said envelope, one of said electrodes comprising juxtaposed first and second electrode regions formed of dissimilar conductive materials, the material of said first region having a substantially lower maximum representative current-chopping level than the material of said second region, arc-initiating means for initiating substantially all circuit-interrupting arcs within said envelope in a location wherein one arc terminal is located on said first electrode region at the instant of arc-initiation, said arc-initiating means comprising means for causing final parting of said electrodes during an interrupting operation to occur on said first electrode region, magnetic means for driving arcs from the location where said arcs are initiated onto said second electrode region, means for maintaining the terminal of low current arcs on said first electrode region until arc-extinction comprising a surface area of said first electrode region interposed between all arc-initiating locations and said second electrode region, said magnetic means driving high current arcs from said first electrode region onto said second electrode region at a speed sufficiently high to locate the arc terminal of said high current arcs on said second region during a major portion of the arcing interval, said magnetic means having insufficient arc-motivating ability during low current interruptions to drive the terminal of low current arcs off of said first electrode region before arc-extinction.

3,182,157
OVER-CENTER CAM AND ANTI-REBOUND MEANS

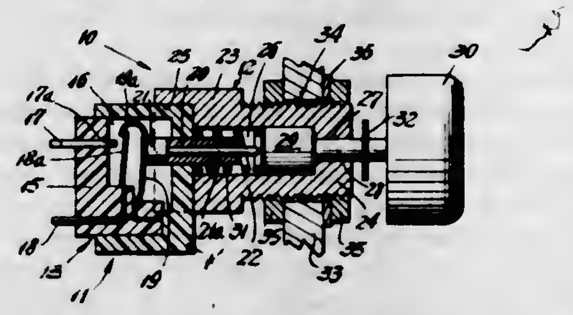
**John C. Brumfield, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 9, 1961, Ser. No. 108,811
11 Claims. (Cl. 200—153)**

1. In a circuit breaker, a pair of cooperating contacts and a mechanism for operating said contacts into and out of engagement; said mechanism comprising a latchable cradle, a movable contact arm carrying one of said cooperating contacts, first means connecting said cradle and said contact arm in a manner such that said contacts cannot be operated into engagement unless said cradle is in a latched position, an operating spring means urging said cradle to a tripped position; said first means comprising a toggle linkage with one end connected to said cradle and the other end connected to said contact arm; a frame to which said cradle is pivoted; said frame including a first portion positioned along the direction of travel of said toggle linkage; said toggle linkage including a second portion remote from the knee thereof; said second portion of said toggle engaging said frame first portion prior to passage of the toggle knee over center as said cradle moves toward tripped position to drive said knee over center shortly after said cradle begins movement to its tripped position.



3,182,158
MANUALLY ACTUATED ELECTRICAL SWITCH DEVICE WITH CONTACT RESTRAINING MEANS

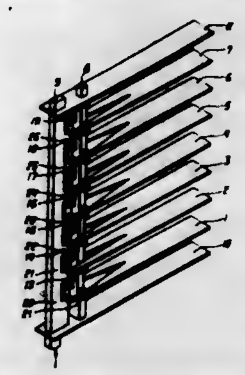
**George M. Beardow, Redding Ridge, and Roger C. Vandermark, Sandy Hook, Conn., assignors to Vitramon, Incorporated, Monroe, Conn., a corporation of Delaware
Filed Aug. 21, 1963, Ser. No. 303,627
10 Claims. (Cl. 200—159)**



1. A manually operated electrical switch comprising a stationary contact and a movable contact, the latter being normally resiliently biased toward the former into closed circuit position therewith and being disengageably held in open circuit position by a separate restraining means resiliently biased away from said stationary contact, said restraining means having a portion disengageably engaging said movable contact and forming the sole connection therewith for holding the movable contact in open circuit position, and a manually operated operating means for imparting movement to said restraining means in the direction of said stationary contact to enable said movable contact to engage the stationary contact in closed circuit position under the force of its resilient bias and the said portion of the restraining means to thereafter disengage the movable contact on continued movement of the restraining means, said operating means including longitudinally movable means engaging with said restraining means and movable in the direction of said stationary contact and means for limiting the movement of said longitudinally movable means in the direction of the stationary contact so that said restraining means, on disengaging said movable contact, is prevented from further continued movement toward the stationary contact, whereby the contacts are maintained free of said restraining means.

3,182,159
CONTACT SPRING GROUP FOR RELAYS, CHANGE-OVER SWITCHES AND THE LIKE

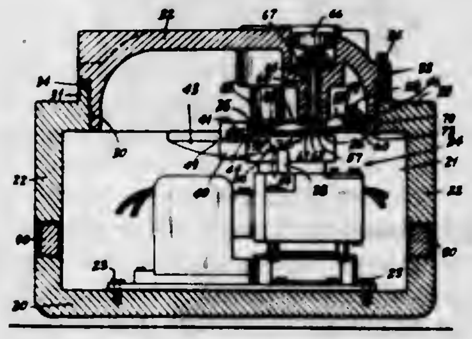
**Per Harry Elias Claesson, Osterhagen, Drevviken, Sweden, and Karl Evert Jarnbrink, Grumsgatan 3, Farsta, Sweden
Filed Apr. 17, 1961, Ser. No. 103,529
Claims priority, application Sweden, Apr. 19, 1960,
3,804/60; Apr. 13, 1961, 3,868/61
6 Claims. (Cl. 200—166)**



1. In a contact spring group for relays, changeover switches and the like, a number of movable contact springs of the leaf spring type and a number of fixed contact springs of the leaf spring type, each of said fixed contact springs having a solid rear portion and a shanked front portion, the rear part of said rear portion being fastened in a supporting bracket, the front part of said rear portion being freely movable in a plane perpendicular to the plane of the spring, each shank of said shanked portion having a mean stiffness for bending in said plane which is considerably lower than half the mean stiffness of said front part of said rear portion, each of the shanks of said shanked portion having a contact surface at its free end, said contact surface being located opposite to a corresponding contact surface of a movable spring, and means for supporting each shank of said shanked portion close to the contact surface of such shank.

3,182,160
UNIVERSAL JUNCTION BOX FOR HOUSING DIFFERENT TYPES OF ELECTRICAL APPARATUS

**Marshall G. Zavertnik, St. Louis, and Joseph J. Farina, Richmond Heights, Mo., assignors to Killark Electric Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 24, 1961, Ser. No. 105,119
10 Claims. (Cl. 200—168)**

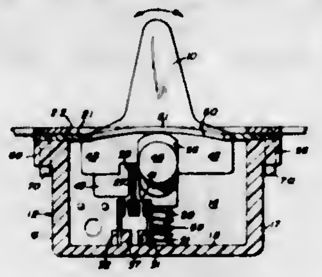


2. A universal junction box for containing different kinds of electrical equipment having differently positioned depressible start and stop buttons comprising a housing for the equipment, a plurality of removable covers for the housing, and a pair of rods extending through each cover, the rods of different covers being positioned opposite the buttons of different kinds of electrical equipment, the rods being selectively depressible to operate the start and stop buttons, each cover being replaceable by another cover having differently positioned rods upon changing the electrical equipment within the housing.

3,182,161
HANDLE QUIETING ACTION FOR A.C. SWITCHES

Paul H. Winter, Syracuse, N.Y., assignor to Pass & Seymour, Inc., Syracuse, N.Y., a corporation of New York

Filed Oct. 16, 1961, Ser. No. 145,082
6 Claims. (Cl. 200—168)

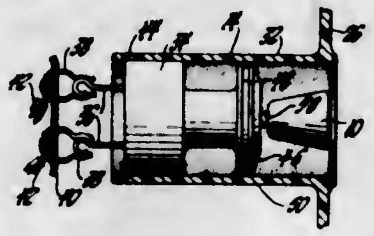


2. In an electric switch, in combination, a cup-like housing of insulating material, an operating lever for said switch having a handle and laterally and oppositely disposed trunnions having bearing ends, bearing notches in opposite walls of said cup extending from the outer edges thereof for the full depth of said bearing ends, an overcenter spring egaging the lever and housing to urge the lever to either end of its stroke when it is moved over center, a flat cover of flexible sheet insulating material engaging said outer edges and holding said ends in the notches, means engaging its periphery and securing said cover to said cup, a rectangular hole in said cover to pass the said handle for movement therein, lobe means on said trunnions intermediate said ends shaped to engage the underside of said cover adjacent said hole to flex it there out of its plane to apply pressure to said trunnions and hence resistance to lever movement to quiet the switch operation, and a slot in said cover sheet spaced from each longitudinal edge of said hole to define with the latter a narrow strip attached by its ends only to the cover and positioned to be engaged by said lobes.

3,182,162
SAFETY SWITCH FOR AUTOMOBILE INSTRUMENT PANEL

Louis Gelfand, Detroit, and Suzanne E. Vanderbilt, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 22, 1962, Ser. No. 167,885
7 Claims. (Cl. 200—168)

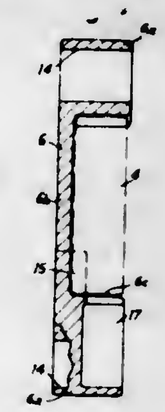


2. A switch assembly for use on a vehicle instrument panel employing a protuding control element, the assembly comprising, a hollow housing having a forward end adapted to be mounted flush with the surface of an instrument panel and a rearward end displaced rearwardly therefrom, a control element normally disposed in a protuberant relation with the forward end of the housing and operatively connected to control the operation of an external mechanism while maintaining said protuberant relation, the hollow housing being adapted to accommodate the control element in a position substantially within the housing, support means connected to the control element and displaceably disposed within the housing, retaining means operatively connected with the support means and the housing for normally maintaining the control element in the protuberant relation, the retaining means being yieldable to separate at least a portion thereof from operative connection with the housing upon application of a predetermined load to the control element thereby to allow the control element to be displaced axially into the housing, the predetermined load being substantially greater than that employed in normal operation of the switch assembly.

3,182,163
SWITCH MOUNTING MEANS

Herbert Baumer, Schlossmuhlestrasse 11, Frauenfeld, Switzerland

Filed Mar. 26, 1962, Ser. No. 182,454
Claims priority, application Switzerland, May 2, 1961, 5,117/61
3 Claims. (Cl. 200—168)

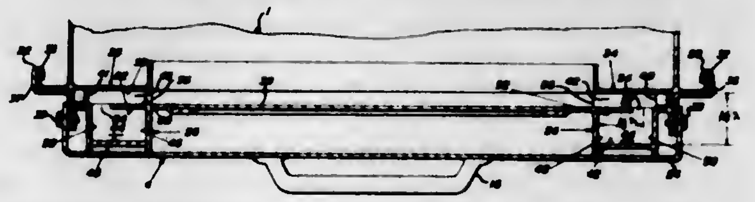


3. A holder member for a switch comprising:
a body portion having a shaped recess adapted to releasably support a switch;
said recess being shaped substantially to the outer surface shape of a switch to be inserted therein;
said body portion having a bore communicating with said recess;
a spring-biased locking member disposed within said bore and normally projecting at least partially into said recess;
said locking member being displaceable during insertion of a switch into said recess and thereafter serving to retain the inserted switch within said recess;
said body portion also having at least one aperture therein adjacent its end portion;
said aperture being spaced away from said recess and being adapted to piercingly receive a carrying member which can mount said holder member.

3,182,164
ELECTROMAGNETIC ENERGY SEAL

Richard Ironfield, Somerset, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Feb. 28, 1962, Ser. No. 176,379
8 Claims. (Cl. 219—10.55)



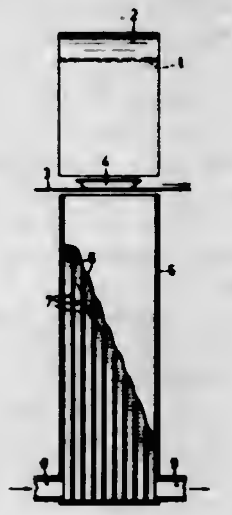
1. In combination;
an enclosure;
means for supplying electromagnetic waves to the interior of said enclosure, said enclosure having an access aperture therein;
a door for closing said aperture;
spacing means preventing metallic contact between said door and said enclosure in a planar area surrounding said access aperture, upon closure thereof, said spacing means thereby providing a gap between said door and said enclosure;

and a cavity situated in one of the gap defining surfaces having a top, bottom, and a plurality of side walls, said top wall having an opening at one end which is located substantially ¼ wavelength from one of said side walls defining a terminating conducting surface, said terminating surface being located substantially an integral number of ½ wavelengths from the origin of said gap.

3,182,165
OVEN FOR HEATING OBJECTS BY MICROWAVES

Johan Posthuma van der Helm, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 8, 1962, Ser. No. 193,138
Claims priority, application Netherlands, May 26, 1961, 265,172
12 Claims. (Cl. 219—10.55)



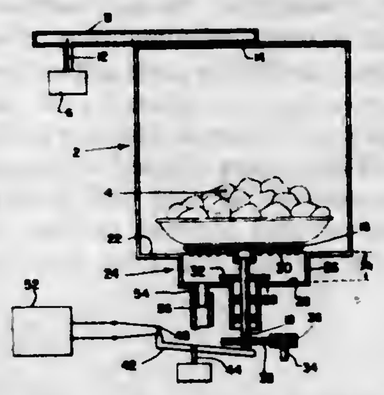
12. High frequency heating apparatus comprising a waveguide enclosure, means for supplying high frequency electromagnetic energy having a given direction of propagation to said enclosure, energy absorbing means arranged in the path of said high frequency energy, means for supporting a substance to be heated between said energy supply means and said energy absorbing means and in the path of said high frequency energy, said energy absorbent means comprising a liquid container holding a dielectric liquid therein, exposed to the incident energy, and means for providing an inclined liquid surface within said container facing and inclined with respect to said direction of propagation of the incident high frequency energy so that a substantial portion of said incident energy is absorbed by said liquid due to dielectric heating thereof by means of multiple reflections of said energy within said container produced by said inclined liquid surface.

3,182,166
MICROWAVE OVENS

Helmut Bohm, Rockford, Ill., and Herbert Duras, Oberderdingen, Germany, assignors to Miwag Mikrowellen Aktien Gesellschaft, a corporation of Switzerland

Filed Aug. 31, 1962, Ser. No. 220,807
Claims priority, application Germany, Sept. 4, 1961, D 36,961
4 Claims. (Cl. 219—10.55)

1. A microwave oven comprising,
an enclosure for confining microwave energy, having top, bottom, and side walls;
a source of microwave energy;
means for coupling energy from the source to the enclosure;
the bottom wall of the enclosure having a generally cylindrical edge defining an opening therein;
a well having a wave reflective bottom wall and a side wall, the side wall of the well connecting the bottom wall of the enclosure at the opening thereof to the bottom wall of the well;

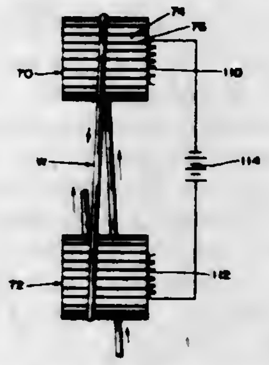


a polarizing grid disposed over the well, the polarizing grid being mounted flush with the bottom wall of the enclosure; and
a dielectric turntable in the oven, the turntable being disposed above the well.

3,182,167
RESISTANCE HEATING APPARATUS

Edward F. McBrien, Parma, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 23, 1962, Ser. No. 168,114
3 Claims. (Cl. 219—10.61)



3. A heating device for continuously heating a moving wire, comprising in combination: first and second rotatably mounted drums spaced from each other, said wire moving between said drums and forming a conductive section of wire between said drums, each of said drums comprising a plurality of conductive elements on the periphery of said drums and extending in a direction substantially perpendicular to said wire and substantially parallel to the axis of rotation of the drum on which they are located, a plurality of conductive elements of each drum being in contact with said wire at all times, a brush engaging each of said drums and contacting said elements, said brush of each drum extending from a position remote of the other drum to a position adjacent to the other drum, each of said brushes having an impedance per length of brush substantially equal to the impedance per length of wire in contact with the same elements as said brushes, conductive means for electrically connecting the remote ends of each brush, and means for causing a current flow between said brushes and through said wire section.

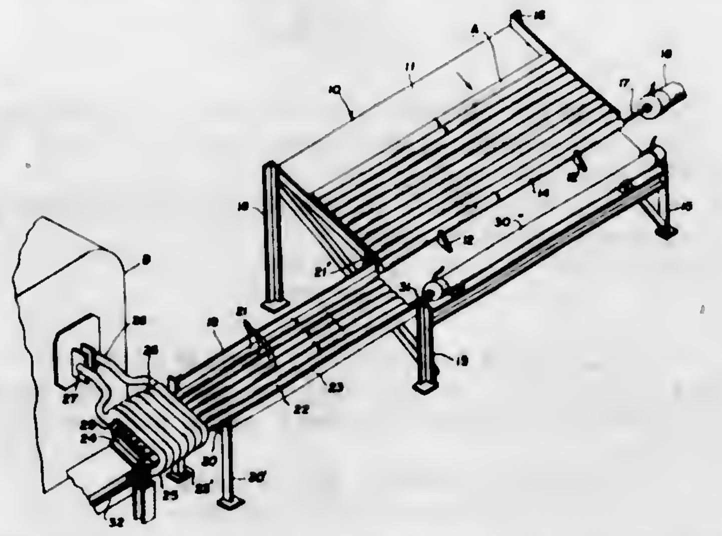
3,182,168
HIGH FREQUENCY INDUCTOR ARRANGEMENT FOR HEATING A NUMBER OF BAR ENDS IN A SOLENOIDAL COIL

Frank J. Cornell, Shaker Heights, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 15, 1962, Ser. No. 217,033
3 Claims. (Cl. 219—10.69)

1. In high frequency induction heating equipment, a support having an inclined surface for receiving a plu-

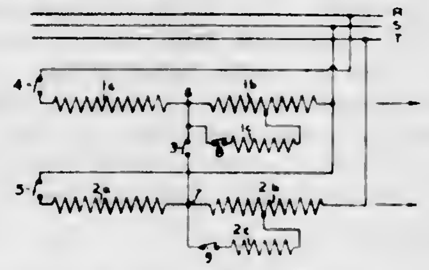
rality of elongated workpieces in side-by-side relationship, a solenoid coil having a workpiece receiving opening with a dimension perpendicular to said surface only slightly greater than the diametrical dimension of said workpieces and a dimension parallel to said surface greater than the diametrical dimension of a plurality of said workpieces. a high frequency power supply for energizing said coil, the opening of said coil being aligned with said surface with the parallel dimension of said coil having substantially the same angle as said inclined surface, stop means on the opposite side of said coil from said inclined surface and aligned with said inclined surface for locating said workpieces in said coil with only the portion of said workpieces to be heated within said coil opening, said stop means being substantially coterminous with said workpiece receiving opening except for an outet at the lowermost end of said coil, said outlet having a dimension greater than the diametrical dimension of one of said workpieces and less than the diametrical dimension of a finite number of said workpieces, said finite number being substantially less than the number of workpieces being received by said coil.



3,182,169
ARRANGEMENT FOR THE SIMULTANEOUS OPERATION OF TWO INDUCTION HEATING DEVICES

Arno Finzi, Dortmund, Germany, assignor, by mesne assignments, to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company of Switzerland

Filed Feb. 5, 1962, Ser. No. 170,958
Claims priority, application Germany, Feb. 9, 1961,
B 61,187
8 Claims. (Cl. 219—10.71)

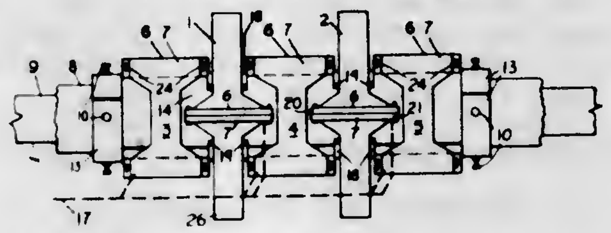


1. In an induction type heating system for simultaneously heating each of two billets in such manner that one end of each billet is heated to a higher temperature than the other, the combination comprising a uniformly wound induction coil individual to and through which each billet is passed for heating, an intermediate tap on each said coil, circuit means connecting one of said coils across one phase of a three-phase power supply mains, circuit means connecting the other of said coils across another phase of said three-phase power supply mains, and switch controlled circuit means interconnecting said intermediate taps on said coils for producing a non-uniform billet heating effect within said coils by modifying the current flow therethrough.

3,182,170
INDUCTION HEATING UNITS

Hans Rolfes, Bronx, N.Y., assignor to Trans Continental Electronics Corp., New York, N.Y., a corporation of New Jersey

Filed Mar. 2, 1962, Ser. No. 177,095
6 Claims. (Cl. 219—10.79)

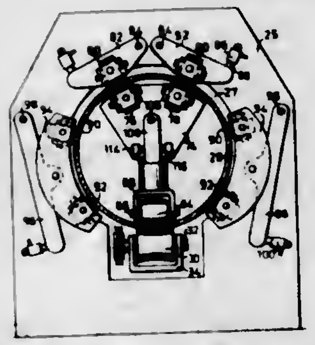


1. An induction heating unit for members of the character defined, said unit having relatively movable halves adapted to envelop a member to be heated, said halves having on adjacent surfaces interengaging pin and socket electrical connectors for completion of the circuit through coils of said unit, means for retaining said halves in coupled relationship around said member, means supporting said unit in spaced relation to the walls of said member, said last named means comprising a split sleeve, means at ends of said sleeve for support of the sleeve on said member, a plurality of said units being arranged longitudinally of said sleeve intermediate said means on the ends of the sleeve, means for spacing said units one with respect to the other, each of said units including radially enlarged coil portions, and the enlarged coil portions of one unit being arranged angularly to those of adjacent units in nesting the units one with respect to the other on said sleeve.

3,182,171
TUBE WELDING MACHINE

Knut Axel Waldemar Persson, Trollbacken, Sweden, assignor to AB Bröderna Hedlund, Stockholm, Sweden, a corporation of Sweden

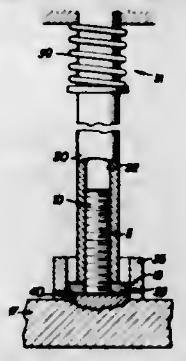
Filed Nov. 19, 1962, Ser. No. 238,386
Claims priority, application Sweden, Dec. 15, 1961,
12,557
11 Claims. (Cl. 219—60)



1. A machine for uniting the longitudinal edges of a tube blank of sheet metal bent to substantially tubular shape, comprising a frame defining a passage for the tube blank, welding means near said passage, a combined feeding and steering roll mounted to support the tube blank at the lowest point thereof and at both margins being welded, a carrier for said roll mounted in the frame for rotation about an axis extending substantially transversely to the longitudinal direction of the tube blank, a driving motor for said roll, said driving motor being supported by said carrier, a feeler sensitive to turning of the tube blank about its longitudinal axis, and means controlled by said feeler and operative to move said carrier about its substantially transverse axis for imparting steering movements to the roll as the roll advances the tube blank past said welding means.

3,182,172
STUD WELDING MEANS AND METHOD

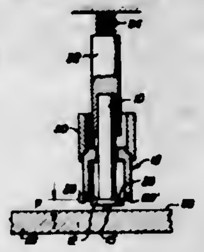
Edward Dash, 710 W. Columbia St., Long Beach 6, Calif.
Filed May 21, 1962, Ser. No. 196,403
19 Claims. (Cl. 219—98)



19. In the art of arc welding, a stud having a welding end portion received within a ferrule and held by a movable chuck of a stud gun with the end of the chuck extending into the ferrule; the provision of: a movable protective means encircling a portion of said stud and carried between said chuck and said stud welding end portion, said protective means being encircled by said ferrule and being adapted to shield said chuck end against molten metal during welding and to forge said molten fillet weld.

3,182,173
WELDING STUD AND FERRULE CONSTRUCTION FOR ARC WELDING

Edward Dash, 710 W. Columbia St., Long Beach 6, Calif.
Filed May 21, 1962, Ser. No. 196,380
10 Claims. (Cl. 219—99)



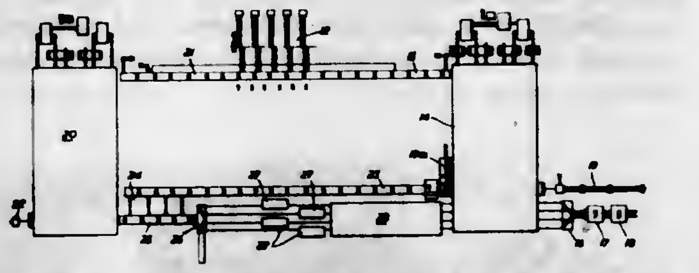
1. A stud-ferrule combination for electrically arc welding a stud to a work member comprising: a stud having a shank portion and an enlarged head portion including a peripheral flange section of substantially uniform thickness extending radially outwardly from the shank portion; a ferrule having a chamber provided with an opening at one end receiving said flange section with only minimum free clearance therefor, said chamber having an opening at its other end for receiving said shank portion with loose clearance, whereby said enlarged head portion during a welding operation is confined within said chamber and all of the metal in said flange section is deposited upon the work surface in direct opposition thereto to provide molten fillet metal.

3,182,174
PROCESSING OF METAL

Raymond Bernard Sims, Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, Yorkshire, England

Filed July 16, 1962, Ser. No. 210,029
Claims priority, application Great Britain, July 18, 1961,
25,974/61
8 Claims. (Cl. 219—101)

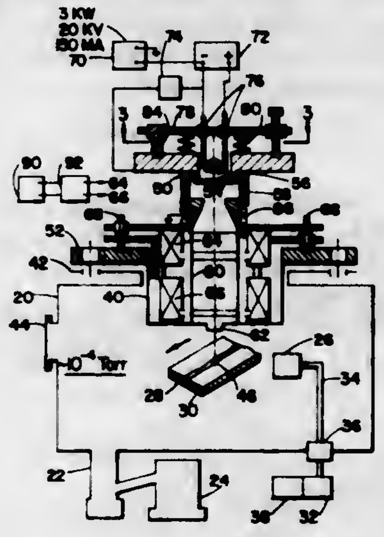
6. In an apparatus comprising first and second reheat furnaces, means for supplying billets to each of the first and second reheat furnaces, a welding plant for welding together end to end a succession of billets to form a plurality of billet streams, means for directing billets from the first and second reheat furnaces to separate parts of the welding plant, such that the billets from the first reheat furnace will form a separate billet stream or streams from those from the second reheat furnace, a plurality of post weld furnaces, means for directing the welded stream or streams of billets from the separate parts of the welding plant to different post weld furnaces, control means for controlling the power supplied to each post weld furnace such that the billets streams leaving each post weld furnace are at the same temperature and means for directing the billet streams from the post weld furnaces.



3,182,175
ELECTRON BEAM HEATING DEVICE

Clifton B. Sibley, Needham, Mass., assignor, by mesne assignments, to National Research Corporation, a corporation of Massachusetts

Filed Sept. 24, 1962, Ser. No. 225,765
7 Claims. (Cl. 219—117)



1. A self-accelerated electron beam gun for emitting a focused stream of electrons to provide intense local heating at a target of small area, the gun comprising in combination: an electron emitting cathode, an acceleration anode comprising an aperture, a focus electrode adapted to establish an electrostatic field focusing the electrons toward the anode aperture as a coherent beam, means for establishing a potential difference on the order of 15–45 kilovolts between said cathode and anode, means for adjusting the relative spacing and alignment of the cathode and focus electrode while the gun is operating, and means for focusing the electron beam after it passes through the anode aperture.

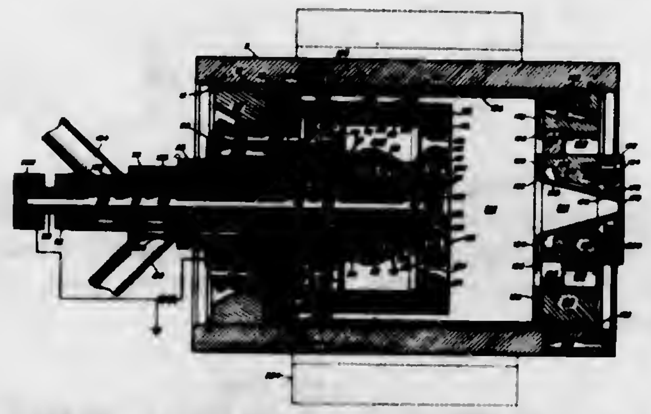
3,182,176
ARC PLASMA GENERATOR

Edgar A. Bunt, Kensington, and Herman L. Olsen, Derwood, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Dec. 10, 1962, Ser. No. 243,682
7 Claims. (Cl. 219—121)

1. An arc plasma generator, comprising
a hollow cylindrical pressure vessel,
end walls closing said vessel at its opposite ends,
an inner electrode support mounted concentrically of
  and extending through one of said end walls,
a generally cylindrical outer electrode support mounted
  concentrically of said inner electrode support and also
  extending through said one end wall,

- insulation means disposed between said electrode supports,
- an annular inner electrode supported on said inner electrode support,
- an annular outer electrode supported on said outer electrode support concentrically about and radially spaced from said inner electrode, said electrodes being arranged in confronting relationship and said



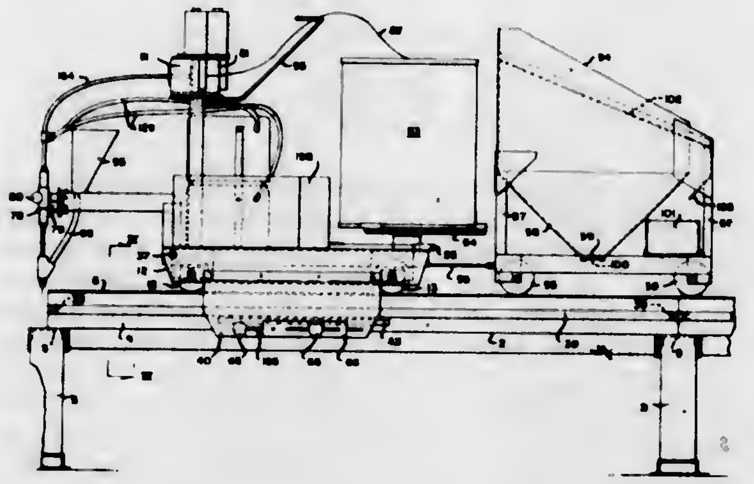
- insulation means being disposed substantially out of view of an arc struck between said electrodes,
- means for producing an arc between said electrodes,
- nozzle means mounted centrally of the other of said end walls, and
- a coil disposed about said pressure vessel and arranged to create a rapidly rotating magnetic field for causing an arc struck between the electrodes to rotate about the axis of said electrodes.

3,182,177
WELDING APPARATUS

Hubert J. Anderson, Pewaukee, Wis., assignor to Automatic Welding Company, Waukesha, Wis., a corporation of Wisconsin

Filed Jan. 7, 1963, Ser. No. 249,932

12 Claims. (Cl. 219—125)



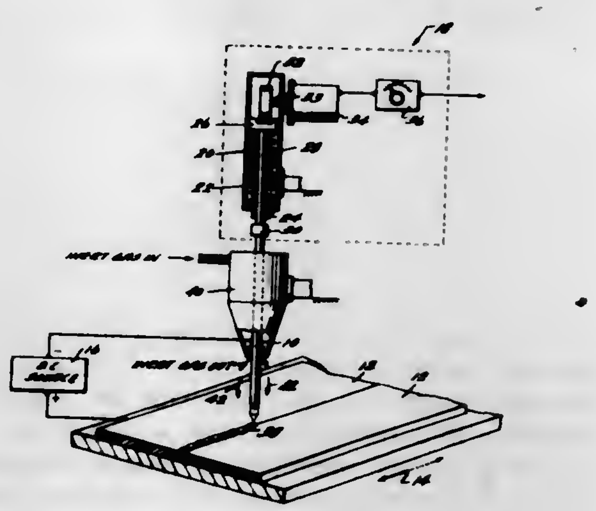
1. Welding apparatus comprising a work support, welding mechanism, means for relatively moving the work support and the welding mechanism to cause the welding mechanism to act successively on portions of work carried by the work support, a series of spaced apart actuating elements ranged along the work support, a carrier adjustably positionable relatively to the welding mechanism in the direction of spacing apart of the actuating elements, control means carried by the carrier comprising two control devices which successively come into cooperative relationship with each actuating element during relative movement between the work support and the welding mechanism, one initiating operation of the welding mechanism and the other terminating operation of the welding mechanism, and means for adjustably positioning at least one of the control devices on the carriage in the direction of spacing apart of the actuating elements.

3,182,178
WELDING METHOD AND APPARATUS

Henry Thomas Libby, Reading, Mass., assignor to General Electric Company, a corporation of New York

Filed Aug. 13, 1962, Ser. No. 216,366

7 Claims. (Cl. 219—130)



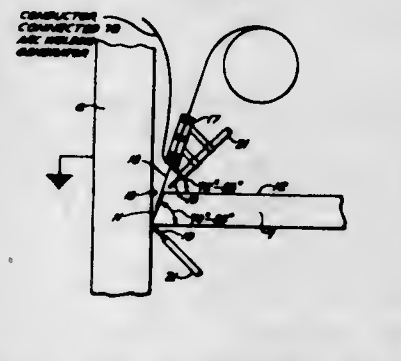
1. In a non-consumable arc welding method, the steps of varying the current density of an arc between a non-consumable arc welding electrode and a workpiece at a rate up to about 1000 cycles per second while maintaining a continuous arc between the apparatus and the workpiece.

3,182,179
METHOD OF MAKING A WELDED JOINT

Lloyd E. Anderson, Sr., Pittsburgh, Pa., assignor to Pittsburgh-Des Moines Steel Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 18, 1964, Ser. No. 368,219

3 Claims. (Cl. 219—137)



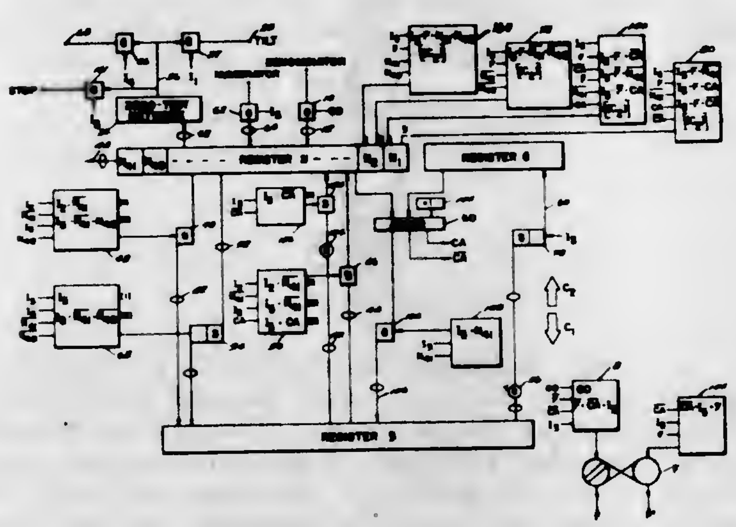
1. The method of welding the edge of a first steel plate to the side face of a second steel plate with the two plates substantially at right angles to each other, said method including the following steps: forming a bevel extending across substantially the entire width of the edge of the first plate and along so much of its length that is to be welded, said bevel forming an included angle of from 70 to 83 degrees with an adjacent side face of the first plate, supporting the plates with an edge of the bevel of the first plate resting against the face of the second plate while maintaining the plates substantially at right angles to each other, thereby to provide a grooved space defined by said bevel and face, welding the plates together by the local application of heat while supplying filler material to the weld from a metal welding rod that has one end received in the grooved space and is fed therein at an angle of from 72 to 85 degrees to the adjacent side face of the first plate, the heat being applied in the presence of an inert gas so as to penetrate and melt the metal on each side of said space, thereby to limit the connection between the first and second plates in the welded zone to a relatively thin junction of weld metal.

3,182,180
DIVISION SYSTEM

Roy A. Keir, Los Angeles, Calif., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Nov. 17, 1960, Ser. No. 70,053

9 Claims. (Cl. 235—164)



1. A binary digital dividing system for developing a signal-represented quotient in floating-point form including a mantissa and a characteristic of signal-represented numerator and denominator values in similar form, comprising:

- first register means for registering signals representative of the denominator mantissa; means for shifting the contents of said first register means whereby to normalize said denominator mantissa;
- second register means for registering signals representative of the numerator mantissa; binary means initially in a first state for manifesting first and second modes of operation for said system; means for shifting the contents of said second register means into more-significant digit locations until a one appears in the most-significant digit location in said second register means;
- third register means for registering the quotient mantissa as developed digit-by-digit from the most-significant digit; means operative upon each shift of the contents of said second register means to enter the next digit of the quotient mantissa in said third register means as a one during said first mode and as a zero during said second mode;
- means for substracting the contents of said first register means from the contents of said second register means upon the occurrence of a one in the most-significant digit location of said second register means; means operative during said first mode of operation for entering the next digit of the quotient mantissa in said third register means as a one if a positive remainder results and as a zero if a negative remainder results from said subtraction; means operative during said second mode of operation for entering the next digit of the quotient mantissa as a zero if a positive remainder results and as a one if a negative remainder results from said subtraction; means for altering the state of said binary upon the occurrence of a negative remainder from said subtraction.

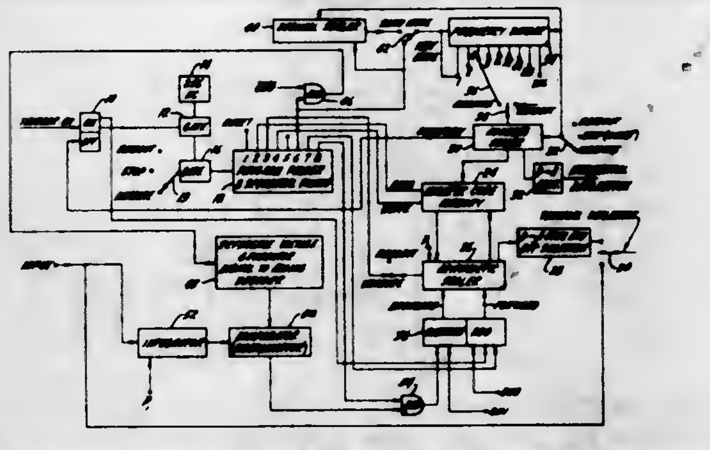
3,182,181
METHOD AND APPARATUS FOR AVERAGING A SERIES OF ELECTRICAL TRANSIENTS

Robert W. Schumann, Madison, Wis., assignor to Nuclear Data, Inc., Madison, Wis., a corporation of Illinois

Filed July 9, 1963, Ser. No. 293,692

36 Claims. (Cl. 235—164)

36. In a system for averaging a succession of electrical signal transients, circuit means for dividing each transient into corresponding time intervals, circuit means for providing a plurality of signals, with each signal representing a transient for at least a portion of a time interval, circuit means for providing a plurality of different reference levels, circuit means for combining the reference levels and signals and for providing a resultant signal for each combination of reference level and signal which resultant signal indicates whether the signal was greater or less than the reference level, with successive signals being combined



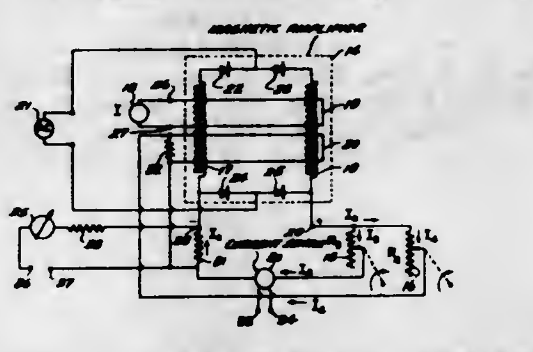
each with only one of said reference levels, a memory circuit having a plurality of memory channels, one for each time interval, said dividing circuit means being connected to said memory, and means, connected to the memory device and combining means, for changing the accumulating count in each memory channel in accordance with said resultant signals, the accumulated count in each memory channel after a number of transients representing the average of all transients which have been combined.

3,182,182
RATIO COMPUTER

Helmuth W. Engelman, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed Oct. 28, 1959, Ser. No. 849,303

3 Claims. (Cl. 235—196)



1. A computer comprising first and second resistors connected in parallel with each other, means for producing an output signal proportional to the magnitude of the current flowing in said first resistor, and feedback amplifier means for automatically maintaining the current flowing in said second resistor substantially constant over a preselected range of resistance values of said resistors.

3,182,183
ANALOG FUNCTION GENERATION

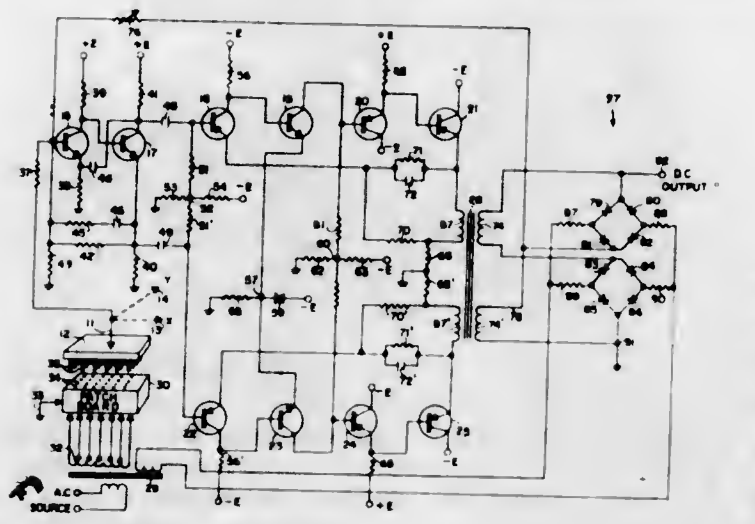
Clarence S. Jones, Los Altos, Calif., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware

Filed May 16, 1960, Ser. No. 29,430

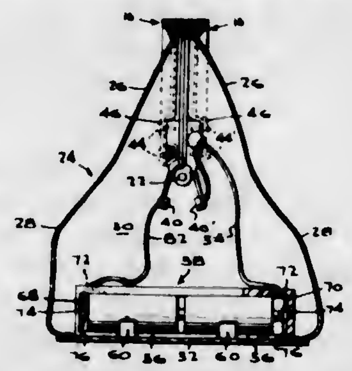
3 Claims. (Cl. 235—197)

1. Apparatus for generating a direct voltage output signal representative of an analog function, said apparatus comprising a source of alternating current, an impedance device coupled to the source of alternating current for establishing a geometric pattern wherein alternating signals vary in magnitude according to the analog function, a voltage pick-up device movable in the geometric pattern

and operable to receive the alternating signal corresponding in amplitude to the analog function and to the positioning of the pick-up device, an amplifier coupled to the pick-up device for developing an alternating output signal, and a synchronous demodulator circuit coupled to the amplifier and to the source of alternating current, said amplifier comprising at least one transistor coupled to the pick-up device and constituting a stage of pre-amplification, said amplifier further including additional transistors arranged in two branches for push-pull amplification and coupled between the stage of pre-amplification and the synchronous demodulator, a final transistor of each branch being a current output stage, a first negative feedback path coupled to the current output stage and capable of passing direct currents, said first negative feedback paths being sensitive to the output currents and being operable to stabilize the amplifier from direct current drift, each branch of the amplifier having another feedback path coupled to the output stage and operable to linearize alternating currents appearing in the output circuit.

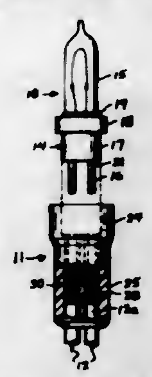


3,182,184
PURSE LIGHT
Davie L. Echols, 13908 Grace Ave., Robbins, Ill., and Robert J. Minarich, 452 S. Ottawa St., Joliet, Ill.
Filed May 8, 1962, Ser. No. 193,187
3 Claims. (Cl. 240—6.45)



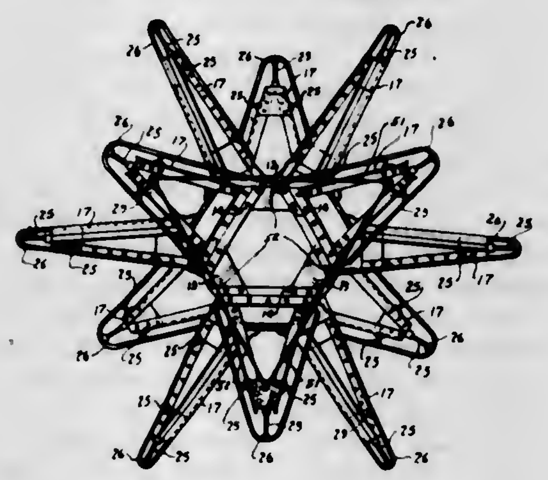
1. In combination, a bag having a frame composed of two opposed inverted U-shaped sections having cross members and downwardly extending legs, means pivoting the legs together at their lower ends at opposite ends of the frames, said legs having facing sides and remote sides, insulated electric contact arms fixed at their upper ends to the remote sides of the legs at one end of the frame, said arms extending below the lower ends of the same legs and having facing contacts on their lower ends, one of said contact arms comprising a bulb socket containing a light bulb, said socket having one side thereof connected to one of said contact arms, electric battery means supported within the bag and having opposite sides thereof severally connected to the remaining side of the bulb socket and to the other contact arm.

3,182,185
PLUG-IN TYPE CHRISTMAS TREE LIGHT
Joseph M. Ahroni and Lee Ahroni, both of P.O. Box 3907, Seattle, Wash.
Filed Feb. 21, 1963, Ser. No. 260,152
2 Claims. (Cl. 240—10)



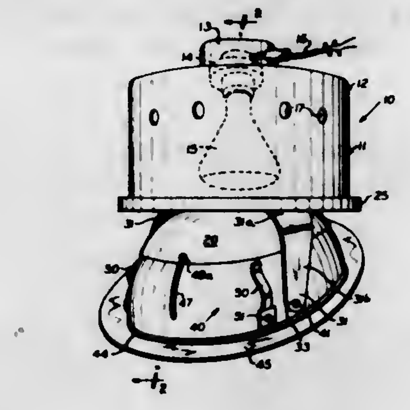
1. A light comprising an electrically nonconductive socket member having an upper exposed socket cavity intersected at the bottom by a pair of longitudinal through bores extending to the base of the socket member, electrically conductive ferrules in said bores, electrically insulated power leads extending upwardly into said bores and having their ends bared of insulation and connected to the lower ends of said ferrules, an electrically nonconductive plug member having a body portion seated in said socket cavity and an integral pair of hollow electrically non-conductive prongs projecting downwardly from said body portion into said ferrules, and an upwardly projecting incandescent bulb fixedly seated in said body portion of the plug member and having a pair of filament leads extending downwardly therefrom through said prongs, the free end portions of said filament leads being doubled back over the bottom of said prongs and pressed between said prongs and ferrules.

3,182,186
POLYHEDRAL DISPLAY DEVICES
Raymond B. Faulk, 8501 William St., Taylor, Mich.
Filed June 25, 1962, Ser. No. 204,978
13 Claims. (Cl. 240—10.1)



1. An article of manufacture comprising
(*a*) a plurality of polygonal base members assembled to form a polyhedral casing,
(*b*) each of said base members comprising a plurality of flanged structural members connected together with their flanges extending outwardly,
(*c*) the flange of each of said structural members being closely adjacent and in a plane substantially parallel to the flange of a structural member of an adjoining base member,
(*d*) a substantially planar member positioned intermediate each pair of adjacent flanges and extending outwardly therefrom and means securing said planar member to said flanges whereby said base members are secured together to form a polyhedral casing and said planar members extend outwardly from each edge of said polyhedral casing, and
(*e*) illuminating means carried on the periphery of each of said planar members.

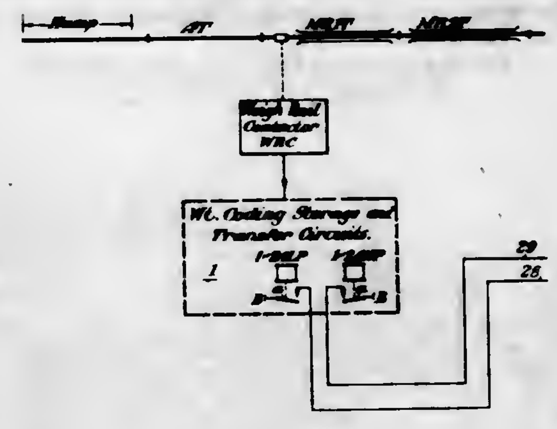
3,182,187
LIGHTING FIXTURE FOR SLOPING CEILINGS
Don L. Gellert, Paramus, N.J., assignor, by mesne assignments, to Silvray-Litecraft Corporation, Passaic, N.J., a corporation of New York
Filed Jan. 14, 1963, Ser. No. 251,126
4 Claims. (Cl. 240—78)



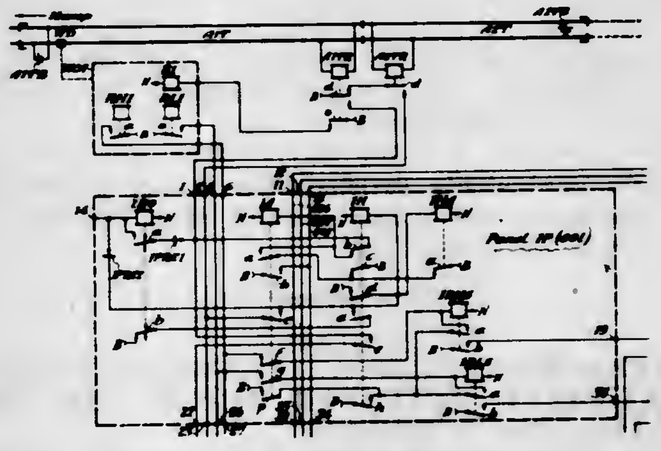
1. Lighting fixture for a sloped ceiling comprising a housing having an upstanding axis and peripheral wall and a bottom opening and adapted to receive a lamp, a part-spherical, downwardly-opening socket fixed to said housing below and covering said bottom opening and having a top opening registering with said housing bottom opening, opposing ears fixed to said housing and depending therefrom outside and below said socket, a bearing having open ends and a part-spherical peripheral wall, pivot means pivotally mounting said bearing between said ears below said socket with said bearing extending frictionally turnably into said socket, said pivot means having an axis which is transverse to said housing axis, and means on said bearing for mounting it in adjusted turned position in the opening of a sloped ceiling with said housing above said ceiling, said ears being turnable about their pivots to locate the axis of said housing in vertical position, said housing, socket and bearing together defining a peripherally closed passage for transmission of light from said lamp to below said ceiling.

3,182,188
INFORMATION HANDLING SYSTEMS
Joseph M. Berill, Edgewood, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Feb. 21, 1958, Ser. No. 716,752
9 Claims. (Cl. 246—182)

2. Apparatus for controlling the speed of each cut of cars sequentially occupying first and second sections of a car retarder, comprising, in combination, first speed comparing means for producing a first output voltage in accordance with the difference between the desired speed for each cut when leaving said retarder and the speed of such cut in said first section, second speed comparing means for producing a second output voltage in accordance with the difference between said desired speed for each cut and the speed of such cut in said second section, first and second retarder control means for controlling the braking force exerted by said first and second sections respectively, means controlled by the occupancy by each cut of said first section for controlling said first retarder control means in accordance with said first output voltage produced for such cut, means controlled by the joint occupancy by each cut of said first and second sections for controlling said second retarder control means in accordance with said first output voltage produced for such cut; and means controlled by the occupancy by each cut of said second section after such cut has vacated the first section and effective until said second section is vacated by that cut for controlling only said second retarder control means in accordance with said second output voltage.



3,182,189
INFORMATION HANDLING SYSTEMS
Edd C. Dwyer, Pittsburgh, and Jacob G. Waugaman, Allison Park, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Oct. 18, 1960, Ser. No. 63,326
9 Claims. (Cl. 246—182)

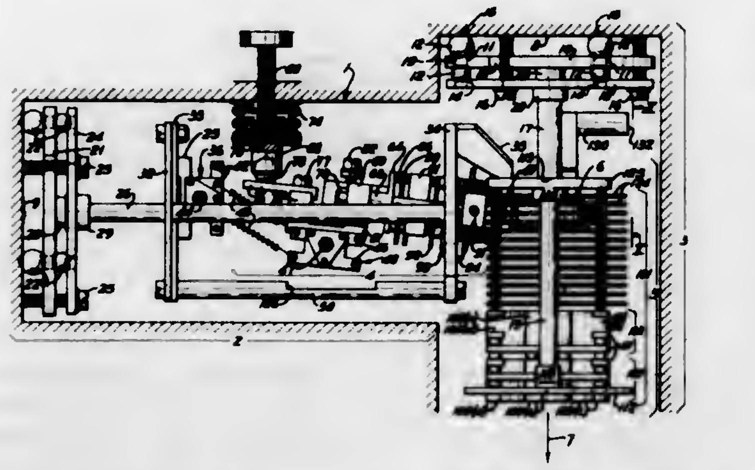


8. In an information handling system in which each of a plurality of storage panels is employed for storing at least one of a plurality of items of information until required at preselected circuit points in circuit networks, each said panel being assigned a distinct one of a group of binary code characters which are transferred over said circuit networks to said circuit points and which are employed at said circuit points for identifying the respective panels and reading out the items of information stored therein, the combination comprising,
(*a*) means for establishing an additional one of said group of binary code characters for each of said plurality of items of information for which a storage panel is unavailable,
(*b*) means for transferring each said additional code character over said circuit networks,
(*c*) means at a selected one of said circuit points for translating each said additional binary code character into its respective item of information.

3,182,190
MAGNETIC FIELD FREE ION SOURCE WITH ADJUSTABLE ELECTRON GUN

Arnys C. Lilly, Jr., Penn Hills Township, Allegheny County, Emmett B. Shutes, Wilkins Township, Allegheny County, and Theodore J. Weismann, Ross Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed July 31, 1962, Ser. No. 213,823
5 Claims. (Cl. 250—41.9)



1. An ion source for a mass spectrometer or the like comprising

an electron gun adapted to produce a geometrically and electrostatically focused electron beam,

an ion chamber located in the path of said electron beam,

means adapted to introduce sample material into said ion chamber,

an opening in said ion chamber permitting entrance of the electron beam from said electron gun,

means producing a segmented electric field adapted to withdraw ions from said ion chamber and accelerate said ions,

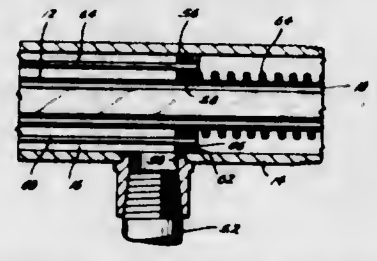
an electrostatic double quadrupole lens adapted to geometrically focus said accelerated ions into a focused ion beam, and

means adapted to rotate said electron gun about an axis substantially perpendicular to the plane containing the axis of said electron beam and the axis of said ion beam.

3,182,191
WATER PURIFYING APPARATUS WITH AN AUTOMATICALLY ACTUATED WIPER FOR THE ULTRA-VIOLET SOURCE

Artie F. McFarland and Arthur E. McFarland, Houston, Tex., assignors to Puretest Water Purifier Co., Houston, Tex., a corporation of Texas

Filed Feb. 14, 1963, Ser. No. 258,538
6 Claims. (Cl. 250—43)

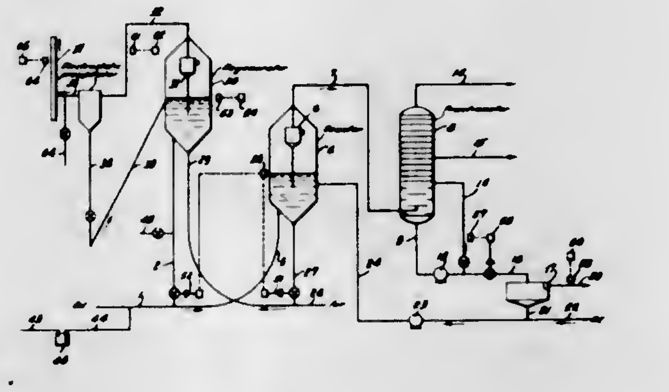


1. In water purification apparatus an elongated, tubular electric lamp providing a source of ultra-violet illumination, a protective cylinder formed of a material transparent to ultra-violet light surrounding said lamp, an outer casing surrounding and forming with said cylinder an annular passageway through which water may flow in light receiving relation to said source, said casing having an inlet through which water may flow into said passageway and an outlet spaced longitudinally from said inlet, wiper means movably disposed in the passageway for movement longitudinally therein in surrounding contact with the cylinder and means in the passageway positioned for coaction with said wiper means to move the wiper means longitudinally in one direction in response to an increase in the pressure of water in said inlet and in the other direction in response to a decrease in such pressure.

3,182,192
METHOD OF DETERMINING DISTRIBUTION OF FRACTIONS OF A MATERIAL BY RADIOACTIVE MEANS

Alfred R. Vander Ploeg, Port Arthur, Tex., assignor to Texaco Inc., a corporation of Delaware

Filed July 2, 1956, Ser. No. 595,481
1 Claim. (Cl. 250—43.5)



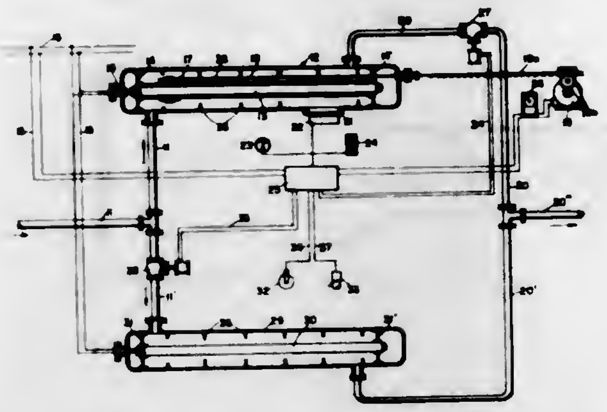
The method of determining the quantity of catalyst present in the product of a catalytic reaction which comprises adding a predetermined amount of a radioactive tracer material to a batch of catalyst to be contacted with the feed to be converted in said catalytic reaction, said tracer corresponding to at least one ingredient of said catalyst, catalytically converting said feed with said catalyst, substantially separating said catalyst from the effluent from said catalytic reaction and producing a signal representative of the radioactivity of the substantially catalyst-free effluent from the catalytic process.

3,182,193
ELECTRONICALLY MONITORED LIQUID PURIFICATION OR STERILIZING SYSTEM

Sidney Ellner and Robert W. Marx, Hartsdale, N.Y., assignors to Ultra Dynamics Corp., Elenite Division, New York, N.Y.

Filed Jan. 3, 1962, Ser. No. 174,330
8 Claims. (Cl. 250—43.5)

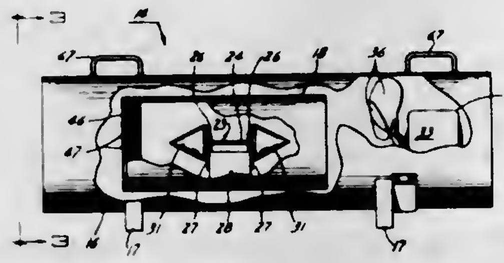
1. An electronically monitored fluid purification system, comprising an elongated chamber, said chamber having inlet means for feeding said fluid from a fluid source into said chamber and outlet means for passage of said fluid therefrom, at least one elongated ultraviolet ray-emitting means disposed in said chamber, said ray-emitting means having at least one light-transmitting housing, means for supporting said ray-emitting means within said chamber in spaced relation with respect to the longitudinal inner wall of said chamber permitting said fluid to flow around said housing and in contact therewith, means for wiping said housing, said ray-emitting means being connectable to an electric power source for activating said ray-emitting means for purifying said fluid, a window in said wall of said chamber, a meter having means responsive to ultraviolet irradiation intensities passing through said window, said meter being disposed on the outside of said chamber adjacent said window and being settable to a minimum permissible value of ultraviolet ray emission from said chamber through said window, electronic monitoring means, said meter being connected to said monitoring means, and means energized by said monitoring means for actuating said wiping means when said meter indicates said minimum permissible low irradiation value.



3,182,194
ION GENERATOR COMPRISING A SHIELDED RADIOACTIVE SOURCE AND MEANS FOR FORCING AIR PAST THE RADIOACTIVE SOURCE

Walter Y. Fish, William H. Conlee, Jr., and Thomas L. Martin, Jr., Tucson, Ariz., assignors, by mesne assignments, to Wesix Electric Heater Co., San Francisco, Calif., a corporation of California

Filed Dec. 8, 1960, Ser. No. 74,608
15 Claims. (Cl. 250—44)



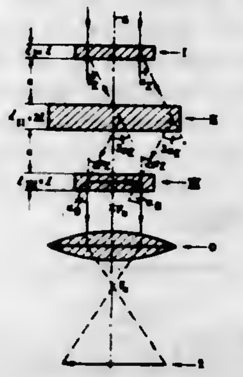
1. In an ion generator for creating an excess of ions of one sign, a radioactive source, a member of high density material surrounding said radioactive source and spaced from the source, the spacing between said radioactive source and said member of high density material being substantially less than the normal distance of travel of the radioactive rays from said source so that said rays strike said member of high density material and are back-scattered therefrom, said rays causing the creation of a substantial number of positive and negative ions in the air in the vicinity of said radioactive source, a member of low density material surrounding said member of high density material, means for applying the charge of one sign to one of said members and a charge of the opposite sign to the other of said members to establish an electrostatic field between said members for separating the desired ions from the undesired ions.

6. An ion generator comprising a radioactive source having a substantial radiation of hard beta particles, and means disposed about and spaced from said radioactive source and forming an ionization zone between itself and said radioactive source, the spacing between said means and said radioactive source being substantially less than the normal distance of travel of the hard beta particles, said means being of a high density material whereby the hard beta particles impinge upon and are back-scattered into said ionization zone.

3,182,195
METHOD OF AND DEVICE FOR MAGNETIZING A SPECIMEN IN AN ELECTRON MICROSCOPE

Ekkehard Fuchs and Wolfgang Lieck, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft Berlin and Munich, a corporation of Germany

Filed Apr. 23, 1962, Ser. No. 189,472
Claims priority, application Germany, Apr. 28, 1961, S 73,743
11 Claims. (Cl. 250—49.5)

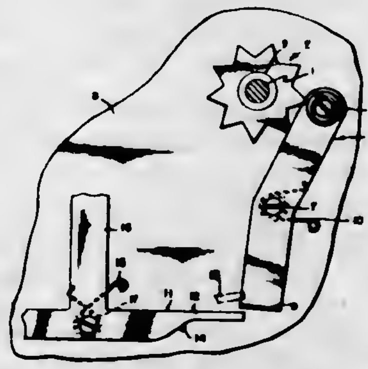


4. An arrangement for controlling action of the electron beam of an electron microscope during permeation of a magnetizable object while subjected to the influence of a magnetic field oriented transverse to the direction of the electron beam, comprising a pair of magnets constructed to form at least two poles disposed adjacent such electron beam, at a point prior to the entry of said beam into said magnetic field, to produce a magnetic field through which said beam passes, operative to effect a predeflection of said beam in a direction deviating from the optical axis prior to the entry of said beam into said first mentioned magnetic field, whereby the latter field is operable to deflect the beam in the direction of the optical axis.

3,182,196
INTERLOCKING MEANS FOR X-RAY SPOT FILM DEVICE CASSETTE CARRIAGES

Le Roy J. Leishman, 9232 3rd Ave., Los Angeles, Calif.

Filed Aug. 15, 1962, Ser. No. 217,031
1 Claim. (Cl. 250—66)



In an X-ray spot film device, means for preventing the release of the cassette carriage into the X-ray field unless the control shaft is accurately indexed, said means comprising: a control shaft; a detent wheel having a plurality of peripheral points, said detent wheel rigidly mounted on said shaft; a first structure pivoted on a first axis parallel to said shaft and comprising a relatively narrow finger extending substantially radially with respect to said first axis, said first structure with its finger movable from a first angular position to a second angular position as the carriage is being released; means for yieldingly holding said first structure in said first angular position; a second structure pivoted on a second axis parallel to said shaft, said second structure comprising (*a*) a component so positioned and shaped that in one angular position of said second structure it will nest between two of said peripheral points for indexing and detenting said detent wheel, and (*b*) a part so located on said second structure on the opposite side of said second axis from said component that when said component is nesting between two of said peripheral points said part will lie outside the path of angular movement of said finger and so that as said component moves away from between said points, said part will move in a direction substantially parallel to said finger along one side thereof into the path of angular movement of said finger, thus preventing said first structure from being moved from said first angular position to said second angular position, or vice versa; and a spring for urging said second structure to said one angular position; said finger and said part so shaped with respect to each other that when said first structure is in said first angular position said part may move along one side of said finger and so that when said first structure is in said second angular position said part may move along the opposite side of said finger.

3,182,197

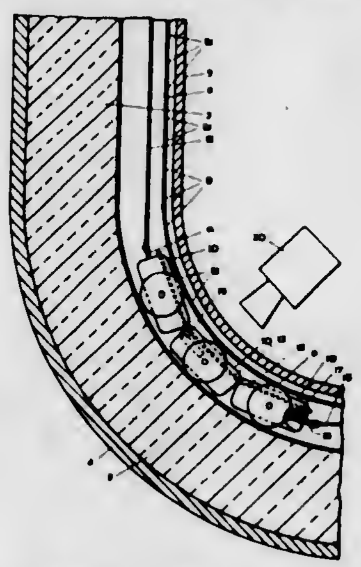
RADIOGRAPHY OF WELDED SEAMS

William Elyott Putnam and Ronald Sutherland, Darlington, and John Kedgwyn Stephenson Wardale, Barnard Castle, England, assignors to Whessoe Limited, Darlington, England, a British company

Filed Aug. 6, 1962, Ser. No. 214,975

Claims priority, application Great Britain, Oct. 20, 1961, 37,758/61

11 Claims. (Cl. 250—68)



1. Means for effecting radiographic examination of a welded seam in one wall of a double walled tank, comprising an open ended duct located in the interspace between the inner and outer walls of said tank, adjacent one surface of said one wall, said duct extending along the line of said seam, a carrier insertable through one end of said duct and movable longitudinally through it, a container of radio-sensitive film removably supported by said carrier, means for moving said carrier to any selected position along the length of said duct, and a source of radiation disposed adjacent the other surface of said one wall and movable to a position opposite said seam and said film.

3,182,198

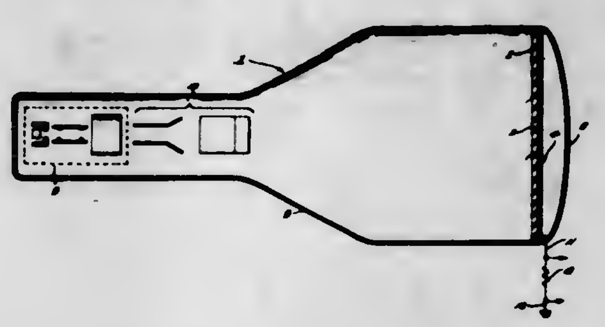
SEMI-CONDUCTOR INFRARED RADIATION DETECTING AND CONVERTING APPARATUS

George W. Mahlman, Woodland Hills, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Mar. 12, 1962, Ser. No. 178,850

6 Claims. (Cl. 250—211)

1. Apparatus for converting long wavelength energy into electrical signals comprising a long wavelength radiation responsive target having a semiconductor element and a radiation absorber element disposed thereon, the work function at the interface between said semiconductor element and said absorber element being less than the energy level of charge carriers excited in said absorber element, the thickness of said absorber element being less than the mean free path of charge carriers therein, and means for scanning said semiconductor element with an electron beam.



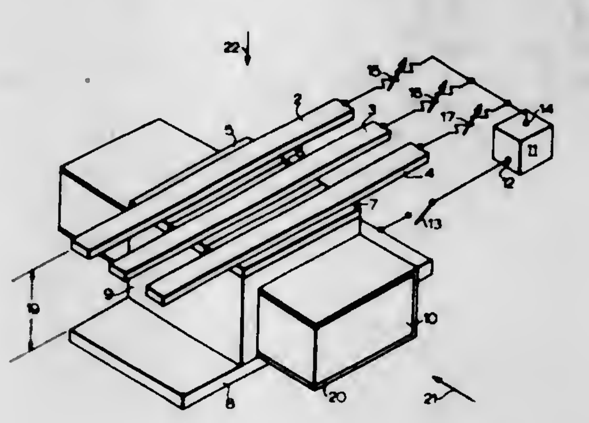
3,182,199

CROSSED-GRID ELECTROLUMINESCENT PHOSPHOR ILLUMINATION CONTROL ELEMENT

Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif.

Filed Aug. 1, 1962, Ser. No. 213,937

8 Claims. (Cl. 250—213)



1. A crossed-grid electroluminescent phosphor illumination control element comprising:

(*a*) a plurality of longitudinally extending first electrodes;

(*b*) longitudinally extending light conductor means angularly displaced with respect to said longitudinally extending first electrodes, spaced apart therefrom and defining a crossing therebetween;

(*c*) photoconductive material presenting first and second light responsive portions, said first portion being intimately joined with said light conductor means coincident with said crossing and adapted to receive light from said light conductor means;

(*d*) electroluminescent phosphor intermediate said material and said first electrodes;

(*e*) a second electrode spaced apart from said phosphor and connected electrically with said material;

(*f*) means for presenting the influence of a combination of electrical potentials across said phosphor and said material intermediate said first electrodes and said second electrode; and means for deriving light radiation from said phosphor corresponding to said combination of electrical potentials upon the admission of light to said light conductor means;

(*g*) light control means intermediate the second portion of said material and said light conductor means for light insulating said second portion from said light conductor means; and

(*h*) means for exposing the second portion of said material to said light radiation from said phosphor.

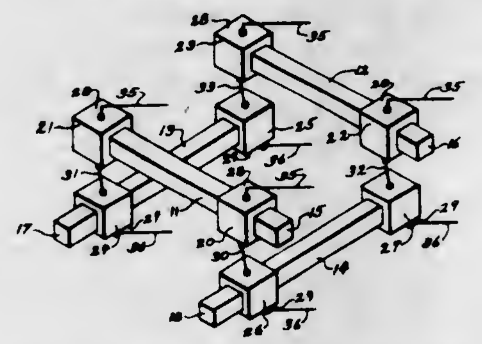
3,182,200

LIGHT INPUT CROSSED-GRID MATRIX CONTROL CIRCUITRY

Joseph T. McNaney, 8548 Boulder Drive, La Mesa, Calif.

Filed Aug. 1, 1961, Ser. No. 128,943

8 Claims. (Cl. 250—227)



1. An array of light-sensitive crossed-grid control circuits comprising:

- a plurality of first and second light conducting fibers each having
  - a longitudinal dimension exceeding its cross sectional dimension,
  - a transverse end presenting an end surface adapted to receive light waves incident to said end surface,
  - an outer surface generally along its longitudinal dimension,
  - a layer of photoconductive material and means by which said layer is joined with said outer surface and thereby adapted to be illuminated from said outer surface;
  - said first fibers being adjacent said second fibers and angularly disposed in relation to said first fibers;
- and means by which said layers of said first fibers are connected operatively with said layers of said second fibers—whereby each connection of said layers provides a relatively high resistance series circuit in said layers dark resistance state and a relatively low resistance series circuit when light waves are received simultaneously by first and second fibers.

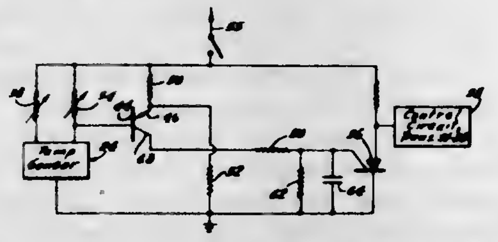
3,182,201

APPARATUS FOR DETECTING LOCALIZED HIGH TEMPERATURES IN ELECTRONIC COMPONENTS

Bernard Sklar, 4615 Brewster Drive, Tarzana, Calif.

Filed Dec. 1, 1960, Ser. No. 72,927

4 Claims. (Cl. 307—88.5)



4. In a temperature monitoring apparatus, a plurality of transistors mounted in an enclosed space, said transistors being enclosed by protective coverings, an additional component mounted in the same enclosed space, said additional component having a protective coating similar to that of said transistors, said additional component further comprising a p-n junction, a heat sensitive element spaced from said p-n junction, an element of high heat conductivity bridging the space between said heat sensitive element and said p-n junction, and a control circuit connected to said heat sensitive element, said control circuit being coupled to change the operation of said transistors upon change in temperature of said heat sensitive element.

3,182,202

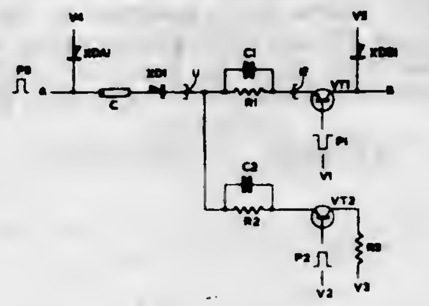
ELECTRIC PULSE-OPERATED SWITCHING CIRCUIT

John Frederick Hesketh, Greenford, England, assignor to Her Majesty's Postmaster General, London, England

Filed Dec. 13, 1960, Ser. No. 75,615

Claims priority, application Great Britain, Dec. 18, 1959, 43,173/59

1 Claim. (Cl. 307—88.5)



An electric pulse-operated switching circuit comprising in combination a pulse source, a pulse transmission path connected to said source, a first source of bias potential joined to said transmission path which is terminated in its characteristic impedance by means comprising a plurality of pulse-controlled output gates each joined to said transmission path, each said output gate having an output circuit connected to it, and a second source of bias potential connected to each said output circuit, a third source of bias potential for each output gate sufficient in combination with said first source of bias potential to render said output gate non-conducting, a first source of bias pulses for each output gate such that when a pulse from said first bias pulse source coincides with a pulse from said pulse source, said output gate is switched to a conducting condition, a discharge path connected to said transmission path in parallel with said output gates, said discharge path containing an impedance of value equal to the characteristic impedance of said transmission path, a further pulse-controlled gate in said discharge path for controlling the flow of current therethrough, a fourth source of bias potential connected to said further pulse-controlled gate and such that taken with said first source of bias potential, said further pulse-controlled gate is rendered conducting, and a second source of bias pulses connected to said further pulse-controlled gate for switching the latter to a non-conducting condition.

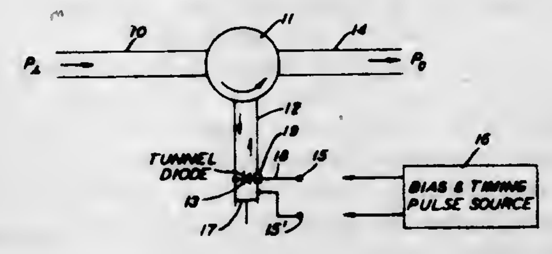
3,182,203

ESAKI DIODE PCM REGENERATOR

Stewart E. Miller, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed July 31, 1961, Ser. No. 128,035

13 Claims. (Cl. 307—88.5)

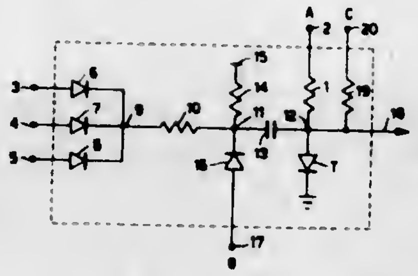


1. A microwave pulse regenerator comprising, in combination, a source of pulsed high frequency electromagnetic wave energy, at least one high frequency transmission line having a given characteristic impedance, means for coupling said wave energy to one end of said line, means for reflecting the energy above a first energy level and below a second energy level from the other end of said line, said reflecting means comprising a nonlinear

impedance element coupled to said line and matched to said characteristic impedance below said first energy level and above said second energy level and mismatched to said characteristic impedance between said first and second energy levels, and means for extracting said reflected energy from said line.

3,182,204
TUNNEL DIODE LOGIC CIRCUIT

Remo Galletti, Milan, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Nov. 16, 1961, Ser. No. 152,725
Claims priority, application Italy, Nov. 24, 1960, 20,304/60
2 Claims. (Cl. 307—88.5)

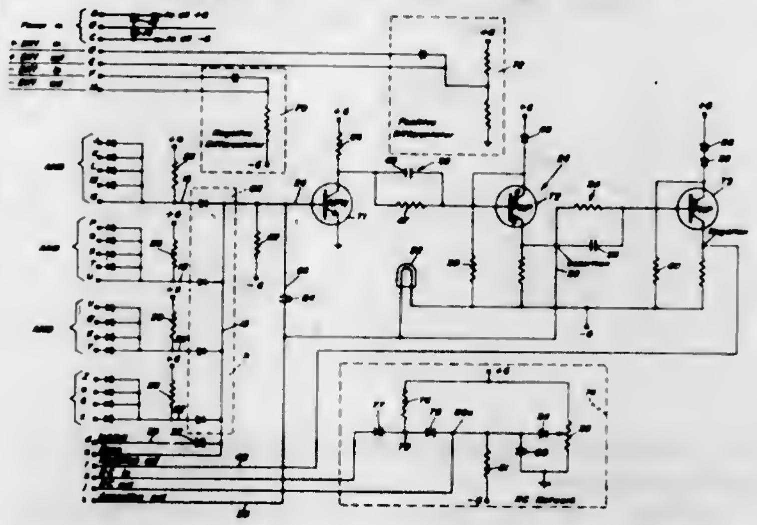


1. A logic "nor" circuit comprising in combination:
- (*a*) a tunnel diode having first and second voltage states,
- (*b*) means for applying an excitation current to said tunnel diode,
- (*c*) and means for selectively applying a control current pulse to said tunnel diode,
- (*d*) said tunnel diode being switched from said first to said second state upon the concurrent application of said excitation current and said control current pulse,
- (*e*) said pulse applying means comprising a clock pulse source, a plurality of sources of input signals, a conventional diode, a condenser, said conventional diode and said condenser being connected in series between said clock pulse source and said tunnel diode, and means for connecting said source of input signals to the junction point between said conventional diode and said condenser, whereby in response to each input signal said condenser is charged to block said conventional diode.

3,182,205
LOGIC PACKAGE INCLUDING INPUT GATING MEANS D.C. COUPLED TO AMPLIFIER

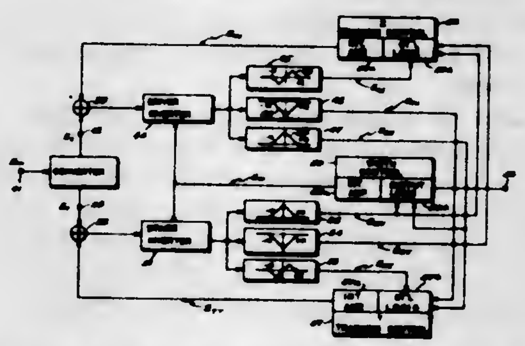
John R. Sorrells, Rockville, and Arthur W. Holt, Silver Spring, Md., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 15, 1962, Ser. No. 166,043
3 Claims. (Cl. 307—88.5)

1. In a multiple purpose logic package having gating means forming plural inputs for the package, an amplifier operable in a first and a second state respectively, direct current coupling means coupling said gating means with said amplifier for conducting a trigger signal to said amplifier to change the state of the amplifier in response to a trigger signal applied to said gating means, said amplifier having distinguishable first and second outputs which change to correspond to the state of said amplifier, a resistor capacitor circuit having a pair of terminals, means to connect one terminal with said first amplifier output, means for connecting the other resistor capacitor circuit terminal to said gating means, and means connecting the said second amplifier output to the same gating means so that when a trigger signal changes the state of said amplifier said resistor capacitor circuit is energized providing a delayed signal which is fed back to said gating means to again change the state of said amplifier thereby making available a one-shot output whose duration corresponds to the time constant of said resistance capacitance circuit.



3,182,206
MULTIDIMENSIONAL PULSE HEIGHT TRACKERS

William M. Waters, Baltimore, Md. (% Electronic Communications Inc., 1830 York Road, Timonium, Md.)
Filed Jan. 29, 1962, Ser. No. 169,288
4 Claims. (Cl. 307—88.5)

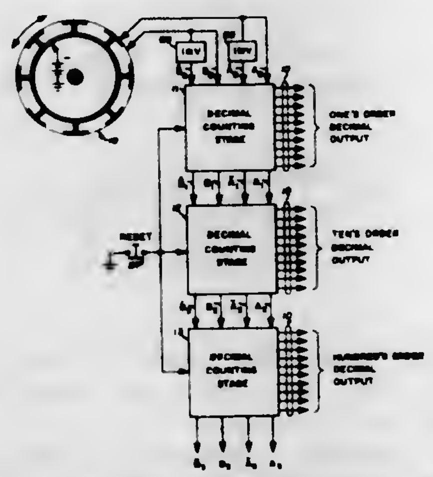


1. In a pulse height discriminator for selecting desired electrical pulses from a larger group of received electrical pulses on the basis of pulse amplitude, the combination of
- a nonlinear circuit having a variable width amplitude acceptance interval for providing an output pulse whenever an electrical pulse is received having an amplitude within said amplitude interval,
  - said amplitude interval having a center amplitude range within, said output pulses being of one polarity if the amplitude of the received pulse is within said center and of the opposite polarity when not within said center range,
- feedback circuit means for integrating and amplifying said output pulses to derive a control signal, and
- means within said nonlinear circuit for adjusting the width of said amplitude acceptance interval in accordance with said control signal.

3,182,207
REVERSIBLE DECIMAL COUNTER

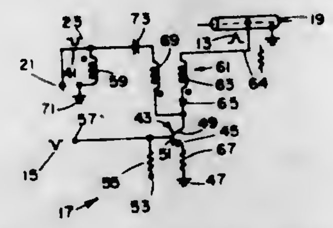
John Kaufmann, Sunnyvale, Calif., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed May 18, 1962, Ser. No. 195,743
7 Claims. (Cl. 307—88.5)

1. A first order decimal counting stage for a counter for reversibly counting input signals having a plurality of waves which are shifted in phase with respect to each other, said counting stage including a first general group of gate inverter circuits and a second general group of gate inverter circuits, each gate inverter circuit having a plurality of input terminals and an output terminal, one of the input terminals of each of the gate inverter circuits of the first group being coupled to receive one of the waves of the input signals and the other input terminals being coupled to the output terminals from other gate inverter circuits of the first group, the gate inverter circuits of the second group being arranged in sub-groups of three circuits each wherein two of the circuits constitute activating gate inverter circuits and the third circuit constitutes a latching gate inverter circuit, each of the activating gate inverter circuits having one input terminal coupled to a selected one of the output terminals of the gate inverter circuits of the first group, each of the latching gate inverter circuits having input terminals coupled to the output terminals of the activating gate inverter circuits, the output terminals of selected ones of the latching gate inverter circuits providing a plurality of waves which are shifted in phase with respect to each other and which may constitute input signals for a higher order counting stage of the counter.


DECIMAL COUNTING STAGE
ONE'S ORDER DECIMAL OUTPUT
DECIMAL COUNTING STAGE
TEN'S ORDER DECIMAL OUTPUT
RESET
DECIMAL COUNTING STAGE
HUNDRED'S ORDER DECIMAL OUTPUT

3,182,208
LINEAR GATE WITH GATING PULSES APPLIED TO COLLECTOR THROUGH THE PRIMARY OF A TRANSFORMER

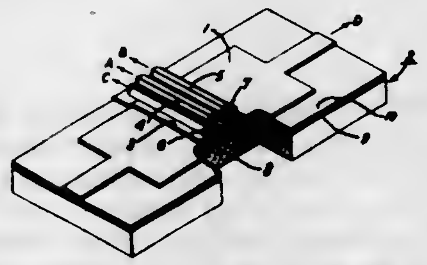
Joachim Fischer, Patchogue, Long Island, William A. Higinbotham, Bellport, Long Island, and Robert Lloyd Chase, Blue Point, Long Island, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed July 3, 1962, Ser. No. 207,443
3 Claims. (Cl. 307—88.5)



1. A fast linear gate circuit, comprising in combination a transistor having a grounded emitter, a base biased forwardly slightly within cut-off to permit low impedance level input signals to said base to turn said transistor on below saturation and a collector, a gating input signal source means, a transformer including first and second primary windings and one secondary winding each having input and output terminals respectively, said first primary winding being connected at its output terminal to ground and at its input terminal to said gating input signal source means, a capacitor connected between said primary winding input terminals and to said collector through said second primary winding, an output connected to said secondary winding output terminal, a diode connected between said secondary winding input terminal and said collector, and a degeneration resistor connected between said emitter and ground whereby the emitter voltage approximates the base voltage for signals of reasonable amplitude and an output current pulse is produced in said output approximately equal to the input signal voltage applied to said base divided by the resistance between said emitter and ground in the presence of a gating input signal from said gating input signal source means to said first primary winding input terminal.

3,182,209
SUPERCONDUCTING SWITCHING DEVICE UTILIZING PLURAL CONTROL SUPERCONDUCTORS

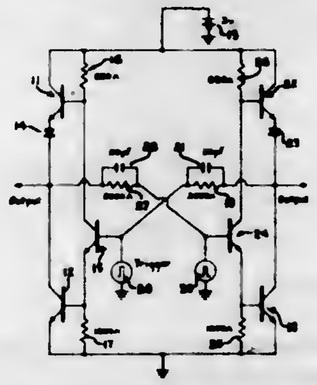
Robert E. Fruin, Schenectady, and Vernon L. Newhouse, Scotia, N.Y., assignors to General Electric Company, a corporation of New York
Filed Nov. 1, 1962, Ser. No. 234,813
8 Claims. (Cl. 307—88.5)



1. A superconducting gate switching device comprising a gate superconductor for carrying current, having connections at either end thereof, and plural control superconductors, said plural control superconductors including at least a first current carrying control superconductor establishing a magnetic field at said gate superconductor, and a second control superconductor wider than said first control superconductor interposed between said first superconductor and said gate superconductor and adjoining said gate superconductor, the magnetic field flux established by current flow in said first superconductor passing around the greater width of said second control superconductor in establishing said magnetic field at said gate superconductor.

3,182,210
BRIDGE MULTIVIBRATOR HAVING TRANSISTORS OF THE SAME CONDUCTIVITY TYPE

Robert W. Jebens, Arlington, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Apr. 26, 1963, Ser. No. 275,858
20 Claims. (Cl. 307—88.5)



1. A multivibrator comprising two pairs of transistors of the same conductivity type, positive feedback means connecting said pairs of transistors in a bridge circuit for rendering both transistors of one of said pairs in a first conducting state at the time both transistors of the other of said pairs are in another conducting state, an output signal being derived in response to the voltage between the collector and emitter of one transistor of each of said pairs, said positive feedback means including means for reversing the phase of an output signal derived from one

of said pairs, and means for coupling the phase reversed signal to the base electrode of the other transistor in said one pair.

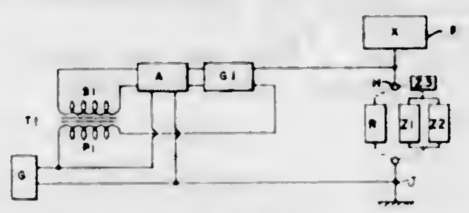
3,182,211
ELECTRONIC SYSTEMS FOR ELECTRIFYING ENCLOSURES

Paul Maratuech, La Garenne Colombes, and René Bernada, Paris, France, assignors, by mesne assignments, to Inventions Finance Corporation, a corporation of Delaware

Filed Feb. 14, 1961, Ser. No. 89,255

Claims priority, application France, May 4, 1960, 826,166; Sept. 21, 1960, 839,114

22 Claims. (Cl. 307—132)



22. In combination with a conducting barrier, a low voltage power supply, sensing means coupling said power supply with said barrier, said sensing means including means for producing a given duration signal when a conducting medium connects a part of said barrier to ground regardless of the duration of the connection to ground, and means powered by said power supply for applying a shocking voltage to said barrier in response to said signal, the last-mentioned means including amplifier means for amplifying said signal and independent signal generating means for producing said shocking voltage.

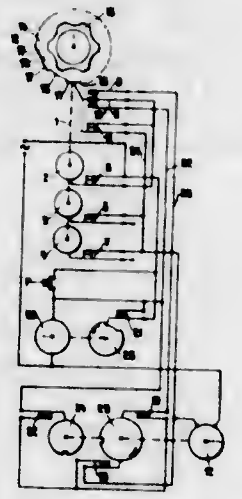
3,182,212
PROGRAM-TIMING DEVICE

Artur Weber, Muri, Bern, and André Rufer, Murten, Switzerland, assignors to Saia A.G., Murten, Switzerland

Filed July 9, 1962, Ser. No. 208,384

Claims priority, application Switzerland, Aug. 11, 1961, 9,431/61

10 Claims. (Cl. 307—141.4)



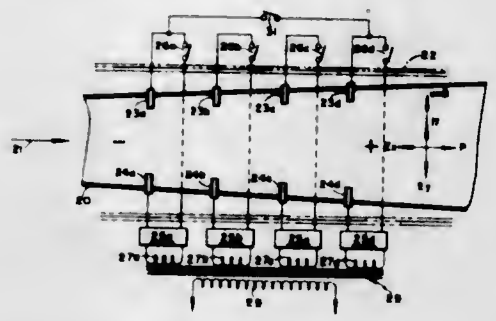
1. A program-timing device, comprising a program-controlling means actuating control switches, driving means for advancing the said program-controlling means at a normal speed, a standard program being controlled by said program-controlling member when driven at said normal speed, means for driving said program-controlling means at a high speed substantially exceeding said normal speed for shortening and omitting parts of the standard program, and means for driving said program-controlling means at a low speed for extending parts of said standard program, said program-controlling means being provided with a single program element for determining all periods of normal speed, high speed and low speed of said driving means and program-control means respectively.

3,182,213
MAGNETOHYDRODYNAMIC GENERATOR

Richard J. Rosa, Reading, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed June 1, 1961, Ser. No. 114,120

30 Claims. (Cl. 310—11)



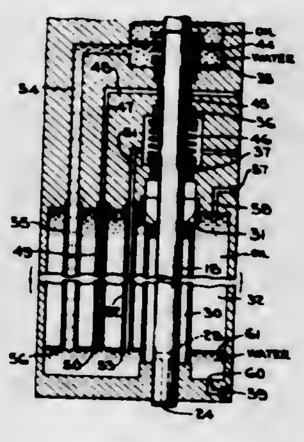
1. In combination, first means for conveying an electrically conductive fluid; means for establishing magnetic flux through said first means at an angle to the direction of flow of the buid; a plurality of discrete electrodes spaced from each other within said first means, the connection in circuit of said plurality of electrodes allowing a potential gradient within the fluid in the direction of flow; and means for selectively reducing said potential gradient to about zero.

3,182,214
SUBMERSIBLE MOTOR SEAL SECTION

Clinton A. Boyd, Tulsa, Okla., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Dec. 26, 1962, Ser. No. 247,188

7 Claims. (Cl. 310—87)



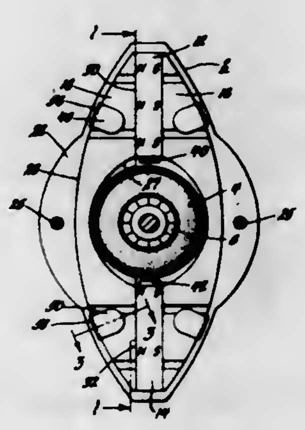
1. A submersible seal for an electric motor driving a pump by means of a shaft passing through the seal for protecting the motor from the intrusion of ambient fluid in which the motor, pump and seal are to be submerged, comprising: a housing having a chamber, means communicating the upper portion of said chamber with the motor, at least one rotary sealing means in said housing in sealing relation with the shaft above said chamber for sealing said chamber from the ambient fluid, second means communicating the lower portion of said chamber with the ambient fluid present above the uppermost said sealing means, lubricating fluid in said chamber, intermediate fluid in said chamber having a specific gravity greater than said lubricating fluid, and said intermediate fluid filling the lower portion of said chamber at least to the level of communication with said second communicating means and filling at least a portion of said second communicating means for separating the lubricating fluid in said chamber from the ambient fluid.

3,182,215
DYNAMOELECTRIC MACHINE WITH PERMANENT MAGNET FIELD ASSEMBLY

Floyd M. Du Bois, Jr., Lyons, and Milton E. Simmons, Rochester, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 6, 1961, Ser. No. 87,346

5 Claims. (Cl. 310—154)



1. A dynamoelectric machine comprising a housing, an armature rotatably supported in said housing and a field assembly in said housing surrounding said armature, said field assembly including a plurality of flat ferrite magnets of generally rectangular prism configuration comprising elongated narrow edge portions which extend radially outward with respect to said armature and in alignment with each other and a plurality of arcuate-shaped pole pieces each with a pair of relatively wide flat end surfaces extending the length of the armature whereby the pole flux emanates from the entire flat wide surfaces, each of said magnets being positioned between and in abutting relationship with opposed flat end surfaces of a pair of said pole pieces and being magnetized in a direction perpendicular to said opposed flat end surfaces.

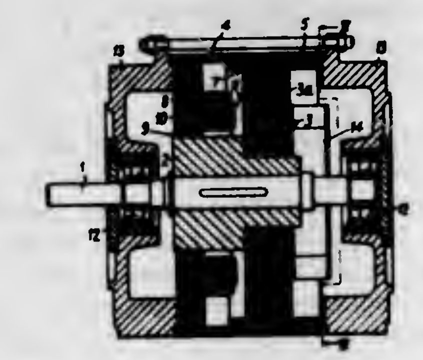
3,182,216
ELECTRIC ALTERNATORS INCLUDING BASKET WINDINGS LOCATED IN THE AIR GAP

Norman R. Bancroft, Cambridge, England, assignor to Pye Limited, Cambridge, England, a British company

Filed Jan. 12, 1961, Ser. No. 82,266

Claims priority, application Great Britain, Jan. 18, 1960, 1,716/60

2 Claims. (Cl. 310—168)



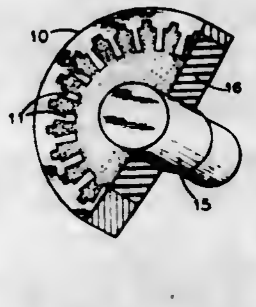
1. An electric alternator comprising a rotor consisting of a generally cylindrical core of magnetic material carrying a plurality of equi-spaced radially outwardly extending pole pieces positioned axially towards one end of the rotor, an axially laminated stator member comprising a plurality of annular concentric lamination rings of magnetic material coaxial with and surrounding the rotor to define an air gap therebetween, said stator having an internal surface free from polar projections, at least one self-supporting winding in which an A.C. voltage is to be generated arranged opposite the pole pieces, said at least one self-supporting winding extending all round the stator, a laminated annular member of magnetic material comprising a stack of annular disc-like laminations extending between the rotor and the stator and surrounding a part of the rotor spaced axially from the pole pieces, an energising winding associated with said annular member and means for suspending the energising winding from the annular member.

3,182,217
COMMUTATING APPARATUS

Frederic R. Quinn, Red Hook, N.Y., assignor to Zyrotron Industries, Inc., Red Hook, N.Y.

Filed Dec. 3, 1962, Ser. No. 241,594

1 Claim. (Cl. 310—235)



A commutator device comprising:

(*a*) an initial form comprising an annular ring formed of an electrical conducting material,

(*b*) said ring having formed therein a plurality of key shaped slots to define commutator segments therebetween whereby said segments are interconnected by an arcuate web portion of said ring, said slots being radially disposed and each of said slots having its narrow end opening to the inner periphery of said ring,

(*c*) each of said slots terminating at its other end in a recessed portion having a width which is less than that of the wide end of said slot and said recess being in communication with said slot,

(*d*) an electrically insulating plastic material imbedded in said slots and respective recesses thereof whereby the ratio of the exposed area of the commutator segments and insulating material therebetween can be varied accordingly depending upon the amount of web removed from the outer periphery of said annular ring.

3,182,218
MOLDED BRUSH HOLDER PLATE

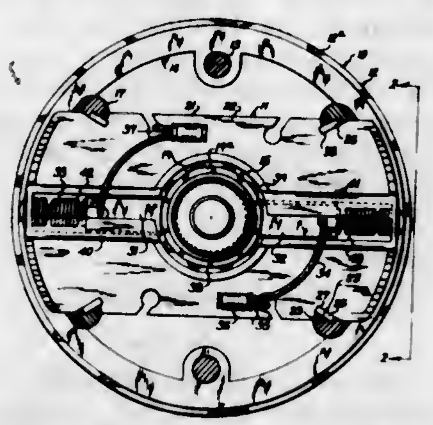
Silvan Videtic, Wickliffe, Ohio, assignor to The Leece-Neville Company, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 22, 1961, Ser. No. 133,120

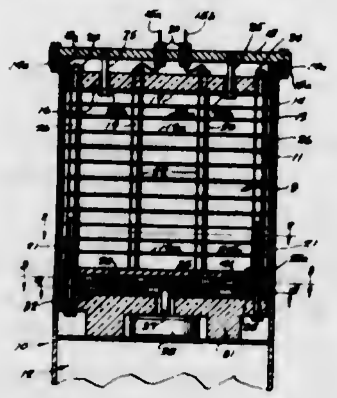
17 Claims. (Cl. 310—239)

1. In an electrical machine having stator means and rotor means including a commutator; a brush holder having an opening in which said commutator is receivable with running clearance; support means effective between said stator means and holder for supporting the latter substantially in a plane extending transverse to the rotation axis of the commutator; said holder comprising a molded plastic member having guide passage means in communication with said opening and extending outwardly therefrom; brush means slidable in said guide passage means; spring means effective against said brush means for urging the same into engagement with said commutator; said holder having a pair of opposed walls extending

along said guide passage means and forming one pair of sides thereof; and overhang portions on said opposed walls and forming partial sides for said guide passage means on another pair of sides thereof.



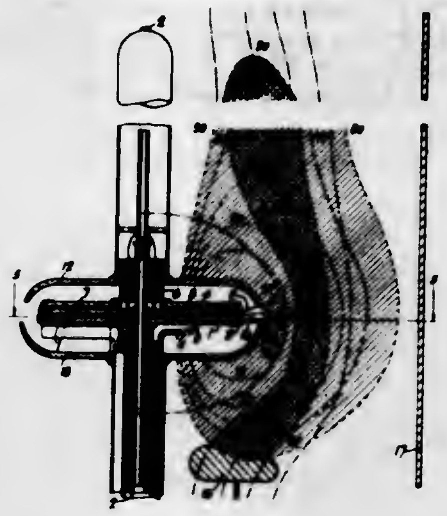
3,182,219
MECHANICALLY MODULATED NEUTRON ION CHAMBER
Harold A. Thomas, San Diego, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 21, 1960, Ser. No. 70,691
4 Claims. (Cl. 313—61)



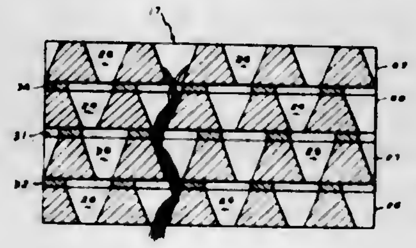
1. Apparatus for selectively detecting neutron flux emanating from a source of neutron and gamma radiation, which comprises a chamber mounted adjacent the source of radiation, one portion of said chamber facing said source and having a plurality of spaced segments formed therein for passing neutron radiation therethrough; a member mounted adjacent said segmented portion for movement relative thereto, said member having a plurality of neutron radiation passing segments formed therein in spaced relation to each other; means for imparting movement to said member to alternately advance said neutron radiation passing segments of said member into and out of alignment with the neutron radiation passing segments of said portion so that the density of the neutron flux passing from said source into said chamber varies uniformly from zero to a maximum value; and means mounted within said chamber for producing an ionization current variable in accordance with variations in the density of the neutron flux entering said chamber.

3,182,220
MULTIPLY NEUTRALIZED ION SOURCE
Dennis Gabor, London, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Mar. 18, 1960, Ser. No. 15,918
Claims priority, application Great Britain, Mar. 18, 1959, 9,430/59
19 Claims. (Cl. 313—63)

1. Ion beam source comprising means for setting up an ion stream, means positioned at a plurality of locations along said stream for injecting electrons transversely into said stream so as to neutralise the space charge of the ions in said stream, and means for preventing flow of injected electrons between different electron injecting means.



3,182,221
SECONDARY EMISSION MULTIPLIER STRUCTURE
Edmund W. Poor, Jr., Yardville, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed July 22, 1963, Ser. No. 296,878
3 Claims. (Cl. 313—103)



1. A secondary emission multiplier structure comprising: a plurality of parallel plate members each contacting the surface of each adjacent plate member; each of said plate members having a plurality of holes therein; the holes in said plate members being aligned to provide a continuous passage through the multiplier structure; the holes in at least a portion of said plate members being tapered between one surface and the other, with the surface of said tapered holes having secondary emissive properties; all of the holes in said plate members being tapered in the same direction through said multiplier structure, each of said plate members with tapered holes therein being laterally displaced with respect to each adjacent plate with holes therein, whereby the centers of the tapered holes are displaced from the center of the other tapered holes in the continuous passage through the multiplier structure, said plate members including means for insulating the secondary emissive surface of each plate from the secondary emissive surface of adjacent plate members and means for applying a voltage to the secondary emissive surfaces of said plate members.

3,182,222
HUMIDITY COMPENSATED THERMOSTAT
Lewis S. Lacy, 4038 E. 23rd St., and Jimmie L. Moon, 5976 E. King Place, both of Tulsa, Okla.
Filed June 13, 1962, Ser. No. 202,110
1 Claim. (Cl. 317—148.5)

A humidity compensated thermostat, comprising, in combination:

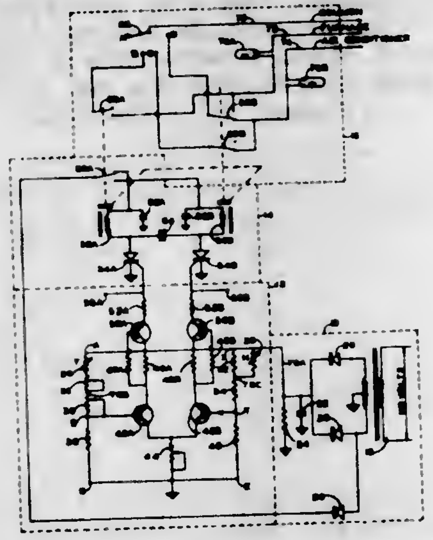
a temperature sensing element having a resistance variable with the temperature of said element;

a humidity sensing element having a resistance variable with the environment humidity in which said element is positioned;

a first transistor amplifying means having a voltage thereacross;

a first biasing resistor means in series with said temperature sensing element, said temperature sensing element and said first biasing resistor means having a voltage impressed thereacross whereby voltage across said first biasing resistors is proportional to resistance of said temperature sensing element, said first biasing resistor means coupled to said first transistor means to control current flow through said first transistor means;

a second transistor amplifying means having a voltage thereacross;

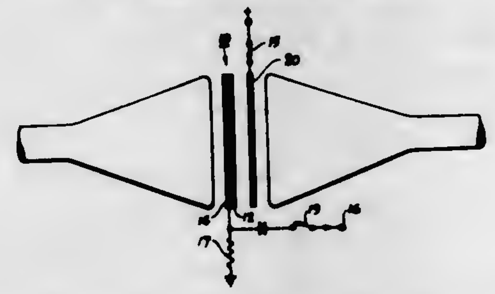


a second biasing resistor means in series with said humidity sensing element, said humidity sensing element and said second biasing resistor means having a voltage impressed thereacross whereby voltage across said second biasing resistor is proportional to resistance of said humidity sensing element, said second biasing resistor means coupled to said second transistor means to control current flow through said second transistor means;

differential detecting means operable by relative current flow through said first and second transistor means; and

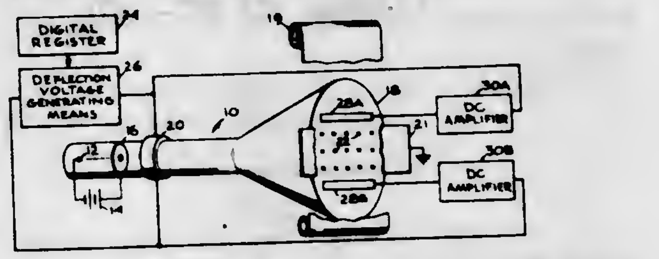
bias differential coupling means between said first and said second transistor.

3,182,223
DATA STORAGE SYSTEM WITH LIGHT BEAM WRITE/READOUT
Joseph T. McNaney, La Mesa, Calif., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed July 5, 1960, Ser. No. 40,794
2 Claims. (Cl. 315—10)



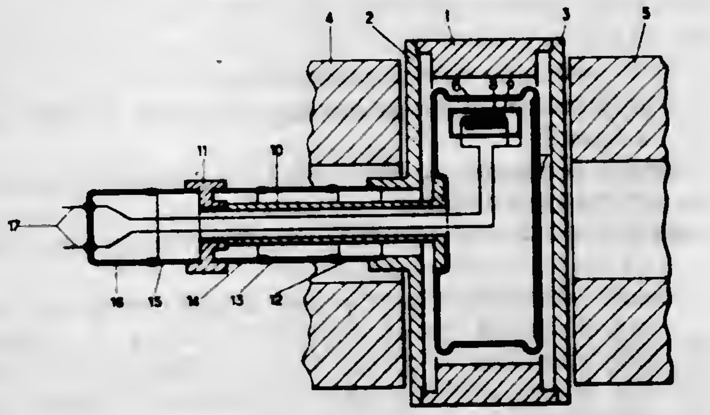
2. An information handling system comprising, a composite two-sheet information storage plate consisting essentially of a transparent electrically conductive sheet and a sheet of photoconductive material having an exposed side and a side in contact with said transparent electrically conductive sheet, means for producing an electrostatic image on the exposed side of said sheet of photoconductive material which electrostatic image is stored thereon, a load circuit for manifesting current changes therethrough, means for coupling said load circuit to said transparent electrically conductive sheet, and means for sweeping said sheet of photoconductive material with a beam of light to cause current to flow through said load circuit representative of said electrostatic image.

3,182,224
CENTERING SYSTEM FOR AN ELECTROSTATIC WRITING TUBE
Joseph J. Stone, Glenview, and Roman A. Adams, Skokie, Ill., assignors to The A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 26, 1962, Ser. No. 233,397
7 Claims. (Cl. 315—21)



1. In a cathode ray tube having a dielectric envelope, and having enclosed within said dielectric envelope means for generating and accelerating an electron beam toward the face portion of said dielectric envelope and having deflection means for deflecting said beam, the improvement comprising correction means for automatically energizing said deflection means to direct said beam toward a predetermined area in said face, said correction means comprising first and second sensing means respectively mounted on the outside of said face portion of said dielectric envelope immediately adjacent to and on opposite sides of said predetermined area for detecting the drift of said electron beam toward one of the sides of said predetermined area and for producing signals indicative thereof, and means connecting said first and second sensing means to said deflection means for actuating said deflection means responsive to signals from said first and second sensing means to deflect said electron beam to correct for said drift.

3,182,225
SOLE FOR M-TYPE TRAVELLING WAVE TUBES
Maurice Favre, Paris, France, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Mar. 7, 1961, Ser. No. 94,012
Claims priority, application France, Mar. 29, 1960, 822,735
3 Claims. (Cl. 315—39.3)

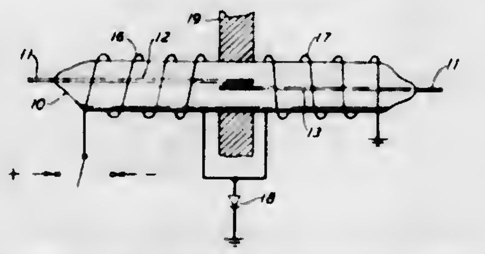


1. An M-type travelling wave tube of essentially circular structure having its axis essentially coinciding with the lines of force of the operating magnetic field, comprising essentially circular anode electrode means, sole elec-

trode means of circular shape and essentially coaxial with said anode electrode means, emissive cathode means including insulating support means for supporting said cathode means on said sole electrode means, and energizing leads leading to said cathode means, at least a portion of said sole electrode means being a hollow box effectively forming a Faraday cage for accommodating therein said cathode support means and said leads, said box being essentially composed of a body portion and of an essentially plane cover closing the space within said body portion.

3,182,226
REED RELAY

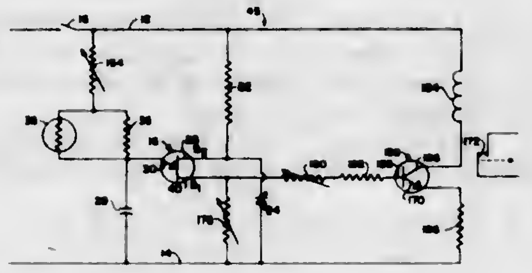
Robert Lee Peek, Jr., New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 15, 1961, Ser. No. 110,081
8 Claims. (Cl. 317—137)



1. A polar locking relay having positive nonmarginal operate and release action, comprising a reed switch unit having a pair of remanent magnetic control members, a first control coil encompassing one of said control members, a second control coil encompassing the other of said control members, said coils being serially connected and adapted to produce substantially equal but oppositely directed magnetic fields when energized by a control current, and asymmetrically conducting means connected in parallel with one of said coils.

3,182,227
SIGNAL CONTROL APPARATUS

Edward G. Brittain, Covina, and William A. Stein, Arcadia, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Filed Aug. 14, 1961, Ser. No. 131,263
5 Claims. (Cl. 317—142)



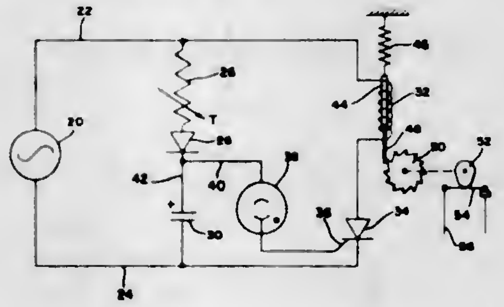
1. A switching device, comprising:
- a unijunction transistor having an emitter, a base-1 and a base-2;
- means connected to the base-2 for establishing it at a reference potential;
- an electric charge accumulator connected to the emitter of the unijunction transistor;
- means interconnecting the base-2 and emitter for storing charge in the accumulator whereby the unijunction transistor is placed in a conductive state when the charge stored in the accumulator reaches a certain predetermined level;
- a reset device operatively related to the transistor and accumulator for momentarily effecting full discharge of the accumulator on the transistor being in a conductive state, whereby a cyclic occurrence of conductive states of the transistor is achieved of substantially constant frequency;
- an amplifier fed by signals from base-1 of the unijunction transistor generated when the transistor is conductive; and
- a relay driven by the amplifier.

ERRATUM

For Class 317—148.5, see:
Patent No. 3,182,222

3,182,228
CIRCUIT FOR REPEATEDLY ENERGIZING A LOAD

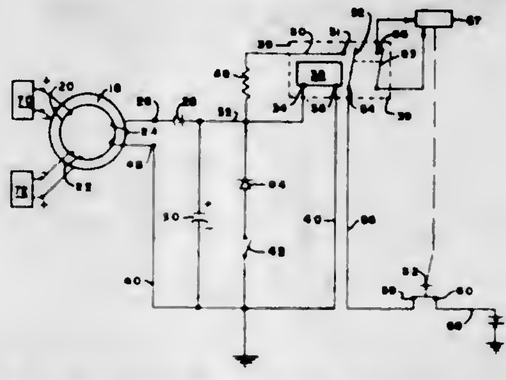
Charles C. Gambill, Tipp City, and John W. Murphy, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 5, 1962, Ser. No. 177,334
5 Claims. (Cl. 317—148.5)



2. In combination, first and second alternating current supply conductors, a first branch circuit comprising a resistance and a diode and a capacitor connected in series with each other in the order named from said first to said second supply conductor, a second branch circuit comprising an electrical load and a solid state controlled rectifier connected in series with each other across said supply conductors in parallel with said first branch circuit, said solid state controlled rectifier having a gate terminal, and a third branch circuit comprising a glow discharge tube connecting said gate terminal and said first branch circuit between said diode and said capacitor, said controlled rectifier and said diode being oriented to direct the flow of current respectively through said second and first branch circuits from said first to said second supply conductor.

3,182,229
RELAY ACTUATING SATURABLE INDUCTOR

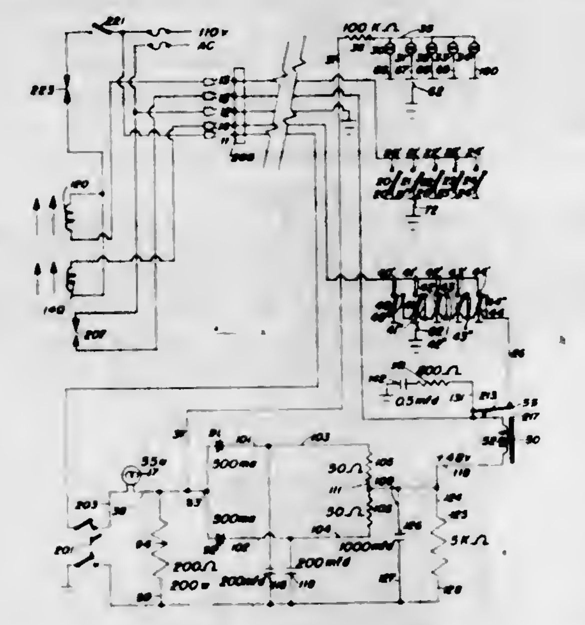
Robert E. Weslund, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 14, 1961, Ser. No. 103,126
4 Claims. (Cl. 317—148)



1. In a relay actuating circuit, the combination comprising: a magnetic core having substantially rectangular hysteresis loop characteristics, and having at least two windings coupled thereto; a source of bipolar pulses connected to a first of said windings for initially setting said core in a first remanent magnetic state, and for subsequently driving said core to its opposite magnetic state to induce substantial signals in a second of said windings; relay coil means having first and second terminals and at least one set of contacts associated therewith; energy storage means connected across the first and second terminals for storing said signals in a first interval of time, and for supplying energy to said relay means for a second interval of time greater than said first interval; a voltage source connected to one of said set of contacts; means connecting the other of said set of contacts to said first terminal, such that said energy supplied by said storage means initially causes said contacts and said voltage source maintains said contacts in a closed condition; means to effect an opening of said contacts; means connecting said terminals in series circuit with said second winding for allowing the signal induced by the collapse of the magnetic field in the relay to re-establish the preexisting remanent state of said core.

3,182,230
SWITCHING DEVICE

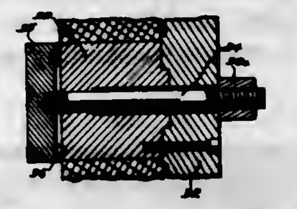
Lewis G. Boone, 311 Norris Court, Madison, Wis.
Filed Apr. 13, 1959, Ser. No. 805,986
11 Claims. (Cl. 317—137)



1. An electrical switching device of the type described comprising a selector circuit, a shunt circuit, a control circuit, and an electric power supply common to all circuits, said selector circuit connecting from said power supply through input signal receiving means, thence through winding means on an automatic stepping switch, hence through a magnetizable movable armature of said stepping switch, thence to first bank of closable terminals of at least one multiple closable position selector switch thence through the throw of each said switches to grounding terminals of said selector switches which contact with a stepwise moving contact on said automatic stepping switch, said moving contact being electrically grounded, said shunt circuit connecting across said selector circuit between said electromagnet winding and said electrical ground, said control circuit connecting from said power supply through output signal delivering means, thence through second selectively closable terminals of said selector switches, thence through said throw of each said switch into contact with said stepwise moving contact of said automatic stepping switch, each of said selector switches having multiple closed circuit positions with ground connection being made by having grounding terminals of said switches being contacted individually and sequentially by a stepwise moving contact on said automatic stepping switch.

3,182,231
MAGNET POLE CAP CONSTRUCTION

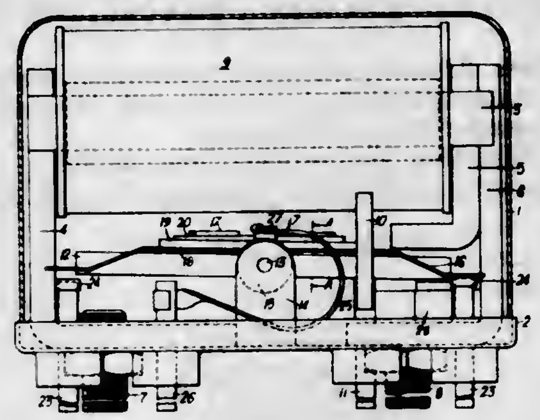
Robert E. Gang, Sunnyvale, and Forrest A. Nelson, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Sept. 26, 1960, Ser. No. 58,298
12 Claims. (Cl. 317—158)



1. A magnet having two pole members forming an air gap, a circular pole cap mounted on the face of at least one of said members, said pole cap having an axially aligned hollow cylindrical recess in the surface adjacent to said member for increasing the homogeneity of the magnetic field in the air gap, and means for adjusting the size of said recess whereby a highly homogeneous magnetic field is provided in the air gap.

3,182,232
ELECTROMAGNETIC RELAYS

William Henry Drury Yule, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 9, 1962, Ser. No. 186,100
Claims priority, application Great Britain, June 12, 1961, 21,134/61
6 Claims. (Cl. 317—171)



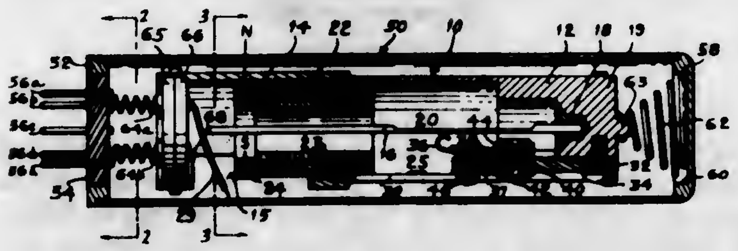
1. In a non-polarized electromagnetic relay, a magnetic structure comprising a pair of salient poles, flux generating means associated with said structure, a balanced armature positioned between said poles in flux linking relationship therewith and operable between an operated and unoperated position in response to variations in magnetic flux generated by said flux generating means traversing the said armature, and magnetic damping apparatus disposed adjacent one end of said armature to urge the armature in its unoperated position by a second magnetic flux traversing said armature in a direction normal to the direction of the first said magnetic flux.

3,182,233
MOUNTING FOR VIBRATORY REED DEVICES

Kenneth R. Woolley, Xenia, and Larry L. Quigley, Piqua, Ohio, assignors to Ledex, Inc., Dayton, Ohio, a corporation of Ohio
Filed May 8, 1964, Ser. No. 366,095
10 Claims. (Cl. 317—182)

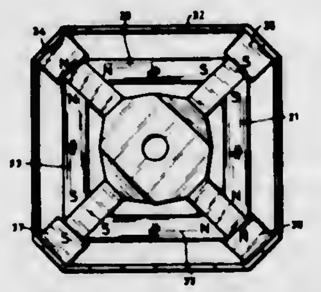
1. An assembly for mounting an elongate reed element for vibration thereof comprising: support means for said reed element, said support means having spaced end members, said reed element being supported at one end thereof by one of said end members and having its free end projecting toward the other of said end members, an outer frame having spaced end walls receiving said

end members therebetween, first spring means interposed between and engaging said one end member and one end wall of said outer frame, second spring means interposed between and engaging said other end member and the other end wall of said outer frame, said first and second spring means being normally in a condition of stress and thereby suspending said support means away from contact with said outer frame, said first and second spring means comprising the sole means suspending said support means away from contact with said frame, said first spring means comprising an elongate body portion having large and small bases at the opposite ends thereof, the large base of said body portion engaging said one end wall substantially continuously along the outer perimeter thereof and said body portion converging in the direction of said small base, said small base engaging said one end member, and means to restrain movement of said small base relative to said one end member in directions transverse to the longitudinal axis of said reed element.



3,182,234
PERMANENT MAGNET SYSTEM FOR FOCUSING AN ELECTRON BEAM IN A TRAVELLING WAVE TUBE

Paul Meyerer, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed Oct. 30, 1961, Ser. No. 148,655
Claims priority, application Germany, Feb. 22, 1961, S 72,657
4 Claims. (Cl. 317—200)

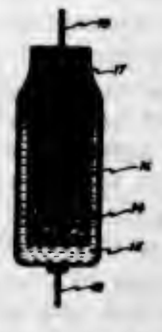


1. In a permanent magnet arrangement for producing a magnetic field for focusing an electron beam over an extended path, having permanent magnets which are surrounded by a shielding housing made of soft iron; the improvement which comprises, arranging in the regions of great magnetic scattering flux, between the permanent magnets and the shielding housing, ferrites of great coercive power which are magnetized with a polarization oriented opposite to the direction of the scattering flux.

3,182,235
ELECTRICAL CAPACITOR AND TITANIUM-CONTAINING ELECTRODE MATERIAL THEREFOR

Donald Mohler, Saratoga Springs, and John H. Westbrook, Ballston Spa, N.Y., and Alfred L. Jenny, Columbia, S.C., assignors to General Electric Company, a corporation of New York
Filed Aug. 11, 1960, Ser. No. 48,906
11 Claims. (Cl. 317—230)

1. An electrical capacitor comprising, in combination, a pair of electrodes and a dielectric oxide film formed on one of said electrodes, at least said one electrode comprising an alloy of titanium and a metal selected from the group consisting of tin and boron.



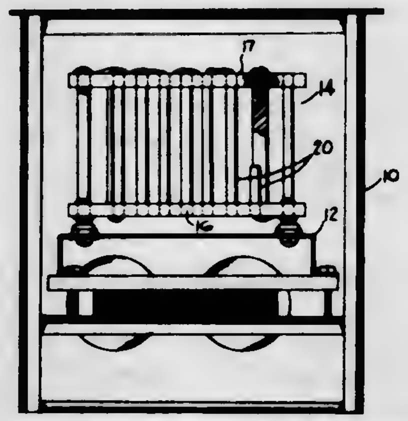
3,182,236
ELECTROLYTE FOR ELECTROLYTIC CAPACITOR

Otto F. C. Stockel, London, England, assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
No Drawing. Filed Nov. 20, 1961, Ser. No. 153,742
Claims priority, application Great Britain, Nov. 22, 1960, 40,079/60
1 Claim. (Cl. 317—230)

In an electrolytic capacitor having an oxide coated electrode and another electrode, an electrolyte in conductive contact between said electrodes, said electrolyte consisting essentially of 50 grams of boric acid and 10 grams of pyrogallol in 100 grams of ethylene glycol, said electrolyte having a pH of about 5 by the presence of 30 ml. of methylamine.

3,182,237
HIGH VOLTAGE MULTI-UNIT ASSEMBLY HAVING READILY REPLACEABLE UNITS

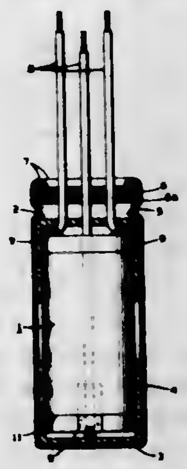
Joseph Kozinski, Chicago, Ill., assignor to H. G. Fischer & Co., Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 8, 1962, Ser. No. 193,230
3 Claims. (Cl. 317—234)



1. In a high voltage, low current assembly, the combination of a pair of flat insulating plates, means for maintaining said plates in spaced, parallel, laterally offset relation, said plates having registering apertures therethrough, a plurality of rod-shaped circuit components disposed in laterally offset parallel relation, each component having its ends registering with apertures in said insulating plates, each component having terminal lead wires extending from opposite ends thereof with such lead wires extending at the outer faces of said insulating plates, said components being retained against lateral movement by said insulating plates, each terminal lead wire being long enough to overlap the terminal lead wire of an adjacent component so that a number of such components can be connected in series and metallic helical springs disposed over the over-lapping ends of terminal lead wires to maintain the series connections of said components, each spring accommodating a pair of overlapping terminal lead wires extending into the coils of a spring from opposite ends thereof, said springs and lead wires permitting ready replacement of a defective component.

3,182,238
ENCASED TUBULAR CAPACITOR

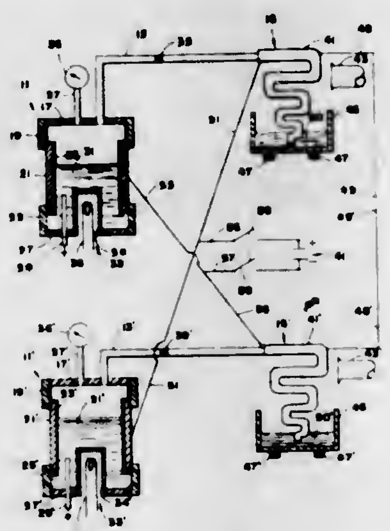
Eric H. Toder, Ruislip, Middlesex, and Victor E. W. Bond, Windsor, Berkshire, England, assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Feb. 5, 1962, Ser. No. 171,023
7 Claims. (Cl. 317—260)



1. An electrostatic capacitor unit comprising a metal casing, an oil-impregnated rolled capacitor section located therein, over and about at least one end of said section is fitted a cap of insulating material held in place against said end by an internal beading formed in said casing, said cap having lead openings receiving lead wires, a closure member positioned in at least one end of said casing.

3,182,239
ELECTROSTATIC CHARGING

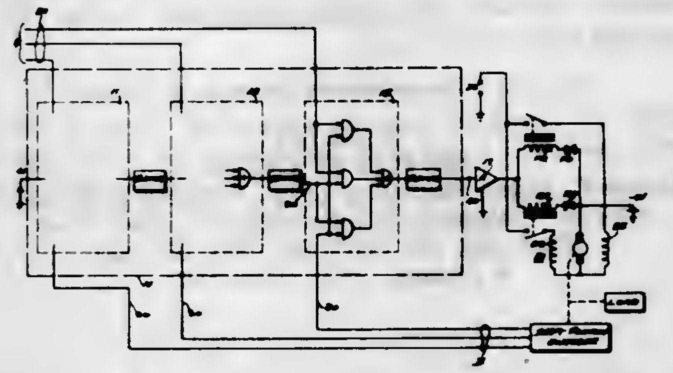
Howard W. Aldag, Utica, N.Y., assignor to The Bendix Corporation, Utica, N.Y., a corporation of Delaware
Filed May 25, 1961, Ser. No. 112,723
7 Claims. (Cl. 317—262)



1. The method of generating an electrostatic potential comprised of establishing a first body of water having a small positive charge, establishing a second body of water having a small negative charge, heating said first and second bodies of water to provide respectively a positively-charged flow of steam and a negatively-charged flow of steam, separately condensing said flows to provide a positively-charged condensate and a negatively-charged condensate, impressing the charge of the positively-charged condensate as formed on said second body of water, impressing the charge of the negatively-charged condensate as formed on said first body of water, continuing to form said condensates so that a high potential exists between said condensates.

3,182,240
DIGITAL COMPARATOR

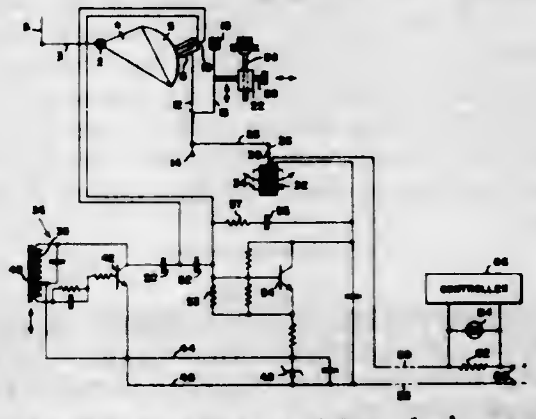
Hermann Schmid, Binghamton, N.Y., assignor to Link Division of General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Jan. 9, 1962, Ser. No. 165,140
15 Claims. (Cl. 318—28)



4. In a digital servo system responsive to digital command signals and including output monitoring means producing digital feedback signals an error indicator comprising: a plurality of stages each having a first input terminal connected to the inputs of a first "and" circuit and a second "and" circuit, a second input terminal connected to the input of said second "and" circuit and a third "and" circuit, a third input terminal connected to the inputs of said first and third "and" circuits, means connecting the outputs of said "and" circuits to the inputs of an "or" circuit, and an output terminal connected to the output of said "or" circuit, the output terminals of successive ones of said stages being connected to the second input terminals of the stage next following, the first input terminals of said stages being energized by said digital command signals, the third input terminals of said stages being energized by said digital feedback signals, and the output terminal of the stage energized by the most significant digit signals of said command signals and said feedback signals producing an analog error signal having a first value when said command signal equals said feedback signal, a second value when said command signal exceeds said feedback signal, and a third value when said feedback signal exceeds said command signal.

3,182,241
MEASURING APPARATUS INCLUDING A BALANCING SERVO SYSTEM

Louis A. Ollivier, Huntingdon Valley, James B. Skitt, Jr., Limekiln Pike, Chalfont, Roy F. Schmoock, Northampton, and Harris Shaffer, Abington, Pa., assignors to Fischer & Porter Company, Warminster, Pa., a corporation of Pennsylvania
Filed Sept. 8, 1961, Ser. No. 136,933
8 Claims. (Cl. 318—31)

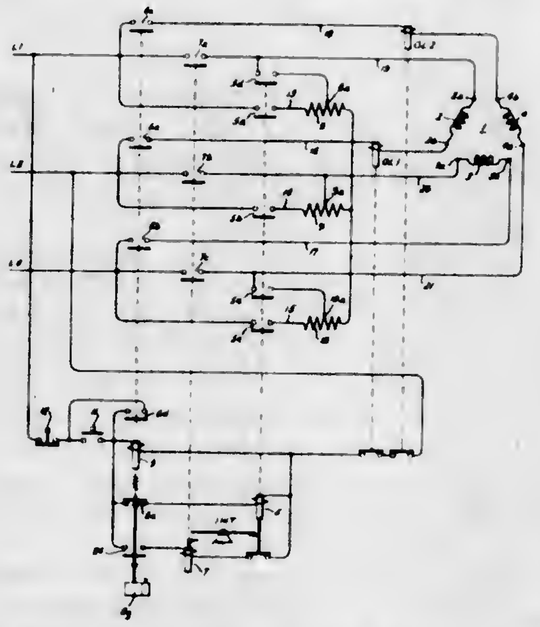


1. Apparatus comprising a pickup device, an element associated with said pickup device and spaced slightly therefrom, said pickup device and element being mounted for relative movement and conjointly providing a reactance variable with their relative positions, means biasing said pickup device and element for relative movement,

means providing a tuned circuit including said reactance as a tuning element, an oscillator, motor means, connections through which said oscillator operates said motor means through said tuned circuit, connecting means through which said motor means produces in opposition to said bias relative movement between said pickup device and said element to maintain their relative position substantially constant, and means responsive to the current operating said motor means.

3,182,242
MOTOR STARTER

James C. Elder, Berkeley, Calif., assignor to General Electric Company, a corporation of New York
Filed Jan. 30, 1962, Ser. No. 169,740
4 Claims. (Cl. 318—230)

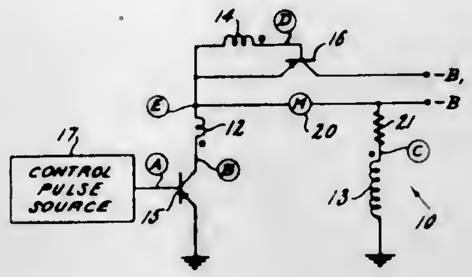


1. A starter for a six lead delta wound motor having three terminally separated phase windings with all winding terminals separately brought out for external delta connection to three phase power supply conductors comprising: an auto transformer having three phase windings provided with intermediate reduced voltage taps, means for connecting a first terminal of each of said motor phase windings to the intermediate tap of a corresponding transformer phase winding, a starting switching device for connecting each of said transformer phase windings to a corresponding one of said three phase power supply conductors, a first switching device having contacts for establishing a separate electrical connection from the second terminal of each of said motor phase windings to a corresponding one of said supply conductors, and a second switching device for establishing a separate electrical connection from each of said first terminals of said motor phase winding to a corresponding one of said supply conductors, said connections being isolated from each other throughout their extent from said contacts to said first and second terminals so that the contacts of said first and second switching devices when closed are in series with the motor phases within the delta circuit configuration and carry motor phase currents during starting and running.

3,182,243
PULSE-DEVELOPING CONTROL CIRCUIT

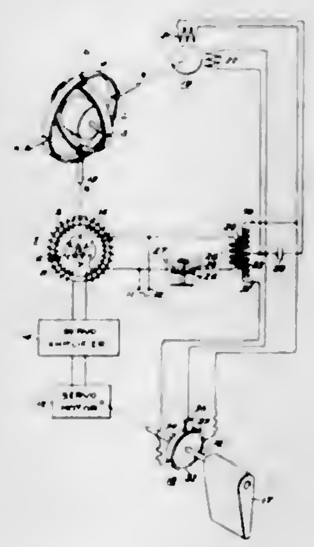
Robert P. Burr, Lloyd Harbor, Huntington, N.Y., assignor to Circuit Research Company, Glen Cove, N.Y., a partnership of New York
Filed June 28, 1961, Ser. No. 120,256
8 Claims. (Cl. 318—269)

4. A control circuit comprising: a pulse transformer including a saturable magnetic core and primary, secondary, and tertiary windings magnetically coupled thereto; a direct-current source having three potential terminals; first and second normally nonconductive transistors; a motor coupled in series with said primary winding and across first and second terminals of said direct-current source and said first normally nonconductive transistor; said motor also being coupled in series with said second transistor and across second and third terminals of said direct-current source; circuit means for supplying a control pulse to said first transistor to render said first transistor conductive to pass current through said primary winding and said motor to saturate said core in one sense and to energize said motor in one sense; a resistor; said secondary winding being coupled to said source through said resistor for saturating said core in the other sense to develop an output pulse at said tertiary winding upon the termination of said control pulse; said tertiary winding being coupled to said second transistor for rendering said second transistor conductive to energize said motor in the other sense upon the termination of said control pulse to stop said motor.



3,182,244
ZEROING APPARATUS FOR INERTIALLY GUIDED PILOTLESS CRAFT

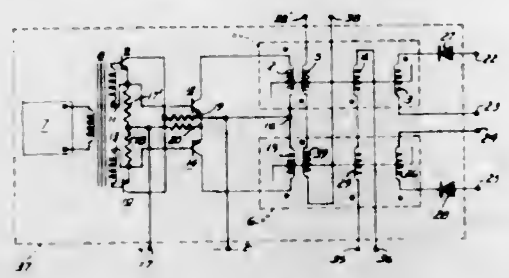
Roland V. Fitzroy, Jr., and James M. Cooper, both of Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 31, 1951, Ser. No. 208,786
2 Claims. (Cl. 318—489)



1. In a pilotless craft having a surface for controlling the movement of said craft about a control axis, position-maintaining means including a gyro for detecting angular movement of said craft about said control axis, servo-means responsive to said position-maintaining means for actuating said surface, and an energizable auxiliary circuit further comprising, switch means selectively responsive to movement of said surface in either direction from a predetermined position, a reversible torque motor connected to said gyro and responsive to apply torque in a direction dependent upon the direction of operation of said switch means whereby said gyro is precessed in a direction to restore the surface to its neutral position, and means for de-energizing said auxiliary circuit upon the launching of said craft.

3,182,245
SELF-SATURATING REACTOR SYSTEM

Allen B. Rosenstein, 3148 Barry Ave., West Los Angeles, Calif.
Filed Aug. 29, 1960, Ser. No. 52,693
12 Claims. (Cl. 321—16)

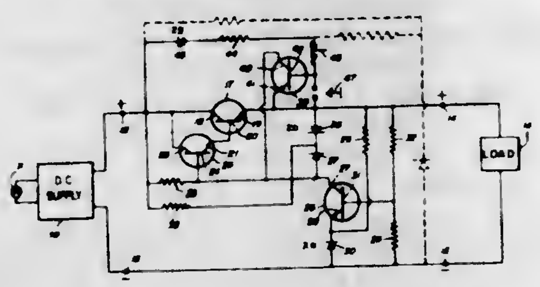


1. Pulse-width control apparatus comprising a self-saturating transformer having an input winding and a control winding, a source of power connected to said input winding a load coupled to said input winding for obtaining power therefrom, switching means connected with said input winding for cyclically applying power thereto to produce substantially rectangular pulses across said load, and terminal means connected to said control winding for imparting a control signal to said control winding, the magnitude of which determines the width of said pulses.

10. Pulse-width control apparatus comprising a self-saturating transformer having an input winding, a control winding, and an output winding, a source of power, a load connected across said output winding for obtaining power therefrom, switching means connected in series with said input winding and with said source of power for cyclically applying power to said input winding to produce substantially rectangular pulses in said output winding, and terminal means connected to said control winding for imparting a control signal to said control winding, the magnitude of which determines the width of said pulses.

3,182,246
ELECTRICAL POWER SUPPLY REGULATOR SYSTEM

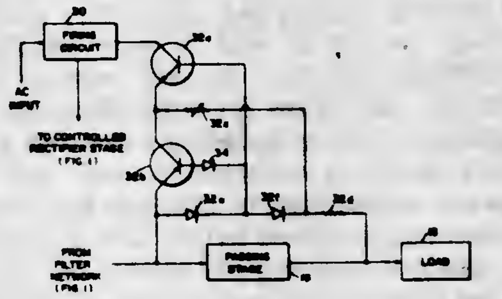
Allan G. Lloyd, Hanover, N.J., assignor, by mesne assignments, to General Mills, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 30, 1960, Ser. No. 59,760
6 Claims. (Cl. 323—22)



1. An electrical power supply regulator system comprising an input circuit adapted to be coupled to a source of unidirectional power and an output circuit, power translating means for supplying electrical power from said input circuit to said output circuit from which power normally at substantially constant voltage may be supplied to a load device, first control means responsive to an increase of current of said output circuit above the current value at full-load output current for controlling said translating means initially to establish a limit upon the maximum value of current which may thereafter be translated by said translating means, second control means responsive to a decrease of said output voltage below said substantially constant voltage output for further controlling said translating means substantially to reduce the value of current translated by said translating means, and means responsive to said reduced voltage translation for periodically reestablishing said constant-current control over said translating means by said first control means to limit for the duration of said decrease of output voltage the average value of current translated by said translating means.

3,182,247
POWER SUPPLY SENSING MEANS

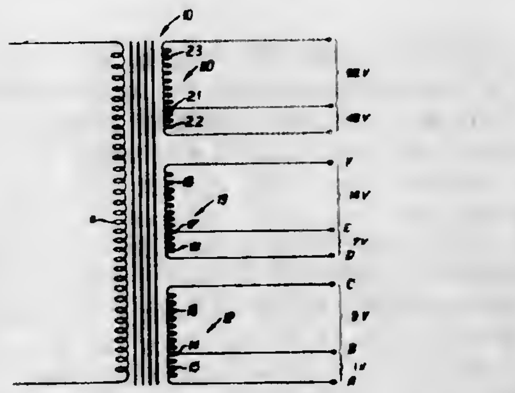
Russell Loucks, Ridgefield, Conn., assignor, by mesne assignments, to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed June 2, 1961, Ser. No. 114,351
6 Claims. (Cl. 323—22)


30
AC INPUT
TO CONTROLLED RECTIFIER STAGE (FIG. 1)
FROM FILTER NETWORK (FIG. 1)
LOAD

1. A device for sensing changes in voltage comprising a network subject to direct voltage changes in the presence of an alternating voltage ripple component, a plurality of series connected impedance devices in parallel with the network, the alternating voltage component appearing substantially across one of the impedance devices including resistance means and the direct voltage change appearing substantially across the remaining impedance devices including diode means, means applying the changes in direct voltage appearing across the remaining impedance devices to a controlling means to correct for the changes of direct voltage in the network beyond a predetermined value.

3,182,248
VOLTAGE BUILDING TRANSFORMER

Bernard F. McNamee, Altadena, Calif., assignor to Dressen-Barnes Electronics Corporation, Pasadena, Calif., a corporation of California
Filed Jan. 29, 1962, Ser. No. 169,306
3 Claims. (Cl. 323—47)



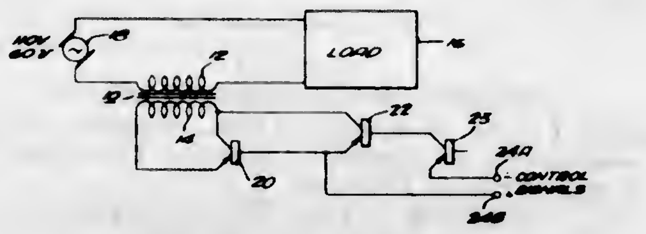
2. An adjustable transformer comprising a magnetic core having a primary winding and a pair of secondary windings having turn ratios related as the numbers seven to one, each winding having separate end terminals and an intermediate terminal dividing the corresponding winding into sections having turn ratios to provide voltages in the ratio of two to one such that cumulative and differential connection of selected winding section terminals provides any voltage proportional to numbers of the series 1, 2, 3, 4, 5, 6, . . .

3,182,249

IMPEDANCE CONTROLLED REACTOR DEVICE

Marcel A. Pahlavan, Los Angeles, Calif. (% Aerospace Products Research Corp., 1429A Lincoln Blvd., Santa Monica, Calif.)

Filed Dec. 1, 1961, Ser. No. 156,350
11 Claims. (Cl. 323—87)



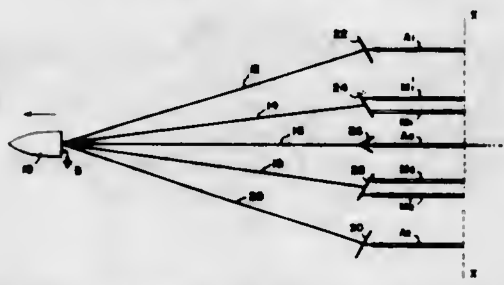
1. A control circuit comprising a saturable transformer having a primary winding and a secondary winding, means for applying current to said primary winding, a load, means coupling said load to said primary winding to derive energy, and means for controlling the impedance of said primary winding including a first and second transistor, each having a collector, emitter, and base electrode, means connecting the collector electrodes of said first and second transistors to one end of said secondary winding, means connecting the emitter of said first transistor to the other end of said secondary winding, means connecting the base of said first transistor to the emitter of the second transistor, and means including an impedance to apply a control signal between the base electrodes of said first and second transistors to control the conductive condition of said first and second transistors.

3,182,250

SURFACE ELECTRICAL PROSPECTING APPARATUS UTILIZING CURRENT FOCUSING ELECTRODE MEANS

Fred M. Mayes, Richardson, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Feb. 23, 1962, Ser. No. 175,030
3 Claims. (Cl. 324—1)



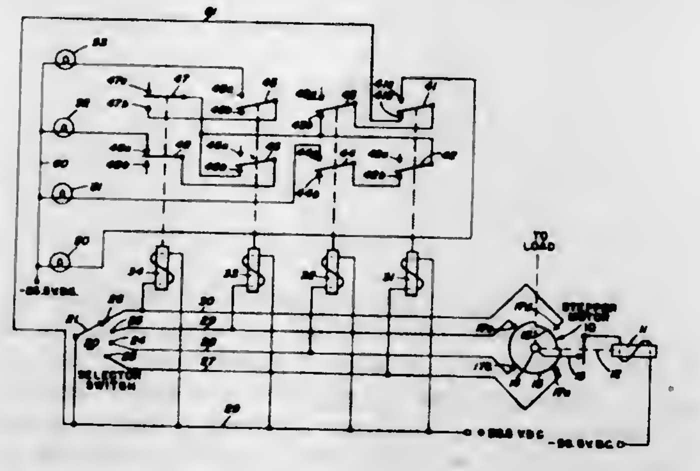
1. Electrical resistivity logging apparatus for the logging of formations covered by water comprising a boat, an electrode array comprising at least one current emitting electrode and control electrodes for focussing current emitted from said current electrode substantially vertically into the water covered formations, said electrode array, comprising a plurality of elongated members individually connected to said boat for towing thereby by corresponding cables including conductors connected to the electrodes, said members being mechanically independent of each other except for their common connection to the boat through said cables, paravanes individually secured to said members and their respective cables and disposed to produce extensive spacing of said members laterally of the direction of towing thereof by said boat so that the electrode array is spread over a wide region transverse to the direction of towing, and apparatus carried by said boat and electrically connected to said electrodes through said cables to provide said current and focusing current to said control electrodes and to record indications of electrical resistivity of said formations during passage of the electrode array thereacross.

3,182,251

RELAY INDICATING AND TESTING CIRCUIT

Richard J. Fiedler, Pittsfield, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed July 31, 1962, Ser. No. 213,829
4 Claims. (Cl. 324—28)



1. A circuit for indicating the operating of a remotely located electromagnetic device, said circuit having testing capabilities, comprising:

(*a*) a selector switch having a contact arm and a plurality of terminals,
(*b*) individual energization circuits connected to each terminal of said selector switch for actuating said electro-mechanical device,
(*c*) means coupled to said electro-mechanical device for sequentially interrupting said individual energization circuits,
(*d*) a plurality of relays connected across said selector switch from said individual energization circuits to said contact arm and
(*e*) an indicator circuit controlled by said plurality of relays whereby upon manipulation of said selector switch said electro-mechanical device is actuated over one of said individual energization circuits until the latter is broken by said interrupting means and one of said relay is de-energized to complete said indicator circuit.

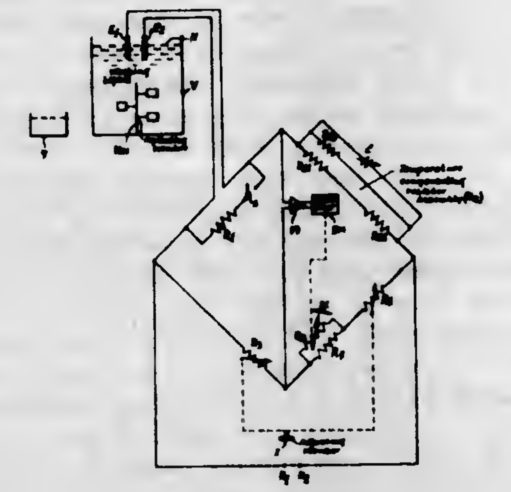
3,182,252

BLOOD LOSS METER

Janwillem van den Berg, Petrus Campersingel 151a, Groningen, Netherlands

Filed Dec. 16, 1960, Ser. No. 76,294
4 Claims. (Cl. 324—30)

1. A blood loss meter comprising a measuring vessel adapted to receive a washing liquid of known electric conductivity, an agitator in said measuring vessel adapted for mixing the blood adsorbed by dressings with said washing liquid, an A.C. bridge circuit including four junctions and four arms connected between the said junctions, an alternating current source connected between two diametrically opposed junctions, a pair of electrodes in said measuring vessel and connected in a first arm of said bridge circuit, a first resistor, a second resistor in series with said first resistor and connected together with the same in a second arm of said bridge circuit diametrically opposed to said first arm, a variable third resistor in parallel with said first resistor, a fourth resistor connected in a third arm of said bridge circuit, a resistive imoedance connected in the fourth arm of said bridge circuit, an amplifier having an input connected with the remaining diametrically opposed junctions of said bridge circuit, a servo-motor coupled to said amplifier and controlling said third resistor to keep the bridge circuit in equilibrium, an indicator mechanically coupled with said third resistor, a scale calibrated in volume parts of blood and positioned opposite to said indicator, means for adjusting the ratio between the resistance values of said first and said second resistor, so that this ratio may be adjusted, for a given patient, to $(g_2-g_1):g_1$, wherein g_1 is the electric conductivity of the



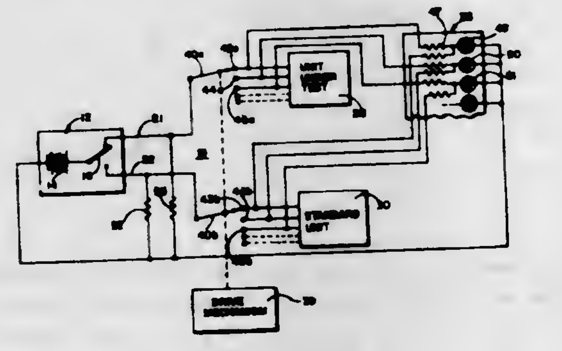
washing liquid and g_2 the electric conductivity of the blood of the patient, and means operated simultaneously with said ratio adjusting means for adjusting the resistance value of an arm of said bridge circuit adjacent to said first arm in such manner that the equilibrium of the bridge circuit is maintained.

3,182,253

WIRING TESTER INCLUDING A STANDARD UNIT AND A SELECTIVE SWITCH MEANS

Daniel W. Dorsch, La Habra, Raymond L. Woodward, Lakewood, and Leon A. Rovelsky, Seal Beach, Calif., assignors to North American Aviation, Inc.

Filed June 13, 1960, Ser. No. 35,538
6 Claims. (Cl. 324—51)



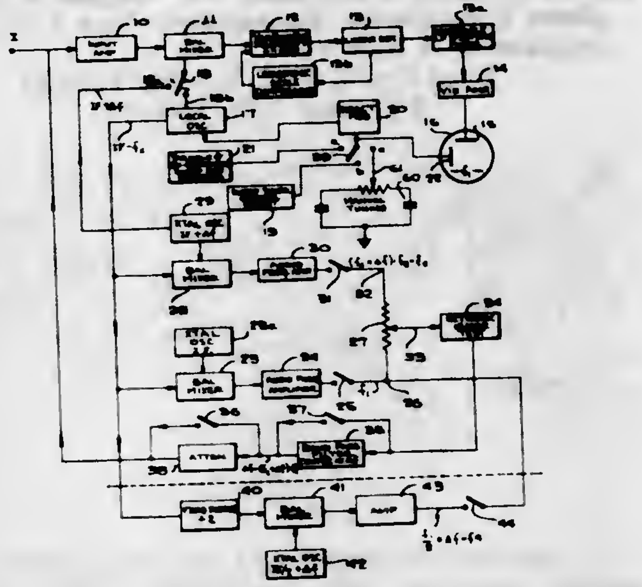
1. A wiring tester for checking the wiring continuity in an electrical unit under test against that of a standard unit comprising a voltage source, means for alternately connecting one terminal of said voltage source to a selected terminal on said electrical unit under test and a corresponding selected terminal on said standard unit at a frequency of approximately 5 cycles per second, and display lamp means connected in series with said standard unit and said unit under test for producing a visual display indicative of the correspondence or non-correspondence between the wiring in said unit under test and said standard unit, the other terminal of said voltage source being connected to said display lamp means which comprises a plurality of neon lamps, a substantially steady state of said lamps being indicative of correspondence between the wiring of said standard unit and said unit under test and a flickering of one of said lamps being indicative of noncorrespondence therebetween.

3,182,254

INTERMODULATION DISTORTION ANALYZER FOR PLOTTING SECOND AND THIRD ORDER COMPONENTS

Edward F. Feldman, New Rochelle, and Bela Ranky, Flushing, N.Y., assignors, by mesne assignments, to The Singer Company, a corporation of New Jersey

Filed Oct. 9, 1961, Ser. No. 143,793
12 Claims. (Cl. 324—57)



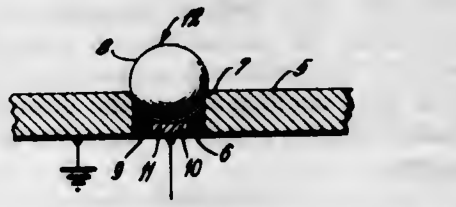
11. In an intermodulation distortion analyzer, means for generating a first band of frequencies $(nf_1+\Delta f)$, where n is an integer and Δf a small frequency increment and f_1 a scanning frequency which scans over a band, means for generating a second band of frequencies nf_1, where n includes values of ½ and integral values, and where f_1 is continuously identical in said first and second bands of frequency, means for applying said first and second bands of frequency to a system under test and for deriving therefrom a signal of frequency Δf only, and means for plotting the amplitude of said signal of frequency Δf against said frequency f_1.

3,182,255

INSTRUMENT FOR CAPACITIVELY TESTING THE CONDITION OF LUBRICATING OIL

Evan L. Hopkins and Lee K. Irwin, Emporia, Kans., assignors to Hopkins Manufacturing Corporation, Emporia, Kans., a corporation of Kansas

Filed Feb. 11, 1960, Ser. No. 8,065
4 Claims. (Cl. 324—61)

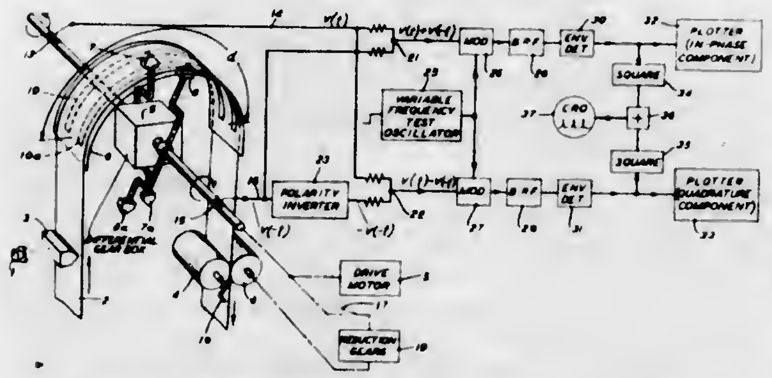


4. An instrument for testing the condition of a fluid by indicating an electrical characteristic thereof comprising a support having an opening therein, electrical insulating means secured to the walls of said opening, an electrically conductive insert supported within said insulating means and having a spherically concave surface portion forming a receptacle for a sample of fluid to be tested, an electrically conductive sphere, mounting means disposed on said support about and immediately adjacent to said opening, the diameter of said mounting means being less than the diameter of said sphere, said sphere being removably directly engageable with said mounting means to locate the surface of said sphere in a predetermined position opposite and slightly spaced from said spherically concave surface portion of said insert to form an electrical cell for retaining a predetermined sample of fluid therebetween, and an electrical circuit means in-

cluding said insert and said sphere for indicating an electrical parameter dependent upon the electrical characteristics of such a sample of fluid.

3,182,256
WAVE ANALYSIS SYSTEM UTILIZING TIME REVERSAL

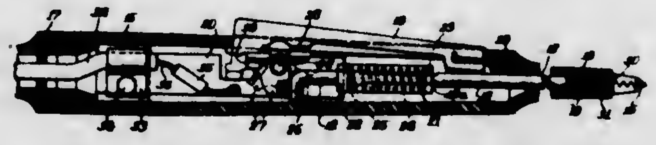
Harold B. Andrew, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 8, 1962, Ser. No. 229,233
4 Claims. (Cl. 324—77)



1. Apparatus for analyzing a complex periodic wave to develop individual indications of the coefficients of the cosine terms and of the sine terms of its Fourier series expansion which comprises
  means for making a space-variant record of said wave,
  means for scanning said record in one direction to develop a forward time wave $v(t)$,
  means for scanning said record in the opposite direction to develop a reverse time wave $v(-t)$,
  means for additively and subtractively combining said waves to form a sum wave $v(t)+v(-t)$ and a difference wave $v(t)-v(-t)$,
  an auxiliary, single-phase source of variable frequency oscillations,
  means for individually modulating said sum wave and said difference wave by the oscillations of said auxiliary source to develop a first and a second product wave,
  filter means for individually selecting, from among the components of said first and second product waves, only those that lie within a specified frequency band,
  and means for indicating the magnitudes of said selected components individually,
  whereby, for each distinct frequency of said auxiliary oscillations, the amplitudes of said selected components are proportional, respectively, to the desired cosine term coefficient and the desired sine term coefficient of said complex wave for a corresponding frequency.

3,182,257
ELECTRONIC TEST PROBE

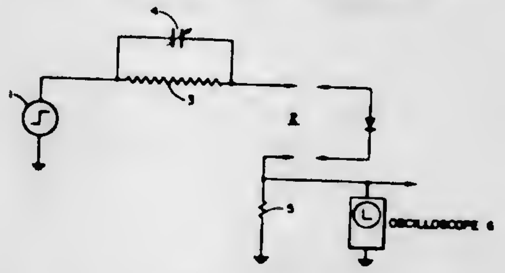
Stanley A. Linkowski, Franklin Park, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed May 18, 1961, Ser. No. 111,024
3 Claims. (Cl. 324—149)



1. A test probe apparatus for use in testing electrical circuits including in combination; a cylindrical housing assembly constructed of insulating material, said housing assembly including a main housing section having an extended tubular portion of reduced diameter, a rear housing section having a cable sleeve of pliant material covering its rearward end, said housing sections having mating threads for joining the same together, support means having a guide portion and a mounting portion contained within said housing assembly, a test cable extending through said cable sleeve into said housing assembly and being mechanically clamped to said mounting portion, a pushbutton lever extending within a longitudinal slot in said main housing, means attaching one end of said pushbutton lever to said main housing with the other end thereof being free to move in a downward motion on being depressed, mechanical mating jaws partially contained within said extended tubular portion and having an operating shaft attached thereto and extending inwardly into said housing assembly, spring means within said housing assembly coupled to said operating shaft for drawing said jaws into said housing, a mechanical crank arm pivotably attached to said guide portion and bearing against said pushbutton lever and said operating shaft, said crank arm being operative to transmit the downward motion of said pushbutton lever as a forward motion to said operating shaft thereby extending said mechanical jaws outward from said tubular portion, said jaws having spring means to open the same in the extended position, said tubular portion being shaped to engage and compress said jaws upon movement of said operating shaft to draw said jaws into said housing, and compensating circuit means contained within said housing assembly mechanically mounted on said mounting portion and electrically connected between said test cable and said mating jaws to adapt said test probe apparatus for a particular type of electrical measurement.

3,182,258
TEST METHOD FOR MEASURING THE FORWARD DYNAMIC TIME CONSTANT OF DIODES

Frank J. Potter, Penfield, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware
Filed Oct. 23, 1961, Ser. No. 146,759
1 Claim. (Cl. 324—158)

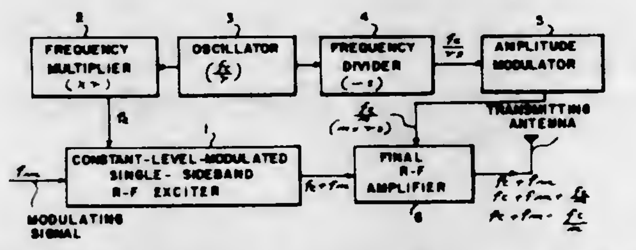


A process for measuring the forward dynamic time constant of a diode comprising the steps of causing said diode to conduct by applying the leading edge of a pulse to said diode, whose forward dynamic time constant is to be measured, through a circuit including a resistor and an adjustable capacitor connected in parallel, sensing the current flow through said diode produced by said pulse, and adjusting said capacitor to cause said current flow to assume a steady state value without exceeding said steady state value in the shortest possible time after the occurrence of the leading edge of said pulse.

3,182,259
SUBMODULATION SYSTEMS FOR CARRIER RECREATION AND DOPPLER CORRECTION IN SINGLE-SIDEBAND ZERO-CARRIER COMMUNICATIONS

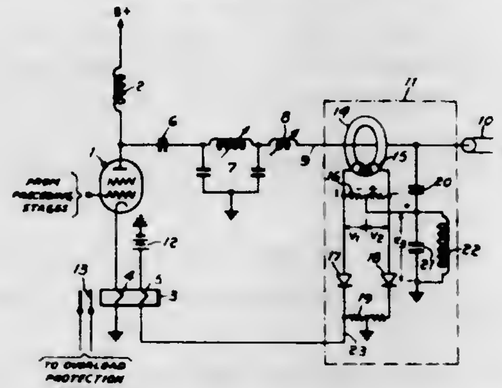
Floyd P. Holder, Marietta, Ga., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 6, 1961, Ser. No. 81,205
5 Claims. (Cl. 325—50)

3. A transmitter for single-sideband zero-carrier communication with provision for the transmission of information permitting re-creation of the carrier at the receiver, comprising: means for generating from applied carrier and modulating signals a constant level single-sideband signal, means for amplitude modulating said single-sideband signal at a submultiple of the frequency of said carrier signal, and means for applying said amplitude modulated single-sideband signal to a transmission medium.



3,182,260
RADIO TRANSMITTER OVERLOAD PROTECTION SYSTEM

Louis John Heaton-Armstrong, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 4, 1961, Ser. No. 156,784
Claims priority, application Great Britain, Dec. 5, 1960, 41,757/60
15 Claims. (Cl. 325—151)

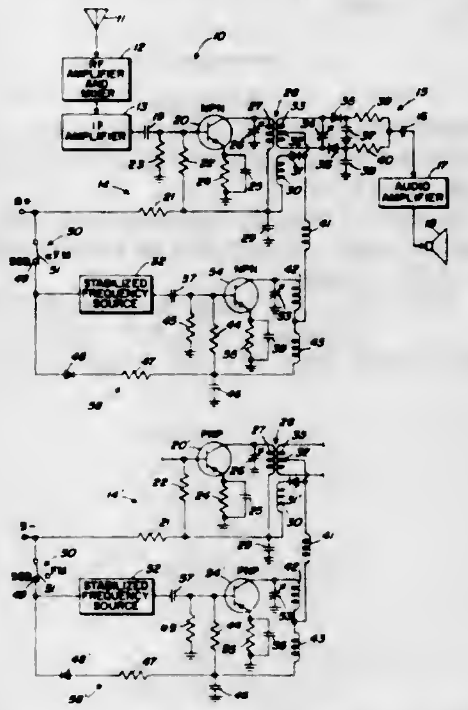


7. In a radio transmitter, an overload protection system comprising a relay having two windings, one of said windings being serially connected in the cathode circuit of a tube of said transmitter responsive to the anode-cathode current, means to produce a current proportional to the power output of said transmitter, and means to couple the current output of said means to produce to the other winding of said relay in a differential relationship with respect to said anode-cathode current, said relay operating to disconnect power from the transmitter tubes in the event said power output becomes excessive.

3,182,261
SSB-FM DETECTOR

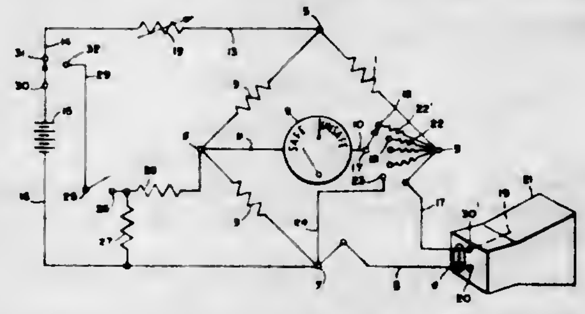
Samuel L. Broadhead, Jr., and Dennis L. Fredrickson, Cedar Rapids, and Russell G. Vinson, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Jan. 21, 1963, Ser. No. 252,790
11 Claims. (Cl. 325—315)

1. A radio receiver having an alternate function SSB-FM audio detector circuit with a signal input portion; an audio detecting portion; a transformer coil coupling connecting the signal input and audio detecting portions; said transformer coil coupling including a primary coil connected to the signal input portion, a first secondary coil connected to the audio detecting portion, and a second secondary coil connected to both the signal input portion and the audio detecting portion; a voltage supply and a voltage reference connected to said signal input portion; a voltage divider in said signal input portion; unidirectional current transmitting means included in the connection between the second secondary coil and the audio detecting portion; an alternate function SSB-FM control circuit appendage connected to said unidirectional current transmitting means and to said first secondary coil, and having a D.C. path to the voltage reference from the unidirectional current transmitting means; means for controlled switching of said voltage supply on and off from the control circuit appendage for audio detection in the SSB mode when on, and in the FM mode when off; stabilized frequency source means in the control circuit appendage connected for providing a SSB carrier reinsertion frequency when the voltage supply is switched to the appendage; and circuit means for applying a reverse bias voltage to said unidirectional current transmitting means when the voltage supply is switched to the control circuit appendage.



3,182,262
DENSIOMETER RADIATION MONITORING DEVICE

Charlie O. Schumann, Huntington, N.Y., assignor to Ramcor Incorporated, Hicksville, N.Y., a corporation of New York
Filed Sept. 7, 1962, Ser. No. 222,102
1 Claim. (Cl. 325—363)



In an RF field intensity measuring device, the combination of,
  a D.C. bridge circuit including three resistors forming three arms thereof and a pair of terminals for connection of a fourth arm,
  an adjustable source of direct current connected across one diagonal of said bridge,
  a direct current meter connected across the other diagonal of said bridge,
  a small antenna having predetermined pick-up properties and including an output coupler rigidly connected to said antenna,
  a rigidly cased thermistor including rigidly positioned input and output coupling means with said input connected to said antenna output coupler to form a short

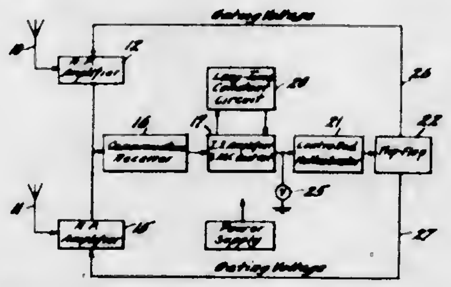
rigid connection between said antenna and said thermistor,

and connecting means adapted to connect said output coupling means with said pair of bridge terminals whereby the circuit conditions between said antenna and said thermistor are rigid and predetermined and a non-critical direct current circuit exists between said thermistor output coupling means and the D.C. bridge circuit.

3,182,263
DIVERSITY RECEPTION SYSTEM WITH CORRECTION FOR LONG-TERM FLUCTUATIONS IN SIGNAL STRENGTH

William Herbert Gossard, Takoma Park, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Nov. 14, 1962, Ser. No. 237,775
4 Claims. (Cl. 325—370)
(Granted under Title 35, U.S. Code (1952), sec. 266)



3. A diversity antenna system which comprises a plurality of antennas for receiving signals, a receiver including means for providing an intermediate frequency (IF) signal which corresponds to the signal being received thereby, means for connecting one of the antennas to the receiver at any given time, an IF amplifier and automatic gain control circuit which includes a plurality of IF amplifiers having inputs and outputs, a voltage detector and an RC circuit having a long charging-time-constant, means for connecting the IF signal from the receiver to the inputs of the IF amplifiers, means for connecting an output from one of the IF amplifiers through the detector and the RC circuit to the inputs of all IF amplifiers, the charging-time-constant of the RC circuit being sufficiently long to prevent the IF amplifiers from reaching full stability within a predetermined period of time in order to compensate for long-term perturbations in the signal being applied to the receiver, and means energized by another of the IF amplifier outputs for actuating the antenna-connecting means.

3,182,264
SEQUENCE TIMER

Theodore R. Thomsen, Farmington, Mich., assignor to Robotron Corporation, Detroit, Mich., a corporation of Michigan

Filed Aug. 14, 1961, Ser. No. 131,404
10 Claims. (Cl. 328—75)

8. In a sequence timing circuit especially for welding service involving "squeeze," "weld," "hold" and "off" time functions, the combination comprising:

a source of alternating potential;

a first valve including at least an anode, a cathode and a control electrode and means actuable to connect said anode and cathode across said source;

continuously energized first blocking means normally blocking said first valve;

a normally conductive second valve including at least a cathode, a control electrode and having first and second anode circuits for connecting said second valve to said source;

firing circuitry effective when energized for overcoming said first blocking means so that conduction of said first valve is no longer blocked by said first blocking means and means responsive to energization of said first anode circuit for energizing said firing circuit;

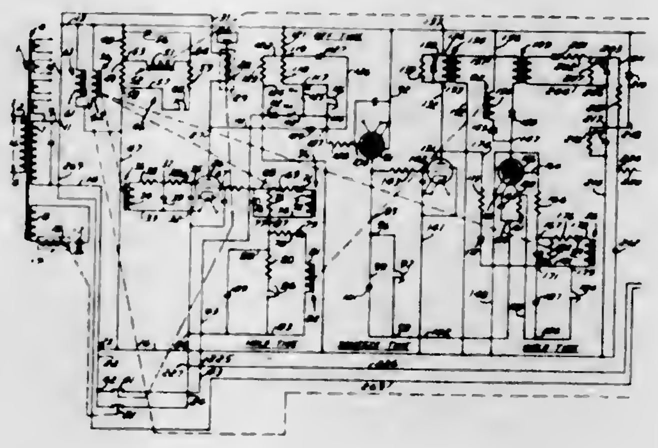
a load and a third valve serially connected therewith for energization by said source, said third valve including at least an anode, a cathode and a control electrode;

second blocking means normally holding said third valve nonconductive;

and circuitry responsive to energization of said second anode circuit for acting when energized to overcome said second blocking means an energize said load;

means terminating the conductivity of said second valve in timed relation to commencement of conductivity of said first valve;

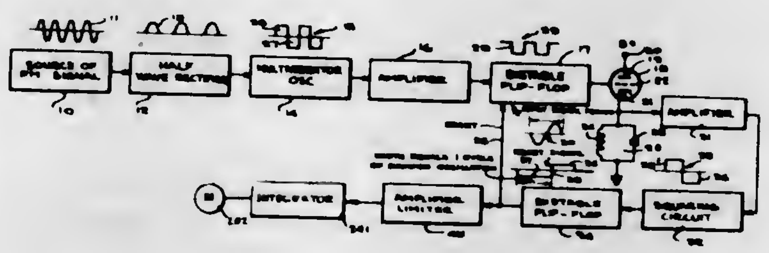
whereby when said second valve becomes nonconductive the first valve becomes blocked in a timed relationship therewith.



3,182,265
FREQUENCY DISCRIMINATOR EMPLOYING A TIMING CIRCUIT

William I. L. Wu, New Rochelle, N.Y., assignor, by mesne assignments, to the Singer Company, a corporation of New Jersey

Filed Mar. 2, 1960, Ser. No. 12,464
16 Claims. (Cl. 328—140)

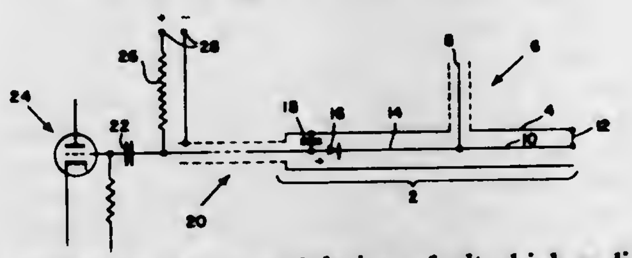


8. In a frequency discriminator for a frequency modulated signal having a mean frequency represented by a carrier signal and having frequency deviations therefrom representing intelligence transmitted on said carrier signal, normally inactive means for generating a periodic signal of fixed frequency, said fixed frequency being an integral multiple, including one, of said mean frequency of said frequency modulated signal, means for activating said generating means in response to attainment of a predetermined point in each cycle of the frequency modulated signal, and means for de-activating said generating means in response to completion of a predetermined number of cycles of said periodic signal.

3,182,266
CRYSTAL DEMODULATING MEANS FOR ULTRAHIGH RADIO FREQUENCIES

Leon Riebman, Huntingdon Valley, Pa., and Bernard Haimowitz, deceased, late of Whitemarsh Township, Montgomery County, Pa., by Wilma Haimowitz, administratrix, Lafayette Hill, Pa.; said Riebman assignor to American Electronic Laboratories, Incorporated, Lansdale, Pa., a corporation of Pennsylvania

Filed Nov. 28, 1962, Ser. No. 240,700
2 Claims. (Cl. 329—162)



1. Means for the demodulation of ultrahigh radio frequency signals comprising a rectifying semiconductor crystal diode, means for applying the modulated radio frequency signals to said diode, means for delivering from said diode signals resulting from the demodulation, and means for applying a bias current through said diode in the direction of forward current flow to provide a barrier resistance R_b approximately equal to

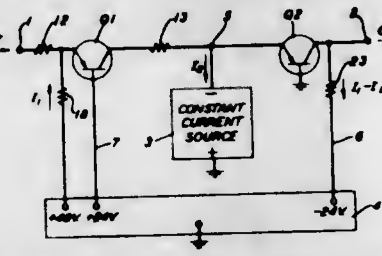
$$\frac{1}{\omega_0^2C_b^2r}$$

wherein ω_0 is the angular radio frequency of said radio frequency signals, in radians per second, at which optimum threshold power is desired, C_b is the barrier capacitance of the diode in farads, and r is the spreading resistance of the diode in ohms.

3,182,267
LINEAR DETECTOR CIRCUIT

Robert E. Myer, Denville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 10, 1962, Ser. No. 222,716
8 Claims. (Cl. 329—205)



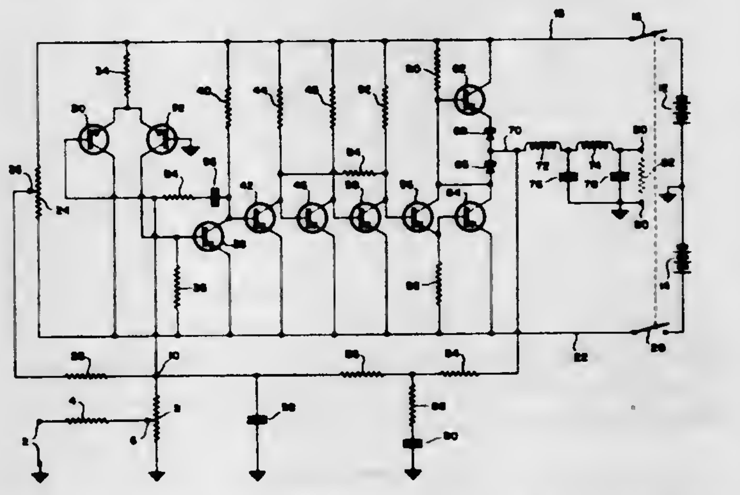
1. A linear detector circuit comprising a diode having an inherent nonlinear voltage-current characteristic, means biasing said diode to substantially zero voltage in the absence of an input signal, an amplifier having an input circuit and an output circuit, said input circuit including means for connection to a source of modulated carrier frequency signals to be detected, said diode being connected to the output circuit to comprise essentially the sole effective load for said amplifier at said carrier frequency, whereby the overall amplifier gain is caused to change with current through said diode to compensate the detector characteristic for the nonlinearity of said diode.

3,182,268
WIDE BAND REGULATED ELECTRONIC AMPLIFIER

Richard S. Burwen, Lexington, Mass., assignor to Honeywell Inc., a corporation of Delaware

Filed Sept. 15, 1961, Ser. No. 138,314
11 Claims. (Cl. 330—10)

1. An electronic power control circuit comprising a closed-loop amplifier having as an output stage a pair of signal controlled semi-conductor switching elements, each of said switching elements being operable to switch between a conducting state and non-conducting state, said amplifier including a negative potential supply line, a positive potential supply line and a common return line, one of said semi-conductor switching elements being connected between said negative potential supply line and said common return line, the other of said semi-conductor switching elements being connected between said positive potential supply line and said common return line, said amplifier further including means connected to said switching elements for generating and applying control signals to said switching elements for cyclically and oppositely actuating said switching elements between said conducting state and said non-conducting state, said amplifier including a negative feedback loop and means for determining the frequency of said control signals hence of the actuation of said switching means, at least a part of said frequency determining means being included in said feedback loop, control means included in said amplifier for controlling the symmetry of said control signals in accordance with an input condition thereby controlling the relative time duration of the conducting state of one of said switching elements with respect to the time duration of the conducting state of the other of said switching elements during each cycle of actuation, and an output circuit means connected in said common return line responsive to said actuation of said elements to produce an output signal corresponding to said input condition.



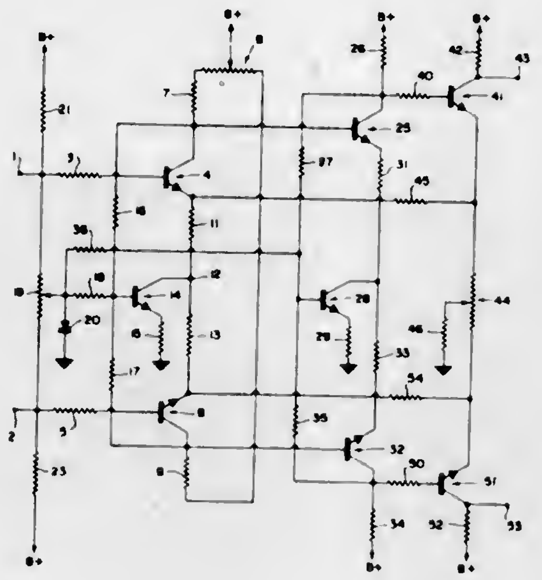
3,182,269
DIFFERENTIAL AMPLIFIER BIAS CIRCUIT

Dayle R. Smith, Littleton, Colo., assignor to Honeywell Inc., a corporation of Delaware

Filed Feb. 17, 1961, Ser. No. 89,958
4 Claims. (Cl. 330—19)

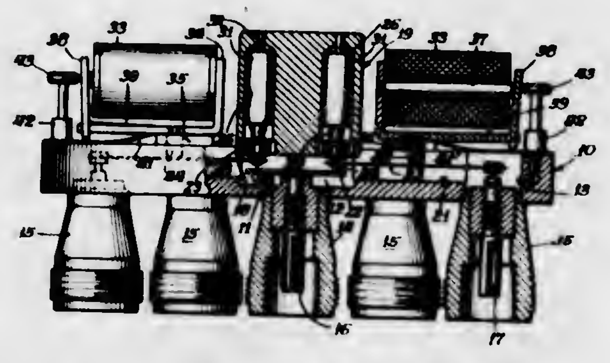
1. A differential amplifier comprising a first transistor having a signal input control electrode, an output electrode and a common electrode, a second transistor having a signal input control electrode, an output electrode, and a common electrode, a third transistor having a control electrode, an output electrode and a common electrode, means connecting said common electrode of said first transistor to said common electrode of said second transistor and to said output electrode of said third transistor, circuit means connecting said output electrode of said first transistor and said second transistor to a source of energizing potential, said common electrode of said third transistor being connected to a return path to said source of energizing potential, feedback means for applying a feedback signal to said control electrode of said third transistor representative of the algebraic sum of the output signals appearing on said output electrode of said first transistor and said second transistor to control the current flow to said first and second transistors, bias signal means connected between said control elec-

trode of said first transistor and said second transistor and to said control electrode of said third transistor, said bias signal means including means for varying a bias signal applied to the control electrode of said third transistor and balancing a bias signal applied to said control electrode of said first and second transistors.



3,182,270
MULTIPLE POSITION COAXIAL SWITCH WITH ANGULARLY SPACED RADIAL CHANNELS

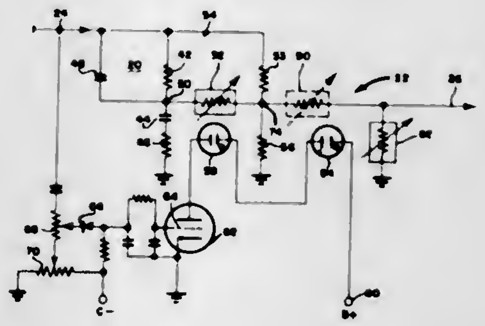
Russell E. Horton, Danbury, Conn., assignor to Amphenol-Borg Electronics Corporation, Broadview, Ill., a corporation of Delaware
Filed Nov. 2, 1962, Ser. No. 235,070
6 Claims. (Cl. 333—7)



1. A multiple-position coaxial switch comprising, in combination,
a metallic housing having a central cavity of generally cylindrical shape and of shallow, wide conformation with
a central connector comprising a short coaxial radio-frequency transmission line segment of predetermined characteristic impedance having an outer conductive sleeve mounted in said housing and a central conductor entering said cavity on the axis thereof and terminating in
a thin, flat, circular central contact disc coaxial with respect to the cavity and centrally disposed therein;
a plurality of peripheral cavities in said housing arranged around the central cavity therein and each being of generally cylindrical shape, with
a plurality of peripheral connectors each comprising a short coaxial radio-frequency transmission line segment of characteristic impedance matching the central connector with an outer conductive sleeve mounted in said housing; said peripheral connectors being spaced from and arranged around the aforesaid central connector and each having a central conductor thereof entering one of said peripheral cavities on the axis thereof and having a terminal portion thereof centrally disposed therein, with
a series of radial channels extending between said central cavity and each of the aforesaid peripheral cavities and
a plurality of switching conductors each consisting of a yieldable reed, with the outer end of each reed supported on one of the aforesaid terminal portions in one of the peripheral cavities and with each reed extending radially inwardly through one of the said radial channels to the aforesaid central cavity; each of said radial channels being of width substantially less than either the central cavity or the peripheral cavities aforesaid, with the walls of said channels parallel with and closely spaced with respect to the edges of said reeds, with
contact portions on each of said switching conductors each biased into engagement with one of a series of indivdual terminal contacts and selectively engageable with the aforesaid central contact disc;
said terminal contacts each being individually electrically interconnected to the outer sleeves of all of the transmission line segments entering the switch through one of a group of resistance elements, said resistance elements each having identical values substantially equal to the characteristic impedance of the aforesaid transmission line segments; together with
individual electromagnetic actuating devices to selectively shift each of the aforesaid contact portions between said central contact disc and one of said terminal contacts, and
selective switching devices for energizing said electromagnetic actuating devices.

3,182,271
TONE CONTROL CIRCUIT FOR EMPHASIZING LOW VOLUME HIGH AND LOW FREQUENCY SIGNALS

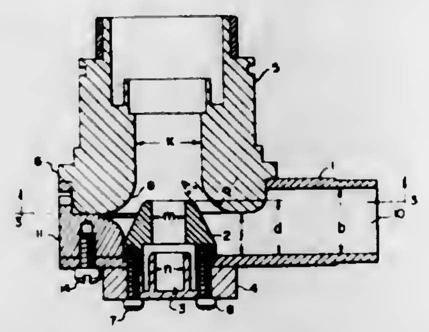
William Ross Aiken, 10410 Magdalena Ave., Los Altos Hills, Calif.
Filed Dec. 15, 1960, Ser. No. 76,016
2 Claims. (Cl. 333—18)



1. A tone control arrangement comprising signal input means, a first condenser and a first resistor in parallel with each other, a second condenser and a variable resistor in series with each other connected in series with said parallel-connected condenser and resistor between said signal input means and ground, means connected to said signal input means responsive to signals received thereover for adjusting said variable resistor to different values, said adjusting means being operative with said filter means to provide an increased signal level for higher and lower frequencies for input signals of lower volume and a substantially unchanged level for the intermediate frequencies, and signal output means at a point between said parallel-connected condenser and resistor and said series-connected condenser and resistor.

3,182,272
WAVEGUIDE TO COAXIAL L TRANSITION HAVING THE COAXIAL OUTER CONDUCTOR EXTENDING INTO THE WAVEGUIDE

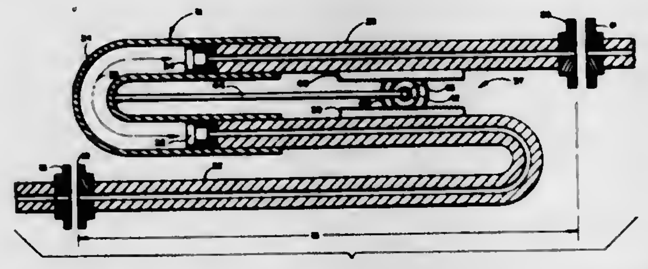
Joseph C. Borghetti, Marlboro, Mass., assignor to Microwave Development Laboratories, Inc., Wellesley, Mass., a corporation of Massachusetts
Filed Apr. 22, 1963, Ser. No. 274,421
3 Claims. (Cl. 333—21)



1. In a waveguide to coaxial L transition of the type comprising a rectangular waveguide having one end terminated in a short circuit, the rectangular waveguide having an aperture in one of its broad walls, the improvement of an impedance matching structure comprising:
an outer coaxial member having therethrough a central aperture terminating in a flared opening providing an annular lobe, the outer coaxial member being secured to the waveguide and having its annular lobed portion extending through the apertured broad wall into the interior of the rectangular waveguide,
and a conical member in the interior of the waveguide, the conical member being concentric with the annular lobe and secured to the opposite broad wall,
the conical member and the annular lobe providing a gradually constricting throat from the waveguide into the central aperture of the outer coaxial member.

3,182,273
EXTENSIBLE LINE HAVING CONSTANT ELECTRICAL LENGTH

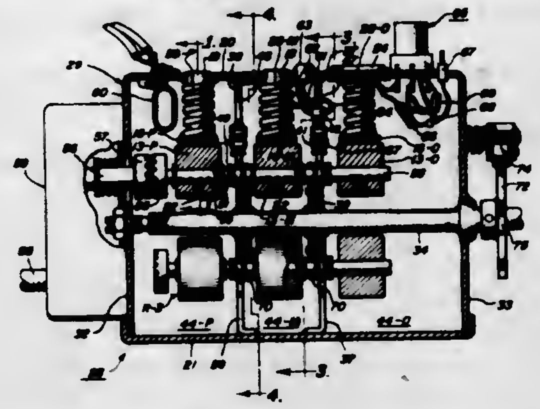
William E. Meyer, Buena Park, Calif., assignor to North American Aviation, Inc.
Filed Sept. 20, 1963, Ser. No. 310,386
3 Claims. (Cl. 333—98)



3. A waveguide assembly of adjustable overall physical length and fixed electrical length, comprising
a first and second rigid terminal waveguide section;
a U-shaped rigid intermediate waveguide section, each end of which slidably engages an end of a mutually exclusive one of said terminal sections to provide waveguide sections of adjustable lengths;
differential motion means coupled to said terminal sections and having an output member for providing a mechanical output motion relative to each of said terminal sections in response to differential motion occurring between said terminal sections, said output member being mechanically connected to said intermediate section, the magnitude of said relative motion maintaining the physical length along the U-shaped intermediate section and said terminal sections constant.

3,182,274
UHF TUNER WITH TURRET MOUNTED ROTOR ELEMENTS ADJUSTABLE WHEN ROTOR IS IN REGISTER WITH STATOR

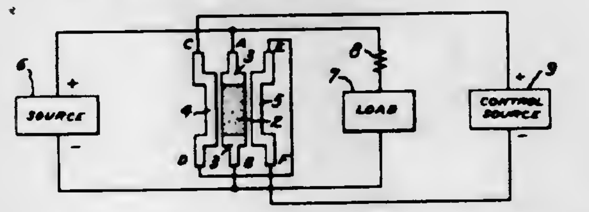
Clarence W. Wandrey, Wheaton, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,384
7 Claims. (Cl. 334—80)



1. A UHF turret tuner for television comprising:
a housing;
a carriage rotatably mounted within said housing;
a plurality of frequency determining circuits tunable across the entire UHF television band and each including a reactance-contributing device having a fixed electrode, said fixed electrodes collectively defining a stator assembly;
a group of channel selectors supported upon said carriage and each comprising a like plurality of adjustable electrodes constituting, when paired with assigned ones of said fixed electrodes, control elements for said reactance-contributing devices, said adjustable electrodes collectively defining a control assembly;
means coupled to said carriage for sequentially advancing said channel selectors from an electrically inactive storage position to an operative position in registration with said stator assembly;
and means for tuning said frequency determining circuits comprising a driver engageable with the control assembly of the one of said channel selectors instantaneously in registration with said stator assembly for displacing said adjustable electrodes relative to their said assigned fixed electrodes.

3,182,275
ASYMMETRIC CRYOGENIC DEVICE

Vernon L. Newhouse, Scotia, and Harold H. Edwards, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 16, 1960, Ser. No. 76,324
11 Claims. (Cl. 338—32)

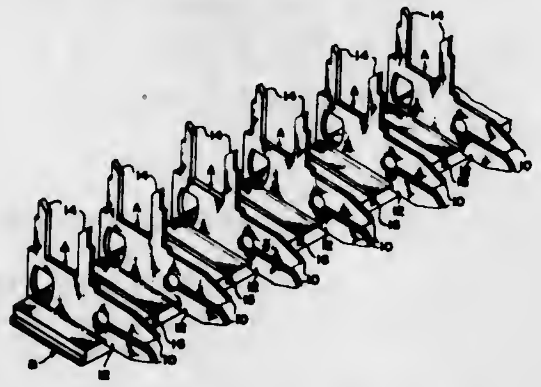


1. An asymmetric conduction device comprising a supporting base, a first superconductor flattened to said supporting base and providing only a single path for current flow, the contour of said superconductor presenting laterally spaced conducting edges extending longitudinally of said superconductor with a central flat current carrying area therebetween, second conductors extending longitudinal of said superconductor principally proximate only the edges thereof rather than said central area, and means for applying current to said second conductors to generate a field principally near the edges of said super-

conductor for raising the critical current of said superconductor when a current is passed in the longitudinally same direction in said superconductor as said second conductors and lowering the critical current of said superconductor when a current is passed in the longitudinally opposite direction in said superconductor.

3,182,276
CONTACT ASSEMBLY WITH THERMOPLASTIC BACKING STRIP

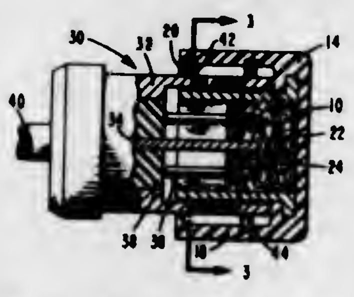
Herbert E. Ruehlemann, Huntingdon Valley, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Pennsylvania
Filed Feb. 26, 1962, Ser. No. 176,496
5 Claims. (Cl. 339—17)



1. An assembly of electrical contacts comprising, in combination, a thin hard, but somewhat flexible self-supporting thermoplastic backing strip, a plurality of small individual contacts removably and partially embedded in said backing strip in parallel spaced relationship from each other, said contacts being of substantially flat stock and disposed in an inverted upstanding position in extending away from said strip, said contacts including at least one mounting leg, edge portions of said contacts being embedded in said strip with said mounting legs extending freely away from said backing strip, said backing strip being adapted to be severed at any desired point to provide a contact assembly having a predetermined number of contacts, said assembly being fastened through said mounting legs to a printed circuit board.

3,182,277
SHORTING PLUG

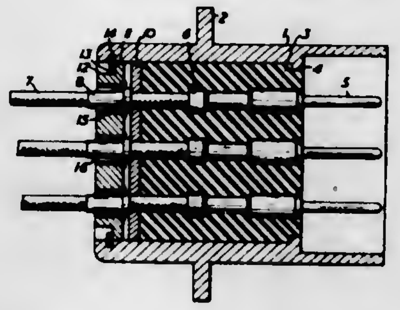
Robert B. Ashby, Alexandria, Va., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia
Filed Apr. 18, 1962, Ser. No. 188,449
5 Claims. (Cl. 339—19)



2. A shorting plug for the pins of an electrical device comprising a conductive receptacle having a closed end and an open end for receiving a plurality of pins, a penetrable, electrically-conductive material positioned within said receptacle, said material being of sufficient axial thickness to insure an electrically-conductive path between said pins when said plug is in mating relationship with said plurality of pins of said electrical device, a container for said receptacle concentric therewith and attached thereto, and means on said container for connecting said plug to said electrical device.

3,182,278
MULTI-CONTACT ELECTRIC CONNECTORS

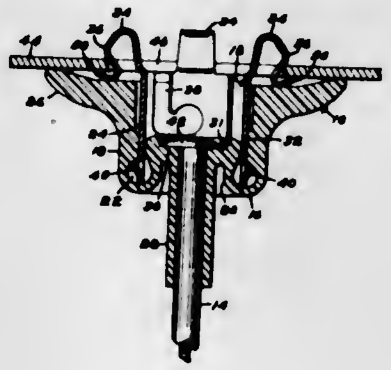
Kenneth Frederick Bridle, London, England, assignor to Smart & Brown (Connectors) Limited, London, England, a company of Great Britain
Filed June 18, 1962, Ser. No. 203,355
Claims priority, application Great Britain, June 16, 1961, 21,869/61
7 Claims. (Cl. 339—59)



1. A multi-contact electrical connector part comprising a rigid outer shell, a resilient insert within the shell, a plurality of bores in said insert, a plurality of contacts one of which is retained in each of said bores, a plurality of conductor cables one of which is secured to each of said contacts, a first perforated plate in contact with said insert and secured in said shell, a second perforated plate spaced from said first perforated plate and secured in said shell, a ferrule firmly secured to each conductor cable in a region spaced from the respective contact, said ferrule having a surface engaging the surface of said first plate remote from said insert, and a tubular collet for each ferrule, said collet having a face engaging the surface of said second plate facing said insert and having a projection engaging a face on said ferrule facing away from said insert.

3,182,279
LAMP SOCKET

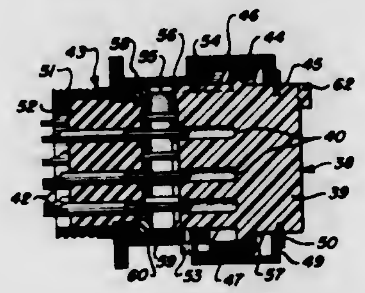
Robert E. Fitz Gerald, Quincy, Mass., assignor to United-Carr Incorporated, Cambridge, Mass., a corporation of Delaware
Filed Aug. 20, 1963, Ser. No. 303,385
1 Claim. (Cl. 339—59)



An electrical bulb socket comprising a flexible insulating housing, a conductive shell having means of engaging a bulb or the like and at least one wire lead, said insulating housing having a base portion, an inner circumferential wall extending from said base portion and an outer circumferential wall extending from said inner circumferential wall and spaced from said inner circumferential wall, said outer circumferential wall having an inner surface a portion of which is angled toward the axis of said socket to form an annular groove with said inner wall and a stem portion integral with said insulating housing and circumscribed, for a portion of its length, in spaced relation, by said inner wall and said conductive shell open at both ends and having a series of tangs formed from and around the circumference of said conductive shell proximate one open end and a series of arms extending from the other end for engagement with an apertured support, said tangs having engagement edges directed toward said arms and engaging the inner surface of said outer circumferential wall.

3,182,280
PROTECTION OF ELECTRICAL CONNECTOR CONTACT PINS

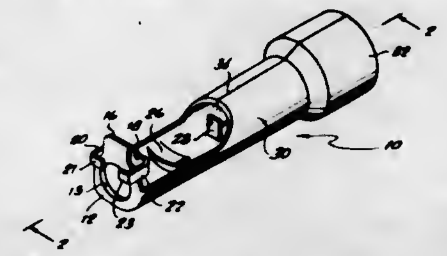
Francis X. Daut and Ralph O. Work, Albuquerque, N. Mex., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 19, 1963, Ser. No. 274,363
1 Claim. (Cl. 339—66)



A device for detecting inaccurately positioned pins and protecting accurately positioned pins of an electrical connector, comprising an end cap member having a main body formed of a single piece of rigid plastic material with a perforate end and an imperforate end, said perforate end having a planar face and defined by a plurality of mutually parallel sockets penetrating said face and terminating at a location intermediate said ends, each of said sockets being of uniform diameter from said face throughout essentially the entire socket length and the diameters corresponding closely to the diameters of said pins for the walls of plastic material defining said sockets to closely envelop said pins throughout substantially their entire exposed lengths, and said body having an annular laterally outwardly projecting flange integral with said body and disposed intermediate said ends thereof, connecting means to secure said device to a said connector including a portion relatively rotatable with respect to said body and including means overlapping said flange to limit axial movement of said portion and including another portion laterally spaced from said body defining a groove therebetween for housing an annular part of a said connector, guide means aligning said pins with said sockets comprising a plurality of keys of said plastic material each integral with and projecting from an outer surface of said body with an end of each key terminating in a plane substantially common with said planar face with each key to mate with a complementary keyway in the annular part of a said connector, one of said keys being of larger cross-sectional dimension than the others of said keys for mating with a keyway of corresponding cross-sectional dimension to insure orientation of said sockets with said pins, an annular integral ridge extending about said planar face and axially projecting away from said flange terminating in a plane spaced from and overlying both said planar face and the ends of said keys and with said ridge having a diameter intermediate that of the annular part of a said connector and that of a dielectric insert housing said pins in a said connector wherein said ridge initially cooperates with said keys to facilitate alignment of the latter with said keyways and thereafter projects past a leading surface of the dielectric insert to engage a deformable sealing means disposed between the insert and the annular part of a said connector, and an indicator projection integral with and on said imperforate end aligned with said one key for indicating and facilitating alignment of said one key with said one keyway.

3,182,281
RELEASABLE SOCKET CONNECTOR

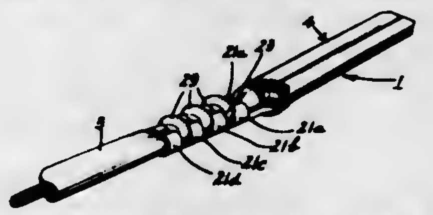
Edwin T. Salz, Sr., Redding, Conn., assignor to Burndy Corporation, a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,613
2 Claims. (Cl. 339—95)



1. A socket connector for receiving a pin conductor therein, comprising:
- a longitudinally extending base portion of conductive metal having a forward end and a rearward end;
- an integrally formed front entrance portion extending substantially perpendicularly from said base portion at said forward end and having an opening therethrough for permitting axial insertion of a pin conductor substantially parallel to said base in a rearward direction;
- an integrally formed resilient deflecting portion extending rearwardly from said front entrance portion and inwardly at an angle to said base portion in position to resiliently engage a pin inserted through said front entrance portion opening;
- said deflecting portion having a free edge sub-portion adapted to engage the surface of an inserted pin conductor in scraping relation to resist withdrawal of said pin through said opening;
- an integrally formed stop portion extending in spaced relation to said front entrance portion to limit the axial movement of a pin conductor inserted through said opening;
- an integrally formed alignment guide strip extending from said base portion and having a support surface disposed substantially parallel to the surface of a pin conductor inserted through said opening for aligning and supporting said pin relative to said deflecting portion;
- release means on said deflecting portion including an extending lever arm accessible forwardly of said entrance portion for permitting manual deflection thereof to release said pin conductor; and
- integrally formed means for electrically securing an external conductor to said socket connector.

3,182,282
ELECTRICAL CONNECTION

Prescott K. Turner, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
Filed Oct. 29, 1962, Ser. No. 233,756
10 Claims. (Cl. 339—97)



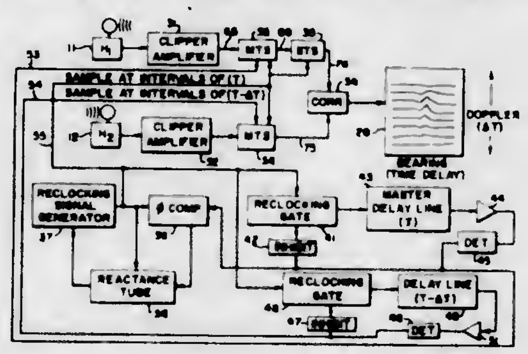
1. An electrical terminal connection for an insulated conductor and a contact, said contact comprising a portion for receiving said conductor, said conductor receiving portion including a plurality of pairs of opposed fingers and a corrugated surface with the corrugations and the fingers extending transversely to the longitudinal axis of said conductor, the fingers of each pair being curled over toward each other and over said corrugated surface to form with the corrugated surface a ferrule for gripping the conductor, the free ends of said fingers and

the inner edges of the ridges of the corrugations being arranged in insulation piercing electrical engagement with said conductor, said conductor being compressed between said fingers and said corrugations, each pair of said fingers being spaced apart from an adjacent pair of said fingers by a transverse gap, with a portion of insulation from said conductor bulging outwardly by relief flow from said gap between adjacent pairs of said fingers thereby to enhance the electrical and mechanical connection between said conductor and said contact.

3,182,283
METHOD OF MEASURING THE VELOCITY OF AN UNDERWATER MOVING SOUND SOURCE

Herman E. Ellingson and John C. Munson, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 2, 1959, Ser. No. 817,691
6 Claims. (Cl. 340—6)
(Granted under Title 35, U.S. Code (1952), sec. 266)

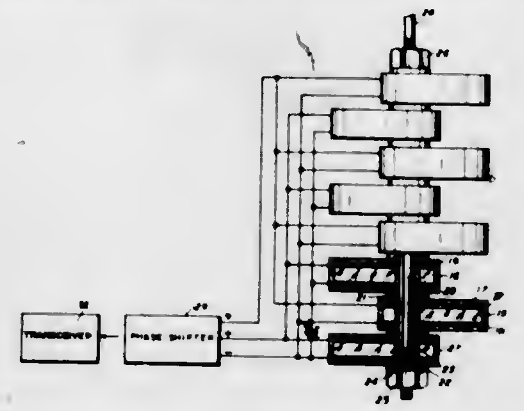


1. The method of measuring a component of velocity of a moving underwater sound source which comprises the steps of receiving a sound signal from said source at each of two sound receiving stations, the sound signal received at one of said stations being displaced variably in time with respect to the sound signal received at the other station, generating at each of said stations an electrical analogue signal corresponding to the sound signal received at the respective station, said electrical signals being variably displaced in the same time relation as the sound signals corresponding thereto, recording said electrical signals in the said variable time relation, correlating said electrical signals, measuring the percentage of time variation of said recorded signals, and calculating said component of velocity from the percentage thus measured.

3,182,284
INTERLEAVED ELECTROACOUSTICAL TRANSDUCER

Charles E. Green, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 25, 1960, Ser. No. 11,113
11 Claims. (Cl. 340—9)
(Granted under Title 35, U.S. Code (1952), sec. 266)

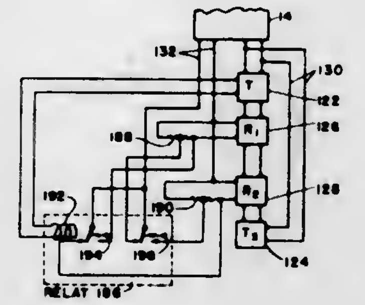


1. A transducer comprising a plurality of stacks of acoustical energy projectors each of which is successively and alternately interleaved with the others along a like plurality of respective axes each of which is spatially disposed from the others, means connected to each of said acoustical energy projectors for timely electrical excitation thereof, and support means connected thereto for effectively securing same in a predetermined relationship.

3,182,285
WELL LOGGING

Charles B. Vogel, Houston, Tex., assignor to Shell Oil Company, a corporation of Delaware

Filed Mar. 14, 1955, Ser. No. 493,999
18 Claims. (Cl. 340—18)



6. In a system for seismic measurements, surface apparatus comprising a recording unit, subsurface apparatus adapted to be lowered into a borehole, means supporting said subsurface apparatus in said borehole, said subsurface apparatus comprising an acoustic wave source and two receivers spaced from each other along a vertical line, said receivers being mounted to one side of said wave source, a single electric circuit means connecting both said receivers to said recording unit, means for energizing said wave source to produce an acoustic impulse reaching said two receivers in succession, means in each receiver for translating each received impulse into a separate signal related to the impulse travel time, said separate electrical signals each being transmitted by said circuit means to said recording unit, and switching means in said subsurface apparatus actuated upon the production of said acoustic impulse for disconnecting the receiver nearest to said wave source from said circuit means.

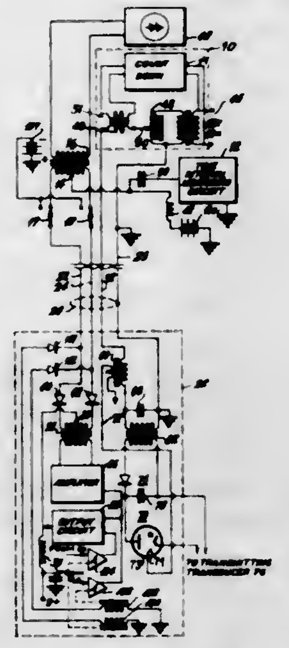
3,182,286
ACOUSTIC WELL LOGGING TRANSMISSION SYSTEM

Carl W. Zimmerman, Dallas, Tex., and Adrian P. Brokaw, Stillwater, Okla., assignors, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Apr. 1, 1960, Ser. No. 19,233
8 Claims. (Cl. 340—18)

7. An acoustic well logging transmission system comprising two conductors and a return path connecting an acoustic well logging tool with surface equipment, said two conductors forming a balanced transmission line, means coupling said balanced transmission line and said return path as a phantom circuit, said surface equipment including a first source of direct current, means for coupling said direct current source to said phantom circuit for transmission of direct current to the well logging tool, a second source of direct current opposite in direction to the direct current from said first source, a switching means in said balanced transmission line for connecting said second source of direct current to at least one of said two conductors instead of and in a direction opposite to that of the direct current from said first source, utilization means in said logging tool, the well logging tool having first polarity sensitive means connected in said balanced transmission line for blocking the current from said second source from the phantom circuit, and the well logging tool also having second polarity sensitive means connected

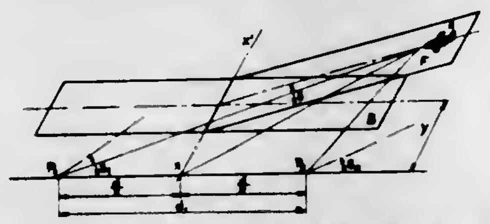
in the balanced transmission line to couple the current from said second source to said utilization means and block therefrom current from said first source and means for coupling signals to said balanced transmission line.



3,182,287
LIGHT-BEACON AIRCRAFT GLIDE PATH

Christian Louis Georges Benard, Paris, France, assignor to Anciens Etablissements Barbier, Benard & Turenne, Paris, France, a company of France

Filed Dec. 19, 1961, Ser. No. 160,461
Claims priority, application France, Jan. 9, 1961, 849,205, Patent 1,044,738
4 Claims. (Cl. 340—26)



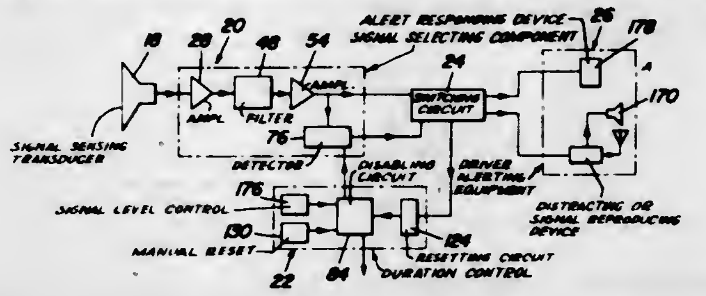
1. A light-beacon device for facilitating the landing of aircraft on a runway along a pre-determined plane of descent, said device comprising two substantially identical main lights located close to said runway and having the axes of their beams fixed in angular elevation on each side of the angle of elevation of said plane of descent to be beaconed, each of said light beams being spread out in said plane giving equal intensities in each of the directions of said plane of descent, said main lights being spaced apart parallel to the axis of the runway by a distance such that at the extreme range of utilization they are angularly separate, whereby said predetermined plane of descent is the locus of the points in space at which the beams emitted by said main lights are visible at the same intensity and when said plane has an angle of descent slightly greater or less than said pre-determined plane of descent, one of said lights will appear to vary in brilliance and eventually disappear unless the angle of descent is corrected until the beams emitted by said main lights are again visible at the same intensity.

3,182,288
ELECTRONIC WARNING DEVICE

Harvey G. Smith, 6005 Mimosa Lane, Dallas 30, Tex.

Filed Sept. 12, 1961, Ser. No. 137,622
24 Claims. (Cl. 340—34)

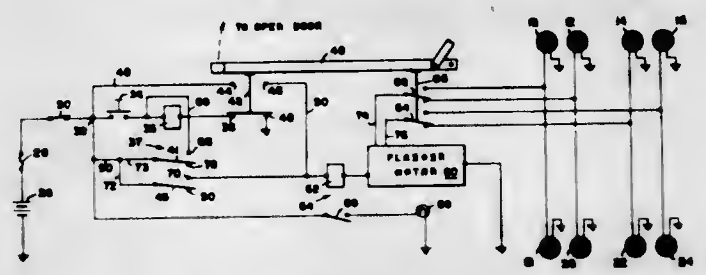
1. An alarm system for an enclosed vehicle or the like comprising, sensing means for receiving uncoded signal energy radiated external to the vehicle of varying frequency, amplitude and duration, signal selecting means operatively connected to the sensing means for transmitting only signal energy indicative of an externally dangerous condition, emergency operating means operatively connected to the signal selecting means and responsive to signal energy transmitted therethrough for providing warning signals internally of said vehicle for a predetermined operational period and duration control means operatively connected to the operating means and signal selecting means operative in response to said transmission of the signal energy for restricting response of the emergency operating means to radiated signal energy persisting for a predetermined duration.



3,182,289
WARNING LIGHT CONTROL SYSTEM

Robert R. Rossi, Audubon, N.J., assignor to Arrow Safety Device Company, Mount Holly, N.J., a corporation of New Jersey

Filed Apr. 24, 1962, Ser. No. 189,881
3 Claims. (Cl. 340—83)



1. A warning light system for a door containing vehicle comprising at least one caution light and at least one stop indicating light mounted on the vehicle, said lights being of different colors, circuit means including a current source and switch means for initially energizing said caution light upon closure of said switch means, said switch means comprising a switch of the momentary closure type which reopens automatically, second circuit means including a relay operated switch means connected to said current source for continuing to energize said caution light after said switch means automatically reopens, third circuit means connected to said current source and including a switch means operated by movement of the vehicle door for automatically deenergizing said caution light and automatically energizing said stop light upon opening of said door and continuing to energize said stop light so long as said door remains open, and fourth switch-controlled circuit means operatively connected to said door for automatically deenergizing said stop light upon closure of said door.

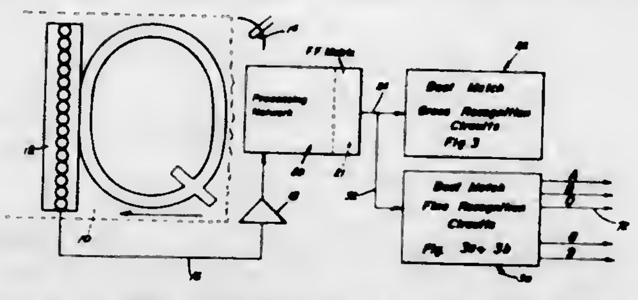
3,182,290
CHARACTER READING SYSTEM WITH SUB MATRIX

Jacob Rabinow, Takoma Park, Md., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Oct. 20, 1960, Ser. No. 63,786
20 Claims. (Cl. 340—146.3)

1. Apparatus to identify characters of a family comprising; means for examining the unknown character and seeking similarities between the unknown character and

the characters of the family to determine that the unknown character is similar to characters of a homogeneous group within said family; means providing a first signal characteristic of said group and means for examining at least one portion of the unknown character to detect differences in the unknown character which distinguish said unknown character from the other characters of said homogeneous group and providing a second signal characteristic thereof; and means responsive to said first and second signals to identify the unknown character.

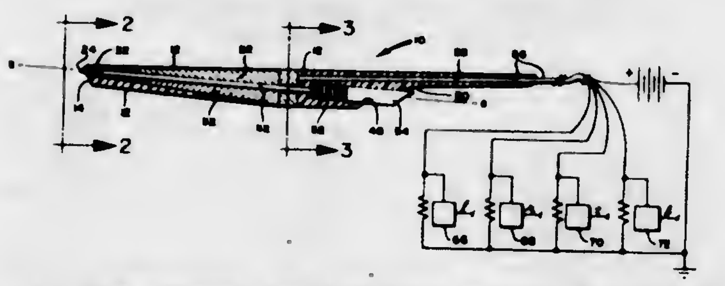


3,182,291
UTENSIL FOR WRITING AND SIMULTANEOUSLY RECOGNIZING THE WRITTEN SYMBOLS

Ernie G. Nassimbene, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Aug. 25, 1961, Ser. No. 133,987

5 Claims. (Cl. 340—146.3)



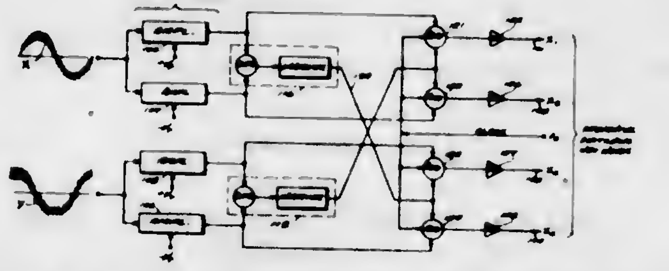
1. Arrangement for indicating written symbols at a point remote from where they are being written comprising the combination of a member containing a source of light, with a writing utensil having a writing point, a light-sensitive element in an area exteriorly adjacent to said point, and a circuit containing said light-sensitive element for developing voltages varying in response to variations in the degree of illumination of said light-sensitive element by said source of light.

3,182,292
NOISE-REJECTING COUNTER CIRCUIT

Hermann Schmid, Binghamton, N.Y., assignor to Link Division of General Precision, Inc., Binghamton, N.Y., a corporation of Delaware

Filed June 29, 1961, Ser. No. 120,709

15 Claims. (Cl. 340—170)



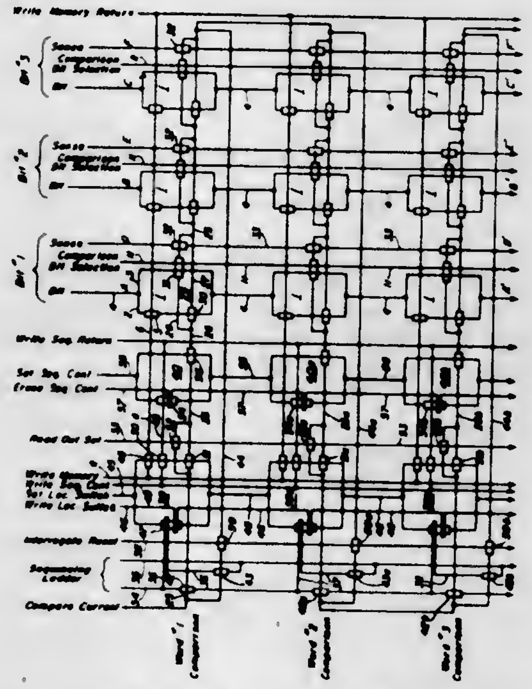
1. Apparatus for receiving two phase-displaced approximately sinusoidal input signals and for providing directional output signals, comprising in combination: a plurality of amplitude selection circuits having four output lines, said amplitude selection circuits being connected to receive said two input signals and operative to provide output signals in a first sequence X_1, X_2, X_3, X_4 on said four output lines when a first of said two input signals leads the second of said input signals, and operative to provide output signals in a second sequence X_4, X_3, X_2, X_1, opposite to said first sequence on said input signals, when said first of said two input signals lags said second of said input signals; and a synchronous switching network connected to receive the signals on said four output lines, said switching network being operable to provide a pulse on a first output line upon each occurrence of said first sequence of input signals and to provide a pulse on a second output line upon each occurrence of said second sequence of input signals.

3,182,293
CRYOGENIC MEMORY CIRCUIT

Robert E. Fruin, Schenectady, and Vernon L. Newhouse, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Apr. 18, 1962, Ser. No. 188,328

6 Claims. (Cl. 340—173.1)



1. A superconducting memory matrix comprising a plurality of superconducting persistent current memory loops electrically arranged by columns and rows, each loop including a first side and a second side, each loop having coupling means for inserting a current into the loop, said coupling means comprising column conductors interconnecting columns of said loops, and each loop also having associated therewith second means in cryotron grid relation to said loop for quenching a current in a portion of the loop to establish persistent current in said loop upon the conclusion of said current inserted into said loop, a second loop associated with at least one of said memory loops, said second loop comprising a first branch and a second branch in parallel, conductor means for supplying current to said parallel branches, at least one of said branches of said second loop including gate means influenced in superposed grid relation by one side of said one of said memory loops, and cryotron gate means for detecting the branch of said second loop carrying a current for detecting the digit information stored in said one of said memory loops.

3,182,294
CRYOGENIC MEMORY

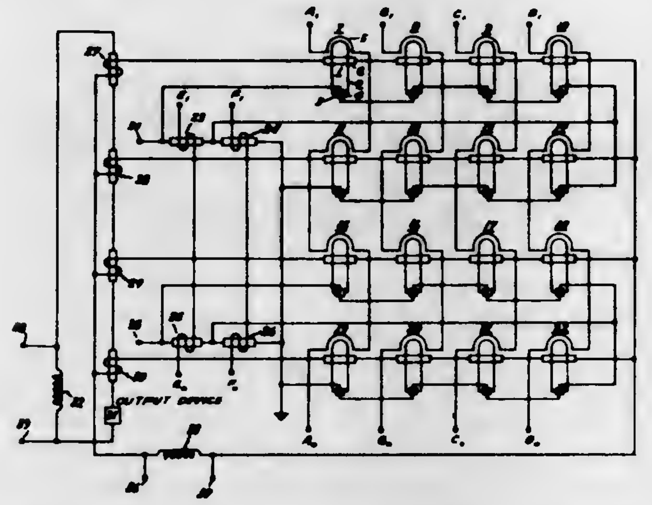
John W. Bremer, Sunnyvale, Calif., and Vernon L. Newhouse, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed July 8, 1964, Ser. No. 382,692

17 Claims. (Cl. 340—173.1)

3. A catalog memory array comprising elements each having a persistent current loop, measurement gate means

thereacross and means for coupling a current thereto, inhibiting grid means across said loop for cooperating to establish a persistent current in said loop by rendering a portion of said loop resistive, said array having the coupling means of said devices serially connected in a plurality of columns so that signals representative of various words to be stored and compared may be coupled thereto, said array also having their inhibiting grid means and measurement gate means each serially connected in rows, means for selectively energizing rows of said inhibiting grid means, and means for measuring the resistance of said rows of measurement gate means.

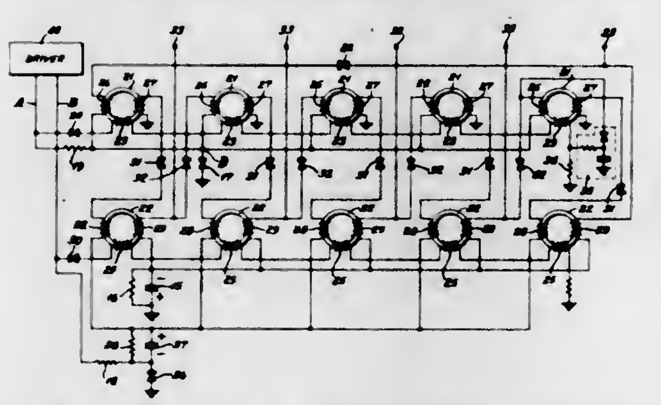


3,182,295
SHIFT REGISTER DEVICE

Joe B. Crank, Dallas, and William F. Donnell, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 14, 1959, Ser. No. 846,285

4 Claims. (Cl. 340—174)



3. The combination of a shift register connected in a continuous ring, means to cause a stored bit to circulate in said shift register, and means for injecting a bit into said shift register in response to the condition of said shift register having no bit circulating therein, said combination including a means for eliminating all but one of the circulating bits in said shift register when more than one bit is circulating in said shift register.

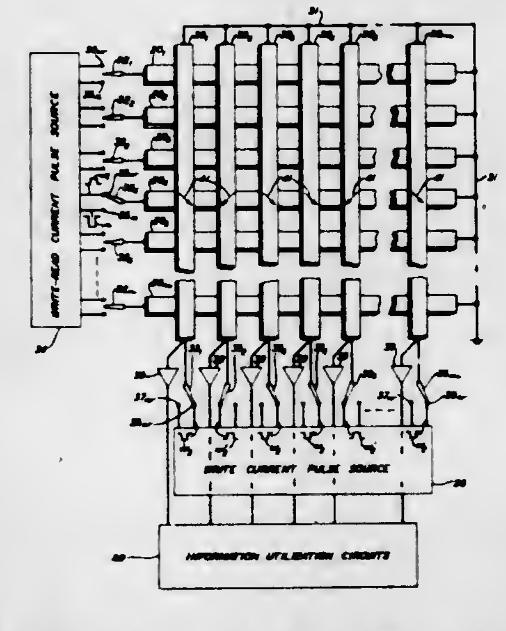
3,182,296
MAGNETIC INFORMATION STORAGE CIRCUITS

John A. Baldwin, Jr., Murray Hill, and Andrew H. Bobeck, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 18, 1960, Ser. No. 29,856

15 Claims. (Cl. 340—174)

15. A memory matrix comprising a lattice of first magnetic strips crossed with second magnetic strips, each of said strips being of an electrically conducting material having substantially rectangular hysteresis characteristics, said first magnetic strips being inductively coupled to said second magnetic strips and defining an array of information address portions on each of said first and second strips at their crosspoints, means for inducing remanent magnetizations in the address portions of a selected one of said first strips and each of said second strips at their crosspoints representative of binary information values, said last-mentioned means comprising means for applying coincident current pulses to said selected one of said first strips and to each of said selected second strips to generate circular magnetic fields around the longitudinal axes of said last-mentioned first and second strips, means for applying an interrogating current pulse to said selected first strip to generate another circular magnetic field around the longitudinal axis of said last-mentioned strip to rotate said remanent magnetizations, and means for detecting voltage changes across the ends of said second strips.

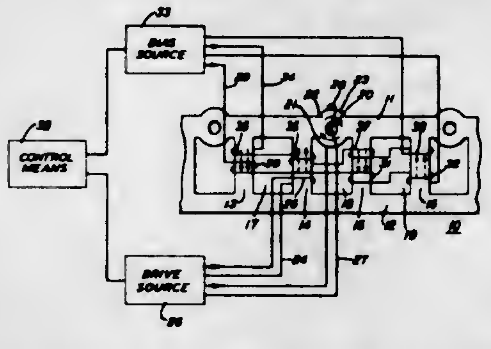

SHIFT-READ CURRENT PULSE SOURCE
WRITE CURRENT PULSE SOURCE
INFORMATION UTILIZATION CIRCUITS

3,182,297
MAGNETIC CONTROL CIRCUIT

Edmunde E. Newhall, Brookside, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,456

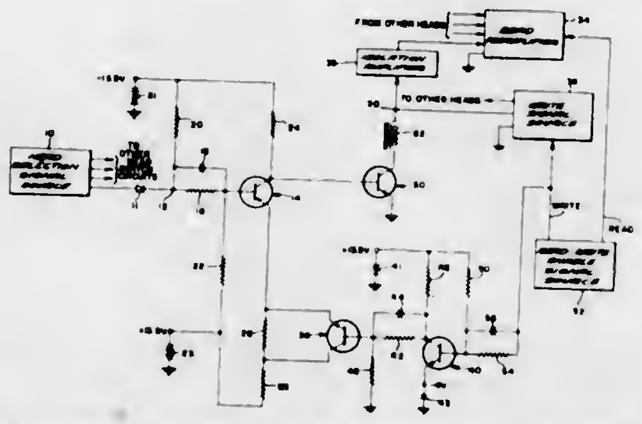
13 Claims. (Cl. 340—174)



3. An information transfer circuit comprising a ferrite sheet of a material capable of assuming a first and second stable magnetic state, said sheet being apertured to include first, second, third and fourth legs therein, first winding means coupled to said second leg, second winding means coupled to the first, third and fourth legs, third winding means coupled to each of the four legs, means for applying alternating first and second pulses to said first winding means repeatedly to switch the flux in said second leg between said first and said second stable magnetic state, means connected to said second winding means for magnetically biasing said first, third and fourth legs for selecting a flux closure path through said fourth leg for the flux switched in said second leg during said first pulses, and means connected to said third winding means

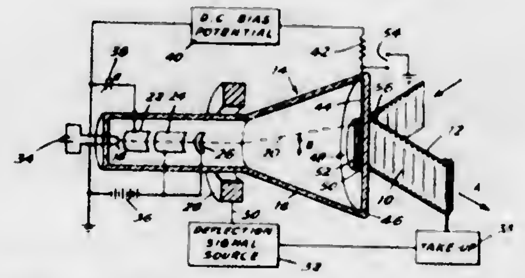
for magnetically biasing preselected ones of said legs for selecting a flux closure path through said third leg for the flux switched in said second leg during said second pulses.

3,182,298
MAGNETIC-RECORDING HEAD SWITCH
John A. Lawrence, Canoga Park, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Feb. 13, 1961, Ser. No. 88,983
4 Claims. (Cl. 340—174.1)



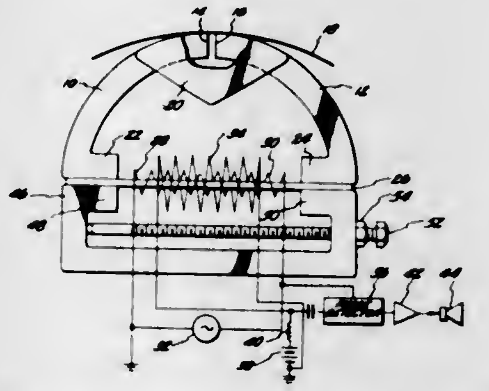
1. A control circuit for a system for recording and reading recorded alternating-current signals employing a transducer having a common current path for said alternating-current signals, said system comprising a single semiconductor switching device, means connecting said semiconductor switching device into said common current path for said signals to and from said transducer to control the current flow therein, means for biasing said semiconductor switching device to be nonconductive when it is desired to maintain said transducer inoperative, means for applying a current drive having one level to said semiconductor switching device when it is desired to record signals with said transducer, and means for applying a current drive to said semiconductor switching device having another level less than said one level when it is desired to read recorded signals with said transducer.

3,182,299
ELECTRON BEAM SCANNING SEMICONDUCTOR MAGNETIC TAPE READOUT DEVICE
Charles R. Weidman, 145 6th Ave., Stratford, Conn.
Filed Mar. 21, 1962, Ser. No. 181,405
4 Claims. (Cl. 340—174.1)



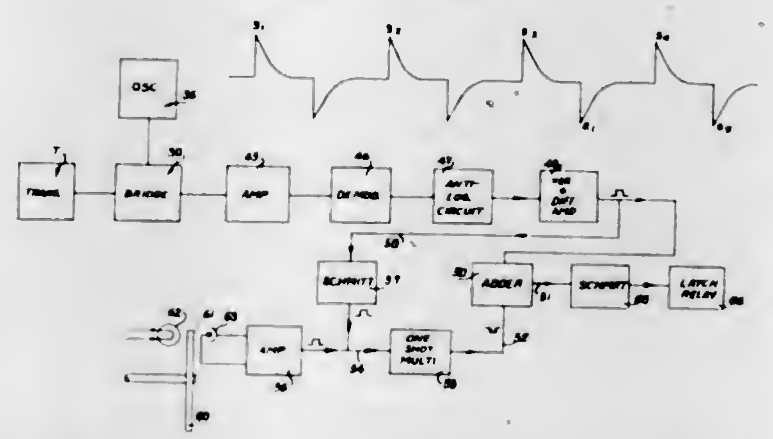
1. A magnetic readout device comprising an enclosure, an electron beam producing means within said enclosure comprising a cathode adapted for the emission of electrons, a screen formed on the inner surface of said enclosure, means for focusing and directing said electron beam from said cathode to said screen, said screen comprising a thin metallic backing layer formed on the inner surface of said enclosure and a layer of magnetically susceptible semiconductor material formed on said backing layer, potential means connected between said screen and said cathode, impedance means connected between said potential means and said screen output terminal, means connected to said impedance means for passing a magnetized record medium by said screen whereby a change is produced in the resistance of the semiconductor layer of said screen, said change in resistance resulting in a variation in the flow of electrons through said impedance means producing a corresponding change in signal at said output terminal means, means for transporting said record medium, and means for synchronizing said means for scanning said beam over said screen with said means for transporting said record medium.

3,182,300
MAGNETIC TAPE TRANSDUCER
James U. Lemke, Los Angeles, Calif., assignor, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 10, 1962, Ser. No. 222,575
3 Claims. (Cl. 340—174.1)



1. A magnetic transducer head comprising a magnetic core forming a closed magnetic flux path, the core having a high reluctance gap, a portion of the core being of reduced cross-section and made of a material having a high permeability that increases in the direction of tensive stress, a pair of series connected windings wound such that a current passing through the two windings produces opposing flux in the core, an output winding wound on the core, and means for maintaining said portion of the core under tension.

3,182,301
MULTIPLE SHEET DETECTOR
Edwin R. Kolb, University Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Nov. 21, 1960, Ser. No. 70,592
20 Claims. (Cl. 340—259)

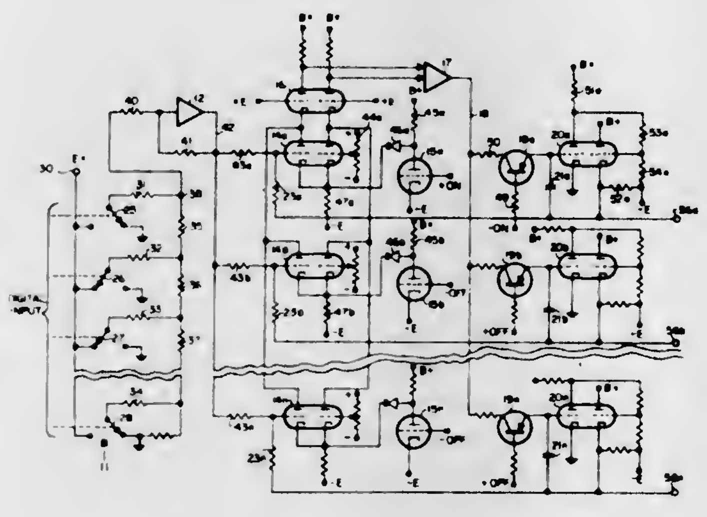


1. In a sheet-handling apparatus wherein sheets are successively moved along a sheet path past a sensing station disposed along said path, means at said sensing station for sensing a sheet as it passes the station and providing an electrical pulse in response to the passage of an edge of the sheet and having a magnitude which is the function of the rate of change of thickness of said edge as it passes the sensing station, and further means connected to the first-mentioned means for analyzing the magnitude of said pulse and for performing a control operation affecting the movement of said sheets when said pulse is greater than a predetermined magnitude.

9. In a sheet-handling apparatus wherein a plurality of sheets are moved in succession past a sensing station, sensing means at said station including a sensing element deflected in a first direction by the arrival of a particular edge of the sheet at said station, first circuit means responsive to the deflection of said element in said first direction for providing a pulse, pulse-generating means operated in synchronism with said sheet-handling apparatus and providing a clock pulse at the time said edge is to arrive at said sensing station, means for comparing the time of occurrence of said pulses and for effecting a control operation in response to the occurrence of said output pulse out of time with respect to said clock pulse.

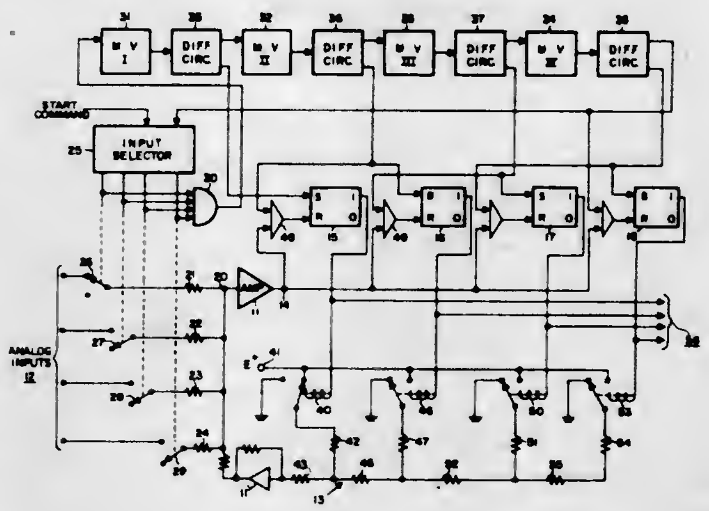
12. In a sheet-handling machine, a transducer for sensing the movement of sheets to a predetermined position on a table, a ball of magnetic material adapted to ride on the sheet material at said station and free to move toward and from said table, a magnetic core disposed below the upper surface of the table and having an air gap opposite to said ball, means constraining said ball against lateral movement, and an inductance coil on said core, said core and ball being relatively positioned so that the inductance of said coil varies as a predetermined function of the position of said ball.

3,182,302
DIGITAL TO ANALOG SIGNAL CONVERSION
Harrison S. Horn, Palo Alto, Calif., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Sept. 12, 1960, Ser. No. 55,285
5 Claims. (Cl. 340—347)



1. A multiplexed digital to analog signal converter comprising an input circuit for receiving digitally coded signals and for generating analog voltages corresponding thereto, a plurality of balanced amplifiers each having one control electrode coupled to the input circuit for receiving the analog voltages and having a second control electrode coupled to receive a balancing voltage, a switching means for biasing a selected one of the balanced amplifiers into conduction, another amplifier coupled to receive signals from the plurality of balanced amplifiers, a plurality of transistor switches corresponding to the plurality of balanced amplifiers and coupled to receive and selectively pass signals from the other amplifier, a holding amplifier coupled to each of the transistor switches and operable to retain a constant output signal during intervals when the transistor switch is non-conductive; and a direct feedback path coupled between each holding amplifier and the corresponding balanced amplifier for providing an overall negative feedback.

3,182,303
ANALOG TO DIGITAL CONVERSION
Robert M. Howe, Ann Arbor, Mich., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Oct. 31, 1960, Ser. No. 66,077
2 Claims. (Cl. 340—347)

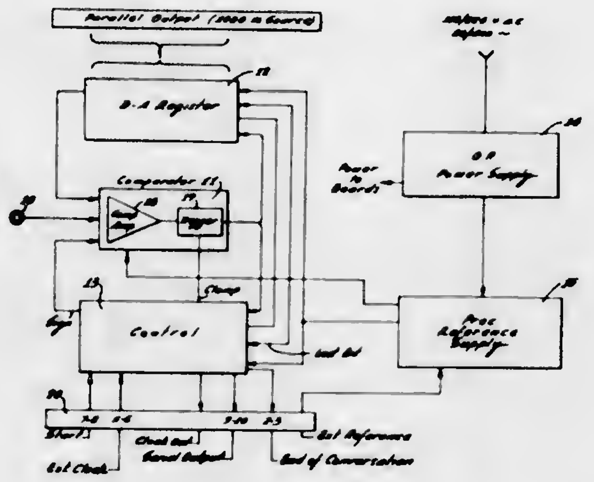


1. Apparatus for converting analog signals representative of numerical quantities into digital signals corresponding to the numerical quantities, said apparatus comprising an amplifier having an input circuit and an output circuit, a digital circuit operable to generate binary voltages sequentially in a descending order of value, the input circuit of the amplifier being coupled to receive both the analog signals and the binary voltages, said amplifier being operable to compare the analog signals with the binary voltages and to provide a voltage at the output circuit thereof in accordance with the comparisons, and a timing means coupled to the digital circuit and operable to generate a conversion cycle wherein each digital circuit is operative for a duration of time corresponding to a time required by the amplifier to respond to each descending order of binary voltages, the timing means being operable to generate a first control pulse having a duration time of substantially one half of the conversion cycle whereby the binary voltage having the greatest order of value will have a comparison time of substantially half of the conversion cycle, the timing means being further operable to generate a second control pulse having a duration time of substantially one quarter of the conversion cycle, and the timing means being further operable to generate subsequent control pulses having duration times substantially less than the duration time of the second amplifier control pulse.

3,182,304
CONVERTER
Robert M. Beck, Los Angeles, Donald W. Fuller, Pacific Palisades, Peter McAfee, Winnetka, and Smil Ruhman, Los Angeles, Calif., assignors, by mesne assignments, to Raytheon Company, Lexington, Mass., a corporation of Massachusetts
Filed Apr. 14, 1961, Ser. No. 103,099
8 Claims. (Cl. 340—347)

1. Apparatus for converting analog signals to digital signals, including, a first register having a plurality of flip-flops, a resistor matrix coupled to said flip-flops for providing a discrete voltage in accordance with the composite operating conditions of said flip-flops of said register, a magnetic shift register having a plurality of stages individually associated with the flip-flops of said first register, means coupled to the shift register and responsive to the operation of any stage of the shift register for enabling a reset operation for the flip-flop associated with said operated stage, cyclically operating circuitry for generating pulses and for shifting the operation from one

stage of the magnetic shift register to the next, means coupled to said resistor matrix for comparing the discrete voltage provided therefrom with the analog signal to be converted, means coupled to said comparing means and responsive to a difference between said discrete voltage and the analog signal which exceeds a predetermined value for resetting the flip-flop associated with the operated stage of said shift register, means coupled to said shift register for setting the flip-flop associated with any one of the stages when said one stage is set, and means coupled to the last stage of the magnetic shift register and responsive to the operation of said last stage for disabling said cyclically operating circuitry.

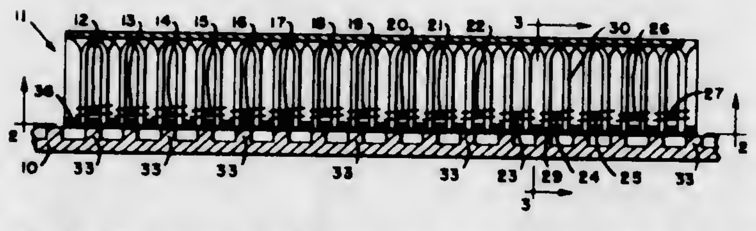


3,182,305
VERNIER DIGITAL ENCODER

Gunther Wolff, Westport, Conn., assignor to Machine Tool Automation, Inc., Southport, Conn., a corporation of Connecticut

Filed Feb. 15, 1962, Ser. No. 173,585

8 Claims. (Cl. 340—347)



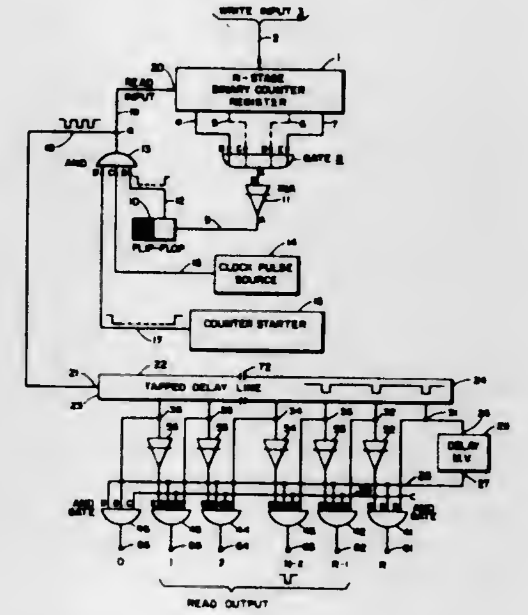
8. In a digital shaft encoder, a codified member in which the distinguishing areas are more than one quantum wide; an associated reading head comprised of a plurality of magnetic differential sensing devices in which the output is proportional to the algebraic sum of the fluxes in two pole pieces, the flux in said pole pieces being responsive to the change in reluctance of the completing magnetic circuit as a result of mechanical motion of a portion of said completing magnetic circuit, each of said sensors being capable of yielding an output only when said sensor is centered on a distinguishing area of said codified member, and said plurality of sensors being spaced at the pitch distance of the codified member plus two quanta; a read-out circuit comprising for each sensor coil a diode; a load consisting of a resistor with associated smoothing capacitor, the output across said load being paralleled with the outputs from said sensor coils through a blocking diode; a common emitter transistor circuit with its base so connected to the paralleled output from the coils that the transistor will be turned on only when the base bias voltage is high enough to overcome the output voltage from any one sensor coil; and a plurality of reading heads provided with pitch distances and output discrimination so adjusted that the outputs from successive heads on the same codified member yield binary numbers of increasing significance.

3,182,306
CONVERTER

William F. Bartlett, Rochester, and Barrie Brightman, Webster, N.Y., assignors to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed Oct. 4, 1962, Ser. No. 228,305

2 Claims. (Cl. 340—347)



1. In combination, a periodic pulse source for producing a serial train of between one and N time spaced pulses, where N is a plural integer, a tapped delay line having an input and N spaced taps providing an output pulse at the tap thereof most distal from said input thereof a predetermined time interval after an input pulse is applied to the input thereof, the time delay provided by said delay line between each adjacent pair of taps being equal to the time spacing between successive pulses of said serial train, means coupling said source to the input of said delay line for applying said serial train of pulses as an input thereto, an individual AND gate corresponding to each of said N taps, first means coupling said most distal tap to a first input of each and every one of said AND gates to partially enable all of said AND gates only in response to the presence of an output pulse at said most distal tap, second means coupling said most distal tap to a second input of each and every one of said AND gates to disable all of said AND gates for a time interval greater than the total time interval occupied by a serial train of N of said time spaced pulses only in response to the termination of an output pulse at said most distal tap, individual third means coupling each of said taps other than said most distal tap to a third input of that AND gate with which that tap corresponds for partially enabling that AND gate only in response to the presence of an output pulse at that tap, individual fourth means coupling each of said taps other than said most distal tap to a fourth input of that AND gate corresponding to the next succeeding one of said taps to disable that AND gate only in response to the presence of an output pulse at that tap, and an individual output conductor connected to the output of each of said AND gates.

3,182,307
ELECTRICAL SIGNALLING DEVICES

John Doggart, Macclesfield, England, assignor to V. & E. Friedland Limited, Macclesfield, England, a British company

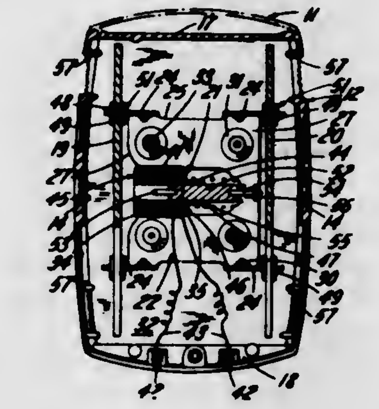
Filed Feb. 28, 1961, Ser. No. 92,226

Claims priority, application Great Britain Feb. 29, 1960

2 Claims. (Cl. 340—392)

2. An electrical signalling device, comprising:
(*a*) a ferro-magnetic support member,
(*b*) a pair of tone bars,

(*c*) a striker mechanism including a plunger armature and a solenoid coil wound onto a non-magnetic tube,



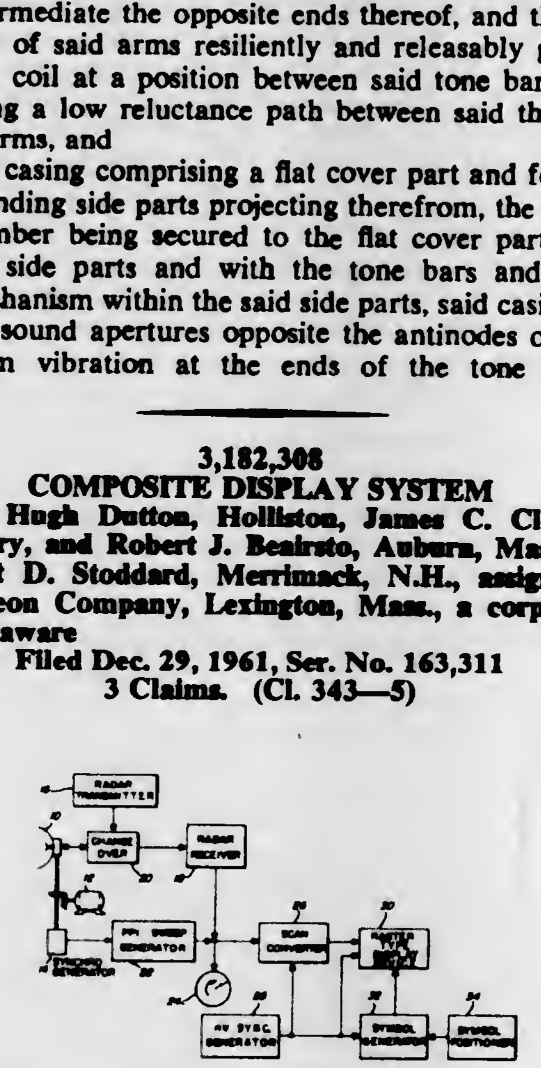
(*d*) three pairs of arms pressed out of and integral with the support member, two pairs of said arms being located at opposite sides of the support member and each releasably supporting one of said tone bars intermediate the opposite ends thereof, and the third pair of said arms resiliently and releasably gripping said coil at a position between said tone bars, there being a low reluctance path between said third pair of arms, and
(*e*) a casing comprising a flat cover part and four surrounding side parts projecting therefrom, the support member being secured to the flat cover part within the side parts and with the tone bars and striker mechanism within the said side parts, said casing having sound apertures opposite the antinodes of maximum vibration at the ends of the tone bars.

3,182,308
COMPOSITE DISPLAY SYSTEM

Richard Hugh Dutton, Holliston, James C. Clements, Sudbury, and Robert J. Beairsto, Auburn, Mass., and Robert D. Stoddard, Merrimack, N.H., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Dec. 29, 1961, Ser. No. 163,311

3 Claims. (Cl. 343—5)



1. In combination:
a symbol generator for producing a given symbol in the form of a matrix;
a display device;
a beam sweep system for generating synchronizing signals;
a source of video information means applying video information from said source to the display device for presentation thereon;
means applying the synchronizing signals to the display device for generating a raster thereon;
means simultaneously applying the synchronizing signals to the symbol generator, and
means interconnecting the symbol generator with the display device to display a composite video and symbol presentation on the display device.

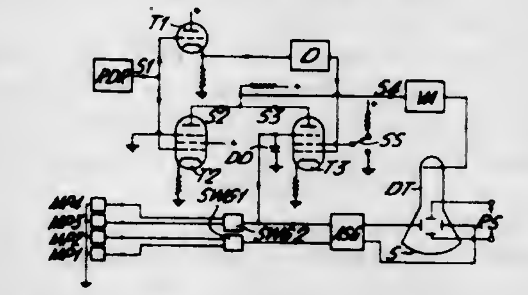
3,182,309
ECHO IDENTIFICATION IN DUAL BEAM RADAR DISPLAY

Archibald Hendry, William C. Brown, and Eric F. V. Robinson, Ottawa, Ontario, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a body corporate

Filed Apr. 1, 1963, Ser. No. 269,432

Claims priority, application Canada, Oct. 19, 1962, 860,467

4 Claims. (Cl. 343—5)



1. A radar system comprising
(*a*) means for producing a narrow radar beam and for continuously repetitively and rapidly scanning said beam in a plurality of arcs to form effectively a plurality of radar beams,
(*b*) means synchronised with said scanning means for generating separate sweep signals corresponding to each of said beams,
(*c*) a radar display connected to said generating means to receive said sweep signals therefrom,
(*d*) means for transmitting to said display echo signals returned in each of said beams,
(*e*) and means responsive to one of said sweep signals for producing delayed identification signals corresponding to and in predetermined timed relation to the echo signals in a selected one of said beams, and for passing said identification signals to said display.

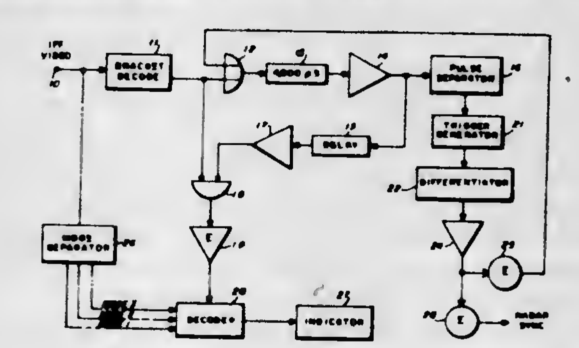
3,182,310
IFF SYSTEM DEFRUITER

Bernarr H. Humpherys, 719 Golden Rod, Escondido, Calif.

Filed Mar. 20, 1962, Ser. No. 181,209

2 Claims. (Cl. 343—6.5)

(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An IFF defruiter comprising;
bracket decode means for decoding start and stop pulses on an interrogation reply and having inputs and outputs,
one of said inputs being adapted to receive IFF video,
delay means operatively connected to an output of said bracket decode means for delaying the pulse output of said bracket decode means by at least one repetition rate of an associated radar system,
coincidizing means having inputs and an output,
one input to said coincidizing means being operatively connected to the output of said delay means,
another input to said coincidizing means operatively connected to an output of said bracket decode means,
said coincidizing means being operable to produce an

output pulse when outputs from said delay means and said bracket decode means are present at the input,

said output pulse from said coincidizing means providing an enabling pulse for a decoding operation on received IFF video,

clock pulse producing means for producing synchronizing pulses operatively connected to the output of said delay means,

said clock pulse producing means having outputs,

one of said outputs being operatively connected to the input of said delay means,

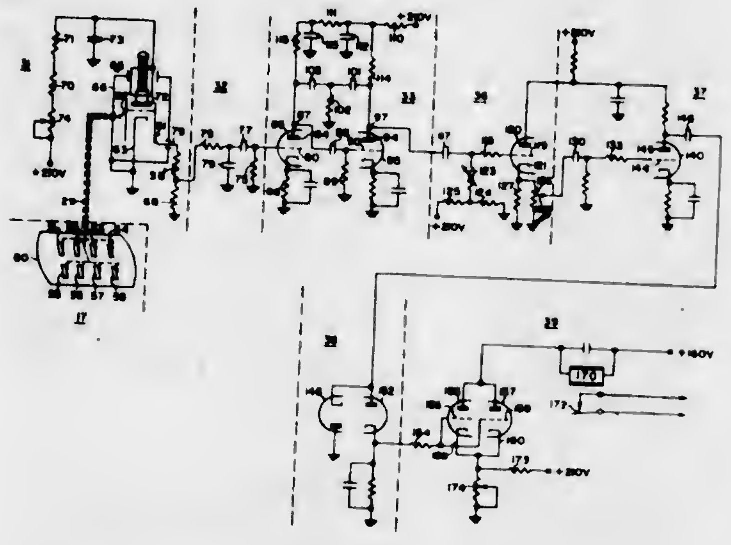
another of said outputs being adapted for connection to a radar synchronization system so that the IFF defruiter is synchronized with associated radar circuitry.

3,182,311
LOW FREQUENCY RESPONSIVE VEHICLE DETECTOR

Bernard J. Midlock, Norwalk, Conn., assignor, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Mar. 24, 1960, Ser. No. 17,406

2 Claims. (Cl. 343—7)



1. A traffic detection apparatus comprising in combination

high frequency transmitting and receiving means including an oscillator-detector circuit for transmitting high frequency waves in a beam at an angle to a traffic path to be reflected from vehicles moving along said path through said beam, said oscillator-detector circuit generating said transmitted waves and receiving Doppler modified waves reflected from the vehicle and mixing these reflected waves with the oscillator generated waves to detect therefrom low frequency Doppler beat frequency output signals,

a low pass filter circuit coupled to the output of said oscillator-detector circuit for receiving and passing the low frequency detected signals as an output,

first and second three-electrode amplifiers in which internal impedance to current flow between the first and second electrodes as an output is controlled by potential of the third electrode with respect to the second electrode as an input, each of said first and second amplifiers having substantially 180-degree internal phase shift between input and output, the input of said first amplifier being coupled to the output of said low pass filter circuit to receive the low frequency signals passed therefrom,

a circuit including an external resistance coupling said first electrode of said first amplifier to a direct current supply one terminal of which serves as a reference,

a combined low frequency interstage coupling and regenerative feedback circuit coupling said first and second amplifiers as successive stages of a low frequency selective alternating current amplifier circuit and providing substantially but not exactly 180-degree external phase shift between the output and input of said second amplifier at a substantially predetermined said low frequency in the low audio to subaudio range to provide regeneration without sustained oscillation in said amplifier circuit in said low frequency, said combined circuit comprising

three series capacitance-parallel resistance phase shift networks coupled in series to provide substantial respective parts of said substantially 180-degree phase shift, the first said network having a capacitor with one side coupled to said first electrode of said second amplifier and having a resistor coupled between the other side of said capacitor and said reference, the second of said networks having a capacitor coupled between said other side of the first network capacitor and said first electrode of said first amplifier and said second network including as its network resistance the internal impedance between the first and second electrodes of said first amplifier in parallel with said external resistance to said reference, and the third of said networks having a capacitor coupled between said first electrode of said first amplifier and said third electrode of said second amplifier and having a resistor coupled between said third electrode of said second amplifier and said reference, whereby said third network serves as an interstage coupling circuit for said amplifiers,

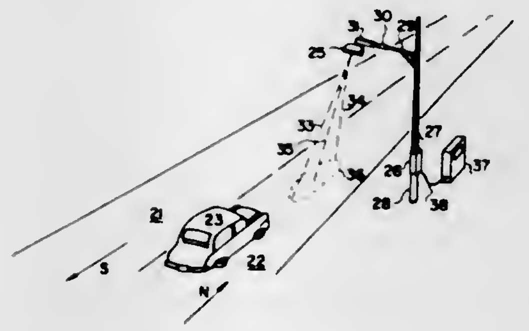
and a relay control circuit coupled to the output of said second amplifier to be controlled thereby.

3,182,312
VEHICLE DETECTION AND COUNTING SYSTEM

Charles K. Daniels, Westport, Conn., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed Jan. 11, 1962, Ser. No. 165,643

15 Claims. (Cl. 343—7)



1. A detector of objects moving along a path including means for transmitting a beam of high frequency waves at an angle across said path to be intercepted by said objects and for receiving such waves reflected from said objects and Doppler shifted in frequency by the component in the direction of said transmitter-receiver of the motion of said object along said path and means for deriving a beat frequency signal representative of the frequency difference between said transmitted and received reflected waves, a transistorized amplifier for said beat frequency signal, solid-state full wave responding and rectifying means coupled to said amplifier to derive a direct current signal positive and negative phases of said amplified beat frquency signal and a transistor trigger circuit controlled by said direct current signal for providing an output change in response to said beat frequncy signal.

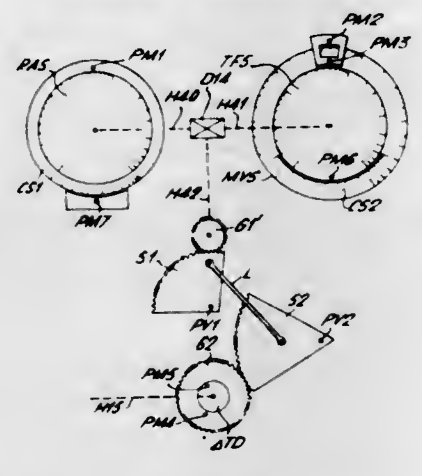
3,182,313
RADAR SYSTEM FOR DETERMINING THE MUZZLE VELOCITY OR TIME OF FLIGHT OF A PROJECTILE

Charles R. Clemence and William C. Brown, Ottawa, Ontario, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a body corporate

Filed Apr. 1, 1963, Ser. No. 269,282

Claims priority, application Canada, Nov. 20, 1962, 862,686

6 Claims. (Cl. 343—7)



1. A radar system comprising

(*a*) means for emitting two closely vertically superposed, mutually divergent, generally horizontal, effectively continuous upper and lower radar beams,

(*b*) means for displaying echoes returned by a projectile travelling in a trajectory intersecting said upper and lower beams and for determining the range value (R_1) of one of said intersections measured from the radar system,

(*c*) means for determining the time interval (ΔT) between passage of the projectile through corresponding points of the upper and lower beams,

(*d*) and mechanism for solving the equation

$$V \approx C_3 t_f \approx C_2\left(\frac{R_1}{\Delta T}\right)$$

where V is the muzzle velocity of the projectile, t_f is the time of flight of the projectile, and C_2 and C_3 are constants,

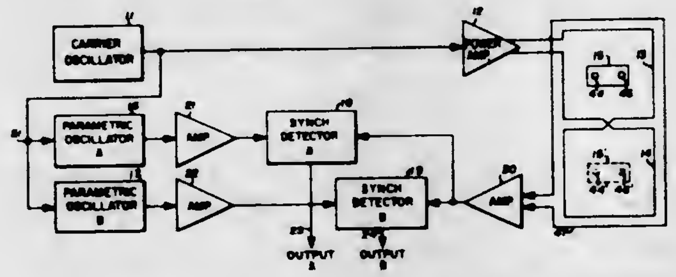
(*e*) and means for inserting the values of R_1 and ΔT into such mechanism to derive at least one of the quantities V and t_f.

3,182,314
DIRECTION SENSING FOR INTERROGATOR RESPONDER SIGNALLING SYSTEMS

Robert A. Kleist, Woodland Hills, and Harold E. Sweeney, Menlo Park, Calif., assignors to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware

Filed June 4, 1962, Ser. No. 199,822

4 Claims. (Cl. 343—6.5)



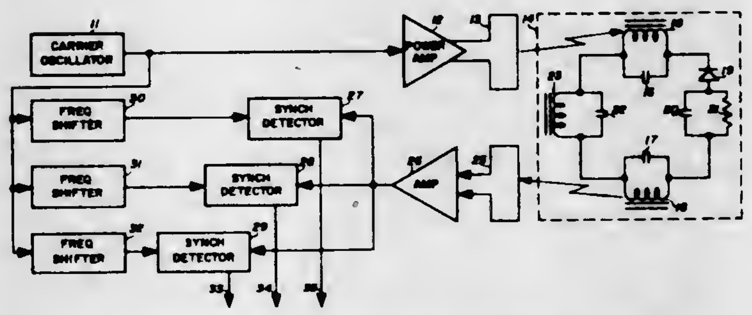
1. An interrogator responder signalling system comprising an interrogator station and a responder device movable into spaced relation with the interrogator station, said interrogator station including a first inductive loop for transmitting an interrogator signal, said transmitter loop being operable to generate two magnetic fields of opposite polarity, said responder device including a parametric oscillator circuit for receiving energy from the interrogator signal and for generating a response signal, said interrogator station including a receiver including a receiver loop positioned in spaced relation with both magnetic fields of the transmitter loop, said receiver including means coupled to receive the interrogator signal and operable to generate a plurality of reference signals shifted in phase with respect to each other, said receiver further including synchronous detector means for comparing the response signal with the reference signals and for generating an output signal in accordance with the relative phase relationship between the response signal and the two reference signals.

3,182,315
INTERROGATOR-RESPONDER SIGNALLING SYSTEM

Harold E. Sweeney, Menlo Park, Calif., assignor to General Precision, Inc., Binghamton, N.Y., a corporation of Delaware

Filed Nov. 24, 1961, Ser. No. 154,459

9 Claims. (Cl. 343—6.5)



1. In an interrogator-responder signalling system, a responder device comprising a first tuned circuit for receiving an interrogator signal of a first frequency, a second tuned circuit for transmitting a response signal of a second frequency, and a diode circuit coupled between the first tuned circuit and the second tuned circuit, said diode circuit being operable to vary the effective capacitance of both tuned circuits whereby oscillations are sustained in the second tuned circuit resulting from a pumping of energy from the first tuned circuit through the diode.

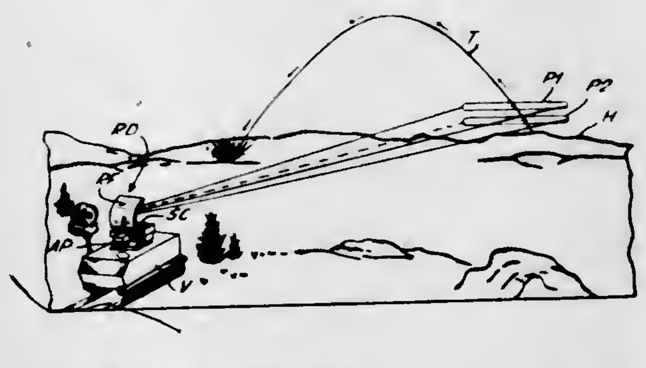
3,182,316
RADAR SYSTEM AND METHOD FOR DETERMINING A TARGET POINT ON A PROJECTILE TRAJECTORY

Charles R. Clemence, Eric F. V. Robinson, and William C. Brown, Ottawa, Ontario, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a body corporate

Filed Apr. 1, 1963. Ser. No. 269,283

Claims priority, application Canada, Oct. 1, 1962, 859,159

8 Claims. (Cl. 343—7)

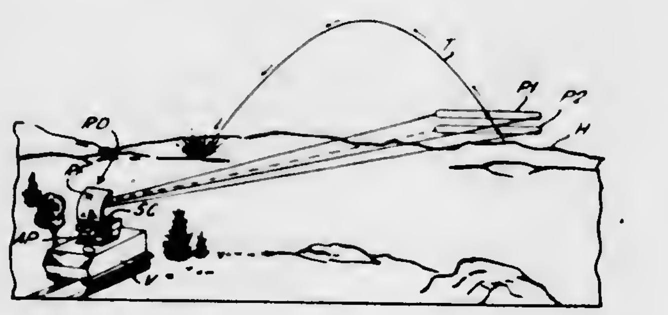


1. A radar system comprising

(*a*) means for emitting two closely vertically superposed, mutually divergent, generally horizontal, effectively continuous, upper and lower radar beams,

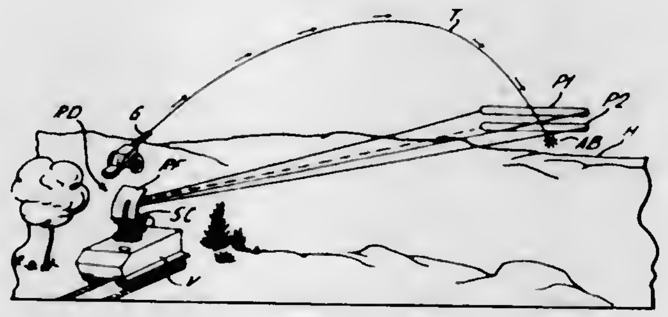
(*b*) means for displaying echoes returned by a projectile travelling in a trajectory intersecting said upper and lower beams for derivation of at least two points of the group comprising
  (i) a point on the echo received from the lower edge of the lower beam,
  (ii) the corresponding point on the echo received from the upper edge of the lower beam,
  (iii) the corresponding point on the echo received from the lower edge of the upper beam,
  (iv) the corresponding point on the echo received from the upper edge of the upper beam,
  (v) the mean point between points (i) and (ii),
  (vi) the mean point between points (iii) and (iv), and
  (vii) the mean point between the series of echoes received from the lower beam and the series of echoes received from the upper beam,
(*c*) means for determining range and azimuth values of a selected two of said points measured from the radar system in relation to a known azimuth datum,
(*d*) a computer,
(*e*) means for supplying the computer with said determined range and azimuth values and with the values of the angles each of said upper and lower beams makes with the horizontal and with the value of the angle a working plane makes with the horizontal,
(*f*) said computer including means for calculating from said values supplied to it at least approximately a target range value from the radar system of a target point on said working plane through which such trajectory extends and a target azimuth value from the radar system of said target point in relation to said datum,
(*g*) and said computer further including switching means operable to modify said calculating means in accordance with the combination of two points selected.

3,182,317
RADAR SYSTEM AND METHOD FOR DETERMINING TARGET POINTS ON PROJECTILE TRAJECTORIES
Charles R. Clemence, William C. Brown, and Eric F. V. Robinson, all of Ottawa, Ontario, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a body corporate
Filed Apr. 1, 1963, Ser. No. 269,284
Claims priority, application Canada, Oct. 1, 1962, 859,158
11 Claims. (Cl. 343—7)



1. A radar system comprising
(*a*) means for emitting two closely vertically superposed, mutually divergent, generally horizontal, effectively continuous, upper and lower radar beams,
(*b*) means for displaying echoes returned by a projectile travelling in either direction in a trajectory intersecting said upper and lower beams and for determining range and azimuth values of such intersections measured from the radar system in relation to a known azimuth datum,
(*c*) a computer,
(*d*) means for supplying the computer with said determined range and azimuth values and with the values of the angles each of said upper and lower beams makes with the horizontal and with the value of the angle a working plane makes with the horizontal,
(*e*) said computer including means for calculating at least approximately coordinates of a target point on said working plane through which such trajectory extends,
(*f*) means for storing said coordinates,
(*g*) and means for displaying any differences between said stored coordinates and the subsequently derived coordinates of another target point.

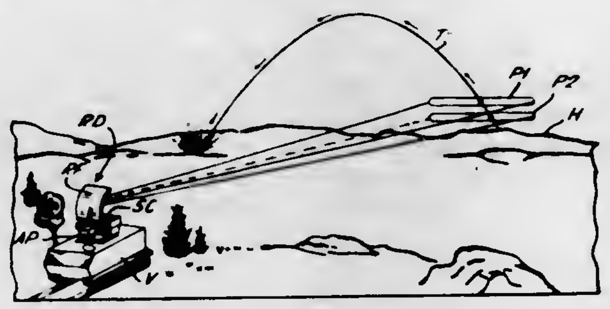
3,182,318
RADAR SYSTEM AND METHOD FOR DETERMINING THE POINT OF BURST OF A PROJECTILE
William C. Brown, Ottawa, Ontario, Canada, assignor to National Research Council, Ottawa, Ontario, Canada, a body corporate of Canada
Filed Apr. 1, 1963, Ser. No. 269,285
Claims priority, application Canada, Jan. 23, 1963, 867,187
8 Claims. (Cl. 343—7)



1. A radar system comprising
(*a*) means for emitting two closely vertically superposed, mutually divergent, generally horizontal, effectively continuous, upper and lower radar beams,
(*b*) means for displaying echoes returned by a projectile travelling in a trajectory intersecting said upper and lower beams and for determining range and azimuth values of such intersections measured from the radar system in relation to a known azimuth datum,
(*c*) a computer,
(*d*) means for supplying the computer with said determined range and azimuth values, with the value of the angle (θ) the lower beam makes with the horizontal, with the value of the angle (α) between beams and with the value of the angle (ϕ) a working plane makes with the horizontal,
(*e*) said computer including means for calculating at least approximately coordinates of a target point on said working plane through which such trajectory extends,
(*f*) and means for observing the point of burst of a projectile and for setting the computer for a working plane passing through such observed point of burst.

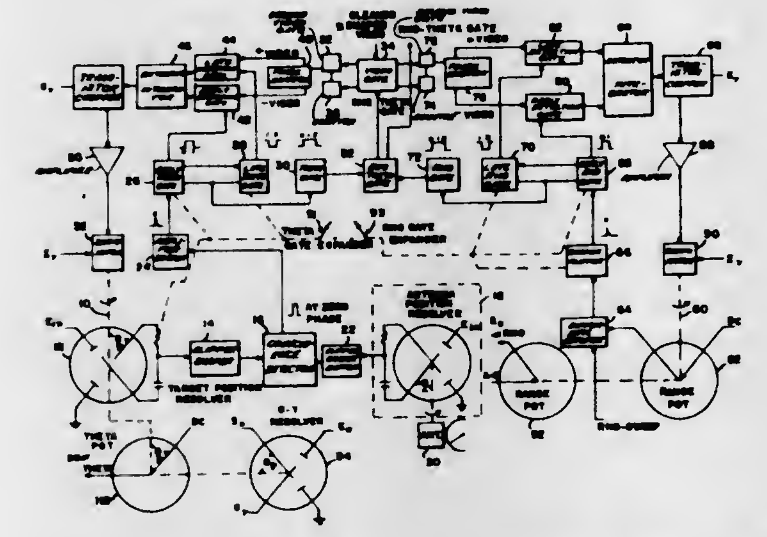
3,182,319
RADAR SYSTEM AND METHOD FOR DETERMINING A TARGET POINT ON A PROJECTILE TRAJECTORY
William C. Brown, Charles R. Clemence, and Eric F. V. Robinson, Ottawa, Ontario, Canada, assignors to National Research Council, Ottawa, Ontario, Canada, a body corporate
Filed Apr. 1, 1963, Ser. No. 269,367
Claims priority, application Canada, Aug. 31, 1962, 857,117
16 Claims. (Cl. 343—7)

1. A radar system comprising
(*a*) means for emitting two closely vertically superposed, mutually divergent, generally horizontal, effectively continuous upper and lower radar beams,
(*b*) means for displaying echoes returned by a projectile travelling in either direction in a trajectory intersecting said upper and lower beams and for determining range and azimuth values of such intersections measured from the radar system in relation to a known azimuth datum,
(*c*) a computer,



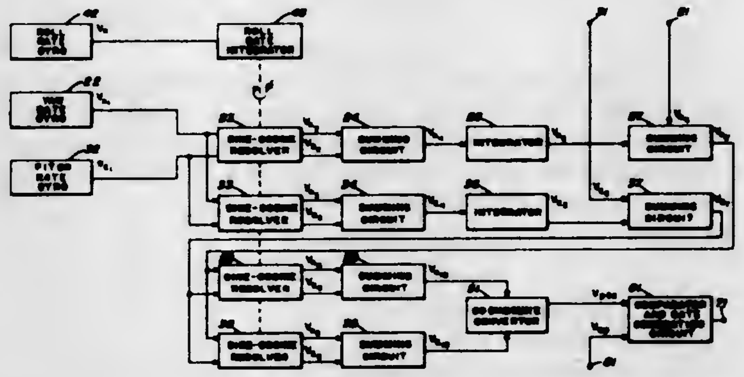
(*d*) means for supplying the computer with said determined range and azimuth values and with the values of the angles each of said upper and lower beams makes with the horizontal and with the value of the angle a working plane makes with the horizontal,
(*e*) said computer including means for calculating at least approximately a target range value from the radar system of a target point on said working plane through which such trajectory extends and a target azimuth value from the radar system of said target point in relation to said datum,
(*f*) and means for displaying said target range and target azimuth values.

3,182,320
AUTOMATIC RANGE AND AZIMUTH TRACK WHILE SCAN SYSTEM
Alan I. Frank, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Air Force
Filed June 29, 1960, Ser. No. 39,753
1 Claim. (Cl. 343—7.3)



A system for tracking a target from azimuth and range information derived from a continuously rotating directional antenna system comprising: means for locking on the said target; azimuth and range gate shafts; first and second servo means responsive to the locking means signals and connected to said azimuth and range gate shafts, respectively, for positioning the original target location on said azimuth and range shafts; a target position resolver on said azimuth shaft for producing an output voltage proportional to said azimuth shaft position; an antenna position resolver connected to said antenna system for producing an output voltage proportional to the position in azimuth of said target; first means coupled to the said target position resolver and said antenna position resolver for comparing said azimuth positions of said resolvers, initiating an azimuth tracking gate at a time just prior to the instant that the said antenna is directed toward the position set on the said azimuth shaft, and terminating the said azimuth tracking gate at a time such that the portion of the azimuth tracking gate prior to the instant the antenna is directed to the said shaft position is identical to that portion thereafter; means for sweeping the range for which said antenna is effective; second means actuated by said sweeping means and said range shaft for initiating a range tracking gate at a time just prior to the instant that the said range sweep is at the position set on said range shaft and terminating said range tracking gate at a time such that the portion of the range tracking gate, prior to the instant that the range sweep is at the said shaft position, is identical to the portion thereafter; video gate means coupled to said first and second means for gating video obtained by said antenna system with a composite azimuth and range tracking gate whereby the video gated will include target video; azimuth error signal generating means coupled to said video gating means for producing a single output error voltage proportional in magnitude to the error in position from center of the said target video within said azimuth tracking gate; said first servo means coupling said azimuth error signal generating means to said azimuth gate shaft for correcting the azimuth shaft position; range error signal generating means coupled to said video gating means for producing a single output error voltage proportional in magnitude to the error position from center of the said target video within said range tracking gate; and said second servo means coupling said range error signal generating means to said range gate shaft for correcting the range shaft position.

3,182,321
SCANNER CO-ORDINATE COMPENSATOR FOR RADAR-BEARING CRAFT
Ralph I. Hauser, Gambrills, and David R. Houston, North Linthicum, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 23, 1962, Ser. No. 190,200
11 Claims. (Cl. 343—7.3)

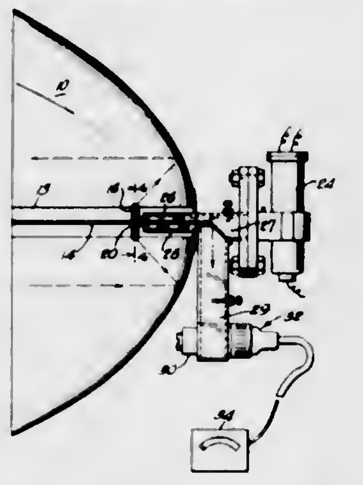


1. A scanner co-ordinate compensator comprising: first signal generating means for generating signals proportional to errors in the angular co-ordinates of a target resulting from ownship maneuvers, terminal means coupled to a source of signals proportional to the initial angular co-ordinates of said target, second signal generating means coupled to said first signal generating means and to said terminal means for generating signals proportional to the instantaneously correct angular co-ordinates of said target, said second signal generating means including conversion means for converting said instantaneously correct target angular co-ordinate signals to a signal proportional to the pattern time co-ordinate form thereof, time reference signal generating means, and

means including gate generating means coupled to said time reference signal generating means and said conversion means.

3,182,322
RADAR ANTENNAE

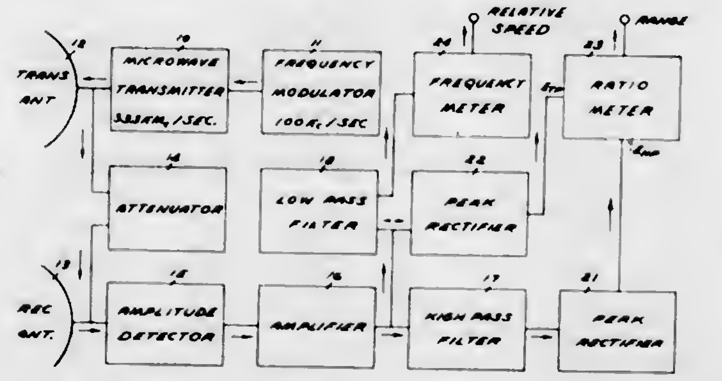
Harry Bruce Nankervis, Middletown, N.J., assignor to Stephenson Corporation, Red Bank, N.J., a corporation of New Jersey
Filed Mar. 6, 1962, Ser. No. 177,864
13 Claims. (Cl. 343—8)



1. In a radar system for measuring the speed of vehicles, in combination, a dish comprising two halves of a parabolic dish separated and joined together at a distance of three-eighths of the length of waves to be transmitted, a septum parallel to the spaced opposed edges of the said halves and dividing the resulting elongated dish diametrically into two portions, a source of waves of the length to be transmitted, a first wave guide extending from said source into one portion of the elongated dish, means in said portion for radiating waves of the length supplied to the dish and hence to the target, a mixer detector assembly, a second wave guide extending into the other portion of the said elongated dish and communicating with said mixer detector assembly, means in the other portion of the dish for concentrating waves reflected from the target and coupling them to the second wave guide, and means for transferring into said other portion of the dish an adjustable measured portion of the transmitted waves and feeding them also into said second wave guide.

3,182,323
CONTINUOUS WAVE RADAR SYSTEM

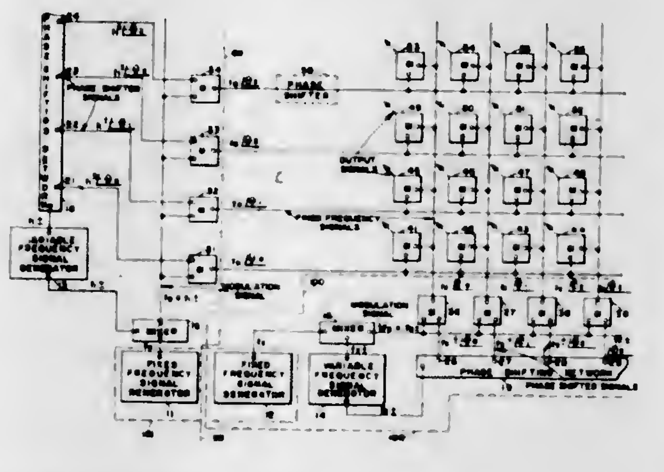
Ole K. Nilssen, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 19, 1960, Ser. No. 76,678
14 Claims. (Cl. 343—9)



1. A radar system for measuring range between the system and a target having relative velocity with respect to the system comprising, a transmitting means, modulating means connected to said transmitting means for angle modulating said transmitting means at a repetition rate greater than the maximum Doppler frequency expected to be received, means for receiving and combining a signal transmitted by said transmitting means and a signal reflected from the target, detecting means connected to said last mentioned means for producing an output signal having a component due to the angle modulation, and means connected to said detecting means for measuring the ratio of the peak amplitudes of the component due to the angle modulation and the total output signal from said detecting means.

3,182,324
SIGNAL SYNTHESIZING SYSTEM

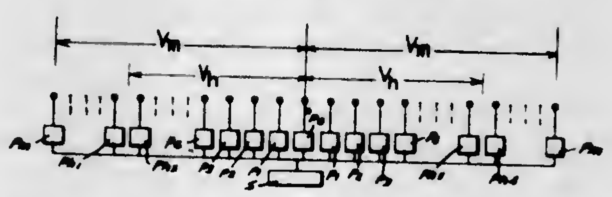
Bruce K. Nelson, Concord, and Maurice B. Haslam, Waltham, Mass., assignors to Avco Manufacturing Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Apr. 1, 1959, Ser. No. 803,539
12 Claims. (Cl. 343—100)



3. In combination with an antenna comprising a radiating element, a signal synthesizing system for developing a radiated signal having predetermined components of phase comprising: means for generating a first phase shifted signal having a preselected frequency and phase; means for generating a second phase shifted signal having a preselected frequency and phase; means for generating a modulation signal whose frequency is a fixed difference from the first and second phase shifted signal; means for intermodulating the first phase shifted signal and the modulation signal for developing a first fixed frequency signal having a frequency equal to the fixed difference and a phase which is representative of the phase of the first phase shifted signal; means for intermodulating the second phase shifted signal and the modulation signal for developing a second fixed frequency signal having a frequency equal to the fixed difference and a phase representative of the second phase shifted signal; and circuit means coupled between the radiating element and said modulating means for receiving the first and second plurality of fixed frequency signals for intermodulating the first and second fixed frequency signals for developing a radiated signal having a phase and a frequency which is a function of the phases and frequencies of the intermodulated first and second fixed frequency signals.

3,182,325
ARRAY PATTERN MODIFICATION

Alan E. Blume, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 21, 1960, Ser. No. 57,429
11 Claims. (Cl. 343—100)

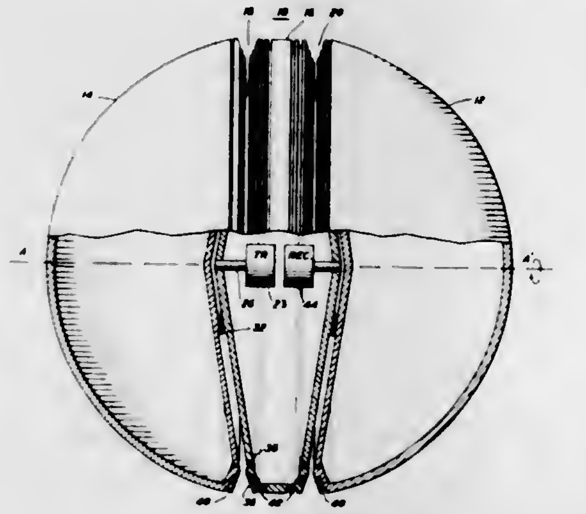


1. An array comprising a plurality of elements, means for connecting a uniform magnitude excitation signal to

the elements of said array for permitting maximum power to be delivered to each element of the array, said uniform magnitude excitation signal having a linearly varying phase deviation for directing the position of the main beam of the radiation pattern, said connecting means being arranged to reverse the phase of the phase deviated signal to selected ones of the elements that are equidistantly disposed about the center of said array for reducing the side lobes of the radiation pattern.

3,182,326
ANTENNA STRUCTURES FOR COMMUNICATION SATELLITES

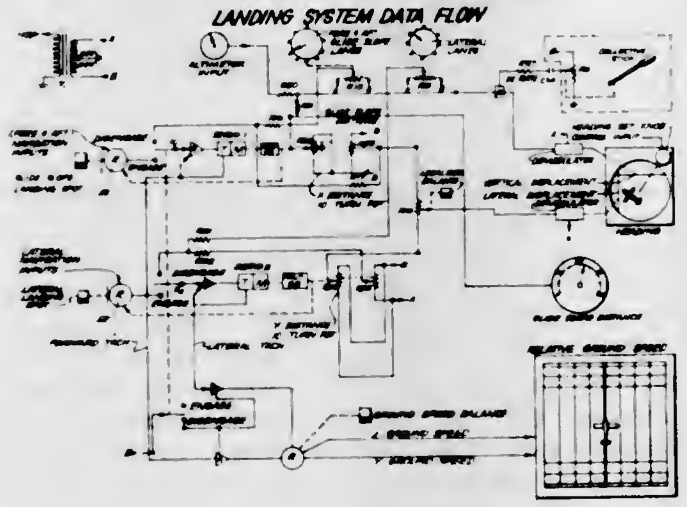
Cassius C. Cutler, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 6, 1960, Ser. No. 74,183
10 Claims. (Cl. 343—100)



4. In a communication system, first and second biconical antennas, transmitting and receiving means, means for coupling energy between said antennas and said transmitting and receiving means, respectively, for circularly polarized waves, and means for minimizing cross-feed between said transmitting and receiving means by way of said antennas.

3,182,327
INSTRUMENT LANDING SYSTEM

Harry W. Mitchell and Jeff E. Freeman, Fort Worth, Tex., assignors to Bell Aerospace, Wheatfield, N.Y., a corporation of Delaware
Filed Jan. 25, 1961, Ser. No. 84,882
3 Claims. (Cl. 343—108)

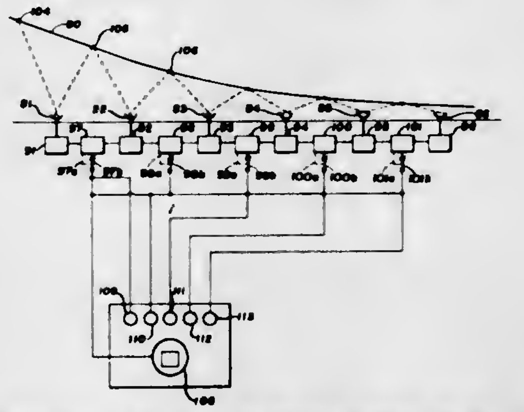


1. A system for the instrument landing of an aircraft from an arbitrarily selected engaging spot onto an arbitrarily selected landing spot, when said aircraft is flying within a system of navigational coordinates, comprising:

- computer means for programming the glide slope between said landing spot and said engaging spot by correlating horizontal distance and altitude along said glide slope, said correlation having reference to the navigational coordinates lying closest to the relevant sector of said glide slope,
- means aboard said aircraft for engaging said navigational coordinates to obtain a first position signal indicating horizontal distance from said landing spot,
- altimeter means aboard said aircraft to obtain a second position signal indicating altitude,
- means for comparing said first position signal with the programmed horizontal distance of said glide slope to obtain a first error signal indicating horizontal deviation from said glide slope, and
- means for comparing said second position signal with the programmed altitude of said glide slope to obtain a second error signal indicating vertical deviation from said glide slope.

3,182,328
RADIO CONTROL SYSTEM

Donald L. Hings, 281 N. Howard Ave., Vancouver, British Columbia, Canada
Filed Feb. 2, 1961, Ser. No. 86,815
13 Claims. (Cl. 343—112)



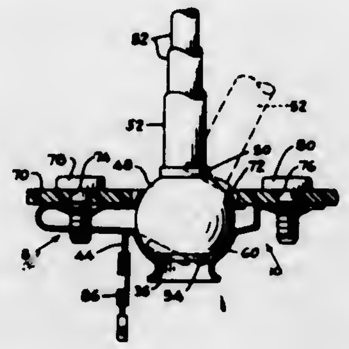
4. An aircraft detection system comprising, in combination, a transmitting antenna at a first location, said transmitting antenna emitting waves in the VHF region, a receiving location on the earth's surface remote from the transmitting antenna a distance sufficient so that the transmitting antenna field is considerably attenuated, a receiver at said receiving location, first and second receiving antennas at said receiving location each being directional and beamed upwardly to establish a zone of detection determined by coincidence of said transmitting antenna field and said two receiving antenna fields, whereby aircraft flying within said zone of detection reflect waves from said transmitting antenna to said first and second receiving antennas, and means at said receiver to compare the changing phase of the signals received at said first and second receiving antennas to indicate the passage of any said aircraft.

3,182,329
ANTENNA MOUNTING CLIP

Donald L. Biesecker, Dayton, Ohio, assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed June 13, 1963, Ser. No. 287,542
14 Claims. (Cl. 343—702)

13. A sheet metal clip for use in the resilient retention of a portable antenna including a pair of substantially parallel leg members of similar length with each leg being provided with aperture means, flange means extending in opposite directions from each of said legs about the margins of said aperture means in each of said legs, said

aperture means being substantially in register with one another, screw accepting means in each of said legs each positioned on opposite sides of the center line passing

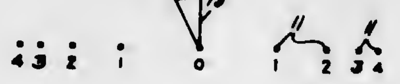


through said flanged aperture means, the lower of said legs being bent adjacent its end so that its free end lies substantially adjacent to and in substantially the same plane as the lower surface of the other leg.

3,182,330

VARIABLY SPACED ARRAYS OF WAVE RADIATORS AND RECEIVERS

Alan E. Blume, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 21, 1960, Ser. No. 57,526
4 Claims. (Cl. 343—844)

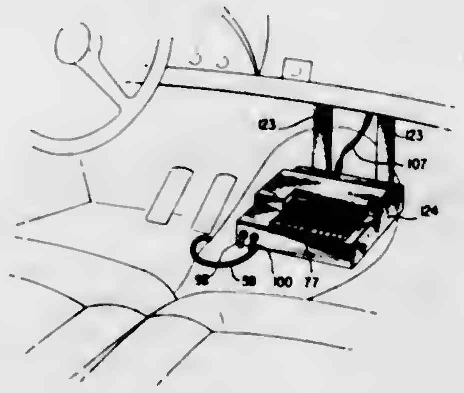


1. An antenna array for the reception or radiation of wave energy comprising a reference point, a plurality of antenna elements, said antenna elements being perturbed in a definite mathematical relation for reducing echelon lobe radiation, the perturbation index for said mathematical relationship being such that said plurality of antenna elements are spaced progressively closer to each other as the distance from said reference point increases, at least one of said elements being spaced more than one-half wave length from any other of said elements.

3,182,331

METHOD OF SPEED INDICATION

Arthur Niemeyer Marshall, 5501 Kingsbury Road, Richmond, Va.
Filed Feb. 11, 1963, Ser. No. 257,378
9 Claims. (Cl. 346—1)

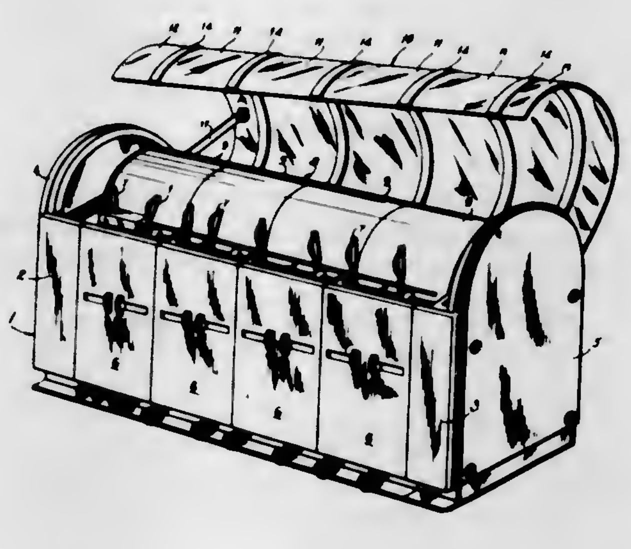


1. A method of determining and identifying the speed of a checked vehicle from a checking vehicle wherein said checking vehicle has a distance measuring unit which can measure and identify a selected distance traveled by said checking vehicle and a time measuring unit which can measure time and a directly readable speed measuring means which can combine said selected distance and time to identify the speed of said checked vehicle comprising the steps of
- starting the time measurement when the checked vehicle passes a first selected point,
- stopping the time measurement when the checked vehicle passes a second selected point, said time starting and stopping steps being accomplished by starting and stopping said time measuring unit,
- moving said checking vehicle from said first to said second selected point over substantially the same path traveled by said checked vehicle,
- starting the distance measurement when the checking vehicle passes said first selected point,
- stopping said distance measurement when the checking vehicle passes said second selected point, said distance starting and stopping steps being accomplished by starting and stopping said distance measuring unit,
- combining the resultant identified time measurement and distance measurement in said directly readable speed measuring means in a predetermined manner to produce a speed identification, the distance measurement steps being independent as to time of execution whereby the selected distance may be measured before, during and/or after the time measurement steps.

3,182,332

RECORDER CONSTRUCTION

Roy L. Van Winkle, Edmond, and William L. Lankford, Jr., and Carl S. Ward, Oklahoma City, Okla., assignors to The Geolograph Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed Dec. 26, 1962, Ser. No. 247,140
12 Claims. (Cl. 346—44)

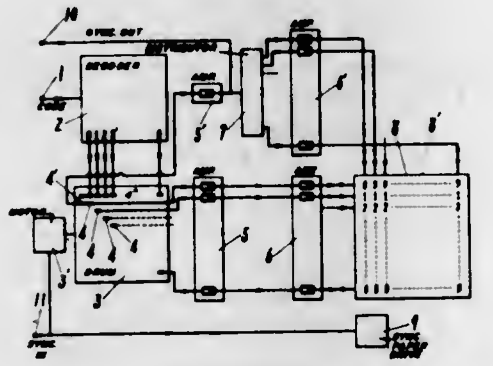


1. A recorder construction comprising a pair of end units arranged in spaced and parallel relation, one end unit having a first disc freely rotatably mounted therein, the other end unit having a second disc mounted for rotation therein coaxially with said first disc, means mounted in said other unit for rotating said second disc, a plurality of recorder modules mounted between said end units, a plurality of hollow cylindrical drum segments interconnected with each other and forming a composite drum assembly mounted between said end units, one end of said drum assembly being connected to said first disc and the other end of said drum assembly being connected to said second disc, each recorder module having pivotally mounted therein a pair of recorder arms upon which are supported a pair of recording elements, respectively, adapted to bear against the corresponding drum segment, means mounted in each module for each pen arm therein for deflecting each pen arm in accordance with the changing conditions of a measured variable, and means associated with each module and with each end unit for connecting all of said modules together in assembled relation and to the end units.

3,182,333

ELECTROSTATIC HIGH SPEED PRINTER

Sanae Amada, Meguro-ku, Tokyo, Keijiro Kubota, Mitaka City, Tokyo, Kazuo Kobayashi, Kodairamachi, Kitatama County, Tokyo, and Yoshitaro Okajima and Shozo Nanbo, Nerima-ku, Tokyo, Japan, assignors to Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan, a corporation of Japan
Filed Dec. 6, 1962, Ser. No. 242,707
Claims priority, application Japan, Dec. 27, 1961, 37/2,940
3 Claims. (Cl. 346—74)

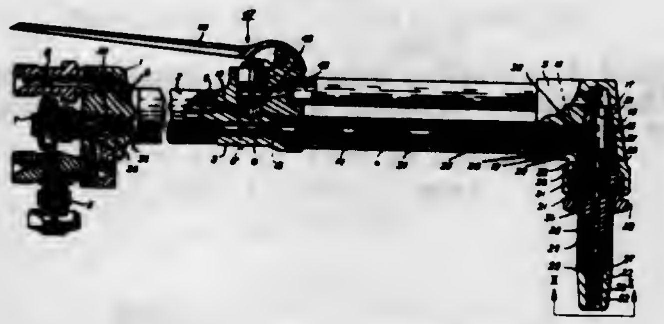


1. A high speed electrostatic printer system comprising in combination, means introducing input information, code converting means producing different signals from the input information having unique delays from a reference signal, a character plate having crossed conductors on front and back surfaces disposed to receive recording paper therebetween, one of said conductors forming a series of *n* shaped characters therealong, means distributing high voltage pulses of one polarity to each of the conductors of one surface in a timed sequence representing characters along a printing line, means producing high voltage pulses of the opposite polarity for each distributed pulse to represent selected ones of the shaped characters at a time drived from said signal, means passing a recording paper which will accept a charge continuously between said surfaces, means introducing an indicating powder on the recording paper at charged positions, and means fixing the charge to obtain a permanent record.

3,182,334

VALVE AND RESTRICTOR FOR GAS TORCHES

George L. Hammon, Oakland, Calif., assignor to Hammon Precision Equipment Company, Oakland, Calif., a corporation of California
Filed Apr. 18, 1960, Ser. No. 22,944
1 Claim. (Cl. 251—121)



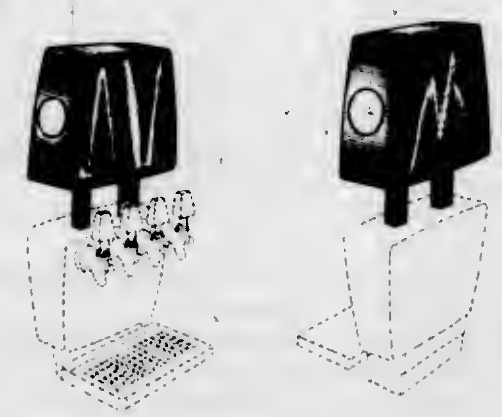
A torch valve comprising,
- a torch body portion having an elongated cylindrical passageway extending therethrough;
- a valve seat in the body portion adjacent one end of said passageway;
- a liquid gas input tube for supplying liquid gas to the other end of said passageway;
- an elongated valve stem extending a substantial length through said body portion in said passageway and the end of the valve stem seating in said seat to close the valve, with the opposite end of the valve stem extending through said body to the exterior thereof to permit adjustment of the valve stem;
- a coil spring in said passageway,
  - the ends of the spring lying adjacent opposite ends of the passageway,
  - the spring being independent of adjustment of the valve stem,
  - the spring closely surrounding the valve stem,
  - the spring having convolutions which are of a diameter to contact the walls of said passageway and form a circuitous path between the walls of the passageway and said valve stem,
  - said spring forms a portion of the circuitous path resisting an increase in flow of liquid gas occasioned by a force being exerted in a direction along the axis of said valve stem toward the valve seat; and
  - said spring being compressible in a direction from the valve seat to said input tube in response to a flashback at said valve seat to thereby restrict the circuitous path and extinguish the flashback.

DESIGNS

MAY 4, 1965

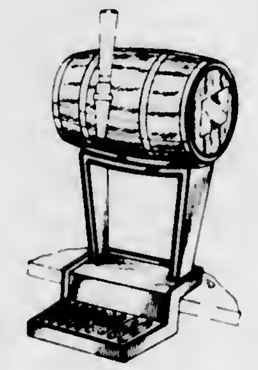
200,996
BEVERAGE DISPENSER HEAD OR SIMILAR ARTICLE

Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Dec. 30, 1963, Ser. No. 77,971
Term of patent 14 years
(Cl. D2—3)



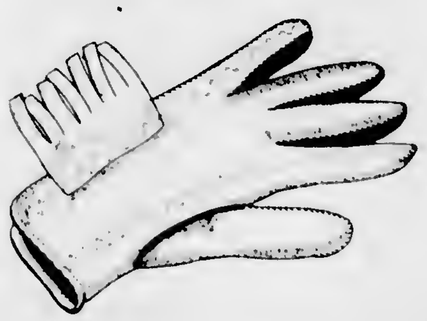
200,997
BEVERAGE DISPENSING HEAD OR SIMILAR ARTICLE

James R. Reichow, Edina, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed May 26, 1964, Ser. No. 80,152
Term of patent 14 years
(Cl. D2—3)



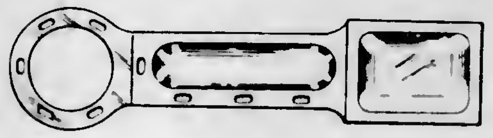
200,998
GLOVE

Stanley R. Florea, Massapequa Park, Long Island, N.Y., assignor to Victor B. Handal & Bro., Inc., New York, N.Y., a corporation of New York
Filed May 8, 1964, Ser. No. 79,893
Term of patent 14 years
(Cl. D3—11)



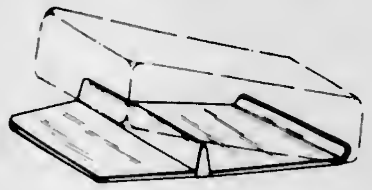
200,999
COMBINATION SOAP, TOOTHBRUSH, WATER-GLASS AND TOOTHPASTE HOLDER

Carlos A. Palacios, 9750 Ramo Court, Santee, Calif.
Filed Mar. 25, 1963, Ser. No. 74,108
Term of patent 3½ years
(Cl. D4—3)



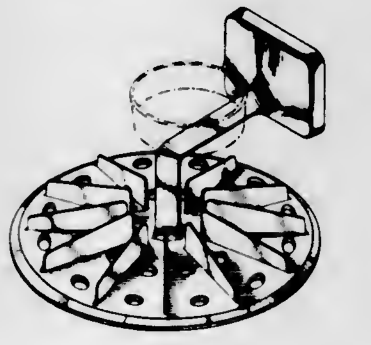
201,000
SOAP DISH

Hy H. Kobrin, 832 N. 8th St., Reading, Pa.
Filed Aug. 1, 1963, Ser. No. 76,066
Term of patent 3½ years
(Cl. D4—3)



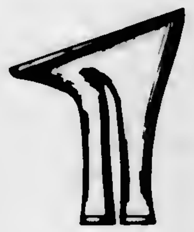
201,001
COMBINED TOOTHBRUSH AND TUMBLER HOLDER

Kenneth M. Solberg, 4807 SW. Barton St., Seattle, Wash.
Filed May 15, 1964, Ser. No. 80,000
Term of patent 14 years
(Cl. D4—3)



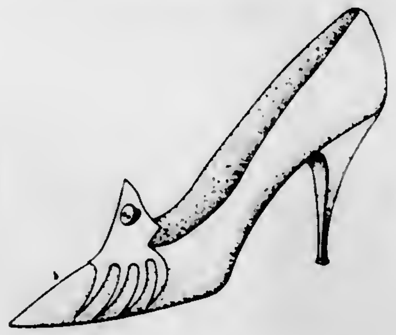
201,002
SHOE HEEL

Le Roy Hahn, 2218 Wismer St., Overland, Mo.
Filed June 2, 1964, Ser. No. 80,242
Term of patent 14 years
(Cl. D7—5)



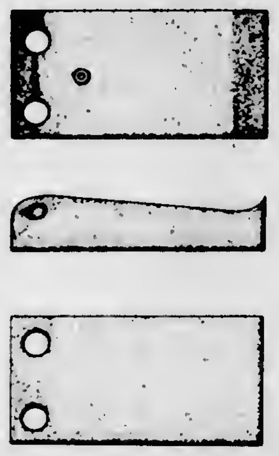
201,003
SHOE

Judith Leah Farrar, 2106 S. Santa Fe, Wichita, Kans.
Filed May 4, 1964, Ser. No. 79,781
Term of patent 3½ years
(Cl. D7—7)



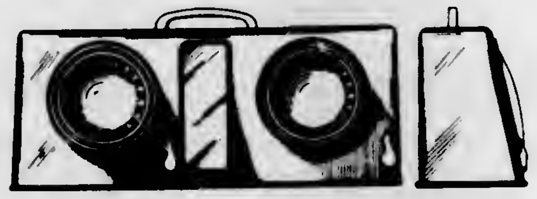
201,004
BATHING AID SPONGE

Dale W. Rowley, Firesteel, S. Dak.
Filed Mar. 5, 1963, Ser. No. 73,829
Term of patent 7 years
(Cl. D9—2)



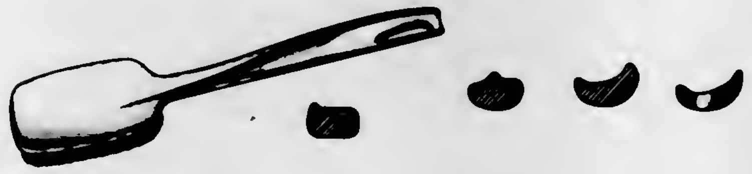
201,005
SHOE CLEANING MACHINE

Fritz Herrmann, Hubertusstrasse 15, Neuenhain, Taunus, Germany
Filed Aug. 1, 1963, Ser. No. 76,076
Claims priority, application Germany Feb. 19, 1963
Term of patent 14 years
(Cl. D9—2)



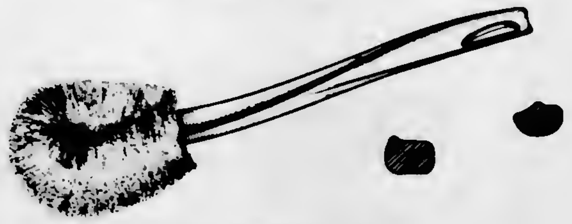
201,006
BATH BRUSH

Jon W. Hauser, St. Charles, Ill., assignor to National Brush Company, Aurora, Ill., a corporation of Illinois
Filed July 14, 1964, Ser. No. 80,855
Term of patent 14 years
(Cl. D9—2)



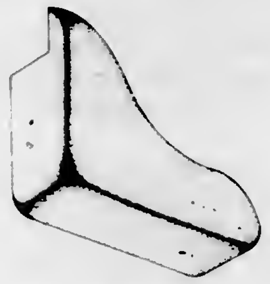
201,007
BOWL BRUSH

Jon W. Hauser, St. Charles, Ill., assignor to National Brush Company, Aurora, Ill., a corporation of Illinois
Filed July 14, 1964, Ser. No. 80,868
Term of patent 14 years
(Cl. D9—2)



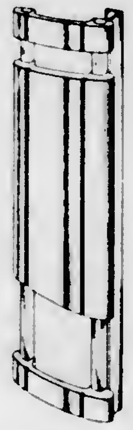
201,008
DOOR CORNER PROTECTOR

Paul S. Grey, 806 Lacy St., Santa Ana, Calif.
Filed Nov. 26, 1963, Ser. No. 77,569
Term of patent 7 years
(Cl. D10—7)



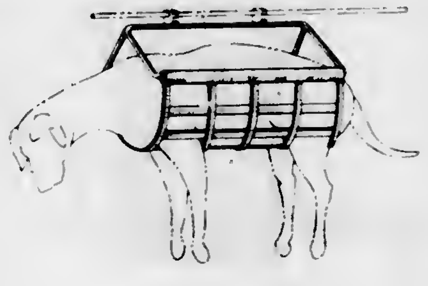
201,009
DOOR PULL

John J. Grove, Dallas, Tex., assignor to Facade, Inc., Richardson, Tex., a corporation of Texas
Filed June 24, 1963, Ser. No. 75,492
Term of patent 14 years
(Cl. D10—8)



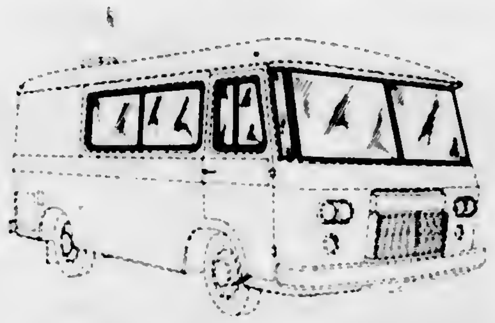
201,010
ANIMAL RESTRAINER

William S. Koon, Harford County, and Nelson P. Musselman, Baltimore, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 14, 1963, Ser. No. 73,998
Term of patent 14 years
(Cl. D12—2)
(Granted under Title 35, U.S. Code (1952), sec. 266)



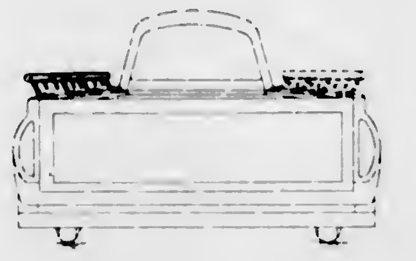
201,011
VEHICLE

Albert D. Mortrude, Pompano Beach, Fla., assignor to Clark Equipment Company, a corporation of Michigan
Filed Feb. 24, 1964, Ser. No. 78,763
Term of patent 14 years
(Cl. D14—3)



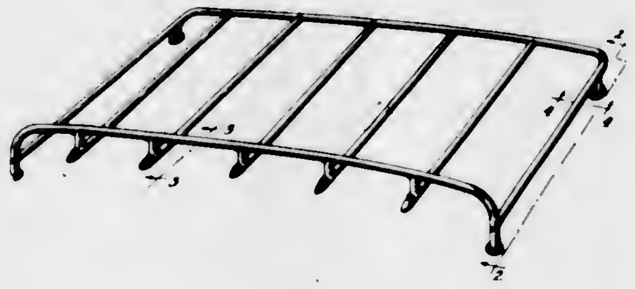
201,012
RAIL UNIT FOR MOTOR VEHICLES

Dave F. Gebhart, 578 Lincoln Way, Auburn, Calif.
Filed Apr. 18, 1963, Ser. No. 74,503
Term of patent 14 years
(Cl. D14—6)



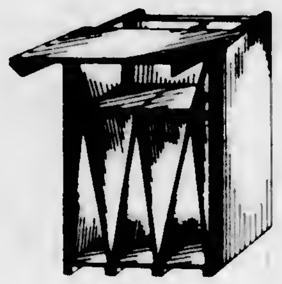
201,013
AUTOMOBILE LUGGAGE RACK

Frederick L. Duer, 2810 Madison St., Bellwood, Ill.
Filed June 26, 1964, Ser. No. 80,590
Term of patent 14 years
(Cl. D14—27)



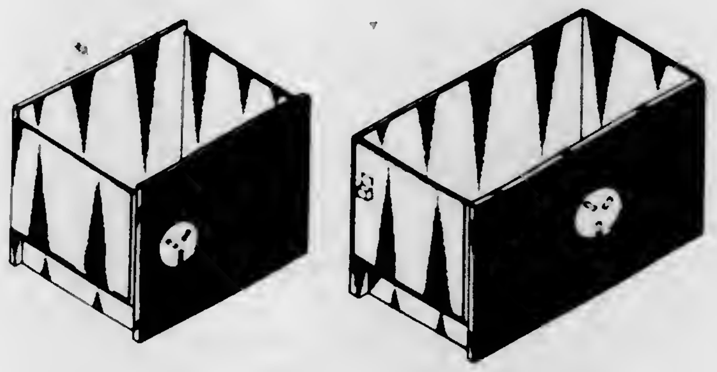
201,014
FEEDING CHAIR FOR A BABY

John W. Tapert, 2381 Earhart Road, Ann Arbor, Mich.
Filed Feb. 27, 1964, Ser. No. 78,814
Term of patent 3½ years
(Cl. D15—1)



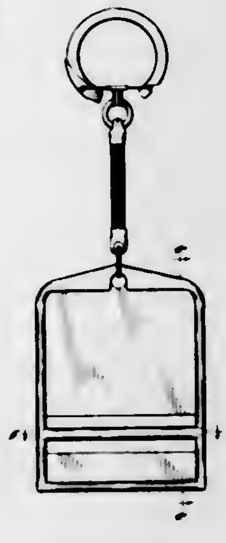
201,015
CASING OR SIMILAR ARTICLE FOR A PROTHROMBIN TIME DETERMINATION APPARATUS OR THE LIKE

Gerald W. Wolfe, Bristol, Pa., assignor to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey
Filed Mar. 8, 1962, Ser. No. 69,151
Term of patent 14 years
(Cl. D16—2)



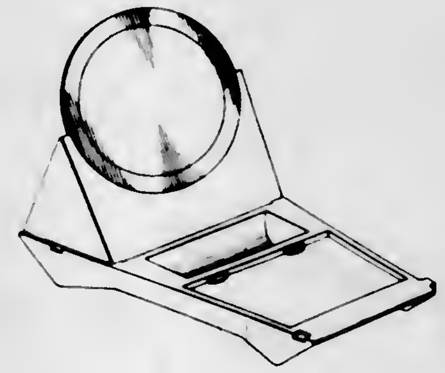
201,016
COMBINED KEY RING AND MATCHBOOK HOLDER

Julian Holland, 780 Wellington Ave., Cranston, R.I.
Filed Dec. 23, 1963, Ser. No. 77,900
Term of patent 7 years
(Cl. D17—14)



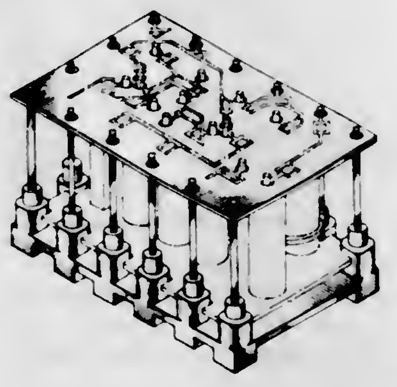
201,017
SUPPORT STAND FOR AN EDUCATIONAL KIT OR THE LIKE

Charles F. Pohlmann, Minneapolis, Minn., assignor to General Electric Company, a corporation of New York
Filed Nov. 19, 1962, Ser. No. 72,538
Term of patent 3½ years
(Cl. D25—1)



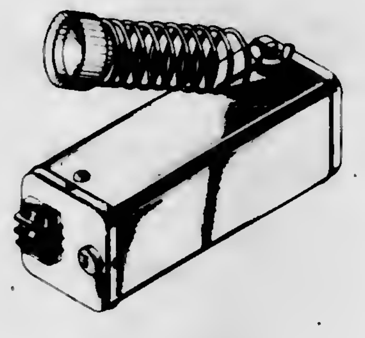
201,018
PLUGGABLE ELECTRONIC MODULE OR SIMILAR ARTICLE

Thomas O. Gephart, Hawthorne, and Theodore H. Abrahams, Huntington Beach, Calif., assignors to Hoffman Electronics Corporation, a corporation of California
Filed Mar. 29, 1963, Ser. No. 74,191
Term of patent 14 years
(Cl. D26—1)



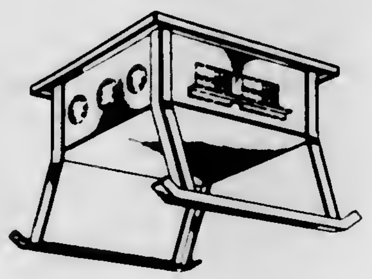
201,019
COMBINED SOLDERING IRON HOLDER AND TRANSFORMER UNIT

Carl E. Weller and Donald R. Fegley, Easton, Pa., and Alden J. Brassaw, Phillipsburg, N.J., assignors to Weller Electric Corporation, Easton, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1964, Ser. No. 79,121
Term of patent 14 years
(Cl. D26—1)



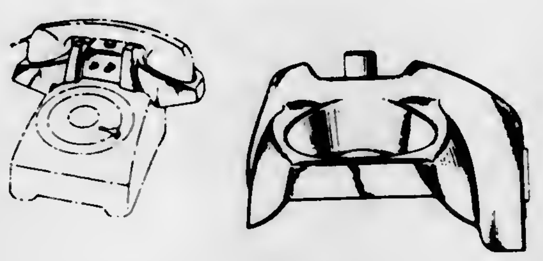
201,020
ELECTRICAL DISTRIBUTION BOX OR SIMILAR ARTICLE

Hubert L. Weiss, 5055 W. Jefferson Blvd., Los Angeles, Calif.
Filed Mar. 27, 1964, Ser. No. 79,217
Term of patent 14 years
(Cl. D26—5)



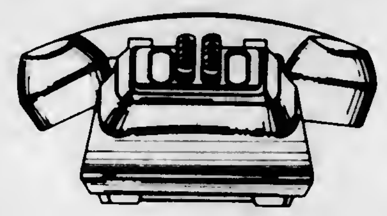
201,021
HOUSING FOR A TELEPHONE AMPLIFIER ACCESSORY OR SIMILAR ARTICLE

Joseph H. Prager, North Hollywood, Calif., assignor of forty percent to Nichimen Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Nov. 8, 1963, Ser. No. 77,336
Term of patent 3½ years
(Cl. D26—14)



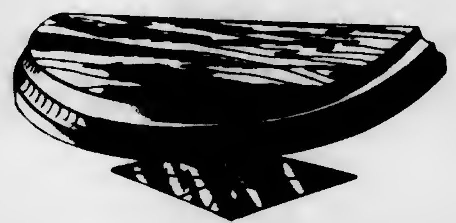
201,022
TELEPHONE

Haruo Nogami, 192 Sekiguchicho, Bunkyoku, Tokyo, Japan
Filed Jan. 17, 1964, Ser. No. 78,242
Term of patent 14 years
(Cl. D26—14)



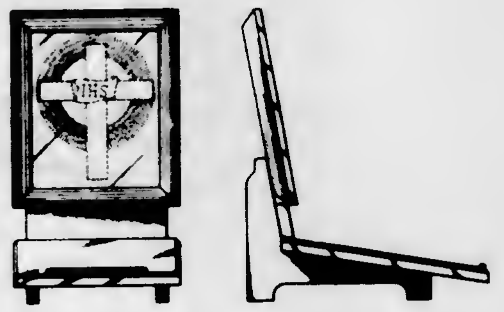
201,023
SHELF

Julian H. Sonneveldt, Kansas City, Kans., and James Demetreon, Kansas City, Mo., assignors to Product and Idea Developers Inc., Kansas City, Mo., a corporation of Missouri
Filed Sept. 18, 1963, Ser. No. 76,628
Term of patent 3½ years
(Cl. D33—3)



201,024
PORTABLE BOOKREST

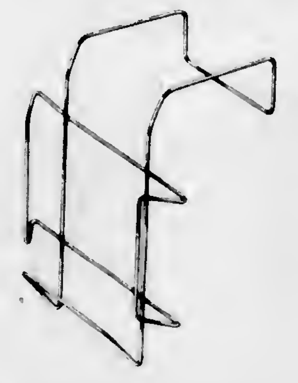
Laurence S. Alexander, Groton, Conn.
(P.O. Box 893, New London, Conn.)
Filed May 26, 1964, Ser. No. 80,165
Term of patent 14 years
(Cl. D33—4)



201,025

HAT RACK

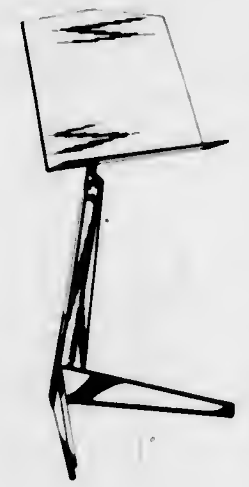
Robert D. Westervelt, 4113 Bryer Place, Peoria, Ill.
Filed Oct. 18, 1963, Ser. No. 77,037
Term of patent 3½ years
(Cl. D33—8)



201,026

NESTABLE MUSIC STAND

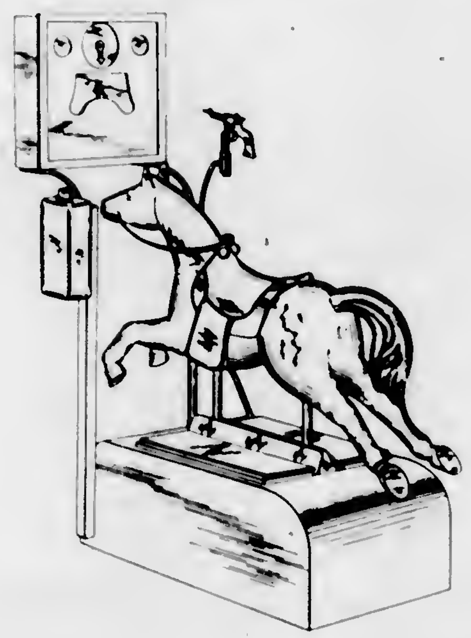
Harold H. Wiese, 804 Spaulding, Davenport, Iowa
Filed Jan. 20, 1964, Ser. No. 78,259
Term of patent 14 years
(Cl. D33—10)



201,027

AMUSEMENT GAME TARGET UNIT

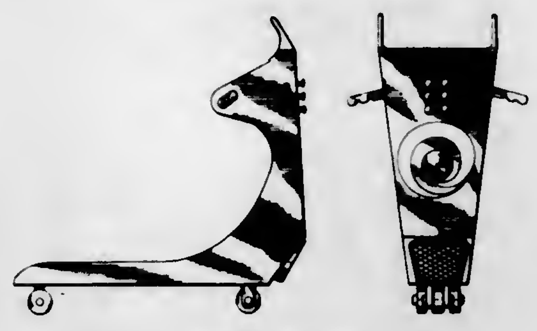
Raymond J. Maher, 58 Prospect Ave., Little Ferry, N.J.
Filed Apr. 16, 1964, Ser. No. 79,534
Term of patent 3½ years
(Cl. D34—5)



201,028

CHILD'S SCOOTER

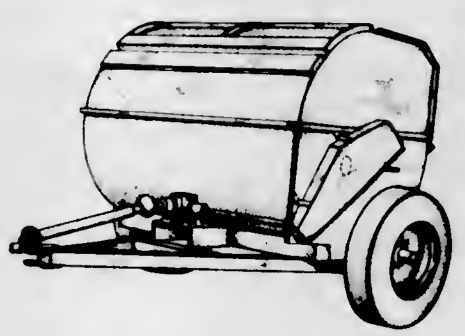
Robert A. George, 262 West End Ave., New York, N.Y.
Filed June 16, 1964, Ser. No. 80,420
Term of patent 3½ years
(Cl. D34—15)



201,029

SCATTERING UNLOADING MACHINE

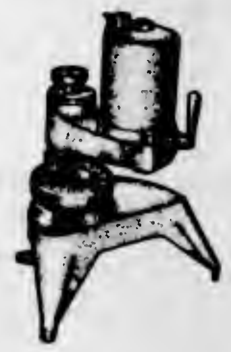
Erwin J. Erp, Des Moines, Iowa, assignor to Brady Manufacturing Corporation, Des Moines, Iowa, a corporation of Ohio
Filed Dec. 31, 1963, Ser. No. 77,991
Term of patent 14 years
(Cl. D35—2)



201,030

TOOL GRINDER, OR SIMILAR ARTICLE

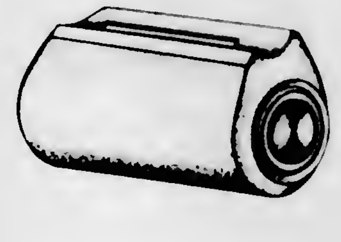
Dennis Daniels, Williamsville, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed May 15, 1963, Ser. No. 74,887
Term of patent 14 years
(Cl. D37—1)



201,031

SEAT BELT HOUSING OR THE LIKE

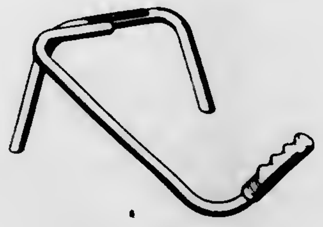
Maurice F. Baldwin, Birmingham, Mich., assignor to Industro-Motive Corporation, Troy, Mich., a corporation of Michigan
Filed Jan. 17, 1964, Ser. No. 78,238
Term of patent 3½ years
(Cl. D41—1)



201,032

MOTORCYCLE JACK

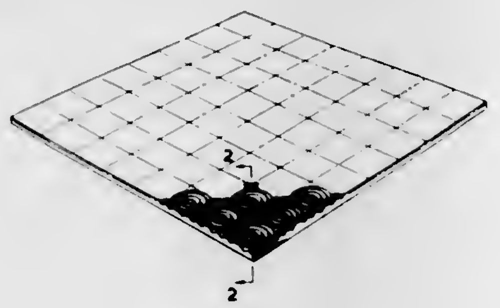
Thomas R. Rumsey, P.O. Box 2512, Culver City, Calif.
Filed July 17, 1964, Ser. No. 80,913
Term of patent 3½ years
(Cl. D41—1)



201,033

PRISMATIC REFLECTOR

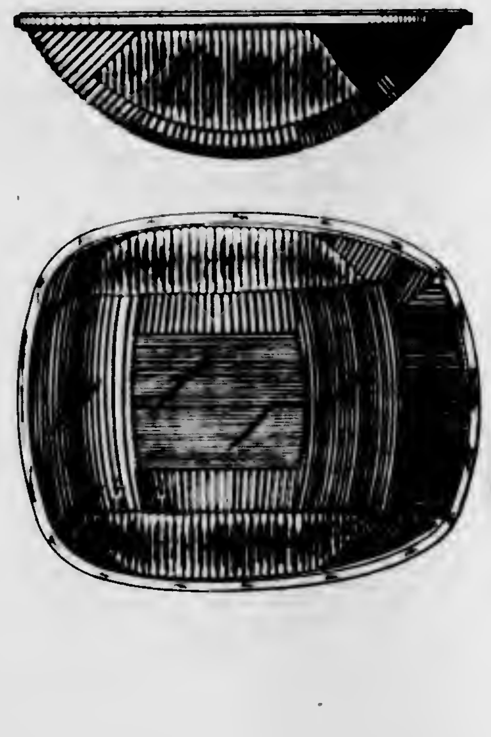
Anne Doster, Downsview, Ontario, Canada, assignor to Tycos Tool & Die Company Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Aug. 30, 1963, Ser. No. 76,421
Term of patent 3½ years
(Cl. D48—16)



201,034

STREET LIGHTING REFRACTOR

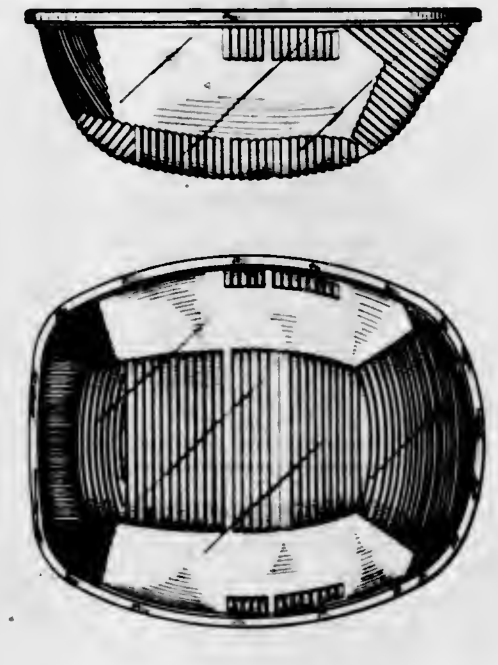
William H. Dorman, 7 Orchard Drive, Corning, N.Y.
Filed June 1, 1964, Ser. No. 80,221
Term of patent 14 years
(Cl. D48—16)



201,035

STREET LIGHTING REFRACTOR

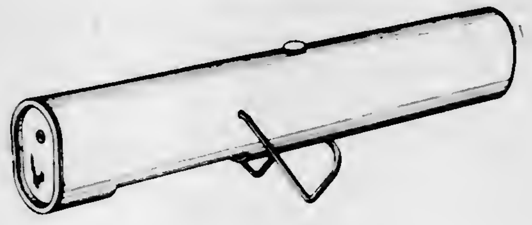
Franklin M. Neal, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed July 10, 1964, Ser. No. 80,794
Term of patent 14 years
(Cl. D48—16)



201,036

HOUSING FOR AN ULTRA-VIOLET LAMP OR SIMILAR ARTICLE

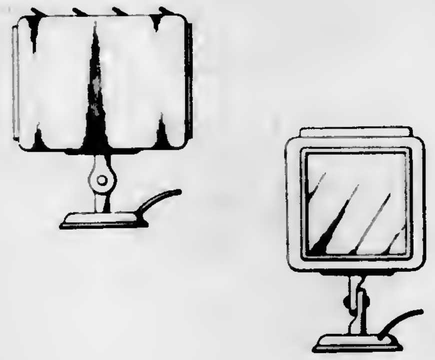
Helmut Weissbrod and Günter Thomas, Hanau am Main, Germany, assignors to Quarzlampen Gesellschaft m.b.H., Hanau am Main, Germany
Filed Mar. 14, 1962, Ser. No. 69,252
Claims priority, application Germany Sept. 15, 1961
Term of patent 14 years
(Cl. D48—20)



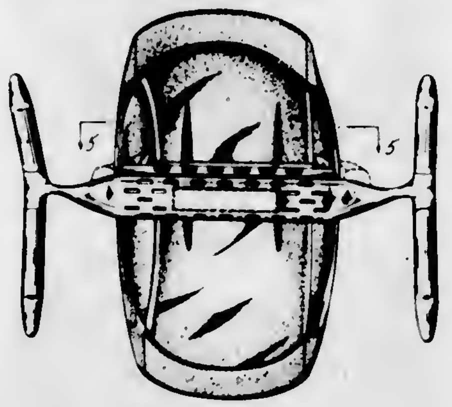
201,037

FLOODLIGHT FOR HOSPITAL OPERATING ROOMS, THEATRICAL STAGES AND THE LIKE

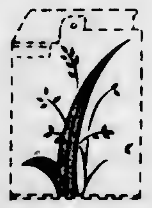
Robert Rex Rudolph, 9610 22nd Ave. SW., Seattle 6, Wash.
Filed Apr. 15, 1963, Ser. No. 74,426
Term of patent 3½ years
(Cl. D48—20)



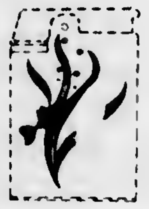
201,038
DENTAL LIGHT OR SIMILAR ARTICLE
Daryl D. Sullivan, Corning, N.Y., Arthur L. Jones, 5001 Milford Road, and Eugene J. Neal, Jr., 3613 Trent St., both of Charlotte 9, N.C.; said Sullivan assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed May 17, 1963, Ser. No. 74,934
Term of patent 14 years
(Cl. D48—20)



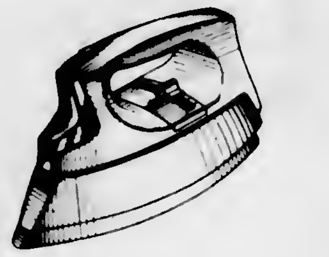
201,039
CIGARETTE LIGHTER
Edith J. Pitts, Attleboro, Mass., assignor to Lambert Engraving Company, Inc., a corporation of Massachusetts
Filed Aug. 23, 1963, Ser. No. 76,334
Term of patent 3½ years
(Cl. D48—27)



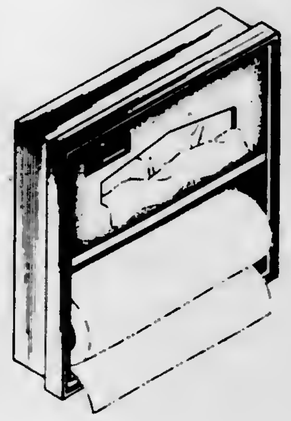
201,040
CIGARETTE LIGHTER
Sergei Kochkin, Providence, R.I., assignor to Lambert Engraving Company, Inc., a corporation of Massachusetts
Filed Aug 23, 1963, Ser. No. 76,335
Term of patent 3½ years
(Cl. D48—27)



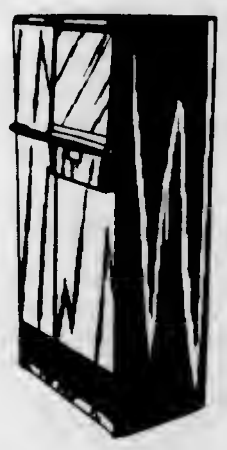
201,041
ELECTRIC IRON
John Christopher Keith Hardaker, High Wycombe, England, assignor to The General Electric Company Limited, London, England
Filed July 17, 1963, Ser. No. 75,855
Claims priority, application Great Britain Jan. 29, 1963
Term of patent 7 years
(D49—6)



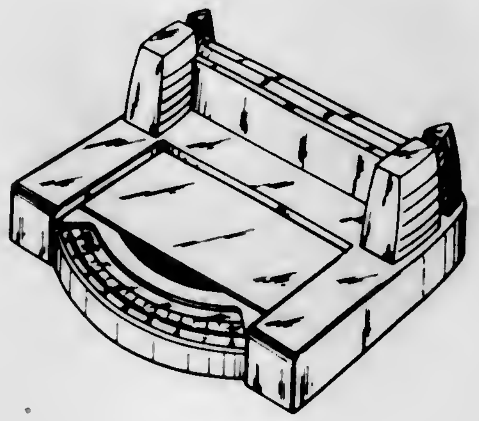
201,042
COMBINED PAPER TOWEL AND TISSUE DISPENSER
Henry R. Johannes, Allentown, Pa., assignor to Caloric Corporation, Topton, Pa., a corporation of Pennsylvania
Filed Feb. 11, 1964, Ser. No. 78,589
Term of patent 14 years
(Cl. D52—2)



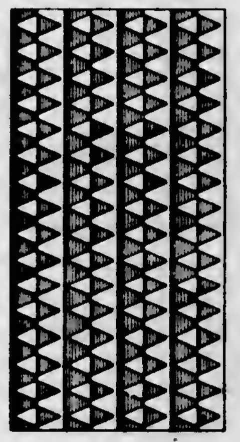
201,043
BOTTLE VENDING MACHINE OR SIMILAR ARTICLE
James R. Reichow, Edina, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Aug. 27, 1964, Ser. No. 81,473
Term of patent 14 years
(Cl. D52—3)



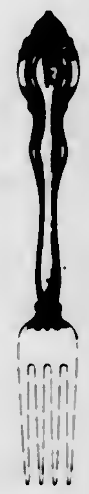
201,044
COMBINED LETTER SCALE, CALENDAR AND PAPER HOLDER
Henry Ruskin, 21 Nomahagan Court, Cranford, N.J.
Filed Apr. 30, 1963, Ser. No. 74,669
Term of patent 14 years
(Cl. D52—10)



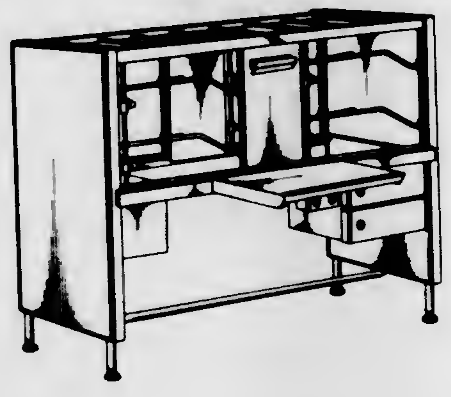
201,045
SCREEN
Arden A. Alfvegren, Monterey Park, Calif., assignor to California Metal Enameling Company, Los Angeles, Calif., a corporation of California
Filed May 16, 1961, Ser. No. 67,903
(Filed under Rule 47(b) and 35 U.S.C. 118)
Term of patent 14 years
(Cl. D54—2)



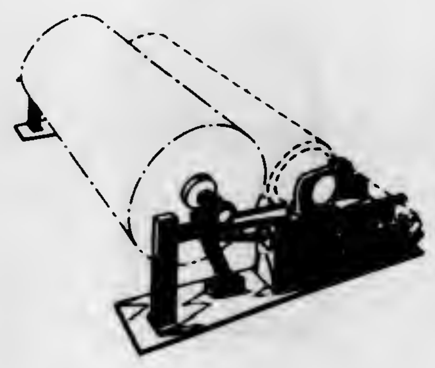
201,046
FORK
Richard C. Gavette, Hampton, N.H., assignor to Gorham Corporation, Providence, R.I.
Filed May 19, 1964, Ser. No. 80,065
Term of patent 14 years
(Cl. D54—12)



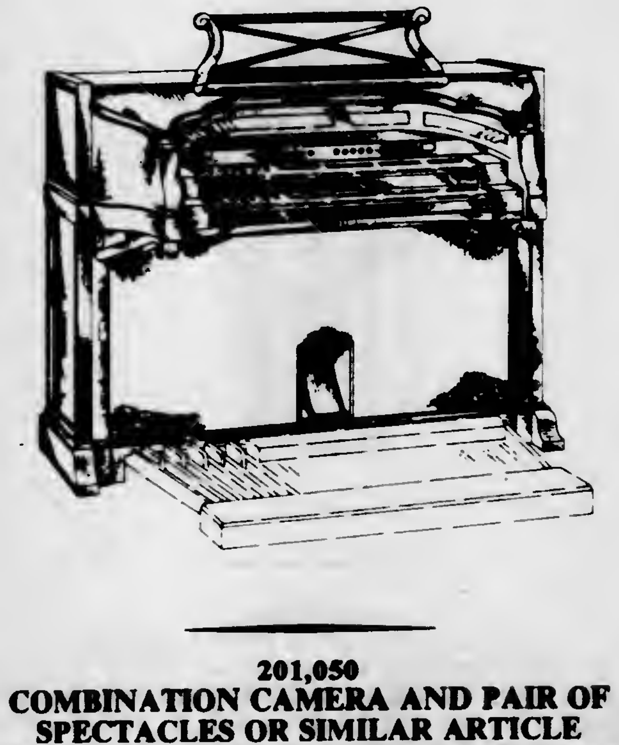
201,047
WORK STATION UNIT FOR PRODUCT ASSEMBLY OR THE LIKE
Douglas M. Sandefur, Los Angeles, Calif., assignor to Sandefur Engineering Co., Inc., Lawndale, Calif., a corporation of California
Filed Nov. 2, 1962, Ser. No. 72,351
Term of patent 14 years
(Cl. D55—1)



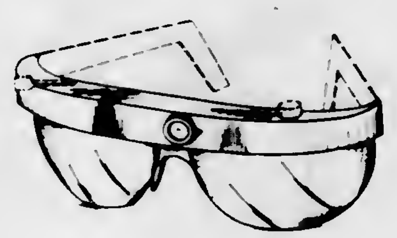
201,048
SINGLE DRUM REWINDER OR SIMILAR ARTICLE
Gerald H. Zimmerman and Edward J. Klaczkiewicz, Wilmington, Del., assignors to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 74,156
Term of patent 14 years
(Cl. D55—1)



201,049
ORGAN CONSOLE
Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 20, 1964, Ser. No. 82,724
Term of patent 14 years
(Cl. D56—2)

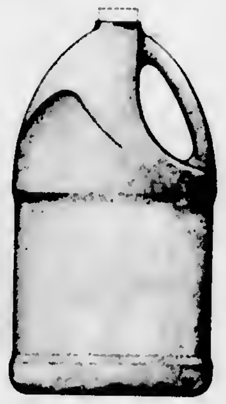


201,050
COMBINATION CAMERA AND PAIR OF SPECTACLES OR SIMILAR ARTICLE
Harry E. Gieseking and Albert F. Quinlan, St. Louis, Mo., assignors to W. A. Sheaffer Pen Company, Fort Madison, Iowa, a corporation of Delaware
Filed Jan. 6, 1964, Ser. No. 78,082
Term of patent 14 years
(Cl. D57—1)



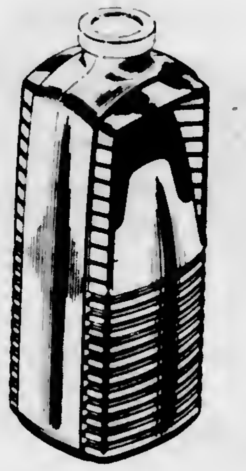
201,051
JUG

James A. Shepler, Toledo, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Aug. 20, 1964, Ser. No. 81,382
Term of patent 14 years
(Cl. D58—5)



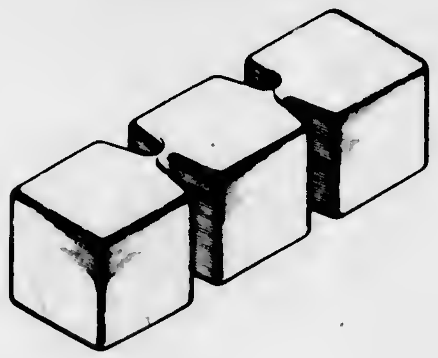
201,052
BOTTLE OR THE LIKE

Roy C. Josephsen, Hillsdale, Joseph R. Tino, Clifton, and Charles R. Fulcher, Bloomfield, N.J., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed June 3, 1964, Ser. No. 80,265
Term of patent 14 years
(Cl. D58—6)



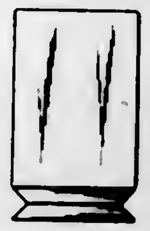
201,053
STORAGE TANK FOR LIQUIDS

Don C. Albinson, 660 Venice Blvd., Culver City, Calif., and Bernard D. Cirlin, 8557 Higuera St., Brentwood, Calif.
Filed Nov. 27, 1963, Ser. No. 77,601
Term of patent 3½ years
(Cl. D58—17)



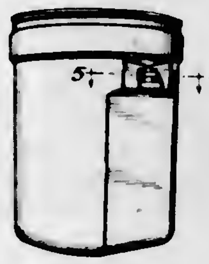
201,054
BEVERAGE CONTAINER

Alfred J. Roach, 144 Noell St., Levittown, N.Y.
Filed Apr. 28, 1964, Ser. No. 79,725
Term of patent 14 years
(Cl. D58—17)



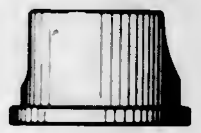
201,055
TRASH CAN

Herman M. Ebert, 1013 Central Ave., Highland Park, Ill.
Filed Aug. 18, 1964, Ser. No. 81,335
Term of patent 14 years
(Cl. D58—17)



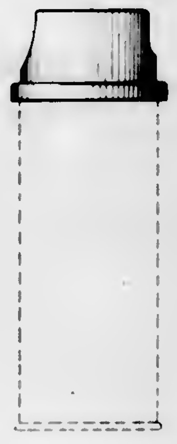
201,056
DISPENSER TOP FOR A PRESSURIZED CAN

Philip H. Sagarin, Bridgeport, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Apr. 16, 1964, Ser. No. 79,522
Term of patent 14 years
(Cl. D58—26)



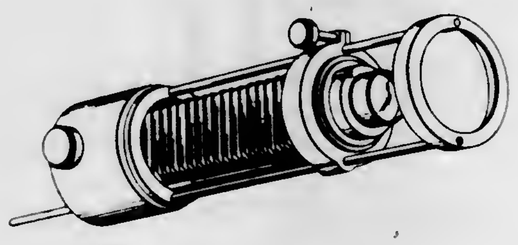
201,057
DISPENSER TOP FOR A PRESSURIZED CAN

Philip Meshberg, 15 Stoneleigh Road, Fairfield, Conn.
Filed May 4, 1964, Ser. No. 79,800
Term of patent 7 years
(Cl. D58—26)



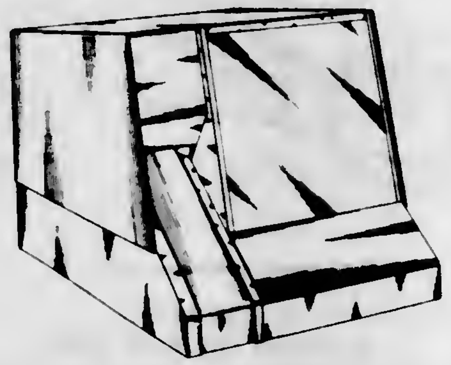
201,058
LENS EXTENSION MOUNT FOR PHOTOGRAPHIC RECORDING APPARATUS

David G. Fladlien and David J. Fladlien, Los Angeles, Calif., assignors to Thompson Ramo Wooldridge Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Dec. 30, 1963, Ser. No. 77,974
Term of patent 14 years
(Cl. D61—1)



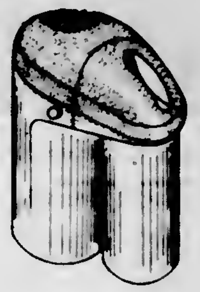
201,059
PROJECTION READER

Ralph M. Vigna and Kenneth Wayne Scott, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 7, 1964, Ser. No. 81,202
Term of patent 14 years
(Cl. D61—1)



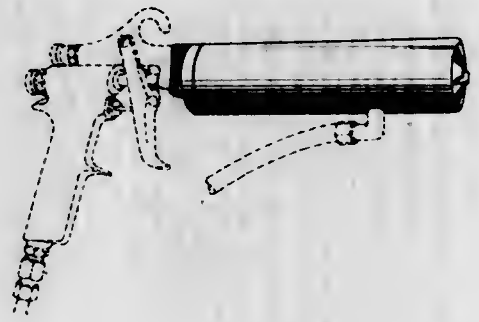
201,060
MOTORIZED SPRAY UNIT

Leonard H. Polukoff, 25415 N. Concourse, Southfield, Mich.
Filed Aug. 6, 1963, Ser. No. 76,124
Term of patent 3½ years
(Cl. D62—2)



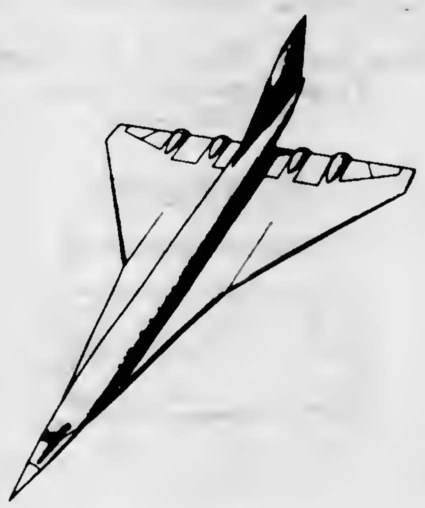
201,061
BARREL FOR AIR ATOMIZATION ELECTROSTATIC DEPOSITION SPRAY GUN

Ronald J. Blackwell, Passaic, and Seymour Devick, Teaneck, N.J., assignors to Selectrostatic Corporation, Lodi, N.J., a corporation of New Jersey
Filed Feb. 17, 1964, Ser. No. 78,670
Term of patent 3½ years
(Cl. D62—2)



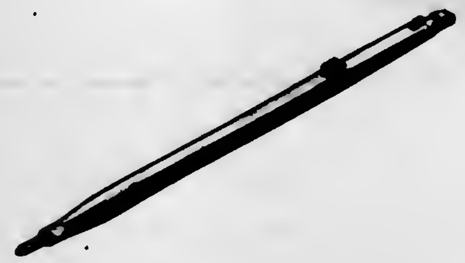
201,062
SUPERSONIC AIRPLANE

Clarence L. Johnson, Encino, and William H. Statler, Northridge, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 15, 1964, Ser. No. 79,994
Term of patent 14 years
(Cl. D71—1)



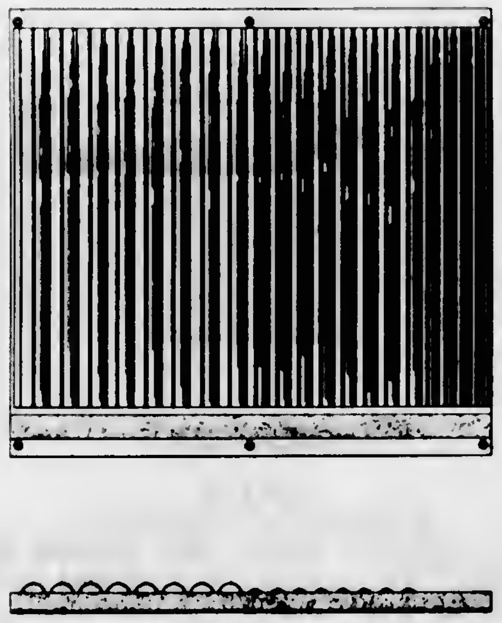
201,063
BALL POINT PEN CARTRIDGE

Julius M. Kahn, Englewood Cliffs, and Morris Levy, Bergenfield, N.J., assignors to David Kahn Inc., North Bergen, N.J., a corporation of New Jersey
Filed Nov. 15, 1963, Ser. No. 77,445
Term of patent 14 years
(Cl. D74—17)



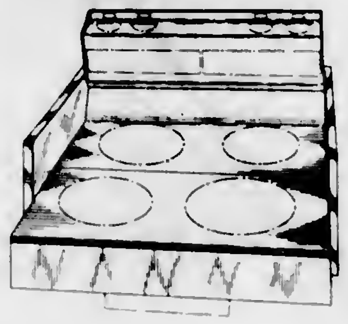
201,064
RACK FOR DISPLAYING AND DISPENSING SMALL ARTICLES

Joseph Di Domenico and Frank Mellion, Providence, R.I., assignors to Jo-Dee-Corp., Providence, R.I., a corporation of Rhode Island
Filed Apr. 8, 1963, Ser. No. 74,322
Term of patent 14 years
(Cl. D80—9)



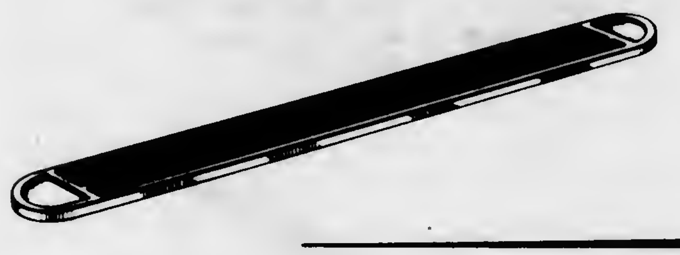
201,065
COOKING STOVE OR THE LIKE

Keith K. Kesling, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 6, 1964, Ser. No. 78,079
Term of patent 3½ years
(Cl. D81—25)



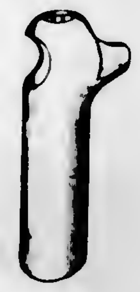
201,066
STICK FOR A MOLDED CONFECTION

Richard L. Wagner, Georgetown, Conn., assignor to Diamond National Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 15, 1963, Ser. No. 77,439
Term of patent 14 years
(Cl. D82—2)



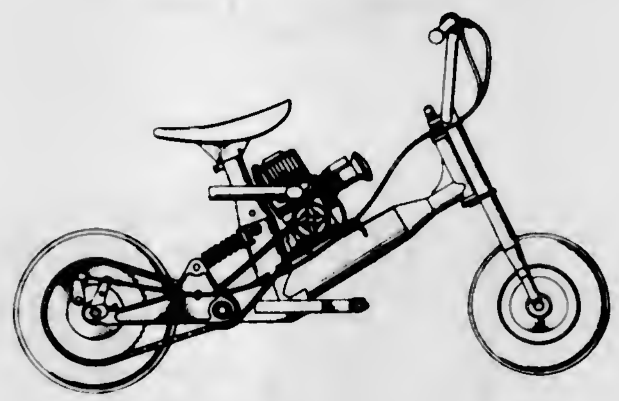
201,067
PROTECTIVE ATOMIZER CONTAINER OR SIMILAR ARTICLE

Virginia M. Cook, 3161 Torrey Road, Flint, Mich.
Filed Feb. 3, 1964, Ser. No. 78,484
Term of patent 14 years
(Cl. D83—1)



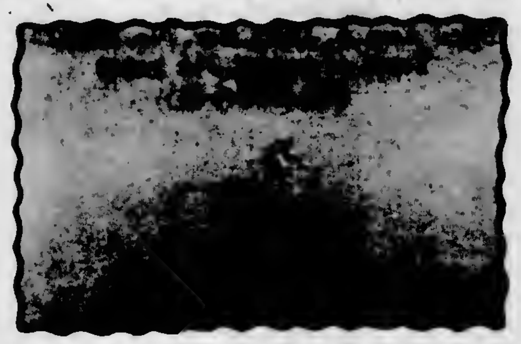
201,068
MOTOR BIKE

Edward J. Kirby, Manhattan Beach, Calif., assignor to Microsound Inc., Los Angeles, Calif., a corporation of California
Filed Feb. 24, 1964, Ser. No. 78,758
Term of patent 14 years
(Cl. D90—8)



201,069
NAPKIN OR THE LIKE

Vera Way Marghab, % Emile Marghab, Inc., 250 W. 57th St., New York, N.Y.
Filed Jan. 8, 1964, Ser. No. 78,129
Term of patent 14 years
(Cl. D92—26)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 4TH DAY OF MAY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Glaisher, Edward J., to North American Philips Co., Inc. Time-base circuit for magnetic beam deflection. Re. 25,772, 5–4–65, Cl. 315—27.
Hukki, Risto T., to Insinooritoimisto-Engineering Bureau R. T. Hukki. Apparatus for wet sizing of finely divided solid materials. Re. 25,774, 5–4–65, Cl. 209—17.
Insinooritoimisto-Engineering Bureau R. T. Hukki: *See*—
  Hukki, Risto T. Re. 25,774.
Knox, William H.: *See*—
  Medwedeff, Fred M., and Knox. Re. 25,773.
Medwedeff, Fred M., and W. H. Knox, to Precision X-Ray Co. X-ray film holder and aiming element. Re. 25,773, 5–4–65, Cl. 250—70.
North American Philips Co., Inc.: *See*—
  Glaisher, Edward J. Re. 25,772.
Precision X-Ray Co.: *See*—
  Medwedeff, Fred M., and Knox. Re. 25,773.

LIST OF PLANT PATENTEES

Kerrigan, Howard. Azalea plant. 2,504, 5–4–65, Cl. 57.
Kerrigan, Howard. Azalea plant. 2,505, 5–4–65, Cl. 57.
Kerrigan, Howard. Azalea plant. 2,506, 5–4–65, Cl. 57.
Motzkau, Henry W., to Yoder Brothers, Inc. Azalea plant. 2,503, 5–4–65, Cl. 56.
Sewart, Dorothy. Chamomile plant. 2,502, 5–4–65, Cl. 88.
Yoder Brothers, Inc.: *See*—
  Motzkau, Henry W. 2,503.

LIST OF DESIGN PATENTEES

Albinson, Don C., and B. D. Cirlin. Storage tank for liquids. 201,053, 5–4–65, Cl. D58—17.
Abrahams, Theodore H.: *See*—
  Gephart, Thomas O., and Abrahams. 201,018.
Alexander, Laurence S. Portable bookrest. 201,024, 5–4–65, Cl. D33—4.
Alfvegren, Arden A., to California Metal Enameling Co. Screen. 201,045, 5–4–65, Cl. D54—2.
Baldwin, D. H., Co.: *See*—
  White, Winsor D., Jr. 201,049.
Baldwin, Maurice F., to Industro-Motive Corp. Seat belt housing or the like. 201,031, 5–4–65, Cl. D41—1.
Becton, Dickinson and Co.: *See*—
  Wolfe, Gerald W. 201,015.
Beloit Eastern Corp.: *See*—
  Zimmerman, Gerald H., and Klaczkiewicz. 201,048.
Blackwell, Ronald J., and S. Devick, to Selectrostatic Corp. Barrel for air atomisation electrostatic deposition spray gun. 201,061, 5–4–65, Cl. D62—2.
Brady Mfg. Corp.: *See*—
  Erp, Erwin J. 201,029.
Brassaw, Alden J.: *See*—
  Weller, Carl E., Fegley, and Brassaw. 201,019.
California Metal Enameling Co.: *See*—
  Alfvegren, Arden A. 201,045.
Caloric Corp.: *See*—
  Johannes, Henry R. 201,042.
Cirlin, Bernard D.: *See*—
  Albinson, Don C., and Cirlin. 201,053.
Clark Equipment Co.: *See*—
  Mortrude, Albert D. 201,011.
Cook, Virginia M. Protective atomizer container or similar article. 201,067, 5–4–65, Cl. D83—1.
Cornelius Co., The: *See*—
  Cornelius, Richard T. 200,996.
  Reichow, James R. 201,043.
  Reichow, James R. 200,997.
Cornelius, Richard T., to The Cornelius Co. Beverage dispenser head or similar article. 200,996, 5–4–65, Cl. D2—3.
Corning Glass Works: *See*—
  Neal, Franklin M. 201,035.
  Sullivan, Daryl D., Jones, and Neal. 201,038.
Daniels, Dennis, to Houdaille Industries, Inc. Tool grinder, or similar article. 201,030, 5–4–65, Cl. D37—1.
Demetreon, James: *See*—
  Sonneveldt, Julian H., and Demetreon. 201,023.
Devick, Seymour: *See*—
  Blackwell, Ronald J., and Devick. 201,061.
Diamond National Corp.: *See*—
  Wagner, Richard L. 201,066.
DiDomenico, Joseph, and F. Mellion, to Jo-Dee Corp. Rack for displaying and dispensing small articles. 201,064, 5–4–65, Cl. D80—9.
Dorman, William H. Street lighting refractor. 201,034, 5–4–65, Cl. D48—16.
Doster, Anne, to Tycos Tool & Die Co. Ltd. Prismatic reflector. 201,033, 5–4–65, Cl. D48—16.
Duer, Frederick L. Automobile luggage rack. 201,013, 5–4–65, Cl. D14—27.
Eastman Kodak Co.: *See*—
  Vigna, Ralph M., and Scott. 201,059.
Ebert, Herman M. Trash can. 201,055, 5–4–65, Cl. D58—17.
Erp, Erwin J. to Brady Mfg. Corp. Scattering unloading machine. 201,029, 5–4–65, Cl. D35—2.
Facade, Inc.: *See*—
  Grove, John J. 201,009.
Farrar, Judith L. Shoe. 201,003, 5–4–65, Cl. D7—7.
Fegley, Donald R.: *See*—
  Weller, Carl E., Fegley, and Brassaw. 201,019.
Fladlien, David G. and D. J., to Thompson Ramo Wooldridge Inc. Lens extension mount for photographic recording apparatus. 201,058, 5–4–65, Cl. D61—1.
Fladlien, David J.: *See*—
  Fladlien, David G. and D. J. 201,058.
Florea, Stanley R., to Victor B. Handal & Bro., Inc. Glove. 200,998, 5–4–65, Cl. D3—11.
Fulcher, Charles R.: *See*—
  Josephsen, Roy C., Tino, and Fulcher. 201,052.
Gavette, Richard C., to Gorham Corp. Fork. 201,046, 5–4–65, Cl. D54—12.
Gebhart, David F. Rail unit for motor vehicles. 201,012, 5–4–65, Cl. D14—6.
General Electric Co.: *See*—
  Pohlmann, Charles F. 201,017.
General Electric Co. Ltd., The: *See*—
  Hardaker, John C. K. 201,041.
General Motors Corp.: *See*—
  Kesling, Keith K. 201,065.
George, Robert A. Child's scooter. 201,028, 5–4–65, Cl. D34—15.
Gephart, Thomas O., and T. H. Abrahams, to Hoffman Electronics Corp. Pluggable electronic module or similar article. 201,018, 5–4–65, Cl. D26—1.
Gieseking, Harry E., and A. F. Quinlan, to W. A. Sheaffer Pen Co. Combination camera and pair of spectacles or similar article. 201,050, 5–4–65, Cl. D57—1.
Gorham Corp.: *See*—
  Gavette, Richard C. 201,046.
Grace, W. R., & Co.: *See*—
  Josephsen, Roy C., Tino, and Fulcher. 201,052.
Grey, Paul S. Door corner protector. 201,008, 5–4–65, Cl. D10—7.
Grove, John J., to Facade, Inc. Door pull. 201,009, 5–4–65, Cl. D10—8.
Hahn, Le Roy. Shoe heel. 201,002, 5–4–65, Cl. D7—5.
Handal, Victor B., & Bro., Inc.: *See*—
  Florea, Stanley R. 200,998.
Hardaker, John C. K., to The General Electric Co. Ltd. Electric iron. 201,041, 5–4–65 Cl. D49—6.
Hauser, Jon W., to National Brush Co. Bath brush. 201,006, 5–4–65, Cl. D9—2.
Hauser, Jon W., to National Brush Co. Bowl brush. 201,007, 5–4–65, Cl. D9—2.
Herrmann, Fritz. Shoe-cleaning machine. 201,005, 5–4–65, Cl. D9—2.
Hoffman Electronics Corp.: *See*—
  Gephart, Thomas O., and Abrahams. 201,018.
Holland, Julian. Combined key ring and matchbook holder. 201,016, 5–4–65, Cl. D17—14.
Houdaille Industries, Inc.: *See*—
  Daniels, Dennis. 201,030.
Industro-Motive Corp.: *See*—
  Baldwin, Maurice F. 201,031.
Jo-Dee Corp.: *See*—
  DiDomenico, Joseph, and Mellion. 201,064.
Johannes, Henry R., to Caloric Corp. Combined paper towel and tissue dispenser. 201,042, 5–4–65, Cl. D52—2.
Johnson, Clarence L., and W. H. Statler, to Lockheed Aircraft Corp. Supersonic airplane. 201,062, 5–4–65, Cl. D71—1.

Jones, Arthur L.: *See*—
Sullivan, Daryl D., Jones, and Neal. 201,038.
Josephsen, Roy C., J. R. Tino, and C. R. Fulcher, to W. R. Grace & Co. Bottle or the like. 201,052, 5–4–65, Cl. D58—6.
Kahn, David, Inc.: *See*—
Kahn, Julius M., and Levy. 201,063.
Kahn, Julius M., and M. Levy, to David Kahn, Inc. Ball point pen cartridge. 201,063, 5–4–65, Cl. D74—17.
Kesling, Keith K., to General Motors Corp. Cooking stove or the like. 201,065, 5–4–65, Cl. D81—25.
Kirby, Edward J., to Microsound Inc. Motor bike. 201,068, 5–4–65, Cl. D90—8.
Klaczkiewicz, Edward J.: *See*—
Zimmerman, Gerald H., and Klaczkiewicz. 201,048.
Kobrin, Hy H. Soap dish. 201,000, 5–4–65, Cl. D4—3.
Kochkin, Sergei, to Lambert Engraving Co., Inc. Cigarette lighter. 201,040, 5–4–65, Cl. D48—27.
Koon, William S., and N. P. Musselman, to United States of America, Army. Animal restrainer. 201,010, 5–4–65, Cl. D12—2.
Lambert Engraving Co., Inc.: *See*—
Pitts, Edith J. 201 039.
Kochkin, Sergei. 201,040.
Levy, Morris: *See*—
Kahn, Julius M., and Levy. 201,063.
Lockheed Aircraft Corp.: *See*—
Johnson, Clarence L., and Statler. 201,062.
Maher, Raymond J. Amusement game target unit. 201,027, 5–4–65, Cl. D34—5.
Marghab, Vera W. Napkin or the like. 201,069, 5–4–65, Cl. D92—26.
Mellion, Frank: *See*—
Di Domenico, Joseph, and Mellion. 201,064.
Meshberg, Philip. Dispenser top for a pressurized can. 201,057, 5–4–65, Cl. D58—26.
Microsound Inc.: *See*—
Kirby, Edward J. 201,068.
Mortrude, Albert D., to Clark Equipment Co. Vehicle. 201,011, 5–4–65, Cl. D14—3.
Musselman, Nelson: *See*—
Koon, William S., and Musselman. 201,010.
National Brush Co.: *See*—
Hauser, Jon W. 201,007.
Hauser, Jon W. 201,006.
Neal, Eugene J., Jr.: *See*—
Sullivan, Daryl D., Jones, and Neal. 201,038.
Neal, Franklin M., to Corning Glass Works. Street lighting refractor. 201,035, 5–4–65, Cl. D48—16.
Nichimen Co., Ltd.: *See*—
Prager, Joseph H. 201,021.
Nogami, Haruo. Telephone. 201,022, 5–4–65, Cl. D26—14.
Owens-Illinois Glass Co.: *See*—
Shepler, James A. 201,051.
Palacios, Carlos A. Combination soap, toothbrush, waterglass and toothpaste holder. 200 999, 5–4–65, Cl. D4—3.
Pitts, Edith J., to Lambert Engraving Co., Inc. Cigarette lighter. 201,039, 5–4–65, Cl. D48—27.
Pohlmann, Charles F., to General Electric Co. Support stand for an educational kit or the like. 201,017, 5–4–65, Cl. D25—1.
Polukoff, Leonard H. Motorized spray unit. 201,060, 5–4–65, Cl. D62—2.
Prager, Joseph H., 40% to Nichimen Co., Ltd. Housing for a telephone amplifier accessory or similar article. 201,021, 5–4–65, Cl. D26—14.
Product and Idea Developers Inc.: *See*—
Sonneveldt, Julian H., and Demetreon. 201,023.
Quarzlampen Gesellschaft m.b.H.: *See*—
Weissbrod, Helmut, and Thomas. 201,036.
Quinlan, Albert F.: *See*—
Gieseking, Harry E., and Quinlan. 201,050.
Reichow, James R., to The Cornelius Co. Beverage dispensing head, or similar article. 200,997, 5–4–65, Cl. D2—3.
Reichlow, James R., to The Cornelius Co. Bottle vending machine, or similar article. 201,043, 5–4–65, Cl. D52—3.
Roach, Alfred J. Beverage container. 201,054, 5–4–65, Cl. D58—17.
Rowley, Dale W. Bathing aid sponge. 201,004, 5–4–65, Cl. D9—2.
Rudolph, Robert R. Floodlight for hospital operating rooms, theatrical stages and the like. 201,037, 5–4–65, Cl. D48—20.
Rumsey, Thomas R. Motorcycle jack. 201,032, 5–4–65, Cl. D41—1.
Ruskin, Henry. Combined letter scale, calendar and paper holder. 201,044, 5–4–65, Cl. D52—10.
Sagarin, Philip H., to Valve Corp. of America. Dispenser top for a pressurized can. 201,056, 5–4–65, Cl. D58—26.
Sandefur Engineering Co., Inc.: *See*—
Sandefur, Douglas M. 201,047.
Sandefur, Douglas M., to Sandefur Engineering Co., Inc. Work station unit for product assembly or the like. 201,047, 5–4–65, Cl. D55—1.
Scott, Kenneth W.: *See*—
Vigna, Ralph M., and Scott. 201,059.
Selectrostatic Corp.: *See*—
Blackwell, Ronald J., and Devick. 201,061.
Sheaffer, W. A., Pen Co.: *See*—
Gieseking, Harry E., and Quinlan. 201,050.
Shepler, James A., to Owens-Illinois Glass Co. Jug. 201,051, 5–4–65, Cl. D58—5.
Solberg, Kenneth M. Combined toothbrush and tumbler holder. 201,001, 5–4–65, Cl. D4—3.
Sonneveldt, Julian H., and J. Demetreon, to Product and Idea Developers Inc. Shelf. 201,023, 5–4–65, Cl. D33—3.
Statler, William H.: *See*—
Johnson, Clarence L., and Statler. 201,062.
Sullivan, Daryl D., A. L. Jones, and E. J. Neal, Jr.; said Sullivan assor. to Corning Glass Works. Dental light or similar article. 201,038, 5–4–65, Cl. D48—20.
Tapert, John W. Feeding chair for a baby. 201,014, 5–4–65, Cl. D15—1.
Thomas, Gunter: *See*—
Weissbrod, Helmut, and Thomas. 201,036.
Thompson Ramo Wooldridge Inc.: *See*—
Fladlien, David G. and D. J. 201,058.
Tino, Joseph R.: *See*—
Josephsen, Roy C., Tino, and Fulcher. 201,052.
Tycos Tool & Die Co. Ltd.: *See*—
Doster, Anne. 201,033.
United States of America
Army: *See*—
Koon, William S., and Musselman. 201,010.
Valve Corp. of America: *See*—
Sagarin, Philip H. 201,056.
Vigna, Ralph M., and K. W. Scott, to Eastman Kodak Co. Projection reader. 201,059, 5–4–65, Cl. D61—1.
Wagner, Richard L., to Diamond National Corp. Stick for a molded confection. 201,066, 5–4–65, Cl. D82—2.
Weiss, Hubert L. Electrical distribution box or similar article. 201,020, 5–4–65, Cl. D26—5.
Weissbrod, Helmut, and G. Thomas, to Quarzlampen Gesellschaft m.b.H. Housing for an ultra-violet lamp or similar article. 201,036, 5–4–65, Cl. D48—20.
Weller, Carl E., D. R. Fegley, and A. J. Brassaw, to Weller Electric Corp. Combined soldering iron holder and transformer unit. 201,019, 5–4–65, Cl. D26—1.
Weller Electric Corp.: *See*—
Weller, Carl E., Fegley, and Brassaw. 201,019.
Westervelt, Robert D. Hat rack. 201,025, 5–4–65, Cl. D33—8.
White, Winsor D., Jr., to D. H. Baldwin Co. Organ console. 201,049, 5–4–65, Cl. D56—2.
Wiese, Harold H. Nestable music stand. 201,026, 5–4–65, Cl. D33—10.
Wolfe, Gerald W., to Becton, Dickinson and Co. Casing or similar article for a prothrombin time determination apparatus or the like. 201,015, 5–4–65, Cl. D16—2.
Zimmerman, Gerald H., and E. J. Klaczkiewicz, to Beloit Eastern Corp. Single drum rewinder or similar article. 201,048, 5–4–65, Cl. D55—1.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 4TH DAY OF MAY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries Inc.: *See*—
Brown, Morris C., and Johnson. 3,181,843.
Aagaard, Georg C. S. Removable panels. 3,181,664, 5–4–65, Cl. 189—88.
Abbe, Edward H., M. Berman, A. B. Blankenship, Jr., and E. H. Sills, to General Electric Co. Article handling system. 3,181,713, 5–4–65, Cl. 214—11.
Abbott, Elbert V. Collection device for parking fees. 3,181,780, 5–4–65, Cl. 232—1.
Abraham, Anton, to Wiener Kammfabrik Anton Abraham Komm. Ges. Teasing comb. 3,181,540, 5–4–65, Cl. 132—159.
Acme Ball Bearing & Mfg. Co.: *See*—
Schermer, Nathan H. 3,181,688.
Adams, Albert H.: *See*—
Ginaven, Marvin E., and Adams. 3,181,454.
Adams, Charles B., and E. A. Silver, to Sperry Rand Corp. Press wheel. 3,181,622, 5–4–65, Cl. 172—519.
Adams, Harold A., and J. K. Coates, to Electro-Smog Corp. Crankcase ventilation system control device. 3,181,833, 5–4–65, Cl. 251—121.
Adams, Roman A.: *See*—
Stone, Joseph J., and Adams. 3,182,224.
Adams-Millis Corp.: *See*—
Rearwin, Earle W. 3,181,211.
Admiral Corp.: *See*—
Kao, Lin. 3,182,122.
Kao, Lin. 3,182,123.
Aerojet-General Corp.: *See*—
Barnett, Paul B., and Knop. 3,181,327.
Brittain, Edward G., and Stein. 3,182,227.
Cox, Robert B. 3,181,937.
Edmonson, Robert B. 3,181,363.
Funnell, William F. 3,181,675.
Krayenbuhl, Harold A., Stirnaman, and Smola. 3,181,897.
Aesup, Etablissements: *See*—
Moret, Michel. 3,181,188.
Agricultural Research Development, Inc.: *See*—
Tripp, Herman W. 3,181,503.
Ahroni, Joseph M. and L. Plug-in type Christmas tree light. 3,182,185, 5–4–65, Cl. 240—10.
Ahroni, Lee: *See*—
Ahroni, Joseph M. and L. 3,182,185.
Aiken, William R. Tone control circuit for emphasizing low volume high and low frequency signals. 3,182,271, 5–4–65, Cl. 333—18.
Air Products and Chemicals, Inc.: *See*—
Geist, Jacob M., Claitor, and Cost. 3,181,306.
Air Reduction Co., Inc.: *See*—
Duron, Paul. 3,181,473.
Airpax Electronics Inc.: *See*—
Coughlin, Thomas W. 3,182,151.
Aitken, William H., to Remington Arms Co., Inc. Sprocket retaining means. 3,181,902, 5–4–65, Cl. 287—53.
Ajinomoto Co., Inc.: *See*—
Tatsumi, Susumu, Sasaji, and Ohno. 3,182,079.
Albrecht, Carl F., to Gould-National Batteries, Inc. Hydrometer attachment device for batteries. 3,181,975, 5–4–65, Cl. 136—181.
Aldag, Howard W., to The Bendix Corp. Electrostatic charging. 3,182,239, 5–4–65, Cl. 317—262.
Alfieri, Giuseppe, to Fabbrica Italiana Magneti Marelli S.p.A. Twin section hydraulic control either in tandem or in parallel for single or multi section compressed air. 3,181,298, 5–4–65, Cl. 60—54.5.
Alis, Roy: *See*—
Pellen, Josef, and Alis. 3,181,380.
Allen, Myrtle R. Life jacket. 3,181,183, 5–4–65, Cl. 9—333.
Allen, Sanford R., and K. R. Foote, to United States of America, Navy. "Wheels-up" flare warning system. 3,181,822, 5–4–65, Cl. 244—114.
Allied Chemical Corp.: *See*—
Bonfield, John H., Hecker, Snider, and Apostle. 3,182,055.
Brooks, Maxwell J., and Newman. 3,181,944.
Gates, William H., and Harris. 3,181,985.
Schmitt, George J. 3,182,046.
Voelker, Walter D. 3,181,199.
Allis-Chalmers Mfg. Co.: *See*—
Washbond, Harry H. 3,181,429.
Allison, James H.: *See*—
Kane, James T., Dayton, and Allison. 3,181,766.
Al-Ray Meg. Co.: *See*—
Raphael, Julius. 3,181,702.
Altamil Corp.: *See*—
Schaible, Michael, and Tuttle. 3,181,207.
Schaible, Michael, and Tuttle. 3,181 213.
Altman, Russell S. Method of cooking grain in a closed system. 3,181,955, 5–4–65, Cl. 99—80.
Aluminum Co. of America: *See*—
Rolles, Rolf. 3,181,962.
Amada, Sanae, K. Kubota, K. Kobayashi, Y. Okajima, and S. Nanbo, to Nippon Telegraph and Telephone Public Corp. Electrostatic high speed printer. 3,182,333, 5–4–65, Cl. 346—74.
Amerco Inc.: *See*—
Mitchell, Chester L. 3,181,849.
American Air Filter Co., Inc.: *See*—
Baustian, Gordon N. 3,181,794.
Copenhefer, John E. 3,181,284.
American Bosch Arma Corp.: *See*—
Voutsas, Alexander M. 3,181,378.
American Brake Shoe Co.: *See*—
Hipple, George M., and Hickman. 3,181,559.
American Chain & Cable Co., Inc.: *See*—
Bratz, Otto J. 3,181,524.
American Cyanamid Co.: *See*—
Fujita, Yoshimasa, Shimoda, and Zoda. 3,182,106.
Heller, Milton D., Lenhard, and Bernstein. 3,182,057.
Heller, Milton D., Lenhard, and Bernstein. 3,182,075.
Pierce, Elliot S., Slowata, and O'Brien. 3,181,966.
Roth, Philip B., and Hallows. 3,181,927.
Sydor, Walter J. 3,182,082.
American Electronic Laboratories, Inc.: *See*—
Riebman, Leon, and Haimowitz. 3,182,266.
American Farm Equipment Co.: *See*—
Andersen, Arthur, Jr. 3,181,740.
American Metal Climax, Inc.: *See*—
Muessel, Dan C. 3,181,204.
American Metal Products Co.: *See*—
Posh, Raymond C. 3,181,831.
Schneider, Herbert. 3,181,598.
American Oil Filter Co., Inc.: *See*—
Cochran, Thomas L. 3,181,661.
American Photocopy Equipment Co.: *See*—
Rautbord, Clayton L., Newcomb, Sugarman, Eisner, and Kent. 3,181,420.
American Radiator & Standard Sanitary Corp.: *See*—
Noakes, Thomas E. 3,182,149.
American Screen Products Co.: *See*—
Winnan, Russell M., and Porter. 3,181,596.
Ammons, Walter D. Refrigerating apparatus with holdover means. 3,181,310, 5–4–65, Cl. 62—432.
Amos, Charles A., and D. J. Lovett, to E. I. du Pont de Nemours and Co. Process and apparatus for treating textile materials. 3,181,967, 5–4–65, Cl. 117—67.
Amphenol-Borg Electronics Corp.: *See*—
Horton, Russell E. 3,182,270.
Anaconda Wire and Cable Co.: *See*—
Ege, Sigmund, and Schnur. 3,181,251.
Anania, James A., 33% to F. C. Holle; 33% to O. Sass; 2% to V. Flaherty, and 2% to D. M. Flaherty. Spacecraft reentry retarding means. 3,181,824, 5–4–65, Cl. 244—138.
Anciens Etablissements Barbier Benard & Turenne: *See*—
Benard, Christian L. G. 3,182.287.
Andersen, Arthur, Jr., to American Farm Equipment Co. Crop dryers. 3,181,740, 5–4–65, Cl. 222—503.
Anderson, Hubert J., to Automatic Welding Co. Welding apparatus. 3,182,177, 5–4–65, Cl. 219—125.
Anderson, Lloyd E., Sr., to Pittsburgh-Des Moines Steel Co. Method of making a welded joint. 3,182,179, 5–4–65, Cl. 219—137.
Anderson, Robert G.: *See*—
Stuart, Frank A., and Anderson. 3,182,024.
Andrew, Harold B., to Bell Telephone Laboratories, Inc. Wave analysis system utilising time reversal. 3,182,256, 5–4–65. Cl. 324—77.
Angioletti, Attilio, to Pirelli S.p.A. Rubber gas mask. 3,181,531, 5–4–65, Cl. 128—141.
Anken Chemical & Film Corp.: *See*—
Van Dam, Max, Baturay, and Zaniewski. 3,181,458.
Anker-Werke Aktiengesellschaft: *See*—
Becker, Gerhard. 3,181,784.
Anthony, William E. Plastic mortar shell. 3,181,465, 5–4–65, Cl. 102—41.
Apostle, Basil G.: *See*—
Bonfield, John H., Hecker, Snider, and Apostle. 3,182,055.
Apparatebau Rothemuhle Dr. Brandt & Co.: *See*—
Brandt, Herbert. 3,181,601.
Archbold, Ralph L.: *See*—
Balcom, George A., and Archbold. 3,182,110.
Armentrout, James L., to Avery Industries, Inc. Packaging method and product. 3,181,699, 5–4–65. Cl. 206—80.
Armour and Co.: *See*—
Cassie, Norman M., and Hofmann. 3,181,720.
Arnes, Lyle L., and J. R. Uhen, to Walker Mfg. Co. Wheeled floor jacks. 3,181,836, 5–4–65, Cl. 254—8.
Arrow Safety Device Co.: *See*—
Rossi, Robert R. 3,182,289.
Art Woodwork Ltd.: *See*—
Guillon, Jacques S., and Sorensen. 3,181,923.
Ascoli, Enzo, to Paillard S.A. Arrangement for producing electric signals controlling the typing of typewriter signs defined by coordinates. 3,182,126, 5–4–65, Cl. 178—30.
Ashby, Robert B., to Atlantic Research Corp. Shorting plug. 3,182,277, 5–4–65, Cl. 339—19.
Asons, Ernest, and W. E. Hillsman, to Western Electric Co. Inc. Method of testing with an optical comparator. 3,181,417, 5–4–65, Cl. 88—24.

Asseff, Peter A., to The Lubrizol Corp. Lubricants containing phosphorus thioic derivatives. 3,182,021, 5-4-65, Cl. 252—46.6.
Aston, Bruno D. Fluent cosmetic applicator with replaceable cartridge. 3,181,539, 5-4-65, Cl. 132—79.
Atlantic Research Corp.: *See*—
  Ashby, Robert B. 3,182,277.
Atlas Copco Aktiebolag: *See*—
  Lindgren, Carl O. 3,181,623.
  Lindberg, Gote R. 3,181,624.
Aurora Equipment Co.: *See*—
  Dunham, John C. 3,181,703.
Automatic Casting Corp.: *See*—
  Madwed, Albert. 3,181,212.
Automatic Welding Co.: *See*—
  Anderson, Hubert J. 3,182,177.
Automotive Rubber Co., Inc.: *See*—
  Duhn, Jens W. 3,182,120.
  Millard, Phillip V. 3,182,119.
Auton, Claud C., to Wright-Knit Hosiery Mills, Inc. Knit fabric having suture-joined solid color pattern areas. 3,181,816, 5-4-65, Cl. 66—179.
Avco Corp.: *See*—
  Nelson, Bruce K., and Haslam. 3,182,324.
  Rosa, Richard J. 3,182,213.
Avery Industries, Inc.: *See*—
  Armentrout, James L. 3,181,699.
Axelrod, Leslie R., to The Powers Regulator Co. Automatic comfort control system. 3,181,791, 5-4-65, Cl. 236—44.
Babcock & Wilcox Co., The: *See*—
  Forsman, Elmer J. 3,181,527.
  Poole, Edward M. 3,181,471.
Babcock & Wilcox, Ltd.: *See*—
  Bensler, Hartwig. 3,182,000.
Babler, Otto: *See*—
  Jepson, Ivar, and Babler. 3,181,237.
Bachman, Walter S.: *See*—
  Melanson, Everett, and Bachman. 3,181,989.
Backlund, Sven, to Ford Motor Co. Motor vehicle air suspension leveling valve. 3,181,854, 5-4-65, Cl. 267—65.
Baggs, Burton D.: *See*—
  Smith, Alexander, and Baggs. 3,181,619.
Baier, John P., H. E. Smith, and W. E. Fritz, to General Motors Corp. Transmission control system. 3,181,387, 5-4-65, Cl. 74—472.
Bailey, Edwin G.: *See*—
  McDaniel, Lloyd E., Schaffner, and Bailey. 3,182,004.
Bailey, Eugene. Slicer. 3,181,582, 5-4-65, Cl. 146—105.
Bailey, George A.: *See*—
  Miskel, John J., and Bailey. 3,181,735.
Bajer, Jacques, to Ford Motor Co. Vibration isolating device. 3,181,850, 5-4-65, Cl. 267—1.
Baker, Norman A., to Hooker Chemical Corp. Liquid level control. 3,181,556, 5-4-65, Cl. 137—389.
Balcom, George A., and R. L. Archbold, to White Consolidated Industries, Inc. Method and apparatus for making fiber glass tank. 3,182,110, 5-4-65, Cl. 264—263.
Baldwin, John A., Jr., and A. H. Bobeck, to Bell Telephone Laboratories, Inc. Magnetic information storage circuits. 3,182,296, 5-4-65, Cl. 340—174.
Ballard, William E.: *See*—
  Moran, Stephen F., and Ballard. 3,182,115.
Ballou, Harry G., to Superior Concrete Accessories, Inc. Dual anchoring insert for a concrete slab. 3,181,276, 5-4-65, Cl. 50—82.
Banal, Michel: *See*—
  Delaruelle, Jacques, and Banal. 3,181,182.
Bancroft, Norman R., to Pye Ltd. Electric alternators including basket windings located in the air gap. 3,182,216, 5-4-65, Cl. 310—168.
Baptist, James N., and F. X. Werber, to W. R. Grace & Co. Plasticized poly-beta-hydroxy butyric acid and process. 3,182,036, 5-4-65, Cl. 260—32 4.
Baracos, Nick, and F. Rosky, to Ford Motor Co. Antiharshness independent front wheel suspension system. 3,181,885, 5-4-65, Cl. 280—124.
Bareis, Marvin A., to Hawthorn Co. Division of Kellwood Co. Umbrella tent frame. 3,181,542, 5-4-65, Cl. 135—4.
Barengoltz, Bernard A., to McGraw-Edison Co. Oil gauge with testing facility. 3,181,342, 5-4-65, Cl. 73—1.
Barkdoll, Joseph P., to SCM Corp. Carriage return mechanism having centrifugal and friction clutches in series. 3,181,681, 5-4-65, Cl. 197—66.
Barnard, Delbert J.: *See*—
  Hess, Wynn S. 3,181,451.
Barnes, John V., to Ford Motor Co. Automatic brake adjustor. 3,181,655, 5-4-65, Cl. 188—79.5.
Barnes, Richard R., to Bell Telephone Laboratories, Inc. Doppler frequency shift correction of information band frequencies in a transmitted carrier system using a single pilot signal. 3,182,131, 5-4-65, Cl. 179—15.
Barnes, Richard R., to Bell Telephone Laboratories, Inc. Doppler frequency shift correction of information band frequencies in a suppressed carrier system using a pair of pilot signals. 3,182,132, 5-4-65, Cl. 179—15.
Barnett, Paul B., and L. H. Knop, to Aerojet-General Corp. Explosive edge-forming. 3,181,327, 5-4-65, Cl. 72—56.
Barogenics, Inc.: *See*—
  Zeitlin, Alexander. 3,181,328.
Baron, Paul L., R. W. Hamaker, and A. T. Romeo, to International Business Machines Corp. Semiconductor device. 3,181,979, 5-4-65, Cl. 148—33.1.
Bartlett, Joseph W. Gas gravitometers. 3,181,345, 5-4-65, Cl. 73—30.
Bartlett, Percy H., to Bartlett Trailer Corp. Semi-trailer lift. 3,181,761, 5-4-65, Cl. 298—20.
Bartlett Trailer Corp.: *See*—
  Bartlett, Percy H. 3,181,761.
Bartlett, William F., and B. Brightman, to General Dynamics Corp. Converter. 3,182,306, 5-4-65, Cl. 340—347.
Bartin, Loy E., to Radio Corp. of America. Apparatus for measuring differential temperature. 3,181,364, 5-4-65, Cl. 73—342.
Battelle Development Corp.: *See*—
  Elsea, Arthur R. 3,181,945.
Baturay, Omar: *See*—
  Van Dam, Max, Baturay, and Zaniewski. 3,181,458.
Bauer Bros. Co., The: *See*—
  Ginaven, Marvin E., and Adams. 3,181,454.
Bauer, Charles A., to Sargent & Co. Pin tumbler lock. 3,181,320, 5-4-65, Cl. 70—421.
Bauer, Donald R., J. D. Cassidy, H. W. Hance, and C. R. Mullen, to Kaiser Gypsum Co., Inc. Method and device for producing patterned-surface sheet material. 3,181,279, 5-4-65, Cl. 51—90.
Bauer, Egon H.: *See*—
  Dieter, Norman H., Jr., and Bauer. 3,182,136.
Bauer, Jordan V., and L. H. Eliser, to The Hubinger Co. Adhesive compositions. 3,182,031, 5-4-65, Cl. 260—17.3.
Baumer, Herbert. Switch mounting means. 3,182,163, 5-4-65, Cl. 200—168.
Baustian, Gordon N., to American Air Filter Co., Inc. Condensate discharge booster. 3,181,794, 5-4-65, Cl. 237—67.
Beacon Mfg. Co.: *See*—
  Carroll, William J. 3,181,569.
Bealrsto, Robert J.: *See*—
  Dutton, Richard H., Clements, Bealrsto, and Stoddard. 3,182,308.
Beardow, George M., and R. C. Vandermark, to Vitramon, Inc. Manually actuated electrical switch device with contact restraining means. 3,182,158, 5-4-65, Cl. 200—159.
Beatty, Donald C. Gain-adjusting audio level terminator. 3,182,137, 5-4-65, Cl. 179—170.8.
Beck, Robert M., D. W. Fuller, P. McAfee, and S. Ruhman, to Raytheon Co. Converter. 3,182,304, 5-4-65, Cl. 340—347.
Becker, Gerhard, to Anker-Werke Aktiengesellschaft. Business machine having a control device for the automatic control of totalizing machine runs. 3,181,784, 5-4-65, Cl. 235—2.
Beckman Instrument, Inc.: *See*—
  Lenkey, Andrew, and Ehret. 3,181,574.
Becofsky, Arthur: *See*—
  Candreva, George J., and Becofsky. 3,181,253.
Bedell, Berkley W., to Berkley & Co., Inc. Monofilament polyamide fishline composition. 3,182,100, 5-4-65, Cl. 260—857.
Behr, Walter: *See*—
  Elsner, Hans, and Behr. 3,181,682.
  Elsner, Hans, and Behr. 3,181,683.
Belanger, Celestin V., to Heat Exchangers Research and Development Co. Heat exchanger bundle. 3,181,606, 5-4-65, Cl. 165—158.
Belk, Samuel A., and W. Humenick, to General Electric Co. Wide modulation combustion system for jet engines. 3,181,297, 5-4-65, Cl. 60—39.72.
Bell Aerospace: *See*—
  Mitchell, Harry W., and Freeman. 3,182,327.
Bell, Allen N., to Corning Glass Works. Liquid level measuring system. 3,181,361, 5-4-65, Cl. 73—290.
Bell & Howell Co.: *See*—
  Lemke, James U. 3,182,300.
Bell, Ramsay M., to Hammond Machinery Builders, Inc. Method and apparatus for holding workpieces for a material removal operation. 3,181,282, 5-4-65, Cl. 51—217.
Bell Telephone Laboratories, Inc.: *See*—
  Andrew, Harold B. 3,182,256.
  Baldwin, John A., Jr., and Bobeck. 3,182,296.
  Barnes, Richard R. 3,182,131.
  Barnes, Richard R. 3,182,132.
  Cutler, Cassius G. 3,182,326.
  Hochgraf, Lester. 3,182,134.
  Lewis, John A. 3,181,348.
  Miller, Stewart E. 3,182,203.
  Myer, Robert E. 3,182,267.
  Newhall, Edmunde E. 3,182,297.
  Peek, Robert L., Jr. 3,182,226.
Benard, Christian L. G., to Anciens Etablissements Barbier Benard & Turenne. Light beacon aircraft glide path. 3,182,287, 5-4-65, Cl. 340—26.
Bender, Emil A. Well servicing rig. 3,181,658, 5-4-65, Cl. 189—11.
Bendix Corp.: The: *See*—
  Aldag, Howard W. 3,182,239.
  Hunt, Paulmer D., and Goerke. 3,181,372.
  Kampmeyer, Roy A., Lee, and Walker. 3,182,125.
  Mock, Frank C. 3,181,520.
  Pauwels, Edward M., and Kestermeier. 3,181,295.
  Polisso, Joseph W. 3,181,673.
  Sabatini, John J. 3,181,374.
  Sabatini, John J. 3,181,375.
  Tepolt, Florian E., and Rothfuss. 3,181,285.
  Troeger, Henry. 3,181,851.
  Troeger, Henry. 3,181,918.
Benner-Nawman, Inc.: *See*—
  Nawman, Rollie B. 3,181,705.
Bennett, James S., to Moore Products Co. Pneumatic transmitters. 3,181,547, 5-4-65, Cl. 137—82.
Benny, Alan H. B., and A. Trainor, to North American Philips Co., Inc. Semi-conductor device with copper-boron alloyed electrode and method of making the same. 3,181,981, 5-4-65, Cl. 148—185.
Benson, James M., to Hastings-Raydist, Inc. Thermal flowmeter. 3,181,357, 5-4-65, Cl. 73—240.
Bensler, Hartwig, to Babcock & Wilcox, Ltd. Shielding arrangement for a spherical nuclear reactor vessel. 3,182,000, 5-4-65, Cl. 176—40.

Berchtold, Glenn A., to E. I. du Pont de Nemours and Co. N,N′ disubstituted dicarboxamides and dithiocarboxamides prepared from monoenamines. 3,182,060, 5-4-65, Cl. 260—247.2.
Berg Airlectro Products Co.: *See*—
  Dobrikin, Harold L., and Horowitz. 3,181,917.
Berill, Joseph M., to Westinghouse Air Brake Co. Retarder control system. 3,182,188, 5-4-65, Cl. 246—182.
Berkin, Gerald L.: *See*—
  Levine, Abe. 3,181,597.
Berkley & Co., Inc.: *See*—
  Bedell, Berkley W. 3,182,100.
Berlo, Ernest J. Machine tool. 3,181,382, 5-4-65, Cl. 74—217.
Berman, Max: *See*—
  Abbe, Edward H., Berman, Blankenship, and Sills. 3,181,713.
Bernada, René: *See*—
  Maratuech, Paul, and Bernada. 3,182,211.
Bernard, George G.: *See*—
  Csassar, Albert K., and Bernard. 3,181,609.
Bernardini, Francesco: *See*—
  Natta, Giulio, Mazzanti, Longi, Dall'Asta, and Bernardini. 3,182,045.
Bernstein, Seymour: *See*—
  Heller, Milton D., Lenhard, and Bernstein. 3,182,057.
  Heller, Milton D., Lenhard, and Bernstein. 3,182,075.
Bertucci, Frank L. Twin lens camera. 3,181,446, 5-4-65, Cl. 95—44.
Best, Lester D. Car suit carrier. 3,181,754, 5-4-65, Cl. 224—29.
Bianchini, Pietro, to Crinos Industria Farmacobiologica S.p.A. Method for the preparation of a pancreatic heparinoid. 3,181,996, 5-4-65, Cl. 167—74.
Bienstock, Daniel: *See*—
  Field, Joseph H., and Bienstock. 3,181,929.
Biesecker, Donald L., to Illinois Tool Works Inc. Antenna mounting clip. 3,182,329, 5-4-65, Cl. 343—702.
Bigelow-Liptak Corp., The: *See*—
  Jones, Robert W. 3,181,278.
Bilbrey, Robert A., to B. W. West, d.b.a. California Controls Co. Visual indicator. 3,181,496, 5-4-65, Cl. 116—70.
Birman, Joseph H. Apparatus for geothermal prospecting. 3,181,629, 5-4-65, Cl. 175—40.
Birmingham Small Arms Co. Ltd., The: *See*—
  Taylor, Wilfred. 3,181,369.
Bisbing, Robert H., to South Chester Corp. Draw pull catch. 3,181,905, 5-4-65, Cl. 292—109.
Blankenship, Arthur B., Jr.: *See*—
  Abbe, Edward H., Berman, Blankenship, and Sills. 3,181,713.
Blaylock, Spencer L., Jr., and W. A. Schaich, to Owens-Illinois Glass Co. Process and apparatus for treating hollow thermoplastic articles. 3,182,103, 5-4-65, Cl. 264—22.
Bleck, Norris E.: *See*—
  Miller, William R., Forward, and Bleck. 3,181,424.
Blizard, Robert B., to Schlumberger Well Surveying Corp. Acoustic well logging apparatus. 3,181,645, 5-4-65, Cl. 181—.5.
Blume, Alan E., to General Electric Co. Array pattern modification. 3,182,325, 5-4-65, Cl. 343—100.
Blume, Alan E., to General Electric Co. Variably spaced arrays of wave radiators and receivers. 3,182,330, 5-4-65, Cl. 343—844.
Blunden, Donald J., W. E. Widener, and R. J. Haggarty, to Whitehead & Kales Co. Vehicle tie-down structure. 3,181,886, 5-4-65, Cl. 280—179.
Bobeck, Andrew H.: *See*—
  Baldwin, John A., Jr., and Bobeck. 3,182,296.
Bodanszky, Miklos, and J. Fried, to Olin Mathieson Chemical Corp. Esters of thiostrepton. 3,181,995, 5-4-65, Cl. 167—65.
Boehm, Josef. Agitating mixer. 3,181,841, 5-4-65, Cl. 259—72.
Boeing Co., The: *See*—
  Gillmore, Kenneth B. 3,181,823.
Bofil S.r.l.: *See*—
  Pilego, Mario. 3,181,538.
Bohlinger, Ernst, and S. Friedman. Jewelry shortener lock. 3,181,217, 5-4-65, Cl. 24—116.
Bohm, Helmut, and H. Duras, to Miway Mikrowellen Aktien Gesellschaft. Microwave ovens. 3,182,166, 5-4-65, Cl. 219—10.55.
Boke, Klaus, to North American Philips Co., Inc. Peltier device employing semi-conductor bodies which are connected to one another by means of interposed members of satisfactory electrical and thermal conductivity. 3,181,304, 5-4-65, Cl. 62—3.
Bolidens Gruvaktiebolag: *See*—
  Noren, Anders B., Fahlstrom, and Burstrom. 3,181,800.
Bolkow-Entwicklungen Kommanditgesellschaft, Firma: *See*—
  Pfleiderer, Kurt. 3,181,816.
Bolton, Theodore S.: *See*—
  Canpotto, Samuel D., and Bolton. 3,181,680.
Bond, Victor E. W.: *See*—
  Toder Eric H., and Bond. 3,182,238.
Bonfield, John H., R. C. Hecker, O. E. Snider, and B. G. Apostle, to Allied Chemical Corp. Regeneration of e-caprolactam from polyamides. 3,182,055, 5-4-65, Cl. 260—239.3.
Bonvicini, Alberto, and C. Caldo, to Montecatini Societa Generale per L'Industria Mineraria e Chimica. Process of rendering polyolefins more dye receptive by mixing with organic compounds having phenolic hydroxy groups. 3,182,105, 5-4-65, Cl. 264—78.
Bonzagni, Francis A., and O. P. Cohen, to Monsanto Co. Laminated milk carton. 3,181,765, 5-4-65, Cl. 229—3.5.
Booe, James M.: *See*—
  Haberecht, Rolf R., Booe, and Loftus. 3,181,229.
Boone, Lewis G. Switching device. 3,182,230, 5-4-65, Cl. 317—157.
Boothe, Willis A., to General Electric Co. Fluid control devices. 3,181,546, 5-4-65, Cl. 137—81.5.
Borden Co., The: *See*—
  Dean, Robert B. 3,181,501.
Borger, Jack W.: *See*—
  Sherrie, Robert M., Peterson, and Borger. 3,181,480.
Borghetti, Joseph C., to Microwave Development Laboratories, Inc. Waveguide to coaxial L transition having the coaxial outer conductor extending into the waveguide. 3,182,272, 5-4-65, Cl. 333—21.
Borg-Warner Corp.: *See*—
  Boyd, Clinton A. 3,182,214.
Borowsky, Frederick G., to George K. Garrett Co., Division of MSL Industries, Inc. Screw-and-washer pre-assembly. 3,181,684, 5-4-65, Cl. 151—37.
Bos, Karel. Tube bending apparatus. 3,181,323, 5-4-65, Cl. 72—26.
Bottum, Edward W. Adjustable muffler. 3,181,648, 5-4-65, Cl. 181—63.
Boyd, Clinton A., to Borg-Warner Corp. Submersible motor seal section. 3,182,214, 5-4-65, Cl. 310—87.
Boylan, Bernard P.: *See*—
  Boylan, Edward B., White, Boylan and Pyre. 3,181,887.
  Boylan, Edward B., White, Boylan, and Pyre. 3,181,888.
Boylan, Edward B., H. J. White, B. P. Boylan, and G. J. Pyre. Service system and coupling mechanism for tractor-trailer vehicles. 3,181,887, 5-4-65, Cl. 280—421.
Boylan, Edward B., H. J. White, B. P. Boylan, and G. J. Pyre, to Peer Cartage Co., Inc. Automatic coupling mechanism for tractor-trailer vehicles. 3,181,888, 5-4-65, Cl. 280—421.
Brach, Ignacy. Lever-shovelling machines. 3,181,716, 5-4-65, Cl. 214—142.
Brackin, Roy E. Process and apparatus for analyzing joint disorders. 3,181,528, 5-4-65, Cl. 128—2.
Brahm, Charles B., and R. F. Gamble, to United Aircraft Corp. Power remaining indicator. 3,181,353, 5-4-65, Cl. 73—116.
Branch, Robert E.: *See*—
  Reddin, Robert M., and Branch. 3,181,696.
Brand, Jay J., to Pittsburgh Plate Glass Co. Glass drawing apparatus. 3,181,392, 5-4-65, Cl. 74—665.
Brandt, Herbert, to Dr. Brandt Apparatebau Rothemuhle & Co. Regenerative heat exchangers. 3,181,601, 5-4-65, Cl. 165—4.
Branscum, Tony E., to Phillips Petroleum Co. Extrusion of thermoplastic tubing. 3,182,108, 5-4-65, Cl. 264—209.
Bratz, Otto J., to American Chain & Cable Co., Inc. Wire gun. 3,181,524, 5-4-65, Cl. 124—16.
Brauer, Edwin H., to Herman Pneumatic Machine Co. Molding machine squeeze foot. 3,181,206, 5-4-65, Cl. 22—41.
Breck, Donald W., to Union Carbide Corp. Molecular sieve-metal agglomerates and their preparation. 3,181,231, 5-4-65, Cl. 29—182.5.
Bremer, John W., and V. L. Newhouse, to General Electric Co. Cryogenic memory. 3,182,294, 5-4-65, Cl. 340—173.1.
Brennan, Harry M.: *See*—
  Seelig, Herman S., Coley, and Brennan. 3,182,014.
Brennan, Harry M., J. R. Coley, C. G. Frye, and L. C. Gutberlet, to Standard Oil Co. Hydrocarbon conversion process. 3,182,097, 5-4-65, Cl. 260—683.65.
Brewington, Philip J. Anchoring bolt for water closet bowls. 3,181,586, 5-4-65, Cl. 151—41.75.
Bridge, Edward W., Sr. Extension for shotgun barrel. 3,181,262, 5-4-65, Cl. 42—79.
Bridger Grover L., and R. W. Starostka, to W. R. Grace & Co. Method of supplying nitrogen and phosphorus nutrients to plants. 3,181,943, 5-4-65, Cl. 71—36.
Bridle, Kenneth F. to Smart & Brown (Connectors) Ltd. Multi-contact electric connectors. 3,182,278, 5-4-65, Cl. 339—59.
Brigel, Jurg H. Vibrator for compacting the bed and surfacing of roads. 3,181,442, 5-4-65, Cl. 94—48.
Brightman, Barrie: *See*—
  Bartlett, William F., and Brightman. 3,182,306.
Bristol-Myers Co.: *See*—
  Wilson, Armin G., Weintraub, and Kennedy. 3,182,084.
Bristol Siddeley Engines Ltd.: *See*—
  Orchard, Peter F., and Williams. 3,181,293.
British Aircraft Corp. Ltd.: *See*—
  Jacob, John E. B., and Sowerby. 3,181,467.
British Iron and Steel Research Assn., The: *See*—
  Sturgeon, George M. 3,181,977.
British Petroleum Co., Ltd., The: *See*—
  Yeo, Alan A., and Hambling. 3,182,096.
Brittain, Edward G., and W. A. Stein, to Aerojet-General Corp. Signal control apparatus. 3,182,227, 5-4-65, Cl. 317—142.
Broadhead, Samuel L., Jr., D. L. Fredrickson, and R. G. Vinson, to Collins Radio Co. SSB-FM detector. 3,182,261, 5-4-65, Cl. 325—315.
Broderna Hedlund, AB: *See*—
  Persson, Knut A. W. 3,181,762.
  Persson, Knut A. W. 3,182,171.
Brokaw, Adrian P.: *See*—
  Zimmerman Carl W., and Brokaw. 3,182,286.
Brooking, Donald R. Apparatus washer. 3,181,541, 5-4-65, Cl. 134—186.
Brooks, Maxwell J., and R. I. Newman, to Allied Chemical Corp. Zinc calcine for hydrometallurgical process. 3,181,944, 5-4-65, Cl. 75—9.
Bross, Helmut K. 50% to Frank T. Johmann. Closure means. 3,181,741, 5-4-65, Cl. 222—517.
Brown, Boveri & Cie. Aktiengesellschaft: *See*—
  Finzi, Arno. 3,182,169.
  Schulten, Rudolf. 3,181,999.

- **Brown, Cicero C.** Well packers. 3,181,614, 5-4-65, Cl. 166—122.
- **Brown, Morris C.,** and E. A. Johnson, to ACF Industries Inc. Carburetor. 3,181,843, 5-4-65, Cl. 261—67.
- **Brown, Robert L.:** *See—*
  - Gruenbeck, Klaus H., and Brown. 3,181,671.
- **Brown, Wilburn K.,** to Pettibone Mulliken Corp. Multi-conduit hydraulic swivels. 3,181,898, 5-4-65, Cl. 285—137.
- **Brown, William C.:** *See—*
  - Clemence, Charles R., Robinson, and Brown. 3,182,310.
  - Clemence, Charles R. and Brown. 3,182 313.
- **Brown, William C.,** to National Research Council. Radar system and method for determining the point of burst of a projectile. 3,182,318, 5-4-65, Cl. 343—7.
- **Brown, William C.,** C. R. Clemence, and E. F. V. Robinson, to National Research Council. Radar system and method for determining a target point on a projectile trajectory. 3,182,319, 5-4-65, Cl. 343—7.
- **Brown, William C.:** *See—*
  - Hendry, Archibald, Brown, and Robinson. 3,182,309.
  - Clemence, Charles R., Brown, and Robinson. 3,182,317.
- **Browning, Lewis M.,** and C. W. Streed, to Socony Mobil Oil Co., Inc. Catalytic hydrocracking. 3,182,012, 5-4-65, Cl. 208—111.
- **Brumfield, John C.,** to I-T-E Circuit Breaker Co. Over-center cam and anti-rebound means. 3,182,157, 5-4-65, Cl. 200—153.
- **Bruner Corp.:** *See—*
  - Rudelick, John. 3,181,564.
- **Brunner, Jacques J.,** and W. W. Collins, to FMC Corp. Article sorting system. 3,181,685, 5-4-65, Cl. 198—24.
- **Bruun, Carroll H.:** *See—*
  - Heth, Arthur M., and Bruun. 3,181,482.
- **Bubelis, Gediminas J.,** to Supreme Products Corp. Hand-held combined rotary and reciprocable tool. 3,181,280, 5-4-65, Cl. 51—170.
- **Bubniak, William C.,** R. J. Moffat, and J. R. Mondt, to General Motors Corp. Regenerative heat exchanger. 3,181,603, 5-4-65, Cl. 165—9.
- **Buckley, John Z.,** and O. H. Johnson, to Parker Mfg. Co. Locking pliers with wire cutter. 3,181,181, 5-4-65, Cl. 7—5.6.
- **Bucy, Harry R.** Fluid pressure actuated mechanism. 3,181,435, 5-4-65, Cl. 92—110.
- **Bukama G.m.b.H.:** *See—*
  - Volkmann, Dieter. 3,181,428.
  - Volkmann, Dieter. 3,181,566.
- **Buksbaum, Edward:** *See—*
  - Fallarino, James V., and Buksbaum. 3,181,904.
- **Bullinger, Othmar J.** Vehicle ball joint testing gauge. 3,181,245, 5-4-65, Cl. 33—169.
- **Bunker-Ramo Corp., The:** *See—*
  - Lawrence, John A. 3.182,298.
- **Bunt, Edgar A.,** and H. L. Olsen, to United States of America, Navy. Arc plasma generator. 3,182,176, 5-4-65, Cl. 219—121.
- **Burgess, Donald J.:** *See—*
  - Nobles, Warren H., Houser, and Burgess. 3,181,193.
- **Burgess, Thomas H.,** and M. P. Kesnar, to Fan Tron Corp. Rectifier unit with heat dissipator. 3,182,114, 5-4-65, Cl. 174—15.
- **Burndy Corp.:** *See—*
  - Salz, Edwin T., Sr. 3,182,281.
- **Burnelli, Hazel G.:** *See—*
  - Burnelli, Vincent J. 3,181,820.
- **Burnelli, Vincent J.,** deceased; H. G. Burnelli, executrix, Retractile tail. 3,181.820, 5-4-65, Cl. 244—87.
- **Burns and Roe, Inc.:** *See—*
  - Roe, Ralph C., and Lichtenstein. 3,181,488.
- **Burns, James O.,** and G. S. Chandler, to Ormston Burns, Ltd. Bridges for stringed instruments such as for guitars. 3,181,409, 5-4-65, Cl. 84—313.
- **Burns, Ormston, Ltd.:** *See—*
  - Burns, James O., and Chandler. 3,181,409.
- **Burns, Robert W.** Wall construction computer device. 3,181,787, 5-4-65. Cl. 235—78.
- **Burnside, Charles H.,** and C. G. Long, to Phillips Petroleum Co. Gel propellants comprising halogen-containing terpolymers. 3,181,982, 5-4-65, Cl. 149—19.
- **Burow, Frank H.,** to Gulf Research & Development Co. Chromatographic apparatus. 3,181,344, 5-4-65, Cl. 73—23.1.
- **Burr, Alan C.,** to Howe Folding Furniture Inc. Carrel-desk structure. 3,181,920, 5-4-65, Cl. 312—223.
- **Burr, Robert P.,** to Circuit Research Co. Pulse-developing control circuit. 3,182,243, 5-4-65, Cl. 318—269.
- **Burstrom. Jonas C.:** *See—*
  - Noren, Anders B., Fahlstrom and Burstrom. 3,181,800.
- **Burwen, Richard S.,** to Honeywell Inc. Wide band regulated electronic amplifier. 3,182,268, 5-4-65, Cl. 330—10.
- **Busche, Robert M.,** to E. I. du Pont de Nemours and Co. Coloring of polymeric shaped structure surfaces. 3,181,926, 5-4-65, Cl. 8—4.
- **Busillo, Eugene P.,** to Fischer & Porter Co. Flowmeter. 3,181,358, 5-4-65, Cl. 73—209.
- **Butsin, Allen L.:** *See—*
  - Nakamura, Masao, McKenney, and Butsin. 3,181.352.
- **Caldo, Cornelio:** *See—*
  - Bonvicini, Alberto, and Caldo. 3,182,105.
- **California Controls Co.:** *See—*
  - Bilbrey, Robert A. 3,181,496.
- **California Research Corp.:** *See—*
  - Chittum. Joseph F., and Schremp. 3,182,018.
  - Stuart, Frank A., and Anderson. 3,182,024.
  - Sullivan, Richard F. 3,182,095.
- **Cameron and Jones, Inc.:** *See—*
  - Nielsen. Irvin P. 3,181,631.
- **Cameron, William M.,** and L. G. Powers, to Henry D. Whittlesey, d.b.a. Whittlesey, Powers and Cameron. Grip for ski poles and the like. 3,181,880, 5-4-65, Cl. 280—11.37.
- **Canadian Refractories Ltd.:** *See—*
  - Davies, Leslie J. 3,181,346.
- **Candell, Earl B.,** to General Electric Co. Shipping and display carton. 3,181,694, 5-4-65, Cl. 206—45.14.
- **Candreva, George J.,** and A. Becofsky. Laboratory teaching system. 3,181,253, 5-4-65, Cl. 35—60.
- **Canevari, Gianotti:** *See—*
  - Canevari, Teresio. 3,181,786.
- **Canevari, Teresio;** deceased by, A. Gianotti, sole heiress and legal representative, to Friden, Inc. Calculating machine with control of decimal places. 3,181,786, 5-4-65, Cl. 235—60.15.
- **Cannata, Dominick J.,** to Genesco, Inc. Laminated brassiere pad. 3,181,536, 5-4-65. Cl. 128—481.
- **Cappotto, Samuel D.,** and T. S. Bolton, to SCM Corp. Power device apparatus in a data transferring device. 3,181,680, 5-4-65, Cl. 197—17.
- **Carlton, Chester F.:** *See—*
  - Mullaney, Norbert F., and Carlton. 3,181,440.
- **Carpenter Corp.:** *See—*
  - Carpenter, William R. 3,181,356.
- **Carpenter, Grant H.,** to Jones & Laughlin Steel Corp. Wire rope configuration. 3,181,291, 5-4-65, Cl. 57—148.
- **Carpenter, Virgil R.:** *See—*
  - Lucius, Donald B., and Carpenter. 3,181,747.
- **Carpenter, William R.,** to Carpenter Corp. Pitot tube. 3,181,356, 5-4-65, Cl. 73—182.
- **Carrier Corp.:** *See—*
  - Garland. Robert J. 3,181,236.
- **Carroll, William J.,** to Beacon Mfg. Co. Filling yarn control means. 3,181,569, 5-4-65, Cl. 139—122.
- **Carruthers, Eben H.** Tuna packer. 3,181,957, 5-4-65, Cl. 99—188.
- **Casey, Robert W.** Spark plug cover. 3,181,523, 5-4-65, Cl. 123—198.
- **Cashore, Louis J.** Apparatus and method for detecting cord length irregularities in creels. 3,181,354, 5-4-65, Cl. 73—159.
- **Caskey. Walter A.:** *See—*
  - Starkey, George W., and Caskey. 3,181,721.
- **Cass, Ralph S.,** and R. W. Goetz, to Edcliff Instruments, Inc. Fluid pressure transducer. 3,181,368, 5-4-65, Cl. 73—412.
- **Cassidy. John D.:** *See—*
  - Bauer, Donald R., Cassidy, Hance, and Mullen. 3,181,279.
- **Cassie, Norman M.,** and L. C. Hofmann, to Armour and Co. Pressure or vacuum release closure for a container or the like. 3.181.720, 5-4-65, Cl. 215—56.
- **Caterpillar Tractor Co.:** *See—*
  - Freedy, Allan L., and Wittry. 3,181,430.
  - Hein, Allyn J., and Junck. 3,181,431.
  - Lohbauer, Kenneth R., Myers, and Winters. 3,181,667.
  - Ramsel, Charles A., Rohweder, and Shoemaker. 3,181,394.
- **Catlin. Robert T.,** and J. C. Sinex, to Remington Arms Co., Inc. Captive piston stud driver. 3,181,760, 5-4-65, Cl. 227—10.
- **Cator, Edward J.** to Crawford Fitting Co. Quick-connect magnetic couplings. 3,181,895, 5-4-65, Cl. 285—1.
- **Cecchin, Mario.** Device for increasing the life of dies for wire drawing frames. 3,181,325, 5-4-65, Cl. 72—43.
- **Chafetz, Harry:** *See—*
  - Eckert, George W., and Chafetz. 3,181,938.
- **Challender, Ronald S.,** to United Kingdom Atomic Eenergy Authority. Apparatus for replacing an impeller. 3,181,232, 5-4-65, Cl. 29—202.
- **Chancellor, Roy D.** Bottle stopper. 3,181,718, 5-4-65, Cl. 215—9.
- **Chandler, Gordon S.:** *See—*
  - Burns, James O., and Chandler. 3,181,409.
- **Chandler, Herman.** Thermal-pressure relief device. 3,181,792, 5-4-65. Cl. 236—92.
- **Chapman Chemical Co.:** *See—*
  - Reddin, Robert M., and Branch. 3,181,696.
- **Charlton, Francis R.,** and F. D. Trischler, to Koppers Co., Inc. Cross-linked triisocyanate-coal tar coating and sealing reaction product. 3,182,032, 5-4-65, Cl. 260—28.
- **Chase, Robert L.:** *See—*
  - Fischer. Joachim. Higinbotham, and Chase. 3,182,208.
- **Chaucer, Daniel,** ½ to R. H. Macy & Co., Inc. Method of storing, combining and applying two-part polymer mixtures. 3,181,737. 5-4-65, Cl. 222—136.
- **Chem-Y, Fabrick van Chemische Producten N.V.:** *See—*
  - Van Brakel, Gerardus. 3,181,195.
- **Chern, Diomed M.:** *See—*
  - Moyle, Clarence L., and Chern. 3,182,070.
- **Cherry-Burrell Corp.:** *See—*
  - Perry, Joseph A., Jr. 3,181,549.
- **Chianese, Augustine S.** Apparatus for preparing concrete foundation. 3,181,832, 5-4-65, Cl. 249—48.
- **Chicago Dynamic Industries, Inc.:** *See—*
  - Kocl, Jerry C., Heide, and Holz. 3,182,141.
- **Child Guidance Toys, Inc.:** *See—*
  - Genin, Robert I., and Wirch. 3,181,869.
- **Chittum, Joseph F.,** and F. W. Schremp, to California Research Corp. Inhibiting corrosion in oil wells. 3,182,018, 5-4-65, Cl. 252—8.55.
- **Chu, Victor F.H.,** and J. Q. Umberger, to E. I. du Pont de Nemours and Co. Polymeric salts of styryl dyes. 3,182,029, 5-4-65, Cl. 260—8.
- **Circuit Research Co.:** *See—*
  - Burr, Robert P. 3,182,243.
- **Claesson, Per H. E.,** and K. E. Jarnbrink. Contact spring group for relays, change-over switches and the like. 3,182,159, 5-4-65, Cl. 200—166.
- **Claitor, Lilburn C.:** *See—*
  - Geist, Jacob M., Claitor, and Cost. 3,181,306.

- Clark, Jared W., and A. E. Winslow, to Union Carbide Corp. Production of polymeric materials from polyoxyalkylene polyols and cycloaliphatic polyepoxy compounds. 3,182,099, 5-4-65, Cl. 260—830.
- Clark, John R., to Northrop Corp. Single-point launching device. 3,181,908, 5-4-65, Cl. 294—83.
- Clark, Kenneth G., M. J. Myles, and H. P. Eichin, to Union Carbide Corp. Packaging method and machine. 3,181,956, 5-4-65, Cl. 99—174.
- Clark, Winslow B. M., and W. R. Spark, to Douglas Aircraft Co., Inc. Electronic stethoscope. 3,182,129, 5-4-65, Cl. 179—1.
- Clarke, Frank W., to Talon, Inc. Beard needle closing device. 3,181,570. 5-4-65 Cl. 139—124.
- Clemence, Charles R., and W. C. Brown, to National Research Council. Radar system for determining the muzzle velocity or time of flight of a projectile. 3,182,313, 5-4-65, Cl. 343—7.
- Clemence, Charles R., W. C. Brown, and E. F. V. Robinson, to National Research Council. Radar system and method for determining target points on projectile trajectories. 3,182,817. 5-4-65, Cl. 343—7.
- Clemence, Charles R.: *See—*
  - Brown, William C., Clemence, and Robinson. 3,182,319.
- Clemence, Charles R., E. F. V. Robinson, and W. C. Brown, to National Research Council. Radar system and method for determining a target point on a projectile trajectory. 3,182.316, 5-4-65. Cl. 343—7.
- Clements, James C.: *See—*
  - Dutton, Richard H., Clements, Bealrsto, and Stoddard. 3,182,308.
- Clingman, Walter L. Gas lift plunger. 3,181,470, 5-4-65, Cl. 103—52.
- Clocheay, Ralph E. Surface projectile rocket game. 3,181,866, 5-4-65. Cl. 273—126.
- Coad, Brian C., to Texas Instruments Inc. Low-melting point materials and method of their manufacture. 3,181,935, 5-4-65. Cl 29—183.5.
- Coates, James K.: *See—*
  - Adams, Harold A., and Coates. 3,181,883.
- Coburn, Robert S., to Joy Mfg. Co. Blasthole drill. 3,181,630, 5-4-65, Cl. 175—85.
- Cochran, Thomas L., to American Oil Filter Co., Inc. Panel wall louvers. 3,181,661, 5-4-65, Cl. 189—54.
- Cockerell, Christopher S., to Hovercraft Development Ltd. Ground effect machine having heave stability for traversing rough surfaces. 3,181,636, 5-4-65, Cl. 180—7.
- Cockerell, Christopher S., to Hovercraft Development Ltd. Means to eliminate foreign matter from the gaseous curtain in air supported vehicles. 3,181,637, 5-4-65, Cl. 180—7.
- Cockerell, Christopher S., to Hovercraft Development Ltd. Vehicles for travelling over land and/or water. 3,181,638, 5-4-65, Cl. 180—7.
- Coe, Merrill J., to KVP Sutherland Paper Co. Collapsible serving or carrying tray. 3,181,770, 5-4-65, Cl. 229—30.
- Coester, Robert. Transverse-flow blower. 3,181,777, 5-4-65, Cl. 230—125.
- Coffing, James R. Flat-faced attitude indicator. 3,181,249, 5-4-65, Cl. 33—204.
- Cohen, Marvin P.: *See—*
  - Shavel, John, Jr., von Strandtmann, and Cohen. 3,182,071.
- Cohen, Oscar P.: *See—*
  - Bonzagni, Francis A., and Cohen. 3,181,765.
- Coin Acceptors, Inc.: *See—*
  - Haverstick, Merral P., and Lotspeich. 3,181,678.
- Colburn, William H., Jr.: *See—*
  - Parker, Theodore C., and Colburn. 3,181,464.
- Cole, Edward L., and E. C. Knowles, to Texaco Inc. Hydrogenation process employing tubular catalytic structure. 3,182,016, 5-4-65, Cl. 208—264.
- Cole, Leslie C.: *See—*
  - Laithwaite, John M., Cole, and Hutchinson. 3,182,002.
- Cole, Manny. Device for holding containers during washing. 3,181,701, 5-4-65, Cl. 211—74.
- Coletti, Rudolph L. Flow dividing valve. 3,181,551, 5-4-65, Cl. 137—119.
- Coley, John R.: *See—*
  - Seelig, Herman S., Coley, and Brennan. 3,182,014.
  - Brennan, Harry M., Coley, Frye, and Gutberlet. 3,182,097.
- Collaro, Christopher. Mechanical aids to practicing golf. 3.181,366, 5-4-65, Cl. 73—381.
- Collins Radio Co.: *See—*
  - Broadhead, Samuel L., Jr., Fredrickson, and Vinson. 3,182,261.
- Collins, Vernon H., and W. J. Goetschius. to Weyerhaeuser Co. Carton. 3,181,772, 5-4-65, Cl. 229—52.
- Collins, William W.: *See—*
  - Brunner, Jacques J., and Collins. 3,181,685.
- Colman, Martin G.: *See—*
  - Storey, Edgar J. 3,181,530.
- Columbia Ribbon and Carbon Mfg. Co., Inc.: *See—*
  - Newman, Douglas A. 3,181,462.
- Columbus McKinnon Corp.: *See—*
  - Parker, Humphrey F. 3,182,140.
- Commercial Solvents Corp.: *See—*
  - Wehrmeister, Herbert L., and Yalowitz. 3,182,047.
- Communications Research, Inc.: *See—*
  - Dyben, Jerry F. 3,181,856.
- Compagnia Italiana Nest-Pack S.p.A.: *See—*
  - Martelli, Guido, N. and F. 3,181,202.
- Coninx, William A. Piston cleaning tool. 3,181,191, 5-4-65, Cl. 15—104.01.
- Conklin, Elmer W., to Crane Packing Co. Outside mounted balanced seal. 3,181,874, 5-4-65, Cl. 277—86.
- Conlee, William H., Jr.: *See—*
  - Fish, Walter Y., Conlee, and Martin. 3,182,194.
- Conolon Corp., The: *See—*
  - De Simone, Emil. 3,181,264.
- Conover, Lloyd H., to Chas. Pfizer & Co., Inc. Nitrofuran derivatives. 3,182,058, 5-4-65, Cl. 260—240.
- Continental Aviation and Engineering Corp.: *See—*
  - Drusynski, Frank C. 3,181,514.
- Continental Oil Co.: *See—*
  - Hutchison, Merle, Riggs, and Sudbury. 3,182,007.
- Control Data Corp.: *See—*
  - Keir, Roy A. 3,182,180.
  - Rabinow, Jacob. 3,182,290.
  - Sorrells, John R., and Holt. 3,182,205.
- Cook, Daniel: *See—*
  - Cook, Robert A. and D. 3,181,554.
- Cook, Earnest D. Sinking weight for snagging gang hooks. 3,181,265, 5-4-65, Cl. 43—42.7.
- Cook, Nelson E., and S. L. Norteman, to Wheeling Steel Corp. Alkali metal borate masking in galvanizing process. 3,181,963, 5-4-65, Cl. 117—5.5.
- Cook, Robert A. and D. Shelter air and waste system. 3,181,554, 5-4-65, Cl. 137—357.
- Cook, Robert W. Straightedge attachment for tape measure. 3,181,242, 5-4-65, Cl. 33—75.
- Cooper, James M.: *See—*
  - Fitzroy, Roland V., Jr., and Cooper. 3,182,244.
- Cope, Geoffrey W., to Symington Wayne Corp. Automatic coupler. 3,181,708, 5-4-65, Cl. 213—104.
- Copeland, Charles R.: *See—*
  - Fisher, Mark E., and Copeland. 3,181,677.
- Copenhefer, John E., to American Air Filter Co., Inc. Electrostatic air filter. 3,181,284, 5-4-65, Cl. 55—132.
- Corn Products Co.: *See—*
  - Katzbeck, Walter J., and Gabel. 3,181,961.
- Cornelius Co., The: *See—*
  - Keller, Paul. 3,181,796.
- Cornell, Frank J., to The Ohio Crankshaft Co. High frequency inductor arrangement for heating a number of bar ends in a solenoidal coil. 3,182,168, 5-4-65, Cl. 219—10.69.
- Cornett, Walter V. Apparatus for tamping, and for breaking concrete and masonry. 3,181,627, 5-4-65, Cl. 173—100.
- Corning Glass Works: *See—*
  - Bell, Allen N. 3,181,361.
  - Giffen, James W. 3,181,563.
  - Knapp. Eugene J., and Laffkas. 3,181,698.
  - McKnight, William H., Jr. 3,181,899.
  - Moreau, Norman, and Seifert. 3,181,941.
  - Murphy, Frank E., Jr. 3,181,545.
- Cospen, Jean, to Olin Mathieson Chemical Corp. Finned hollow article. 3,181,607, 5-4-65, Cl. 165—170.
- Cost, Joe L.: *See—*
  - Geist, Jacob M., Claitor, and Cost. 3,181,306.
- Coughlin, Thomas W., to Airpax Electronics Inc. Remote indicating circuit breakers. 3,182,151. 5-4-65, Cl. 200—87.
- Cowan, James S. Rotatable heel construction. 3,181,254, 5-4-65, Cl. 36—39.
- Cox, Robert B., to Aerojet-General Corp. Rocket hydrofuel container with chemical heating device. 3,181,937, 5-4-65, Cl. 44—2.
- Coy, Truman, to Sperry Rand Corp. Die structure. 3,181,405, 5-4-65, Cl. 83—123.
- Cramer, Harold W. Resting support. 3,181,828, 5-4-65, Cl. 248—125.
- Crane Packing Co.: *See—*
  - Conklin, Elmer W. 3,181,874.
- Crank, Joe B., and W. F. Donnell, to Texas Instruments Inc. Shift register device. 3,182,295, 5-4-65, Cl. 340—174.
- Crawford Fitting Co.: *See—*
  - Cator, Edward J. 3,181,895.
- Crawford, H. E., Co., Inc.: *See—*
  - Crawford, Herman E., and Wells. 3,181,313.
- Crawford, Herman E., and J. H. Wells, to H. E. Crawford Co., Inc. Machine for knitting plate and float patterns. 3,181 313, 5-4-65, Cl. 66—42.
- Crinos Industria Farmacobiologica S.p.A.: *See—*
  - Bianchini, Pietro. 3,181,996.
- Crown Zellerbach Corp.: *See—*
  - Leary, Daniel C., Jr. 3,181,438.
- Crucible Steel Co. of America: *See—*
  - Vordahl, Milton B. 3,181,947.
- Crum, Larry A.: *See—*
  - O'Dell, Richard C., and Crum. 3,181,757.
- Cruse, Oliver B., to Wagner Electric Corp. Friction device operating mechanism. 3,181,438, 5-4-65, Cl. 92—52.
- Csaszar, Albert K., and G. G. Bernard, to The Pure Oil Co. Oil recovery process. 3,181,609, 5-4-65, Cl. 166—9.
- Cummings, Howard B., to Shenango China, Inc. Tile setter. 3,181,223, 5-4-65, Cl. 25—153.
- Curtiss-Wright Corp.: *See—*
  - Kunde, Wayne C., and Tomko. 3,181,669.
  - Olson Norman C. 3,181,810.
- Cutler, Cassius C., to Bell Telephone Laboratories, Inc. Antenna structures for communication satellites. 3,182,326, 5-4-65, Cl. 343—100.
- Cutter, James W., to Sylvania Electric Products Inc. Portable tower construction. 3,181,649, 5-4-65, Cl. 182—152.
- Cutter, James W., and H. W. Kowal, to Sylvania Electric Products Inc. Portable tower construction. 3,181,650, 5-4-65, Cl. 182—179.
- Cuvinot, Paul, to Preparation Industrielle des Combustibles. Winding installations. 3,181,837, 5-4-65, Cl. 254—188.
- Cwik, Lester L., to The Glidden Co. Process for making thick-skinned articles comprising polyurethane foam. 3,182,104, 5-4-65, Cl. 264—45.
- Czajkowski, Norman, to United States of America, Navy. Spin compensating switch for a projectile fuze. 3,181,466, 5-4-65, Cl. 102—70.2.
- Daito Chemical Industry Co., Ltd.: *See—*
  - Konishi, Kenzo, Furukawa, and Hirano. 3,182,059.
- Dallas, Alexander G., and J. L. Figgles. Displacement measuring transducer. 3,181,355, 5-4-65, Cl. 73—167.

Dall'Asta, Gino: *See—*
  Natta, Giulio, Massanti, Longi, Dall'Asta, and Bernardini. 3,182,045.
D'Ambrosio, Teresa. Lingerie strap retainer. 3,181,214, 5-4-65, Cl. 24—73.
Damitz, Clyde O., to Ford Motor Co. Curved propeller shaft rotatably supported on a sealed plastic housing containing a lubricant. 3,181,642, 5-4-65, Cl. 180—70.
Damon, James J., to Ford Motor Co. Hydraulic plunger type shock absorber having separate jounce and rebound passages. 3,181,656, 5-4-65, Cl. 188—88.
Dana Corp.: *See—*
  Sink, William H. 3,181,668.
Daniels, Charles K., to Laboratory for Electronics, Inc. Vehicle detection and counting system. 3,182,312, 5-4-65, Cl. 343—7.
Daniels, Dennis, to Houdaille Industries, Inc. Work support. 3,181,858, 5-4-65, Cl. 269—296.
Dannebaum, Rex P. Pen tip automatic retraction. 3,181,507, 5-4-65, Cl. 120—42.08.
Darke, Andrew J., to North American Refractories Co. Hanger construction for refractory roof. 3,181,487, 5-4-65, Cl. 110—99.
Dash, Edward. Stud welding means and method. 3,182,172, 5-4-65, Cl. 219—98.
Dash, Edward. Welding stud and ferrule construction for arc welding. 3,182,173, 5-4-65, Cl. 219—99.
Daut, Francis X., and R. O. Work, to United States of America, Atomic Energy Commission. Protection of electrical connector contact pins. 3,182,280, 5-4-65, Cl. 339—66.
Davidson & Co. Ltd.: *See—*
  Johnstone, Archibald. 3,181,602.
Davies, Leslie J., to Canadian Refractories Ltd. Method and apparatus for measuring the gas permeability of permeable bodies. 3,181,346, 5-4-65, Cl. 73—38.
Davis, Alice C.: *See—*
  Davis, George W. 3.181,301.
Davis, Carroll C., to United States of America, Air Force. Blade vibration damping device. 3,181,835, 5-4-65, Cl. 253—77.
Davis, George W., deceased; A. C. Davis, executrix. Method and apparatus for entrenching a section of pipeline in a riverbed. 3,181,301, 5-4-65, Cl. 61—72.4.
Davis, Melbourne E. Sitz bath therapy device. 3,181,534, 5-4-65, Cl. 128—377.
Davis, Robert H., to Socony Mobil Oil Co., Inc. Stabilized calcium acetate oil dispersions. 3,182,020, 5-4-65, Cl. 252—40.7.
Davis, Wayne T., to Ethyl Corp. Process for recovery of elemental bromine from an aqueous bromine solution. 3,181,934, 5-4-65, Cl. 23—218.
Davy and United Engineering Co. Ltd.: *See—*
  Sims, Raymond B. 3,182,174.
Dawson-Vogel Engineering Co.: *See—*
  Vogel, Arthur E. 3,181,878.
Daykin, Theodore W., and W. J. Pruner, to Ford Motor Co. Windshield washer wiper combination. 3,181,194, 5-4-65, Cl. 15—250.02.
Dayton, Harry W.: *See—*
  Kane, James T., Dayton, and Allison. 3,181,766.
Daytona Thompson Corp.: *See—*
  Thompson, Tom H. 3,181,475.
Dean, Robert B., to The Borden Co. Machine for application of hot melt adhesive. 3,181,501, 5-4-65, Cl. 118—70.
De Forest, Taber. Insect catcher. 3,181,268, 5-4-65, Cl. 43—110.
Delaruelle, Jacques, and M. Banal, to Electricite de France, and Gaz de France. Floats. 3,181,182, 5-4-65, Cl. 9—8.
De Lavel Turbine Inc.: *See—*
  Sennet, Morgan B. 3,181,472.
Dennison Mfg. Co.: *See—*
  Nelson, George R. 3,182,087.
Denny, John P., and R. W. Hardt, to General Electric Co. Superconductors and method for the preparation thereof. 3,181,936, 5-4-65, Cl. 29—194.
Densmore, Neal W., to Joy Mfg. Co. Roof bolting drill. 3,181,625, 5-4-65, Cl. 173—44.
De Proost, Roger M. A., C. A. M. Klaassen, and J. M. B. C. Yperman, to North American Philips Co., Inc. Method of providing contacts on semi-conductive ceramic bodies of N-type oxidic material and contact produced thereby. 3,182,118, 5-4-65, Cl. 174—94.
De Rose, Ralph A., and J. M. Leo, to International Telephone and Telegraph Corp. Hand tool for extracting printed circuit cards from library racks. 3,181,906, 5-4-65, Cl. 294—16.
Deshaies, Leo J., to Scovill Mfg. Co. Snap fastener assembly. 3,181,219, 5-4-65, Cl. 24—203.
De Simone, Emil, to The Conolon Corp. Fishing rod handle. 3,181,264, 5-4-65, Cl. 43—22.
Deutsch, Bela, and T. C. Knaebel, to B., H., and C. J. Deutsch, d.b.a. Standard Machine & Mfg. Co. Four part reversing valve. 3,181,567, 5-4-65, Cl. 137—625.43.
Deutsch, Carl J.: *See—*
  Deutsch, Bela, and Knaebel. 3,181,567.
Deutsch, Herman: *See—*
  Deutsch, Bela, and Knaebel. 3,181,567.
Development Diversified, Inc.: *See—*
  Leufvenius, Karl J. 3,181,266.
Dever, James L., to Monsanto Research Corp. Dehydration of hydroxy esters. 3,182,077, 5-4-65, Cl. 260—486.
De Vitt, John W., and K. E. Jones. Serving tray. 3,181,483, 5-4-65, Cl. 108—25.
Dewas, Raymond. Device for the formation of selvedges on looms. 3,181,568, 5-4-65, Cl. 139—122.
Diapulse Mfg. Corp. of America: *See—*
  Milinowski, Arthur S. 3,181,535.
Dick, A. B., Co., The: *See—*
  Stone, Joseph J., and Adams. 3,182,224.
Dickow, Frederick P., to The Eastern Co. Mine roof bolt expanding shells. 3,181,414, 5-4-65, Cl. 85—75.
Dieter, Norman H., Jr., and E. H. Bauer, to Sonotone Corp. Phonograph pickups with detachably replaceable stylus drive structure. 3,182,136, 5-4-65, Cl. 179—100.41.
Dietert, Harry W., to Harry W. Dietert Co. Moldability recorder. 3,181,370, 5-4-65, Cl. 73—432.
Dietert, Harry W., Co.: *See—*
  Dietert, Harry W. 3,181,370.
Dillon, Eugene F.: *See—*
  McAvoy, Thomas, and Dillon. 3,181,230.
Discenza, Nelson. Back-filling blade for a power shovel. 3,181,256, 5-4-65, Cl. 37—117.5.
Dix, Willard A., and O. M. Porter, to The Singer Co. Rug scrubbing attachments. 3,181,190, 5-4-65, Cl. 15—98.
Dixson, Bruce E., to Northrop Corp. Aircraft sextant mounting. 3,181,812, 5-4-65, Cl. 244—14.
Dobrikin, Harold L., and C. Horowitz, to Berg Airlectro Products Co. Relay valve. 3,181,917, 5-4-65, Cl. 303—40.
Doggart, John, to V. & E. Friedland Ltd. Electrical signalling devices. 3,182,307, 5-4-65, Cl. 340—392.
Dollarhide, Francis E.: *See—*
  West, Samuel R., and Dollarhide. 3,181,612.
Dollarhide, Francis E., to The Dow Chemical Co. Selective prevention of water and brine intrusion into mineral-producing strata. 3,181,611, 5-4-65, Cl. 166—33.
Dolphin, John R. V.: *See—*
  Goodacre, Cecil, and Dolphin. 3,181,640.
Dolza, John, to General Motors Corp. Fuel control. 3,181,519, 5-4-65, Cl. 123—119.
Donnell, William F.: *See—*
  Crank, Joe B., and Donnell. 3,182,295.
Donohue, Thomas F., to General Motors Corp. Coupled engines. 3,181,294, 5-4-65, Cl. 60—39.15.
Dorr-Oliver Inc.: *See—*
  Weber, William C. 3,181,931.
Dorsch, Daniel W., R. L. Woodward, and L. A. Rovelsky, to North American Aviation, Inc. Wiring tester including a standard unit and a selective switch means. 3,182,253, 5-4-65, Cl. 324—51.
Dotson, Cleao R., and W. B. Willis. Table mounted tray. 3,181,485, 5-4-65, Cl. 108—97.
Douglas Aircraft Co., Inc.: *See—*
  Clark, Winslow B. M., and Spark. 3,182,129.
Dow Chemical Co., The: *See—*
  Dollarhide, Francis E. 3,181,611.
  Foerster, George S. 3,181,337.
  Hennis, Henry E. 3,182,088.
  Moyle, Clarence L., and Chern. 3,182,070.
  Nakamura, Masao, McKenney, and Butsin. 3,181,352.
  Pitchforth, Lehi L., Jr. 3,182,085.
  West, Samuel R., and Dollarhide. 3,181,612.
Dow, Walter K. Accelerator controlling device. 3,181,666, 5-4-65, Cl. 192—3.
Dowbenko, Rostyslaw, to The Pittsburgh Plate Glass Co. Bicyclo [3.3.0] octane substituted amides. 3,182,083, 5-4-65, Cl. 260—561.
Draim, John E., to United States of America, Navy. Device for handling a water-launchable missile. 3,181,422, 5-4-65, Cl. 89—1.7.
Drangula, Joseph P., to United States Steel Corp. Trifoil cam-and-roller wrench. 3,181,397, 5-4-65, Cl. 81—128.
Draper Corp.: *See—*
  Mogayzel, William W. 3,181,572.
Dressen-Barnes Electronics Corp.: *See—*
  McNamee, Bernard F. 3,182,248.
Dresser Industries, Inc.: *See—*
  Zimmerman, Carl W., and Brokaw. 3,182,286.
Dreyer, Allen F., to Universal Research. Memory game apparatus. 3,181,867, 5-4-65, Cl. 273—131.
Droubay, Jean, to A. J. Fagard & Cie. Method for producing ball points and their protecting caps. 3,181,228, 5-4-65, Cl. 29—149.5.
Druzynski, Frank C., to Continental Aviation and Engineering Corp. Piston construction. 3,181,514, 5-4-65, Cl. 123—41.35.
Dubnick, Bernard, to Warner-Lambert Pharmaceutical Co. Analgesic biphenyl acetic acid derivatives. 3,181,994, 5-4-65, Cl. 167—65.
Du Bois, Floyd M., Jr., and M. E. Simmons, to General Motors Corp. Dynamoelectric machine wtih permanent magnet field assembly. 3,182,215, 5-4-65, Cl. 310—154.
Dubuque Awning & Tent Co.: *See—*
  Frommelt, Cyril P. and S. J. 3,181,205.
Duddy, Joseph C., to The Electrici Storage Battery Co. Fuel cell electrode and method of making the same. 3,181,973, 5-4-65, Cl. 136—120.
Duffy, Dan W.: *See—*
  Potts, Herbert J. 3,181,184.
Duhn, Jens W., to Automotive Rubber Co., Inc. Snap-on insulating grommets. 3,182,120, 5-4-65, Cl. 174—151.
Duncan, William W. Trench back filling and excavating machine. 3,181,258, 5-4-65, Cl. 37—144.
Dunham, John C., to Aurora Equipment Co. Storage and display shelving structure. 3,181,703, 5-4-65, Cl. 211—126.
Dunlop Rubber Co. Ltd.: *See—*
  Jenkins, Peter J. 3,181,690.
Dunning, Elmer D. Hydraulic boat steering control. 3,181,491, 5-4-65, Cl. 114—150.
Dupler, Raymond R. Simulated log gas heater. 3,181,590, 5-4-65, Cl. 158—100.

Du Pont de Nemours, E. I., and Co.: *See—*
  Amos, Charles A., and Lovett. 3,181,967.
  Berchtold, Glenn A. 3,182,060.
  Busche, Robert M. 3,181,926.
  Chu, Victor F.-H., and Umberger. 3,182,029.
  Mastrangelo, Sebastian V. R. 3,181,952.
  Rees, Richard W. 3,182,101.
  Remy, David C. 3,182,039.
  Tanner, David. 3,181,224.
Duras, Herbert: *See—*
  Bohm, Helmut, and Duras. 3,182,166.
Duriron Co., Inc., The: *See—*
  Reiling, Victor G. 3,181,990.
Durlofsky, Meyer T., to Radio Corp. of America. Projection apparatus. 3,181,418, 5-4-65, Cl. 88—24.
Duron, Paul, to Air Reduction Co., Inc. High-pressure, cavitation free piston pumps. 3,181,473, 5-4-65, Cl.. 103—153.
Dutton, Richard H., J. C. Clements, R. J. Bealrsto, and R. D. Stoddard, to Raytheon Co. Composite display system. 3,182,308, 5-4-65, Cl. 343—5.
Dvorin, Martin, to General Electric Co. Record changer control assembly. 3,181,872, 5-4-65, Cl. 274—15.
Dwyer, Edd C., and J. G. Waugaman, to Westinghouse Air Brake Co. Information handling systems. 3,182,189, 5-4-65, Cl. 246—182.
Dyben, Jerry F., to Communications Research, Inc. Door control mechanism. 3,181,856, 5-4-65, Cl. 268—65.
Dye, James E., to Dye Sheet Metal Products, Inc. Ice dispenser. 3,181,739, 5-4-65, Cl. 222—158.
Dye Sheet Metal Products, Inc.: *See—*
  Dye, James E. 3,181,739.
Eastern Co., The: *See—*
  Dickow, Frederick P. 3,181,414.
Eastman Kodak Co.: *See—*
  Lareau, Norman N., and Olson. 3,181,443.
Eberhart, Ray. Safety belt buckle. 3,181,215, 5-4-65, Cl. 24—75.
Eberspächer, J.: *See—*
  Kofink, Siegfried. 3,181,522.
Echols, Davie L., and R. J. Minarich. Purse light. 3,182,184, 5-4-65, Cl. 240—6.45.
Eckert, George W., and H. Chafetz, to Texaco Inc. Motor fuel containing octane appreciator. 3,181,938, 5-4-65, Cl. 44—69.
Eckert, John S., to The United States Stoneware Co. Portable drum rotator. 3,181.842, 5-4-65, Cl. 259—89.
Edcliff Instruments, Inc.: *See—*
  Cass, Ralph S., and Goetz. 3,181,368.
Eddin, Timothy O.: *See—*
  Webb, James E. 3,181,821.
Edmonson, Robert B., to Aerojet-General Corp. Calorimetric temperature measuring device. 3,181,363, 5-4-65, Cl. 73—339.
Edwards, Harold H.: *See—*
  Newhouse, Vernon L., and Edwards. 3,182,275.
Edwards, Howard C. Silencer having contiguous concentric layers of sound absorbent material. 3,181,646, 5-4-65, Cl. 181—42.
Ege, Sigmund, and M. D. Schnur, to Anaconda Wire and Cable Co. Strand treating reel. 3,181,251, 5-4-65, Cl. 34—153.
Ehlert, Gilbert W., A. W. Musgrave, P. E. Nash, and R. M. Nugent, to Socony Mobile Oil Co., Inc. Combining multiple seismic records. 3,181,643, 5-4-65, Cl. 181—.5.
Ehret, Robert J.: *See—*
  Lenkey, Andrew, and Ehret. 3,181,574.
Eichin, Harry P.: *See—*
  Clark, Kenneth G., Myles, and Eichin. 3,181,956.
Einson Freeman and De Troy Corp.: *See—*
  Scherotto, John. 3,181,260.
Eisner, Burton D.: *See—*
  Rautbord, Clayton L., Newcomb, Sugarman, Eisner, and Kent. 3,181,420.
Ekstroms, A., Maskinaffar, AB: *See—*
  Jansson, Johannes G. 3,181,349.
Elco Corp.: *See—*
  Ruehlemann, Herbert E. 3,182.276.
Elder, James C., to General Electric Co. Motor starter. 3,182.242, 5-4-65, Cl. 318—230.
Eldred Co., The: *See—*
  Eldred, John W., and Legg. 3,181.457.
Eldred, John W., and J. B. Legg, to The Eldred Co. Turret type article stencilling machine. 3,181,457, 5-4-65, Cl. 101—124.
Electric Storage Battery Co., The: *See—*
  Duddy, Joseph C. 3,181,973.
Electricite de France: *See—*
  Delaruelle, Jacques, and Banal. 3,181,182.
Electro-Smog Corp.: *See—*
  Adams, Harold A., and Coates. 3,181,833.
Elizer, Lee H.: *See—*
  Bauer, Jordan V., and Elizer. 3,182,031.
Ellingson, Herman E., and J. C. Munson, to United States of America, Navy. Method of measuring the velocity of an underwater moving sound source. 3,182,283, 5-4-65, Cl. 340—6.
Ellis, Charles A. Hermetic thermostat. 3,182,155, 5-4-65, Cl. 200—137.
Ellis, Charles A., to Skasol Inc. Liquid proportioner. 3,181,731, 5-4-65, Cl. 222—57.
Ellner, Sidney, and R. W. Marx, to Ultra Dynamics Corp. Electronically monitored liquid purification or sterilizing system. 3 182.193, 5-4-65, Cl. 250—43.5.
Elsea, Arthur R., to Battelle Development Corp. High strength steel. 3,181,945, 5-4-65, Cl. 75—123.
Elsner, Hans, and W. Behr, to Olympia Werke A.G. Proportional spacing mechanism control for typewriters. 3,181,682, 5-4-65, Cl. 197—84.
Elsner, Hans, and W. Behr, to Olympia Werke A.G. Carriage step selector arrangement for proportional spacing control of a typewriter. 3,181,683, 5-4-65, Cl. 197—84.
Emberson, John E.: *See—*
  Lerou, Roger J., and Emberson. 3,181,178.
Engel, Albert G.: *See—*
  Moore, Harrington, and Engel. 3,181,185.
Engelberg, Inc.: *See—*
  Schaller, Robert L. 3,181,561.
Engelman, Helmuth W., to General Electric Co. Ratio computer. 3,182,182, 5-4-65, Cl. 235—196.
Engert, Caspar F., to Kleen-Stik Products, Inc. Tape applying machine. 3,181,988, 5-4-65, Cl. 156—350.
Ensign, Robert H., to General Foods Corp. Container structure. 3,181,734, 5-4-65, Cl. 222—83.5.
Ensign, Robert H.: *See—*
  Immermann, Milton, Ensign, and Woods. 3,181,732.
Epstein, Ralph. Air conveyor or pneumatic conveyor for light materials, plastics etc. 3,181,916, 5-4-65, Cl. 302—29.
Esco Corp.: *See—*
  Larsen, Paul V. 3,181,257.
Esser, Harold H., to Ideal Industries, Inc. Wrench for crimping connectors. 3,181,339, 5-4-65, Cl. 72—402.
Esso Research and Engineering Co.: *See—*
  Hederhorst, Fred. 3,181,360.
  Mertzweiller, Joseph K., and Watts. 3,182,090.
  Weiner, Lazarus C. 3,181,978.
  Wellman, William E. 3,182,093.
  Wilks, Gordon N., and Langton. 3,182,019.
Etcheverry, John P.: *See—*
  Jennings, Norman T., and Etcheverry. 3,181,834.
Ethyl Corp.: *See—*
  Davis, Wayne T. 3,181,934.
Everest, Julian T.: *See—*
  Nicholas, David W., and Everest. 3,181,639.
FMC Corp.: *See—*
  Brunner, Jacques J., and Collins. 3,181,685.
  Galloway, Robert K. 3,181,771.
  Garman, John A. 3,182,035.
  Hait, James M. 3,181,581.
  Horvitz, David. 3,182,087.
  Howsmon, John A., and Thumm. 3,182,107.
  Schmidt, Dieter K. 3,181,710.
  Tillis, William J. 3,181,984.
  Woodward, Henry T., and Shrode. 3,181,600.
Fabbrica Italiana Magneti Marelli S.p.A.: *See—*
  Alfieri, Giuseppe. 3,181,298.
Fagard, A. J., & Cie: *See—*
  Droubay, Jean. 3,181,228.
Fahlstrom, Per A. H. H.: *See—*
  Noren, Anders B., Fahlstrom, and Burstrom. 3,181,800.
Fairbanks Morse Inc.: *See—*
  Hale, John D. 3,181,635.
Fallarino, James V., and E. Buksbaum, to Melpar Steel Products Corp. Latch with emergency release means. 3,181,904, 5-4-65, Cl. 292—93.
Fan Tron Corp.: *See—*
  Burgess, Thomas H., and Kesnar. 3,182,114.
Farbenfabriken Bayer Aktiengesellschaft: *See—*
  Krönig, Walter, and Müller. 3,182,015.
  Sasse, Klaus, Wegner, and Eue. 3,182,068.
  Schultz, Fritz. 3,181,997.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See—*
  Messwarb, Gunter, Orthner, Reuber, and Grossmann. 3,182,044.
  Scherer, Otto, Hahn, and Munch. 3,182,091.
Farina, Joseph J.: *See—*
  Zavertnik, Marshall G., and Farina. 3,182,160.
Farrel-Birmingham Co., Inc.: *See—*
  Miller, William R., Forward, and Bleck. 3,181,424.
Faulk, Raymond B. Polyhedral display devices. 3,182,186, 5-4-65, Cl. 240—10.1.
Favre, Maurice, to United States of America, Army. Sole for M-type travelling wave tubes. 3,182,225, 5-4-65, Cl. 315—89.3.
Feldman, Edward P., and B. Ranky, to The Singer Co. Intermodulation distortion analyser for plotting second and third order components. 3,182.254, 5-4-65, Cl. 324—57.
Felker, Maurice H., to Scott & Williams, Inc. Knitting machine. 3,181,312, 5-4-65, Cl. 66—28.
Felt, Maurice D., to Packing Supply Co. Piston cup. 3,181,876, 5-4-65, Cl. 277—212.
Fernseh G.m.b.H.: *See—*
  Legler, Ernst. 3,182,128.
Fiedler, Richard J., to United States of America, Navy. Relay indicating and testing circuit. 3,182,251, 5-4-65, Cl. 324—28.
Field, Joseph H., and D. Bienstock, to United States of America, Interior. Method of inhibiting corrosion in purifying gases. 3,181.929, 5-4-65, Cl. 23—3.
Fields, Eugene J.: *See—*
  Kramer, Bruce E., and Fields. 3,181,964.
Figgles, John L.: *See—*
  Dallas, Alexander G., and Figgles. 3,181,355.
Fillon, Jacques D., to Institut de Recherches de la Siderurgie Francaise. Method and arrangement for measuring continuously the change of the carbon content of a bath of molten metal. 3 181.343, 5-4-65, Cl. 73—23.
Fineman, Harold, to Girling Ltd. Flexible sealing boots or dust covers. 3.181.376, 5-4-65, Cl. 74—18.2.
Finzi, Arno, to Brown, Boveri & Cie. Aktiengesellschaft. Arrangement for the simultaneous operation of two induction heating devices. 3 182,169, 5-4-65, Cl. 219—10.71.
Fischer, H. G., & Co., Inc.: *See—*
  Kosinski, Joseph. 3,182 287.
Fischer, Henry C. Drawer slide. 3,181,925, 5-4-65, Cl. 312—339.
Fischer, Joachim, W. A. Higinbotham, and R. L. Chase, to United States of America, Atomic Energy Commission. Linear gate with gating pulses applied to collector through the primary of a transformer. 3,182,208, 5-4-65, Cl. 307—88.5.

- Fischer & Porter Co. : *See*—
  - Busillo, Eugene P. 3,181,358.
  - Ollivier, Louis A., Skitt, Schmoock, and Shaffer. 3,182,241.
- Fish, Walter Y., W. H. Conlee, Jr., and T. L. Martin, Jr., to Wesix Electric Heater Co. Ion generator comprising a shielded radioactive source and means for forcing air past the radioactive source. 3,182,194, 5-4-65, Cl. 250—44.
- Fisher, Mark E., and C. R. Copeland, to General Motors Corp. Transmission. 3,181,677, 5-4-65, Cl. 192—4.
- Fitch, John C. Stowable luggage rack. 3,181,753, 5-4-65, Cl. 224—29.
- FitzGerald, Robert E., to United-Carr Inc. Lamp socket. 3,182,279, 5-4-65, Cl. 339—59.
- Fitzroy, Roland V., Jr., and J. M. Cooper, to General Electric Co. Zeroing apparatus for inertially guided pilotless craft. 3,182,244, 5-4-65, Cl. 318—489.
- Flaherty, Doris M. : *See*—
  - Anania, James A. 3,181,824.
- Flaherty, Vincent : *See*—
  - Anania, James A. 3,181,824.
- Flax, Valer. Valved containers of flexible plastic material. 3,181,439, 5-4-65, Cl. 93—35.
- Fleck, Raymond N., and C. G. Wight, to Union Oil Co. of California. Separation of naphthenes from hydrocarbon mixtures using 7 A. to 12 A. molecular sieves. 3,182,017, 5-4-65, Cl. 208—310.
- Flintkote Co., The : *See*—
  - Starkey, George W. 3,181,767.
  - Starkey, George W., and Caskey. 3,181,721.
- Flom, Richard C., to Honeywell, Inc. Control apparatus. 3,181,441, 5-4-65, Cl. 94—46.
- Flynn, Thomas W., and B. K. Smith, to Weyerhaeuser Co. Shipping container for furniture or the like. 3,181,768, 5-4-65, Cl. 229—23.
- Foerster, George S., to The Dow Chemical Co. Process for preparing fine grained, high strength extrusions. 3,181,337, 5-4-65, Cl. 72—342.
- Foote, Kenneth R. : *See*—
  - Allen, Sanford R., and Foote. 3,181,822.
- Ford Motor Co. : *See*—
  - Backlund, Sven. 3,181,854.
  - Bajer, Jacques. 3,191,850.
  - Baracos, Nick, and Rosky. 3,181,885.
  - Barnes, John V. 3,181,655.
  - Damitz, Clyde O. 3,181,642.
  - Damon, James J. 3,181,656.
  - Daykin, Theodore W., and Pruner. 3,181,194.
  - Haddad, Charles. 3,181,641.
  - Howell, Carl A. 3,181,853.
  - Jandasek, Vladimir J. 3,181,393.
  - McHenry, Raymond R. 3,181,877.
  - Nilssen, Ole K. 3,182 323.
  - Page, Ernest. 3,181,299.
  - Richards, Jesse W. 3,181,884.
  - Rosky, Frederick, and Wenzel. 3,181,882.
- Foreman, Robert W., and F. Veatch, to The Standard Oil Co. Process for the production of cyanamide. 3,181,932, 5-4-65, Cl. 23—190.
- Forsman, Elmer J., to The Babcock & Wilcox Co. Fluid cooled damper. 3,181,527, 5-4-65, Cl. 126—285.
- Forward, Worthy J. : *See*—
  - Miller, William R., Forward, and Bleck. 3,181,424.
- Foseco Fordath AG : *See*—
  - Parkes, Eric. 3,182,030.
- Frank, Alan I., to United States of America, Air Force. Automatic range and azimuth track while scan system. 3,182,820, 5-4-65, Cl. 343—7.3.
- Frazier, John E., N. L. Murphy, B. A. Ella, and J. C. McCreary, to Frazier-Simplex, Inc. Electric glass melting furnace. 3,182,113, 5-4-65, Cl. 13—6.
- Frazier-Simplex, Inc. : *See*—
  - Frazier, John E., Murphy, Ella, and McCreary. 3,182,113.
- Fredrickson, Dennis L. : *See*—
  - Broadhead, Samuel L., Jr., Fredrickson, and Vinson. 3,182,261.
- Freedman, Louis : *See*—
  - Shapiro, Seymour L., Freedman, and Karten. 3,182,064.
- Freedy, Allan L., and E. J. Wittry, to Caterpillar Tractor Co. Relief valve for bucket loader circuits. 3,181,430, 5-4-65, Cl. 91—413.
- Freeman, Jeff E. : *See*—
  - Mitchell, Harry W., and Freeman. 3,182,327.
- Freistat, Alfred A. Carrying case insert formed with locked-in polyurethane foam. 3,181,693, 5-4-65, Cl. 206—1.
- Freudenschuss, Otto : *See*—
  - Keznickl, Eduard, and Freudenschuss. 3,181,805.
- Friden, Inc. : *See*—
  - Canevari, Teresio, and Gianotti. 3,181,786.
- Fried, Josef : *See*—
  - Bodanszky, Miklos, and Fried. 3,181,995.
- Friedl, Otto. Multiple thread plug closure. 3,181,725, 5-4-65, Cl. 220—39.
- Friedland, V. & E., Ltd. : *See*—
  - Doggart, John. 3,182,307.
- Friedman, Bernard S., to Sinclair Research, Inc. Cracking a plurality of hydrocarbon stocks. 3,182,011, 5-4-65, Cl. 208—78.
- Friedman, Michael : *See*—
  - Jelling, Murray, and Friedman. 3,181,773.
- Friedman, Samuel : *See*—
  - Bohlinger, Ernst, and Friedman. 3,181,217.
- Frilette, Vincent J., and P. B. Weisz, to Socony Mobil Oil Co., Inc. Process for purifying gases. 3,181,928, 5-4-65, Cl. 23—2.
- Frisch, Erling : *See*—
  - Thorp, Arthur G., II, Widmer, and Frisch. 3,182,008.
- Fritz, William E. : *See*—
  - Baier, John, Smith, and Fritz. 3,181,387.
- Frommelt, Cyril P. and S. J., to Dubuque Awning & Tent Co. Pad structures. 3,181,205, 5-4-65, Cl. 20—69.
- Frommelt, Sylvan J. : *See*—
  - Frommelt, Cyril P. and S. J. 3,181,205.
- Fromson, Howard A. Photographic plate. 3,181,461, 5-4-65, Cl. 101—149.2.
- Fruhwirth, Otto, to Wacker-Chemie G.m.b.H. Process for separating acetone and other carbonyl compounds with 3 carbon atoms from vinyl acetate. 3,182,006, 5-4-65, Cl. 202—42.
- Fruin, Robert E. and V. L. Newhouse, to General Electric Co. Superconducting switching device utilizing plural control superconductors. 3,182,209, 5-4-65, Cl. 307—88.5.
- Fruin, Robert E., and V. L. Newhouse, to General Electric Co. Cryogenic memory circuit. 3,182,293, 5-4-65, Cl. 340—173.1.
- Frye, Clifton G. : *See*—
  - Brennan, Harry M., Coley, Frye, and Gutberlet. 3,182,097.
- Fryer, Rodney I., R. A. Schmidt, and L. H. Sternbach, to Hoffmann-La Roche Inc. Benzodiazepine compounds. 3,182,067, 5-4-65, Cl. 260—296.
- Fryer, Rodney I., R. A. Schmidt, and L. H. Sternbach, to Hoffman-La Roche Inc. Aminophenyl-pyridyl ketones. 3,182,066, 5-4-65, Cl. 260—296.
- Fryer, Rodney I., R. A. Schmidt, and L. H. Sternbach, to Hoffman-La Roche Inc. 2-acetamidobenzoyl-pyridines. 3,182,065, 5-4-65, Cl. 260—295.
- Fuchs, Ekkehard, and W. Liesk, to Siemens & Halske Aktiengesellschaft. Method of and device for magnetizing a specimen in an electron microscope. 3,182,195, 5-4-65, Cl. 250—49.5.
- Fujita, Yoshimasa, K. Shimoda, and K. Zoda, to American Cyanamid Co. Spinning multi-component fibers. 3,182,106, 5-4-65, Cl. 264—171.
- Fuller, Donald W. : *See*—
  - Beck, Robert M., Fuller, McAfee and Ruhman. 3,182,304.
- Fulton, James F. : *See*—
  - Randall, Wilbur W., Rubenstein, and Fulton. 3,181,781.
- Fultz, Palmer : *See*—
  - Vogel, Arthur E., and Fultz. 3,181,878.
- Funnell, William F., to Aerojet-General Corp. Shaft indexing device. 3,181,675, 5-4-65, Cl. 192—148.
- Furukawa, Minoru : *See*—
  - Konishi, Kenzo, Furukawa, and Hirano. 3,182,059.
- Furuya, Hirobumi : *See*—
  - Sakai, Sumio, Tanaka, and Furuya. 3,182,080.
- GPE Controls, Inc. : *See*—
  - Osterstrom, Gordon E. 3,181,359.
- Gabel, Ronald R. : *See*—
  - Katzbeck, Walter J., and Gabel. 3,181,961.
- Gabor, Dennis, to National Research Development Corp. Multiply neutralized ion source. 3,182,220, 5-4-65, Cl. 313—63.
- Galletti, Remo, to Olivetti, Ing. C., & C., S.p.A. Tunnel diode logic circuit. 3,182,204, 5-4-65, Cl. 307—88.5.
- Galloway Robert K., to FMC Corp. Folding box. 3,181,771, 5-4-65, Cl. 229—35.
- Gambill, Charles C., and J. W. Murphy, to General Motors Corp. Circuit for repeatedly energizing a load. 3,182,228, 5-4-65, Cl. 317—148.5.
- Gamble, Richard F. : *See*—
  - Brahm, Charles B., and Gamble. 3,181,353.
- Gang, Robert E., and F. A. Nelson, to Varian Associates. Magnet pole cap construction. 3,182,231, 5-4-65, Cl. 317—158.
- Gardner-Denver Co. : *See*—
  - Swanson, Roger I. 3,181,672.
- Gardner, Homer K., Jr. : *See*—
  - Knoepfler, Nestor B., Gardner, and Vix. 3,181,225.
- Gardner, Irving. Reamer clip tool. 3,181,895, 5-4-65, Cl. 77—72.
- Garland, Robert J., to Carrier Corp. Apparatus for fabricating finned tubing. 3,181,236, 5-4-65, Cl. 29—561.
- Garman, John A., to FMC Corp. Vinyl chloride resin plasticized with an epoxidized copolymer of butadiene and xylene. 3,182,035, 5-4-65, Cl. 260—30.4.
- Garrett, George K., Co., Division of MSL Industries, Inc. *See*—
  - Borowsky, Frederick G. 3,181,584.
- Gaskins, Thomas. Saw for palm wood. 3,181,577, 5-4-65, Cl. 143—133.
- Gates Rubber Co., The : *See*—
  - Hayward, Walter W., Jr. 3,181,900.
- Gates, William H., and R. L. Harris, to Allied Chemical Corp. Process for producing paper-lined by-product gypsum products. 3,181,985, 5-4-65, Cl. 156—39.
- Gaz de France : *See*—
  - Delaruelle, Jacques. 3,181,182.
- Gebr. Stork & Co.'s Apparatenfabriek N.V. : *See*—
  - Van der Winden, Johannes B. 3,181,689.
- Gelst, Jacob M., L. C. Claitor, J. L. Cost, to Air Products and Chemicals, Inc. Argon separation. 3,181,306, 5-4-65, Cl. 62—22.
- Gelfand, Louis, and S. E. Vanderbilt, to General Motors Corp. Safety switch for automobile instrument panel. 3,182,162, 5-4-65, Cl. 200—168.
- Gellert, Don L., to Silvray-Litecraft Corp. Lighting fixture for sloping ceilings. 3,182,187, 5-4-65, Cl. 240—78.
- General Aniline & Film Corp. : *See*—
  - Takats, Zoltan, and Komas. 3,181,444.
- General Dynamics Corp. : *See*—
  - Bartlett, William F., and Brightman. 3,182,306.
  - McNaney, Joseph T. 3,182,223.
  - Potter, Frank J. 3,182,258.
  - Thomas, Harold A. 3,182,219.
  - Warburton, Peter H., and White. 3,181,803.

- General Electric Co. : *See*—
  - Abbe, Edward H., Berman, Blankenship, and Sills. 3,181,718.
  - Belk Samuel A., and Humenick. 3,181,297.
  - Blume, Alan E. 3,182,325.
  - Blume, Alan E. 3,182,330.
  - Boothe, Willis A. 3,181,546.
  - Bremer, John W., and Newhouse. 3,182,294.
  - Candell, Earl B. 3,181,694.
  - Denny, John P., and Hardt. 3,181,936.
  - Dvorin, Martin. 3,181,872.
  - Elder, James C. 3,182,242.
  - Engelman, Helmuth W. 3,182,182.
  - Fitzroy, Roland V., Jr., and Cooper. 3,182,244.
  - Fruin, Robert E., and Newhouse. 3,182,209.
  - Fruin, Robert E., and Newhouse. 3,182,293.
  - Hogue, Marcus P. 3,182,111.
  - Holdstock, Norman G. 3,182,076.
  - Lee, Thomas H., and Schneider. 3,182,156.
  - Libby, Henry T. 3,182,178.
  - Loncrini, Donald F. 3,182,073.
  - Loncrini, Donald F. 3,182,074.
  - McAvoy, Thomas, and Dillon. 3,181,230.
  - Mohler, Donald, Westbrook, and Jenny. 3,182,235.
  - Moore, Fred W., and Pressley. 3,181,921.
  - Newhouse, Vernon L., and Edwards. 3,182,275.
  - Rumsey, Clayton S., and Melcher. 3,181,479.
  - Turner, Prescott K. 3,182,282.
  - Wentorf, Robert H., Jr. 3,181,933.
- General Foods Corp. : *See*—
  - Ensign, Robert H. 3,181,734.
  - Immermann, Milton, Ensign, and Woods. 3,181,732.
- General Mills, Inc. : *See*—
  - Lloyd, Allan G. 3,182,246.
- General Motors Corp. : *See*—
  - Baier, John P., Smith, and Fritz. 3,181,387.
  - Bubniak, William C., Moffat, and Mondt. 3,181,603.
  - Dolza, John. 3 181,519.
  - Donohue, Thomas F. 3,181,294.
  - Du Bois, Floyd M., Jr., and Simmons. 3,182,215.
  - Fisher, Mark E., and Copeland. 3,181,677.
  - Gambill, Charles C., and Murphy. 3,2182,228.
  - Gelfand, Louis, and Vanderbilt. 3,182,162.
  - Hauth, Willard E., Jr., and Somers. 3,181,847.
  - Keinath, Richard L. 3,181,517.
  - Knaup, David R., Lehmann, and Stockdale. 3,181,419.
  - Mason, James L. 3,181 663.
  - McMahan, Herschel E., and Stoughton. 3,181,247.
  - Medisch, Joseph C., and Wright. 3,181,615.
  - Reindl, Harold J., and Killen. 3,181,502.
  - Schaefer, Robert H. 3,181,386.
  - Vander Hagen, Orrie F. 3,181,308.
- General Precision, Inc. : *See*—
  - Horn, Harrison S. 3,182,302.
  - Howe, Robert M. 3 182,303.
  - Jones, Clarence S. 3,182,183.
  - Kaufmann, John. 3,182,207.
  - Kleist, Robert A., and Sweeney. 3,182,314.
  - Maninger Ralph C. 3,181,365.
  - Morgan, William C., and Picciano. 3,181,463.
  - Parker, Theodore C., and Colburn. 3,181,464.
  - Sweeney, Harold E. 3,182,315.
- General Products Co., Inc. : *See*—
  - McKann, Henry S. 3,181,525.
- General Tire & Rubber Co., The : *See*—
  - Wiley, William. 3,181,610.
- Genesco, Inc. : *See*—
  - Cannata, Dominick J. 3,181,536.
- Genin, Robert I., and L. S. Wirch, to Child Guidance Toys, Inc. Puzzle board toy assembly. 3,181,869, 5-4-65, Cl. 273—157.
- Geolograph Co., The : *See*—
  - Van Winkle, Roy L., Lankford, and Ward. 3,182,332.
- Geratebau Ebersnacher : *See*—
  - Kofink, Siegfried. 3,181,562.
- Gerhardus, Otto : *See*—
  - Vom Dorp, Walter, and Gerhardus. 3,181,332.
- Gevaert Photo-Producten N.V. : *See*—
  - Koerber, Willem K., and Schouteden. 3,181,948.
  - Koerber, Willem K., and Schouteden. 3,181,949.
  - Koerber, Willem K., and Schouteden. 3,181,950.
- Gianotti, Annita : *See*—
  - Ganevari, Teresio. 3,181,786.
- Gibson, Robert N. Remote controlled toy submarine. 3,181,272, 5-4-65, Cl. 46—244.
- Giffen, James W., to Corning Glass Works. Valve means for selectively supplying a desired port with positive and negative pressures. 3,181,563, 5-4-65, Cl. 137—596.
- Gill, John B. Pipe pulling tool. 3,181,234, 5-4-65, Cl. 29—237.
- Gillmore, Kenneth B., to The Boeing Co. Rescue system. 3,181,823, 5-4-65, Cl. 244—137.
- Ginaven, Marvin E., and A. H. Adams, to The Bauer Bros. Co. Pressurized press. 3,181,454, 5-4-65, Cl. 100—74.
- Girling Ltd. : *See*—
  - Fineman, Harold. 3,181,376.
  - Riddy, Frederick T. 3,181,388.
- Gits, John R. : *See*—
  - Gits, Jules P. 3,181,321.
- Gits, Jules P., to John R. Gits. Key holders. 3,181,321, 5-4-65, Cl. 70—456.
- Glaser, Günther : *See*—
  - Junghans, Helmut, Glaser, and Jahn. 3,181,499.
- Glaze, Thomas C., to United States of America, Air Force. Portable humidifier. 3,181 844, 5-4-65, Cl. 261—130.
- Glazier, Edwin M., R. W. Helwig, and V. J. Yeakley, to Gulf Research & Development Co. Thermal hydrodealkylation process. 3,182,094, 5-4-65, Cl. 260—672.
- Glidden Co., The : *See*—
  - Cwik, Lester L. 3,182,104.
- Globe Safety Products, Inc. : *See*—
  - Smilg, Benjamin. 3,181,756.
- Goerke, James R. : *See*—
  - Hunt, Paulmer D., and Goerke. 3,181,372.
- Goetschius, William J. : *See*—
  - Collins, Vernon H., and Goetschius. 3,181,772.
- Goetz, Richard W. : *See*—
  - Cass, Ralph S., and Goetz. 3,181,368.
- Goldberg, Moses W., and H. H. Lehr, to Hoffmann-La Roche Inc. Substituted mercapto-acetamides. 3,182,081, 5-4-65, Cl. 260—535.
- Golde, H. T., G.m.b.H. & Co. K.G. : *See*—
  - Werner, Johannes. 3,181,857.
- Goldschmidt, Eric N., to Warner-Lambert Pharmaceutical Co. 5-[4-(p-hydroxyphenoxy)phenyl]-5-oxo-3-methylvaleric acid. 3,182,061, 5-4-65, Cl. 260—520.
- Goldschmidt, H., & Associates, Inc. : *See*—
  - Goldschmidt, Hans, and Sanford. 3,181,252.
- Goldschmidt, Hans, and A. B. Sanford, to H. Goldschmidt & Associates, Inc. Teaching device (tutor toy). 3,181,252, 5-4-65, Cl. 35—9.
- Goodacre, Cecil, and J. R. V. Dolphin, to Lansing Bagnall Ltd. Industrial trucks. 3,181,640, 5-4-65, Cl. 180—19.
- Goodman Mfg. Co. : *See*—
  - Wurzburg, Warren F., and Reid. 3,181,799.
- Gorman, Edmond B., to McGraw-Edison Co. Electric switch. 3,182,145, 5-4-65, Cl. 200—48.
- Gossard, William H., to United States of America, Army. Diversity reception system with correction for long-term fluctuations in signal strength. 3,182,263, 5-4-65, Cl. 325—370.
- Gouker, Zelbert, and R. C. Storkan ; said Gouker assor. to said Storkan. Apparatus for gathering pliofilm sheeting from a field. 3,181,455, 5-4-65, Cl. 100—97.
- Gould-National Batteries, Inc. : *See*—
  - Albrecht, Carl F. 3,181,975.
- Goulding, Kenneth C., to The Magnavox Electronics Co. Ltd. Magazine spindles for automatic record changing gramophones. 3,181,871, 5-4-65, Cl. 274—10.
- Grace, W. R., & Co. : *See*—
  - Baptist, James N., and Werber. 3,182,036.
  - Bridger, Grover L., and Starostka. 3,181,943.
  - Gregorian, Razmic S. 3,182,033.
- Grainger, William G., and D. E. Wilson, to Western Electric Co. Inc. Apparatus for assembling components. 3,181,227, 5-4-65, Cl. 29—25.42.
- Graser, Earl J., and R. L. Schuster, to Olin Mathieson Chemical Corp. Carton blank and method of folding. 3,181,727, 5-4-65, Cl. 220—115.
- Green, Charles E., to United States of America, Navy. Interleaved electroacoustical transducer. 3,182,284, 5-4-65, Cl. 340—10.
- Greenlife Products Co. : *See*—
  - Lowery, Alexander B. 3,181,620.
- Gregorian, Razmic S., to W. R. Grace & Co. Crosslinked polyethylene wax composition. 3,182,033, 5-4-65, Cl. 260—28.5.
- Greulich, Gerald G. Method of making prestressed concrete pavement. 3,182,109, 5-4-65, Cl. 264—228.
- Grobowski, Ben T., to The E. T. Rugg Co. Combination liquid container and filling and draining conduit. 3,181,745, 5-4-65, Cl. 222—539.
- Gronvold, George B. Coffee brewing method. 3,181,951, 5-4-65, Cl. 99—71.
- Grossmann, Max : *See*—
  - Messwarb, Gunter, Orthner, Reuber, and Grossmann. 3,182,044.
- Gruenbeck, Klaus H., and R. L. Brown, to Hughes Aircraft Co. Magnetic variable torque clutch. 3,181,671, 5-4-65, Cl. 192—84.
- Gruetzmacher, Herman H. Buckle-tongue fastener. 3,181,840, 5-4-65, Cl. 72—409.
- Guessford, David G. : *See*—
  - Morrison, Charles D., and Guessford. 3,181,587.
- Guido, Lewis, and E. S. Wedding. Display hassock. 3,181,913, 5-4-65, Cl. 297—462.
- Guillon, Jacques S., and C. W. Sorensen, to Art Woodwork Ltd. Furniture assembling device. 3,181,923, 5-4-65, Cl. 312—255.
- Gulf Research & Development Co. : *See*—
  - Burow, Frank H. 3,181,344.
  - Glazier, Edwin M., Helwig, and Yeakley. 3,182,094.
  - Lilly, Arnys C., Jr., Shutes, and Weismann. 3,182,190.
- Gulick, Joseph F., Jr., T. D. Jacot, H. H. Knapp, Jr., and H. H. Nall, to United States of America, Navy. Interferometer homing system. 3,181,818, 5-4-65, Cl. 244—14.
- Gutberlet, Louis C. : *See*—
  - Brennan, Harry M., Coley, Frye, and Gutberlet. 3,182,097.
- Haberecht, Rolf R., J. M. Booe, and W. D. Loftus, to P. R. Mallory & Co., Inc. Hermetically sealed semiconductor device and method for producing it. 3,181,229, 5-4-65, Cl. 29—155.5.
- Hablanian, Marsbed, and J. R. Roehrig, to National Research Corp. Split body diffusion pump. 3,181,776, 5-4-65, Cl. 230—101.
- Haddad, Charles, to Ford Motor Co. Vehicle suspension. 3,181,641, 5-4-65, Cl. 180—42.
- Haggarty, Robert J. : *See*—
  - Blunden, Donald J., Widener, and Haggarty. 3,181,886.
- Hagney, Edward D., and M. Mehlman. Composite matrix and method for making the same. 3,181,206, 5-4-65, Cl. 22—5.5.
- Hahn, Helmut : *See*—
  - Scherer, Otto, Hahn, and Munch. 3,182,091.
- Haimowitz, Bernard : *See*—
  - Riebman, Leon, and Haimowitz. 3,182,266.
- Haimowitz, Wilma : *See*—
  - Riebman, Leon, and Haimowitz. 3,182,266.
- Hait, James M., to FMC Corp. Apparatus for pitting peaches. 3,181,581, 5-4-65, Cl. 146—28.

Halberg, Robert A., to Minnesota Mining and Mfg. Co. Autofocus viewing and reproducing apparatus. 3,181,416, 5-4-65, Cl. 88—24.
Hale, John D., to Fairbanks Morse Inc. Portable weighing scale. 3,181,635, 5-4-65, Cl. 177—264.
Hales, Carlos J. Reversible dispenser and closure for containers. 3,181,744, 5-4-65, Cl. 222—539.
Hall, Ralph W., to Textron, Inc. Roll stand for a tubing mill. 3,181,333, 5-4-65, Cl. 72—240.
Hallows, Leonard B.: *See—*
Roth, Philip B., and Hallows. 3,181,927.
Halls, Lawrence M., to Sperry Rand Corp. Mower mounting apparatus. 3,181,288, 5-4-65, Cl. 56—25.
Hamaker, Raymond W.: *See—*
Baron, Paul L., Hamaker, and Romeo. 3,181,979.
Hambling, James K.: *See—*
Yeo, Alan A., and Hambling. 3,182,096.
Hammon, George L., to Hammon Precision Equipment Co. Valve and restrictor for gas torches. 3,182,334, 5-4-65, Cl. 251—121.
Hammon Precision Equipment Co.: *See—*
Hammon, George L. 3,182,334.
Hammond Machinery Builders, Inc.: *See—*
Bell, Ramsay M. 3,181,282.
Tuttle, Philip B. 3,181,283.
Hance, Howard W.: *See—*
Bauer, Donald R., Cassidy, Hance, and Mullen. 3,181,279.
Hapeman, Fred J. Rotary internal combustion engine. 3,181,512, 5-4-65, Cl. 123—16.
Harbison-Walker Refractories Co.: *See—*
King, Donald F. 3,181,486.
King, Donald F., and Smoot. 3,181,960.
Hardt, Richard W.: *See—*
Denny, John P., and Hardt. 3,181,936.
Harriman Mfg. Co., The: *See—*
Mortashed, Merle H. 3,181,621.
Harris, Artell L. Sand blaster's helmet. 3,181,532, 5-4-65, Cl. 128—142.
Harris, Bert C., to The White Motor Co. Trailer clearance device. 3,181,889, 5-4-65, Cl. 280—438.
Harris-Intertype Corp.: *See—*
Kolb, Edwin R. 3,182,301.
Harris, Robert L.: *See—*
Gates, William H., and Harris. 3,181,985.
Hartman, Frank W., Jr., to Kiekhaefer Corp. Ignition distributor with surface changing contacts. 3,182,142, 5-4-65, Cl. 200—30.
Hartvig-Johansen, Leif. Dispensing device. 3,181,738, 5-4-65, Cl. 222—156.
Haskins, Bernard J., to Rolls Royce Ltd. Lost motion mechanism. 3,181,565, 5-4-65, Cl. 137—614.11.
Haslam, Maurice B.: *See—*
Nelson, Bruce K., and Haslam. 3,182,324.
Hastings-Raydist, Inc.: *See—*
Benson, James M. 3,181,357.
Haszeldine, Robert N., and H. Isersom, to Pennsalt Chemicals Corp. Preparation of tetrahalomethanes. 3,182,092, 5-4-65, Cl. 260—653.
Hauser, Ralph I., and D. R. Houston, to United States of America, Navy. Scanner co-ordinate compensator for radar-bearing craft. 3,182,321, 5-4-65, Cl. 343—7.3.
Hauth, Willard E., Jr., and A. V. Somers, to General Motors Corp. Temperature gradient furnace apparatus, and method of forming same. 3,181,847, 5-4-65, Cl. 263—41.
Haverstick, Merral P., and J. A. Lotspeich, ½ to The Vendo Co., and ½ to Coin Acceptors, Inc. Coin changer apparatus. 3,181,678, 5-4-65, Cl. 194—9.
Hawthorn Co., Division of Kellwood Co.: *See—*
Bareis, Marvin A. 3,181,542.
Hayes, Charles T., to Parkersburg-Aetna Corp. Aircraft arresting and launching system. 3,181,819, 5-4-65, Cl. 244—63.
Hayes Spray Gun Co.: *See—*
Hayes, Stanley A. 3,181,797.
Hayes, Stanley A., to Hayes Spray Gun Co. Mixing apparatus having plural eductors. 3,181,797, 5-4-65, Cl. 239—317.
Hayward, Walter W., Jr., to The Gates Rubber Co. Hose coupling having wedged clamping means. 3,181,900, 5-4-65, Cl. 285—243.
Heald Machine Co., The: *See—*
Rice, Stanley I., and Jacobson. 3,181,401.
Heat Exchangers Research and Development Co.: *See—*
Belanger, Celestin V. 3,181,606.
Heath, William C. Surgical snare. 3,181,533, 5-4-65, Cl. 128—320.
Heaton-Armstrong, Louis J., to International Standard Electric Corp. Radio transmitter overload protection system. 3,182,260, 5-4-65, Cl. 325—151.
Hecker, Richard C.: *See—*
Bonfield, John H., Hecker, Snider, and Apostle. 3,182,055.
Hederhorst, Fred, to Esso Research and Engineering Co. Gas displacement meter. 3,181,360, 5-4-65, Cl. 73—270.
Heide, Stanford M.: *See—*
Koci, Jerry C., Heide, and Hols. 3,182,141.
Hein, Allyn J., and J. A. Junck, to Caterpillar Tractor Co. Hydraulic circuit for tractor drawn scrapers and the like. 3,191,431, 5-4-65, Cl. 91—414.
Heister, Claire C.: *See—*
Heister, Paul J. 3,181,377.
Heister, Paul J., ½ to C. C. Heister. Pulsating torque converter. 3,181,377, 5-4-65, Cl. 74—64.
Heller, Milton D., R. H. Lenhard, and S. Bernstein, to American Cyanamid Co. New 16-substituted-19-norpregna-1,3,5(10),6,8-pentaen-20-ones. 3,182,057, 5-4-65, Cl. 260—239.55.
Heller, Milton D., R. H. Lenhard, and S. Bernstein, to American Cyanamid Co. 17-substituted 19-norpregna-1,3,5(10),6,8-pentaen-20-ones. 3,182,075, 5-4-65, Cl. 260—397.45.
Helliwell, Guy S., and L. J. Swindall, to Samuel Pegg & Son Ltd. Dyeboarding method. 3,181,749, 5-4-65, Cl. 223—76.
Helliwell, Guy S., and J. L. Swindall, to Samuel Pegg & Son Ltd. Dyeboarding plant. 3,181,750, 5-4-65, Cl. 223—76.
Helwig, Ralph W.: *See—*
Glazier, Edwin M., Helwig, and Yeakley. 3,182,094.
Hemenway, Philip. Copy sheet support for book copying machine. 3,181,448, 5-4-65, Cl. 95—73.
Hendry, Archibald, W. C. Brown, and E. F. V. Robinson, to National Research Council. Echo identification in dual beam radar display. 3,182,309, 5-4-65, Cl. 343—5.
Hennipman, Cornelis, to Shell Oil Co. Industrial furnaces. 3,181,508, 5-4-65, Cl. 122—356.
Hennis, Henry E., to The Dow Chemical Co. Method of making a tetrabromobisphenol. 3,182,088, 5-4-65, Cl. 260—619.
Hensley, James L., to Tysaman Machine Co. Inc. Grinding wheels. 3,181,281, 5-4-65, Cl. 51—209.
Herneus, W. C., G.m.b.H.: *See—*
Seiz, Richard. 3,181,201.
Herb, Raymond G., to Wisconsin Alumni Research Foundation. Pumping apparatus. 3,181,775, 5-4-65, Cl. 230—69.
Hercules Powder Co.: *See—*
Levering, Dewey R., and Maury. 3,182,086.
Herman Pneumatic Machine Co.: *See—*
Brauer, Edwin H. 3,181,208.
Herring, David L., to United States of America, Navy. Preparation of polymeric materials by the reaction of aryldiphosphines with aryl diazides. 3,182,028, 5-4-65, Cl. 260—2.
Hesketh, John F., to Her Majesty's Postmaster General. Electric pulse-operated switching circuit. 3,182,202, 5-4-65, Cl. 307—88.5.
Hess, Wynn S., ¼ to D. J. Barnard. Exhaust pipe closure mechanism. 3,181,451, 5-4-65, Cl. 98—59.
Hesson, James C., to United States of America, Atomic Energy Commission. Immiscible liquids separator. 3,181,700, 5-4-65, Cl. 210—175.
Heth, Arthur M., and C. H. Bruun, to Midwest Feed & Pelleting Co., Inc. Portable pellet mill apparatus. 3,181,482, 5-4-65, Cl. 107—4.
Heywood, Donald L., H. A. Stansbury, Jr., and B. Phillips, to Union Carbide Corp. Hydroxylation of organic compounds. 3,182,008, 5-4-65, Cl. 204—162.
Hickman, Jack S.: *See—*
Hippie, George M., and Hickman. 3,181,559.
Higinbotham, William A.: *See—*
Fischer, Joachim, Higinbotham, and Chase. 3,182,208.
Hill, Frank R. Retainer with penetrating teeth. 3,181,412, 5-4-65, Cl. 85—13.
Hill, Harold G. Control system for modulating gas burner operation on forced air heating system. 3,181,789, 5-4-65, Cl. 236—10.
Hillsman, Walter E.: *See—*
Asons, Ernesta, and Hillsman. 3,181,417.
Hings, Donald L. Radio control system. 3,182,328, 5-4-65, Cl. 343—112.
Hipple, George M., and J. S. Hickman, to American Brake Shoe Co. Electromagnetic and fluid pressure operated valve and anti-hysteresis control circuit therefor. 3,181,559, 5-4-65, Cl. 137—489.
Hirano, Masatoshi: *See—*
Konishi, Kenzo, Furukawa, and Hirano. 3,182,059.
Hire, William R., to Research Mfg., Inc. Collapsible conveyor. 3,181,676, 5-4-65, Cl. 193—35.
Hi-Shear Rivet Tool Co.: *See—*
Wing, George S. 3,181,413.
Hochgraf, Lester, to Bell Telephone Laboratories, Inc. Circuit for interconnecting a number of calling lines. 3,182,134, 5-4-65, Cl. 179—18.
Hockett, Leiter W. Rudder for Marine vessels. 3,181,492, 5-4-65, Cl. 114—167.
Hodges, Robert T. Stabilizing device for ice skates. 3,181,879, 5-4-65, Cl. 280—11.12.
Hoffmann-La Roche Inc.: *See—*
Goldberg, Moses W., and Lehr. 3,182,081.
Fryer, Rodney I., Schmidt, and Sternbach. 3,182,065.
Fryer, Rodney I., Schmidt, and Sternbach. 3,182,066.
Fryer, Rodney I., Schmidt, and Sternbach. 3,182,067.
Steiger, Norbert. 3,182,053.
Sternbach, Leo H., and Saucy. 3,182,054.
Hofmann, Leroy C.: *See—*
Cassie, Norman M., and Hofmann. 3,181,720.
Hogue, Marcus P., to General Electric Co. Sump construction for a food waste disposer. 3,182,111, 5-4-65, Cl. 264—272.
Holder, Floyd P., to United States of America, Air Force. Submodulation systems for carrier re-creation and Doppler correction in single-sideband zero-carrier communications. 3,182,259, 5-4-65, Cl. 325—50.
Holdstock, Norman G., to General Electric Co. Carboxyalkyl organosiloxanes. 3,182,076, 5-4-65, Cl. 260—448.2.
Holle, Frederick C.: *See—*
Anania, James A. 3,181,824.
Hollingsworth, Henry L., and V. H. Lausen; said Hollingsworth assor. to Phelps Dodge Copper Products Corp. High-speed production of magnet wire. 3,181,326, 5-4-65, Cl. 72—46.
Hollyday, James H., to Sperry Rand Corp. Hitch. 3,181,892, 5-4-65, Cl. 280—477.
Holt, Arthur W.: *See—*
Sorrells, John R., and Holt. 3,182,205.
Holtzman, Eugene S. Audio book jacket. 3,181,894, 5-4-65, Cl. 281—31.
Holz, Alfred: *See—*
Koci, Jerry C., Heide, and Holz. 3,182,141.

Honeywell Inc.: *See—*
Burwen, Richard S. 3,182,268.
Flom, Richard C. 3,181,441.
Ireland, Paul E. 3,181,808.
Smith, Dayle R. 3,182,269.
Stauffer, Norman L. 3,181,351.
Hooker Chemical Corp.: *See—*
Baker, Norman A. 3,181,556.
Hopkins, Evan L., and L. K. Irwin, to Hopkins Mfg. Corp. Instrument for capacitively testing the condition of lubricating oil. 3,182,255, 5-4-65, Cl. 324—61.
Hopkins Mfg. Corp.: *See—*
Hopkins, Evan L., and Irwin. 3,182,255.
Horn, Harrison S., to General Precision, Inc. Digital to analog signal conversion. 3,182,302, 5-4-65, Cl. 340—347.
Horowitz, Charles: *See—*
Dobrikin, Harold L., and Horowitz. 3,181,917.
Horton, Russell E., to Amphenol-Borg Electronics Corp. Multiple position coaxial switch with angularly spaced radial channels. 3,182,270, 5-4-65, Cl. 333—7.
Horvitz, David, to FMC Corp. Process for the preparation of trimethylhydrazine. 3,182,087, 5-4-65, Cl. 260—583.
Houdaille Industries, Inc.: *See—*
Daniels, Dennis. 3,181,858.
Rumsey, Rollin D., and Kamman. 3,181,437.
Houser, Franklin C.: *See—*
Nobles, Warren H., Houser, and Burgess. 3,181,193.
Houston, David R.: *See—*
Hauser, Ralph I., and Houston. 3,182,321.
Hovercraft Development Ltd.: *See—*
Cockerell, Christopher S. 3,181,636.
Cockerell, Christopher S. 3,181,637.
Cockerell, Christopher S. 3,181,638.
Nicholas, David W., and Everest. 3,181,639.
Hovey, Robert W. Rotary vane device. 3,181,510, 5-4-65, Cl. 123—16.
Howe Folding Furniture Inc.: *See—*
Burr, Alan C. 3,181,920.
Howe, Robert M., to General Precision, Inc. Analog to digital conversion. 3,182,303, 5-4-65, Cl. 340—347.
Howell, Carl A., to Ford Motor Co. Motor vehicle air suspension. 3,181,853, 5-4-65, Cl. 267—15.
Howsmon, John A., and B. A. Thumm, to FMC Corp. Method of producing all-skin viscose rayon. 3,182,107, 5-4-65, Cl. 264—193.
Hubinger Co., The: *See—*
Bauer, Jordan V., and Elizer. 3,182,031.
Hudon, Marie A. Door lock. 3,181,319, 5-4-65, Cl. 70—14.
Hughes Aircraft Co.: *See—*
Gruenbeck, Klaus H., and Brown. 3,181,671.
Mahlman, George W. 3,182,198.
Humenick, William: *See—*
Belk, Samuel A., and Humenick. 3,181,297.
Humes, Carl E. Truck assembly. 3,181,914, 5-4-65, Cl. 298—17.
Humpherys, Bernarr H. IFF system defruiter. 3,182,310, 5-4-65, Cl. 343—6.5.
Hunt, Charles J., to Vulcan Corp. Shoe last construction. 3,181,186, 5-4-65, Cl. 12—136.
Hunt, Paulmer D., and J. R. Goerke, to The Bendix Corp. Compensated flyweight. 3,181,372, 5-4-65, Cl. 73—497.
Hunter Douglas International (Quebec) Ltd.: *See—*
Pender, John G. 3,181,595.
Hupp Corp.: *See—*
Smith, Horace L., Jr. 3,181,605.
Hurlburt, Joseph C., to Sperry Rand Corp. Mounting structure. 3,181,686, 5-4-65, Cl. 198—87.
Huston, Elmo F., to The Ohio Brass Co. Electrical apparatus housing and joint therefore. 3,181,722, 5-4-65, Cl. 220—2.3.
Hutchinson, William G.: *See—*
Laithwaite, John M., Cole, and Hutchinson. 3,182,002.
Hutchison, Merle, O. L. Riggs, Jr., and J. D. Sudbury, to Continental Oil Co. Electrode assembly for the anodic passivation of metals. 3,182,007, 5-4-65, Cl. 204—147.
Ideal Industries, Inc.: *See—*
Esser, Harold H. 3,181,339.
IIT Research Institute: *See—*
McAndrew, Joseph B., Metcalfe, and Simcoe. 3,181,946.
Ike, Ernest C., to Western Die Casting Co. Fluid pressure brake system. 3,181,426, 5-4-65, Cl. 91—33.
Illinois Tool Works Inc.: *See—*
Biesecker, Donald L. 3,182,329.
Image Designs, Inc.: *See—*
Polevitzky, Igor B. 3,181,987.
Immermann, Milton, R. H. Ensign, and G. H. Woods, to General Foods Corp. Beverage apparatus. 3,181,782, 5-4-65, Cl. 222—80.
Impcomation, Inc.: *See—*
Nimke, Helmut E., and Wagner. 3,181,421.
Imperial Chemical Industries Ltd.: *See—*
Rayner, Laurence S. 3,181,971.
Ingersoll-Rand Co.: *See—*
Taylor, Hugh B. 3,181,580.
Inoue, Yukio, and M. Mitsuno, to Takeda Chemical Industries, Ltd. Fumaric acid-containing composition. 3,181,954, 5-4-65, Cl. 99—78.
Institut de Recherches de la Siderurgie Francaise: *See—*
Fillon, Jacques D. 3,181,343.
Intellux Inc.: *See—*
Pritikin, Nathan. 3,181,986.
Interchemical Corp.: *See—*
Michelotti, Francis W. 3,181,965.
International Business Machines Corp.: *See—*
Baron, Paul L., Hamaker, and Romeo. 3,181,979.
Nassimbene, Ernie G. 3,182,291.
International Machinery Corp. S.A.: *See—*
Menacci, Samuel A. 3,181,692.
International Nickel Co., Inc., The: *See—*
Peck, James V., and Witherell. 3,181,970.
International Research and Development Corp.: *See—*
Thomas, Glen H., and Morrow. 3,181,350.
International Standard Electric Corp.: *See—*
Heaton-Armstrong, Louis J. 3,182,260.
Yule, William H. D. 3,182,232.
International Telephone and Telegraph Corp.: *See—*
De Rose, Ralph A., and Leo. 3,181,906.
Jennings, Norman T., and Etcheverry. 3,181,834.
Rosen, Robert. 3,181,724.
Inventions Finance Corp.: *See—*
Maratuech, Paul, and Bernada. 3,182,211.
Ireland, Paul E., to Honeywell Inc. Tape guide. 3,181,808, 5-4-65, Cl. 242—76.
Ironfield, Richard, to Raytheon Co. Electromagnetic energy seal. 3,182,164, 5-4-65, Cl. 219—10.55.
Irvin, Howard B., to Phillips Petroleum Co. Bulk polymerization. 3,182,050, 5-4-65, Cl. 260—94.2.
Irwin, Lee K.: *See—*
Hopkins, Evan L., and Irwin. 3,182,255.
Isell & Co.: *See—*
Lehacque, Raymond E. T. 3,181,322.
Iserson, Hyman: *See—*
Hasseldine, Robert N., and Iserson. 3,182,092.
I-T-E Circuit Breaker Co.: *See—*
Brumfield, John C. 3,182,157.
Wishing, Eugene M. 3,181,331.
Itek Corp.: *See—*
Wright, Maior. 3,181,449.
Izenour, George C. Versatile display apparatus. 3,181,274, 5-4-65, Cl. 50—24.
Jackoboice, Edward W., to Monarch Road Machinery Co. Generator pump and bracket assembly. 3,181,825, 5-4-65, Cl. 248—16.
Jackson, John G., Jr., to McEvoy Co. Valves with enhanced pressure actuated seals. 3,181,552, 5-4-65, Cl. 137—246.12.
Jacob, John E. B., and J. M. Sowerby, to British Aircraft Corp. Ltd. Control mechanisms. 3,181,467, 5-4-65, Cl. 102—83.
Jacobson, Alden H.: *See—*
Rice, Stanley I., and Jacobson. 3,181,401.
Jacobson, Irvin D., to Perfection Pine Nipple Co. Drain valves and the like. 3,181,555, 5-4-65, Cl. 137—375.
Jacot, Thomas D.: *See—*
Gulick, Joseph F., Jr., Jacot, Knapp, and Nall. 3,181,813.
Jahn, Paul: *See—*
Junghans, Helmut, Glaser, and Jahn. 3,181,499.
Jandasek, Vladimir J., to Ford Motor Co. Transmission. 3,181,393, 5-4-65, Cl. 74—732.
Janson, Stig, and V. Stending, to Siemens & Halske Aktiengesellschaft. Method of and circuit arrangement for supervising and maintaining coaxial lines. 3,182,138, 5-4-65, Cl. 179—175.31.
Janssen, Robert V. Hoisting apparatus. 3,181,707, 5-4-65, Cl. 212—8.
Jansson, Johannes G., to A. Ekstroms, Maskinaffar, AB. Torque sensing apparatus for pulp suspensions or the like. 3,181,349, 5-4-65, Cl. 73—59.
Jarnbrink, Karl E.: *See—*
Claesson, Per H. E., and Jarnbrink. 3,182,159.
Jebens, Robert W., to Melpar, Inc. Bridge multivibrator having translators of the same conductivity type. 3,182,210, 5-4-65, Cl. 307—88.5.
Jeffrey-Allan Industries, Inc.: *See—*
Kulwin, Seymour J. 3,181,221.
Jelling, Murray, and M. Friedman. Bag and bag supply. 3,181,773, 5-4-65, Cl. 229—69.
Jenkins, Lonnie W., and T. H. Pratt, to United States of America, Army. Method and apparatus for determining the integrity of a solid propellant rocket motor. 3,181,246, 5-4-65, Cl. 33—174.
Jenkins, Peter J., to Dunlop Rubber Co. Ltd. Segmental conveyor belt. 3,181,690, 5-4-65, Cl. 198—193.
Jenkins, Walter W., to The National Acme Co. Angular cutting machine. 3,181,399, 5-4-65, Cl. 82—11.
Jenner, Ray R., to Mechanical Products, Inc. Circuit breaker compensated for ambient temperature and for the activity factor of the current responsive element. 3,182,152, 5-4-65, Cl. 200—116.
Jennings, Norman T., and J. P. Etcheverry, to International Telephone and Telegraph Corp. Biased seal structure for ball valves. 3,181,834, 5-4-65, Cl. 251—172.
Jennings, Roger G., to Pacific Vegetable Oil Corp. Method and apparatus for pre-expansion of plastic foams. 3,181,839, 5-4-65, Cl. 259—8.
Jenny, Alfred L.: *See—*
Mohler, Donald Westbrook, and Jenny. 3,182,235.
Jepson, Ivar, and O. Babler, to Sunbeam Corp. Electric dry shaver. 3,181,237, 5-4-65, Cl. 30—34.2.
Jet-Heet, Inc.: *See—*
MacCracken, Calvin D., and Miles. 3,181,793.
Johansen, Frank M. Apparatus for introduction of flavoring material into ice cream. 3,181,838, 5-4-65, Cl. 259—8.
Johmann, Frank T.: *See—*
Bross, Helmut K. 3,181,741.
Johns-Manville Corp.: *See—*
Labino, Dominick. 3,181,324.
Johnson, Eldon A.: *See—*
Brown, Morris C., and Johnson. 3,181,843.
Johnson, Oscar H.: *See—*
Buckley, John Z., and Johnson. 3,181,181.
Johnson, Paul B. Internal combustion engine. 3,181,511, 5-4-65, Cl. 123—16.
Johnstone, Archibald, to Davidson & Co. Ltd. Heat exchangers. 3,181,602, 5-4-65, Cl. 165—4.
Jones, Clarence S., to General Precision, Inc. Analog function generation. 3,182,183, 5-4-65, Cl. 235—197.
Jones, Kenneth E.: *See—*
De Vitt, John W., and Jones. 3,181,483.

Jones & Laughlin Steel Corp.: *See*—
  Carpenter, Grant H. 3,181,291.
Jones, Robert W., to The Bigelow-Liptak Corp. Refractory wall. 3,181,278, 5–4–65, Cl. 50—418.
Jopson, Howard B., H. V. Yentzer, and P. Karnow, to United States of America, Navy. Universal tow bar. 3,181,893. 5–4–65. Cl. 280—494.
Jorgensen, Oscar H. Steplessly variable power transmission devices. 3,181,381, 5–4–65, Cl. 74—199.
Josam Products Ltd.: *See*—
  Lerou, Roger J., and Emberson. 3,181,178.
Joseph, William, to Metro-Goldwyn-Mayer Inc. Heating and cooling means for flat phonograph record die. 3,181,200, 5–4–65, Cl. 18—5.3.
Joy Mfg. Co.: *See*—
  Coburn, Robert S. 3,181,680.
  Densmore, Neal W. 3,181,625.
Junck, John A.: *See*—
  Hein, Allyn J., and Junck. 3,181,431.
Junghans, Gebruder, Aktiengesellschaft: *See*—
  Junghans, Helmut, Glaser, and Jahn. 3,181,499.
Junghans, Helmut, G. Glaser, and P. Jahn, to Gebruder Junghans, Aktiengesellschaft. Striking clock. 3,181,499, 5–4–65, Cl. 116—169.
Junkers & Co. G.m.b.H.: *See*—
  Krajc, Adolf, and Pritzkow. 3,181,592.
Juy, Lucien C. H. Change speed gear control devices for bicycles and similar chain driven vehicles. 3,181,383, 5–4–65, Cl. 74—217.
Juy, Lucien C. H. Chain shift devices for bicycles and similar chain driven vehicles. 3,181,384, 5–4–65, Cl. 74—242.
Juy, Lucien C. H. Control lever devices. 3,181,390, 5–4–65, Cl. 74—531.
Juy, Lucien C. H. Control lever devices. 3,181,391, 5–4–65, Cl. 74—581.
KVP Sutherland Paper Co.: *See*—
  Coe, Merrill J. 3,181,770.
Kagley, William H., to Lindsay Ripe Olive Co. Automatic chain tensioning device. 3,181,691, 5–4–65. Cl. 198—208.
Kahn, Harry J., to Kaiser Aluminum & Chemical Corp. Bridge construction. 3,181,187, 5–4–65, Cl. 14—73.
Kaiser Aluminum & Chemical Corp.: *See*—
  Kahn, Harry J. 3,181,187.
  Olsen, Orrie C. 3,181,930.
  Raine, Frank F., and Smith. 3,181,959.
  Schroter, Richard C., and Wood. 3,181,275.
Kaiser Gypsum Co., Inc.: *See*—
  Bauer, Donald R., Cassidy, Hance, and Mullen. 3,181,279.
Kaken Kagaku Kabushiki Kaisha: *See*—
  Sakai, Sumio, Tanaka, and Furuya. 3,182,080.
Kamman, Gordon W.: *See*—
  Rumsey, Rollin D., and Kamman. 3,181,437.
Kampmeyer, Roy A., R. A. Lee, and B. F. Walker, to The Bendix Corp. Illumination control system for television pickup tubes and the like.. 3,182,125, 5–4–65, Cl. 178—7.72.
Kane, James T., H. W. Dayton, and J. H. Allison. Cushioned package. 3,181,766, 5–4–65. Cl. 229—14.
Kanig, Joseph L. Tablet disintegration. 3,181,998, 5–4–65, Cl. 167—82.
Kanthal, Aktiebolaget: *See*—
  Malm, Anders E., and Thorselius. 3,181,845.
Kantor, Laszlo, to Technoimpex Magyar Gepipari Kulkereskedelmi Vallalat. Guard and accident prevention equipment for wood working industry. 3,181,579, 5–4–65, Cl. 144—251.
Kao, Lin, to Admiral Corp. Noise protection circuit. 3,182,122, 5–4–65, Cl. 178—7.3.
Kao, Lin, to Admiral Corp. Noise protection circuit. 3,182,123, 5–4–65, Cl. 178—7.3.
Kappen, Frieda E.: *See*—
  Kappen, John W. and F. E. 3,181,714.
Kappen, John W., deceased; F. E. Kappen administratrix. Material handling apparatus. 3,181,714, 5–4–65, Cl. 214—16.4.
Karavias, Alexander N. Thermostatic element including a pair of bowed bimetallic elements and a thermodilatable element. 3,182,154, 5–4–65, Cl. 200—122.
Karnow, Paul: *See*—
  Jopson, Howard B., Yentzer, and Karnow. 3,181,893.
Karten, Marvin J.: *See*—
  Shapiro, Seymour L., Freedman, and Karten. 3,182,064.
Katzbeck, Walter J., and R. R. Gabel, to Corn Products Co. Self-propelling liquid textile sizing composition. 3,181,961, 5–4–65, Cl. 106—213.
Kaufmann, John, to General Precision, Inc. Reversible decimal counter. 3,182,207, 5–4–65, Cl. 307—88.5.
Kawasaki, Keiki, to Riccar Sewing Machine Co., Ltd. Method and apparatus for cutting threads in a sewing machine. 3,181,490, 5–4–65, Cl. 112—252.
Kearney, James R., Corp.: *See*—
  Thornton, John A., and Zemels. 3,181,341.
Kebert, John. Pouring devices. 3,181,742, 5–4–65, Cl. 222—527.
Keinath, Richard L., to General Motors Corp. Inlet manifold. 3,181,517, 5–4–65, Cl. 123—52.
Keir, Roy A., to Control Data Corp. Division system. 3,182,180, 5–4–65, Cl. 235—164.
Keller, Paul, to The Cornelius Co. Spray pump. 3,181,796, 5–4–65, Cl. 239—216.
Kennedy, Daniel M.: *See*—
  Wilson, Armin G., Weintraub, and Kennedy. 3,182,084.
Kent, George C.: *See*—
  Rautbord, Clayton L., Newcomb, Sugarman, Eisner, and Kent. 3,181,420.
Keppler, Frank W., to Norbute Corp. Manifold construction. 3,181,484, 5–4–65, Cl. 106—50.
Kerhart, Waldemar, H. Wienand, and D. Weyl, to Zahnfabrik Wienand Sohne & Co., G.m.b.H. Ceramic artificial teeth and method of their manufacture. 3,181,240, 5–4–65, Cl. 32—8
Kesnar, Maurits P.: *See*—
  Burgess, Thomas H., and Kesnar. 3,182,114.
Kestermeier, William J.: *See*—
  Pauwels, Edward M., and Kestermeier. 3,181,295.
Keystone Chemurgic Corp.: *See*—
  Schenck, Remsen T. 3,181,993.
Keznickl, Eduard, to Karl Vockenhuber. Camera having a varifocal objective. 3,181,447, 5–4–65, Cl. 95—45.
Keznickl, Eduard, and O. Freudenschuss, to Karl Vockenhuber, and DDr. Raimund Hauser. Projector for substandard film. 3,181,805, 5–4–65, Cl. 242—55.11.
Kiekhaefer Corp.: *See*—
  Hartman, Frank W., Jr. 3,182,142.
  Kiekhaefer, Elmer C., and North. 3,181,494.
  Kiekhaefer, Elmer C. 3,181,495.
Kiekhaefer, Elmer C., to Kiekhaefer Corp. Coolant supply and exhaust discharge means for inboard-outboard drives. 3,181,495, 5–4–65, Cl. 115—34.
Kiekhaefer, Elmer C., and I. W. North, to Kiekhaefer Corp. Stern drive unit assembly. 3,181,494, 5–4–65, Cl. 115—34.
Killark Electric Mfg. Co.: *See*—
  Zavertnik, Marshall G., and Farina. 3,182,160.
Killen, Charles W.: *See*—
  Reindl, Harold J., and Killen. 3,181,502.
Killoren, Richard J.: *See*—
  Wagner, Charles H., and Killoren. 3,181,218.
Kincannon, Leo T., to Outboard Marine Corp. Engine. 3,181,518, 5–4–65, Cl. 123—73.
Kindorf, Orlan C. Friction pipe strap. 3,181,826, 5–4–65, Cl. 248—72.
King, Donald F., to Harbison-Walker Refractories Co. Refractory structure. 3,181,486, 5–4–65, Cl. 110—99.
King, Donald F., and T. W. Smoot, to Harbison-Walker Refractories Co. Refractory practices. 3,181,960, 5–4–65, Cl. 106—64.
Kinnicutt, Roger, Jr., and A. G. Stauble, to Morgan Construction Co. Turnover apparatus for billets and the like. 3,181,709, 5–4–65, Cl. 214—1.
Kirkland, Earl V., to Standard Oil Co. Removal of water from monocarboxylic acids by membrane permeation. 3,182,043, 5–4–65, Cl. 260—87.1.
Klaassen, Christiaan A. M.: *See*—
  De Proost, Roger M. A., Klaassen, and Yperman. 3,182,118.
Kleen-Stik Products, Inc.: *See*—
  Engert, Casper F. 3,181,988.
Kleist, Robert A., and H. E. Sweeney, to General Precision, Inc. Direction sensing for interrogator responder signalling systems. 3,182,314, 5–4–65, Cl. 343—6.5.
Kluge, Hazel E.: *See*—
  Siegart, William R., Odell, and Kluge. 3,182,022.
Kluge, Herman D.: *See*—
  Siegart, William R., Odell, and Kluge. 3,182,022.
Knaebel, Thomas C.: *See*—
  Deutsch, Bela, and Knaebel. 3,181,567.
Knapp, Harlan H., Jr.: *See*—
  Gulick, Joseph F., Jr., Jacot, Knapp, and Nall. 3,181,813.
Knapp, Eugene J., and H. P. Laffkas, to Corning Glass Works. Packaging and display device. 3,181,698, 5–4–65, Cl. 206—72.
Knaup, David R., J. T. Lehmann, and R. W. Stockdale, to General Motors Corp. Method and apparatus for producing dials. 3,181,419, 5–4–65, Cl. 88—24.
Knight, Frank, and R. R. Landless, to Loxhams Engineering Works Ltd. Lubrication of internal combustion engines and the like. 3,181,652, 5–4–65, Cl. 184—6.
Knightly, Richard T. W., to Lever Brothers Co. Handle operated foam generator and applicator. 3,181,196, 5–4–65, Cl. 15—525.
Knoepfler, Nestor B., H. K. Gardner, Jr., and H. L. E. Vix, to United States of America, Agriculture. Process of resin treating a cotton batting. 3,181,225, 5–4–65, Cl. 28—75.
Knop, Louis H.: *See*—
  Barnett, Paul B., and Knop. 3,181,327.
Knowles, Edwin C.: *See*—
  Cole, Edward L., and Knowles. 3,182,016.
Kobayashi, Kazuo: *See*—
  Amada, Sanae, Kubota, Kobayashi, Okajima, and Nanbo. 3,182,333.
Koci, Jerry C., S. M. Heide, and A. Holz, to Chicago Dynamic Industries, Inc. Actuating mechanism for a thumbwheel type switch. 3,182,141, 5–4–65, Cl. 200—17.
Koehegyi, Joseph N. Process to raise combustion temperatures. 3,181,599, 5–4–65, Cl. 165—1.
Koerber, Willem K., and F. L. Schouteden, to Gevaert Photo-Production N.V. Method for optical bleaching of coated papers and resultant product. 3,181,948, 5–4–65, Cl. 96—82.
Koerber, Willem K., and F. L. Schouteden, to Gevaert Photo-Production N.V. Light sensitive elements having optical bleaching compositions coated thereon. 3,181,949, 5–4–65, Cl. 96—82.
Koerber, Willem K., and F. L. Schouteden, to Gevaert Photo-Producten N.V. Method for optical bleaching of coated photosensitive papers and resultant product. 3,181,950, 5–4–65, Cl. 96—82.
Kofink, Siegfried, to J. Eberspächer. Control switch arrangement for a spark plug ignition circuit. 3,181,522, 5–4–65, Cl. 123—148.
Kofink, Siegfried, to Geratebau Eberspacher. Lubricating fluid distributor system. 3,181,562, 5–4–65, Cl. 137—561.
Koga, Motoyuki. Soldering iron. 3,181,763, 5–4–65, Cl. 228—53.
Kohl, Everard F. Panels. 3,181,659, 5–4–65, Cl. 189—34.

Kohler, Hans: *See*—
  Konig, Karl. 3,181,758.
Kohner Bros, Inc.: *See*—
  Stubbmann, Albert. 3,181,679.
Kohring Erwin. Two speed power tool transmission. 3,181,400, 5–4–65, Cl. 82—25.
Kolb, Edwin R., to Harris-Intertype Corp. Multiple sheet detector. 3,182,301, 5–4–65, Cl. 340—259.
Kolbe, Hans: *See*—
  Konig, Karl. 3,181,758.
Kolbe, Joachim. Vehicle with curve-bank suspension. 3,181,883, 5–4–65, Cl. 280—112.
Komas, John: *See*—
  Takats, Zoltan, and Komas. 3,181,444.
Konig, Karl, to Hans Kolbe, and Hans Kohler. Machine for cutting brittle synthetic sheet material. 3,181,758, 5–4–65, Cl. 225—103.
Konishi, Kenzo, M. Furukawa, and M. Hirano, to Daito Chemical Industry Co., Ltd. Method of preparing halogenomethylated derivtaive of α,β-(aryloxazolyl-(2))-ethylene-onium compound. 3,182,059, 5–4–65, Cl. 260—240.
Koppers Co., Inc.: *See*—
  Charlton, Francis R., and Trischler. 3,182,032.
Kowal, Harold W.: *See*—
  Cutter, James W., and Kowal. 3,181,650.
Kosinski, Joseph, to H. G. Fischer & Co., Inc. High voltage multi-unit assembly having readily replaceable units. 3,182,237, 5–4–65, Cl. 317—234.
Krajc, Adolf, and A. Pritzkow, to Junkers & Co. G.m.b.H. Gas burner control system. 3,181,592, 5–4–65, Cl. 158—124.
Kramer, Bruce E., and E. J. Fields, to United States of America, Navy. Magnesium oxide coating method. 3,181,964, 5–4–65, Cl. 117—23.
Krayenbuhl, Harold A., E. A. Stirnaman, and C. R. Smola, to Aerojet-General Corp. Mechanical joint for connecting members together. 3,181,897, 5–4–65, Cl. 285—81.
Kreuter, Kenneth G., to Robertshaw Controls Co. Condition responsive pneumatic controller. 3,181,548, 5–4–65, Cl. 137—85.
Kritzer, Richard W., to Peerless of America, Inc. Air conditioning system for subdivided inhabitable enclosures. 3,181,604, 5–4–65, Cl. 165—22.
Krizka, Jerry A., to Pak' tronic Machine Corp. Filling machines. 3,181,575, 5–4–65, Cl. 141—141.
Krong, Walter, and H.-J. Müller, to Farkenfabriken Bayer Aktiengesellschaft. Process for the selective hydrogenation of liquid hydrocarbons of the gasoline boiling range. 3,182 015, 5–4–65, Cl. 208—255.
Krueger, Roland F., to Union Oil Co. of California. Method and apparatus for subterranean heating. 3,181,613, 5–4–65, Cl. 166—38.
Kruger, Michael H., to Smithcraft Corp. Ventilation and lighting. 3,181,450, 5–4–65, Cl. 98—40.
Kubota, Keijiro: *See*—
  Amada, Sanae, Kubota, Kobayashi, Okajima, and Nanbo. 3,182,333.
Kuck, David J., and J. B. Lindecker. Method of forming F-shaped and L-shaped laminations for shell-type core. 3,181,402, 5–4–65, Cl. 83—32.
Kuerston, Richard D., to Phillips Petroleum Co. Helium separation. 3,181,307, 5–4–65, Cl. 62—23.
Kulwin, Seymour J., to Jeffrey-Allan Industries, Inc. Seat belt buckle. 3,181,221, 5–4–65, Cl. 24—230.
Kumferman, Robert P., to Renner Mfg. Co. Openable rear beam. 3,181,717, 5–4–65, Cl. 214—394.
Kumpf, Hermann, to Siemens-Schuckertwerke Aktiengesellschaft. Heterogeneous nuclear reactor. 3,182,001, 5–4–65, Cl. 176—50.
Kunde, Wayne C., and D. R. Tomko, to Curtiss-Wright Corp. On-off indexing type spring clutch. 3,181,669, 5–4–65, Cl. 192—81.
Kunz Max: *See*—
  Lape, Philip B., and Kunz. 3,181,983.
La Barbera, Mannie. Releasable battery clip. 3,181,974, 5–4–65, Cl. 136—173.
Labino, Dominick, to Johns-Manville Corp. Lubricant pad for extruding hot metals. 3,181 324, 5–4–65, Cl. 72—42.
Laboratory for Electronics, Inc.: *See*—
  Daniels, Charles K. 3,182,312.
  Midlock, Bernard J. 3,182,311.
La Combe Edward M., and W. P. Miller, to Union Carbide Corp. Polymerizable furansulfonic acid compounds and polymers thereof. 3,182,042, 5–4–65, Cl. 260—79.3.
Lacy, Lewis S., and J. L. Moon. Humidity compensated thermostat. 3,182 222, 5–4–65, Cl. 317—148.5.
Ladd, Elbert C., to United States Rubber Co. N-[(4-anilinoanilino)methyl]maleimide. 3,182,072, 5–4–65, Cl. 260—326.5.
Laffkas, Harry P.: *See*—
  Knapp, Eugene J., and Laffkas. 3,181,698.
Laing, Nikolaus, to Laing Vortex, Inc. Cooling arrangements for projectors and other apparatus emitting waste heat in operation. 3,181,415, 5–4–65, Cl. 88—24.
Laing Vortex, Inc.: *See*—
  Laing, Nikolaus. 3,181,415.
Laithwaite, John M., L. C. Cole, and W. G. Hutchinson, to United Kingdom Atomic Energy Authority. Liquid cooled nuclear reactor with improved heat exchange arrangement. 3 182 002, 5–4–65, Cl. 176—65.
Landless, Richard R.: *See*—
  Knight, Frank, and Landless. 3,181,652.
Langton, Aubrey T.: *See*—
  Wilks, Gordon N., and Langton. 3,182,019.
Langtry, Alfred L., Jr. Yieldable panel structure. 3,181,660, 5–4–65, Cl. 189—34.
Lanham, William E. Conveyor belts. 3,181,292, 5–4–65, Cl. 59—1.
Lankford, William L., Jr.: *See*—
  Van Winkle, Roy L., Lankford, and Ward. 3,182,332.
Lannan, James E., Jr. Liquid interface sensor. 3,181,557, 5–4–65, Cl. 137—391.
Lannen, Joseph P., to Micropoise Engineering & Sales Co. Universal balance testing machine. 3,181,371, 5–4–65, Cl. 73—483.
Lansing Bagnall Ltd.: *See*—
  Goodacre, Cecil, and Dolphin. 3,181,640.
Lape, Philip B., and M. Kunz, to Sperry Rand Corp. Method for controlling the characteristic of a tunnel diode. 3,181,983, 5–4–65, Cl. 156—17.
Lareau, Norman N., and R. J. Olson, to Eastman Kodak Co. Two-speed camera for flash photography. 3,181,443, 5–4–65, Cl. 95—11.5.
Larsen, Henry A. Valance-supporting bracket. 3,181,829, 5–4–65, Cl. 248—264.
Larsen, Paul V., to Esco Corp. Twisted chain with increased amounts of metal at points of high wear. 3,181,257, 5–4–65, Cl. 37—135.
Larson, Clayton E., to White Metal Rolling & Stamping Corp. Ladder and rung connection. 3,181,651, 5–4–65, Cl. 181—228.
Larson, Melvin E., to Rose Patch & Label Co. Control device for label cutting and folding machine. 3,182,147, 5–4–65, Cl. 200—61.13.
Lasswell, Fred D., Jr. Phonograph. 3,181,870, 5–4–65, Cl. 274—9.
Latzer, John B. Refrigerated trailer. 3,181,311, 5–4–65, Cl. 62—440.
Lausen, Verne H.: *See*—
  Hollingsworth, Henry L., and Lausen. 3,181,326.
Lawrence, John A., to The Bunker-Ramo Corp. Magnetic-recording head switch. 3,182,298, 5–4–65, Cl. 340—174.1.
Laws, Ira G., and C. E. Wilson, to Seismograph Service Corp. Packaging unit for voting machine. 3,181,785, 5–4–65, Cl. 235—51.
Leary, Daniel C., Jr., to Crown Zellerbach Corp. Method and apparatus for making tear strip pouch type containers. 3,181,438, 5–4–65, Cl. 93—8.
Ledex, Inc.: *See*—
  Woolley, Kenneth R., and Quigley. 3,182,233.
Lee, Robert. Ignition distributor for automobiles. 3,181,521, 5–4–65, Cl. 123—146.5.
Lee, Robert A.: *See*—
  Kampmeyer, Roy A., Lee, and Walker. 3,182,125.
Lee, Thomas H., and H. N. Schneider, to General Electric Co. Vacuum-type circuit interrupter. 3,182,156, 5–4–65, Cl. 200—144.
Leece-Neville Co., The: *See*—
  Videtic, Silvan. 3,182,218.
Legg, James B.: *See*—
  Eldred, John W., and Legg. 3,181,457.
Legler, Ernst to Fernseh G.m.b.H. Synchronizing remote and local television signals by shifting one signal until coincidence is obtained. 3,182,128, 5–4–65, Cl. 178—69.5.
Lehacque, Raymond E. T., to Iseli & Co. Machine for smoothing band-saw blades. 3,181,322, 5–4–65, Cl. 72—17.
Lehmann, James T.: *See*—
  Knaup, David R., Lehmann, and Stockdale. 3,181,419.
Lehr, Hanns H.: *See*—
  Goldberg, Moses W., and Lehr. 3,182,081.
Leishman, Le Roy J. Interlocking means for X-ray spot film device cassette carriages. 3,182,196, 5–4–65, Cl. 250—66.
Leitz, Ernst, G.m.b.H.: *See*—
  Schäfer, Wilhelm. 3,181,806.
Leive, Ernest W., to Stearns Electric Corp. Spring disengaged electromagnetic clutch or brake. 3,181,670, 5–4–65, Cl. 192—84.
Lemke, James U., to Bell & Howell Co. Magnetic tape transducer. 3,182,300, 5–4–65, Cl. 340—174.1.
Lenhard, Robert H.: *See*—
  Heller, Milton D., Lenhard, and Bernstein. 3,182,057.
  Heller, Milton D., Lenhard, and Bernstein. 3,182,075.
Lenkey, Andrew, and R. J. Ehret, to Beckman Instrument, Inc. Dispensing head for a fluid fraction collector. 3,181,574, 5–4–65, Cl. 141—130.
Leo, Joseph M.: *See*—
  De Rose, Ralph A., and Leo. 3,181,906.
Leopols, Frans M., to North American Philips Co., Inc. Method of manufacturing semi-conductive devices. 3,181,980, 5–4–65, Cl. 148—177.
Lerou, Roger J., and J. E. Emberson, to Josam Products Ltd. Carrier for wall hung fixtures. 3,181,178, 5–4–65, Cl. 4—252.
Leas, Louis L., to One-In-Hand Tie Co. Pretied necktie. 3,181,175, 5–4–65, Cl. 2—150.
Leufvenius, Karl J., to Development Diversified, Inc. Fishing kite. 3,181,266, 5–4–65, Cl. 43—43.13.
Leupold, Henry G., to United Electric Controls Co. Temperature responsive control having a bell-crank lever and a rigid motion-transmitter pivotally mounted thereon. 3,182,146, 5–4–65, Cl. 200—56.
Lever Brothers Co.: *See*—
  Knightly, Richard T. W. 3 181,196.
Levering, Dewey R., and L. G. Maury, to Hercules Powder Co. Catalytic hydrogenation of nitrosamines to hydrazines. 3,182,086, 5–4–65, Cl. 260—583.
Leveskis, Newton G., to U. S. Peroxygen Corp. Pigmented peroxide compositions. 3,181 991, 5–4–65, Cl. 252—430.
Leveskis, Newton G., to U. S. Peroxygen Corp. Homogeneous pigmented peroxide compositions. 3,182,026, 5–4–65, Cl. 252—430.
Levine, Abe, ½ to G. L. Berkin. Pleating means for fabrics. 3,181,597, 5–4–65 Cl. 160—348.
Lewis, John A., to Bell Telephone Laboratories, Inc. Semi-direct oscillational viscometry. 3,181,348, 5–4–65, Cl. 73—54.
Leyden, Isadore, to Riviera Appliance Corp. Power operated toothbrush. 3 181,189, 5–4–65, Cl. 15—22.
Libby, Henry T., to General Electric Co. Welding method and apparatus. 3,182,178, 5–4–65, Cl. 219—130.

Libit, Sidney M., and A. W. Newby. Dispensing closure of the collapsible well type. 3,181,743, 5-4-65, Cl. 222—528.
Lichtenstein, Joseph: *See*—
    Roe, Ralph C., and Lichtenstein. 3,181,488.
Liebenow, Gilbert I.: *See*—
    Liebenow, Julius G. and G. I. 3,181,860.
Liebenow, Julius G. and G. I. Sheet feeding mechanism. 3,181,860, 5-4-65, Cl. 271—82.
Lieck, Wolfgang: *See*—
    Fuchs, Ekkehard, and Lieck. 3,182,195.
Liggio, Leo L. Pistol grip pipe cutter. 3,181,238, 5-4-65, Cl. 30—94.
Liljendahl, Sven A. J. Production and utilization of vacuum. 3,181,553, 5-4-65, Cl. 137—357.
Lilly, Arnys C., Jr., E. B. Shutes, and T. J. Weismann, to Gulf Research & Development Co. Magnetic field free ion source with adjustable electron gun. 3,182,190, 5-4-65, Cl. 250—41.9.
Lindberg, Gote R., to Atlas Copco Aktiebolag. Rock drilling apparatus. 3,181,624, 5-4-65, Cl. 173—43.
Lindecker, Joseph B.: *See*—
    Kuck, David J., and Lindecker. 3,181,402.
Lindgren, Carl O., to Atlas Copco Aktiebolag. Drill carriages. 3,181,628, 5-4-65, Cl. 173—22.
Lindley, John, to United Kingdom Atomic Energy Authority. Apparatus for concentrating solutions. 3,181,593, 5-4-65, Cl. 159—28.
Lindsay Ripe Olive Co.: *See*—
    Kagley, William H. 3,181,691.
Lindsay, William R. Pipe splitter and spreader. 3,181,302, 5-4-65, Cl. 61—72.7.
Lingenfelter, Daniel J. Reclosable plastic container. 3,181,583, 5-4-65, Cl. 150—8.
Lingley, Theodore R. Carrier for attachment to a motor vehicle. 3,181,755, 5-4-65, Cl. 224—42.03.
Link Division of General Precision, Inc.: *See*—
    Schmid, Hermann. 3,182,240.
    Schmid, Hermann. 3,182,292.
Linkowski, Stanley A., to Motorola, Inc. Electronic test probe. 3,182,257, 5-4-65, Cl. 324—149.
Littman, Alan L., to The Wolf Envelope Co. Envelope and card unit. 3,181,774, 5-4-65, Cl. 229—70.
Lloyd, Allan G., to General Mills, Inc. Electrical power supply regulator system. 3,182,246, 5-4-65, Cl. 323—22.
Lobelle, Marcel J. O., to M. L. Aviation Co. Ltd. Aircraft crash recorder unit. 3,181,809, 5-4-65, Cl. 244—1.
Lodge & Shipley Co., The: *See*—
    Sporck, Claus L. 3,181,329.
Loepfe, A. G., Gebrueder: *See*—
    Stutz, Hansruedi. 3,181,573.
Loftus, Wallace D.: *See*—
    Haberecht, Rolf R., Booe, and Loftus. 3,181,229.
Logic Systems, Inc.: *See*—
    Sterns, Robert B., Mahony, and Meyer. 3,181,403.
Lohbauer, Kenneth R., J. D. Myers, and F. H. Winters, to Caterpillar Tractor Co. System for automatically neutralising a vehicle transmission upon application of brakes. 3,181,667, 5-4-65, Cl. 192—4.
Loncrini, Donald F., to General Electric Co. Trimellitic anhydride derivatives. 3,182,073, 5-4-65, Cl. 260—346.3.
Loncrini, Donald F., to General Electric Co. Cupric and zinc-bis (trimellitate) dianhydrides. 3,182,074, 5-4-65, Cl. 260—346.3.
Long, Claude G.: *See*—
    Burnside, Charles H., and Long. 3,181,982.
Longert, Christian L. Device for the mechanical processing of standing trees. 3,181,578, 5-4-65, Cl. 144—2.
Longi, Paolo: *See*—
    Natta, Giulio, Mazzanti, Longi, Dall'Asta, and Bernardini. 3,182,045.
Lotspeich, Joseph A.: *See*—
    Haverstick, Merral P., and Lotspeich. 3,181,678.
Lotspih, Anthony J.: *See*—
    Lung, Kenneth R., Lotspih, and Schieve. 3,181,801.
    Lung, Kenneth R., Lotspih, and Schieve. 3,181,802.
Loucks, Russell, to Raytheon Co. Power supply sensing means. 3,182,247, 5-4-65, Cl. 323—22.
Lovett, Daniel J.: *See*—
    Amos, Charles A., and Lovett. 3,181,967
Lowery, Alexander B., to Greenlife Products Co. Portable cultivating implement. 3,181,620, 5-4-65, Cl. 172—375.
Lowry, Ronald E. Collapsible ornamental box. 3,181,764, 5-4-65, Cl. 229—1.5.
Loxhams Engineering Works Ltd.: *See*—
    Knight, Frank, and Landless. 3,181,652.
Lubrizol Corp., The: *See*—
    Asseff, Peter A. 3,182,021.
Lucius, Donald B., and V. R. Carpenter, to The Unipress Co., Inc. Folding table. 3,181,747, 5-4-65, Cl. 228—37.
Lund, Robert, to Pettibone Mulliken Corp. Shut-off plug for a blast tip. 3,181,591, 5-4-65 Cl. 158—104.
Lung, Kenneth R., A. J. Lotspih, and E. H. Schieve. Mounting and splash guard structure for waste grinder. 3,181,801, 5-4-65, Cl. 241—100.5.
Lung, Kenneth R., A. J. Lotspih, and E. H. Schieve, to The Tait Mfg. Co. Waste grinder. 3,181,802, 5-4-65, Cl. 241—257.
Lupfer, Dale E., to Phillips Petroleum Co. Fractionator reboiler heat and bottoms product control system. 3,182,005, 5-4-65, Cl. 202—40.
M.L. Aviation Co. Ltd.: *See*—
    Lobelle, Marcel J. O. 3,181,809.
MacCracken, Calvin D., and G. N. Miles, to Jet-Heet, Inc. Integral hot air space heating and water heating system. 3,181,793, 5-4-65, Cl. 237—2.
Machine Tool Automation, Inc.: *See*—
    Wolff, Gunther. 3,182,305.
Macy, R. H., & Co., Inc.: *See*—
    Chaucer, Daniel. 3,181,787.
Madwed, Albert, to Automatic Casting Corp. Die casting machine. 3,181,212, 5-4-65, Cl. 22—70.
Maertzig, Joseph N., Jr. Mounting construction for chalk boards, corkboards and like panels. 3,181,662, 5-4-65, Cl. 189—88.
Maffezzoni, Umberto: *See*—
    Marullo, Gerlando, Maffezzoni, and Susa. 3,182,051.
Magnavox Electronics Co. Ltd., The: *See*—
    Goulding, Kenneth C. 3,181,871.
Magnuson, Roland A., to United States of America, Army. Hydraulic motor control system. 3,181,427, 5-4-65, Cl. 91—202.
Mahlman, George W., to Hughes Aircraft Co. Semi-conductor infrared radiation detecting and converting apparatus. 3,182,198, 5-4-65, Cl. 250—211.
Mahony, Donald J.: *See*—
    Sterns, Robert B., Mahony, and Meyer. 3,181,403.
Maksim, John, Jr. Circular airfoil aerodynamic lift mechanism. 3,181,811, 5-4-65, Cl. 244—12.
Mallory, P. R., & Co., Inc.: *See*—
    Haberecht, Rolf R., Booe, and Loftus. 3,181,229.
Malm, Anders E., and R. B. Thorselius, to Kanthal, Aktiebolaget. Crucible furnace. 3,181,845, 5-4-65, Cl. 263—12.
Mamiya, Shigeo, and T. Odashima, to Saginomiya Seisakusho Co., Ltd. Automatic pressure switch for automatically controlling the compressor used in various refrigerators. 3,182,148, 5-4-65, Cl. 200—81.
Mandel, Marvin, to Topps Products Corp. Display stand and article holding rack therefor. 3,181,706, 5-4-65, Cl. 211—163.
Mandorf, Victor, Jr., to Union Carbide Corp. Methods for metal vaporization. 3,181,968, 5-4-65, Cl. 117—107.
Maninger, Ralph C., to General Precision, Inc. Thermal noise investigation. 3,181,365, 5-4-65, Cl. 73—362.
Manlove, Maxwell B. Wheel alignment apparatus. 3,181,248, 5-4-65, Cl. 33—203.18.
Mannesmann-Meer Aktiengesellschaft: *See*—
    Vom Dorp, Walter, and Gerhardus. 3,181,332.
Maples, Richard E., to Victor Comptometer Corp. Punched tape driving mechanism. 3,181,759, 5-4-65, Cl. 226—51.
Maratuech, Paul, and R. Bernada, to Inventions Finance Corp. Electronic systems for electrifying enclosures. 3,182,211, 5-4-65, Cl. 307—132.
Marcus, Milton, R. D. Porter, and D. R. Pearl, to United Aircraft Corp. Air inlet control. 3,181,817, 5-4-65, Cl. 244—53.
Markle, Jacob E., and R. L. Whitcomb, Jr. Combination sales register and game. 3,181,868, 5-4-65, Cl. 273—139.
Marland, Joseph A. One-way clutch, bearing and cooling means therefor. 3,181,674, 5-4-65, Cl. 192—113.
Marler, Arnold H. Combined handle and pouring spout. 3,181,733, 5-4-65, Cl. 222—83.
Marmac Co., The: *See*—
    McCreery, Robert B. 3,181,436.
Marotta Valve Corp.: *See*—
    Worden, Donald A., and Smolen. 3,181,560.
Marra, Daniel A., Sr. Scarfing torch tip. 3,181,588, 5-4-65, Cl. 158—27.4.
Marshall, Arthur N. Method of speel indication. 3,182,331, 5-4-65, Cl. 346—1.
Marshall, Charles X., ½ to G. F. Sager. Mounting assembly for a toilet flush ball. 3,181,177, 5-4-65, Cl. 4—57.
Marshall, Douglas W., and S. J. Roschuk, to Norton Co. Fused alumina-zirconia abrasives. 3,181,939, 5-4-65, Cl. 51—309.
Martelli, Francesco: *See*—
    Martelli, Guido, Nerio, and Francesco. 3,181,202.
Martelli, Guido, N. and F., to Compagnia Italiana Nest-Pack S.p.A. Rotary machine for the combined automatic vacuum- and pressure-forming of continuous thermoplastic bands. 3,181,202, 5-4-65, Cl. 18—19.
Martelli, Nerio: *See*—
    Martelli, Guido, N. and F. 3,181,202.
Martin-Marietta Corp.: *See*—
    Wallis, Lyle, and Mathis. 3,181,235.
Martin, Thomas L., Jr.: *See*—
    Fish, Walter Y., Conlee, and Martin. 3,182,194.
Martorelli, Arthur: *See*—
    Pellerino, Ernest, and Martorelli. 3,181,576.
Marullo, Gerlando, U. Maffezzoni, and E. Susa, to Montecatini Societá Generale per L'Industria Mineraria e Chimicas. Polymerisation of 1,3-butadiene to crystalline polybutadienes having a syndiotactic 1,2-structure. 3,182,051, 5-4-65, Cl. 260—94.3.
Marx, Robert W.: *See*—
    Ellner, Sidney, and Marx. 3,182,198.
Maryland Cup Corp.: *See*—
    West, John B., and Wills. 3,181,728.
Maschinenfabrik Vits G.m.b.H.: *See*—
    Vits Hilmar. 3,181,250.
Mason, James L., to General Motors Corp. Fastening means. 3,181,663, 5-4-65, Cl. 189—88.
Mastrangelo, Sebastian V. R., to E. I. du Pont de Nemours and Co. Enhancing the aroma of foods. 3,181,952, 5-4-65, Cl. 99—71.
Mathis, James O.: *See*—
    Wallis, Lyle, and Mathis. 3,181,235.
Matthews, Hugh B., to Sperry Rand Corp. Power transmission. 3,181,476, 5-4-65, Cl. 103—162.
Matthews, Hugh B., to Sperry Rand Corp. Power transmission. 3,181,477, 5-4-65, Cl. 103—162.
Mattson, Richard E., and B. G. Winstrom, to A. O. Smith Corp. Extrusion apparatus. 3,181,334, 5-4-65, Cl. 72—255.
Maury, Lucien G.: *See*—
    Levering, Dewey R., and Maury. 3,182,086.
Mayes, Fred M., to Sun Oil Co. Surface electrical prospecting apparatus utilizing current focusing electrode means. 3,182,250, 5-4-65, Cl. 324—1.

Mayne, Robert A., deceased, by R. D. Mayne, executrix. Blower wheel. 3,181,778, 5-4-65, Cl. 230—134.
Mayne, Ruth D.: *See*—
    Mayne, Robert A. 3,181,778.
Maytag Co., The: *See*—
    Smith, Thomas R. 3,181,790.
Mazzanti, Giorgio: *See*—
    Natta, Giulio, Mazzanti, Longi, Dall'Asta, and Bernardini. 3,182,045.
McAfee, Peter: *See*—
    Beck, Robert M., Fuller, McAfee, and Ruhman. 3,182,304.
McAndrew, Joseph B., A. G. Metcalfe, and C. R. Simcoe, to IIT Research Institute. Columbium base alloys. 3,181,946, 5-4-65, Cl. 75—174.
McAvoy, Thomas, and E. F. Dillon, to General Electric Co. Methods of making electric heating units of the sheathed resistance conductor type. 3,181,230, 5-4-65, Cl. 29—155.63.
McBean, David H. Filing apparatus. 3,181,922, 5-4-65, Cl. 312—234.1.
McBrien, Edward F., to The Ohio Crankshaft Co. Resistance heating apparatus. 3,182,167, 5-4-65, Cl. 219—10.61.
McCreery, Robert B., to The Marmac Co. Differential hydraulic cylinder mechanism. 3,181,436, 5-4-65, Cl. 92—117.
McCurdy, Richard M.: *See*—
    Watkins, Nathaniel L., Jr., and McCurdy. 3,182,040.
    Watkins, Nathaniel L., Jr., and McCurdy. 3,182,041.
McDaniel, Lloyd E., C. P. Schaffner, and E. G. Bailey, to Warner-Lambert Pharmaceutical Co. Production of fungimycin. 3,182,004, 5-4-65, Cl. 195—80.
McEvoy Co.: *See*—
    Jackson, John G., Jr. 3,181,552.
McFall, Loring W.: *See*—
    Perkins, Glenn H., and McFall. 3,181,460.
McFarland, Arthur E.: *See*—
    McFarland, Artie F. and A. E. 3,182,191.
McFarland, Artie F. and A. E., to Puretest Water Purifier Co. Water purifying apparatus with an automatically actuated wiper for the ultra-violet source. 3,182,191, 5-4-65, Cl. 250—43.
McGraw-Edison Co.: *See*—
    Barengoltz, Bernard A. 3,181,342.
    Gorman, Edmond B. 3,182,145.
    Phillips, Davis M. 3,182,116.
    Postal, Robert H. 3,182,133.
McHenry, Raymond R., to Ford Motor Co. Closed hydraulic leveling system for motor vehicle. 3,181,877, 5-4-65, Cl. 280—6.
McKann, Henry S., to General Products Co., Inc. Radiant heaters. 3,181,525, 5-4-65, Cl. 126—94.
McKenney, Donald J.: *See*—
    Nakamura, Masao, McKenney, and Butzin. 3,181,352.
McKenney, George F. Convertible oil feed plug and visible oil level and reservoir kit. 3,181,362, 5-4-65, Cl. 73—303.
McKnight, William H., Jr., to Corning Glass Works. Assembly for connecting pipe to an apertured tank. 3,181,899, 5-4-65, Cl. 285—161.
McMahan, Herschel E., and A. H. Stoughton, to General Motors Corp. Gear checking apparatus and method. 3,181,247, 5-4-65, Cl. 33—179.5.
McNamee, Bernard F., to Dressen-Barnes Electronics Corp. Voltage building transformer. 3,182,248, 5-4-65, Cl. 323—47.
McNaney, Joseph T. Crossed-grid electroluminescent phosphor illumination control element. 3,182,199, 5-4-65, Cl. 250—213.
McNaney, Joseph T. Light input crossed-grid matrix control circuitry. 3,182,200, 5-4-65, Cl. 250—227.
McNaney, Joseph T., to General Dynamics Corp. Data storage system with light beam write/readout. 3,182,223, 5-4-65, Cl. 315—10.
Mechanical Products, Inc.: *See*—
    Jenner, Ray R. 3,182,152.
Mechoulam, Raphael. Novel steroid compounds and process for preparing same. 3,182,069, 5-4-65, Cl. 260—308.
Medisch, Joseph C., and C. B. Wright, to General Motors Corp. Variable camber propeller blade. 3,181,615, 5-4-65, Cl. 170—160.1.
Mehl, Josef: *See*—
    Müllers, Karl A., and Mehl. 3,181,804.
Mehlman, Marvin: *See*—
    Hagney, Edward D., and Mehlman. 3,181,206.
Mejlso, George M., to United-Carr Inc. Fasteners. 3,181,411, 5-4-65, Cl. 85—5.
Mekelburg, Earl F., to Square D Co. Lockout device for push button switches having a migratory pivot means. 3,182,143, 5-4-65, Cl. 200—42.
Melanson, Everett, and W. S. Bachman, to United-Carr Inc. Snap fastener attaching unit. 3,181,989, 5-4-65, Cl. 156—566.
Melcher, Conway H.: *See*—
    Rumsey, Clayton S., and Melcher. 3,181,479.
Meletti, Adolph, to Vacuum Cleaner Corp. of America. Electric cord reel. 3,182,139, 5-4-65, Cl. 191—12.4.
Mellen, William F. Trailing implement with swing joint. 3,181,890, 5-4-65, Cl. 280—447.
Melpar, Inc.: *See*—
    Jebens, Robert W. 3,182,210.
Melpar Steel Products Corp.: *See*—
    Fallarino, James V., and Buksbaum. 3,181,904.
Menacci, Samuel A., to International Machinery Corp. S.A. Apparatus for heat treating containers. 3,181,692, 5-4-65, Cl. 198—211.
Mertzweiller, Joseph K., and R. N. Watts, deceased (by B. S. Watts, legal representative), to Esso Research and Engineering Co. Oxo process for producing alcohols from olefins. 3,182,090 5-4-65, Cl. 260—638.
Messwarb, Gunter, L. Orthner, R. Reuber, and M. Grossmann, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Polymerization of unsaturated polymerizable compounds. 3,182,044, 5-4-65, Cl. 260—87.1.
Metcalfe, Arthur G.: *See*—
    McAndrew, Joseph B., Metcalfe, and Simcoe. 3,181,946.
Metro-Goldwyn-Mayer Inc.: *See*—
    Joseph, William. 3,181,200.
Mettoy Co. Ltd., The: *See*—
    Withams, Brian F. 3,181,271.
Meyer, Herman G., Jr.: *See*—
    Sterns, Robert B., Mahony, and Meyer. 3,181,403.
Meyer, William E., to North American Aviation, Inc. Extensible line having constant electrical length. 3,182,273, 5-4-65, Cl. 333—98.
Meyerer, Paul, to Siemens & Halske Aktiengesellschaft. Permanent magnet system for focusing an electron beam in a travelling wave tube. 3,182,234, 5-4-65, Cl. 317—200.
Mezerenyi, Ilona C. Fastener with nose for garment and belt. 3,181,220, 5-4-65, Cl. 24—225.
Michalowski, Joseph: *See*—
    Zajac, Thaddeus, Osowski, and Michalowski. 3,181,243.
Michalski, Raymond J., J. R. Nelson, and L. L. Wolfson, to Nalco Chemical Co. Antimicrobial lower alkyl polyhalogenated esters of acids of 1-6 carbons. 3,181,992, 5-4-65, Cl. 167—38.6.
Michelotti, Francis W., to Interchemical Corp. Heat-sensitive copying sheet and method of making. 3,181,965, 5-4-65, Cl. 117—36.7.
Micropoise Engineering & Sales Co.: *See*—
    Lannen, Joseph P. 3,181,371.
Microwave Development Laboratories, Inc.: *See*—
    Borghetti, Joseph C. 3,182,272.
Middleton, Robert G. Measuring means for use in playing football. 3,181,241, 5-4-65, Cl. 33—46.
Midlock, Bernard J., to Laboratory For Electronics, Inc. Low frequency responsive vehicle detector. 3,182,311, 5-4-65, Cl. 343—7.
Midwest Feed & Pelleting Co., Inc.: *See*—
    Heth, Arthur M., and Bruun. 3,181,482.
Miles, George N.: *See*—
    MacCracken, Calvin D., and Miles. 3,181,793.
Milinowski, Arthur S., to Diapulse Mfg. Corp. of America. Athermapeutic apparatus. 3,181,535, 5-4-65, Cl. 128—422.
Millar, John J., to Scott & Williams, Inc. Knitting methods and apparatus and products thereof. 3,181,314, 5-4-65, Cl. 66—42.
Millard, Phillip V., to Automotive Rubber Co., Inc. Insulating grommets. 3,182,119, 5-4-65, Cl. 174—151.
Miller, John, to The F. & M. Schaefer Brewing Co. Transfer mechanism for conveyor key palletizing device. 3,181,684, 5-4-65, Cl. 198—24.
Miller, John M. Electronic cotton chopper. 3,181,618, 5-4-65, Cl. 172—6.
Miller, Kenneth D., Jr., to United States of America, Navy. Amalgam regenerator for primary battery system. 3,181,848, 5-4-65, Cl. 266—34.
Miller, Stewart E., to Bell Telephone Laboratories, Inc. Esaki diode PCM regenerator. 3,182,203, 5-4-65, Cl. 307—88.5.
Miller, Walter P.: *See*—
    La Combe, Edward M., and Miller. 3,182,042.
Miller, William R., W. J. Forward, and N. E. Bleck, to Farrel-Birmingham Co., Inc. Counterbalancing mechanism. 3,181,424, 5-4-65, Cl. 90—15.
Millmaster Onyx Corp.: *See*—
    Wakeman, Reginald L. 3,181,969.
Mills, Ivor W., to Sun Oil Co. Metal oxide polymerization catalysts. 3,182,048, 5-4-65, Cl. 260—93.7.
Milonas, Timothy S., and H. Woodsford; said Woodsford assor. to said Milonas. Fluid meter device. 3,181,729, 5-4-65, Cl. 222—36.
Miner, W. H., Inc.: *See*—
    Olander, Roland J. 3,181,903.
Minnesota and Ontario Paper Co.: *See*—
    Paulson, Morris G., and Thureen. 3,181,500.
Minnesota Mining and Mfg. Co.: *See*—
    Halberg, Robert A. 3,181,416.
    Watkins, Nathaniel L., Jr., and McCurdy. 3,182,040.
    Watkins, Nathaniel L., Jr., and McCurdy. 3,182,041.
Miskel, John J., and G. A. Bailey, to White Laboratories, Inc. Pressurized dispenser. 3,181,735, 5-4-65, Cl. 222—95.
Mitchell, Chester L., to Amerco Inc. Shock absorbing guard. 3,181,849, 5-4-65, Cl. 267—1.
Mitchell, Harry W., and J. E. Freeman, to Bell Aerospace. Instrument landing system. 3,182,327, 5-4-65, Cl. 343—108.
Mitsuno, Masaki: *See*—
    Inoue, Yukio, and Mitsuno. 3 181,954.
Miway Mikrowellen Aktien Gesellschaft: *See*—
    Bohm, Helmut, and Duras. 3,182,166.
Moats, Earl W., to Sperry Rand Corp. Support stand. 3,181,891, 5-4-65, Cl. 280—475.
Moberly, Charles W., to Phillips Petroleum Co. Production of solid olefin polymers. 3,182,049, 5-4-65, Cl. 260—93.7.
Mock, Frank C., to The Bendix Corp. Fuel injector system with smog inhibiting means. 3,181,520, 5-4-65, Cl. 123—139.
Moffat, Robert J.: *See*—
    Bubniak, William C., Moffat, and Mondt. 3,181,603.
Mogayzel, William W., to Draper Corp. Loom shuttle. 3,181,572, 5-4-65, Cl. 139—207.
Mohler, Donald, J. H. Westbrook, and A. L. Jenny, to General Electric Co. Electrical capacitor and titanium-containing electrode material therefor. 3,182,235, 5-4-65, Cl. 317—230.
Monarch Road Machinery Co.: *See*—
    Jackoboice, Edward W. 3,181,825.
Mondt, James R.: *See*—
    Bubniak, William C., Moffat, and Mondt. 3,181,603.
Monroe, Meade, to Newspaper Enterprise Assn. Newspaper delivery tube. 3,181,782, 5-4-65, Cl. 232—17.

- Monsanto Co.: *See—*
  - Bonzagni, Francis A., and Cohen. 3,181,765.
  - Van Ness, John H., and Stephens. 3,181,953.
- Monsanto Research Corp.: *See—*
  - Dever, James L. 3,182,077.
  - Smith, John O. 3,181,972.
- Montecatini Societa Generale per l'Industria Mineraria e Chimica: *See—*
  - Bonvicini, Alberto, and Caldo. 3,182,105.
  - Marullo, Gerlando, Maffezzoni, and Susa. 3,182,051.
  - Natta, Giulio, Mazzanti, Longi, Dall'Asta, and Bernardini. 3,182,045.
- Montgomery, William A., to United States Pipe and Foundry Co. Centrifugal casting apparatus. 3,181,210, 5–4–6, Cl. 22—65.
- Moon, Jimmie L.: *See—*
  - Lacy, Lewis S., and Moon. 3,182,222.
- Moore, Fred W., and R. C. Pressley, Jr., to General Electric Co. Safety and control mechanism for power-operated structure. 3,181,921, 5–4–65, Cl. 312—223.
- Moore, George W., Inc.: *See—*
  - Moore, Harrington, and Engel. 3,181,185.
- Moore, Harrington, and A. G. Engel, to George W. Moore, Inc. Method of making frictional locking setscrews. 3,181,185, 5–4–65, Cl. 10—10.
- Moore Products Co.: *See—*
  - Bennett, James S. 3,181,547.
- Moore, Raymond J., to Northrop Corp. Restraint device. 3,181,180, 5–4–65, Cl. 5—336.
- Moran, Edward F. Portable power operated barbecue apparatus. 3,181,453, 5–4–65, Cl. 99—349.
- Moran, Stephen F., and W. E. Ballard, to United States of America, Navy. Large-power dissipating transistor mounting. 3,182,115, 5–4–65, Cl. 174—15.
- Moreau, Norman, and J. A. Seifert, to Corning Glass Works. Glass tube forming. 3,181,941, 5–4–65, Cl. 65—187.
- Moret, Michel, to Aesup, Etablissements. Electric hand appliances, particularly toothbrushes. 3,181,188, 5–4–65, Cl. 15—22.
- Moretta, Marcella S.: *See—*
  - Tenconi, Riccardo. 3,181,940.
- Morgan Construction Co.: *See—*
  - Kinnicutt, Roger, Jr., and Stauble. 3,181,709.
- Morgan, William C., and M. A. Picciano, to General Precision, Inc. Explosive device containing charge of elongated crystals and an exploding bridgewire. 3,181,463, 5–4–65, Cl. 102—28.
- Morrison, Charles D., and D. G. Guessford. Tire removal and assembly device. 3,181,587, 5–4–65, Cl. 157—1.17.
- Morrow, Robert S.: *See—*
  - Thomas, Glen H., and Morrow. 3,181,350.
- Mortashed, Merle H., to The Harriman Mfg. Co. Flexible disc harrow. 3,181,621, 5–4–65, Cl. 172—455.
- Motorola, Inc.: *See—*
  - Linkowski, Stanley A. 3,182,257.
  - Zeiss, Ernest R. 3,182,130.
- Moyle, Clarence L., and D. M. Chern, to The Dow Chemical Co. Benzimidazole compounds. 3,182,070, 5–4–65, Cl. 260—309.2.
- Mueller, Klaus P., to Robertshaw Controls Co. Pressure actuated control device. 3,181,425, 5–4–65, Cl. 91—25.
- Muessel, Dan C., to American Metal Climax, Inc. Window structure. 3,181,204, 5–4–65, Cl. 20—53.
- Mullaney, Norbert F., and C. P. Carlton, to A. O. Smith Corp. Stamped tread plate. 3,181,440, 5–4–65, Cl. 94—5.
- Mullen, Clarence R.: *See—*
  - Bauer, Donald R., Cassidy, Hance, and Mullen. 3,181,279.
- Müller, Hans-Joachim: *See—*
  - Krönig, Walter, and Müller. 3,182,015.
- Müllers, Karl A., and J. Mehl; said J. Mehl assor. to said K. A. Müllers. Spool-holder for winding machines. 3,181,804, 5–4–65, Cl. 242—18.
- Munch, Norbert: *See—*
  - Scherer, Otto, Hahn, and Munch. 3,182,091.
- Munson, John C.: *See—*
  - Ellingson, Herman E., and Munson. 3,182,283.
- Murphy, Frank E., Jr., to Corning Glass Works. Stable fluid amplifiers. 3,181,545, 5–4–65, Cl. 137—81.5.
- Murphy, John W.: *See—*
  - Gambill, Charles C., and Murphy. 3,182,228.
- Murphy, Nelson L.: *See—*
  - Frazier, John E., Murphy, Ella, and McCreary. 3,182,113.
- Musgrave, Albert W.: *See—*
  - Ehlert, Gilbert W., Musgrave, Nash, and Nugent. 3,181,643.
- Muskegon Piston Ring Co.: *See—*
  - Shepard, Ralph M. 3,181,875.
- Myer, Robert E., to Bell Telephone Laboratories Inc. Linear detector circuit. 3,182,267, 5–4–65, Cl. 329—205.
- Myers, Jimmy D.: *See—*
  - Lohbauer, Kenneth R., Myers, and Winters. 3,181,667.
- Myers, John W., to Phillips Petroleum Co. Activation of isomerization and hydrocracking catalysts. 3,182,013, 5–4–65, Cl. 208—112.
- Myles, Michael J.: *See—*
  - Clark, Kenneth G., Myles, and Eichin. 3,181,956.
- Nagy, David, and M. Tarnowski. Article retaining band for flush tanks. 3,181,176, 5–4–65, Cl. 4—1.
- Nakamura, Masao, D. J. McKenney, and A. L. Butsin, to The Dow Chemical Co. Machinability tester for foam plastic. 3,181,352, 5–4–65, Cl. 73—101.
- Nalband, Eugene R.: *See—*
  - Nalband, Thomas E. and E. R. 3,182,009.
- Nalband, Thomas E. and E. R. Electroplating apparatus having hydraulic heavy roll supporting rack. 3,182,009, 5–4–65, Cl. 204—212.
- Nalco Chemical Co.: *See—*
  - Michalski, Raymond J., Nelson, and Wolfson. 3,181,992.
- Nall, Hilary H.: *See—*
  - Gulick, Joseph F., Jr., Jacot, Knapp, and Nall. 3,181,813.
- Nanbo, Shozo: *See—*
  - Amada, Sanae, Kubota, Kobayashi, Okajima, and Nanbo. 3,182,333.
- Nance, Luther L. Nipple removing tool. 3,181,396, 5–4–65, Cl. 81—72.
- Nankervis, Harry B., to Stephenson Corp. Radar antennae. 3,182,322, 5–4–65, Cl. 343—8.
- Nankervis, Harry B., to Stephenson Corp. Hold meters. 3,181,498, 5–4–65, Cl. 116—129.
- Nash, Paul E.: *See—*
  - Ehlert, Gilbert W., Musgrave, Nash, and Nugent. 3,181,643.
- Nassimbene, Ernie G., to International Business Machines Corp. Utensil for writing and simultaneously recognizing the written symbols. 3,182,291, 5–4–65, Cl. 340—146.3.
- National Acme Co., The: *See—*
  - Jenkins, Walter W. 3,181,399.
- National Aeronautics and Space Administration: *See—*
  - Webb, James E. 3,181,821.
- National Research Corp.: *See—*
  - Hablanian, Marsbed, and Roehrig. 3,181,776.
  - Reed, Malcolm E. 3,181,878.
  - Sibley, Clifton B. 3,182,175.
- National Research Council: *See—*
  - Brown, William C. 3,182,318.
  - Brown, William C., Clemence, and Robinson. 3,182,319.
  - Clemence, Charles R., and Brown. 3,182,313.
  - Clemence, Charles R., Brown, and Robinson. 3,182,317.
  - Clemence, Charles R., Robinson, and Brown. 3,182,316.
  - Hendry, Archibald, Brown, and Robinson. 3,182,309.
- National Research Development Corp.: *See—*
  - Gabor, Dennis. 3,182,220.
- National Tank Co.: *See—*
  - Parks, Asbury S. 3,181,286.
- Natta, Giulio, G. Mazzanti, P. Longi, G. Dall'Asta, and F. Bernardini, to Montecatini, Societa Generale per L' Industria Mineraria e Chimica. Vinylpyridine polymers having a sterically regular structure and process for obtaining same. 3,182,045, 5–4–65, Cl. 260—88.3.
- Nawman, Rollie B., to Benner-Nawman, Inc. Folding tray construction. 3,181,705, 5–4–65, Cl. 211—132.
- Naylor, Floyd E., to Phillips Petroleum Co. Process for producing cis-1,4 polybutadiene of reduced cold-flow. 3,182,052, 5–4–65, Cl. 260—94.3.
- Neldas, Torsten: *See—*
  - Persson, Erik O. 3,181,434.
- Nellermoe, Donald A. Indoor baseball bag. 3,181,863, 5–4–65, Cl. 273—25.
- Nelson, Bruce K., and M. B. Haslam, to Avco Corp. Signal synthesizing system. 3,182,324, 5–4–65, Cl. 343—100.
- Nelson, Forrest A.: *See—*
  - Gang, Robert E., and Nelson. 3,182,231.
- Nelson, George R., to Dennison Mfg. Co. Polyurethane stabilized with titanium dioxide and a dithiocarbamate. 3,182,037, 5–4–65, Cl. 260—45.75.
- Nelson, John R.: *See—*
  - Michalski, Raymond J., Nelson, and Wolfson. 3,181,992.
- Nelson, L. R., Mfg. Co., Inc.: *See—*
  - Smeal, Donald L. 3,181,478.
- Nepera Chemical Co., Inc.: *See—*
  - Wilbert, Godfrey. 3,182,089.
- Neterlandse Centrale Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek: *See—*
  - Van Wijk, Hendrik F. 3,182,098.
- Newbold, Thomas, to United-Carr Inc. Hanger device and installation. 3 181,830, 5–4–65, Cl. 248—318.
- Newby, Arthur W.: *See—*
  - Libit, Sidney M., and Newby. 3,181,743.
- Newcomb, Harley M.: *See—*
  - Rautbord, Clayton L., Newcomb, Sugarman, Eisner, and Kent. 3,181,420.
- Newhall, Edmunde E., to Bell Telephone Laboratories, Inc. Magnetic control circuit. 3,182,297, 5–4–65, Cl. 340—174.
- Newhouse, Vernon L.: *See—*
  - Fruin, Robert E., and Newhouse. 3,182,209.
  - Fruin, Robert E., and Newhouse. 3,182,293.
  - Bremer, John W., and Newhouse. 3,182,294.
- Newhouse, Vernon L., and H. H. Edwards, to General Electric Co. Asymmetric cryogenic device. 3,182,275, 5–4–65, Cl. 338—32.
- Newman, Douglas A., to Columbia Ribbon and Carbon Mfg. Co., Inc. Photohectographic duplicating. 3,181,462, 5–4–65, Cl. 101—149.4.
- Newman, Robert I.: *See—*
  - Brooks, Maxwell J., and Newman. 3,181,944.
- Newman, Stanley H. Cigarette lighter. 3,181,317, 5–4–65, Cl. 67—7.1.
- Newspaper Enterprise Association: *See—*
  - Monroe, Meade. 3,181,782.
- Nicholas, David W., and J. T. Everest, to Hovercraft Development Ltd. Vehicles for traveling over a surface. 3,181,639, 5–4–65, Cl. 180—7.
- Nielsen, Irvin P., ½ to Cameron and Jones, Inc. Counter-rotating earth drill. 3,181,631, 5–4–65, Cl. 175—96.
- Nielsen, Jens G. M. Frame for upholstery in pieces of sitting furniture. 3,181,912, 5–4–65, Cl. 297—445.
- Nilssen, Ole K., to Ford Motor Co. Continuous wave radar system. 3,182,323, 5–4–65, Cl. 343—9.
- Nimke, Helmut E., and A. M. Wagner, to Impcomation, Inc. Visual and audio presentation system. 3,181,421, 5–4–65, Cl. 88—28.

- Nippon Telegraph and Telephone Public Corp.: *See—*
  - Amada, Sanae, Kubota, Kobayashi, Okajima, and Nanbo. 3,182,333.
- Nixon, Phillip. Gliding missile toy. 3,181,269, 5–4–65, Cl. 46—79.
- Noakes, Thomas E., to American Radiator & Standard Sanitary Corp. Pressure-operated control having means for adjusting the actuating pressures of a plurality of control switches. 3,182,149, 5–4–65, Cl. 200—81.5.
- Nobles, Warren H., F. C. Houser, and D. J. Burgess. Floor cleaning brushes. 3,181,193, 5–4–65, Cl. 15—114.
- Norbute Corp.: *See—*
  - Keppler Frank W. 3,181,484.
- Noren, Anders B., P. A. H. H. Falstrom, and J. C. Burstrom, to Boliden Gruvaktiebolag. Method of comminuting materials by autogenous grinding in a continuous grinding mill. 3,181,800, 5–4–65, Cl. 241—24.
- Norman, Robert J., to The Powers Regulator Co. Temperature sensing device. 3,181,788, 5–4–65, Cl. 236—1.
- Norteman, Samuel L.: *See—*
  - Cook, Nelson E., and Norteman. 3,181,963.
- North, Irving W.: *See—*
  - Kiekhaefer, Elmer C., and North. 3,181,494.
- North American Aviation, Inc.: *See—*
  - Dorsch, Daniel W., Woodward, and Rovelsky. 3,182,253.
  - Meyer, William E. 3,182,273.
- North American Philips Co., Inc.: *See—*
  - Benny, Alan H. B., and Trainor. 3,181,981.
  - Böke, Klaus. 3,181,304.
  - De Proost, Roger M. A., Klaassen, and Yperman. 3,182,118.
  - Leopols, Frans M. 3,181,980.
  - Rabenau, Albrecht K. H. T. 3,181,303.
  - Roovers, Wilhelmus A. 3,182,117.
  - Siezen, Gerrit J. 3,182,135.
  - Speyer, Nico B. 3,181,226.
  - Van der Helm, Johan P. 3,182,165.
- North American Refractories Co.: *See—*
  - Darke, Andrew J. 3,181,487.
- Northrop Corp.: *See—*
  - Clark, John R. 3,181,908.
  - Dixson, Bruce E. 3,181,812.
  - Moore, Raymond J. 3,181,180.
- Norton Co.: *See—*
  - Marshall, Douglas W., and Roschuk. 3,181,939.
- Nuclear Data, Inc.: *See—*
  - Schumann, Robert W. 3,182,181.
- Nugent, Roderick M.: *See—*
  - Ehlert, Gilbert W., Musgrave, Nash, and Nugent. 3,181,643.
- Nurse, Michael J. D., to Pye Ltd. Multi-frequency frame scan generator with bootstrap amplifier to provide constant amplitude output. 3,182,124, 5–4–65, Cl. 178—7.3.
- O'Brien, Edward J.: *See—*
  - Wahlin, Fred W., O'Brien, and Williams. 3,181,798.
- O'Brien, Samuel J.: *See—*
  - Pierce, Elliot S., Slowata, and O'Brien. 3,181,966.
- Odashima, Takeshi: *See—*
  - Mamiya, Shigeo, and Odashima. 3,182,148.
- Odell, Norman R.: *See—*
  - Siegart, William R., Odell, and Kluge. 3,182,022.
- O'Dell, Richard C., and L. A. Crum, to Pittsburgh Plate Glass Co. Apparatus for fabricating glass. 3,181,757, 5–4–65, Cl. 225—96.5.
- O'Donnell, John J., deceased; M. O'Donnell, surviving spouse. Rope slings. 3,181,907, 5–4–65, Cl. 294—74.
- O'Donnell, Mabel: *See—*
  - O'Donnell, John J. 3,181,907.
- Ohio Brass Co., The: *See—*
  - Huston, Elmo F. 3,181,722.
- Ohio Crankshaft Co., The: *See—*
  - Cornell, Frank J. 3,182,168.
  - McBrien, Edward F. 3,182,167.
- Ohmstede Machine Works, Inc.: *See—*
  - Ohmstede, Robert L. 3,181,347.
- Ohmstede, Robert L., to Ohmstede Machine Works, Inc. Tube bundle testing equipment. 3,181,347, 5–4–65, Cl. 73—49.1.
- Ohno, Ko: *See—*
  - Tatsumi, Susumu, Sasaji, and Ohno. 3,182,079.
- Okabe, Misao. Hydraulic valve device switching automatically over multiple distributing pipes. 3,181,550, 5–4–65, Cl. 137—119.
- Okajima, Yoshitaro: *See—*
  - Amada, Sanae, Kubota, Kobayashi, Okajima, and Nanbo. 3,182,333.
- Olander, Roland J., to W. H. Miner, Inc. Door fastener. 3,181,903, 5–4–65, Cl. 292—5.
- Olin Mathieson Chemical Corp.: *See—*
  - Bodanszky, Miklos, and Fried. 3,181,995.
  - Cospen, Jean. 3,181,607.
  - Graser, Earl J., and Schuster. 3,181,727.
  - Ottmann, Gerhard F. 3,182,078.
- Olivetti, Ing. C., & C., S.p.A.: *See—*
  - Galletti, Remo. 3,182,204.
- Ollivier, Louis A., J. B. Skitt, Jr. R. F. Schmoock and H. Shaffer to Fischer & Porter Co. Measuring apparatus including a balancing servo system. 3,182,241, 5–4–65, Cl. 318—31.
- Olsen, Herman L.: *See—*
  - Bunt, Edgar A., and Olsen. 3,182,176.
- Olsen, Orrie C., to Kaiser Aluminum & Chemical Corp. Process for producing anhydrous ammonium carnallite. 3,181,930, 5–4–65, Cl. 23—91.
- Olson, Earl G., to Vandale Corp. Silo unloader connection. 3,181,715, 5–4–65, Cl. 214—17.
- Olson, Norman C., to Curtiss-Wright Corp. Attitude control system for VTOL aircraft. 3,181,810, 5–4–65, Cl. 244—7.
- Olson, Richard J.: *See—*
  - Lareau, Norman N., and Olson. 3,181,443.
- Olympia Werke A.G.: *See—*
  - Elsner, Hans, and Behr. 3,181,682.
  - Elsner, Hans, and Behr. 3,181,683.
- One-In-Hand Tie Co.: *See—*
  - Less, Louis L. 3,181,175.
- Oppel, Heinz C. Digging wheel for sugar beet harvesters. 3,181,616, 5–4–65, Cl. 171—58.
- Orchard, Peter F., and M. R. Williams, to Bristol Siddeley Engines Ltd. Fluid fuel burning equipment. 3,181,293, 5–4–65, Cl. 60—35.55.
- Orthner, Ludwig: *See—*
  - Messwarb, Gunter, Orthner, Reuber, and Grossmann. 3,182,044.
- Osowski, Louis A.: *See—*
  - Zajac, Thaddeus T., Osowski, and Michalowski. 3,181,243.
- Osterstrom, Gordon E., to GPE Controls, Inc. Flow rate transmitter. 3,181,359, 5–4–65, Cl. 73—211.
- Ottmann, Gerhard F., to Olin Mathieson Chemical Corp. Preparation of 1,4-cyclohexadiene-1,4-dicarboxylic acid. 3,182,078, 5–4–65, Cl. 260—514.
- Outboard Marine Corp.: *See—*
  - Kincannon, Leo T. 3,181,518.
- Owens-Illinois Glass Co.: *See—*
  - Blaylock, Spencer L., Jr., and Schaich. 3,182,103.
  - Schaich, Wilbur A. 3,181,719.
  - Torok, Julius J. 3,182,112.
- Oxford Paper Co.: *See—*
  - Perkins, Glenn H., and McFall. 3,181,460.
- Pachter, Irwin J., and J. Weinstock, to Smith Kline & French Laboratories. Synthesis of quinoxalines and analogues thereof. 3,182,062, 5–4–65, Cl. 260—250.
- Pacific Industrial Mfg. Co.: *See—*
  - Pearson, Eugene W. 3,181,407.
- Pacific Vegetable Oil Corp.: *See—*
  - Jennings, Roger G. 3,181,839.
- Packing Supply Co.: *See—*
  - Felt, Maurice D. 3,181,876.
- Page, Ernest, to Ford Motor Co. Hydraulic master cylinder assembly. 3,181,299, 5–4–65, Cl. 60—54.6.
- Pahlavan, Marcel A. Impedance controlled reactor device. 3,182,249, 5–4–65, Cl. 323—87.
- Paillard S. A.: *See—*
  - Ascoli, Enzo. 3,182,126.
  - Thevenaz, Jean. 3,181,807.
- Pak'tronic Machine Corp.: *See—*
  - Kriska, Jerry A. 3,181,575.
- Paller, Frederick C., to Superior Industries, Inc. Shock absorber spring unit. 3,181,852, 5–4–65, Cl. 267—8.
- Palmer, John M., to Shell Oil Co. Method for determining permeability alignment in a formation. 3,181,608, 5–4–65, Cl. 166—4.
- Palmer, Percy W. Machine for manufacture of prestressed concrete conduit. 3,181,222, 5–4–65, Cl. 25—41.
- Pannier Corp., The: *See—*
  - Pannier, Ralph A., and Stoltenberg. 3,181,456.
- Pannier, Ralph A., and L. A. Stoltenberg, to The Pannier Corp. Flexographic rotary printing cylinder with retractable dies. 3,181,456, 5–4–65, Cl. 101—91.
- Paramount Picture Corp.: *See—*
  - Rubinstein, William C. 3,182,121.
- Parilla, Daniel. High pressure barometer. 3,181,367, 5–4–65, Cl. 73—396.
- Parker, George K. Fastening and sealing means for containers. 3,181,726, 5–4–65, Cl. 220—46.
- Parker Humphrey F., to Columbus McKinnon Corp. Coding unit for conveyor systems with readout mechanism. 3,182,140, 5–4–65, Cl. 200—9.
- Parker Mfg. Co.: *See—*
  - Buckley, John Z., and Johnson. 3,181,181.
- Parker, Theodore C., and W. H. Colburn, Jr., to General Precision, Inc. Low conductance exploding bridge. 3,181,464, 5–4–65, Cl. 102—28.
- Parkersburg-Aetna Corp.: *See—*
  - Hayes, Charles T. 3,181,819.
- Parkes, Eric, to Foseco Fordath AG. Core binder composition comprising sugar, gum arabic, urea formaldehyde resin and boric acid. 3,182,030, 5–4–65, Cl. 260—17.3.
- Parks, Asbury S., to National Tank Co. Apparatus for recovering hydrocarbons and liquids from gas streams. 3,181,286, 5–4–66, Cl. 55—163.
- Pass & Seymour, Inc.: *See—*
  - Winter, Paul H. 3,182,161.
- Patt, Sylvester. Lawnmower. 3,181,289, 5–4–65, Cl. 56—294.
- Paul Chemical Co.: *See—*
  - Duron, Paul. 3,181,473.
- Paul, William F., to United Aircraft Corp. Rotor vibration reduction cap. 3,181,815, 5–4–65, Cl. 244—17.11.
- Paulson, Morris G., and C. M. Thureen, to Minnesota and Ontario Paper Co. Apparatus for the production of coated paper. 3,181,500, 5–4–65, Cl. 118—126.
- Pauwels, Edward M., and W. J. Kestermeier, to The Bendix Corp. Operator and speed controlled actuator for turbine guide blades. 3,181,295, 5–4–65, Cl. 60—39.6.
- Pearl, David R.: *See—*
  - Marcus, Milton, Porter, and Pearl. 3,181,817.
- Pearl, David R., to United Aircraft Corp. Shock wave position controller. 3,181,818, 5–4–65, Cl. 244—53.
- Pearson, Eugene W., to Pacific Industrial Mfg. Co. Shear machine with adjustable ram having means to immobilized said machine during adjustment. 3,181,407, 5–4–65, Cl. 83—380.
- Peck, James V., and C. E. Witherell, to The International Nickel Co. Coated welding electrode. 3,181,970, 5–4–65, Cl. 117—205.
- Peek, Robert L., Jr., to Bell Telephone Laboratories, Inc. Reed relay. 3,182,226, 5–4–65, Cl. 317—137.

- Peer Cartage Co., Inc. : *See—*
  - Boyland, Edward B., White, Boyland and Pyre. 3,181,888.
- Peerless of America, Inc : *See—*
  - Kritzer, Richard W. 3,181,604.
- Peerless Trailer and Truck Service, Inc. : *See—*
  - Van Raden, Frederick F. 3,181,881.
- Pegg, Samuel, & Son Ltd. : *See—*
  - Helliwell, Guy S., and Swindall. 3,181,749.
  - Helliwell, Guy S., and Swindall. 3,181,750.
- Pelich, Eduard, and O. Vana, to Vyzkumny ustav prislusenstvi motorvych vosidel. Brake shoe. 3,181,657, 5–4–65, Cl. 188—242.
- Pellen, Josef, and R. Alls, to Sperry Rand Corp. Reversible ratchet drives. 3,181,380, 5–4–65, Cl. 74—152.
- Pellerino, Ernest, and A. Martorelli. Filling apparatus for dispensing measured amounts of liquids. 3,181,576, 5–4–65, Cl. 141—293.
- Pender, John G., to Hunter Douglas International (Quebec) Ltd. Venetian blinds. 3,181,595, 5–4–65, Cl. 160—171.
- Pennsalt Chemicals Corp. : *See—*
  - Hasseldine, Robert N., and Iserson. 3,182,092.
  - Popoff, Ivan C. 3,181,942.
- Pennway Garment Co. : *See—*
  - Sayles, Raymond E. 3,181,406.
  - Sayles, Raymond E. 3,181,859.
- Peras, Lucien, to Regie Nationale des Usines Renault. Disc brakes. 3,181,654, 5–4–65, Cl. 188—73.
- Peras, Lucien, to Regie Nationale des Usines Renault. Means for converting a tail-gate estate car into a light delivery van or a passenger car. 3,181,911, 5–4–65, Cl. 296—37.
- Perfection Pipe Nipple Co. : *See—*
  - Jacobson, Irvin D. 3,181,555.
- Perkins, Glenn H., and L. W. McFall, to Oxford Paper Co. Paper offset plate for photographic transfer and direct image printing. 3,181,460, 5–4–65, Cl. 101—149.2.
- Perkut, Branko R. Water skiing apparatus. 3,181,493, 5–4–65, Cl. 115—6.1.
- Perry, Joseph A., Jr., to Cherry-Burrell Corp. Liquid level control system. 3,181,549, 5–4–65, Cl. 137—118.
- Persson, Erik O., to Torsten Neldas. Rock drilling device. 3,181,434, 5–4–65, Cl. 92—107.
- Persson, Knut A. W., to Broderna Hedlund, AB. Guide device for tubes during welding operation. 3,181,762, 5–4–65, Cl. 228—49.
- Persson, Knut A. W., to Broderna Hedlund, AB. Tube welding machine. 3,182,171, 5–4–65, Cl. 219—60.
- Peterson, Ruben V. Internal combustion engine. 3,181,516, 5–4–65, Cl. 123—41.82.
- Peterson, William H. : *See—*
  - Sherrie, Robert M., Peterson, and Borger. 3,181,480.
- Petrasch, Kurt, 50% to Nathan Root. Mounting frame for fabric pressing pads and the like. 3,181,259, 5–4–65, Cl. 38—66.
- Petrie, John D. Tent smoke venting and ventilating arrangement. 3,181,543, 5–4–65, Cl. 135—14.
- Petroff, Robert J. Intermittent motion mechanism. 3,181,378, 5–4–65, Cl. 74—84.
- Petroff, Robert J. Intermittent mechanism. 3,181,379, 5–4–65, Cl. 74—84.
- Pettibone Mulliken Corp. : *See—*
  - Brown, Wilburn K. 3,181,898.
  - Lund, Robert. 3,181,591.
- Pfizer, Chas., & Co., Inc. : *See—*
  - Conover, Lloyd H. 3,182,058.
- Pfleiderer, Kurt, to Bolkow-Entwicklungen Kommanditgesellschaft, Firma. Fettered rotary wing aircraft. 3,181,816, 5–4–65, Cl. 244—17.17.
- Pharmaseal Laboratories : *See—*
  - Taterka, Michael, and White. 3,181,695.
- Phelps Dodge Copper Products Corp. : *See—*
  - Hollingsworth, Henry L., and Lausen. 3,181,326.
- Phelps, Rex V., to Warren Petroleum Corp. Apparatus for the storage and burning of a fluid under pressure. 3,181,589, 5–4–65, Cl. 158—32.
- Phillips, Benjamin : *See—*
  - Heywood, Donald L., Stansbury, and Phillips. 3,182,008.
- Phillips, Davis M., to McGraw-Edison Co. Mid-span spreader for transmission lines. 3,182,116, 5–4–65, Cl. 174—40.
- Phillips, James S. Guitar pick retention. 3,181,410, 5–4–65, Cl. 84—322.
- Phillips, Leonard R., to Triangle Sheet Metal Works, Inc. Enclosure structure. 3,181,795, 5–4–65, Cl. 237—79.
- Phillips Petroleum Co. : *See—*
  - Branscum, Tony E. 3,182,108.
  - Burnside, Charles H., and Long. 3,181,982.
  - Irvin, Howard B. 3,182,050.
  - Kuerston, Richard D. 3,181,307.
  - Lupfer, Dale E. 3,182,005.
  - Moberly, Charles W. 3,182,049.
  - Myers, John W. 3,182,013.
  - Naylor, Floyd E. 3,182,052.
  - Reid, Thomas A. 3,181,544.
- Picciano, Michael A. : *See—*
  - Morgan, William C., and Picciano. 3,181,463.
- Pierce, Elliot S., S. S. Slowata, and S. J. O'Brien, to American Cyanamid Co. Process for imparting soil retardance to the pile portions of a textile material. 3,181,966, 5–4–65, Cl. 117—37.
- Piliego, Mario, to Bofil S.r.l. Holder for cigars and cigarettes incorporating an ejector and filter. 3,181,538, 5–4–65, Cl. 131—182.
- Pirelli S.p.A. : *See—*
  - Angioletti, Attilio. 3,181,531.
- Pitchforth, Lehi L., Jr., to The Dow Chemical Co. Products prepared from the reaction of halomethylated diphenyl oxide and amines. 3,182,085, 5–4–65, Cl. 260—570.9.
- Pittman, Charles W., to United States of America, Navy. Missile target intercept angle measuring system. 3,181,814, 5–4–65, Cl. 244—14.
- Pittsburgh-Des Moines Steel Co. : *See—*
  - Anderson, Lloyd E., Sr. 3,182,179.
- Pittsburgh Plate Glass Co. : *See—*
  - Brand, Jay J. 3,181,392.
  - Dowbenko, Rostyslaw. 3,182,083.
  - O'Dell, Richard C., and Crum. 3,181,757.
- Plemich, John J., and P. C. Vienna, to Standard Oil Co. Lubricant compositions. 3,182,023, 5–4–65, Cl. 252—46.7.
- Plummer, Walter A. Piling jacket and method of protecting pilings. 3,181,300, 5–4–65, Cl. 61—54.
- Polevitzky, Igor B., to Image Designs, Inc. Methods and systems for reproducing color patterns in manufactured articles, particularly mosaic tile. 3,181,987, 5–4–65, Cl. 156—299.
- Poliseo, Joseph W., to The Bendix Corp. Self-energizing overrunning clutch with speed responsive retarder. 3,181,673, 5–4–65, Cl. 192—103.
- Poole, Edward M., to The Babcock & Wilcox Co. Centrifugal pump construction. 3,181,471, 5–4–65, Cl. 103—103.
- Poor, Edmund W., Jr., to United States of America, Air Force. Secondary emission multiplier structure. 3,182,221, 5–4–65, Cl. 313—103.
- Popoff, Ivan C., to Pennsalt Chemicals Corp. Method of controlling plant growth. 3,181,942, 5–4–65, Cl. 71—2.3.
- Porter, Oswald M. : *See—*
  - Dix, Willard A., and Porter. 3,181,190.
- Porter, Robert D. : *See—*
  - Marcus, Milton, Porter, and Pearl. 3,181,817.
- Porter, William D. : *See—*
  - Winnan, Russell M., and Porter. 3,181,596.
- Posh, Raymond C., to American Metal Products Co. Seat supporting mechanism. 3,181,831, 5–4–65, Cl. 248—421.
- Postal, Robert H., to McGraw-Edison Co. Electrical equipment provided with a visual indicator. 3,182,153, 5–4–65, Cl. 200—121.
- Postmaster General, Her Majesty's : *See—*
  - Hesketh, John F. 3,182,202.
- Potter, Frank J., to General Dynamics Corp. Test method for measuring the forward dynamic time constant of diodes. 3,182,258, 5–4–65, Cl. 324—158.
- Potts, Herbert J., 50% to D. W. Duffy. Inflatable devices. 3,181,184, 5–4–65, Cl. 9—340.
- Powers, Lawrence G. : *See—*
  - Cameron, William M., and Powers. 3,181,880.
- Powers Regulator Co., The : *See—*
  - Axelrod, Leslie R. 3,181,791.
  - Norman, Robert J. 3,181,788.
- Pratt, Thomas H. : *See—*
  - Jenkins, Lonnie W., and Pratt. 3,181,246.
- Preparation Industrielle des Combustibles : *See—*
  - Cuvinot, Paul. 3,181,837.
- Pressley, Robert C., Jr. : *See—*
  - Moore, Fred W., and Pressley. 3,181,921.
- Pritikin, Nathan, to Intellux Inc. Method of making inlaid circuits. 3,181,986, 5–4–65, Cl. 156—233.
- Pritzkow, Andreas : *See—*
  - Krajc, Adolf, and Pritzkow. 3,181,592.
- Pruner, William J. : *See—*
  - Daykin, Theodore W., and Pruner. 3,181,194.
- Prutton, Daniel H. Swage forming machine. 3,181,330, 5–4–65, Cl. 72—90.
- Pullman Inc. : *See—*
  - Sherrie, Robert M., Peterson, and Borger. 3,181,480.
- Pure Oil Co., The : *See—*
  - Csaszar, Albert K., and Bernard. 3,181,609.
- Puretest Water Purifier Co. : *See—*
  - McFarland, Artie F. and A. E. 3,182,191.
- Purex Corp., Ltd. : *See—*
  - Yager, George A. 3,181,976.
- Puster, Louis M., to Robertshaw Controls Co. Means for adjusting the effective area of a pressure responsive diaphragm. 3,181,482, 5–4–65, Cl. 92—6.
- Putnam, William E., R. Sutherland, and J. K. S. Wardale, to Whessoe Ltd. Radiography of welded seams. 3,182,197, 5–4–65, Cl. 250—68.
- Pye Ltd. : *See—*
  - Bancroft, Norman R. 3,182,216.
  - Nurse, Michael J. D. 3,182,124.
- Quigley, Larry L. : *See—*
  - Woolley, Kenneth R., and Quigley. 3,182,238.
- Quinn, Frederic R., to Zyrotron Industries, Inc. Commutating apparatus. 3,182,217, 5–4–65, Cl. 310—235.
- Rabenau, Albrecht K. H. T., to North American Philips Co., Inc. Thermoelectric devices of single phase Ti_2Te_3 and its system. 3,181,303, 5–4–65, Cl. 62—3.
- Rabinow, Jacob, to Control Data Corp. Character reading system with sub matrix. 3,182,290, 5–4–65, Cl. 340—146.3.
- Rabson, Solly R. Scrubbing apparatus for removing particulate matter from air. 3,181,287, 5–4–65, Cl. 55—257.
- Radio Corp. of America : *See—*
  - Barton, Loy E. 3,181,364.
- Radio Corp. of America : *See—*
  - Durlofsky, Meyer T. 3,181,418.
- Raine, Frank F., and R. T. Smith, to Kaiser Aluminum & Chemical Corp. Refractory. 3,181,959, 5–4–65, Cl. 106—64.
- Ramcor Inc. : *See—*
  - Schumann, Charlie O. 3,182,262.
- Ramsel, Charles A., G. D. Rohweder, and C. L. Shoemaker, to Caterpillar Tractor Co. Hydraulic controls. 3,181,394, 5–4–65, Cl. 74—754.
- Randall, Wilbur W., J. Rubenstein, and J. F. Fulton, to said Randall. Incentive savings bank. 3,181,781, 5–4–65, Cl. 232—5.
- Ranky, Bela : *See—*
  - Feldman, Edward P., and Ranky. 3,182,254.
- Raphael, Julius, to Al-Ray Mfg. Co. Hanger for use in combination with showers and the like. 3,181,702, 5–4–65, Cl. 211—119.

- Rautbord, Clayton L., H. M. Newcomb, M. L. Sugarman, Jr., B. D. Eisner, and G. C. Kent, to American Photocopy Equipment Co. Copying machine. 3,181,420, 5–4–65, Cl. 88—24.
- Raynal, Jean, to Societe anonyme dite : Societe Nationale des Petroles d'Aquitaine. Diamond drill bit. 3,181,632, 5–4–65, Cl. 175—329.
- Rayner, Laurence S., to Imperial Chemical Industries Ltd. Insulated copper articles. 3,181,971, 5–4–65, Cl. 117—232.
- Raytheon Co. : *See—*
  - Beck, Robert M., Fuller, McAfee, and Ruhman. 3,182,304.
  - Dutton, Richard H., Clements, Beairsto, and Stoddard. 3,182,308.
  - Ironfield, Richard. 3,182,164.
  - Loncks, Russell. 3,182,247.
- Rearwin, Earle W., to Adams-Millis Corp. Die casting with ultrasonic vibration. 3,181,211, 5–4–65, Cl. 22—68.
- Reddin, Robert M., and R. E. Branch, to Chapman Chemical Co. Applicator bandage for tops of poles. 3,181,696, 5–4–65, Cl. 206—65.
- Reed, Malcolm E., to National Research Corp. High torque, high speed rotary feed-through seal for ultrahigh vacuum chambers. 3,181,873, 5–4–65, Cl. 277—3.
- Rees, Richard W., to E. I. du Pont de Nemours and Co. Blends of linear polyethylene and ethylene-vinyl acetate copolymer. 3,182,101, 5–4–65, Cl. 260—885.
- Regie Nationale des Usines Renault : *See—*
  - Peras, Lucien. 3,181,654.
  - Peras, Lucien. 3,181,911.
- Reid, Jack M. : *See—*
  - Wurzburg, Warren F., and Reid. 3,181,799.
- Reid, Thomas A., to Phillips Petroleum Co. System for discharging slurry from a tank. 3,181,544, 5–4–65, Cl. 187—15.
- Relling, Victor G., to The Duriron Co., Inc. Sintered plastic articles. 3,181,990, 5–4–65, Cl. 161—119.
- Reindl, Harold J., and C. W. Killen, to General Motors Corp. Manufacturing apparatus and method for operating the same. 3,181,502, 5–4–65, Cl. 118—627.
- Reine, George, to Venus Pen & Pencil Corp. Pencil box. 3,181,697, 5–4–65, Cl. 206—67.
- Remington Arms Co., Inc. : *See—*
  - Aitken, William H. 3,181,902.
  - Catlin, Robert T., and Sinex. 3,181,760.
- Remy, David C., to E. I. du Pont de Nemours and Co. Fluorinated polymers containing hydrazide groups. 3,182,039, 5–4–65, Cl. 260—72.
- Renner Mfg. Co. : *See—*
  - Kumferman, Robert P. 3,181,717.
- Research Mfg., Inc. : *See—*
  - Hire, William R. 3,181,676.
- Reuber, Rudolf : *See—*
  - Messwarb, Gunter, Orthner, Reuber, and Grossmann. 3,182,044.
- Rexall Drug and Chemical Co. : *See—*
  - Tupper, Earl S. 3,181,746.
- Reymond, Lucien, to Societe d'Optique et de Mecanique de Haute Precision. View finder. 3,181,445, 5–4–65, Cl. 95—42.
- Rhodes, Keith H., to Walker Mfg. Co. Compressor. 3,181,779, 5–4–65, Cl. 230—172.
- Riccar Sewing Machine Co., Ltd. : *See—*
  - Kawasaki, Keiki. 3,181,490.
- Rice, Stanley I., and A. H. Jacobson, to The Heald Machine Co. Machine tool. 3,181,401, 5–4–65, Cl. 82—34.
- Richard, Paul P. Control mechanism. 3,181,389, 5–4–65, Cl. 74—480.
- Richards, J. A., Co. : *See—*
  - Richards, John A., Sr. 3,181,408.
- Richards, Jesse W., to Ford Motor Co. Vehicle suspension system having torsion bar spring. 3,181,884, 5–4–65, Cl. 280—124.
- Richards, John A., Sr., to J. A. Richards Co. Reciprocating tool actuated by toggle joint means. 3,181,408, 5–4–65, Cl. 83—630.
- Riddy, Frederick T., to Girling Ltd. Braking systems for vehicles. 3,181,388, 5–4–65, Cl. 74—478.
- Riebman, Leon, and B. Haimowitz, deceased (by W. Haimowitz, administratrix) ; said Riebman assor. to American Electronic Laboratories, Inc. Crystal demodulating means for ultrahigh radio frequencies. 3,182,266, 5–4–65, Cl. 329—162.
- Riets, Carl A., to Riets Mfg. Co. Mixing apparatus. 3,181,840, 5–4–65, Cl. 259—9.
- Riets Mfg. Co. : *See—*
  - Riets, Carl A. 3,181,840.
- Riggs, Olen L., Jr. : *See—*
  - Hutchison, Merle, Riggs, and Sudbury. 3,182,007.
- Riley, Harry L., to United Coke and Chemicals Co. Ltd. Method of making a K_2O-V_2O_5 glass catalyst. 3,182,027, 5–4–65, Cl. 252—439.
- Ritzerfeld, Gerhard : *See—*
  - Ritzerfeld, Wilhelm and G. 3,181,459.
- Ritzerfeld, Wilhelm and G. Stripper arrangement for a printing machine. 3,181,459, 5–4–65, Cl. 101—132.5.
- Riviera Appliance Corp. : *See—*
  - Leyden, Isadore. 3,181,189.
- Robertshaw Controls Co. : *See—*
  - Kreuter, Kenneth G. 3,181,548.
  - Mueller, Klaus P. 3,181,425.
  - Puster, Louis M. 3,181,432.
  - Smith, Larry S. 3,182,150.
- Robertson, H. H., Co. : *See—*
  - Slingluff, Thomas J. 3,181,277.
- Robinson, Eric F. V. : *See—*
  - Brown William C., Clemence, and Robinson. 3,182,319.
  - Clemence, Charles R., Brown, and Robinson. 3,182,317.
  - Clemence, Charles R., Robinson, and Brown. 3,182,316.
  - Hendry, Archibald, Brown, and Robinson. 3,182,309.
- Robotron Corp. : *See—*
  - Thomsen, Theodore R. 3,182,264.
- Rocha, John G., to United States of America, Army. Motor driven automatic gun. 3,181,423, 5–4–65, Cl. 89—161.
- Roddey, Belven B., Jr., to The Springs Cotton Mills. Fitted bed sheet and method for making same. 3,181,179, 5–4–65, Cl. 5—334.
- Roe, Ralph C., and J. Lichtenstein, to Burns and Roe, Inc. Apparatus for drying coal in bunkers. 3,181,488, 5–4–65, Cl. 110—101.
- Roehrig, Jonathan R. : *See—*
  - Hablanian, Marsbed, and Roehrig. 3,181,776.
- Roever, William L., to Shell Oil Co. Apparatus for plotting seismic data. 3,181,644, 5–4–65, Cl. 181—.5.
- Rogers, John M. Pipe joint refacing apparatus. 3,181,398, 5–4–65, Cl. 82—4.
- Rogerson, John R. Lobster trap davit. 3,181,268, 5–4–65, Cl. 43—8.
- Rohm & Haas Co. : *See—*
  - Van Hook, John O. 3,182,034.
- Rohweder, Gerald D. : *See—*
  - Ramsel, Charles A., Rohweder, and Shoemaker. 3,181,394.
- Rolfes, Hans, to Trans Continental Electronics Corp. Induction heating units. 3,182,170, 5–4–65, Cl. 219—10.79.
- Rolke, Albert A. Adjustable weight ball for bowling. 3,181,864, 5–4–65, Cl. 273—63.
- Roller, Paul S. Electrolytic metal hydroxide cell. 3,182,010, 5–4–65, Cl. 204—227.
- Rolles, Rolf, to Aluminum Co. of America. Conversion of non-leafing to leafing metallic pigments. 3,181,962, 5–4–65, Cl. 106—290.
- Rolls Royce Ltd. : *See—*
  - Haskins, Bernard J. 3,181,565.
- Romeo, Angelo T. : *See—*
  - Baron, Paul L., Hainaker, and Romeo. 3,181,979.
- Roosa, Vernon D. Fuel supply system. 3,181,468, 5–4–65, Cl. 103—2.
- Root, Nathan : *See—*
  - Petrasch, Kurt. 3,181,259.
- Roovers, Wilhelmus A., to North American Philips Co., Inc. Semiconductor device in cold-welded envelope. 3,182,117, 5–4–65, Cl. 174—52.
- Rosa, Richard J., to Avco Corp. Magnetohydrodynamic generator. 3,182,213, 5–4–65, Cl. 310—11.
- Roschuk, Steven J. : *See—*
  - Marshall, Douglas W., and Roschuk. 3,181,939.
- Rose Patch & Label Co. : *See—*
  - Larson, Melvin E. 3,182,147.
- Rosen, Leo. High speed perforator. 3,181,783, 5–4–65, Cl. 234—119.
- Rosen, Robert, to International Telephone and Telegraph Corp. Thermostat case. 3,181,724, 5–4–65, Cl. 220—31.
- Rosenstein, Allen B. Self-saturating reactor system. 3,182,245, 5–4–65, Cl. 321—16.
- Roskelley, Jack A., to United States of America, Atomic Energy Commission. Crash energy absorber for heavy apparatus. 3,181,653, 5–4–65, Cl. 188—1.
- Rosky, Frederick : *See—*
  - Baracos, Nick, and Rosky. 3,181,885.
- Rosky, Frederick, and C. P. Wenzel, to Ford Motor Co. Independent suspension system. 3,181,882, 5–4–65, Cl. 280—96.2.
- Rossi, Robert R., to Arrow Safety Device Co. Warning light control system. 3,182,289, 5–4–65, Cl. 340—83.
- Roth, Philip B., and L. B. Hallows, to American Cyanamid Co. Process of wet and dry wrinkle proofing cellulose fabric with an amino-plast resin and zinc chloride. 3,181,927, 5–4–65, Cl. 8—116.3.
- Rothfuss, Neal B. : *See—*
  - Tepolt, Florian E., and Rothfuss. 3,181,285.
- Rovelsky, Leon A. : *See—*
  - Dorsch, Daniel W., Woodward, and Rovelsky. 3,182,253.
- Rubenstein, Julia : *See—*
  - Randall, Wilbur W., Rubenstein, and Fulton. 3,181,781.
- Rubinstein, William C., to Paramount Picture Corp. Subscription-television receiver having rate set by program selector. 3,182,121, 5–4–65, Cl. 178—5.1.
- Rudelick, John, to Bruner Corp. Control valve for water softeners. 3,181,564, 5–4–65 Cl. 137—599.1.
- Ruegg, Walter. Fireplace. 3,181,526, 5–4–65, Cl. 126—123.
- Ruehlemann, Herbert E., to Elco Corp. Contact assembly with thermoplastic backing strip. 3,182,276, 5–4–65, Cl. 339—17.
- Rufer André : *See—*
  - Weber, Artur, and Rufer. 3,182,212.
- Rugg, E. T., Co., The : *See—*
  - Grobowski, Ben T. 3,181,745.
- Ruhman, Emil : *See—*
  - Beck, Robert M., Fuller, McAfee, and Ruhman. 3,182,304.
- Rumsey, Clayton S., and C. H. Melcher, to General Electric Co. Lightweight truck. 3,181,479, 5–4–65, Cl. 105—136.
- Rumsey, Rollin D., and G. W. Kamman, to Houdaille Industries, Inc. Rotary actuator. 3,181,437, 5–4–65, Cl. 92—122.
- Russell, Clifford M. Coupling nut. 3,181,896, 5–4–65, Cl. 285—15.
- SCM Corp : *See—*
  - Barkdoll, Joseph P. 3,181,681.
  - Cappotto, Samuel D., and Bolton. 3,181,680.
- Sabatini, John J., to The Bendix Corp. Engine starter drive. 3,181,374, 5–4–65, Cl. 74—6.
- Sabatini, John J., to The Bendix Corp. Engine starter drive. 3,181,375, 5–4–65, Cl. 74—6.
- Sager, George F. : *See—*
  - Marshall, Charles X. 3,181,177.
- Saginomiya Seisakusho Co., Ltd. : *See—*
  - Mamiya, Shigeo, and Odashima. 3,182,148.
- Sala A.G : *See—*
  - Weber, Artur, and Rufer. 3,182,212.

Sakai, Sumio, M. Tanaka, and H. Furuya, to Kaken Kagaku Kabushiki Kaisha. Process for producing β-amino-α-hydroxy-butyric acid. 3,182,080, 5–4–65, Cl. 260—534.
Sakundiak, Peter. Motor mount for grain augers and the like. 3,181,687, 5–4–65, Cl. 198—120.5.
Salz, Edwin T., Sr., to Burndy Corp. Releasable socket connector. 3,182,281, 5–4–65, Cl. 339—95.
Sanford, Adrian B.: *See*—
  Goldschmidt, Hans, and Sanford. 3,181,252.
Sannipoli, Alfred L., and E. E. Thomas, to Seamless Covers, Inc. Manufacture of paint rollers. 3,181,233, 5–4–65, Cl. 29—235.
Santos, Anthony R. Feed wagon spray attachment. 3,181,736, 5–4–65, Cl. 222—135.
Sargent & Co.: *See*—
  Bauer, Charles A. 3,181,320.
Sasaji, Ichiro: *See*—
  Tatsumi, Susumu, Sasaji, and Ohno. 3,182,079.
Sass, Otto: *See*—
  Anania, James A. 3,181,824.
Sasse, Klaus, R. Wegler, and L. Eue, to Farbenfabriken Bayer Aktiengesellschaft. Certain 3-aryl-1,4,2-oxathiazol-one-5 compounds. 3,182,068, 5–4–65, Cl. 260—306.7.
Sassin, Anthony J. Clip structure for hanging wire. 3,181,827, 5–4–65, Cl. 248—74.
Satzinger, Gerhard, to Warner-Lambert Pharmaceutical Co. Substituted 4-thiazolidinones and process therefor. 3,182,063, 5–4–65, Cl. 260—293.4.
Saucy, Gabriel: *See*—
  Sternbach, Leo H., and Saucy. 3,182,054.
Sawyer, Loren A., and W. E. Wood. Live bait cage. 3,181,267, 5–4–65, Cl. 43—55.
Sayles, Raymond E., to Pennway Garment Co. Sharpening mechanism for reciprocating rotatable cutter. 3,181,406, 5–4–65, Cl. 83—174.
Sayles, Raymond E., to Pennway Garment Co. Side register means for cloth spreading apparatus. 3,181,859, 5–4–65, Cl. 270—31.
Schaefer, F. & M., Brewing Co., The: *See*—
  Miller, John. 3,181,684.
Schaefer, Robert H., to General Motors Corp. Transmission. 3,181,386, 5–4–65, Cl. 74—372.
Schäfer, Wilhelm, to Ernst Leitz G.m.b.H. Automatic fastening device for film take-up reels. 3,181,806, 5–4–65, Cl. 242—71.2.
Schaffner, Carl P.: *See*—
  McDaniel, Lloyd E., Schaffner, and Bailey. 3,182,004.
Schafroth, Werner. High speed table stapling machine. 3,181,730, 5–4–65, Cl. 227—7.
Schaible, Michael, and W. Tuttle, to Altamil Corp. Automatic mold preparing apparatus. 3,181,207, 5–4–65, Cl. 22—20.
Schaible, Michael, and W. Tuttle, to Altamil Corp. Method for the use of dynamic vacuum in foundry operations. 3,181,213, 5–4–65, Cl. 22—193.
Schaich, Wilbur A.: *See*—
  Blaylock, Spencer L., Jr., and Schaich. 3,182,103.
Schaich, Wilbur A., to Owens-Illinois Glass Co. Containers and closure caps for same. 3,181,719, 5–4–65, Cl. 215—46.
Schaller, Robert L., to Engelberg, Inc. Balanced regulating valve. 3,181,561, 5–4–65, Cl. 137—505.18.
Scheffel, Walter. Pneumatic weft inserting means. 3,181,571, 5–4–65, Cl. 139—127.
Schenck, Remsen T., to Keystone Chemurgic Corp. Water-soluble salicylic acid derivatives, as analgesics and antipyretica. 3,181,993, 5–4–65, Cl. 167—65.
Scherer, Otto, H. Hahn, and N. Munch, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Nitrobenzotrichlorides and process for their manufacture. 3,182,091, 5–4–65, Cl. 260—646.
Schering Corp.: *See*—
  Tanabe, Masato. 3,182,056.
Schermer, Nathan H., to Acme Ball Bearing & Mfg. Co. Roller conveyor with sprockets on bearings. 3,181,688, 5–4–65, Cl. 198—127.
Scherotto, John, to Einson Freeman and De Troy Corp. Collapsible cardboard display device. 3,181,260, 5–4–65, Cl. 40—124.1.
Schieve, Edmund H.: *See*—
  Lung, Kenneth R., Lotspih, and Schieve. 3,181,801.
  Lung, Kenneth R., Lotspih, and Schieve. 3,181,802.
Schlichte, Max, to Siemens & Halske Aktiengesellschaft. Circuit arrangement for attenuating and deattenuating two-conductor lines. 3,182,133, 5–4–65, Cl. 179—15.
Schlumberger Well Surveying Corp.: *See*—
  Blizard, Robert B. 3,181,645.
Schmid, Hermann, to Link Division of General Precision, Inc. Digital comparator. 3,182,240, 5–4–65, Cl. 318—28.
Schmid, Hermann, to Link Division of General Precision, Inc. Noise-rejecting counter circuit. 3,182,292, 5–4–65, Cl. 340—170.
Schmidt, Dieter K., to FMC Corp. Article handling apparatus. 3,181,710, 5–4–65, Cl. 214—1.
Schmidt, Erich A., ½ to Universal Button Co. Mechanism for sewing fastener elements. 3,181,489, 5–4–65, Cl. 112—113.
Schmidt, Robert A.: *See*—
  Fryer, Rodney I., Schmidt, and Sternbach. 3,182,065.
  Fryer, Rodney I., Schmidt, and Sternbach. 3,182,066.
  Fryer, Rodney I., Schmidt, and Sternbach. 3,182,067.
Schmieding, Warren H. F.: *See*—
  Vogel, Arthur E. 3,181,878.
Schmitt, George J., to Allied Chemical Corp. Polymers of 1-cyanocyclopentenes and process for preparing them. 3,182,046, 5–4–65, Cl. 260—88.7.
Schmoock, Roy F.: *See*—
  Ollivier, Louis A., Skitt, Schmoock, and Shaffer. 3,182,241.
Schneider, Harold N.: *See*—
  Lee, Thomas H., and Schneider. 3,182,156.
Schneider, Herbert, to American Metal Products Co. Tacking strip. 3,181,598, 5–4–65, Cl. 160—403.
Schnur, Martin D.: *See*—
  Ege, Sigmund, and Schnur. 3,181,251.
Schoenfelder, Carl W., to United States of America, Air Force. Method for isolating nitrogen trifluoride from nitrous oxide and tetrafluorohydrazine. 3,181,305, 5–4–65, Cl. 62—12.
Schofield, Hubert P. Method of producing the pointed end of a hypodermic needle. 3,181,336, 5–4–65, Cl. 72—340.
Schomburg, Edward H. Apparatus for muffling noise and engine exhaust gases. 3,181,647, 5–4–65, Cl. 181—54.
Schouteden, Ferdinand L.: *See*—
  Koerber, Willem K., and Schouteden. 3,181,948.
  Koerber, Willem K., and Schouteden. 3,181,949.
  Koerber, Willem K., and Schouteden. 3,181,950.
Schray, Walter H., to United Steel & Wire Co. Dairy cases. 3,181,723, 5–4–65, Cl. 220—19.
Schremp, Frederic W.: *See*—
  Chittum, Joseph F., and Schremp. 3,182,018.
Schroter, Richard C., and J. A. Wood, to Kaiser Aluminum & Chemical Corp. Covering structure. 3,181,275, 5–4–65, Cl. 30—66.
Schulten, Rudolf to Brown, Boveri & Cie Aktiengesellschaft. Heat treating method and means utilizing nuclear energy. 3,181,999, 5–4–65, Cl. 176—39.
Schultz, Fritz, to Farbenfabriken Bayer Aktiengesellschaft. Process for preparing purified solutions of kallikrein inactivator. 3,181,997, 5–4–65, Cl. 167—74.
Schumann, Charlie O., to Ramcor Inc. Densiometer radiation monitoring device. 3,182,262, 5–4–65, Cl. 325—363.
Schumann, Kurt E. Concrete pumping apparatus. 3,181,469, 5–4–65, Cl. 103—49.
Schumann, Robert W., to Nuclear Data, Inc. Method and apparatus for averaging a series of electrical transients. 3,182,181, 5–4–65, Cl. 235—164.
Schuster, Richard L.: *See*—
  Graser, Earl J., and Schuster. 3,181,727.
Scott, O. M., & Sons Co., The: *See*—
  West, John R., and Westfall. 3,181,273.
Scott & Williams, Inc.: *See*—
  Felker, Maurice H. 3,181,312.
  Millar, John J. 3,181,314.
Scovill Mfg. Co.: *See*—
  Deshaies, Leo J. 3,181,219.
Seamless Covers, Inc.: *See*—
  Sannipoli, Alfred L., and Thomas. 3,181,233.
Seelig, Herman S., J. R. Coley, and H. M. Brennan, to Standard Oil Co. Transferring sulfur between gasoline pool components. 3,182,014, 5–4–65, Cl. 208—245.
Seifert, John A.: *See*—
  Moreau, Norman, and Seifert. 3,181,941.
Seismograph Service Corp.: *See*—
  Laws, Ira G., and Wilson. 3,181785.
Seiz, Richard, to W. C. Heraeus, G.m.b.H. Spinnerette for the production of composite threads. 3,181,201, 5–4–65, Cl. 18—8.
Seltzer, Abraham F.: *See*—
  Seltzer, Alice P. and A. F. 3,181,752.
Seltzer, Alice P. and A. F. Means for carrying luggage, bags, and the like. 3,181,752, 5–4–65, Cl. 224—5.
Sennet, Morgan B., to De Laval Turbine Inc. Pumps or motors. 3,181,472, 5–4–65, Cl. 103—120.
Seymour, Shaun A., to Sperry Rand Corp. Feeding method. 3,181,506, 5–4–65, Cl. 119—56.
Shaffer, Harris: *See*—
  Ollivier, Louis A., Skitt, Schmoock, and Shaffer. 3,182,241.
Shapiro, Florence M.: *See*—
  Shapiro, Seymour L., Freedman, and Karten. 3,182,064.
Shapiro, Sam. Triple festoon valance. 3,181,594, 5–4–65, Cl. 160—124.
Shapiro, Seymour L., L. Freedman, M. J. Karten, and F. M. Shapiro, executrix of S. L. Shapiro, deceased, to U.S. Vitamin Pharmaceutical Corp. α-[2-(4-pyridyl)ethyl] aminopropionic acid derivatives. 3,182,064, 5–4–65, Cl. 260—295.
Shavel, John, Jr., M. Von Strandtmann, and M. P. Cohen, to Warner-Lambert Pharmaceutical Co. Acylated indole derivatives. 3,182,071, 5–4–65, Cl. 260—319.
Shears, Stuart T., to United-Carr Inc. Adjustable snap fastener buckle. 3,181,216, 5–4–65, Cl. 24—77.
Shell Oil Co.: *See*—
  Hennipman, Cornelis. 3,181,508.
  Palmer, John M. 3,181,608.
  Roever, William L. 3,181,644.
  Vogel, Charles B. 3,182,285.
Shelley, Robert J. Tubular dish-dispensing apparatus. 3,181,919, 5–4–65, Cl. 312—71.
Shenango China, Inc.: *See*—
  Cummings, Howard B. 3,181,223.
Shepard, Ralph M., to Muskegon Piston Ring Co. Piston rings. 3,181,875, 5–4–65, Cl. 277—140.
Sherrie, Robert M., W. H. Peterson, and J. W. Borger, to Pullman Inc. Long travel cushioned fifth wheel stand. 3,181,480, 5–4–65, Cl. 105—368.
Shimoda, Keitaro: *See*—
  Fujita, Yoshimasa, Shimoda, and Zoda. 3,182,106.
Shoe, Theodore W. Electric lock having spaced apart conductive areas adapted to be electrically connected with spaced conductive areas on an insertable key. 3,182,144, 5–4–65, Cl. 200—46.
Shoemaker, Clifford L.: *See*—
  Ramsel, Charles A., Rohweder, and Shoemaker. 3,181,394.
Shrode, William A.: *See*—
  Woodward, Henry T., and Shrode. 3,181,600.
Shutes, Emmett B.: *See*—
  Lilly, Arnya C., Jr., Shutes, and Weismann. 3,182,190.
Sibley, Clifton B., to National Research Corp. Electron beam heating device. 3,182,175, 5–4–65, Cl. 219—117.

Siegart, William R., N. R. Odell, and H. D. Kluge, deceased, by H. E. Kluge, administratrix, to Texaco Inc. Organic adducts and lubricating compositions thereof. 3,182,022, 5–4–65, Cl. 252—46.6.
Siemens & Halske Aktiengesellschaft: *See*—
  Fuchs, Ekkehard, and Liesk. 3,182,195.
  Janson, Stig, and Stending. 3,182,138.
  Meyerer, Paul. 3,182,234.
  Schlichte, Max. 3,182,133.
  Wiese, Otto. 3,182,127.
Siemens-Schuckertwerke Aktiengesellschaft: *See*—
  Kumpf, Hermann. 3,182,001.
Siezen, Gerrit J., to North American Philips Co. Inc. Apparatus for checking imperfections in a recording medium. 3,182,135, 5–4–65, Cl. 179—100.1.
Siler, Charles A., to Twin Disc Clutch Co. Power transmission. 3,181,385, 5–4–65, Cl. 74—364.
Sills, Earl H.: *See*—
  Abbe, Edward H., Berman, Blankenship, and Sills. 3,181,713.
Silver, Edward A.: *See*—
  Adams, Charles B., and Silver. 3,181,622.
Silvray-Litecraft Corp.: *See*—
  Gellert, Don L. 3,182,187.
Simantel, Larry L., to Sinclair Research, Inc. Catalyst demetallization. 3,182,025, 5–4–65, Cl. 252—415.
Simcoe, Charles R.: *See*—
  McAndrews, Joseph B., Metcalfe, and Simcoe. 3,181,946.
Simmons, Milton E.: *See*—
  Du Bois, Floyd M., Jr., and Simmons. 3,182,215.
Simnad, Massoud T., to United States of America, Atomic Energy Commission. Method and apparatus for making dense bodies of refractory materials. 3,182,102, 5–4–65, Cl. 264—21.
Simon, Lewis B., to United States of America, Navy. Sealing means for rotary engines. 3,181,509, 5–4–65, Cl. 123—16.
Sims, Raymond B., to Davy and United Engineering Co. Ltd. Processing of metal. 3,182,174, 5–4–65, Cl. 219—101.
Sinclair Research, Inc.: *See*—
  Friedman, Bernard S. 3,182,011.
  Simantel, Larry L. 3,182,025.
Sinex, John C.: *See*—
  Catlin, Robert T., and Sinex. 3,181,760.
Singer Co., The: *See*—
  Dix, Willard A., and Porter. 3,181,190.
  Feldman, Edward P., and Ranky. 3,182,254.
  Wu, William I. L. 3,182,265.
Sink, William H., to Dana Corp. Double clutch and control linkage therefor. 3,181,668, 5–4–65, Cl. 192—48.
Skasol Inc.: *See*—
  Ellis, Charles A. 3,181,731.
Skitt, James B., Jr.: *See*—
  Ollivier, Louis A., Skitt, Schmoock, and Shaffer. 3,182,241.
Skok, Alois. Tree and shrub branch saw. 3,181,239, 5–4–65, Cl. 30—166.
Skrip, Frank J. Tire chain traction device and the like. 3,181,586, 5–4–65, Cl. 152—241.
Slingluff, Thomas J., to H. H. Robertson Co. Electrical ducts with access cups. 3,181,277, 5–4–65, Cl. 50—127.
Slowata, Stanley S.: *See*—
  Pierce, Elliot S., Slowata, and O'Brien. 3,181,966.
Smart & Brown (Connectors) Ltd.: *See*—
  Bridle, Kenneth F. 3,182,278.
Smeal, Donald L., to L. R. Nelson Mfg. Co., Inc. Mechanism for steering a vehicle in an agriculture field. 3,181,478, 5–4–65, Cl. 104—244.1.
Smilg, Benjamin, to Globe Safety Products, Inc. Carrier for resuscitator equipment. 3,181,756, 5–4–65, Cl. 224—45.
Smith, A. O., Corp.: *See*—
  Mattson, Richard E., and Winstrom. 3,181,334.
  Mullaney, Norbert F., and Carlton. 3,181,440.
Smith, Alexander, and B. D. Baggs. Power driven laterally shiftable cultivator. 3,181,619, 5–4–65, Cl. 172—99.
Smith, Barton K.: *See*—
  Flynn, Thomas W., and Smith. 3,181,768.
Smith, Dayle R., to Honeywell Inc. Differential amplifier bias circuit. 3,182,269, 5–4–65, Cl. 330—19.
Smith, Harvey G. Electronic warning device. 3,182,288, 5–4–65, Cl. 340—34.
Smith, Homer E.: *See*—
  Baier, John P., Smith, and Fritz. 3,181,387.
Smith, Horace L., Jr., to Hupp Corp. Uniformly heated rotary drum. 3,181,605, 5–4–65, Cl. 165—90.
Smith, Hugh R., Jr., to Temescal Metallurgical Corp. Foil production. 3,181,209, 5–4–65, Cl. 22—57.4.
Smith, John O., to Monsanto Research Corp. Nitrol compounds as depolarizers. 3,181,972, 5–4–65, Cl. 136—90.
Smith Kline & French Laboratories: *See*—
  Pachter, Irwin J., and Weinstock. 3,182,062.
Smith, Larry S., to Robertshaw Controls Co. Pneumatic-electric switch. 3,182,150, 5–4–65, Cl. 200—83.
Smith, Roy T.: *See*—
  Raine, Frank F., and Smith. 3,181,959.
Smith, Thomas R., to The Maytag Co. Fluid flow control device. 3,181,790, 5–4–65, Cl. 236—12.
Smithcraft Corp.: *See*—
  Kruger, Michael H. 3,181,450.
Smola, Charles R.: *See*—
  Krayenbuhl, Harold A., Stirnaman, and Smola. 3,181,897.
Smolen, Sam R.: *See*—
  Worden, Donald A., and Smolen. 3,181,560.
Smoot, Charles R. Process for controlling the bulk density of polyoxymethylene. 3,182,038, 5–4–65, Cl. 260—67.
Smoot, Thomas W.: *See*—
  King, Donald F., and Smoot. 3,181,960.
Snider, Orville E.: *See*—
  Bonfield, John H., Hecker, Snider, and Apostle. 3,182,055.
Societe d'Optique et de Mecanique de Haute Precision: *See*—
  Reymond, Lucien. 3,181,445.
Societe Nationale des Petroles d'Aquitaine, Societe anonyme dite: *See*—
  Raynal, Jean. 3,181,632.
Socony Mobil Oil Co., Inc.: *See*—
  Browning, Lewis M., and Streed. 3,182,012.
  Davis, Robert H. 3,182,020.
  Ehlert, Gilbert W., Musgrave, Nash, and Nugent. 3,181,643.
  Frilette, Vincent J., and Weisz. 3,181,928.
Somers, Arthur V.: *See*—
  Hauth, Willard E., Jr., and Somers. 3,181,847.
Sonotone Corp.: *See*—
  Dieter, Norman H., Jr., and Bauer. 3,182,136.
Sorensen, Christen W.: *See*—
  Guillon, Jacques S., and Sorensen. 3,181,923.
Sorrells, John R., and A. W. Holt, to Control Data Corp. Logic package including input gating means D.C. coupled to amplifier. 3,182,205, 5–4–65, Cl. 307—88.5.
Sosa, Victor M. Adjustable caliper. 3,181,244, 5–4–65, Cl. 33—143.
South Chester Corp.: *See*—
  Bisbing, Robert H. 3,181,905.
Sowerby, James M.: *See*—
  Jacob, John E. B., and Sowerby. 3,181,467.
Spark, Wallace R.: *See*—
  Clark, Winslow B. M., and Spark. 3,182,129.
Sperber, Albert M. Lubricating means for hinges. 3,181,197, 5–4–65, Cl. 16—161.
Sperry Rand Corp.: *See*—
  Adams, Charles B., and Silver. 3,181,622.
  Coy, Truman. 3,181,405.
  Halls, Lawrence M. 3,181,288.
  Hollyday, James H. 3,181,892.
  Hurlburt, Joseph C. 3,181,686.
  Lape, Philip B., and Kuns. 3,181,983.
  Matthews, Hugh B. 3,181,476.
  Matthews, Hugh B. 3,181,477.
  Moats, Earl W. 3,181,891.
  Pellen, Josef, and Alla. 3,181,380.
  Seymour, Shaun A. 3,181,506.
  Wesslund, Robert E. 3,182,229.
Speyer, Nico B., to North American Philips Co., Inc. Method of manufacturing semi-conductive devices having electrodes containing aluminum. 3,181,226, 5–4–65, Cl. 29—25.3.
Spisak, Edward G., to Gar Wood Industries, Inc. Wheel cover. 3,181,915, 5–4–65, Cl. 301—37.
Sporck, Claus L., to The Lodge & Shipley Co. Method of forming ribbed tubes. 3,181,329, 5–4–65, Cl. 72—85.
Sprague Electric Co.: *See*—
  Stockel, Otto F. C. 3,182,236.
  Toder, Eric H., and Bond. 3,182,238.
Spraying Systems Co.: *See*—
  Wahlin, Fred W., O'Brien, and Williams. 3,181,798.
Springs Cotton Mills, The: *See*—
  Roddey, Belven B., Jr. 3,181,179.
Square D Co.: *See*—
  Mekelburg, Earl F. 3,182,143.
Standard Machine & Mfg. Co.: *See*—
  Deutsch, Bela, and Knaebel. 3,181,567.
Standard Oil Co. (Indiana): *See*—
  Brennan, Harry M., Coley, Frye, and Gutberlet. 3,182,097.
  Kirkland, Earl V. 3,181,043.
  Plemich, John J., and Vienna. 3,182,023.
  Seelig, Herman S., Coley, and Brennan. 3,182,014.
Standard Oil Co. (Ohio), The: *See*—
  Foreman, Robert W., and Veatch. 3,181,932.
Standard Pressed Steel Co.: *See*—
  Zetterlund, Rune A. E. 3,181,338.
Stansbury, Harry A., Jr.: *See*—
  Heywood, Donald L., Stansbury, and Phillips. 3,182,008.
Starkey, George W., to The Flintkote Co. Reclosable box structure. 3,181,767, 5–4–65, Cl. 229—17.
Starkey, George W., and W. A. Caskey, to The Flintkote Co. Packing of produce. 3,181,721, 5–4–65, Cl. 217—42.
Starostka, Raymond W.: *See*—
  Bridger, Grover L., and Starostka. 3,181,943.
Stauble, Alfred G.: *See*—
  Kinnicutt, Roger, Jr., and Stauble. 3,181,709.
Stauffer, Norman L., to Honeywell Inc. Non-contacting tonometer. 3,181,351, 5–4–65, Cl. 73—80.
Stearns Electric Corp.: *See*—
  Leive, Ernest W. 3,181,670.
Steiger, Norbert, to Hoffmann-La Roche Inc. Pyridine formamidines of primary amines. 3,182,053, 5–4–65, Cl. 260—156.
Stein, William A.: *See*—
  Brittain, Edward G., and Stein. 3,182,227.
Steiner, Harry. Brassiere. 3,181,537, 5–4–65, Cl. 128—492.
Stelzen, Fred. Fish holder and scraper. 3,181,198, 5–4–65, Cl. 17—8.
Stending, Viking: *See*—
  Janson, Stig, and Stending. 3,182,138.
Stephens, Darwin O.: *See*—
  Van Ness, John H., and Stephens. 3,181,953.
Stephenson Corp.: *See*—
  Nankervis, Harry B. 3,181,498.
  Nankervis, Harry B. 3,182,322.
Sternbach, Leo H.: *See*—
  Fryer, Rodney I., Schmidt, and Sternbach. 3,182,065.
  Fryer, Rodney I., Schmidt, and Sternbach. 3,182,066.
  Fryer, Rodney I., Schmidt, and Sternbach. 3,182,067.
Sternbach, Leo H., and G. Saucy, to Hoffmann-La Roche Inc. Benzodiazepine compounds. 3,182,054, 5–4–65, Cl. 260—239.

Sterns, Robert B., D. J. Mahony, and H. G. Meyer, Jr., to Logic Systems, Inc. Control system. 3,181,403, 5-4-65, Cl. 83—76.
Stirnaman, Edward A.: *See—*
  Krayenbuhl, Harold A., Stirnaman, and Smola. 3,181,897.
Stockdale, Ralph W.: *See—*
  Knaup, David R., Lehmann, and Stockdale. 3,181,419.
Stockel, Otto F. C., to Sprague Electric Co. Electrolyte for electrolytic capacitor. 3,182,236, 5-4-65, Cl. 317—230.
Stockton, Samuel W. Wallboard positioning device. 3,181,711, 5-4-65, Cl. 214—1.
Stoddard, Richard D. Snow removal apparatus. 3,181,255, 5-4-65, Cl. 37—43.
Stoddard, Robert D.: *See—*
  Dutton, Richard H., Clements, Bealrsto, and Stoddard. 3,182,308.
Stoltenberg, Laverne A.: *See—*
  Pannier, Ralph A., and Stoltenberg. 3,181,456.
Stone, Joseph J., and R. A. Adams, to The A. B. Dick Co. Centering system for an electrostatic writing tube. 3,182,224, 5-4-65, Cl. 315—21.
Storey, Edgar J., ½ to M. G. Colman. Restraint for inhibiting motion of a person in a bed or chair or the like. 3,181,530, 5-4-65, Cl. 128—134.
Storkan, Richard C.: *See—*
  Gouker, Zelbert, and Storkan. 3,181,455.
Storts, Gerald F. Exercising device for birds. 3,181,504, 5-4-65, Cl. 119—29.
Stoughton, Arthur H.: *See—*
  McMahan, Herschel E., and Stoughton. 3,181,247.
Straub, Henry E., deceased; by M. H. Straub, administratrix. Liquid level control for livestock watering troughs. 3,181,558, 5-4-65, Cl. 137—438.
Straub, Martha H.: *See—*
  Straub, Henry E. 3,181,558.
Streed, Carl W.: *See—*
  Browning, Lewis M., and Streed. 3,182,012.
Stuart, Frank A., and R. G. Anderson, to California Research Corp. Polyaminopyrrolidines in lubricating oils. 3,182,024, 5-4-65, Cl. 252—50.
Stubbmann, Albert, to Kohner Bros., Inc. Embossing tool. 3,181,679, 5-4-65, Cl. 197—6.7.
Sturgeon, George M., to The British Iron and Steel Research Association. Heat treatment of elongate metal material. 3,181,977, 5-4-65, Cl. 148—13.1.
Stuts, Hansruedi, to A. G. Gebrueder Loepfe. Shuttle control for looms. 3,181,573, 5-4-65, Cl. 139—341.
Sudbury, John D.: *See—*
  Hutchison, Merle, Riggs, and Sudbury. 3,182,007.
Sugarman, Meyer L., Jr.: *See—*
  Rautbord, Clayton L., Newcomb, Sugarman, Elsner, and Kent. 3,181,420.
Sullivan, Richard F., to California Research Corp. Disproportionation of alkylbenzenes. 3,182,095, 5-4-65, Cl. 260—672.
Sun Oil Co.: *See—*
  Mayes, Fred M. 3,182,250.
  Mills, Ivor W. 3,182,048.
Sunbeam Corp.: *See—*
  Jepson, Ivar, and Babler. 3,181,237.
Superior Concrete Accessories, Inc.: *See—*
  Ballou, Harry G. 3,181,276.
Superior Industries, Inc.: *See—*
  Paller, Frederick C. 3,181,852.
Supreme Products Corp.: *See—*
  Bubelis, Gediminas J. 3,181,280.
Surf Tow, Inc.: *See—*
  Wilkinson, John S. 3,181,861.
Susa, Ermanno: *See—*
  Marullo, Gerlando, Maffessoni, and Susa. 3,182,051.
Sussman, Ernst. Impact tools. 3,181,626, 5-4-65, Cl. 173—53.
Sutherland, Ronald: *See—*
  Putnam, William E., Sutherland, and Wardale. 3,182,197.
Svenska Metallverken, Aktiebolaget: *See—*
  Weber, Rolf D. 3,181,335.
Swanson, Roger I., to Gardner-Denver Co. Tension control wrench. 3,181,672, 5-4-65, Cl. 192—.096.
Swarts, William M. Display device. 3,181,261, 5-4-65, Cl. 40—138.
Sweeney, Harold E.: *See—*
  Kleist, Robert A., and Sweeney. 3,182,314.
Sweeney, Harold E., to General Precision, Inc. Interrogator-responder signalling system. 3,182,315, 5-4-65, Cl. 343—6.5.
Swindall, Leslie J.: *See—*
  Helliwell, Guy S., and Swindall. 3,181,749.
Swindall, John L.: *See—*
  Helliwell, Guy S., and Swindall. 3,181,750.
Sydor, Walter J., to American Cyanamid Co. Salicylaldehyde-semicarbazones. 3,182,082, 5-4-65, Cl. 260—552.
Sylvania Electric Products Inc.: *See—*
  Cutter, James W. 3,181,649.
  Cutter, James W., and Kowal. 3,181,650.
Symington. Wayne, Corp.: *See—*
  Cope, Geoffrey W. 3,181,708.
Tait Mfg. Co., The: *See—*
  Lung, Kenneth R., Lotspih, and Schieve. 3,181,802.
Takats, Zoltan, and J. Komas, to General Aniline & Film Corp. Control and actuation of rapid processing equipment. 3,181,444, 5-4-65, Cl. 95—12.
Takeda Chemical Industries, Ltd.: *See—*
  Inoue, Yukio, and Mitsuno. 3,181,954.
Talon, Inc.: *See—*
  Clarke, Frank W. 3,181,570.
Tanabe, Masato, to Schering Corp. 9(11)-dehydro-17,21-alkylidene-dioxy pregnenes. 3,182,056, 5-4-65, Cl. 260—239.55.
Tanaka, Michio: *See—*
  Sakai, Sumio, Tanaka, and Furuya. 3,182,080.
Tanner, David, to E. I. du Pont de Nemours and Co. Process for preparing bulky fabrics. 3,181,224, 5-4-65, Cl. 28—72.
Tarnowski, Michael: *See—*
  Nagy, David, and Tarnowski. 3,181,176.
Taterka, Michael, and S. M. White, to Pharmaseal Laboratories. Package for surgical gloves. 3,181,695, 5-4-65, Cl. 206—63.2.
Tatsumi, Susumu, I. Sasaji, and K. Ohno, to Ajinomoto Co., Inc. Optical resolution of DL-valine. 3,182,079, 5-4-65, Cl. 260—534.
Taylor's, Chas., Sons Co., The: *See—*
  Thomas, Everett A. 3,181,958.
Taylor, Frank. Cover assembly for open type vehicles. 3,181,481, 5-4-65, Cl. 105—377.
Taylor, Hugh B., to Ingersoll-Rand Co. Collet type finders for use with power screw drivers. 3,181,580, 5-4-65, Cl. 145—52.
Taylor, Wilfred, to The Birmingham Small Arms Co. Ltd. Sampling device for bulk materials. 3,181,369, 5-4-65, Cl. 73—421.
Technoimpex Magyar Gepipari Kulkereskedelmi Vallalat: *See—*
  Kántor, Lásaló. 3,181,579.
Temescal Metallurgical Corp.: *See—*
  Smith, Hugh R., Jr. 3,181,209.
Tenconi, Riccardo, to M. S. Moretta. Device for forming the shaped reinforced parts of stockings on circular machines for the manufacture of stockings or socks. 3,181,940, 5-4-65, Cl. 66—49.
Teplitz, Alfred, to United States Steel Corp. Method and apparatus for open coil annealing. 3,181,846, 5-4-65, Cl. 263—40.
Tepolt, Florian E., and N. B. Rothfuss, to The Bendix Corp. Electrostatic precipitator. 3,181,285, 5-4-65, Cl. 55—138.
Texaco Inc.: *See—*
  Cole, Edward L., and Knowles. 3,182,016.
  Eckert, George W., and Chafetz. 3,181,938.
  Siegart, William R., Odell, and Kluge. 3,182,022.
  Vander Ploeg, Alfred R. 3,182,192.
Texas Instruments Inc.: *See—*
  Coad, Brian C. 3,181,935.
  Crank, Joe B., and Donnell. 3,182,295.
Textron, Inc.: *See—*
  Hall, Ralph W. 3,181,333.
Thevenaz, Jean, to Paillard S.A. Cinematographic camera. 3,181,807, 5-4-65, Cl. 242—71.2.
Thomas, Claud F. Carrier. 3,181,704, 5-4-65, Cl. 211—126.
Thomas, Earl E.: *See—*
  Sannipoli, Alfred L., and Thomas. 3,181,233.
Thomas, Erwin S. Platform for extensible trailers. 3,181,910, 5-4-65, Cl. 296—23.
Thomas, Everett A., to The Chas. Taylor's Sons Co. Refractory composition. 3,181,958, 5-4-65, Cl. 106—57.
Thomas, Glen H., and R. S. Morrow, to International Research and Development Corp. Portable classifier for unbalance. 3,181,350, 5-4-65, Cl. 73—71.2.
Thomas, Harold A., to General Dynamics Corp. Mechanically modulated neutron ion chamber. 3,182,219, 5-4-65, Cl. 313—61.
Thompson, Tom H., to Daytona Thompson Corp. Wobble plate pump. 3,181,475, 5-4-65, Cl. 103—162.
Thomsen, Theodore R., to Robotron Corp. Sequence timer. 3,182,264, 5-4-65, Cl. 328—75.
Thornton, John A., and C. G. Zemels, to James R. Kearney, Corp. Dies for compression tools. 3,181,341, 5-4-65, Cl. 72—410.
Thorp, Arthur G. II, T. F. Widmer, E. Frisch, to Westinghouse Electric Corp. Means for supporting fuel elements in a nuclear reactor. 3,182,003, 5-4-65, Cl. 176—78.
Thorselius, Rolf B.: *See—*
  Malm, Anders E., and Thorselius. 3,181,845.
Thumm, Byron A.: *See—*
  Howsmon, John A., and Thumm. 3,182,107.
Thureen, Carroll M.: *See—*
  Paulson, Morris G., and Thureen. 3,181,500.
Tillis, William J., to FMC Corp. Cleaning and brightening of solder. 3,181,984, 5-4-65, Cl. 156—20.
Toder, Eric H., and V. E. W. Bond, to Sprague Electric Co. Encased tubular capacitor. 3,182,238, 5-4-65, Cl. 317—260.
Toledo Scale Corp.: *See—*
  Williams, Lawrence S. 3,181,634.
Tomko, Donald R.: *See—*
  Kunde, Wayne C., and Tomko. 3,181,669.
Tompson, Clement R., to Zenith Radio Corp. Tuning indicator. 3,181,497, 5-4-65, Cl. 116—124.4.
Topps Products Corp.: *See—*
  Mandel, Marvin. 3,181,706.
Torok, Julius J., to Owens-Illinois Glass Co. Current balancing means for multiple electrodes in electrically heated glass melting units. 3,182,112, 5-4-65, Cl. 13—6.
Tout, Francis H. Football simulating device. 3,181,865, 5-4-65, Cl. 273—94.
Trainor, Albert: *See—*
  Benny, Alan H. B., and Trainor. 3,181,981.
Trans Continental Electronics Corp.: *See—*
  Rolfes, Hans. 3,182,170.
Trevena, Charles D. Movable wheeled inch worm toy. 3,181,270, 5-4-65, Cl. 46—104.
Triangle Sheet Metal Works, Inc.: *See—*
  Phillips, Leonard R. 3,181,795.
Tripp, Herman W., to Agricultural Research Development, Inc. Farrowing pen with floor heated plight areas. 3,181,503, 5-4-65, Cl. 119—20.
Trischler, Floyd D.: *See—*
  Charlton, Francis R., and Trischler. 3,182,032.

Troeger, Henry, to The Bendix Corp. Flexural pivot. 3,181,851, 5-4-65, Cl. 267—1.
Troeger, Henry, to The Bendix Corp. Flexural pivot. 3,181,918, 5-4-65, Cl. 308—2.
Trombetta, Panfilo. Electrically controlled brake. 3,181,665, 5-4-65, Cl. 192—2.
Truman, Chester A. Bucket for sewer cleaning. 3,181,192, 5-4-65, Cl. 15—104.3.
Tupper, Earl S., to Rexall Drug and Chemical Co. Pitcher and cover. 3,181,746, 5-4-65, Cl. 222—545.
Turbo Machine Co.: *See—*
  Wyatt, William K. 3,181,318.
Turner, Prescott K., to General Electric Co. Electrical connection. 3,182,282, 5-4-65, Cl. 339—97.
Tuttle, Philip B., to Hammond Machinery Builders, Inc. Means for cutting chip breaker grooves. 3,181,283, 5-4-65, Cl. 51—218.
Tuttle, Wainwright: *See—*
  Schaible, Michael, and Tuttle. 3,181,207.
  Schaible, Michael, and Tuttle. 3,181,213.
Twin Disc Clutch Co.: *See—*
  Siler, Charles A. 3,181,385.
Tyssman Machine Co., Inc.: *See—*
  Hensley, James L. 3,181,281.
Uhen, James R.: *See—*
  Arnes, Lyle L., and Uhen. 3,181,836.
Ultra Dynamics Corp.: *See—*
  Ellner, Sidney, and Marx. 3,182,193.
Umberger, Jacob Q.: *See—*
  Chu, Victor F.-H., and Umberger. 3,182,029.
Union Carbide Corp.: *See—*
  Breck, Donald W. 3,181,231.
  Clark, Jared W., and Winslow. 3,182,099.
  Clark, Kenneth G., Myles, and Eichin. 3,181,956.
  Heywood, Donald L., Stansbury and Phillips. 3,182,008.
  La Combe, Edward M., and Miller. 3,182,042.
  Mandorf, Victor, Jr. 3,181,968.
Union Oil Co. of California: *See—*
  Fleck, Raymond N., and Wight. 3,182,017.
  Krueger, Roland F. 3,181,618.
Union Pump Co.: *See—*
  Yohpe Reinhard A. 3,181,474.
Unipress Co., Inc., The: *See—*
  Lucius, Donald B., and Carpenter. 3,181,747.
United Aircraft Corp.: *See—*
  Brahm, Charles B., and Gamble. 3,181,353.
  Marcus. Milton, Porter, and Pearl. 3181817.
  Paul, William F. 3,181,815.
  Pearl, David R. 3,181,818.
United-Carr Inc.: *See—*
  FitzGerald, Robert E. 3,182,279.
  Mejlso, George M. 3,181,411.
  Melanson Everett, and Bachman. 3,181,989.
  Newbold. Thomas. 3,181,830.
  Shears, Stuart T. 3 181,216.
United Coke and Chemicals Co. Ltd.: *See—*
  Riley, Harry L. 3,182,027.
United Electric Controls Co.: *See—*
  Leupold, Henry G. 3,182,146.
United Kingdom Atomic Energy Authority: *See—*
  Challender, Ronald S. 3 181,232.
  Laithwaite, John M., Cole, and Hutchinson. 3,182,002.
United States of America
  Agriculture: *See—*
    Knoepfler, Nestor B., Gardner, and Vix. 3,181,225.
  Air Force: *See—*
    Davis, Carroll C. 3,181,835.
    Frank, Alan I. 3,182,320.
    Glaze Thomas C. 3,181,844.
    Holder, Floyd P. 3,182,259.
    Poor, Edmund W., Jr. 3 182,221.
    Schoenfelder, Carl W. 3,181,305.
  Army: *See—*
    Favre, Maurice. 3,182,225.
    Gossard. William H. 3,182,263.
    Jenkins, Lonnie W., and Pratt. 3,181,246.
    Magnuson, Roland A. 3 181,427.
    Rocha, John G. 3,181,423.
  Atomic Energy Commission: *See—*
    Daut, Francis X., and Work. 3,182 280.
    Fischer, Joachim Higinbotham, and Chase. 3,182,208.
    Hesson James C. 3,181,700.
    Roskelley, Jack A.3,181,653.
    Simnad, Massoud T. 3,182,102.
  Interior: *See—*
    Field, Joseph H., and Bienstock. 3,181,929.
  Navy: *See—*
    Allen, Sanford R., and Foote. 3,181,822.
    Bunt, Edgar A., and Olsen. 3,182,176.
    Czajkowski, Norman. 3,181,466.
    Draim, John E. 3,181,422.
    Ellingson, Herman E., and Munson. 3,182,283.
    Fiedler Richard J. 3,182,251.
    Green, Charles E. 3,182,284.
    Gulick, Joseph F., Jr., Jacot, Knapp, and Nall. 3,181,813.
    Hauser, Ralph I., and Houston. 3,182,321.
    Herring, David L. 3,182,028.
    Jopson, Howard B., Yentzer, and Karnow. 3,181,893.
    Kramer, Bruce E., and Fields. 3 181,964.
    Miller, Kenneth D., Jr. 3,181,848.
    Moran, Stephen F., and Ballard. 3,182,115.
    Pittman, Charles W. 3,181,814.
    Simon Lewis B. 3,181,509.
U.S. Peroxygen Corp.: *See—*
  Leveskis, Newton G. 3,181,991.
  Leveskis, Newton G. 3,182,026.
United States Pipe and Foundry Co.: *See—*
  Montgomery, William A. 3,181,210.
United States Rubber Co.: *See—*
  Ladd, Elbert C. 3,182,072.
United States Steel Corp.: *See—*
  Drangula, Joseph P. 3,181,397.
  Teplitz, Alfred. 3,181,846.
United States Stoneware Co., The: *See—*
  Eckert, John S. 3,181,842.
U.S. Vitamin Pharmaceutical Corp.: *See—*
  Shapiro, Seymour L., Freedman, and Karten. 3,182,064.
United Steel & Wire Co.: *See—*
  Schray, Walter H. 3,181,723.
Universal Button Co.: *See—*
  Schmidt, Erich A. 3,181,489.
Universal Research: *See—*
  Dreyer, Allen F. 3,181 867.
Vacuum Cleaner Corp. of America: *See—*
  Meletti, Adolph. 3,182,139.
Vana, Oldrich: *See—*
  Pelich, Eduard, and Vana. 3,181,657.
Van Brakel, Gerardus, to Chem-Y, Fabriek van Chemische Producten N.V. Apparatus for the treatment of floors. 3,181,195, 5-4-65, Cl. 15—501.
Vandale Corp.: *See—*
  Olson, Earl G. 3,181,715.
Van Dam Max, O. Baturay, and W. C. Zaniewski, to Anken Chemical & Film Corp. Transfer process for producing stencils. 3 181,458, 5-4-65, Cl. 101—128.3.
Van den Berg, Janwillem. Blood loss meter. 3,182,252, 5-4-65, Cl. 324—30.
Vanderbilt, Suzanne E.: *See—*
  Gelfand, Louis, and Vanderbilt. 3,182,162.
Vander Hagen, Orrie F., to General Motors Corp. Refrigerant engine cooling and auxiliary power system. 3,181,308, 5-4-65, Cl. 62—238.
Van der Helm, J. P., to North American Philips Co., Inc. Oven for heating objects by microwaves. 3,182,165, 5-4-65, Cl. 219—10.55.
Van der Lely, C., N.V.: *See—*
  Van der Lely, Cornelis. 3,181,290.
Van der Lely, Cornelis, to C. van der Lely, N.V. Tedders. 3,181,290, 5-4-65, Cl. 56—372.
Vandermark Roger C.: *See—*
  Beardow, George M., and Vandermark. 3,182,158.
Vander Ploeg, Alfred R., to Texaco Inc. Method of determining distribution of fractions of a material by radioactive means. 3,182,192. 5-4-65, Cl. 250—43.5.
Van der Winden, Johannes B., to Gebr. Stork & Co.'s Apparatenfabriek N.V. Tubular carriers for the sterilization of commodities in containers. 3,181,689, 5-4-65, Cl. 198—131.
Van Hook, John O., to Rohm & Haas Co. Vinyl chloride resins plasticized with mixed esters of saturated polyhydric alcohols esterified with naphthenic acid and epoxidized fatty acids. 3,182,034, 5-4-65, Cl. 260—30.4.
Van Ness, John H., and D. O. Stephens, to Monsanto Co. Cold water soluble compositions. 3,181,953, 5-4-65, Cl. 99—78.
Van Raden, Frederick F., to Peerless Trailer and Truck Service, Inc. Clamp for trailer reach. 3,181,881, 5-4-65, Cl. 280—34.
Van Wijk, Hendrik F., to Nederlandse Centrale Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek. Purification of crystalline substances. 3,182,098, 5-4-65, Cl. 260—707.
Van Winkle, Roy L., W. L. Lankford, Jr., and C. S. Ward, to The Geolograph Co. Recorder construction. 3,182,332, 5-4-65, Cl. 346—44.
Varian Associates: *See—*
  Gang, Robert E., and Nelson. 3,182,231.
Veatch, Franklin: *See—*
  Foreman, Robert W., and Veatch. 3,181,932.
Vendo Co., The: *See—*
  Haverstick, Merral P., and Lotspeich. 3,181,678.
Venus Pen & Pencil Corp.: *See—*
  Reine, George. 3,181,697.
Verville, William P. Conductor sleeve and packing gland for sub-aqueous marine drilling. 3,181,628, 5-4-65, Cl. 175—10.
Victor Comptometer Corp.: *See—*
  Maples, Richard E. 3,181,759.
Videtic, Silvan, to The Leece-Neville Co. Molded brush holder plate. 3,182,218, 5-4-65, Cl. 310—239.
Vienna, Paul C.: *See—*
  Plemich, John J., and Vienna. 3,182,023.
Vinson, Russell G.: *See—*
  Broadhead, Samuel L., Fredrickson, and Vinson. 3,182,261.
Vitramon, Inc.: *See—*
  Beardow, George M., and Vandermark. 3,182,158.
Vits, Hilmar, to Maschinenfabrik Vits G.m.b H. Apparatus and method of drying web material by directing hollow gas jet streams against opposite faces of the web. 3,181,250, 5-4-65, Cl. 34—23.
Vix, Henry L. E.: *See—*
  Knoepfler, Nestor B., Gardner, and Vix. 3,181,225.
Vockenhuber, Karl: *See—*
  Keznickl, Eduard. 3,181,447.
  Keznickl, Eduard, and Freudenschuss. 3,181,805.
Voelker, Walter D., to Allied Chemical Corp. Froth applicator. 3,181,199, 5-4-65, Cl. 18—4.
Vogel, Arthur E., ½ to Dawson-Vogel Engineering Co., ¼ to W. H. F. Schmieding, and ¼ to P. Fults. Electromagnetic control system for fluid actuated suspension system. 3,181,878, 5-4-65, Cl. 280—6.1.
Vogel, Charles B., to Shell Oil Co. Well logging. 3,182,285, 5-4-65, Cl. 340—18.

Volkmann, Dieter, to Bukama G.m.b.H. Pneumatic fastener device. 3,181,428, 5-4-65, Cl. 91—392.

Volkmann, Dieter, to Bukama G.m.b.H. Control valve for pneumatic equipment. 3,181,566, 5-4-65, Cl. 137—625.6.

Vom Dorp, Walter, and O. Gerhardus, to Mannesmann-Meer Aktiengesellschaft. Rolling mill having plurality of roll heads. 3,181,332, 5-4-65, Cl. 92—224.

Von Gal, George E., Jr. Combination loader and unloader machine. 3,181,712, 5-4-65, Cl. 214—6.

Von Strandtmann, Maximilian : *See*—

Shavel, John, Jr., Von Strandtmann, and Cohen. 3,182,071.

Vordahl, Milton B., to Crucible Steel Co. of America. Powder metallurgy processes and products. 3,181,947, 5-4-65, Cl. 75—205.

Voutsas, Alexander M., to American Bosch Arma Corp. Accelerometer. 3,181,373, 5-4-65, Cl. 73—517.

Vulcan Corp. : *See*—

Hunt, Charles J. 3,181,186.

Vyzkumny ustav prislusenstvi motorovych vozidel : *See*—

Pelich, Eduard, and Vana. 3,181,657.

Wacker-Chemie G.m.b.H. : *See*—

Fruhwirth, Otto. 3,182,006.

Wagner, Arthur M. : *See*—

Nimke, Helmut E., and Wagner. 3,181,421.

Wagner, Charles H., and R. J. Killoren. Document fastener. 3,181,218, 5-4-65, Cl. 24—153.

Wagner Electric Corp. : *See*—

Cruse, Oliver B. 3,181,433.

Wahlin, Fred W., E. J. O'Brien, and R. P. Williams, to Spraying Systems Co. Airless spray gun having spray and valve safety means. 3,181,798, 5-4-65, Cl. 239—499.

Wakeman, Reginald L., to Millmaster Onyx Corp. Process of rendering hydrophobic textile material antistatic and resulting product. 3,181,969, 5-4-65, Cl. 117—138.8.

Walker, Bayard F. : *See*—

Kampmeyer, Roy A., Lee, and Walker. 3,182,125.

Walker (Enfield) Ltd. : *See*—

Walker, William E. 3,181,404.

Walker Mfg. Co. : *See*—

Arnes, Lyle L., and Uhen. 3,181,836.

Rhodes, Keith H. 3,181,779.

Walker, William E., to Walker (Enfield) Ltd. Cutting machines. 3,181,404, 5-4-65, Cl. 83—98.

Wallace, Wilbur. Peanut harvester. 3,181,617, 5-4-65, Cl. 171—61.

Wallis, Lyle, and J. O. Mathis, to Martin-Marietta Corp. Process for resistance welding through a butyl rubber weld-through sealant. 3,181,235, 5-4-65, Cl. 29—484.

Walraven, Ollie C. Semi-automatic hog and calf feed dispenser. 3,181,505, 5-4-65, Cl. 119—51.

Wandrey, Clarence W., to Zenith Radio Corp. UHF tuner with turret mounted rotor elements adjustable when rotor is in register with stator. 3,182,274, 5-4-65, Cl. 334—80.

Warburton, Peter H., and B. F. White, to General Dynamics Corp. Toroidal core winding machine. 3,181,803, 5-4-65, Cl. 242—4.

Ward, Carl S. : *See*—

Van Winkle, Roy L., Lankford, and Ward. 3,182,332

Wardale, John K S. : *See*—

Putnam, William E., Sutherland, and Wardale. 3,182,197.

Warner-Lambert Pharmaceutical Co. : *See*—

Dubnick, Bernard. 3,181,994.

Goldschmidt, Eric N. 3,182,061.

McDaniel, Lloyd E., Schaffner, and Bailey. 3,182,004.

Satzinger, Gerhard. 3,182,063.

Shavel, John, Jr., Von Strandtmann, and Cohen. 3,182,071.

Warren Petroleum Corp. : *See*—

Phelps, Rex V. 3,181,589.

Washbond, Harry H., to Allis-Chalmers Mfg. Co. Piston and unloading valve therefor. 3,181,429, 5-4-65, Cl. 91—401.

Waters, William M. Multidimensional pulse height trackers. 3,182,206, 5-4-65, Cl. 307—88.5.

Watkins, Nathaniel L., Jr., and R. M. McCurdy, to Minnesota Mining and Mfg. Co Amide-cured carboxyl-terminated prepolymers. 3,182,040, 5-4-65, Cl. 260—75.

Watkins, Nathaniel L., Jr., and R. M. McCurdy, to Minnesota Mining and Mfg. Co. Polyester and method of making same. 3,182,041, 5-4-65, Cl. 260—75.

Watts, Beulah S. : *See*—

Mertzweiller, Joseph K., and Watts. 3,182,090.

Watts, John D. Instant release connection with a reduced effective angle of friction. 3,181,901, 5-4-65, Cl. 285—367.

Watts, Rhea N. : *See*—

Mertzweiller, Joseph K., and Watts. 3,182,090.

Waugaman, Jacob G. : *See*—

Dwyer, Edd C., and Waugaman. 3,182,189.

Webb, James E., administrator of the National Aeronautics and Space Administration, with respect to an invention of T. O. Eddin. Spacecraft soft landing system. 3,181,821, 5-4-65, Cl. 244—100.

Weber, Artur, and A. Rufer, to Saia A.G. Program-timing device. 3,182,212, 5-4-65, Cl. 307—141.4.

Weber, Rolf D., to Svenska Metallverken, Aktiebolaget. Extrusion apparatus. 3,181,335, 5-4-65, Cl. 72—273.

Weber, William C., to Dorr-Oliver Inc. Process for producing phosphoric acid. 3,181,931, 5-4-65, Cl. 23—165.

Wedding, Earl S. : *See*—

Guido, Lewis, and Wedding. 3,181,913.

Wegler, Richard . *See*—

Sasse, Klaus, Wegler, and Eue. 3,182,068.

Wehrmeister, Herbert L., and H. I. Yalowitz, to Commercial Solvents Corp. Amino alcohol modified polyacrylates. 3,182,047, 5-4-65, Cl. 260—89.5.

Weidman, Charles R. Electron beam scanning semiconductor magnetic tape readout device. 3,182,299, 5-4-65, Cl. 340—174.1.

Weiner, Lazarus C., to Esso Research and Engineering Co. Process for restoring ductility to hydrogen attacked steel. 3,181,978, 5-4-65, Cl. 148—14.

Weinstock, Joseph : *See*—

Pachter, Irwin J., and Weinstock. 3,182,062.

Weintraub, Leonard : *See*—

Wilson, Armin G., Weintraub, and Kennedy. 3,182,084.

Weismann, Theodore J. : *See*—

Lilly, Arnya C., Jr., Shutes, and Weismann. 3,182,190.

Weisz, Paul B. : *See*—

Frilette, Vincent J., and Weisz. 3,181,928.

Wellman, William E., to Esso Research and Engineering Co. Preparation of 1,5-cyclododecadiene. 3,182,093, 5-4-65, Cl. 260—667.

Wells, James H. : *See*—

Crawford, Herman E., and Wells. 3,181,313.

Wenger, Harry J. Portable stage and shell. 3,181,203, 5-4-65, Cl. 20—1.126.

Wentorf, Robert H., Jr., to General Electric Co. Radioactive diamond and process for the preparation thereof. 3,181,933, 5-4-65, Cl. 23—209.1.

Wenzel, Carl P. : *See*—

Rosky, Frederick, and Wenzel. 3,181,882.

Werber, Frank X. : *See*—

Baptist, James N., and Werber. 3,182,036.

Werner, Harry O., to Wildman Jacquard Co. Auxiliary take-up mechanism for knitting machines. 3,181,315, 5-4-65, Cl. 66—150.

Werner, Johannes, to H. T. Golde, G.m.b.H. & Co. K.G. Motor vehicle door. 3,181,857, 5-4-65, Cl. 268—122.

Wesix Electric Heater Co. : *See*—

Fish, Walter Y., Conlee, and Martin. 3,182,194.

Wesslund, Robert E., to Sperry Rand Corp. Relay actuating saturable inductor. 3,182,229, 5-4-65, Cl. 317—148.

West, Benjamin W. : *See*—

Bilbrey, Robert A. 3,181,496.

West, John B., and W. R. Wills, to Maryland Cup Corp. Container feeding machine. 3,181,728, 5-4-65, Cl. 221—221.

West, John R., and R. T. Westfall, to The O M. Scott & Sons Co. Ground cover. 3,181,273, 5-4-65, Cl. 47—26.

West, Samuel R., and F. E. Dollarhide, to The Dow Chemical Co. Selective plugging of subterranean formations to inhibit intrusion of water into oil-producing strata. 3,181,612, 5-4-65, Cl. 166—33.

Westbrook, John H. : *See*—

Mohler, Donald, Westbrook, and Jenny. 3,182,235.

Western Die Casting Co. : *See*—

Ike, Ernest C. 3,181,426.

Western Electric Co. Inc. : *See*—

Asons, Ernest, and Hillsman. 3,181,417.

Grainger, William G., and Wilson. 3,181,227.

Westfall, Richard T. : *See*—

West, John R., and Westfall. 3,181,273.

Westinghouse Air Brake Co. : *See*—

Berill, Joseph M. 3,182,188.

Dwyer, Edd C., and Waugaman. 3,182,189.

Westinghouse Electric Corp. : *See*—

Thorp, Arthur G. II, Widmer, and Frisch. 3,182,003.

Weyerhaeuser Co. : *See*—

Collins, Vernon H., and Goetschius. 3,181,772.

Flynn, Thomas W., and Smith. 3,181,768.

Weyl, Dieter : *See*—

Kerhart, Waldemar, Wienand, and Weyl. 3,181,240.

Wheeling Steel Corp. : *See*—

Cook, Nelson E., and Norteman. 3,181,963.

Whessoe Ltd. : *See*—

Putnam, William E., Sutherland, and Wardale. 3,182,197.

Whitcomb, Robert L., Jr. : *See*—

Markle, Jacob E., and Whitcomb. 3,181,868.

White, Benjamin F. : *See*—

Warburton, Peter H., and White. 3,181,803.

White Consolidated Industries, Inc. : *See*—

Balcom, George A., and Archbold. 3,182,110.

White, Herman J. : *See*—

Boylan, Edward B., White, B. P. Boylan, and Pyre. 3,181,887.

Boylan, Edward B., White, B. P. Boylan, and Pyre. 3,181,888.

White Laboratories, Inc. : *See*—

Miskel, John J., and Bailey. 3,181,735.

White Metal Rolling & Stamping Corp. : *See*—

Larson, Clayton E. 3 181,651.

White Motor Co., The : *See*—

Harris, Bert C. 3,181,889.

White, Stuart M. : *See*—

Taterka, Michael, and White. 3,181,695.

White, William J. Pogo stick. 3,181,862, 5-4-65, Cl. 272—57.

Whitehead & Kales Co. : *See*—

Blunden, Donald J., Widener, and Haggarty. 3,181,886.

Whittlesey, Henry D. : *See*—

Cameron, William M., and Powers. 3,181,880.

Whittlesey, Powers, and Cameron : *See*—

Cameron, William M., and Powers. 3,181,880.

Widener, William E. : *See*—

Blunden, Donald J., Widener, and Haggarty. 3,181,886.

Widmer, Thomas F. : *See*—

Thorp, Arthur G., II, Widmer, and Frisch. 3,182,003.

Wienand, Heinrich : *See*—

Kerhart, Waldemar, Wienand, and Weyl. 3,181,240.

Wiener Kammfabrik Anton Abraham Komm. Ges. : *See*—

Abraham, Anton. 3 181,540.

Wiese, Otto, to Siemens & Halske Aktiengesellschaft. Measuring reference distortion of telegraph symbols in start-stop telegraph operation. 3,182,127, 5-4-65, Cl. 178—69.

Wight, Carlyle G. : *See*—

Fleck, Raymond N., and Wight. 3,182,017.

Wilbert, Godfrey, to Nepera Chemical Co., Inc. Method of preparing 2,4,6-triiodinated aromatic compounds. 3,182,089, 5-4-65, Cl. 260—623.

Wilburn, Edgar H. Valved body-fluid sampling tubes. 3,181,529, 5-4-65, Cl. 128—2.

Wilbushewich, Eugen. Apparatus for freezing a liquid. 3,181,309, 5-4-65, Cl. 62—352.

Wildman Jacquard Co. : *See*—

Werner, Harry O. 3,181,315.

Wiley, William, to The General Tire & Rubber Co. Inorganic cement containing a retarding amount of a modified aldehyde polymer. 3,181,610, 5-4-65, Cl. 166—31.

Wilkinson, John S., to Surf Tow, Inc. Towing system for surfboards and the like. 3,181,861, 5-4-65, Cl. 272—32.

Wilks, Gordon N., and A. T. Langton, to Esso Research and Engineering Co. Process for preparing petroleum oil additives. 3,182,019, 5-4-65, Cl. 252—32.7.

Willenbring, Louis H. Foot pedal opener for garage door. 3,181,855, 5-4-65, Cl. 268—42.

Williams, Lawrence S., to Toledo Scale Corp. Weighing scales. 3,181,634, 5-4-65, Cl. 177—169.

Williams, Michael R. : *See*—

Orchard, Peter F., and Williams. 3,181,293.

Williams, Robert P. : *See*—

Wahlin, Fred W., O'Brien, and Williams. 3,181,798.

Willis, William B. : *See*—

Dotson, Cleao R., and Willis. 3,181,485.

Wills, William R. : *See*—

West, John B., and Wills. 3,181,728.

Wilson, Armin G., L. Weintraub, and D. M. Kennedy, to Bristol-Myers Co. Amino-ketones and their method of preparation. 3,182,084, 5-4-65, Cl. 260—570.5.

Wilson, C. J., 50% to J. V. Wilson. Fishing tackle bag. 3,181,751, 5-4-65, Cl. 224—5.20.

Wilson, Charles E. : *See*—

Laws, Ira G., and Wilson. 3,181,785.

Wilson, Delbert E. : *See*—

Grainger, William G., and Wilson. 3,181,227.

Wilson, John V. : *See*—

Wilson, C. J. 3,181,751.

Wing, George S., to Hi-Shear Rivet Tool Co. Fastening device with lubricating means. 3,181,413, 5-4-65, Cl. 85—70.

Winnan, Russell M., and W. D. Porter, to American Screen Products Co. Bi-fold door unit. 3,181,596, 5-4-65, Cl. 160—206.

Winslow, Alfred E. : *See*—

Clark, Jared W., and Winslow. 3,182,099.

Winstrom, Bertil G. : *See*—

Mattson, Richard E., and Winstrom. 3,181,334.

Winter, Paul H., to Pass & Seymour, Inc. Handle quieting action for A.C. switches. 3,182,161, 5-4-65, Cl. 200—168.

Winters, Frank H. : *See*—

Lohbauer, Kenneth R., Myers, and Winters. 3,181,667.

Wirch, Leon S. : *See*—

Genin, Robert I., and Wirch. 3,181,869.

Wisconsin Alumni Research Foundation : *See*—

Herb, Raymond G. 3,181,775.

Wise, Glenn E. Convertible truck box. 3,181,909, 5-4-65, Cl. 296—10.

Wishing, Eugene M., to I-T-E Circuit Breaker Co. Article bending machine. 3,181,331, 5-4-65, Cl. 72—215.

Withams, Brian F., to The Mettoy Co. Ltd. Simulated head lamps for toy vehicles. 3,181,271, 5-4-65, Cl. 46—202.

Witherell, Charles E. : *See*—

Peck, James V., and Witherell. 3,181,970.

Wittry, Eugene J. : *See*—

Freedy, Allan L., and Wittry. 3,181,430.

Wolf Envelope Co., The : *See*—

Littman, Alan L. 3,181,774.

Wolf, Morris A. Manikin for the display of blouses and the like. 3,181,748, 5-4-65, Cl. 223—68.

Wolff, Gunther, to Machine Tool Automation, Inc. Vernier digital encoder. 3,182,305, 5-4-65, Cl. 340—347.

Wolfson, Leonard L. : *See*—

Michalski, Raymond J., Nelson, and Wolfson. 3,181,992.

Wood, Gar, Industries, Inc. : *See*—

Spisak, Edward G. 3,181,915.

Wood, James A. : *See*—

Schroter, Richard C., and Wood. 3,181,275.

Wood, Walter E. : *See*—

Sawyer, Loren A., and Wood. 3,181,267.

Woods, George H. : *See*—

Immermann, Milton, Ensign, and Woods. 3,181,732.

Woodsford, Henry : *See*—

Milonas, Timothy S., and Woodsford. 3,181,729.

Woodward, Henry T., and W. A. Shrode, to FMC Corp. Liquid to liquid heat exchange. 3,181,600, 5-4-65, Cl. 165—1.

Woodward, Raymond L. : *See*—

Dorsch, Daniel W., Woodward, and Rovelsky. 3,182,253.

Woolley, Kenneth R., and L. L. Quigley, to Ledex, Inc. Mounting for vibratory reed devices. 3,182,233, 5-4-65, Cl. 317—182.

Worden, Donald A., and S. R. Smolen, to Marotta Valve Corp. Pressure regulating valve construction. 3,181,560, 5-4-65, Cl. 137—494.

Work, Ralph O. : *See*—

Daut, Francis X., and Work. 3,182,280.

Worst, Marc T. Registering scale system. 3,181,633, 5-4-65, Cl. 177—44.

Wright, Clifford B. : *See*—

Medisch, Joseph C., and Wright. 3,181,615.

Wright-Knit Hosiery Mills, Inc. : *See*—

Auton, Claud C. 3,181,316.

Wright, Malor, to Itek Corp. Data processing system. 3,181,449, 5-4-65 Cl. 95—89.

Wu, William I. L., to The Singer Co. Frequency discriminator employing a timing circuit. 3,182,265, 5-4-65, Cl. 328—140.

Wurzburg, Warren F., and J. M. Reid, to Goodman Mfg. Co. Method for loosening frozen ore beds. 3,181,799, 5-4-65, Cl. 241—1.

Wyatt, William K., to Turbo Machine Co. Apparatus for dyeing yarn packages. 3,181,318, 5-4-65, Cl. 68—150.

Yager, George A., to Purex Corp., Ltd. Phosphating process and composition. 3,181,976, 5-4-65, Cl. 148—6.15.

Yalowitz, Harold I. : *See*—

Wehrmeister, Herbert L., and Yalowitz. 3,182,047.

Yeakley, Vernon J. : *See*—

Glazier, Edwin M., Helwig, and Yeakley. 3,182,094.

Yentzer, Harold V. : *See*—

Jopson, Howard B., Yentzer, and Karnow. 3,181,893.

Yeo, Alan A., and J. K. Hambling, to The British Petroleum Co. Ltd. Dimerisation of propylene. 3,182,096, 5-4-65, Cl. 260—683.15.

Yohpe, Reinhard A., to Union Pump Co. Dismountable pressure pump. 3,181,474, 5-4-65, Cl. 103—153.

Young, Gerald H. Oscillating engine. 3,181,513, 5-4-65, Cl. 123—18.

Yperman, Jean M. B. G. : *See*—

De Proost, Roger M. A., Klaassen, and Yperman. 3,182,118.

Yule, William H. D., to International Standard Electric Corp. Electromagnetic relays. 3,182,232, 5-4-65, Cl. 317—171.

Zahnfabrik Wienand Sohne & Co., G.m.b.H. : *See*—

Kerhart, Waldemar, Wienand, and Weyl. 3,181,240.

Zaidener, Kitty. Cooking by means of electricity. 3,181,452, 5-4-65, Cl. 99—332.

Zajac, Thaddeus T., L. A. Osowski, and J. Michalowski. Drafting instrument. 3,181,243, 5-4-65, Cl. 33—104.

Zaniewski, Walter C. : *See*—

Van Dam, Max, Baturay, and Zaniewski. 3,181,458.

Zavertnik, Marshall G., and J. J. Farina, to Killark Electric Mfg. Co. Universal junction box for housing different types of electrical apparatus. 3,182,160, 5-4-65, Cl. 200—168.

Zeiss, Ernest R., to Motorola, Inc. Shock mounting. 3,182,130, 5-4-65, Cl. 179—1.

Zeitlin, Alexander, to Barogenics, Inc. Shock aided extrusion. 3,181,328, 5-4-65, Cl. 72—56.

Zemels, Carl G. : *See*—

Thornton, John A., and Zemels. 3,181,341.

Zenith Radio Corp. : *See*—

Tompson, Clement R. 3,181,497.

Wandrey, Clarence W. 3,182,274.

Zetterlund, Rune A. E., to Standard Pressed Steel Co. Power hand tool. 3,181,338, 5-4-65, Cl. 72—391.

Zimmerman, Carl W., and A. P. Brokaw, to Dresser Industries, Inc. Acoustic well logging transmission system. 3 182,286, 5-4-65, Cl. 340—18.

Zimmern, Fernand. Gas engine with continuous fuel injection. 3,181,296, 5-4-65, Cl. 60—39.63.

Zoda, Keiichi : *See*—

Fujita, Yoshimasa, Shimoda, and Zoda. 3,182,106.

Zurich, Nikola O. Internal combustion engine. 3,181,515, 5-4-65, Cl. 123—41.65.

Zyrotron Industries, Inc. : *See*—

Quinn, Frederic R. 3,182,217.

CLASSIFICATION OF PATENTS

ISSUED MAY 4, 1965

NOTE.—First number, class; second number, subclass; third number, patent number

2 – 150 : 3,181,175
4 – 1 : 3,181,176
57 : 3,181,177
252 : 3,181,178
5 – 334 : 3,181,179
336 : 3,181,180
7 – 5.6 : 3,181,181
8 – 4 : 3,181,926
116.3 : 3,181,927
9 – 8 : 3,181,182
333 : 3,181,183
340 : 3,181,184
10 – 10 : 3,181,185
12 – 136 : 3,181,186
13 – 6 : 3,182,112
3,182,113
14 – 73 : 3,181,187
15 – 22 : 3,181,188
3,181,189
98 : 3,181,190
104.01: 3,181,191
104.3 : 3,181,192
114 : 3,181,193
250.02: 3,181,194
501 : 3,181,195
525 : 3,181,196
16 – 161 : 3,181,197
17 – 8 : 3,181,198
18 – 4 : 3,181,199
5.3 : 3,181,200
8 : 3,181,201
19 : 3,181,202
20 – 1.126 3,181,203
53 : 3,181,204
69 : 3,181,205
22 – 5.5 : 3,181,206
20 : 3,181,207
41 : 3,181,208
57.4 : 3,181,209
65 : 3,181,210
68 : 3,181,211
70 : 3,181,212
193 : 3,181,213
23 – 2 : 3,181,928
3 : 3,181,929
91 : 3,181,930
165 : 3,181,931
190 : 3,181,932
209.1 : 3,181,933
218 : 3,181,934
24 – 73 : 3,181,214
75 : 3,181,215
77 : 3,181,216
116 : 3,181,217
153 : 3,181,218
203 : 3,181,219
225 : 3,181,220
230 : 3,181,221
25 – 41 : 3,181,222
153 : 3,181,223
28 – 72 : 3,181,224
75 : 3,181,225
29 – 25.3 : 3,181,226
25.42: 3,181,227
149.5 : 3,181,228
155.5 : 3,181,229
155.63: 3,181,230
182.5 : 3,181,231
183.5 : 3,181,935
194 : 3,181,936
202 : 3,181,232
235 : 3,181,233
237 : 3,181,234
484 : 3,181,235
561 : 3,181,236
30 – 34.2 : 3,181,237
94 : 3,181,238
166 : 3,181,239
32 – 8 : 3,181,240
33 – 46 : 3,181,241
75 : 3,181,242
104 : 3,181,243
143 : 3,181,244
169 : 3,181,245
174 : 3,181,246
179.5 : 3,181,247
203.18: 3,181,248
204 : 3,181,249
34 – 23 : 3,181,250
153 : 3,181,251
35 – 9 : 3,181,252
60 : 3,181,253
36 – 39 : 3,181,254
37 – 43 : 3,181,255
117.5 : 3,181,256
135 : 3,181,257

37 – 144 : 3,181,258
38 – 66 : 3,181,259
40 – 124.1 : 3,181,260
138 : 3,181,261
42 – 79 : 3,181,262
43 – 8 : 3,181,263
22 : 3,181,264
42.7 : 3,181,265
43.13: 3,181,266
55 : 3,181,267
110 : 3,181,268
44 – 2 : 3,181,937
69 : 3,181,938
46 – 79 : 3,181,269
104 : 3,181,270
202 : 3,181,271
244 : 3,181,272
47 – 26 : 3,181,273
50 – 24 : 3,181,274
66 : 3,181,275
82 : 3,181,276
127 : 3,181,277
418 : 3,181,278
51 – 90 : 3,181,279
170 : 3,181,280
209 : 3,181,281
217 : 3,181,282
218 : 3,181,283
309 : 3,181,939
55 – 132 : 3,181,284
138 : 3,181,285
163 : 3,181,286
257 : 3,181,287
56 – 25 : 3,181,288
294 : 3,181,289
372 : 3,181,290
57 – 148 : 3,181,291
59 – 1 : 3,181,292
60 – 35.55: 3,181,293
39.15: 3,181,294
39.16: 3,181,295
39.63: 3,181,296
39.72: 3,181,297
54.5 : 3,181,298
54.6 : 3,181,299
61 – 54 : 3,181,300
72.4 : 3,181,301
72.7 : 3,181,302
62 – 3 : 3,181,303
3,181,304
12 : 3,181,305
22 : 3,181,306
23 : 3,181,307
238 : 3,181,308
352 : 3,181,309
432 : 3,181,310
440 : 3,181,311
65 – 187 : 3,181,941
66 – 28 : 3,181,312
42 : 3,181,313
3,181,314
49 : 3,181,940
150 : 3,181,315
179 : 3,181,316
67 – 7.1 : 3,181,317
68 – 150 : 3,181,318
70 – 14 : 3,181,319
421 : 3,181,320
456 : 3,181,321
71 – 2.3 : 3,181,942
36 : 3,181,943
72 – 17 : 3,181,322
26 : 3,181,323
42 : 3,181,324
43 : 3,181,325
46 : 3,181,326
56 : 3,181,327
3,181,328
85 : 3,181,329
90 : 3,181,330
215 : 3,181,331
224 : 3,181,332
240 : 3,181,333
255 : 3,181,334
273 : 3,181,335
340 : 3,181,336
342 : 3,181,337
391 : 3,181,338
402 : 3,181,339
409 : 3,181,340
410 : 3,181,341
73 – 1 : 3,181,342
23 : 3,181,343
23.1 : 3,181,344
30 : 3,181,345
38 : 3,181,346

73 – 49.1 : 3,181,347
54 : 3,181,348
59 : 3,181,349
71.2 : 3,181,350
80 : 3,181,351
101 : 3,181,352
116 : 3,181,353
159 : 3,181,354
167 : 3,181,355
182 : 3,181,356
204 : 3,181,357
209 : 3,181,358
211 : 3,181,359
270 : 3,181,360
290 : 3,181,361
303 : 3,181,362
339 : 3,181,363
342 : 3,181,364
362 : 3,181,365
381 : 3,181,366
396 : 3,181,367
412 : 3,181,368
421 : 3,181,369
432 : 3,181,370
483 : 3,181,371
497 : 3,181,372
517 : 3,181,373
74 – 6 : 3,181,374
3,181,375
18.2 : 3,181,376
64 : 3,181,377
84 : 3,181,378
3,181,379
152 : 3,181,380
199 : 3,181,381
217 : 3,181,382
3,181,383
242 : 3,181,384
364 : 3,181,385
472 : 3,181,386
3,181,387
478 : 3,181,388
480 : 3,181,389
531 : 3,181,390
3,181,391
665 : 3,181,392
732 : 3,181,393
754 : 3,181,394
75 – 9 : 3,181,944
123 : 3,181,945
174 : 3,181,946
206 : 3,181,947
77 – 72 : 3,181,395
81 – 72 : 3,181,396
128 : 3,181,397
82 – 4 : 3,181,398
11 : 3,181,399
25 : 3,181,400
34 : 3,181,401
83 – 32 : 3,181,402
76 : 3,181,403
98 : 3,181,404
123 : 3,181,405
174 : 3,181,406
380 : 3,181,407
630 : 3,181,408
84 – 313 : 3,181,409
322 : 3,181,410
85 – 5 : 3,181,411
13 : 3,181,412
70 : 3,181,413
75 : 3,181,414
88 – 24 : 3,181,415
3,181,416
3,181,417
3,181,418
3,181,419
3,181,420
28 : 3,181,421
89 – 1.7 : 3,181,422
161 : 3,181,423
90 – 15 : 3,181,424
91 – 25 : 3,181,425
33 : 3,181,426
202 : 3,181,427
392 : 3,181,428
401 : 3,181,429
413 : 3,181,430
414 : 3,181,431
92 – 6 : 3,181,432
52 : 3,181,433
107 : 3,181,434
110 : 3,181,435
117 : 3,181,436
122 : 3,181,437
93 – 8 : 3,181,438

93 – 35 : 3,181,439
94 – 5 : 3,181,440
46 : 3,181,441
48 : 3,181,442
95 – 11.5 : 3,181,443
12 : 3,181,444
42 : 3,181,445
44 : 3,181,446
45 : 3,181,447
73 : 3,181,448
89 : 3,181,449
96 – 82 : 3,181,948
3,181,949
3,181,950
98 – 40 : 3,181,450
59 : 3,181,451
99 – 71 : 3,181,951
3,181,952
78 : 3,181,953
3,181,954
80 : 3,181,955
174 : 3,181,956
188 : 3,181,957
332 : 3,181,452
349 : 3,181,453
100 – 74 : 3,181,454
97 : 3,181,455
101 – 91 : 3,181,456
124 : 3,181,457
128.3 : 3,181,458
132.5 : 3,181,459
149.2 : 3,181,460
3,181,461
149.4 : 3,181,462
102 – 28 : 3,181,463
3,181,464
41 : 3,181,465
70.2 : 3,181,466
83 : 3,181,467
103 – 2 : 3,181,468
49 : 3,181,469
52 : 3,181,470
103 : 3,181,471
120 : 3,181,472
153 : 3,181,473
3,181,474
162 : 3,181,475
3,181,476
3,181,477
104 – 244.1 : 3,181,478
105 – 136 : 3,181,479
368 : 3,181,480
377 : 3,181,481
106 – 57 : 3,181,958
64 : 3,181,959
3,181,960
213 : 3,181,961
290 : 3,181,962
107 – 4 : 3,181,482
108 – 25 : 3,181,483
50 : 3,181,484
97 : 3,181,485
110 – 99 : 3,181,486
3,181,487
101 : 3,181,488
112 – 113 : 3,181,489
252 : 3,181,490
114 – 150 : 3,181,491
167 : 3,181,492
115 – 6.1 : 3,181,493
34 : 3,181,494
3,181,495
116 – 70 : 3,181,496
124.4 : 3,181,497
129 : 3,181,498
169 : 3,181,499
117 – 5.5 : 3,181,963
23 : 3,181,964
36.7 : 3,181,965
37 : 3,181,966
67 : 3,181,967
107 : 3,181,968
138.8 : 3,181,969
205 : 3,181,970
232 : 3,181,971
118 – 70 : 3,181,501
126 : 3,181,500
627 : 3,181,502
119 – 20 : 3,181,503
29 : 3,181,504
51 : 3,181,505
56 : 3,181,506
120 – 42.03: 3,181,507
122 – 356 : 3,181,508
123 – 16 : 3,181,509
3,181,510

123 – 16 : 3,181,511
3,181,512
18 : 3,181,513
41.35: 3,181,514
41.65: 3,181,515
41.82: 3,181,516
52 : 3,181,517
73 : 3,181,518
119 : 3,181,519
139 : 3,181,520
146.5 : 3,181,521
148 : 3,181,522
198 : 3,181,523
124 – 16 : 3,181,524
126 – 94 : 3,181,525
133 : 3,181,526
285 : 3,181,527
128 – 2 : 3,181,528
3,181,529
134 : 3,181,530
141 : 3,181,531
142 : 3,181,532
320 : 3,181,533
377 : 3,181,534
422 : 3,181,535
481 : 3,181,536
492 : 3,181,537
131 – 182 : 3,181,538
132 – 79 : 3,181,539
159 : 3,181,540
134 – 186 : 3,181,541
135 – 4 : 3,181,542
14 : 3,181,543
136 – 90 : 3,181,972
120 : 3,181,973
173 : 3,181,974
181 : 3,181,975
137 – 15 : 3,181,544
81.5 : 3,181,545
3,181,546
82 : 3,181,547
85 : 3,181,548
118 : 3,181,549
119 : 3,181,550
3,181,551
246.12: 3,181,552
357 : 3,181,553
3,181,554
375 : 3,181,555
389 : 3,181,556
391 : 3,181,557
438 : 3,181,558
489 : 3,181,559
494 : 3,181,560
505.18: 3,181,561
561 : 3,181,562
596 : 3,181,563
599.1 : 3,181,564
614.11: 3,181,565
625.43: 3,181,567
625.6 : 3,181,566
139 – 122 : 3,181,568
3,181,569
124 : 3,181,570
127 : 3,181,571
207 : 3,181,572
341 : 3,181,573
141 – 130 : 3,181,574
141 : 3,181,575
293 : 3,181,576
143 – 133 : 3,181,577
144 – 2 : 3,181,578
251 : 3,181,579
145 – 52 : 3,181,580
146 – 28 : 3,181,581
105 : 3,181,582
148 – 6.15: 3,181,976
13.1 : 3,181,977
14 : 3,181,978
33.1 : 3,181,979
177 : 3,181,980
185 : 3,181,981
149 – 19 : 3,181,982
150 – 3 : 3,181,583
151 – 37 : 3,181,584
41.75: 3,181,585
152 – 241 : 3,181,586
156 – 17 : 3,181,983
20 : 3,181,984
39 : 3,181,985
233 : 3,181,986
299 : 3,181,987
350 : 3,181,988
566 : 3,181,989
157 – 1.17: 3,181,587
158 – 27.4 : 3,181,588

158 – 32 : 3,181,589
100 : 3,181,590
104 : 3,181,591
124 : 3,181,592
159 – 28 : 3,181,593
160 – 124 : 3,181,594
171 : 3,181,595
206 : 3,181,596
348 : 3,181,597
403 : 3,181,598
161 – 119 : 3,181,990
165 – 1 : 3,181,599
3,181,600
4 : 3,181,601
3,181,602
9 : 3,181,603
22 : 3,181,604
90 : 3,181,605
158 : 3,181,606
170 : 3,181,607
166 – 4 : 3,181,608
9 : 3,181,609
31 : 3,181,610
33 : 3,181,611
3,181,612
38 : 3,181,613
122 : 3,181,614
167 – 38.6 : 3,181,992
65 : 3,181,993
3,181,994
3,181,995
74 : 3,181,996
3,181,997
82 : 3,181,998
170 – 160.1 : 3,181,615
171 – 58 : 3,181,616
61 : 3,181,617
172 – 6 : 3,181,618
99 : 3,181,619
375 : 3,181,620
455 : 3,181,621
519 : 3,181,622
173 – 22 : 3,181,623
43 : 3,181,624
44 : 3,181,625
53 : 3,181,626
100 : 3,181,627
174 – 15 : 3,182,114
3,182,115
40 : 3,182,116
52 : 3,182,117
94 : 3,182,118
151 : 3,182,119
3,182,120
175 – 10 : 3,181,628
40 : 3,181,629
85 : 3,181,630
96 : 3,181,631
329 : 3,181,632
176 – 39 : 3,181,999
40 : 3,182,000
50 : 3,182,001
65 : 3,182,002
78 : 3,182,003
177 – 44 : 3,181,633
169 : 3,181,634
264 : 3,181,635
178 – 5.1 : 3,182,121
7.3 : 3,182,122
3,182,123
3,182,124
7.92: 3,182,125
30 : 3,182,126
69 : 3,182,127
69.5 : 3,182,128
179 – 1 : 3,182,129
3,182,130
15 : 3,182,131
3,182,132
3,182,133
18 : 3,182,134
100.1 : 3,182,135
100.41: 3,182,136
170.8 : 3,182,137
175.31: 3,182,138
180 – 7 : 3,181,636
3,181,637
3,181,638
3,181,639
19 : 3,181,640
42 : 3,181,641
70 : 3,181,642
181 – .5 : 3,181,643
3,181,644
3,181,645
42 : 3,181,646

CLASSIFICATION OF PATENTS

181 – 54 : 3,181,647
63 : 3,181,648
182 – 152 : 3,181,649
179 : 3,181,650
228 : 3,181,651
184 – 6 : 3,181,652
188 – 1 : 3,181,653
73 : 3,181,654
79.5 : 3,181,655
88 : 3,181,656
242 : 3,181,657
189 – 11 : 3,181,658
34 : 3,181,659
3,181,660
54 : 3,181,661
88 : 3,181,662
3,181,663
3,181,664
191 – 12.4 : 3,182,139
192 – .096 3,181,672
2 : 3,181,665
3 : 3,181,666
4 : 3,181,667
3,181,677
48 : 3,181,668
81 : 3,181,669
84 : 3,181,670
3,181,671
103 : 3,181,673
113 : 3,181,674
148 : 3,181,675
193 – 35 : 3,181,676
194 – 9 : 3,181,678
195 – 80 : 3,182,004
197 – 6.7 : 3,181,679
17 : 3,181,680
66 : 3,181,681
84 : 3,181,682
3,181,683
198 – 24 : 3,181,684
3,181,685
87 : 3,181,686
120.5 : 3,181,687
127 : 3,181,688
131 : 3,181,689
193 : 3,181,690
208 : 3,181,691
211 : 3,181,692
200 – 9 : 3,182,140
17 : 3,182,141
30 : 3,182,142
42 : 3,182,143
46 : 3,182,144
48 : 3,182,145
56 : 3,182,146
61.13: 3,182,147
81 : 3,182,148
81.5 : 3,182,149
83 : 3,182,150
87 : 3,182,151
121 : 3,182,153
122 : 3,182,152
3,182,154
137 : 3,182,155
144 : 3,182,156
153 : 3,182,157
159 : 3,182,158
166 : 3,182,159
168 : 3,182,160
3,182,161
3,182,162
3,182,163
202 – 40 : 3,182,005
42 : 3,182,006
204 – 147 : 3,182,007
162 : 3,182,008
212 : 3,182,009
227 : 3,182,010
206 – 1 : 3,181,693
45.14: 3,181,694
63.2 : 3,181,695
65 : 3,181,696
67 : 3,181,697
72 : 3,181,698
80 : 3,181,699
208 – 78 : 3,182,011
111 : 3,182,012
112 : 3,182,013
245 : 3,182,014
255 : 3,182,015
264 : 3,182,016
310 : 3,182,017
209 – 17 : Re.25,774
210 – 175 : 3,181,700
211 – 74 : 3,181,701
119 : 3,181,702
126 : 3,181,703
3,181,704

211 – 132 : 3,181,705
163 : 3,181,706
212 – 8 : 3,181,707
213 – 104 : 3,181,708
214 – 1 : 3,181,709
3,181,710
3,181,711
6 : 3,181,712
11 : 3,181,713
16.4 : 3,181,714
17 : 3,181,715
142 : 3,181,716
394 : 3,181,717
215 – 9 : 3,181,718
46 : 3,181,719
56 : 3,181,720
217 – 42 : 3,181,721
219 – 10.55: 3,182,164
3,182,165
3,182,166
10.61: 3,182,167
10.69: 3,182,168
10.71: 3,182,169
10.79: 3,182,170
60 : 3,182,171
98 : 3,182,172
99 : 3,182,173
101 : 3,182,174
117 : 3,182,175
121 : 3,182,176
125 : 3,182,177
130 : 3,182,178
137 : 3,182,179
220 – 2.3 : 3,181,722
19 : 3,181,723
31 : 3,181,724
39 : 3,181,725
46 : 3,181,726
115 : 3,181,727
221 – 221 : 3,181,728
222 – 36 : 3,181,729
57 : 3,181,731
80 : 3,181,732
83 : 3,181,733
83.5 : 3,181,734
95 : 3,181,735
135 : 3,181,736
136 : 3,181,737
156 : 3,181,738
158 : 3,181,739
503 : 3,181,740
517 : 3,181,741
527 : 3,181,742
528 : 3,181,743
539 : 3,181,744
3,181,745
545 : 3,181,746
223 – 37 : 3,181,747
68 : 3,181,748
76 : 3,181,749
3,181,750
224 – 5 : 3,181,751
3,181,752
29 : 3,181,753
3,181,754
42.03: 3,181,755
45 : 3,181,756
225 – 96.5 : 3,181,757
103 : 3,181,758
226 – 51 : 3,181,759
227 – 7 : 3,181,730
10 : 3,181,760
228 – 49 : 3,181,762
53 : 3,181,763
229 – 1.5 : 3,181,764
3.5 : 3,181,765
14 : 3,181,766
17 : 3,181,767
23 : 3,181,768
30 : 3,181,770
35 : 3,181,771
52 : 3,181,772
69 : 3,181,773
70 : 3,181,774
230 – 69 : 3,181,775
101 : 3,181,776
125 : 3,181,777
134 : 3,181,778
172 : 3,181,779
232 – 1 : 3,181,780
5 : 3,181,781
17 : 3,181,782
234 – 119 : 3,181,783
235 – 2 : 3,181,784
51 : 3,181,785
60.15: 3,181,786
78 : 3,181,787

235 – 164 : 3,182,180
3,182,181
196 : 3,182,182
197 : 3,182,183
236 – 1 : 3,181,788
10 : 3,181,789
12 : 3,181,790
44 : 3,181,791
92 : 3,181,792
237 – 2 : 3,181,793
67 : 3,181,794
79 : 3,181,795
239 – 216 : 3,181,796
317 : 3,181,797
499 : 3,181,798
240 – 6.45: 3,182,184
10 : 3,182,185
10.1 : 3,182,186
78 : 3,182,187
241 – 1 : 3,181,799
24 : 3,181,800
100.5 : 3,181,801
257 : 3,181,802
242 – 4 : 3,181,803
18 : 3,181,804
55.11: 3,181,805
71.2 : 3,181,806
3,181,807
76 : 3,181,808
244 – 1 : 3,181,809
7 : 3,181,810
12 : 3,181,811
14 : 3,181,812
3,181,813
3,181,814
17.11: 3,181,815
17.17: 3,181,816
53 : 3,181,817
3,181,818
63 : 3,181,819
87 : 3,181,820
100 : 3,181,821
114 : 3,181,822
137 : 3,181,823
138 : 3,181,824
246 – 182 : 3,182,188
3,182,189
248 – 16 : 3,181,825
72 : 3,181,826
74 : 3,181,827
125 : 3,181,828
264 : 3,181,829
318 : 3,181,830
421 : 3,181,831
249 – 43 : 3,181,832
250 – 41.9 : 3,182,190
43 : 3,182,191
43.5 : 3,182,192
3,182,193
44 : 3,182,194
49.5 : 3,182,195
66 : 3,182,196
68 : 3,182,197
70 : Re.25,773
211 : 3,182,198
213 : 3,182,199
227 : 3,182,200
251 – 121 : 3,181,833
3,182,334
172 : 3,181,834
252 – 8.55: 3,182,018
32.7 : 3,182,019
40.7 : 3,182,020
46.6 : 3,182,021
3,182,022
46.7 : 3,182,023
50 : 3,182,024
415 : 3,182,025
430 : 3,181,991
3,182,026
439 : 3,182,027
253 – 77 : 3,181,835
254 – 8 : 3,181,836
188 : 3,181,837
259 – 8 : 3,181,838
3,181,839
9 : 3,181,840
72 : 3,181,841
89 : 3,181,842
260 – 2 : 3,182,028
8 : 3,182,029
17.3 : 3,182,030
3,182,031
28 : 3,182,032
28.5 : 3,182,033
30.4 : 3,182,034
3,182,035
32.4 : 3,182,036

260 – 45.75: 3,182,037
67 : 3,182,038
72 : 3,182,039
75 : 3,182,040
3,182,041
79.3 : 3,182,042
87.1 : 3,182,043
3,182,044
88.3 : 3,182,045
88.7 : 3,182,046
89.5 : 3,182,047
93.7 : 3,182,048
3,182,049
94.2 : 3,182,050
94.3 : 3,182,051
: 3,182,052
156 : 3,182,053
239 : 3,182,054
239.3 : 3,182,055
239.55: 3,182,056
3,182,057
240 : 3,182,058
3,182,059
247.2 : 3,182,060
250 : 3,182,062
293.4 : 3,182,063
295 : 3,182,064
3,182,065
296 : 3,182,066
3,182,067
306.7 : 3,182,068
308 : 3,182,069
309.2 : 3,182,070
319 : 3,182,071
326.5 : 3,182,072
346.3 : 3,182,073
3,182,074
397.45: 3,182,075
448.2 : 3,182,076
486 : 3,182,077
514 : 3,182,078
520 : 3,182,061
534 : 3,182,079
3,182,080
535 : 3,182,081
552 : 3,182,082
561 : 3,182,083
570.5 : 3,182,084
570.9 : 3,182,085
583 : 3,182,086
3,182,087
619 : 3,182,088
623 : 3,182,089
638 : 3,182,090
646 : 3,182,091
653 : 3,182,092
667 : 3,182,093
672 : 3,182,094
3,182,095
683.15: 3,182,096
683.65: 3,182,097
707 : 3,182,098
830 : 3,182,099
857 : 3,182,100
885 : 3,182,101
261 – 67 : 3,181,843
130 : 3,181,844
263 – 12 : 3,181,845
40 : 3,181,846
41 : 3,181,847
264 – 21 : 3,182,102
22 : 3,182,103
45 : 3,182,104
78 : 3,182,105
171 : 3,182,106
193 : 3,182,107
209 : 3,182,108
228 : 3,182,109
263 : 3,182,110
272 : 3,182,111
266 – 34 : 3,181,848
267 – 1 : 3,181,849
3,181,850
3,181,851
8 : 3,181,852
15 : 3,181,853
65 : 3,181,854
268 – 42 : 3,181,855
65 : 3,181,856
122 : 3,181,857
269 – 296 : 3,181,858
270 – 31 : 3,181,859
271 – 32 : 3,181,860
272 – 32 : 3,181,861
57 : 3,181,862
273 – 25 : 3,181,863
63 : 3,181,864
94 : 3,181,865

273 – 126 : 3,181,866
131 : 3,181,867
139 : 3,181,868
157 : 3,181,869
274 – 9 : 3,181,870
10 : 3,181,871
15 : 3,181,872
277 – 3 : 3,181,873
86 : 3,181,874
140 : 3,181,875
212 : 3,181,876
280 – 6 : 3,181,877
6.1 : 3,181,878
11.12: 3,181,879
11.37: 3,181,880
34 : 3,181,881
96.2 : 3,181,882
112 : 3,181,883
124 : 3,181,884
3,181,885
179 : 3,181,886
421 : 3,181,887
3,181,888
438 : 3,181,889
447 : 3,181,890
475 : 3,181,891
477 : 3,181,892
494 : 3,181,893
281 – 31 : 3,181,894
285 – 1 : 3,181,895
15 : 3,181,896
81 : 3,181,897
137 : 3,181,898
161 : 3,181,899
243 : 3,181,900
367 : 3,181,901
287 – 53 : 3,181,902
292 – 5 : 3,181,903
93 : 3,181,904
109 : 3,181,905
294 – 16 : 3,181,906
74 : 3,181,907
83 : 3,181,908
296 – 10 : 3,181,909
23 : 3,181,910
37 : 3,181,911
297 – 445 : 3,181,912
462 : 3,181,913
298 – 17 : 3,181,914
20 : 3,181,761
301 – 37 : 3,181,915
302 – 29 : 3,181,916
303 – 40 : 3,181,917
307 – 88.5 : 3,182,201
3,182,202
3,182,203
3,182,204
3,182,205
3,182,206
3,182,207
3,182,208
3,182,209
3,182,210
132 : 3,182,211
141.4 : 3,182,212
308 – 2 : 3,181,918
310 – 11 : 3,182,213
87 : 3,182,214
154 : 3,182,215
168 : 3,182,216
235 : 3,182,217
239 : 3,182,218
312 – 71 : 3,181,919
223 : 3,181,920
3,181,921
234.1 : 3,181,922
255 : 3,181,923
330 : 3,181,924
339 : 3,181,925
313 – 61 : 3,182,219
63 : 3,182,220
103 : 3,182,221
315 – 10 : 3,182,223
21 : 3,182,224
27 : Re.25,772
39.3 : 3,182,225
317 – 137 : 3,182,226
3,182,230
142 : 3,182,227
148 : 3,182,229
148.5 : 3,182,222
3,182,228
158 : 3,182,231
171 : 3,182,232
182 : 3,182,233
200 : 3,182,234
230 : 3,182,235
3,182,236

317 – 234 : 3,182,237
260 : 3,182,238
262 : 3,182,239
318 – 28 : 3,182,240
31 : 3,182,241
230 : 3,182,242
269 : 3,182,243
489 : 3,182,244
321 – 16 : 3,182,245
323 – 22 : 3,182,246
3,182,247
47 : 3,182,248
87 : 3,182,249
324 – 1 : 3,182,250
28 : 3,182,251
30 : 3,182,252
51 : 3,182,253
57 : 3,182,254
61 : 3,182,255
77 : 3,182,256
149 : 3,182,257
158 : 3,182,258
325 – 50 : 3,182,259
151 : 3,182,260
315 : 3,182,261
363 : 3,182,262
370 : 3,182,263
328 – 75 : 3,182,264
140 : 3,182,265
329 – 162 : 3,182,266
205 : 3,182,267
330 – 10 : 3,182,268
19 : 3,182,269
333 – 7 : 3,182,270
18 : 3,182,271
21 : 3,182,272
98 : 3,182,273
334 – 80 : 3,182,274
338 – 32 : 3,182,275
339 – 17 : 3,182,276
19 : 3,182,277
59 : 3,182,278
3,182,279
66 : 3,182,280
95 : 3,182,281
97 : 3,182,282
340 – 6 : 3,182,283
9 : 3,182,284
18 : 3,182,285
3,182,286
26 : 3,182,287
34 : 3,182,288
83 : 3,182,289
146.3 : 3,182,290
3,182,291
170 : 3,182,292
173.1 : 3,182,293
3,182,294
174 : 3,182,295
3,182,296
3,182,297
174.1 : 3,182,298
3,182,299
3,182,300
259 : 3,182,301
347 : 3,182,302
3,182,303
3,182,304
3,182,305
3,182,306
392 : 3,182,307
343 – 5 : 3,182,308
3,182,309
6.5 : 3,182,310
3,182,314
3,182,315
7 : 3,182,311
3,182,312
3,182,313
3,182,316
3,182,317
3,182,318
3,182,319
7.3 : 3,182,320
3,182,321
8 : 3,182,322
9 : 3,182,323
100 : 3,182,324
3,182,325
3,182,326
108 : 3,182,327
112 : 3,182,328
702 : 3,182,329
844 : 3,182,330
346 – 1 : 3,182,331
44 : 3,182,332
74 : 3,182,333

CLASSIFICATION OF DESIGNS

D 2 – 3 : 200,996
200,997
D 3 – 11 : 200,998
D 4 – 3 : 200,999
201,000
201,001
D 7 – 5 : 201,002
7 : 201,003
D 9 – 2 : 201,004
201,005
201,006
201,007
D10 – 7 : 201,008

D10 – 8 : 201,009
D12 – 2 : 201,010
D14 – 3 : 201,011
6 : 201,012
27 : 201,013
D15 – 1 : 201,014
D16 – 2 : 201,015
D17 – 14 : 201,016
D25 – 1 : 201,017
D26 – 1 : 201,018
201,019
5 : 201,020
14 : 201,021

D26 – 14 : 201,022
D33 – 3 : 201,023
201,024
8 : 201,025
10 : 201,026
D34 – 5 : 201,027
15 : 201,028
D35 – 2 : 201,029
D37 – 1 : 201,030
D41 – 1 : 201,031
201,032
D48 – 16 : 201,033

D48 – 16 : 201,034
201,035
20 : 201,036
201,037
201,038
27 : 201,039
201,040
D49 – 6 : 201,041
D52 – 2 : 201,042
3 : 201,043
10 : 201,044
D54 – 2 : 201,045

D54 – 12 : 201,046
D55 – 1 : 201,047
201,048
D56 – 2 : 201,049
D57 – 1 : 201,050
D58 – 5 : 201,051
6 : 201,052
17 : 201,053
201,054
201,055
26 : 201,056
201,057

D61 – 1 : 201,058
201,059
D62 – 2 : 201,060
201,061
D71 – 1 : 201,062
D74 – 17 : 201,063
D80 – 9 : 201,064
D81 – 25 : 201,065
D82 – 2 : 201,066
D83 – 1 : 201,067
D90 – 8 : 201,068
D92 – 26 : 201,069

CLASSIFICATION OF PLANTS

P. – 56 : 2,503
P. – 57 : 2,504
P. – 57 : 2,505
P. – 57 : 2,506
P. – 88 : 2,502

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

May 4, 1965 Volume 814 Number 1

TRADEMARKS

NOTICES

Notice of Daylight Saving Time

The Patent Office will operate on Daylight Saving Time from April 26, 1965, through October 30, 1965.

Decisions of the Commissioner of Patents

The 1964 Edition of the Decisions of the Commissioner of Patents has been released from the printer and is available from the Superintendent of Documents, Government Printing Office, Washington, D. C., 20402________________Price $4.50

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 145,335 (SUNBEAM), Chicago Flexible Shaft Company, Electric flatirons; **Reg. No. 267,557**, same, Electric percolators and electric lighters for pipes, cigars and cigarettes; **Reg. No. 280,756**, same, Electric food mixers, electric waffle irons, and electric clocks; **Reg. No. 318,056**, same, Electrically operated devices consisting of room and space heaters, desk fans, scissors, coffee makers, etc.; **Reg. No. 370,742**, same, Electric dry shavers and parts thereof; **Reg. No. 390,181**, same, Electrical appliances, etc.; **Reg. No. 428,410**, same, Chicago Flexible Shaft Company, now by change of name Sunbeam Corporation, Electric clocks; **Reg. No. 430,571**, same, Receptacles for household use—namely, bowls, dishes, etc.; **Reg. No. 442,875**, same, Replaceable filter elements for coffeemakers of cloth and other porous material; **Reg. No. 537,850**, same, Sunbeam Corporation, Electric egg cookers; **Reg. No. 539,425**, same, Electric toasters; **Reg. No. 540,165**, same, Portable electric radiant heaters for general use; **Reg. No. 588,806**, same, Electric bottle warmers; **Reg. No. 588,909**, same, Electric cookers and deep fryers; **Reg. No. 594,171**, same, Electric blankets; **Reg. No. 606,316**, same, Electric frying pans; **Reg.**

CONDITION OF TRADEMARK APPLICATIONS AS OF MARCH 31, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	15, 573
Date of oldest new application	August 26, 1964
Date of oldest amended application	July 27, 1964

J. H. MERCHANT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	8-26-64	8-5-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	9-1-64	7-27-64
Renewals (All Classes)	3-8-65	3-29-65
Sec. 12 (c) Publications (All Classes)	3-16-65	--------

Applications filed during the month of March 1965—2,676.

Registrations Issued	361—No. 788,885 to No. 789,245
Renewals Issued	60

For the quarter—January 1, 1965 through March 31, 1965

Applications filed	6525
Registrations issued	5051
Renewals issued	664
Cancellations under Section 8	1280

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

No. 627,651, same, Electric water kettles and tea brewing apparatus; Reg. No. 627,653, same, Electric blenders, disintegrators, and liquefiers and parts thereof, for intermixing fluids and for producing fluid substances from solid foods; Reg. No. 650,604, same, Plastic articles—Namely, handles, knobs, cases, bases, housing, covers, etc.; Reg. No. 650,933, same, Service and repair of household appliances, portable tools, lawn maintenance equipment, and furnaces belonging to customers; Reg. No. 675,555, same, Floor cleaning, polishing and conditioning machines and rug scrubbing machines; Reg. No. 690,401, same, Electric hair clippers and parts thereof; Reg. No. 696,712, Electric vacuum cleaners, parts and accessories therefor, including air turbine operated brush and nozzles, rug and floor nozzles, dusting brushes, crevice tools, filter bags, and air hoses; Reg. No. 774,123, same, Electric toothbrushes; 2,552,972, I. Jepson, MEANS FOR ROTATING A MIXER BOWL; 2,615,630, same, BEATER AND BOWL ARRANGEMENT FOR MIXERS, filed Feb. 8, 1965, D.C., N.D. Tex. (Dallas), Doc. 3–868, *Sunbeam Corporation* v. *Pearsol Appliance Co. et al.*

International Convention for the Protection of Industrial Property

Adherence of Mauritania to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of the Islamic Republic of Mauritania to the Convention of Union of Paris for the Protection of Industrial Property, as last revised at Lisbon on October 31, 1958.

The note also confirms the membership of that State in the International Union of Paris for the Protection of Industrial Property.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

Apr. 7, 1965.

International Convention for the Protection of Industrial Property

Adherence of South Africa to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 17, 1965, of the Republic of South Africa to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

Apr. 7, 1965.

International Convention for the Protection of Industrial Property

Adherence of Yugoslavia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of Yugoslavia to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

Apr. 7, 1965.

MARKS PUBLISHED FOR OPPOSITION

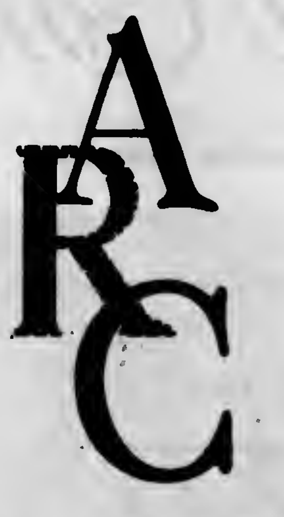
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 162,128. ARC, Inc., McMinnville, Oreg. Filed Feb. 6, 1963.



Class 16—Protective and Decorative Coatings

For Paints—viz, Industrial Finishes and Marine Paints Such as Machinery Enamels and Primers, Marking Paints, Casting Paints, Steel Joist Paints, Fixture and Appliance Paints, Floor and Deck Enamels, Chassis Black Paint, Tank Coatings, Radiator Paints, and Paints for Hulls, Decks, and Trim, Paint and Paint Catalyst, Primers, Enamels, Paint and Lacquer Thinners, Varnish, Paint and Varnish Removers, Resin or Varnish Base Metal Coating Oil To Prevent Rust During Storage of Pipes and Other Metal Products, Resin Base Rust Preventative Spray Coating To Protect Ships in Storage, Asphalt Liquids for Coating Roofs, Tools, Tanks, Vehicle Frames, Chassis, and Radiators, Undercoatings for Railroad Cars and Automotive Vehicles, Burial Vault Coating, and Anti-Rust Spray Compound for the Interior of Vehicle Bodies.

First use Oct. 5, 1960.

Class 18—Medicines and Pharmaceutical Preparations

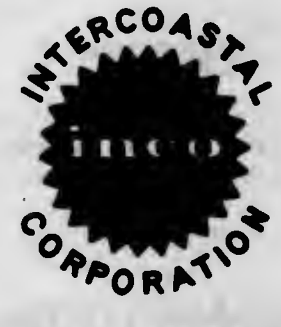
For Veterinary Preparations—Namely, Eye Astringent, Medicated Ear Cleaning Solution, Diarrhea, Anesthetic, and Septic Medicines.

Class 52—Detergents and Soaps

For Animal Shampoo.

First use September 1962.

SN 174,962. Intercoastal Corporation, East St. Louis, Ill. Filed Aug. 13, 1963.



Owner of Reg. Nos. 313,756, 583,898, and others.

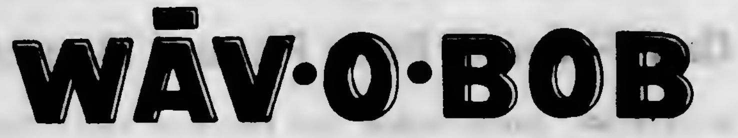
Class 5—Adhesives

For Adhesives, Rubber Cements, and Wallboard Adhesive.

Class 12—Construction Materials

For Mastic Asphalt Waterproofing Compounds for Basements and Other Exterior Masonry Surfaces, Sound Deadener Compounds for Use on Sheet Metal Such as Heating and Air Conditioning Ducts, Crack Fillers and Patching Compounds for Concrete and Masonry, Joint Sealer for Metal Building Construction, Fibrated Asphalt Sealer for Vehicle Bodies, Sealing Strips for Vehicle Bodies and Metal Building Construction, Burial Vault Sealing Tape, Insulation Tapes, Caulking Compound, Asphalt Cement, Base for Caulking Compounds, Ceiling, Floor, Wall and Acoustical Tile Mastics, Sealing Compound for Refrigerators, and Furnace Duct Mastic.

SN 189,041. Victor Brog, d.b.a. The Gintone Laboratories, and Rene St. Clair Products Co., Memphis, Tenn. Filed Mar. 19, 1964.



Class 51—Cosmetics and Toilet Preparations

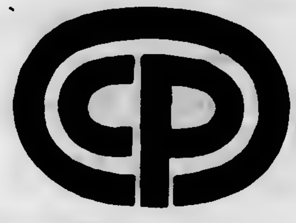
For Preparation for Removing Dandruff, Hair Oil and Hair Tonics.

Class 52—Detergents and Soaps

For Hair and Scalp Preparations—Namely, Shampoos and Cream Shampoos.

First use Mar. 3, 1927.

SN 191,908. Cluett, Peabody & Co., Inc., New York, N.Y. Filed Apr. 24, 1964.



Class 39—Clothing

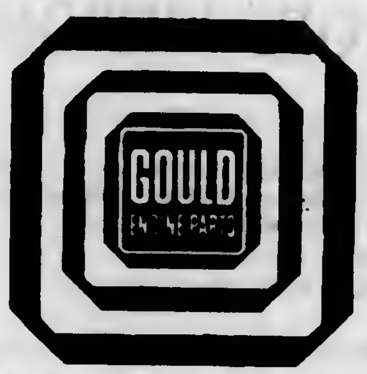
For Shirts, Pajamas, Underwear, Handkerchiefs, Neckties, and Ladies' Blouses.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Piece Goods Used in the Manufacture of the above.

First use Mar. 25, 1964.

SN 193,547. Gould-National Batteries, Inc., St. Paul, Minn. Filed May 15, 1964.



The term "Engine Parts" is disclaimed apart from the mark as shown. *Owner of Reg. Nos. 410,543, 635,119, and 637,394.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Block Repair Bushings; Piston Pin Bushings; Cylinder Sleeve Assemblies Consisting of Sleeve, Piston, Piston Pin, Piston Pin Locks, Piston Rings, and Sleeve Sealing Rings; Cylinder Sleeve Repair Liners; Cylinder Sleeves; Pistons; Piston Pins; Rebore Kits Consisting of Piston Pin, Piston Pin Locks, and Piston Rings; Valves for Engine Cylinders; and Valve Guides, Valve Springs, Valve Keepers, and Valve Seats for Valves for Engine Cylinders.

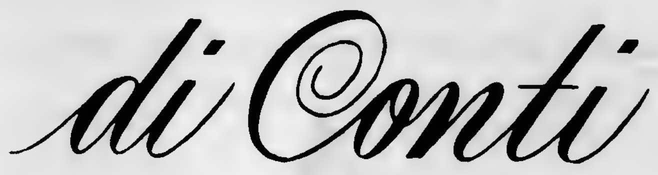
First use Jan. 31, 1962.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Piston Rings.

First use Jan. 16, 1964.

SN 205,284. Julius Goldstein & Son, Inc., Mobile, Ala. Filed Nov. 2, 1964.



Class 27—Horological Instruments

For Watches.

Class 28—Jewelry and Precious-Metal Ware

For Jewelry.

First use Aug. 15, 1964.

SECTION 2

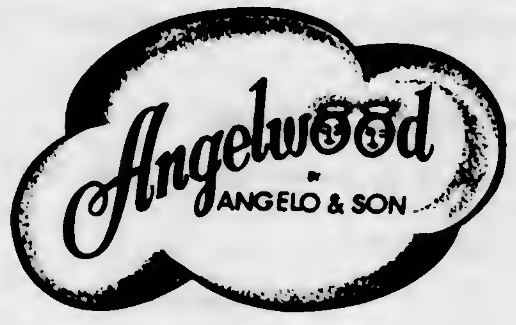
The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

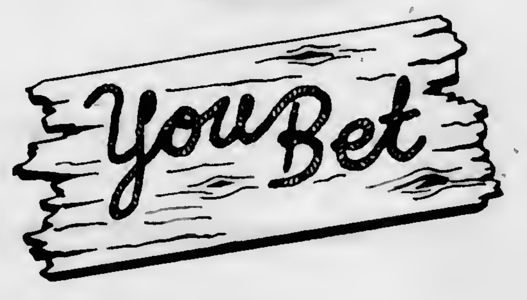
SN 176,705. Angelo & Son, San Francisco, Calif. Filed Sept. 11, 1963.



For Cottonwood Excelsior.

First use Jan. 31, 1961.

SN 177,289. Pyramid Charcoal Briquette Company, Cedar City, Utah. Filed Sept. 18, 1963.



For Charcoal Briquettes.

First use July 18, 1961.

SN 187,158. The Sexauer Company, Brookings, S. Dak. Filed Feb. 20, 1964.

RED CARPET

For Red Clover Seed.

First use on or about Jan. 20, 1964.

SN 192,693. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. Filed May 5, 1964.

GENOTHERM

Owner of German Reg. No. 604,691, dated Feb. 2, 1951.

For Plastic Films and Tapes for General Use in the Industrial Arts.

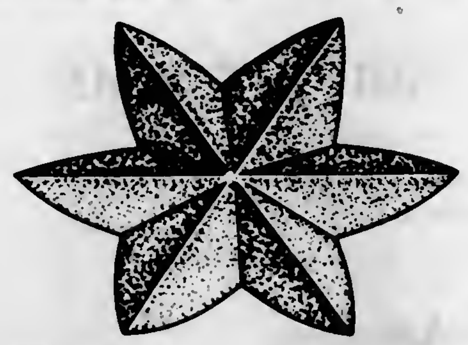
SN 192,694. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany. Filed May 5, 1964.

GENAFOL

Owner of German Reg. No. 636,624, dated Apr. 13, 1953.

For Plastic Films and Tapes for General Use in the Industrial Arts.

SN 198,105. The Char-Lite Manufacturing Company, St. Louis, Mo. Filed May 11, 1964.



Owner of Reg. No. 504,927.

For Charcoal Briquettes.

First use July 13, 1934.

SN 198,550. Jonathan Green & Sons, Kearney, N.J. Filed July 27, 1964.

The portrait is that of "Jonathan Green," a deceased individual.

For Mixed Grass Seed.

First use Feb. 23, 1962.

SN 199,735. General Foods Corporation, White Plains, N.Y. Filed Aug. 12, 1964.

UNIDRIL

For Pregelatinized Starch Used as a Mud Drilling Additive.

First use Aug. 3, 1964.

SN 201,810. Celanese Corporation of America, New York, N.Y. Filed Sept. 14, 1964.

STELLACEL

Owner of Reg. No. 770,977.

For Man-Made Fibers.

First use Sept. 3, 1964.

SN 202,011. Carl Freudenberg Kommanditgesellschaft, Weinheim/Bergstrasse, Germany. Filed Sept. 16, 1964.

SANCHO

For Leather and Artificial Leather.

First use July 17, 1963.

SN 202,304. Martin Harold Kelly, d.b.a. Sandy New, Lincroft, N.J. Filed Aug. 31, 1964.

SANDY NEW

For Beagle Dogs.

First use August 1954.

SN 203,008. The Charles C. Hart Seed Company, Wethersfield, Conn. Filed Sept. 30, 1964.

WEAR 'N TEAR

For Lawn Seed.

First use January 1963.

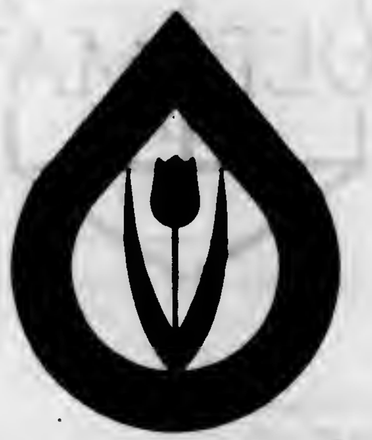
SN 203,146. American Hardware Supply Company, East Butler, Pa. Filed Oct. 2, 1964.

BIG A

For Grass Seed.

First use January 1962.

SN 203,534. W. R. Van Der Schoot, Inc., Hillegom, Netherlands. Filed Oct. 7, 1964.



The representation of a tulip is disclaimed apart from the mark as shown.

For Bulbs for Flowers Including Tulips, Daffodils, Hyacinths, Grape Hyacincths, and Crocus.

First use May 29, 1964; in commerce May 29, 1964.

SN 203,608. Polymers, Inc., Middlebury, Vt. Filed Oct. 8, 1964.

TAMPYL

For Synthetic Fibres, Particularly Adapted for Use as Brush Bristles.

First use Sept. 12, 1964.

SN 203,767. Johns-Manville Corporation, New York, N.Y. Filed Oct. 12, 1964.

TY-PAK

For Roving.

First use Apr. 7, 1964.

Class 2—Receptacles

SN 168,415. I.L.C.A. Simmenthal Meridionale S.p.A., Aprilia, Rome, Italy. Filed May 8, 1963.

E-ZEE-OPEN

Priority claimed under Sec. 44(d) on Italian application filed Nov. 22, 1962; Reg. No. 161,106, dated Feb. 6, 1963.

For Metal Food Cans With an Opening Device Affixed Thereto.

SN 172,251. Sick's Rainier Brewing Co., Seattle, Wash. Filed July 1, 1963.

PULL-TAB

For Metal Beer Cans Having a Self-Opening Device as a Component Thereof.

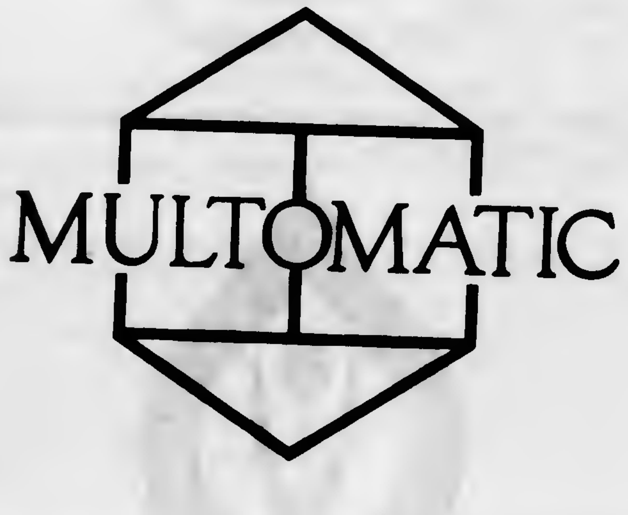
First use Apr. 9, 1963.

SN 183,912. Jarke Corporation, Chicago, Ill. Filed Jan. 2, 1964.

CARRYBIN

For Storage Hoppers, With Nesting Tops and Bottoms.
First use Dec. 6, 1963.

SN 197,601. The Mead Corporation, Dayton, Ohio. Filed July 10, 1964.



For Paper and Paperboard Cartons.
First use June 24, 1964.

SN 198,568. The Mead Corporation, Dayton, Ohio. Filed July 27, 1964.

"ZIP-IT"

For Corrugated Cartons.
First use July 1963.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 206,333. Ralph R. Teetor, d.b.a. Ralph R. Teetor Engineering Development, Hagerstown, Md. Filed Nov. 13, 1964.

TEDCO

For Suitfolders for Luggage.
First use Oct. 1, 1964.

Class 4 — Abrasives and Polishing Materials

SN 203,684. Nutrilite Products, Inc., Buena, Park, Calif. Filed Oct. 9, 1964.

NPI

Owner of Reg. No. 664,571.
For Floor Wax.
First use May 18, 1964.

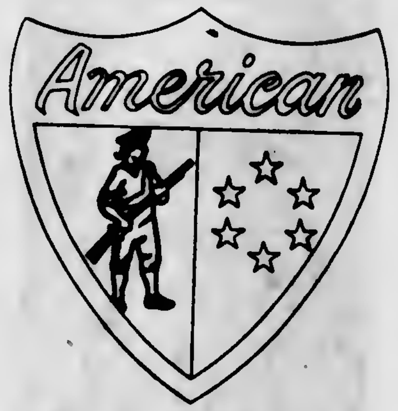
SN 203,715. Dartmouth Marketing Co., Inc., Skokie, Ill. Filed Oct. 9, 1964.

BRIGHT TIME

For Floor Wax.
First use May 8, 1964.

Class 5 — Adhesives

SN 168,800. American "Pres-Stix" Tape Company, Port Huron, Mich. Filed May 14, 1963.



Without waiver of common law rights or rights under U.S. Reg. No. 747,733, applicant disclaims the expression "American" apart from the mark as shown. Owner of Reg. No. 747,733.
For Adhesive Tapes.
First use Mar. 22, 1963.

SN 188,164. Viking-Criterion Paper Corporation, Long Island City, N.Y. Filed Mar. 6, 1964.

KLIMAX

For Reinforced Sealing Tape With a Glue Adhesive Face.
First use June 1, 1963.

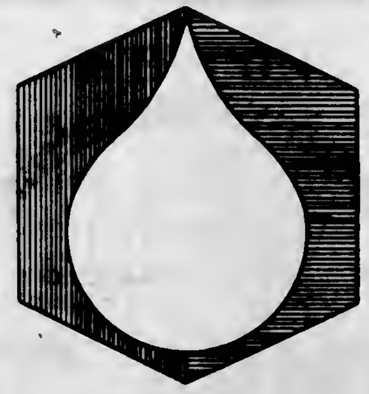
Class 6 — Chemicals and Chemical Compositions

SN 168,831. Koppers Company, Inc., Pittsburgh, Pa. Filed May 7, 1963.

NON-COM

Owner of Reg. No. 741,794.
For Fire Resistant Mineral Salts Used in the Preservation of Forest Products—Namely, Treated Lumber, Wood Panels, Paperboards, Fiberboards, Poles, Posts, etc.
First use July 20, 1959.

SN 168,721. Eaton Chemical Corporation, Detroit, Mich. Filed May 13, 1963.



The drawing is lined for blue and red, but no claim is made to color.
For Alcohols and Sulfurous Acid for Use in the Commercial Dry Cleaning and Garment Industry.
First use Mar. 18, 1963.

SN 171,618. Ciba Limited, Basel, Switzerland. Filed June 24, 1963.

TELCOLUX

Owner of Swiss Reg. No. 194,328, dated Oct. 5, 1962.
For Chemical Compositions—Namely, Coloring Compositions for Photographic Purposes and Graphic Arts.

SN 171,960. British Titan Products Company Limited, Billingham, Durham, England. Filed June 27, 1963.

TIOXIDE

Priority claimed under Sec. 44(d) on British Reg. No. 846,647, dated Mar. 19, 1963.
For Titanium Pigments.

SN 180,470. Van Waters & Rogers, Inc., d.b.a. Wendover Specialties, Inc., Salt Lake City, Utah. Filed Nov. 4, 1963.

SaniLite

For Water Softener Aid—Namely, Salt With Sanitizing Agent Added.
First use July 9, 1963.

SN 186,362. Jefferson Chemical Company, Inc., Houston, Tex. Filed Feb. 10, 1964.

THANOL

For Hydroxy Terminated Polyoxyalkylene Ethers for Use as Polyurethane Raw Material and for Other Industrial Use.
First use Jan. 10, 1964.

SN 192,628. Puritan Chemical Company, Atlanta, Ga. Filed May 4, 1964.

SHIELD

For Horticultural Fungicides Used for the Protection of Orchids and Other Flowers and for the Houses Where the Flowers Are Kept.
First use Nov. 7, 1962.

SN 192,635. R.I.T.A. Chemical Corporation, Chicago, Ill. Filed May 4, 1964.

SUPER-SAT

For Hydrogenated Lanolin for Use in the Manufacture of Emollient in Hair Preparations, Lotions and Creams.
First use Feb. 10, 1963.

SN 199,086. Monsanto Company, St. Louis, Mo. Filed Aug. 3, 1964.

STALL

For Herbicides.
First use July 9, 1964.

SN 199,159. Zymak Biochemical Corp., Bayamon, Puerto Rico. Filed Aug. 3, 1964.

SEP-LAK!

For Enzyme Preparations Used To Liquefy and/or Activate Solids in Septic Tanks and Cesspools in Residential Sewage Systems.
First use Mar. 14, 1963.

SN 201,078. Armour Pharmaceutical Company, Chicago, Ill. Filed Sept. 2, 1964.

ARMAGEL

For Gels Containing Magnesium Hydroxide.
First use July 27, 1964.

SN 202,285. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Sept. 21, 1964.

SPRING-BAK

For Plant Fungicide.
First use Aug. 12, 1964.

SN 202,840. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Sept. 28, 1964.

PENNSTARCH

For Laundry Starch.
First use May 7, 1958.

SN 202,850. Reliance Chemicals Corporation, Houston, Tex. Filed Sept. 28, 1964.

B.AMIGO

For Bacterial Cultures for Manure Volume and Odor Control.
First use July 13, 1964.

SN 208,177. Holiday Inns of America, Inc., Memphis, Tenn. Filed Oct. 2, 1964.

IMA

For Sudsing Ammonia, Disinfectants, and Insecticides.
First use Jan. 1, 1962.

SN 203,302. The Kroger Co., Cincinnati, Ohio. Filed Oct. 5, 1964.

KANDU

Owner of Reg. No. 781,281.
For Chlorine Bleach.
First use at least as early as Sept. 12, 1963.

SN 203,547. United Shoe Machinery Corporation, Boston, Mass. Filed Oct. 7, 1964.

BOSCODUR

For Curing Agents for Multi-Part Adhesives and Coatings.
First use on or about July 28, 1958.

SN 203,679. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Oct. 9, 1964.

SCOTCH

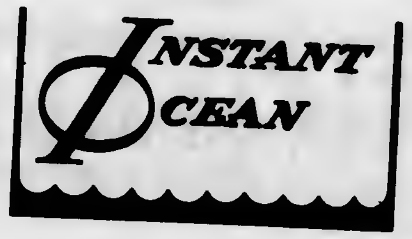
For Spray Starch.
First use Sept. 25, 1964.

SN 203,705. Willie C. Wade, Stockton, Ga. Filed Oct. 9, 1964.

WADE'S GUM-KUM

For Tree Treating Products—Namely, a Preparation Applied to Trees To Increase the Flow of Gum and Oleoresins.
First use Sept. 19, 1963.

SN 203,719. Aquarium Systems, Inc., Wickliffe, Ohio. Filed Oct. 12, 1964.



For Synthetic Sea Salt Compositions.
First use on or about Sept. 21, 1964.

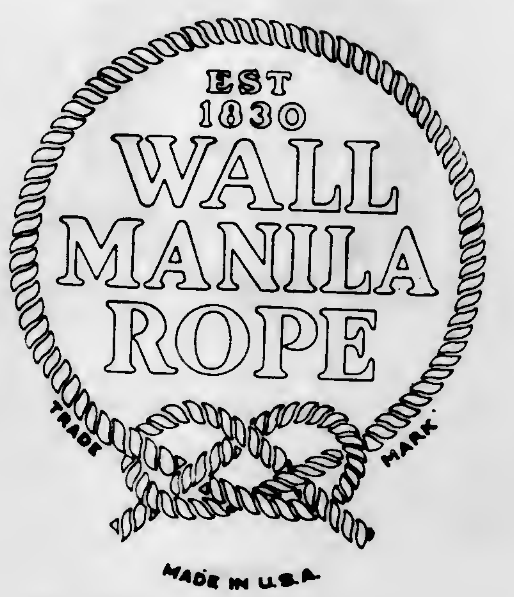
SN 206,545. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Nov. 19, 1964.

HOOKER

Owner of Reg. Nos. 522,608, 555,557, and others.
For Chemicals and Chemical Compositions.
First use November 1909.

Class 7 — Cordage

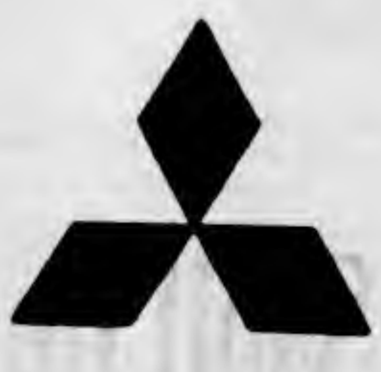
SN 189,024. Wall Rope Works, Inc., Beverly, N.J. Filed Mar. 18, 1964.



Applicant disclaims the words "Est. 1830," "Manila Rope," "Trade Mark," and "Made in U.S.A." apart from the mark as shown. Owner of Reg. No. 212,045.
For Rope.
First use at least as early as 1915.

Class 10 — Fertilizers

SN 187,508. Mitsubishi Chemical Industries Limited, Chiyoda-ku, Tokyo, Japan. Filed Feb. 26, 1964.



Owner of Japanese Reg. No. 36,278, dated May 11, 1909.
For Urea, Ammonium Sulphate, Ammonium Nitrate, Chile Saltpeter, Phosphate Fertiliser, Compound Fertiliser.

SN 202,950. Organic Compost Corporation, Germantown, Wis. Filed Sept. 29, 1964.

PLAY-BULL

For Sheep and Cattle Manure Compost.
First use Jan. 6, 1964.

SN 203,864. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Oct. 13, 1964.

TREY

For Combination Fertiliser, Herbicide and Pesticide.
First use Sept. 17, 1964.

Class 12 — Construction Materials

SN 185,738. Weyerhaeuser Company, Tacoma, Wash. Filed Jan. 30, 1964.

WEYCON

Owner of Reg. Nos. 583,156, 593,749, and 736,612.
For Hardboard.
First use June 6, 1960.

SN 188,630. Goodyear Aerospace Corporation, Akron, Ohio. Filed Mar. 13, 1964.

HFC ARMOR

The word "Armor" is disclaimed apart from the mark as shown.
For Ballistic Laminate.
First use Oct. 18, 1963.

SN 191,212. Ravenswood Panel Corporation, Skokie, Ill. Filed Apr. 15, 1964.

RAVENSWOOD

For Prefabricated Building Panels, for Example, Curtain Wall Panels.
First use Dec. 19, 1963.

SN 193,981. Pacific Steel Pool Corp., Latham, N.Y. Filed May 21, 1964.

Pacific
Pools

No claim of exclusive right is made to the word "Pools," except as same appears as part of the mark here recited.
For Permanent Installation-Type Swimming Pools.
First use Jan. 26, 1962.

SN 198,015. Grant Wilson Incorporated, Chicago, Ill. Filed July 16, 1964.

FLEX-SULATION

For Thermal Insulation for Covering Pipes, Tanks, Ducts, Cabinets, etc.
First use Apr. 7, 1960.

SN 198,075. Paddock of California, Inc., Albany, N.Y. Filed July 17, 1964.

MARCITE

For Plaster-Marble Aggregate Mix.
First use 1952.

SN 200,661. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Aug. 26, 1964.

PLYADEK

Owner of Reg. Nos. 408,699, 629,331, and others.
For Spray-On Type Polyurethane Resin Foam Composition for Home and Commercial Use on Floors, Parking Decks, Heliports, and the Like.
First use June 3, 1963.

SN 204,680. Kemlite Corporation, Joliet, Ill. Filed Oct. 23, 1964.

DYRO

For Liner Panels Equipped With Spacing Devices and Adapted for Attachment to Walls, Sheets, and the Like.
First use June 30, 1964.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 192,981. Atwood & Morrill Co., Salem, Mass. Filed May 8, 1964.

ISO-CHECK

For Valves.
First use Aug. 22, 1963.

SN 198,169. The Hale Company, Tulsa, Okla. Filed July 20, 1964.

VARI-FLO

For Handles for Industrial Butterfly Valves.
First use July 11, 1964.

SN 198,947. Essex Plumbing and Heating Wholesalers Incorporated, Newark, N.J. Filed July 31, 1964.

U-PLUMB PRODUCTS

Applicant disclaims the term "Products."
For Hardware and Plumbing and Steam Fitting Supplies.
First use Jan. 29, 1964.

SN 200,266. Kyova Pipe Company, Ironton, Ohio. Filed Aug. 20, 1964.

TRUSS PIPE

For Plastic Reinforced Pipe.
First use May 18, 1964; January 1964 as to "Truss Pipe" in a different form.

SN 202,502. Polytop Corporation, Slatersville, R.I. Filed Sept. 23, 1964.

AMBER-TAP

For Keg Valves Consisting of a Tavern Unit and a Barrel Unit, Each of Which Units May Be Sold Separately.
First use Sept. 4, 1964.

SN 202,837. Olympic Foundry Company, Seattle, Wash. Filed Sept. 28, 1964.

HI-JACK

Owner of Reg. No. 682,493.
For Scaffold for Use in Building Operations, and a Bracket for Use With Such Scaffold.
First use on or about Sept. 15, 1958.

SN 202,891. Transparent Bag Company, Seattle, Wash. Filed Sept. 28, 1964.

tarp-Tys

For Plastic Grommet Attachment for Whole Plastic Sheets.
First use July 31, 1964.

SN 204,128. Buckeye Iron & Brass Works, Dayton, Ohio. Filed Oct. 16, 1964.

DRY-BREAK

For Valve Couplings.
First use October 1964.

SN 205,686. Genova Products, Flint, Mich. Filed Nov. 6, 1964.

CPS

For Plastic Plumbing Pipe and Fittings.
First use Aug. 17, 1964.

Class 14—Metals and Metal Castings and Forgings

SN 205,805. A. Finkl & Sons, Company, Chicago, Ill. Filed Nov. 9, 1964.

HB

For Die Blocks and Other Semi-Finished Alloy Steel Products—Namely, Holder Blocks.
First use Aug. 25, 1964.

SN 205,806. A. Finkl & Sons, Company, Chicago, Ill. Filed Nov. 9, 1964.

DC

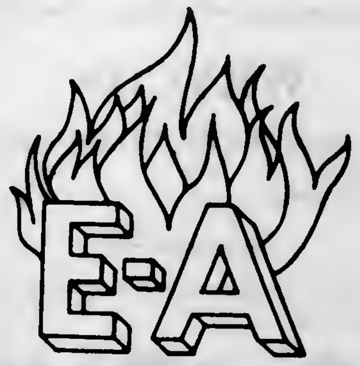
For Semi-Finished Alloy Steel Products—Namely, Die Blocks for Die Casting Dies.
First use Aug. 25, 1964.

SN 205,807. A. Finkl & Sons, Company, Chicago, Ill. Filed Nov. 9, 1964.

MD

For Semi-Finished Alloy Steel Products—Namely, Die Blocks for Plastic Molding Dies.
First use Aug. 25, 1964.

SN 209,900. American Brake Shoe Company, New York, N.Y. Filed Jan. 14, 1965.



For Heat and/or Corrosion Resistant Alloys and Castings.
First use Nov. 25, 1964.

SN 210,002. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Jan. 15, 1965.

DETACLAD

For Explosion-Bonded Clad Metals Sold for Use in Fabricating Process Vessels, Heat Exchangers, Tubes, Rods, Machine Components and Other Structures for Generalized Use in the Industrial Arts.
First use Dec. 8, 1964.

SN 210,106. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Jan. 18, 1965.

DU PONT

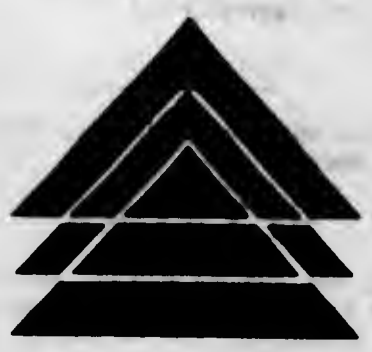
For Explosion-Bonded Clad Metals Sold for Use in Fabricating Process Vessels, Heat Exchangers, Tubes, Rods, Machine Components and Other Structures for Generalized Use in the Industrial Arts.
First use Dec. 8, 1964.

SN 210,110. Elox Corporation of Michigan, Troy, Mich. Filed Jan. 18, 1965.

ELOXOLOY

For Material for Making Electrical Discharge Machining Electrodes Comprising Essentially a Copper Base Alloy.
First use on or about Sept. 1, 1964.

SN 210,130. The International Nickel Company, Inc., New York, N.Y. Filed Jan. 18, 1965.



For Nickel.
First use Dec. 14, 1964.

Class 15—Oils and Greases

SN 206,547. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Nov. 19, 1964.

HOOKER

Owner of Reg. Nos. 522,608, 555,557, and others.
For Lubricating Oils and Greases.
First use at least as early as December 1933.

SN 208,704. Texaco Inc., New York, N.Y. Filed Dec. 22, 1964.

TEXCLAD

For Lubricants, Particularly for Use With Earth Moving Machinery.
First use April 1962.

SN 208,974. Spotoil Corporation, Seattle, Wash. Filed Dec. 28, 1964.

SPOTOIL

For Internal Combustion Fuel and Lubricant Additive.
First use Oct. 31, 1947.

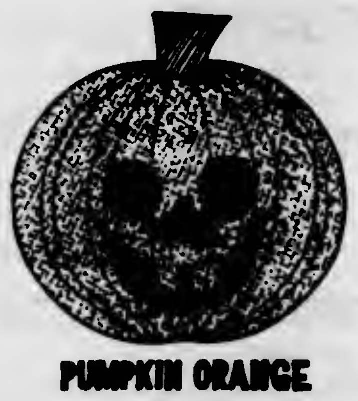
Class 16—Protective and Decorative Coatings

SN 185,220. Liquid Nitrogen Processing Corporation, Malvern, Pa. Filed Jan. 23, 1964.

LIQUINITE

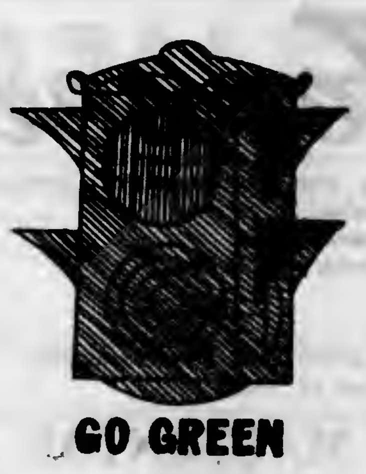
For Plastic Powders for Coating Applications.
First use on or about June 15, 1960.

SN 185,385. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



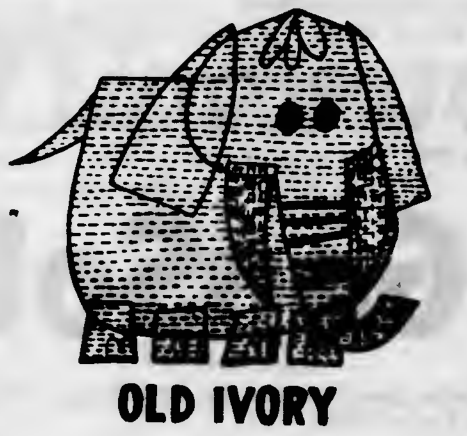
The drawing is lined for the colors brown and orange. No registration rights are claimed for the words "Pumpkin Orange" apart from the mark shown, but applicant waives none of its common law rights in the mark or any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

SN 185,387. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



The drawing is lined for the colors green and red. No registration rights are claimed for the words "Go Green" apart from the mark shown, but applicant waives none of its common law rights in the mark or any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

SN 185,388. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



The drawing is lined for the colors gray, silver, and yellow. No registration rights are claimed for the words "Old Ivory" apart from the mark shown, but applicant waives none of its common law rights in the mark or any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

Class 17—Tobacco Products

SN 207,095. Universal Cigar Corporation, New York, N.Y. Filed Nov. 27, 1964.

PANTHER

For Cigars.
First use Nov. 13, 1964.

Class 18—Medicines and Pharmaceutical Preparations

SN 151,843. Reed & Carnrick, Kenilworth, N.J. Filed Aug. 24, 1962.

COSIL

For Medicinal Preparation for Use as an Antiflatulent.
First use on or about June 1, 1962.

SN 183,103. Pharmafac, Inc., Austin, Tex. Filed Dec. 16, 1963.

Femsert

For Medicines and Pharmaceutical Preparations for the Treatment of Vaginal Infections.
First use December 1958.
Subj. to Intf. with SN 199,868.

SN 183,141. Warren-Teed Pharmaceuticals Inc., Columbus, Ohio. Filed Dec. 16, 1963.

MASTENIDE

For Medicinal Agent for Infusion Into the Udders of Animals.
First use Jan. 15, 1957.

SN 183,759. A. Allen Horton, d.b.a. Acid-Eze Company, Trion, Ga. Filed Dec. 30, 1963.

TOE-EZE

For Liquid Preparation for the Relief of Athletes Foot and Other Fungus Skin Irritations.
First use Oct. 1, 1952.

SN 191,854. General Mills, Inc., Minneapolis, Minn. Filed Apr. 23, 1964.

GenSol

For Vitamin Concentrates for Fortifying Fluid Milk.
First use Apr. 4, 1962.

SN 193,518. The William A. Webster Company, Memphis, Tenn. Filed May 14, 1964.

A-SEC

For Suppositories Containing Aspirin and Secobarbital.
First use May 5, 1964.

SN 193,526. American Medicinal Corporation, Forest Hills, N.Y. Filed May 15, 1964.

BONA-C

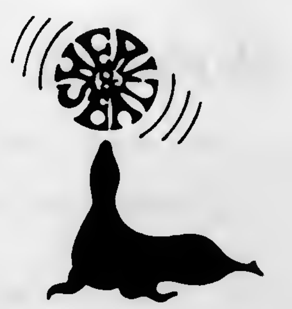
For Vitamin C Tablets.
First use May 12, 1964.

SN 194,027. Bristol-Myers Company, New York, N.Y. Filed May 22, 1964.

NoDoz

Owner of Reg. No. 545,634.
For Medicinal Preparation in Tablet Form Especially Prepared To Relieve Drowsiness.
First use Oct. 24, 1961.

SN 196,744. Vitadin Pharmaceuticals, Inc., Pawtucket, R.I. Filed June 29, 1964.



VITADIN

For Pharmaceutical Ointment Used in the Treatment of Diaper Rash, Minor Burns, Superficial Wounds, Sunburn, Minor Bed Sores, and Other Skin Irritations.
First use on or about May 4, 1964.

SN 197,965. Eli Lilly and Company, Indianapolis, Ind. Filed July 16, 1964.

C-QUENS

For Hormone Preparation for Ovulation Control.
First use June 24, 1964.

SN 198,372. Chas. Pfizer & Co., Inc., New York, N.Y. Filed July 22, 1964.

ANALTRAN

For Tranquilizer Analgesic Preparation.
First use June 10, 1964.

SN 199,997. International Pharmaceutical Corporation, Norristown, Pa. Filed Aug. 17, 1964.

PEDUROX

For Ointment-Like Material Containing Urea Peroxide and Used for Topical Treatment of Athletes Foot and Minor Fungal and Bacterial Infections.
First use July 7, 1964.

SN 203,349. Summers Laboratories, Inc., Fort Washington, Pa. Filed Oct. 5, 1964.

CORTISUM

For Pharmaceutical Preparation for Use in the Treatment of Dermatosis.
First use Sept. 17, 1963.

SN 203,521. Nysco Laboratories, Inc., d.b.a. Pharmatest Laboratories, Long Island City, N.Y. Filed Oct. 7, 1964.

PHARMATEST

For Meprobamate, Prednisone and Prednisolone in Tablet Form.
First use Sept. 15, 1964.
Subj. to Intf. with SN 204,005.

SN 204,005. Warren-Teed Pharmaceuticals Inc., East Detroit, Mich. Filed Oct. 14, 1964.

PHARMA-TEST

For Medicines and Pharmaceuticals—Namely, an Analgesic Compound.
First use on or about Feb. 15, 1963.
Subj. to Intf. with SN 203,521.

SN 204,050. Clay-Adams, Inc., New York, N.Y. Filed Oct. 15, 1964.

CLAY ADAMS

Owner of Reg. Nos. 632,280, 771,011, and others.
For Bacteriostatic, Silicone Spray Ointment Used To Protect, Soothe, and Lubricate the Skin.
First use Aug. 10, 1962.

SN 208,166. Aktiebolaget Kabi, Stockholm, Sweden. Filed Dec. 15, 1964.

KABIKINAS

Owner of Swedish Reg. No. 100,894, dated Aug. 25, 1961.
For Streptokinase, a Protein Medicament Having Antigenic Character and Effective To Induce Fibrinolysis, for Medicinal and Pharmaceutical Use.

SN 208,664. American Home Products Corporation, New York, N.Y. Filed Dec. 22, 1964.

COLPRONE

For Progestational Preparation.
First use Oct. 19, 1964.

SN 208,818. The Dietene Company, Minneapolis, Minn. Filed Dec. 24, 1964.

VENTAIRE

For Prescription Drug for Relief of Asthma.
First use Aug. 27, 1964.

SN 211,486. G. D. Searle & Co., Skokie, Ill. Filed Feb. 8, 1965.

SYNCRO-MATE

For Products Used for the Treatment and Conditioning of Domestic Animals—Namely, Progestinated Pessaries.
First use Feb. 3, 1965.

Class 19—Vehicles

SN 197,778. Rimer, Incorporated, Clinton, S.C. Filed July 13, 1964.

ABBY

The drawing is lined for the color red.
For Mobile Homes.
First use Feb. 1, 1964.

SN 197,779. Rimer, Incorporated, Clinton, S.C. Filed July 13, 1964.

AZALEA

The drawing is lined for the colors silver, red, and green.
For Mobile Homes.
First use May 1, 1959.

SN 197,780. Rimer, Incorporated, Clinton, S.C. Filed July 13, 1964.

Empress

The drawing is lined for the color gold.
For Mobile Homes.
First use Feb. 1, 1962.

SN 203,186. Kayot, Inc., Mankato, Minn. Filed Oct. 2, 1964.

Windward

For Sailboats.
First use December 1962.

SN 203,312. Macdon, Inc., Cle Elum, Wash. Filed Oct. 5, 1964.

MIZPAH

For Camper Bodies for Use on Automotive Vehicles.
First use Apr. 1, 1964.

SN 203,869. Guerdon Industries, Inc., Southfield, Mich. Filed Oct. 13, 1964.

Diplomat
by VAGABOND

Owner of Reg. No. 710,484.
For Mobile Homes.
First use Sept. 2, 1964.

SN 204,075. Lone Star Boat Company, Plano, Tex. Filed Oct. 15, 1964.

CUSHION V

The drawing is lined for shading only.
For Boats.
First use Oct. 1, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 177,923. Texas Instruments Incorporated, Dallas, Tex. Filed Sept. 27, 1963.

TI-CAD

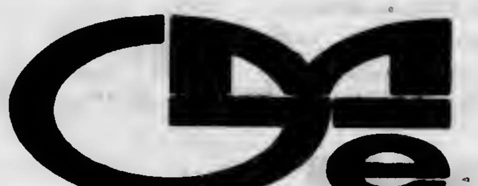
For Electrical Contacts for Use in Subassemblies.
First use on or before June 8, 1962.

SN 179,104. Baird-Atomic, Inc., Cambridge, Mass. Filed Oct. 16, 1963.

DEKA-TRIGGER

Owner of Reg. No. 670,576.
For Trigger Tubes for Electronic Instrumentation.
First use July 10, 1963.

SN 183,398. General Micro-Electronics Inc., Santa Clara, Calif. Filed Dec. 23, 1963.



For Semiconductor Integral Circuits and Parts—Namely, Transistors and Silicon Wafers.
First use Nov. 26, 1963.

SN 194,138. Compagnie Francaise Thomson-Houston, Paris, France. Filed May 25, 1964.

COLORICON

Priority claimed under Sec. 44(d) on French Reg. No. 517,628, dated Dec. 4, 1963 (Seine); Natl. Inst. No. 215,699.
For Electron Tubes for Radio, Television, Medical and Nuclear Purposes and Particularly Cathode-Ray Tubes Principally for Television; Image Tubes, Amplifiers, Converters and Scanners; Travelling Wave Tubes; Tubes Incorporating a Photoelectric Cell; and Storage Tubes.

SN 194,140. Compagnie Francaise Thomson-Houston, Paris, France. May 25, 1964.

THOMICON

Priority claimed under Sec. 44(d) on French Reg. No. 517,631, dated Dec. 4, 1963 (Seine); Natl. Inst. No. 215,702.
For Electron Tubes for Radio, Television, Medical and Nuclear Purposes and Particularly Cathode-Ray Tubes Principally for Television; Image Tubes, Amplifiers, Converters and Scanners; Travelling Wave Tubes; Tubes Incorporating a Photoelectric Cell; and Storage Tubes.

SN 194,141. Compagnie Francaise Thomson-Houston, Paris, France. Filed May 25, 1964.

NOCTICON

Priority claimed under Sec. 44(d) on French Reg. No. 517,629, dated Dec. 4, 1963 (Seine); Natl. Inst. No. 215,700.
For Electron Tubes for Radio, Television, Medical and Nuclear Purposes and Particularly Cathode-Ray Tubes Principally for Television; Image Tubes, Amplifiers, Converters and Scanners; Travelling Wave Tubes; Tubes Incorporating a Photoelectric Cell; and Storage Tubes.

SN 198,395. Ateliers des Charmilles Societe Anonyme, Geneva, Switzerland. Filed July 23, 1964.

ISOPULSE

Priority claimed under Sec. 44(d) on Swiss Reg. No. 202,720, dated Jan. 27, 1964.
For Machines for Electrically Machining Metals.

SN 200,414. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Aug. 24, 1964.

CINCINNATI

Owner of Reg. No. 612,130.
For Induction Heating Machine for the Heat-Treating of Metal Parts.
First use July 1957.

SN 200,415. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Aug. 24, 1964.

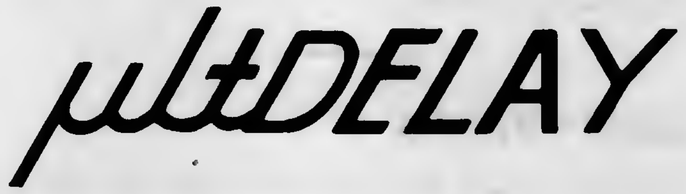
CINCINNATI

Owner of Reg. No. 612,130.
For Electrochemical Machines, Electrolytic Grinding Machines, and Electrical Discharge Machines.
First use June 13, 1959.

SN 200,702. The Clarken Company, d.b.a. Porcelain Products Co., St. Louis, Mo. Filed Aug. 27, 1964.

For Electrical Insulators and Insulator Hardware for the Transmission and Distribution of Electrical Power and Signals.
First use on or about Jan. 15, 1959; Oct. 1, 1927, as to the letters "PP."

SN 200,996. Airborne Accessories Corporation, Hillside, N.J. Filed Sept. 1, 1964.



Owner of Reg. No. 745,729.
For Time Delay Relays.
First use July 17, 1964.

SN 201,163. Admiral Controls, Inc., Los Angeles, Calif. Filed Sept. 3, 1964.

ADLOC

For Binder Posts for Electronic Applications.
First use on or about May 15, 1964.

Class 22—Games, Toys, and Sporting Goods

SN 175,576. Mary Jo Harer, Los Angeles, Calif. Filed Aug. 22, 1963.

MERRY MAID

For Doll Clothes.
First use Mar. 25, 1963.

SN 179,602. The Bomar Company, Inc., Boston, Mass. Filed Oct. 28, 1963.

SANI-BABE

For Nursery Playthings—Namely, Plastic Squeeze Toys in Miniature Animal Configurations.
First use August 1961.

SN 186,052. Norman Bennett, Washington, D.C. Filed Feb. 5, 1964.

CARODEO

For Equipment (or Apparatus) Sold as a Unit for Playing Various Type Toy Auto Games.
First use Dec. 23, 1963.

SN 186,797. Wham-O Mfg. Co., San Gabriel, Calif. Filed Feb. 14, 1964.

POCKET BUBBLES

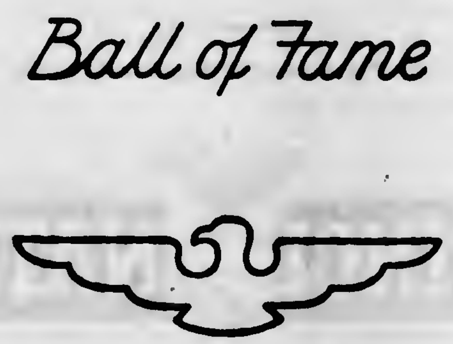
Applicant disclaims the word "Bubbles" apart from the mark as shown.
For Pocket Size Automatic Bubble Blower.
First use Jan. 17, 1964.

SN 189,207. Princess Grace Doll, Inc., New York, N.Y. Filed Mar. 20, 1964.

BABY PRINCESS

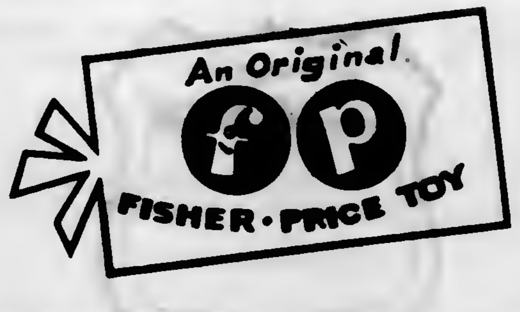
No claim of exclusive right is made to "Baby" for dolls and dolls' clothes. Owner of Reg. No. 632,175.
For Dolls and Dolls' Clothes.
First use Mar. 9, 1964.

SN 193,436. Amerace Corporation, New York, N.Y. Filed May 14, 1964.



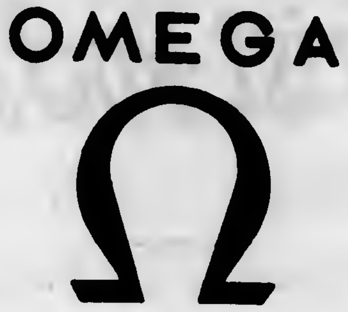
No claim of exclusive right is made to "Ball" for bowling balls.
For Bowling Balls.
First use Apr. 8, 1964.

SN 193,652. Fisher-Price Toys, Inc., East Aurora, N.Y. Filed May 18, 1964.



Applicant makes no claim to the words "an Original" and "Toy" apart from the mark as shown. Owner of Reg. Nos. 611,383, 779,395, and others.
For Toys—Namely, Push or Pull Toys and Musical Toys.
First use Apr. 10, 1964, on musical toys.

SN 195,656. The Dee Bee Company, Portland, Oreg. Filed June 15, 1964.



For Snow Skis.
First use Apr. 14, 1963.

SN 200,104. Louis Kessler, d.b.a. Novelty Games Co., Brooklyn, N.Y. Filed Aug. 18, 1964.

PRIZO

For Equipment for Playing a Bingo-Type Game.
First use Jan. 18, 1939.

SN 202,046. Rosel Industries, Inc., Lincolnwood, Ill. Filed Sept. 16, 1964.

THE HUSTLER

For Billiard Tables and Pool Tables.
First use Apr. 13, 1964.

SN 202,071. De Luxe Reading Corporation, Elizabeth, N.J. Filed Sept. 17, 1964.

SUZY CUTE

For Dolls and Outfits and Accessories for Such Dolls.
First use Aug. 14, 1964.

SN 202,133. Delaware Mercantile Company, Inc., Stamford, N.Y. Filed Sept. 18, 1964.

VAN HILL

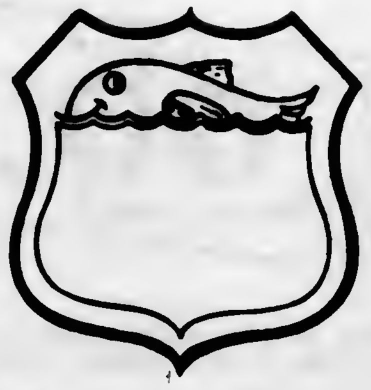
For Skis, Ski Poles, and Ski Bindings.
First use Apr. 1, 1964.

SN 202,258. Gayla Industries, Houston, Tex. Filed Sept. 21, 1964.

FIREBIRD

For Kites.
First use June 17, 1957.

SN 202,347. Atlantic Lures, Inc., Providence, R.I. Filed Sept. 22, 1964.



For Fishing Lures.
First use Mar. 30, 1964.

SN 202,361. Howard F. Ellenburg, d.b.a. Trumark Manufacturing Company, Columbus, Nebr. Filed Sept. 22, 1964.

For Sling Shots.
First use Sept. 30, 1954.

SN 202,408. Zadek-Feldstein Co., Inc., Brooklyn, N.Y. Filed Sept. 22, 1964.

KLICKUM

For Toys in the Form of Balls, Disk-Like Rattles, Animal Replica Toys.
First use October 1948.

SN 202,412. Campbell Manufacturing Company Limited, Willowdale, Ontario, Canada. Filed Sept. 23, 1964.

POLY-DYNE

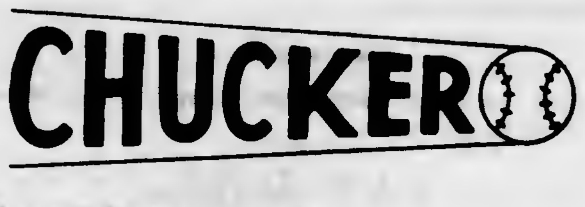
For Golf Balls.
First use June 12, 1964 ; in commerce July 8, 1964.

SN 202,475. Fred H. Hayden,, d.b.a. The Aztec Golf Bag Mfg. Company, St. Petersburg, Fla. Filed Sept. 28, 1964.

THE AZTEC

For Golf Bags.
First use on or about Oct. 1, 1963.

SN 202,608. Laird Enterprises, Palmdale, Calif. Filed Sept. 24, 1964.



For Baseball Pitching Machines.
First use on or about Mar. 30, 1964.

SN 203,356. Tru-Step, Inc., Goldendale, Wash. Filed Oct. 5, 1964.

TRU-STEP

For Practice Baseball Batting Ball Tossing Devices.
First use June 3, 1964.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 182,087. Clemtex, Ltd., Houston, Tex. Filed Nov. 29, 1963.

PAC

For Apparatus for Air Fluidizing Particulate Abrasive Material.
First use at least as early as Mar. 26, 1962.

SN 195,175. The Torrington Company, Torrington, Conn. Filed June 8, 1964.

TORRINGTON

Owner of Reg. Nos. 509,711, 616,145, and 765,417.
For Needles for Machine Sewing, Felting, Knitting and Shoe-Making, Latch Needles and Tricot and Raschel Knitting Units.
First use Dec. 1, 1940.

SN 200,827. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Aug. 21, 1964.

CINCINNATI

Owner of Reg. No. 612,130.
For Machine for Forming Metal by Application of Fluid Pressure to the Workpiece Blank Through a Flexible Diaphragm, the Source of the Fluid Pressure Being a Hydraulic Piston Motor or a Hydraulic Pump.
First use in or before 1950.

SN 200,828. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Aug. 21, 1964.

CINCINNATI

Owner of Reg. No. 612,130.
For Lathes.
First use 1955.

SN 200,416. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Aug. 24, 1964.

CINCINNATI

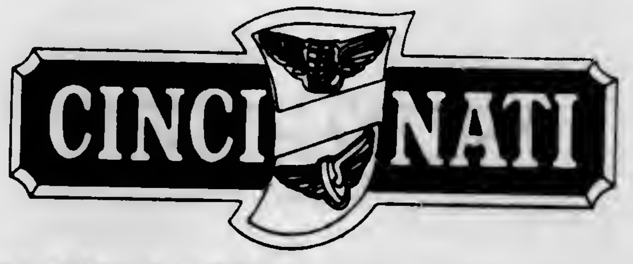
Owner of Reg. No. 612,130.
For Metal Spinning Machine.
First use December 1954.

SN 200,911. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Aug. 31, 1964.

CINCINNATI

Owner of Reg. No. 612,130.
For High Speed Revolving Die Swaging Machine.
First use June 13, 1959.

SN 200,912. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Aug. 31, 1964.



Owner of Reg. No. 612,130.
For Milling Machines, Grinding Machines, and Broaching Machines.
First use on or about Oct. 2, 1929, on grinding machines.

SN 202,638. Steward Printers and Lithographers Equipment Co., d.b.a. The Steward Company, Los Angeles, Calif. Filed Sept. 24, 1964.

GENERAL GRAPHIC

For Padding Press.
First use Sept. 3, 1964.

SN 205,909. Smico, Inc., Oklahoma City, Okla. Filed Nov. 9, 1964.

SMICO

For Bleaching Agitators, Sifters, Sieves, Roller Mills, Washers, Stream Dividers, Crushers, Purifiers, Duster Sifters, Dust Collectors, Bale Sealers, Net Trim Weighers, Automatic Bag Sealers, Packing Machines, Pneumatic Handling Machines.
First use June 1, 1952.

SN 208,464. Lamb-Grays Harbor Co., Inc., Hoquiam, Wash. Filed Dec. 18, 1964.

CRD

For Machine for Stacking and Conveying Sheets of Pulp and Paper.
First use Feb. 8, 1962.

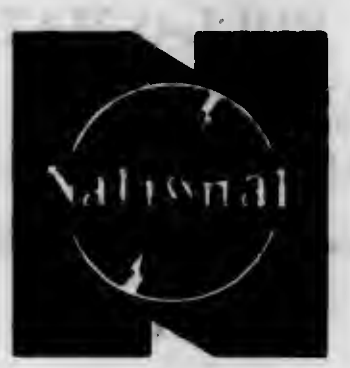
SN 208,788. Universal American Corporation, New York, N.Y. Filed Dec. 28, 1964.

NU-CLEAR

For Drills.
First use on or about Nov. 6, 1964.

Class 26 — Measuring and Scientific Appliances

SN 186,669. Matsushita Electric Industrial Co., Ltd., Kitakawachi-gun, Osaka, Japan. Filed Jan. 26, 1962.



Priority claimed under Sec. 44(d) on Japanese applications filed Oct. 11, 1961; Reg. Nos. 625,996 and 626,789, dated Oct. 7, 1963, and Oct. 17, 1963, respectively. Owner of U.S. Reg. No. 718,171.
For Photo Flash Lamps, Voltage Regulators, and Time Switches, and Electric Measuring Instruments—Namely, Meters and Testers.

SN 168,076. John Dritz & Sons, Inc., Spartanburg, S.C. Filed May 3, 1963.

SEE-THRU

For Dressmaker's Ruler.
First use May 7, 1956.
Subj. to Intf. with SN 164,814.

Class 27 — Horological Instruments

SN 210,026. Manufacture d'Horlogerie Favre-Leuba S.A., Lancy-Geneva, Switzerland. Filed Jan. 15, 1965.

BIVOUAC

For Watches and Parts Thereof.
First use July 25, 1963 ; in commerce July 25, 1963.

Class 28 — Jewelry and Precious-Metal Ware

SN 194,880. Leo Gluck, d.b.a. Perfect Pearl Co., Chicago, Ill. Filed June 4, 1964.

For Imitation Pearls.
First use Apr. 6, 1964.

SN 209,769. Coro Incorporated of Rhode Island, Providence, R.I. Filed Jan. 12, 1965.

NAMELY YOURS

For Jewelry.
First use Dec. 31, 1964.

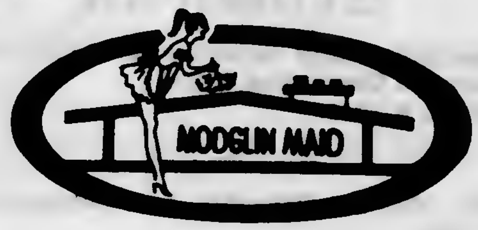
SN 210,022. S. Lesse & Sons, Inc., Philadelphia, Pa. Filed Jan. 15, 1965.

PHOTO-JEWEL

For Individually Framed Miniature Photographs on Gold or Other Precious or Semi-Precious Metal.
First use July 1963.

Class 29 — Brooms, Brushes, and Dusters

SN 194,202. Modglin Company, Hazlehurst, Miss. Filed May 25, 1964.



For Press Squeeze Cellulose Sponge Mops, Wet Mops and Mop Heads, Dust Mops, Mop Sticks, and Wax Applicators.
First use July 5, 1962.

SN 208,199. Kaydan Products Development Corporation, Havertown, Pa. Filed Dec. 15, 1964.

For Toothbrushes.
First use Sept. 15, 1964.

SN 210,395. Milton Arnold Zelinkoff, d.b.a. The House of Zelinkoff, and The Zelinkoff Company, Wichita, Kans. Filed Jan. 21, 1965.

Zippy-Mop

For All Types of Wet or Scrubbing Mops and Synthetic Sponge and Cellulose Mops for Use on Floors, Walls, and General Cleaning.
First use Apr. 15, 1964.

Class 30—Crockery, Earthenware, and Porcelain

SN 186,376. Midland Enterprises, Inc., New York, N.Y. Filed Feb. 10, 1964.

Hampton Fine China

Reserving, and without prejudice to, all of the common law rights in the trademark as shown on the drawing and on the specimen, and without prejudice to the rights in the relationship of the different parts of the mark therein shown, but to effect registration of the trademark in the United States Patent Office, the words, "Fine China," apart from the trademark as shown, are disclaimed.
For Dinnerware and Tableware Made of China.
First use Nov. 19, 1963.

Class 31—Filters and Refrigerators

SN 179,432. Luber-Finer Incorporated, Los Angeles, Calif. Filed Oct. 21, 1963.

HYDROPAK

For Replaceable Filter Elements for Liquid Filters Employed in Internal Combustion Engines.
First use Oct. 8, 1963.

SN 181,912. Michigan-Dynamics, Inc., Detroit, Mich. Filed Nov. 26, 1963.

DELTA-MATIC

For Industrial Filters for Use With Hydraulic Fluids, Coolants, Lubricants, and Oils.
First use July 16, 1963.

SN 187,371. Whirlpool Corporation, St. Joseph, Mich. Filed Feb. 24, 1964.

TECTROL

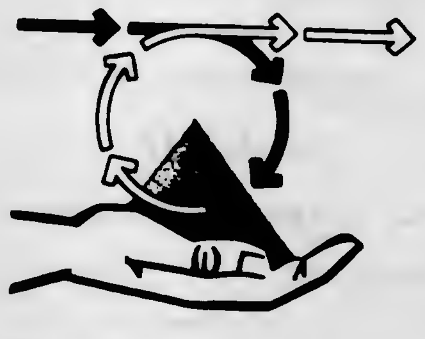
Owner of Reg. No. 754,622.
For Filter and Refrigeration Apparatus—Namely, Refrigeration Compressors, Refrigeration Condensers, Refrigeration Evaporators, Refrigeration Valves, Gas Sorbers, Atmosphere Cleaners, Molecular Sieves, Gas Filters, and Parts Thereof.
First use Apr. 26, 1962.

SN 193,791. Jordon Commercial Refrigerator Company, Philadelphia, Pa. Filed May 19, 1964.

Jordon

For Commercial Refrigerators and Freezers.
First use Dec. 15, 1946.

SN 197,228. Barnebey-Cheney Company, Columbus, Ohio. Filed July 3, 1964.



For Gas and Liquid-Conditioning Filters Containing Activated Charcoal.
First use June 25, 1964.

SN 203,100. Robert I. Larus, New York, N.Y. Filed Oct. 1, 1964.

FREEZOR-EAZOR

For Refrigerator Shelves.
First use August 1960.

SN 203,247. American Air Filter Company, Inc., Louisville, Ky. Filed Oct. 6, 1964.

ROLL-O-MAT

Owner of Reg. Nos. 634,246 and 607,283.
For Air Filtering Material.
First use Dec. 30, 1954.

SN 203,484. De Laval Turbine Inc., Trenton, N.J. Filed Oct. 7, 1964.

CANLINE

For Plate-Type Filters for Removal of Suspended Solids From Liquids.
First use August 1963.

Class 32—Furniture and Upholstery

SN 192,393. Henredon Furniture Industries, Incorporated, Morganton, N.C. Filed Apr. 30, 1964.

CUSTOM FOLIO

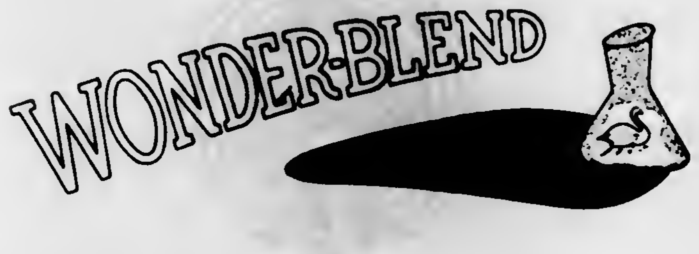
Owner of Reg. No. 765,896.
For Living Room, Dining Room, Bedroom, Occasional, and Upholstered Furniture.
First use at least as early as April 1963.

SN 203,716. Acme Visible Records, Inc., Crozet, Va. Filed Oct. 12, 1964.

VERI-VISIBLE

Owner of Reg. Nos. 415,730, 416,070, and 555,860.
For Card Index Cabinets, Desks, and Portable Record Filing Trays.
First use on or about Mar. 14, 1944.

SN 204,994. New York Feather Co., Inc., Brooklyn, N.Y. Filed Oct. 28, 1964.



For Pillows and Cushions.
First use March 1954.

Class 34—Heating, Lighting, and Ventilating Apparatus

SN 200,417. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Aug. 24, 1964.

CINCINNATI

Owner of Reg. No. 612,130.
For Flame Heating Machine for the Heat-Treating of Metal Parts.
First use December 1946.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 187,948. The Mohawk Rubber Company, Akron, Ohio. Filed Mar. 4, 1964.

MEDALLION

For Automobile Tires.
First use Nov. 30, 1960.

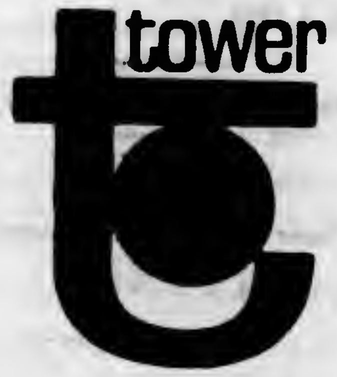
SN 203,294. Hennessy Lubricator Company, Inc., Chambersburg, Pa. Filed Oct. 5, 1964.

GUARDWELL

For Railway Axle Box Dust Guard Oil Seals.
First use on or about Sept. 1, 1963.

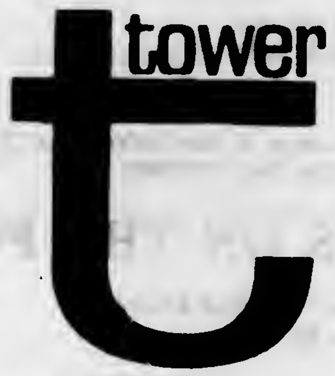
Class 36—Musical Instruments and Supplies

SN 200,153. Capitol Records, Inc., Los Angeles, Calif. Filed Aug. 19, 1964.



Owner of Reg. No. 678,451.
For Phonograph Records.
First use Aug. 6, 1964.

SN 200,154. Capitol Records, Inc., Los Angeles, Calif. Filed Aug. 19, 1964.



Owner of Reg. No. 678,451.
For Phonograph Records.
First use Aug. 6, 1964.

Class 37—Paper and Stationery

SN 194,508. Nightwriter Corporation, Alexandria, Va. Filed May 28, 1964.

Nightwriter

For Self-Illuminated Pens and Pencils, and Component, Interchangeable Parts Thereof.
First use Apr. 6, 1963.

SN 204,009. The Rosenthal Company, Inc., New York, N.Y. Filed Oct. 14, 1964.

GOODYEAR

Owner of Reg. No. 502,320.
For Elastic Bands.
First use Mar. 15, 1964; March 1911 on related goods.

SN 204,467. Georgia-Pacific Corporation, Portland, Oreg. Filed Oct. 21, 1964.

SURWEB

For Printing Paper.
First use Aug. 29, 1963.

SN 204,692. Milprint, Inc., Milwaukee, Wis. Filed Oct. 28, 1964.

BI-LAM

For Plastic Film Packaging Material.
First use Sept. 8, 1964.

SN 204,967. The Crystal Tissue Company, Middletown, Ohio. Filed Oct. 28, 1964.

POMPS

For Tissue Paper Sections for Decorating Floats and the Like.
First use Oct. 1, 1964.

Class 38 — Prints and Publications

SN 155,078. H. Leland Kaplan, Houston, Tex. Filed Oct. 12, 1962.

BOOK OF PEARLS

For Magazine Column.
First use July 1, 1962.

SN 163,571. Joseph R. De Maio, d.b.a. De Maio Associates, Paoli, Pa. Filed Feb. 27, 1963.

FOCUS ON THE FUTURE

For Brochure, Published Annually.
First use Jan. 30, 1963.

SN 176,886. Ceramic Publications, Inc., Cleveland, Ohio. Filed Sept. 18, 1963.

MINERALS PROCESSING

Owner of Reg. No. 726,832.
For Trade Magazine.
First use in or about January of 1963.

SN 179,558. Norcross, Inc., New York, N.Y. Filed Oct. 22, 1963.

CRYSTAL ELEGANCE

For Greeting Cards and Greeting Card Folders.
First use Oct. 4, 1963.

SN 182,280. Leonard Edge, Norristown, Pa. Filed Dec. 3, 1963.

SPOT O GOLD

For Promotional Tickets for Promoting the Sales of Merchandise.
First use Feb. 5, 1963.

SN 185,412. Hertzberg New Method, Inc., Jacksonville, Ill. Filed Jan. 27, 1964.

THE EDUCATIONAL PAPERBACK RESEARCHER

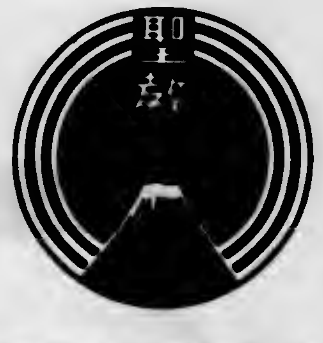
For Periodical Magazine for Librarians and Teachers Issued From Time to Time.
First use Jan. 8, 1964.

SN 187,624. "Sokagakkai" Religious Corporation, Shinjuku-ku, Tokyo, Japan. Filed Feb. 27, 1964.

聖敎新聞

The Japanese trademark when translated into English means "holy or saint, teaching newspaper." Owner of Japanese Reg. No. 578,319, dated Aug. 1, 1961.
For Newspapers Issued Three Times Per Week.

SN 187,625. "Sokagakkai" Religious Corporation, Shinjuku-ku, Tokyo, Japan. Filed Feb. 27, 1964.



The Japanese characters appearing in the mark when translated into English mean "holy teaching." Owner of Japanese Reg. No. 589,182, dated June 14, 1962.
For Yearbooks, Pamphlets, Newspapers, and Magazines.

SN 187,939. Kenneth H. Krause, d.b.a. Associated Commercial Attorneys List, New York, N.Y. Filed Mar. 4, 1964.

A C A List

Applicant disclaims the word "List" apart from the mark as shown.
For Directory of Selected Attorneys Issued Periodically.
First use Oct. 1, 1931.

SN 189,494. Newsday, Incorporated, Garden City, N.Y. Filed Mar. 24, 1964.

YOUR PURSE STRINGS

For Financial News Column in Newspaper.
First use Oct. 6, 1960.

SN 189,595. Kaumagraph Company, New Castle, Del. Filed Mar. 25, 1964.

PRESURMARK

Owner of Reg. No. 340,256.
For Decalcomanias for Transferring a Printed Design to a Hard Impervious Surface.
First use Feb. 28, 1964.

SN 189,988. The Reuben H. Donnelley Corporation, New York, N.Y. Filed Mar. 31, 1964.

WATER WORKS AND WASTES ENGINEERING

Owner of Reg. Nos. 641,415 and 641,419.
For Professional Magazine Pertaining to the Field of Water Resources.
First use January 1964.

SN 190,225. The American Society for Engineering Education, Urbana, Ill. Filed Mar. 30, 1964.

THE ENGINEERING ECONOMIST

For Journal Devoted to the Problems of Capital Investment.
First use June 15, 1955.

SN 190,730. Independent Television Corporation, New York, N.Y. Filed Apr. 9, 1964.

VIDECOLOR

For Motion Picture Films.
First use June 4, 1963.

SN 193,884. McGraw-Hill, Inc., New York, N.Y. Filed May 20, 1964.

TODAY'S SECRETARY

For Monthly Publication.
First use Sept. 1, 1950.

SN 198,716. Carter Products, Inc., New York, N.Y. Filed July 29, 1964.

PRACTI/FILE

For Packaged Sets of Printed Material Issued From Time to Time Consisting of Medical Educational Information, Medical Illustrations and Patient Aids.
First use Dec. 7, 1963.

SN 200,103. Home News Publishing Company, New Brunswick, N.J. Filed Aug. 18, 1964.

THE HOME NEWS

Owner of Reg. Nos. 358,404, 518,201, and 651,580.
For Sunday Comic Supplement of Sunday Newspaper.
First use Sept. 22, 1963.

SN 200,636. The Flyer, Inc., Westerville, Ohio. Filed Aug. 26, 1964.

The Flyer

SERVING AVIATION IN THE MIDWEST

The words "Serving Aviation in the Midwest" are herewith disclaimed apart from the mark as shown.
For Monthly Magazine.
First use Aug. 1, 1963.

SN 200,679. Towler Trading Co., Ltd., Kapaa, Kauai, Hawaii. Filed Aug. 26, 1964.

ARTOONS

For Cartoons Published Periodically in Newspapers and Other Printed Media.
First use July 29, 1964.

SN 202,122. Eothen Films Limited, Boreham Wood, England. Filed Sept. 16, 1964.

CINETTE

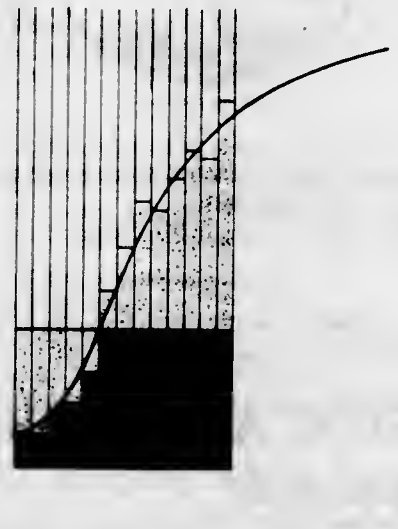
For Cinematographic Films Prepared for Exhibition.
First use Dec. 1, 1963; in commerce July 5, 1964.

SN 202,861. Success Motivation Institute, Inc., Waco, Tex. Filed Sept. 28, 1964.

BLUEPRINT FOR SUCCESS

For Educational and Training Courses Comprising Books, Booklets, and Sound Recordings Pertaining Thereto
First use at least as early as Aug. 16, 1964.

SN 202,862. Success Motivation Institute, Inc., Waco, Tex. Filed Sept. 28, 1964.



For Educational and Training Courses Comprising Books, Booklets, and Sound Recordings Pertaining Thereto.
First use at least as early as May 28, 1964.

SN 202,863. Success Motivation Institute, Inc., Waco, Tex. Filed Sept. 28, 1964.

LEGACIES OF SUCCESS

For Educational and Training Courses Comprising Books, Booklets, and Sound Recordings Pertaining Thereto.
First use ea early as Dec. 12, 1963.

SN 203,078. Farm Journal, Inc., Philadelphia, Pa. Filed Oct. 1, 1964.

DAIRY EXTRA

For Section of Magazine.
First use Sept. 18, 1964.

SN 204,940. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Oct. 26, 1964.

MAGIC MOTION

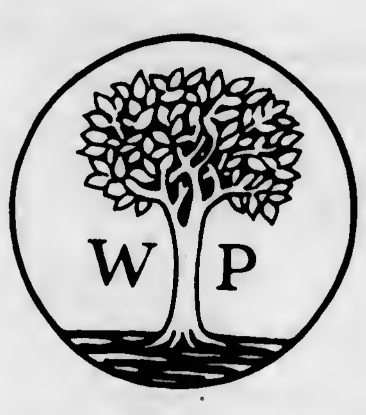
For Greeting Cards.
First use Oct. 7, 1964.

SN 205,594. Mel-A-Kard Company, Pittsburgh, Pa. Filed Nov. 5, 1964.

MEL-A-KARD

For Greeting Cards.
First use Jan. 28, 1964.

SN 205,908. World Publishing Company, Cleveland, Ohio. Filed Nov. 9, 1964.



For Books Containing Printed Literary and Artistic Works, Dictionaries, and Encyclopedias.
First use 1949.

SN 206,067. OA Business Publications, Inc., Elmhurst, Ill. Filed Nov. 12, 1964.

OFFICE APPLIANCES

Owner of Reg. No. 486,583.
For Trade Journal of the Office Equipment Industry.
First use April 1905.

SN 207,876. Farm Journal, Inc., Philadelphia, Pa. Filed Dec. 10, 1964.

BEEF EXTRA

For Section of a Magazine.
First use Nov. 21, 1964.

Class 39 — Clothing

SN 186,351. Ger-Ro-Mar, Incorporated, San Jose, Calif. Filed Feb. 10, 1964.

SYMBRA

For Brassieres, Hosiery, and Girdles.
First use Aug. 8, 1962, on brassieres.

SN 187,044. Randy Knitwear, Inc., New York, N.Y. Filed Feb. 19, 1964.

RALLY 'ROUND Randy

Owner of Reg. No. 659,882.
For Girls' and Misses' Knitted Pullovers, Shirts, Shorts, Slacks, and Suits.
First use Aug. 20, 1963.

SN 190,733. Peter Kay Uniform Corp., Woodside, N.Y. Filed Apr. 9, 1964.

PETER KAY

The name "Peter Kay" is fanciful.
For Uniforms for Nurses, Domestics, and Waitresses.
First use Apr. 2, 1964.

SN 196,269. Fownes Brothers & Co., Incorporated, New York, N.Y. Filed June 23, 1964.

Enchanté

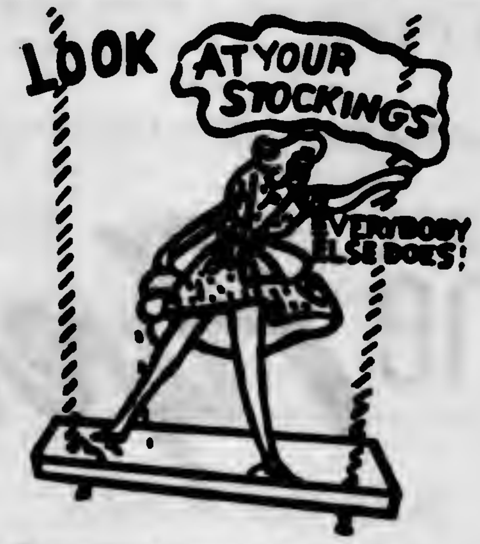
For Hand Gloves.
First use Jan. 24, 1964.

SN 198,661. Plymouth Wholesale Corporation, New York, N.Y. Filed July 28, 1964.

LINDA LEE

The mark "Linda Lee" is purely fanciful. Owner of Reg. No. 728,883.
For Infants' and Children's Anklets, Leotards, Outer Shirts and Blouses; Sweaters and Hosiery for Girls, Women, and Young Women; Knee Length Hose and Underpanties for Girls and Young Women.
First use Sept. 15, 1960.

SN 199,908. The Mayer Company, Inc., d.b.a. The Mayer Company Inc., New York, N.Y. Filed Aug. 14, 1964.



Applicant disclaims the word "Stockings" alone and apart from the mark as shown.
For Ladies' and Misses' Hosiery.
First use in or about January 1944.

SN 201,128. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Sept. 2, 1964.

CHARLES OF THE RITZ

Owner of Reg. Nos. 576,182, 639,114, and others.
For Hosiery.
First use Apr. 23, 1964.

SN 201,251. M. Aron Corporation, New York, N.Y. Filed Sept. 2, 1964.

PIRELLI

The mark is not the name of any living individual known to applicant.
For Neckties.
First use Aug. 14, 1964.

SN 203,137. Aimcee Wholesale Corporation, New York, N.Y. Filed Oct. 2, 1964.

YOUTH PARK

For Boys', Girls' and Toddlers' Clothing, Including Underwear—Namely, Underpants, Undershirts, Slips, Tights, and T-Shirts; Outerwear—Namely, Pants, Dress and Knit Shirts, Jeans, Slacks, Shorts, Sweaters, Coats, Dresses, Jackets, Snowsuits and Raincoats; Blouses and Skirts; Sleepwear—Namely, Sleepers and Robes; and Swimwear.
First use Mar. 8, 1963.

SN 205,576. Duofold, Inc., Mohawk, N.Y. Filed Nov. 5, 1964.

THUNDERWEAR

For Underwear—Namely, Shirts and Shorts; and Outerwear—Namely, Tennis Shirts and Shorts and Golf and Ski Shirts.
First use Oct. 10, 1964.

SN 205,654. Beldoch-Popper, Inc., New York, N.Y. Filed Nov. 6, 1964.

PANTS PALS

For Ladies' Sweaters and Knitted Dresses.
First use Oct. 5, 1964.

SN 206,459. Jain-Sax Clothing Co., Inc., New York, N.Y. Filed Nov. 18, 1964.

ROYAL STORK

For Maternity Wearing Apparel.
First use Oct. 1, 1964.

SN 206,580. U.S. Industries, Inc., New York, N.Y. Filed Nov. 19, 1964.

USI

For Hosiery.
First use Sept. 9, 1964.

SN 206,861. Kayser-Roth Corporation, New York, N.Y. Filed Nov. 24, 1964.

MOJUD

Owner of Reg. Nos. 158,032, 658,560, and others.
For Women's Gloves.
First use June 10, 1964.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 188,081. Crompton & Knowles-Malimo, Inc., Worcester, Mass. Filed Mar. 6, 1964.

MALIWATT

For Non-Woven Textile Fabrics in the Piece.
First use Feb. 10, 1964.

SN 189,695. Genesco Inc., Nashville, Tenn., assignee of Flagg-Utica Corporation, Nashville, Tenn. Filed Mar. 26, 1964.

MOR-KOTE

For Knitted Fabrics Made of Cotton or Blends of Synthetic Fabrics Used as a Backing Material for Coated Fabrics Used in Upholstery and in Certain Apparel.
First use Mar. 16, 1964.

SN 191,027. Bates Manufacturing Company, Lewiston, Maine. Filed Apr. 14, 1964.

SOMINAIRE

For Blankets.
First use March 1964.

SN 193,264. Courtaulds North America Inc., New York, N.Y. Filed May 12, 1964.

LIRELLE

Owner of Reg. Nos. 721,651 and 723,432.
For Rayon Fibers Contained in Textile Fabrics.
First use Apr. 14, 1964.

SN 194,046. Arthur Gamlin, d.b.a. Nevada Layout Company, Las Vegas, Nev. Filed May 22, 1964.

GAMELINE

For Cloth for Game Tables.
First use May 14, 1963.

SN 195,678. The Kendall Company, Walpole, Mass. Filed June 15, 1964.

SLEEPY HOLLOW

Owner of Reg. No. 108,212.
For Sheets.
First use on or before Nov. 28, 1962.

SN 196,452. The Kendall Company, Walpole, Mass. Filed June 25, 1964.

RUGGEDENE

Owner of Reg. No. 329,798.
For Sheets.
First use June 4, 1964.

SN 200,296. J. P. Stevens & Co., Inc., New York, N.Y. Filed Aug. 20, 1964.

FURY TWILL

Applicant disclaims exclusive right to the word "Twill" apart from the mark as shown.
For Piece Goods of One or More Natural Fibers Including Cotton, or of Synthetic Fibers or of Blends of the Foregoing.
First use Aug. 5, 1964.

SN 204,626. Allen Knitting Mills, Inc., New York, N.Y. Filed Oct. 28, 1964.

LUSTRELON

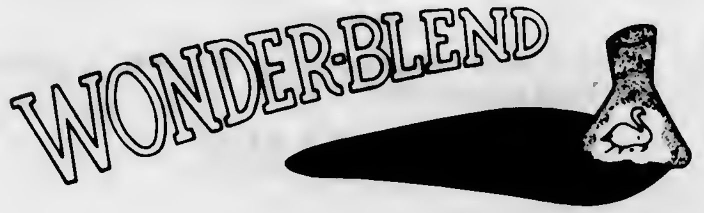
For Knitted Cotton Fabrics.
First use Oct. 1, 1964.

SN 204,639. Cone Mills Inc., New York, N.Y. Filed Oct. 28, 1964.

CONEPREST

For Piece Goods Made From Cotton, Synthetic Fibers, and Blends of Cotton and Synthetic Fibers.
First use Oct. 14, 1964

SN 204,992. New York Feather Co., Inc., Brooklyn, N.Y. Filed Oct. 28, 1964.



For Comforters.
First use March 1954.

SN 205,052. French Textiles Company, Clifton, N.J. Filed Oct. 29, 1964.

AQUA

Owner of Reg. No. 570,803.
For Net Ribbon.
First use July 1950.

SN 205,483. Associated Dry Goods Corporation, New York, N.Y. Filed Nov. 3, 1964.

SATIN SOFT

Owner of Reg. No. 722,035.
For Sheets and Pillow Cases.
First use during August 1960.

SN 205,966. Southern Mills, Inc., Atlanta, Ga. Filed Nov. 10, 1964.

WHITE TOP

For Textile Padding Used for Ironing Boards and Laundry Presses.
First use on or about Oct. 29, 1964.

SN 205,971. William Teres Co., Inc., New York, N.Y. Filed Nov. 10, 1964.

V.I.P.

For Textile Fabrics, in the Piece, Composed of Cotton, Silk, Wool, Synthetic Fibers, and Combinations Thereof.
First use Oct. 1, 1964.

SN 205,986. Allied Stores Corporation, New York, N.Y. Filed Nov. 12, 1964.

SEASONAIRE

For Bed Blankets.
First use Apr. 10, 1964.

SN 206,087. The Springs Cotton Mills, Lancaster, S.C. Filed Nov. 12, 1964.

SLEEPWAY

Owner of Reg. No. 518,528.
For Blankets, Bedspreads, Draperies, and Towels.
First use Oct. 20, 1964.

Class 43 — Thread and Yarn

SN 198,943. Edgewater Woolen Company, Philadelphia, Pa. Filed July 31, 1964.

CROFTWOOL

For Weaving and Knitting Yarn of 100% Wool.
First use June 9, 1964.

SN 206,533. W. T. Grant Company, New York, N.Y. Filed Nov. 19, 1964.

GRANT CREST

Owner of Reg. Nos. 612,676, 622,841, and 774,177.
For Knitting Yarns.
First use June 1959.

Class 44 — Dental, Medical, and Surgical Appliances

SN 195,341. The Torrington Company, Torrington, Conn. Filed June 10, 1964.

TORRINGTON

Owner of Reg. Nos. 509,711, 616,145, and 765,417.
For Surgeons' Needles.
First use June 21, 1941.

SN 199,751. The Motloid Company, Inc., Chicago, Ill. Filed Aug. 12, 1964.

The word "System" is disclaimed apart from the mark as shown.

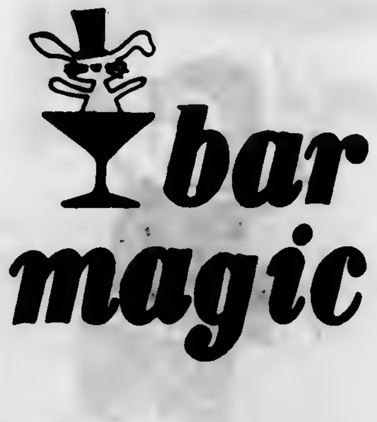
For Components for Making Dental Cement Consisting of Zinc Cement Powder, Liquid Phosphoric Acid, Mixing Slab, and Conditioning Unit.
First use about December 1958.

Class 45 — Soft Drinks and Carbonated Waters

SN 172,645. Crush International Inc., Evanston, Ill. Filed July 9, 1963.

For Soft Drinks.
First use June 13, 1963.

SN 202,918. Dell Products Corp., Hillside, N.J. Filed Sept. 29, 1964.



For Non-Alcoholic Cocktail Mix.
First use Aug. 26, 1964.

Class 46 — Foods and Ingredients of Foods

SN 77,241. All Star Foods, Inc., Albemarle, N.C., assignee of All Star Dairy Association, Inc., New York, N.Y. Filed July 8, 1959.

ALL STAR

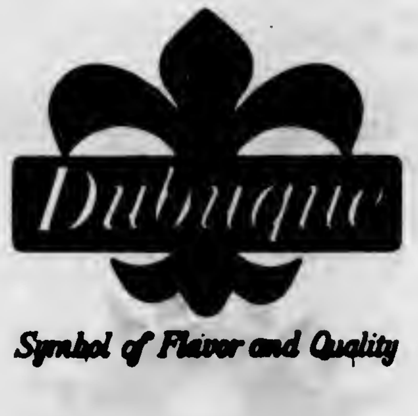
Owner of Reg. Nos. 692,505 and 687,313.
For Fresh Milk, Egg Nog, Butter, Sour Cream, and Cottage Cheese.
First use on or about July 1, 1957, on fresh milk.

SN 161,519. Inter-American Food Products, Inc., Long Island City, N.Y. Filed Jan. 28, 1963.

LA INCA

Owner of Reg. No. 408,663.
For Cookies and Spaghetti.
First use Sept. 5, 1962.

SN 161,594. Dubuque Packing Company, Dubuque, Iowa. Filed Jan. 29, 1963.


Dubuque
Symbol of Flavor and Quality

No claim is made to the words "Symbol of Flavor and Quality" apart from the mark as shown. The drawing is lined for the color red. Owner of Reg. No. 701,071.
For Prepared Meats.
First use Sept. 10, 1961; July 3, 1933, as to "Dubuque."

SN 170,916. Lakeland Grocery Co., Hopkins, Minn. Filed June 13, 1963.

ENERGEE

For Dog Food.
First use May 9, 1963.

SN 174,402. Mars, Incorporated, Chicago, Ill., by merger and change of name from Mars, Incorporated, Chicago, Ill. Filed Aug. 5, 1963.

Applicant disclaims any exclusive rights to the words "Caramel Bits" apart from the mark as shown. Owner of Reg. Nos. 553,503, 779,545, and others.
For Candy Bars.
First use July 19, 1963.

SN 174,403. Mars, Incorporated, Chicago, Ill., by merger and change of name from Mars, Incorporated, Chicago, Ill. Filed Aug. 5, 1963.

Applicant disclaims any exclusive rights to the words "Cherry Bits" apart from the mark as shown. Owner of Reg. Nos. 553,503, 779,545, and others.
For Candy Bars.
First use July 19, 1963.

SN 174,405. Mars, Incorporated, Chicago, Ill., by merger and change of name from Mars, Incorporated, Chicago, Ill. Filed Aug. 5, 1963.

Applicant disclaims any exclusive rights to the words "Goodie Roll" apart from the mark as shown. Owner of Reg. Nos. 304,055, 779,545, and others.
For Candy Bars.
First use July 19, 1963.

SN 174,406. Mars, Incorporated, Chicago, Ill., by merger and change of name from Mars, Incorporated, Chicago, Ill. Filed Aug. 5, 1963.

Applicant disclaims any exclusive rights to the words "Goodie Rolls," apart from the mark as shown. Owner of Reg. Nos. 304,055, 779,545, and others.
For Candy Bars.
First use July 19, 1963.

SN 174,407. Mars, Incorporated, Chicago, Ill., by merger and change of name from Mars, Incorporated, Chicago, Ill. Filed Aug. 5, 1963.

MARS

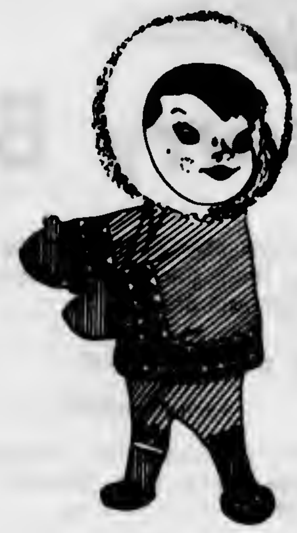
Nuts over Caramel

Applicant disclaims any exclusive rights to the term "Nuts Over Caramel" apart from the mark as shown. Owner of Reg. Nos. 304,055, 779,545, and others.

For Candy Bars.

First use July 19, 1963.

SN 175,828. Eskimo Pie Corporation, Richmond, Va. Filed Aug. 23, 1963.

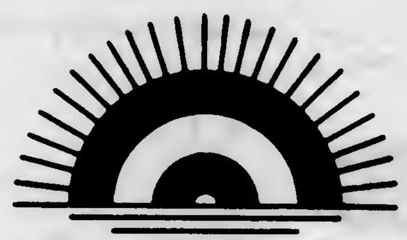


The drawing is lined for the colors red, brown, tan, black, and yellow. Owner of Reg. Nos. 300,055 and 400,973.

For Frozen Desserts—Namely, Ice Cream, Frozen Custard, Ice Milk, Sherbet, and Ices Either With or Without a Confectionery Coating.

First use at least as early as 1930.

SN 178,904. Eskimo Pie Corporation, Richmond, Va. Filed Oct. 14, 1963.

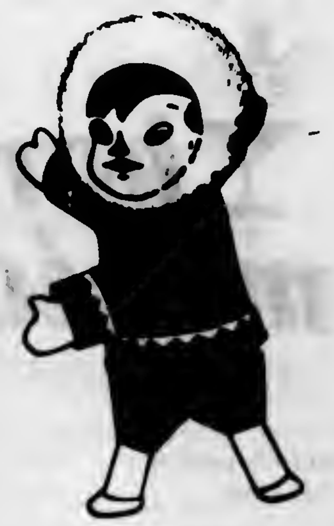


Owner of Reg. No. 370,175.

For Frozen Desserts—Namely, Ice Cream, Frozen Custard, Ice Milk, Sherbet, and Ices Either With or Without a Confectionery Coating.

First use at least as early as June 10, 1924.

SN 178,905. Eskimo Pie Corporation, Richmond, Va. Filed Oct. 14, 1963.

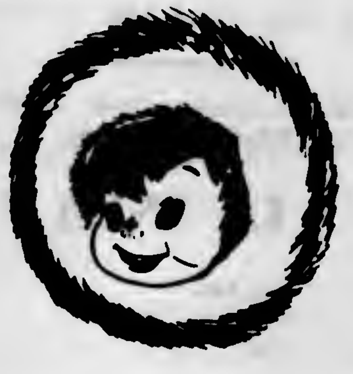


Owner of Reg. Nos. 300,055, 400,973, and others.

For Frozen Desserts—Namely, Ice Cream, Frozen Custard, Ice Milk, Sherbet, and Ices Either With or Without a Confectionery Coating.

First use Aug. 29, 1961.

SN 178,906. Eskimo Pie Corporation, Richmond, Va. Filed Oct. 14, 1963.

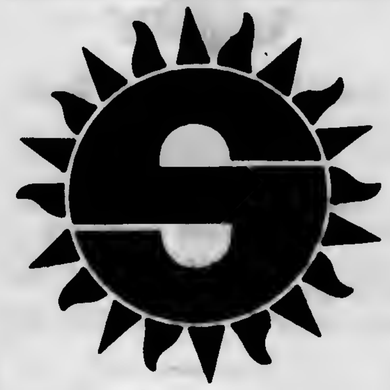


Owner of Reg. Nos. 300,055, 400,973, and others.

For Frozen Desserts—Namely, Ice Cream, Frozen Custard, Ice Milk, Sherbet, and Ices Either With or Without a Confectionery Coating.

First use Jan. 22, 1958.

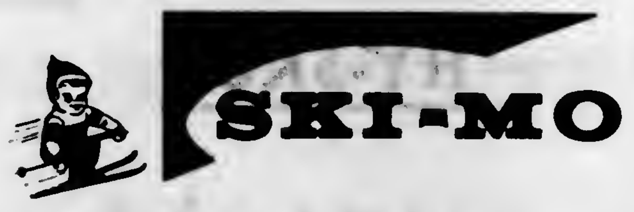
SN 183,633. Sunspiced Foods Company, Vacaville, Calif. Filed Dec. 26, 1963.



For Dehydrated Foods—Namely, Potatoes.

First use Sept. 25, 1963.

SN 183,672. Eskimo Pie Corporation, Richmond, Va. Filed Dec. 27, 1963.



Owner of Reg. No. 764,032 and others.

For Frozen Desserts—Namely, Ice Cream, Frozen Custard, Ice Milk, Sherbet, and Ices Either With or Without a Confectionery Coating.

First use Oct. 28, 1963.

SN 188,703. Artco Distributors, Inc., Glendale, Ariz. Filed Mar. 16, 1964.

AA

For Fresh Lettuce.

First use Oct. 18, 1957.

SN 188,704. Artco Distributors, Inc., Glendale, Ariz. Filed Mar. 16, 1964.

GI·GI

For Fresh Lettuce.

First use Oct. 18, 1957.

SN 190,159. Corn Products Company, New York, N.Y. Filed Apr. 2, 1964.

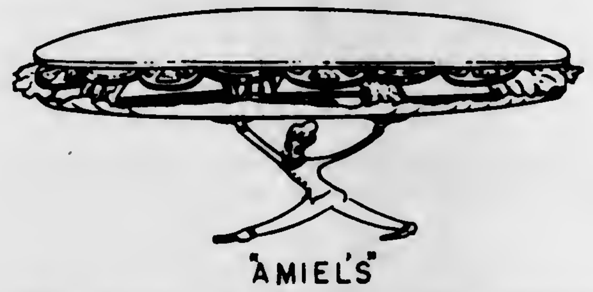
PEERLESS

Owner of Reg. Nos. 147,972 and 514,184.

For Starch for Food Purposes.

First use as early as 1930.

SN 191,900. Amiel's Jumbo Submarine Sandwiches, Inc., Rochester, N.Y. Filed Apr. 24, 1964.



No claim of exclusive right is made to the design of the sandwich as a showing of the goods herein.

For Submarine Sandwiches.

First use Mar. 26, 1964.

SN 191,903. Amiel's Jumbo Submarine Sandwiches, Inc., Rochester, N.Y. Filed Apr. 24, 1964.

"AMIEL'S"

Owner of Reg. No. 376,316.

For Submarine Sandwiches.

First use Mar. 26, 1964.

SN 193,375. Hygrade Food Products Corporation, Detroit, Mich. Filed May 13, 1964.

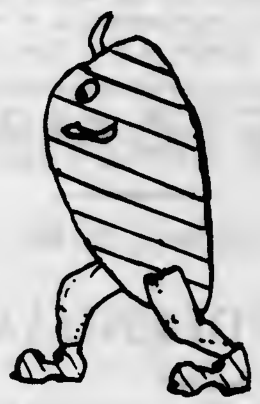
BOHEMIAN BOY

For Meat Products—Namely, Frankfurters, Meat Loaf, Sausage, Thuringer, Bologna, and Salami.

First use May 1, 1955.

SN 194,260. John Turner, d.b.a. Turner's, Chinese Camp, Calif. Filed May 25, 1964.

WALKING CHILI



Applicant disclaims exclusive right to the word "Chili" when used apart from the mark. The drawing is lined for green.

For Chili Sauces and Similar Preparations in the Nature of Seasoned Sauces.

First use June 1, 1963.

SN 197,151. McDonald's Corporation, Chicago, Ill. Filed July 6, 1964.

MC DOUBLE

For Sandwiches—Namely, Cheeseburgers and Hamburgers.

First use on or about June 15, 1964.

SN 198,964. Max Lutz, d.b.a. Max Lutz Company and Max Lutz Co., McAllen, Tex. Filed July 31, 1964.

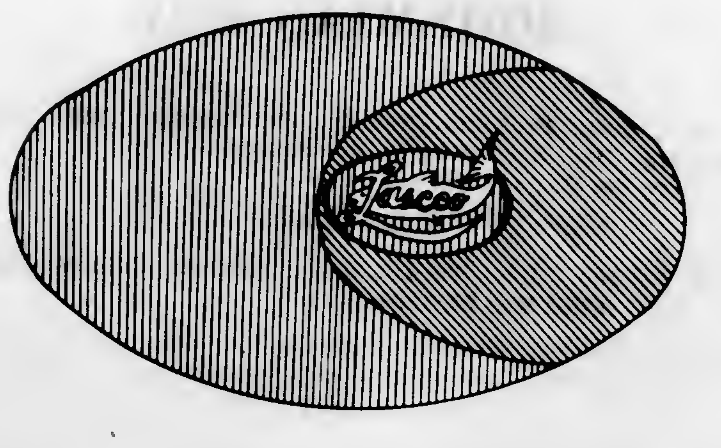
Max
Pack

The word "Pack" is disclaimed apart from the mark as shown. Owner of Reg. No. 416,373.

For Fresh Vegetables.

First use at least as early as the year 1943.

SN 201,087. Los Angeles Smoking & Curing Co., Los Angeles, Calif. Filed Sept. 1, 1964.



The drawing is lined for the colors pink and green. No claim is made to the representation of the fish disclosed by the drawing per se. Owner of Reg. Nos. 315,277, 581,677, and 644,271.

For Smoked Salmon.

First use Mar. 27, 1964; Dec. 1, 1922, as to the mark "Lascco."

SN 202,778. William Davies Co. Inc., Chicago, Ill. Filed Sept. 28, 1964.

VOLENDAM

Owner of Reg. No. 686,092.

For Canned, Cooked Hams and Pork Shoulders.

First use Jan. 20, 1958.

SN 203,009. Hi-Water Co., Inc., Chicago, Ill. Filed Sept. 30, 1964.

HI-WATER

For Food and Food Ingredients—Namely, Fresh Frozen Fish.

First use on or about Sept. 1, 1964.

SN 203,254. Cakemasters of America, Inc., Chicago, Ill. Filed Oct. 5, 1964.

AWARD WINNER

For Fruit Cakes.

First use Sept. 1, 1964.

SN 203,329. The Quaker Oats Company, Chicago, Ill. Filed Oct. 5, 1964.

CHOXAN

For Cookies.

First use June 22, 1954.

SN 203,330. The Quaker Oats Company, Chicago, Ill. Filed Oct. 5, 1964.

GAUCHOS

For Cookies.

First use Mar. 28, 1955.

SN 203,548. Emma M. Thompson, d.b.a. Granday Canning Co., Key West, Fla. Filed Oct. 7, 1964.

A. GRANDAY'S

For Turtle Soup and Turtle Meat Sold in Cans.

First use 1895.

SN 207,674. H. B. Taylor Co., Chicago, Ill. Filed Dec. 7, 1964.

HY-SKOR

For Liquid Flavor for Food Products of All Types.

First use July 12, 1963.

SN 208,397. John Sexton & Co., Chicago, Ill. Filed Dec. 17, 1964.

COFFIER

For Non-Dairy Cream Substitute.

First use Dec. 14, 1964.

Class 48 — Malt Beverages and Liquors

SN 126,351. John Labatt Limited, London, Ontario, Canada. Filed Aug. 21, 1961.

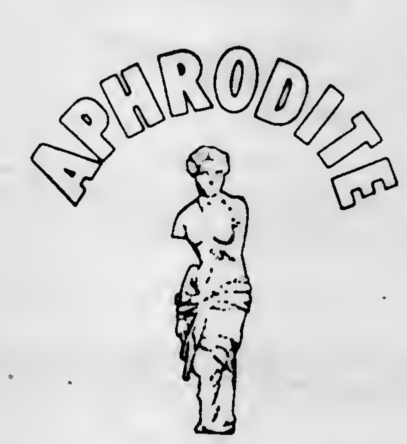
IPA

For Ales.

First use 1938; in commerce 1938.

Class 49 — Distilled Alcoholic Liquors

SN 191,251. The Cathay Corporation, Jersey City, N.J. Filed Apr. 16, 1964.



For Distilled Spirits—Namely, Gin, Brandy, Ouso, Vodka, Mastikha, and Liqueurs.

First use Apr. 3, 1964.

SN 199,272. Esbeco Distilling Corporation, d.b.a. United Kingdom Products Co., Ltd., Stamford, Conn. Filed Aug. 5, 1964.

CANADIAN NATIONAL

No claim of exclusive right is made to "Canadian" as used on Canadian whisky.

For Canadian Whisky.

First use June 22, 1964.

Class 50 — Merchandise Not Otherwise Classified

SN 155,423. Master Etching Corporation, Englewood, N.J. Filed Oct. 18, 1962.

MASTER PHOTO

For Name Plates, Dials and Panels Having a Dye-Impregnated Oxide Coating Used for Metal Specialties Such as Advertising, License Plates, and Insignia, and as Data Plates for Machines, Appliances, Vehicles, and Ships.

First use Sept. 21, 1962.

SN 192,831. John K. Karfo, New York, N.Y. Filed May 6, 1964.

TOPOFOAM

For Three-Dimensional Models, Topographical Representations and Architectural Displays.

First use Apr. 1, 1964.

SN 199,582. Fernanda Designs, St. Paul, Minn. Filed Aug. 10, 1964.

FERNANDA DESIGNS

The term "Designs" is hereby disclaimed apart from the mark as shown.

For Specialty Gift Items Such as Picture Plaques With Marriage and Birth Announcements Thereon.

First use May 17, 1961.

SN 205,299. Wallace Klarman, d.b.a. Beaux Art Materials, Atlanta, Ga. Filed Nov. 2, 1964.

TARA

For Canvas Artist Panels, Canvas Artist Panels in Book Form and Pads of Canvas, All for Use Only by Artists in Painting.

First use Dec. 15, 1963.

SN 205,562. Americraft, Inc., Brooklyn, N.Y. Filed Nov. 5, 1964.

Americraft

For Art Craft Products—Namely, Wall Plaques, Art Reproductions, Statuary, Statuettes, Images, and Wall Decorations.

First use on or about Mar. 15, 1964.

SN 206,353. The Eagle-Picher Company, Cincinnati, Ohio. Filed Nov. 17, 1964.

ORTEX

For Rubber Mats and Vacuum Molded Polymer Mats and Panels.

First use Sept. 29, 1964.

SN 207,129. International Dinner Theatres, Ltd., Richmond, Va. Filed Nov. 30, 1964.

"MAGIC STAGE"

No claim is made to the word "Stage," apart from the mark as shown.

For Movable Theatre Stage.

First use Nov. 27, 1963.

SN 208,396. Sem-Tek Mfg. Co., Inc., Garwood, N.J. Filed Dec. 17, 1964.

SCHEMAT·A·KIT

For Educational Electronic Kit Composed Essentially of a Switch, a Silicon Diode, Plugs, and Wiring.

First use Sept. 28, 1964.

SN 208,423. American Advertising Corporation, Abilene, Tex. Filed Dec. 18, 1964.

ROTARYADVANCE

For Rotating Windblown Signs.

First use Jan. 15, 1964.

SN 211,095. P.C.B. Inc., Dundee, Ill. Filed Feb. 1, 1965.

SKEE

For Pallets.

First use May 15, 1964.

SN 211,306. Pandora, Incorporated, Kansas City, Mo. Filed Feb. 8, 1965.

RAK-A-SLAK

For Garment Hangers.

First use during March 1964.

Class 51 — Cosmetics and Toilet Preparations

SN 52,372. Texas Pharmacal Company, San Antonio, Tex. Filed May 27, 1958.

Allercreme

For Cosmetic Skin Creams and Lotions, Body and Face Powders, Astringents, Bath Oils, Deodorants, Eye Mascara and Shadow, Hair Spray Preparations, Lipstick, Perfumes, Rouge, and Suntan Preparations.

First use before February 1941.

SN 160,324. Armour Pharmaceutical Company, Chicago, Ill., assignee, by mesne assignment, of Reheis Company, Inc., Berkeley Heights, N.J. Filed Jan. 7, 1963.

REHEIS

Owner of Reg. No. 550,093.

For Antiperspirants and Ingredients of Antiperspirant Preparations Containing Aluminum Compounds, Including Aluminum Hydroxide, Aluminum Chloride, Aluminum Chlorhydroxide and Salts, Aluminum Oxychlorides, Aluminum Chlorhydroxy Ethylate, Aluminum Lactate, Sodium Aluminum Lactate, Sodium Aluminum Chlorhydroxy Lactate, and Aluminum Citrate; Zirconium Hydroxychloride, and Zirconyl Chloride-Aluminum Chlorhydroxide Complexes, in the Form of Gels, Powders, and Solutions.

First use Feb. 10, 1950.

SN 179,627. Fritzsche Brothers, Inc., New York, N.Y. Filed Oct. 28, 1963.

REMEMBER ME

For Perfume for Manufacturing and Professional Use Only.

First use Oct. 1, 1963.

SN 184,556. Viviane Woodard Corporation, Panorama City, Calif. Filed Jan. 13, 1964.

Colors Lamé

The word "Colors" is disclaimed apart from the mark as shown.

For Nail Enamel.

First use Sept. 1, 1963.

SN 186,624. International Drug Trading Inc., Detroit, Mich. Filed Feb. 13, 1964.

danAmide

For Dandruff Remover and Hair Conditioner.

First use May 1, 1963.

SN 187,553. Brunswig Drug Company, d.b.a. Martone Distributing Company, Los Angeles, Calif. Filed Feb. 27, 1964.

MARTONE

For Hand and Body Lotion.

First use June 27, 1962.

SN 190,205. Raymond Research Corp., New York, N.Y. Filed Apr. 2, 1964.

RD

For Combination Hair Coloring and Dressing.

First use Feb. 15, 1963.

SN 191,433. G. H. Packwood Manufacturing Co., St. Louis, Mo. Filed Apr. 17, 1964.

PAX

Owner of Reg. Nos. 253,176, 389,614, and others.

For Cosmetics—Namely, Lotions and Creams for the Skin, and Particularly Lanolin Lotion, Silicone Lotion, Medicated Waterless Cleaner Lotion.

First use 1949 on lotion.

SN 202,029. Johnson Publishing Company, Inc., Chicago, Ill. Filed Sept. 16, 1964.

DUKE

Owner of Reg. No. 720,758.

For Cologne, After Shave Lotion, and Body Deodorant.

First use June 10, 1964.

SN 202,030. Johnson Publishing Company, Inc., Chicago, Ill. Filed Sept. 16, 1964.

RAVEEN

Owner of Reg. No. 722,085.

For Hand and Body Lotion, Cologne, Bath Oil and Bubble Bath Preparations, Deodorant and Bleaching Cream.

First use June 10, 1964.

SN 202,091. Lehn & Fink Products Corporation, d.b.a. Tussy Cosmetics, Bloomfield, N.J. Filed Sept. 17, 1964.

YOUNG CARE

For Eye Cream.

First use Aug. 26, 1964.

SN 202,126. The Andrew Jergens Company, Cincinnati, Ohio. Filed Sept. 18, 1964.

SECRET PASSION

For Cologne, Perfume, Dusting Powder, and Bath Oil.

First use Aug. 21, 1964, on perfume.

SN 202,622. Revlon, Inc., New York, N.Y. Filed Sept. 24, 1964.

BLUE ICE

For Hair Spray.

First use Sept. 10, 1964.

Subj. to Intf. with SN 206,004.

SN 203,068. John H. Breck, Inc., Springfield, Mass. Filed Oct. 1, 1964.

MAJESTY

For Permanent Hair Waving Preparation.

First use Aug. 26, 1964.

SN 203,375. John H. Breck, Inc., Springfield, Mass. Filed Oct. 6, 1964.

PROTONE

For Hydrogen Peroxide and a Color Developer for Hair Dye.

First use Sept. 16, 1964.

SN 203,376. John H. Breck, Inc., Springfield, Mass. Filed Oct. 6, 1964.

PRO-TONE

For Hydrogen Peroxide and a Color Developer for Hair Dye.

First use Sept. 16, 1964.

SN 203,410. Ludwig Scherk, Inc., New York, N.Y. Filed Oct. 6, 1964.

ARABIAN NIGHTS

Owner of Reg. No. 411,529.

For Perfume, Toilet Water, Talcum Powder, Bath Powder, and Brilliantine.

First use Aug. 1, 1923, on perfume and toilet water.

SN 203,476. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 7, 1964.

DENTAGARD

Owner of Reg. No. 701,806.

Dentifrice.

First use Apr. 22, 1964.

SN 203,477. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 7, 1964.

AWARD

Owner of Reg. Nos. 435,782 and 598,890.

For Dentifrice.

First use Apr. 22, 1964.

SN 203,478. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 7, 1964.

BANNER

For Dentifrice.

First use Apr. 22, 1964.

SN 203,480. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 7, 1964.

REGAL

For Dentifrice.

First use Apr. 22, 1964.

SN 203,481. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 7, 1964.

PRIME

Owner of Reg. No. 705,336.

For Dentifrice.

First use Apr. 22, 1964.

SN 203,567. Cameo, Inc., Toledo, Ohio. Filed Oct. 8, 1964.

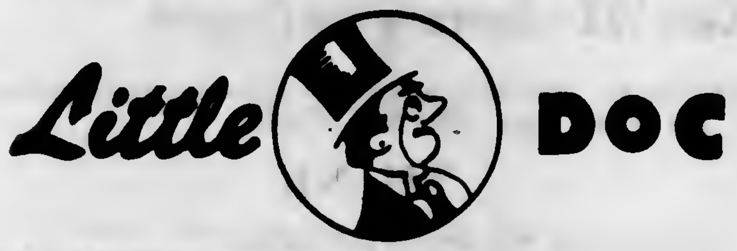
Lip smackin'

For Flavored Lipstick.

First use July 28, 1964.

Class 52—Detergents and Soaps

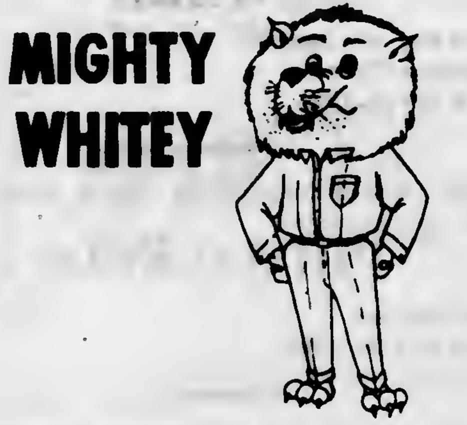
SN 166,414. Gus J. Schaffner, Jr., d.b.a. Gus J. Schaffner Co., Pittsburgh, Pa. Filed Apr. 9, 1963.



For Waterless Hand Cleaners.

First use July 30, 1941.

SN 184,365. Domestic Linen Supply & Laundry Co., Detroit, Mich. Filed Jan. 10, 1964.



For Sweeping Compounds and Hand Cleansers.

First use Oct. 7, 1963.

SN 187,554. Brunswig Drug Company, d.b.a. Martone Distributing Company, Los Angeles, Calif. Filed Feb. 27, 1964.

MARTONE

For Liquid Shampoo, Egg Shampoo, and Creme Rinse.

First use June 27, 1962.

SN 189,040. Victor Brog, d.b.a. The Gintone Laboratories, Memphis, Tenn. Filed Mar. 19, 1964.

Māngene

For Hair Preparations—Namely, Liquid Shampoo and Creme Shampoos.

First use June 4, 1955.

SN 191,389. E. M. Howey, Woodbury, N.J. Filed Apr. 17, 1964.

AQUA-DE

For Degreasing Solvent.

First use Apr. 17, 1962.

SN 195,256. Tri-Bros. Chemical Corp., Morton Grove, Ill. Filed June 9, 1964.

BorCoil

For Chemical for Descaling and Deliming for Use in Connection With Coil-Type Water Heating and Cooling Equipment.

First use June 2, 1964.

SN 200,730. S. C. Johnson & Son, Inc., Racine, Wis. Filed Aug. 27, 1964.

STEP OFF

For Floor Cleaner and Wax Remover.

First use on or about Aug. 5, 1964.

SN 202,120. Colgate-Palmolive Company, New York, N.Y. Filed Sept. 17, 1964.

SWERL

Owner of Reg. No. 384,697.
For Scouring Cleanser.
First use Apr. 7, 1964.

SN 202,908. Britex Corporation, Boston, Mass. Filed Sept. 29, 1964.

PHOS-O-SUDS

For Acid Cleaner.
First use July 28, 1961.

SN 203,181. Holiday Inns of America, Inc., Memphis, Tenn. Filed Oct. 2, 1964.

IMA

For Hand and Face Soaps, Carpet Shampoo, All-Purpose Detergents, Glass Cleaners, Spot Remover, Bowl Cleaner, and Wax Stripper and Degreaser.
First use Jan. 1, 1962.

SN 203,281. Glamorene, Incorporated, Clifton, N.J. Filed Oct. 5, 1964.

NAUGHTY PUP

For Preparation for Spot Cleaning Soils on Rugs and Upholstery Due to Pet Mishaps.
First use Sept. 24, 1964.

SN 203,424. Parts Inc., Memphis, Tenn. Filed Oct. 6, 1964.

PROTECTO

For Oil and Grease Absorbent.
First use July 29, 1964.

SN 203,439. Swank, Inc., Attleboro, Mass. Filed Oct. 6, 1964.

玉
東

The Chinese characters mean "jade east" in English.
Owner of Reg. Nos. 782,977 and 784,934.
For Toilet Soap.
First use July 18, 1964.

SN 203,685. Nutrilite Products, Inc., Buena Park, Calif. Filed Oct. 9, 1964.

NPI

Owner of Reg. No. 664,571.
For Dishwashing Lotion, Laundry Compound and Heavy Duty Detergent Cleaner.
First use May 18, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

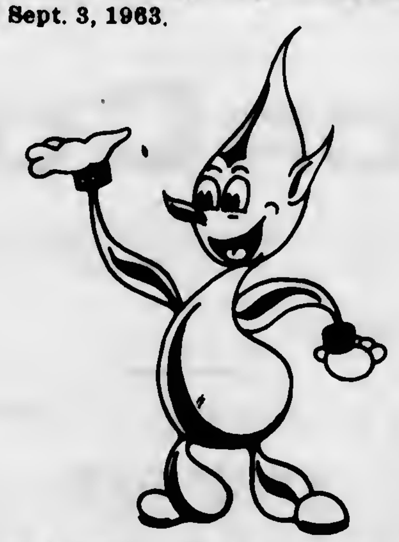
SN 196,866. Jack's Franchising Company Incorporated, Birmingham, Ala. Filed July 1, 1964.

JACK'S

For Restaurant Services—Namely, Drive-In Restaurants Specialising in the Serving of Sandwiches, Seafood, and Non-Alcoholic Beverages.
First use Dec. 1, 1961.

Class 101 — Advertising and Business

SN 176,201. Henry V. Kayes, d.b.a. Burnie Bluflame, Denver, Colo. Filed Sept. 3, 1963.



For Design and Formulation of Advertising Material To Be Used by Public Utility and Other Companies in Advertising Their Services and in Promoting the Sale of Gas and Gas Appliances.
First use July 29, 1958.

SN 179,479. Monroe International, Inc., Orange, N.J., assignee of Tel-Atlas, Inc., Los Angeles, Calif. Filed Oct. 21, 1963.

ORDER-MATION

For Service Comprising Consultation, Advice, Instruction, and Guidance in Selection of Equipment for a Merchandising Ordering Service.
First use Feb. 28, 1963.

SN 179,480. Monroe International, Inc., Orange, N.J., assignee of Tel-Atlas, Inc., Los Angeles, Calif. Filed Oct. 21, 1963.

TEL-ATLAS

For Service Comprising Consultation, Advice, Instruction, and Guidance in Selection of Equipment for a Merchandising Ordering Service.
First use Aug. 13, 1962.

Class 102 — Insurance and Financial

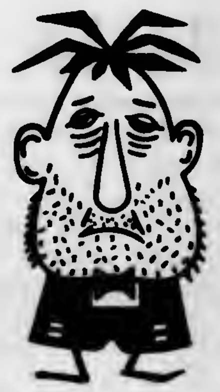
SN 189,841. The State Automobile & Casualty Underwriters, Des Moines, Iowa. Filed Mar. 6, 1964.

THINK

Owner of Reg. Nos. 389,343 and 586,958.
For Underwriting of Insurance.
First use Dec. 20, 1933.

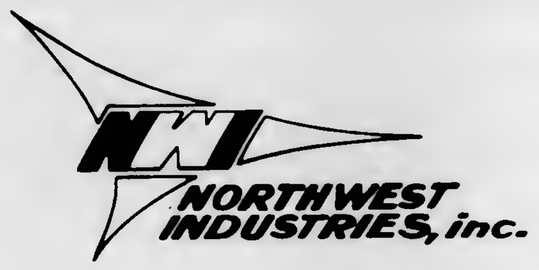
Class 103 — Construction and Repair

SN 197,237. Ajax Sewer Cleaning Corp., Glendale, N.Y. Filed July 7, 1964.



For Services to Residential, Industrial and Commercial Establishments—Namely, the Cleaning and Thawing Out of Sewer Lines and Pipes, and the Pumping Out of Flooded Cellars.
First use Oct. 23, 1963.

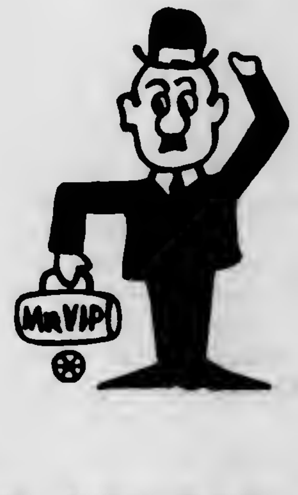
SN 197,418. Northwest Industries, Inc., Albany, Oreg. Filed July 8, 1964.



For Precision Machining and Fabrication of Refractory, Reactive and Corrosion-Resistant Metals for the Aerospace, Nuclear, Chemical, Pulp and Paper Industries.
First use on or about Jan. 1, 1964.

Class 105 — Transportation and Storage

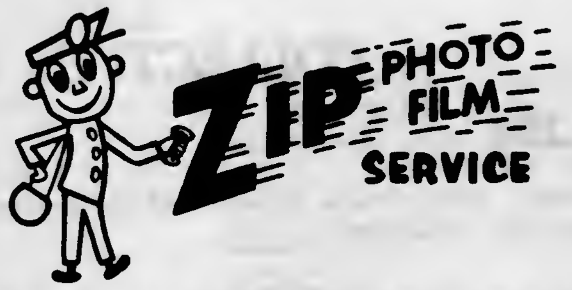
SN 186,790. V.I.P. Travel Service, Inc., Chicago, Ill. Filed Feb. 14, 1964.



For Travel Agency Service—Namely, Arranging for Conducted Foreign and Domestic Tours Including All Types of Transportation and Accommodations.
First use Dec. 17, 1963.

Class 106 — Material Treatment

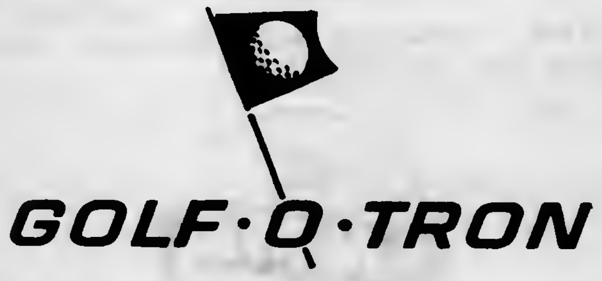
SN 195,324. James B. Price, d.b.a. Zip Photo Film Service, Newberry, S.C. Filed June 10, 1964.



No claim is made to the wording "Photo Film Service" apart from the mark as shown.
For Developing and Finishing of Photographic Film.
First use on or about Dec. 15, 1963.
Subj. to Intf. with SN 190,802 and SN 193,859.

Class 107 — Education and Entertainment

SN 168,820. M. Richard Speiser, New York, N.Y., assignee of Golf-O-Tron Corporation, New York, N.Y. Filed May 14, 1963.



Owner of Reg. No. 746,184.
For Installation and Maintenance of Electronically Operated Golf Driving Ranges.
First use Sept. 1, 1962.

SN 199,803. The Domestic and Foreign Missionary Society of the Protestant Episcopal Church in the United States of America, New York, N.Y. Filed Aug. 13, 1964.

ADVENTUROUS MISSION

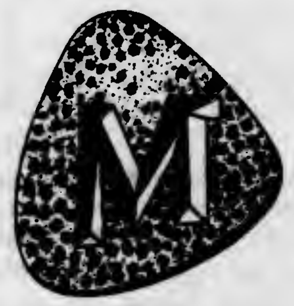
For Title of a Religious Television Program.
First use during October 1960.

SN 199,804. The Domestic and Foreign Missionary Society of the Protestant Episcopal Church in the United States of America, New York, N.Y. Filed Aug. 13, 1964.

THE GOOD LIFE

For Title of a Religious Radio Program.
First use during January 1961.

SN 200,273. Morris Animal Foundation, Denver, Colo. Filed Aug. 20, 1964.

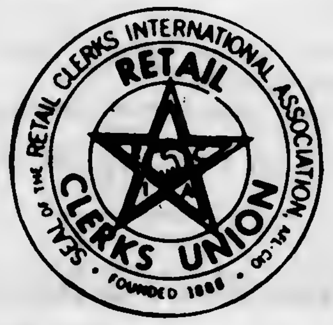


For Foundation Services—Namely, Promoting Science and the Practice of Veterinary Medicine.
First use at least as early as June 30, 1960.

COLLECTIVE MEMBERSHIP MARKS

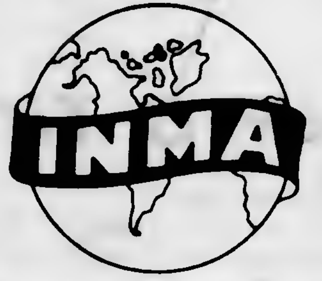
Class 200

SN 176,958. Retail Clerks International Association, Washington, D.C. Filed Sept. 13, 1963.


SEAL OF THE RETAIL CLERKS INTERNATIONAL ASSOCIATION, AFL-CIO
RETAIL
CLERKS UNION
FOUNDED 1888

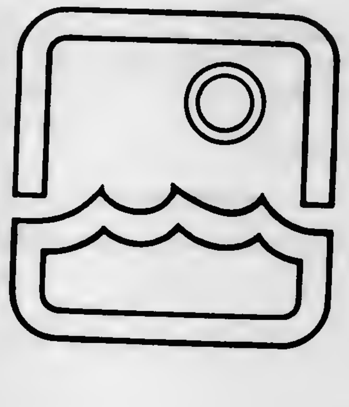
For Miscellaneous Printed Matter Issued From Time to Time To Indicate Membership in the Applicant Association.
First use August 1962.

SN 194,392. International Nutria Marketing Association, Watonga, Okla. Filed May 27, 1964.



For Indicating Membership in Applicant Association.
First use Jan. 28, 1963.

SN 198,655. National Swimming Pool Institute, Washington, D.C. Filed July 28, 1964.

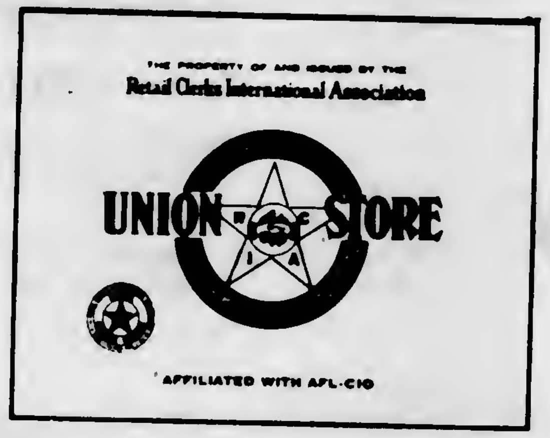


For Indicating Membership in Applicant.
First use June 22, 1964.

CERTIFICATION MARKS

Class B — Services

SN 176,955. Retail Clerks International Association, Washington, D.C. Filed Sept. 13, 1963.


THE PROPERTY OF AND ISSUED BY THE
Retail Clerks International Association
UNION
STORE
AFFILIATED WITH AFL-CIO

The mark is used by persons authorised by applicant to certify that the services of their employees are performed by members of applicant.
For Retail Store Services.
First use January 1963.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

788,885. AEROJET-GENERAL. Aerojet-General Corporation. SN 180,816. Pub. 2–16–65. Filed 11–12–63.

788,886. TRANS-PIP. Polymer Corporation Limited. SN 182,827. Pub. 2–16–65. Filed 12–11–63.

788,887. BAKELITE. Union Carbide Corporation. SN 187,976. Pub. 2–16–65. Filed 3–4–64.

Class 2 — Receptacles

788,888. TREE AND ROLL SYMBOL (DESIGN). Bathurst Containers Limited. SN 186,320. Pub. 2–16–65. Filed 2–10–64.

788,889. GLACIER PAK. Georgia-Pacific Corporation. SN 191,380. Pub. 2–16–65. Filed 4–17–64.

788,890. EQUALITY. Equality Plastics, Inc. SN 194,787. Pub. 2–16–65. Filed 6–3–64.

Class 4 — Abrasives and Polishing Materials

788,891. PHOSBRITE. Albright & Wilson (Mfg.) Limited. SN 135,162. Pub. 2–16–65. Filed 1–4–62.

788,892. TUBA. Werner & Mertz, G.m.b.H. MULTIPLE CLASS (Classes 4, 5, 6, 29, and 52). SN 184,861. Pub. 2–16–65. Filed 5–13–64.

Class 5 — Adhesives

788,892. (See Class 4 for this trademark.)

788,893. PLASTI-TAK. Brooks Manufacturing Company, assignee of Lincoln A. Brooks, d.b.a. Brooks Manufacturing Co. SN 198,981. Pub. 2–16–65. Filed 7–31–64.

Class 6 — Chemicals and Chemical Compositions

788,892. (See Class 4 for this trademark.)

788,894. PHOSBRITE. Albright & Wilson (Mfg.) Limited. SN 135,163. Pub. 2–16–65. Filed 1–4–62.

788,895. DCMX. The Ottawa Chemical Company. SN 146,744. Pub. 2–16–65. Filed 6–12–62.

788,896. DCC AND DESIGN. Drew Chemical Corporation. SN 162,084. Pub. 2–16–65. Filed 2–5–63.

788,897. GOLDEN CROWN. Steuart, Son & Co., Inc. SN 181,577. Pub. 2–16–65. Filed 11–20–63.

788,898. TONOX. United States Rubber Company. SN 182,385. Pub. 2–16–65. Filed 12–4–63.

788,899. TENSYN. Velsicol Chemical Corporation. SN 182,388. Pub. 2–16–65. Filed 12–4–63.

788,900. MICRONIER. Rayonier Incorporated. SN 182,897. Pub. 2–16–65. Filed 12–12–63.

788,901. RIVERFRAC. The Dow Chemical Company. SN 186,704. Pub. 2–16–65. Filed 2–14–64.

788,902. SANDFRAC. The Dow Chemical Company. SN 186,705. Pub. 2–16–65. Filed 2–14–64.

788,903. UNION CARBIDE AND DESIGN. Union Carbide Corporation. SN 187,975. Pub. 2–16–65. Filed 3–4–64.

788,904. ATLANTIC. The Atlantic Refining Company. MULTIPLE CLASS (Classes 6, 15, and 52). SN 194,341. Pub. 2–16–65. Filed 5–27–64.

Class 8 — Smokers' Articles, Not Including Tobacco Products

788,905. SURE-SNUFF. Anchor Hocking Glass Corporation. SN 202,344. Pub. 2–16–65. Filed 9–22–64.

788,906. EVER-DRI. S. M. Frank & Co., Inc. SN 202,584. Pub. 2–16–65. Filed 9–24–64.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

788,907. TRW. Thompson Ramo Wooldridge Inc. MULTIPLE CLASS (Classes 9, 21, and 35). SN 182,681. Pub. 2–16–65. Filed 12–9–63.

788,908. CROOKER AND DESIGN. Robert M. Crooker, d.b.a. Crooker. MULTIPLE CLASS (Classes 9, 22, 37, and 38). SN 189,558. Pub. 2–16–65. Filed 3–25–64.

Class 10 — Fertilizers

788,909. CROTODUR. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 156,457. Pub. 2–16–65. Filed 11–2–62.

Class 11 — Inks and Inking Materials

788,910. UNICOAT. Carbon Paper Co., Ltd. SN 191,127. Pub. 2–16–65. Filed 4–15–64.

788,911. CLIMATE CONTROLLED. Formulabs, Incorporated. SN 204,061. Pub. 2–16–65. Filed 10–15–64.

Class 12 — Construction Materials

788,912. BLACK FILL. The National Paving and Contracting Company, assignee, by mesne assignments, of Arthur T. Ward, Jr., and Clara E. Haines. SN 176,130. Pub. 2–16–65. Filed 8–30–63.

788,913. RICHLITE. Rainier Plywood Company. SN 180,447. Pub. 2–16–65. Filed 11–4–63.

788,914. DEPENDABLE CRACK FILLER AND DESIGN. Dependable Chemical Co., Incorporated. SN 181,759. Pub. 2–16–65. Filed 11–22–63.

788,915. TROPHY. Trophy Manufacturing Corporation, assignee, by mesne assignments, of Trophy Industries, Inc. SN 183,635. Pub. 2–16–65. Filed 12–26–63.

788,916. TROPHY AND DESIGN. Trophy Manufacturing Corporation, assignee, by mesne assignments, of Trophy Industries, Inc. SN 183,636. Pub. 2–16–65. Filed 12–26–63.

788,917. F.R. PLATEWOOD. Abitibi Power and Paper Company, Limited. SN 184,561. Pub. 2–16–65. Filed 1–14–64.

788,918. COMPRESIN. A/S De-No-Fa og Lilleborg Fabriker. MULTIPLE CLASS (Classes 12 and 32). SN 185,475. Pub. 2–16–65. Filed 1–28–64.

788,919. CEL-WAY. Granite City Steel Company, d.b.a. Granco Steel Products Company. SN 188,009. Pub. 2–16–65. Filed 3–5–64.

788,920. PERMA-DOPE. Johnson & Johnson. SN 193,384. Pub. 2–16–65. Filed 5–13–64.

788,921. TILE-LITE. United States Mineral Products Company, by change of name from United States Mineral Wool Company. SN 194,004. Pub. 2–9–65. Filed 5–21–64.

788,922. POWER-SHIELD. United States Mineral Products Company, by change of name from United States Mineral Wool Company. SN 194,443. Pub. 2–9–65. Filed 5–27–64.

788,923. "MARTY." Martin Marietta Corporation. SN 196,388. Pub. 2–16–65. Filed 6–24–64.

788,924. DUR-RED. Red Plastic Co., Inc. SN 197,175. Pub. 2–16–65. Filed 7–6–64.

788,925. BETCO. Bethesda Cinder Block Manufacturing Co., Inc. SN 198,399. Pub. 2–16–65. Filed 7–23–64.

788,926. PA AND DESIGN. The Purdy-Ammon Lumber Company. SN 198,434. Pub. 2–16–65. Filed 7–23–64.

788,927. J-SPRAY. Johns-Manville Corporation. SN 198,740. Pub. 2–16–65. Filed 7–29–64.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

788,928. HIDE-AHL. American Screen Products Company. SN 139,010. Pub. 2–16–65. Filed 3–5–62.

788,929. HARRY HOMEOWNER. Hechinger Co. SN 163,362. Pub. 2–16–65. Filed 2–25–63.

788,930. STOP AND DESIGN. Holland Industries, Inc., assignee of Kars Petersen, Inc. SN 176,660. Pub. 2–16–65. Filed 9–10–63.

788,931. SUDSATION AND DESIGN. Jerome I. Heald, d.b.a. Sudsation Shower Company. SN 183,172. Pub. 2–16–65. Filed 12–17–63.

788,932. TORQ FLEX AND DESIGN. Marquette Coppersmithing Company, Inc. SN 185,695. Pub. 2–16–65. Filed 1–30–64.

788,933. FLOMATIC. The Bastian-Blessing Company. SN 186,050. Pub. 2–16–65. Filed 2–5–64.

788,934. KAY KENNEY AND DESIGN. Kenney Manufacturing Company. SN 194,984. Pub. 2–16–65. Filed 6–5–64.

788,935. BRASSCO-FLEX. National Distillers and Chemical Corporation. SN 195,430. Pub. 2–16–65. Filed 6–11–64.

788,936. CHALLENGER. Yale & Towne, Inc. SN 196,330. Pub. 2–16–65. Filed 6–23–64.

788,937. CLUB. Club Aluminum Products Company. SN 196,503. Pub. 2–16–65. Filed 6–26–64.

788,938. AIR FLO AND DESIGN. U.S. Products Co. SN 198,102. Pub. 2–16–65. Filed 7–17–64.

Class 14—Metals and Metal Castings and Forgings

788,939. SIMS. Sims Castings Corp. SN 203,209. Pub. 2–16–65. Filed 10–2–64.

Class 15—Oils and Greases

788,904. (See Class 6 for this trademark.)

788,940. ALDLUBE. ALD, Inc. SN 182,696. Pub. 2–16–65. Filed 12–10–63.

788,941. TRANS-O-MAGIC. A. Margolis & Sons Corporation. SN 188,250. Pub. 2–16–65. Filed 3–9–64.

788,942. DUALUBE AND DESIGN. Dualube, Inc. SN 189,158. Pub. 2–16–65. Filed 3–20–64.

788,943. SEA SAW. Agway, Inc., by merger from Cooperative Grange League Federation Exchange, Inc. SN 190,160. Pub. 8–18–64. Filed 4–2–64.

788,944. SOHITRO. The Standard Oil Company. SN 194,433. Pub. 2–16–65. Filed 5–27–64.

788,945. SOHIPET. The Standard Oil Company. SN 194,437. Pub. 2–16–65. Filed 5–27–64.

788,946. GEAR-O-MATIC AND DESIGN. Prairie States Corporation. SN 197,845. Pub. 2–16–65. Filed 7–14–64.

788,947. NO WELD. Scott Chemical Corporation. SN 199,121. Pub. 2–16–65. Filed 8–3–64.

788,948. FLEET-HEAT AND DESIGN. Fleet-Wing Corporation. SN 201,933. Pub. 2–16–65. Filed 9–15–64.

788,949. MOTOR MINDER. Malco Products Inc. SN 203,318. Pub. 2–16–65. Filed 10–5–64.

Class 16—Protective and Decorative Coatings

788,950. GRID-WHITE. Thompson-Hayward Chemical Company. SN 179,675. Pub. 2–16–65. Filed 10–23–63.

788,951. "X" FABRI-COAT AND DESIGN. "X" Laboratories, Inc. SN 182,913. Pub. 10–27–64. Filed 12–12–63.

788,952. PALETTE-TONE AND DESIGN. The Debevoise Company. SN 189,879. Pub. 11–24–64. Filed 3–30–64.

Class 17—Tobacco Products

788,953. RJR. R. J. Reynolds Tobacco Company. SN 191,441. Pub. 2–16–65. Filed 4–17–64.

788,954. FLAMENCO. Compania Insular Tabacalera, S.A. SN 201,015. Pub. 2–16–65. Filed 9–1–64.

788,955. CLUB CAVENDISH. The Bloch Brothers Tobacco Co. SN 202,228. Pub. 2–16–65. Filed 9–21–64.

788,956. AFTER HOURS. Lane Limited. SN 202,277. Pub. 2–16–65. Filed 9–21–64.

Class 18—Medicines and Pharmaceutical Preparations

788,957. MYCODEX. The S. B. Massengill Company. SN 168,832. Pub. 2–16–65. Filed 5–14–63.

788,958. ZADOS. Ezra M. Norris, d.b.a. Zados Laboratories. SN 181,914. Pub. 2–16–65. Filed 11–26–63.

788,959. LOBIDRAM. Dram Pharmaceuticals, Inc. SN 183,385. Pub. 2–16–65. Filed 12–23–63.

788,960. FIGURE OF A KNIGHT. Olin Mathieson Chemical Corporation. SN 187,604. Pub. 2–16–65. Filed 2–27–64.

788,961. SUN CITY. The Sun City Pharmaceutical Corp. SN 188,292. Pub. 2–16–65. Filed 3–9–64.

788,962. MINIPRESS. Chas. Pfizer & Co., Inc. SN 188,389. Pub. 2–16–65. Filed 3–10–64.

788,963. INDERAL. Imperial Chemical Industries Limited. SN 189,475. Pub. 2–16–65. Filed 3–24–64.

788,964. URICEUTICAL. Conal Pharmaceuticals, Inc. SN 198,718. Pub. 2–16–65. Filed 7–29–64.

Class 19—Vehicles

788,965. MM AND DESIGN. Metal-Matic, Inc. SN 163,020. Pub. 2–16–65. Filed 2–14–63.

788,966. TRAV-L-TRAY. Byford & Morris, Inc. SN 197,361. Pub. 2–16–65. Filed 7–8–64.

788,967. ROD-'N-RIFLE. Semlac Corporation. SN 197,783. Pub. 2–16–65. Filed 7–13–64.

788,968. STARLIFTER. Lockheed Aircraft Corporation. SN 197,835. Pub. 2–16–65. Filed 7–14–64.

Class 20—Linoleum and Oiled Cloth

788,969. PINWHEEL. Formica Corporation. SN 141,518. Pub. 2–16–65. Filed 4–4–62.

788,970. CLOUD. American Biltrite Rubber Co., Inc. SN 184,417. Pub. 2–16–65. Filed 1–13–64.

Class 21—Electrical Apparatus, Machines, and Supplies

788,907. (See Class 9 for this trademark.)

788,971. DOUBLE TRIANGLE LOGO DESIGN. Omni Spectra, Inc. SN 150,361. Pub. 2–16–65. Filed 8–2–62.

788,972. SIGMA. Sigma Instruments, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 153,221. Pub. 2–16–65. Filed 9–14–62.

788,973. LYALL LYFE LYTE AND DESIGN. Lyall Electric, Inc. SN 170,919. Pub. 2–16–65. Filed 6–13–63.

788,974. CONTINENTAL CUSTOM. Al Davis Radio, Inc. SN 174,020. Pub. 2–16–65. Filed 7–30–63.

788,975. EA AND DESIGN. Electrical Automation Company, Inc. SN 175,739. Pub. 2–16–65. Filed 8–26–63.

788,976. COMTEK. Comtek, Inc. SN 181,331. Pub. 2–16–65. Filed 11–18–63.

788,977. SOLECTRON. Ransomes Sims & Jefferies Limited. SN 181,684. Pub. 2–16–65. Filed 11–21–63.

788,978. VARLEY AND DESIGN. Oliver Pell Control Limited. MULTIPLE CLASS (Classes 21 and 26). SN 182,437. Pub. 2–16–65. Filed 12–5–63.

788,979. EAC AND DESIGN. Electronic Assistance Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 183,321. Pub. 2–16–65. Filed 12–20–63.

788,980. SURFER. Packard-Bell Electronics Corporation. SN 183,920. Pub. 2–16–65. Filed 1–2–64.

788,981. TELE-TIMER. Ansa Fone Corp. SN 185,481. Pub. 2–16–65. Filed 1–28–64.

788,982. SIMIBLOCK. Siemens & Halske Aktiengesellschaft. SN 191,888. Pub. 2–16–65. Filed 4–23–64.

788,983. TANTOROID. Sprague Electric Company. SN 192,333. Pub. 2–16–65. Filed 4–29–64.

788,984. NYLET. Heyman Manufacturing Company. SN 193,367. Pub. 2–16–65. Filed 5–13–64.

788,985. ZOX. The Eagle-Picher Company. SN 195,289. Pub. 2–16–65. Filed 6–10–64.

788,986. TWYSTRON. Varian Associates. SN 195,471. Pub. 2–16–65. Filed 6–11–64.

Class 22—Games, Toys, and Sporting Goods

788,908. (See Class 9 for this trademark.)

788,987. SEA HAWK. White Stores, Inc. SN 158,884. Pub. 2–16–65. Filed 12–10–62.

788,988. HOLIDAY FAIR AND DESIGN. Hedaya & Co. SN 188,011. Pub. 2–16–65. Filed 3–5–64.

788,989. GONKS AND DESIGN. Gonks Limited, assignee of Daniel Buckley Enterprises Limited. SN 189,544. Pub. 2–16–65. Filed 3–25–64.

788,990. TRU SPHERE. Dearborn Gage Company. SN 189,559. Pub. 2–16–65. Filed 3–25–64.

788,991. ROYAL CANADIAN. St. Lawrence Manufacturing Company, Inc. SN 189,626. Pub. 2–16–65. Filed 3–25–64.

788,992. MICROHELMET. De Luxe Reading Corporation. SN 193,133. Pub. 2–16–65. Filed 5–11–64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

788,993. AMERICAN. Huber-Warco Company. SN 168,322. Pub. 2–16–65. Filed 5–7–63.

788,994. LAWN-GROOM. McDonough Co., d.b.a. O. Ames Co. SN 175,423. Pub. 2–2–65. Filed 8–20–63.

788,995. TURBO-VAC. Jacobsen Manufacturing Company. SN 184,072. Pub. 2–16–65. Filed 1–6–64.

788,996. PIG-PUMP. The Upjohn Company. SN 184,117. Pub. 2–16–65. Filed 1–6–64.

788,997. FLOOD CHECK AND DESIGN. Midwest Automotive Research, Inc. SN 184,739. Pub. 2–16–65. Filed 1–16–64.

788,998. AMMOPAC. Girdler Corporation. SN 184,809. Pub. 2–16–65. Filed 1–17–64.

788,999. TAPE-ALL. Walter P. Hill, Inc. SN 185,136. Pub. 2–16–65. Filed 1–22–64.

789,000. STOWE-WOODWARD. Stowe-Woodward, Inc. SN 185,451. Pub. 2–16–65. Filed 1–27–64.

789,001. HOFFMAN. Belson Corporation. SN 185,485. Pub. 1–12–65. Filed 1–28–64.

789,002. VIKING. The Viking Tool Company. SN 185,734. Pub. 2–16–65. Filed 1–30–64.

789,003. VIKING AND DESIGN. The Viking Tool Company. SN 185,735. Pub. 2–16–65. Filed 1–30–64.

789,004. BONIS. Bonis Bros. Fur Machinery Corp. SN 186,053. Pub. 2–16–65. Filed 2–5–64.

789,005. GUIDE-ALL AND DESIGN. Kenneth R. Gilfry, d.b.a. The Rustic Shop. SN 186,526. Pub. 2–16–65. Filed 2–12–64.

789,006. BIG EARTHA. Clarence G. Grube. SN 186,719. Pub. 2–16–65. Filed 2–14–64.

789,007. CLE-BIDE. The Cleveland Twist Drill Company. SN 187,172. Pub. 2–16–65. Filed 2–21–64.

789,008. LIDO TOOLS. Straza Industries. SN 187,588. Pub. 2–16–65. Filed 2–26–64.

789,009. ZAMBONI. Frank J. Zamboni & Co. SN 187,840. Pub. 2–16–65. Filed 3–2–64.

789,010. AMERICAN AIR-MASTER AND DESIGN. American Air-Master. SN 188,827. Pub. 2–16–65. Filed 3–10–64.

789,011. SQUEEZ-GRIP. The Fyr-Fyter Company. SN 190,708. Pub. 2–16–65. Filed 4–9–64.

789,012. ACCESS. Hartman Metal Fabricators, Inc. SN 190,923. Pub. 12–29–64. Filed 4–13–64.

789,013. THE GB LINE AND DESIGN. Great Bend Manufacturing Company, Inc. SN 192,133. Pub. 2–16–65. Filed 4–24–64.

789,014. BALLY. Bally Block Company. MULTIPLE CLASS (Classes 23 and 32). SN 192,664. Pub. 2–16–65. Filed 5–5–64.

789,015. ROYAL. Nicholson File Company. SN 193,893. Pub. 2–16–65. Filed 5–20–64.

789,016. CARBIDEX. Carbidex Corporation. SN 193,934. Pub. 2–16–65. Filed 5–21–64.

789,017. STAINLESS KRONA AND DESIGN. Eversharp, Inc. SN 195,384. Pub. 2–16–65. Filed 6–11–64.

789,018. CALK-IT. Calk-It Corporation. SN 195,640. Pub. 2–16–65. Filed 6–15–64.

789,019. TIE-MASTER. Vann Industries, Inc. SN 195,827. Pub. 2–16–65. Filed 6–16–64.

789,020. VIKING. Viking Corporation. SN 195,829. Pub. 2–16–65. Filed 6–16–64.

789,021. BULKMASTER. Jervis B. Webb Company. SN 195,987. Pub. 2–16–65. Filed 6–18–64.

789,022. MON-O-FLO. The A. J. Sackett & Sons Company. SN 197,617. Pub. 2–16–65. Filed 7–10–64.

789,023. REDINGTON. Crompton & Knowles Corporation. SN 197,945. Pub. 2–16–65. Filed 7–16–64.

789,024. WATER-VAK. Scott Aviation Corporation. SN 197,991. Pub. 2–16–65. Filed 7–16–64.

789,025. BOAR, ETC. AND DESIGN. RaM Enterprises, d.b.a. Boar Equipment Company. SN 198,079. Pub. 2–16–65. Filed 7–17–64.

789,026. ELGIN PELICAN AND DESIGN. Elgin Sweeper Company. SN 198,471. Pub. 2–16–65. Filed 7–24–64.

789,027. HYVIT. Bata Shoe Company of Canada Limited. SN 199,008. Pub. 2–16–65. Filed 8–3–64.

789,028. HYNIT. Bata Shoe Company of Canada Limited. SN 199,009. Pub. 2–16–65. Filed 8–3–64.

789,029. HYTEM. Bata Shoe Company of Canada Limited. SN 199,010. Pub. 2–16–65. Filed 8–3–64.

789,030. LOC-RITE. Kelsey-Hayes Company. SN 199,574. Pub. 2–16–65. Filed 8–10–64.

789,031. CORN O MATIC. Feature Products Inc. SN 199,980. Pub. 2–16–65. Filed 8–17–64.

789,032. ROLL-A-MATIC. Sossner Steel Stamps, Inc. SN 200,039. Pub. 2–16–65. Filed 8–17–64.

789,033. COUNTESS. Riccar America Company. SN 205,725. Pub. 2–16–65. Filed 11–6–64.

789,034. UG. United-Greenfield Corporation. SN 206,096. Pub. 2–16–65. Filed 11–12–64.

789,035. EDUCATOR. Royal McBee Corporation. SN 206,652. Pub. 2–16–65. Filed 11–20–64.

Class 24 — Laundry Appliances and Machines

789,036. CHORE CHAMP. John H. Alsip, d.b.a. Southwest Machinery Company. SN 204,123. Pub. 2–16–65. Filed 10–16–64.

Class 26 — Measuring and Scientific Appliances

788,972. (See Class 21 for this trademark.)

788,978. (See Class 21 for this trademark.)

788,979. (See Class 21 for this trademark.)

789,037. JEWELL. Moeller Manufacturing Co., Inc. SN 181,555. Pub. 2–16–65. Filed 11–20–63.

789,038. CURAMOLD. A. H. Harris & Sons, Inc. SN 183,057. Pub. 2–16–65. Filed 12–16–63.

789,039. DIAZOLUX. Rotolite Corporation. SN 202,961. Pub. 2–16–65. Filed 9–29–64.

Class 27 — Horological Instruments

789,040. SESAME. Atlantic Fabrique d'Horlogerie S.A. Bettlach (Atlantic Uhrenfabrik AG Bettlach) (Atlantic Watch Factory Ltd. Bettlach). SN 202,536. Pub. 2–16–65. Filed 9–24–64.

Class 28 — Jewelry and Precious-Metal Ware

789,041. BRAIDED ELEGANCE. Textron Inc. SN 197,199. Pub. 2–16–65. Filed 7–6–64.

789,042. THIN WATCHMATE. Textron Inc. SN 197,205. Pub. 2–16–65. Filed 7–6–64.

789,043. TIPPY TASTER. Tippy Taster Corporation of America. SN 197,347. Pub. 2–16–65. Filed 7–7–64.

789,044. WL AND DESIGN. William Lowe, Inc. SN 200,007. Pub. 2–16–65. Filed 8–17–64.

789,045. RINALDO. Ronnie Jewelry, Inc. SN 201,875. Pub. 2–16–65. Filed 9–14–64.

789,046. YS. James H. Hall Co., Inc. SN 203,284. Pub. 2–16–65. Filed 10–5–64.

Class 29 — Brooms, Brushes, and Dusters

788,892. (See Class 4 for this trademark.)

789,047. CROWN AND DESIGN. The Drackett Company. SN 175,258. Pub. 2–16–65. Filed 8–19–63.

789,048. MAGICLEAN AND DESIGN. Brenham Broom & Mop Works, Inc. SN 184,207. Pub. 2–16–65. Filed 1–8–64.

789,049. ACOUSTI-COATER. Jack-Sons Products Corp. SN 185,213. Pub. 2–16–65. Filed 1–23–64.

789,050. H ORAL HYGIENE BRAND. Joyce Tatelbame. Inc., d.b.a. Oral Hygiene Industries. SN 186,125. Pub. 2–16–65. Filed 2–5–64.

789,051. RING TAIL. Theron V. Moss, d.b.a. South Eastern Cordage. SN 201,042. Pub. 2–16–65. Filed 9–1–64.

789,052. PANW. Pellon Corporation. SN 202,167. Pub. 2–16–65. Filed 9–18–64.

Class 31 — Filters and Refrigerators

789,053. SPARKLER VERTICAL PLATE FILTERS AND DESIGN. Sparkler Mfg. Co. SN 166,944. Pub. 2–16–65. Filed 4–17–63.

789,054. PRINCESS. Union Tank Car Company. SN 175,701. Pub. 2–16–65. Filed 8–23–63.

789,055. DEL. Arrowhead and Puritas Waters Inc. SN 180,355. Pub. 2–16–65. Filed 11–4–63.

789,056. MINI-CUBE. General Electric Company. SN 184,054. Pub. 2–16–65. Filed 1–6–64.

789,057. ELIASON. Eliason Refrigerator Company. SN 185,378. Pub. 2–16–65. Filed 1–27–64.

789,058. MONTCLAIR. Water Refining Company, Inc. SN 187,451. Pub. 2–16–65. Filed 2–25–64.

789,059. REFIN-A-MATIC. Water Refining Company, Inc. SN 195,838. Pub. 2–16–65. Filed 6–16–64.

789,060. EPOCEL. Pall Corporation. SN 197,322. Pub. 2–16–65. Filed 7–7–64.

789,061. PUMPSTER. Pall Corporation. SN 197,328. Pub. 2–16–65. Filed 7–7–64.

789,062. MISCELLANEOUS DESIGN. Bally Case and Cooler, Inc. SN 197,870. Pub. 2–16–65. Filed 7–15–64.

Class 32 — Furniture and Upholstery

788,918. (See Class 12 for this trademark.)

789,014. (See Class 23 for this trademark.)

789,063. AMERICAN MAID. Slick Industrial Company, d.b.a. Illinois Shade Division of Slick Industrial Company. SN 182,670. Pub. 2–16–65. Filed 12–9–63.

789,064. FLEX-KING. Levolor Lorentzen, Inc. SN 196,169. Pub. 2–16–65. Filed 6–22–64.

Class 33 — Glassware

789,065. MORGAN. Morgan & Co., Inc. SN 178,624. Pub. 2–16–65. Filed 10–9–63.

Class 34 — Heating, Lighting, and Ventilating Apparatus

789,066. THERMOSTAT ACTION. Premier Industrial Corporation. SN 151,358. Pub. 2–16–65. Filed 8–16–62.

789,067. F AND DESIGN. Franklin Frohlich. SN 177,520. Pub. 2–16–65. Filed 9–23–63.

789,068. PITMAN MASTERMATIC. J. C. Pitman & Sons Engineering Corp. SN 179,062. Pub. 2–16–65. Filed 10–15–63.

789,069. TRIUMPH-AIRE. The Standard Motor Company Limited. SN 181,419. Pub. 2–16–65. Filed 11–18–63.

789,070. VENTRONIC. Barber Manufacturing Company. SN 186,319. Pub. 2–16–65. Filed 2–10–64.

789,071. THERMO-ZONE. American Radiator & Standard Sanitary Corporation. SN 187,063. Pub. 2–16–65. Filed 2–20–64.

789,072. DW AND DESIGN. De Wolf Furnace Co., Inc. SN 202,561. Pub. 2–16–65. Filed 9–24–64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

788,907. (See Class 9 for this trademark.)

789,073. BXP AND DESIGN. Raybestos-Manhattan, Inc. SN 184,650. Pub. 2–16–65. Filed 1–15–64.

789,074. JET-AIR II. The General Tire & Rubber Company. SN 197,955. Pub. 2–16–65. Filed 7–16–64.

789,075. JET SEAL AND DESIGN. Eaton Manufacturing Company. SN 198,143. Pub. 2–16–65. Filed 7–20–64.

Class 36 — Musical Instruments and Supplies

789,076. WE DELIVER HAPPINESS. Hammond Organ Studios of Boston, Inc. SN 175,404. Pub. 2–16–65. Filed 8–20–63.

789,077. BELCOR. The Belcor Corp., Inc. SN 192,666. Pub. 2–16–65. Filed 5–5–64.

Class 37 — Paper and Stationery

788,908. (See Class 9 for this trademark.)

789,078. STEEL KRAFT. Arkell Safety Bag Company. SN 176,702. Pub. 12–1–64. Filed 9–11–63.

789,079. RING-O. Cory Corporation. SN 184,216. Pub. 2–16–65. Filed 1–8–64.

789,080. NEVA-LOSE. Cory Corporation. SN 184,217. Pub. 2–16–65. Filed 1–8–64.

789,081. BULLDOG. The H. C. Cook Company. SN 190,340. Pub. 2–16–65. Filed 4–6–64.

789,082. GLENVALE. KVP Sutherland Paper Company. SN 196,164. Pub. 2–16–65. Filed 6–22–64.

Class 38 — Prints and Publications

788,908. (See Class 9 for this trademark.)

789,083. GUIDELINES TO GOVERNMENT CONTRACTS. Fairchild Publications, Inc. SN 167,131. Pub. 2–16–65. Filed 4–19–63.

789,084. HEN·OTEL. Southern States Cooperative Incorporated. SN 179,818. Pub. 2–16–65. Filed 10–25–63.

789,085. THE LILLIPUT SCHOOLHOUSE AND DESIGN. Genevieve Tarlton Alexander, d.b.a. The Lilliput Schoolhouse. SN 184,807. Pub. 2–16–65. Filed 1–17–64.

Class 39 — Clothing

789,086. THE HAND OF FASHION. John E. Fuchs Corp. SN 127,335. Pub. 2–16–65. Filed 9–6–61.

789,087. CEDRIC. Georges Levy. SN 181,784. Pub. 2–16–65. Filed 11–22–63.

789,088. LITTLE KING. Esther K. Davis, d.b.a. Davis Manufacturing Co. SN 194,282. Pub. 2–16–65. Filed 5–26–64.

789,089. TIN MIL. Boss Manufacturing Company. SN 198,329. Pub. 2–16–65. Filed 7–22–64.

789,090. THE ROYCE SHOE. Endicott Johnson Corporation. SN 199,729. Pub. 2–16–65. Filed 8–12–64.

Class 41 — Canes, Parasols, and Umbrellas

789,091. TRAVELAIRE. Scherts Umbrellas, Inc. SN 198,777. Pub. 2–16–65. Filed 7–29–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

789,092. PEDITEX. Kirban Corporation, by change of name from Pedigree Fabrics, Inc. SN 163,759. Pub. 2–16–65. Filed 3–1–63.

789,093. DESIGNS BY LOTTE. Designs by Lotte, Inc. SN 176,174. Pub. 2–16–65. Filed 9–3–63.

789,094. CARPET ENGINEERS. Carpet Engineers Inc. SN 177,765. Pub. 2–16–65. Filed 9–26–63.

789,095. AETZLON. Aetzlon Textile Company. SN 185,476. Pub. 2–16–65. Filed 1–28–64.

789,096. LAWSONIT. Lawson Products, Inc. SN 186,086. Pub. 2–16–65. Filed 2–5–64.

789,097. ROUTE "6." Boyd Lee Hosiery Mills, Inc. SN 189,140. Pub. 2–16–65. Filed 3–20–64.

789,098. PLAS FILM ACETATE MATTRESS PADS AND DESIGN. W. V. Matheny, d.b.a. Protect-A-Mat-Company. SN 190,226. Pub. 2–16–65. Filed 3–31–64.

789,099. GENERAL WORTH. J. W. Valentine Co., Inc. SN 191,725. Pub. 2–16–65. Filed 4–21–64.

789,100. MISCELLANEOUS DESIGN. J. W. Valentine Co., Inc. SN 191,726. Pub. 2–16–65. Filed 4–21–64.

789,101. EVERFASHIONABLE. Everfast Fabrics, Inc. SN 193,772. Pub. 2–16–65. Filed 5–19–64.

789,102. BEERSHEBA. Dyersburg Cotton Products, Inc. SN 194,154. Pub. 2–16–65. Filed 5–25–64.

789,103. KILMALCOLM. Dyersburg Cotton Products, Inc. SN 194,156. Pub. 2–16–65. Filed 5–25–64.

789,104. SNUG-N-HUG. Dyersburg Cotton Products, Inc. SN 194,157. Pub. 2–16–65. Filed 5–25–64.

789,105. TAFFSKIN. Ascot Textile Corp. SN 198,814. Pub. 2–16–65. Filed 7–30–64.

789,106. LANALAIRE. Faribault Woolen Mill Company. SN 199,043. Pub. 2–16–65. Filed 8–3–64.

789,107. TRAMP 'N TUB. Regal Rugs, Inc. SN 199,224. Pub. 2–16–65. Filed 8–4–64.

789,108. BOONSKIN. Amphenol-Borg Electronics Corporation. SN 199,248. Pub. 2–16–65. Filed 8–5–64.

789,109. POROSOFT. Huyck Corporation. SN 199,368. Pub. 2–16–65. Filed 8–6–64.

789,110. 2-A-PLUS. Huyck Corporation. SN 199,471. Pub. 2–16–65. Filed 8–7–64.

789,111. KERSAN. Knitweave Associates, Inc. SN 199,475. Pub. 2–16–65. Filed 8–7–64.

789,112. CORONET. Coronet Industries, Inc. SN 199,542. Pub. 2–16–65. Filed 8–10–64.

789,113. DELISSA. J. P. Stevens & Co., Inc. SN 200,121. Pub. 2-16-65. Filed 8-18-64.

789,114. SEA BLUES. Erwin Mills, Inc. SN 200,173. Pub. 2-16-65. Filed 8-19-64.

789,115. RAMISTAFF. Hodges Research & Development Company. SN 200,228. Pub. 2-16-65. Filed 8-19-64.

Class 43 — Thread and Yarn

789,116. C NYLON & SPANDEX. Monsanto Company. SN 198,573. Pub. 2-16-65. Filed 7-27-64.

789,117. ALLYN-707. Allied Chemical Corporation. SN 198,801. Pub. 2-16-65. Filed 7-30-64.

Class 44 — Dental, Medical, and Surgical Appliances

789,118. STAUFFER HOME PLAN. Bonnie H. Stauffer, executrix of the last will of Bernard H. Stauffer, deceased, assignee of Bernard H. Stauffer. SN 162,033. Pub. 2-16-65. Filed 2-4-63.

789,119. STAR X-RAY AND DESIGN. Star X-Ray Co., Inc. SN 198,504. Pub. 2-16-65. Filed 5-14-64.

789,120. ARISTETTE QUEEN. Aristo Manufacturing Co. SN 197,810. Pub. 2-16-65. Filed 7-14-64.

Class 46 — Foods and Ingredients of Foods

789,121. STEWART IN-FRA-RED ETC. AND MAP DESIGN. Stewart In-Fra-Red, Inc. SN 153,827. Pub. 3-2-65. Filed 9-24-62.

789,122. PRO NUTRO. Hind Brothers & Company Limited. SN 178,610. Pub. 2-16-65. Filed 10-9-63.

789,123. DAWE'S AND DESIGN. Dawe's Laboratories, Inc. SN 180,567. Pub. 2-16-65. Filed 11-6-63.

789,124. BRACH'S AND DESIGN. E. J. Brach & Sons. SN 181,850. Pub. 2-16-65. Filed 11-26-63.

789,125. AMERICAN TRADITION AND DESIGN. American Tradition Inc., d.b.a. American Tradition Foods. SN 183,198. Pub. 2-16-65. Filed 12-18-63.

789,126. KUHNE AND DESIGN. Carl Kuhne KG. SN 185,686. Pub. 2-16-65. Filed 1-30-64.

789,127. QUIKEE. Broughton Specialty Foods, Inc. SN 189,543. Pub. 2-16-65. Filed 3-25-64.

789,128. TALL TATERS. General Foods Corporation. SN 198,158. Pub. 2-16-65. Filed 5-11-64.

789,129. CHEF O'NAISE. Recipe Foods, Inc. (New York corporation), by merger and change of name from Recipe Foods, Inc. (Maryland corporation). SN 195,151. Pub. 12-29-64. Filed 6-8-64.

Class 47 — Wines

789,130. HENRI MARSAL. Louis Bert & Cie. SN 177,852. Pub. 2-16-65. Filed S.R. 9-27-63; Am. P.R. 9-24-64.

789,131. TASHEIMER. The Stellenbosch Farmers' Winery Limited. SN 188,474. Pub. 2-16-65. Filed 3-11-64.

789,132. CHATEAU LIBERTAS. The Stellenbosch Farmers' Winery Limited. SN 188,475. Pub. 2-16-65. Filed 3-11-64.

789,133. LA GRATITUDE. The Stellenbosch Farmers' Winery Limited. SN 188,476. Pub. 2-16-65. Filed 3-11-64.

Class 48 — Malt Beverages and Liquors

789,134. EZE-OPEN BIG D. Drewrys Limited U.S.A., Inc. SN 163,086. Pub. 2-16-65. Filed 2-19-63.

Class 49 — Distilled Alcoholic Liquors

789,135. TURKISH DELIGHT. The Huntington Creek Corporation, d.b.a. Leroux & Company. SN 184,068. Pub. 2-16-65. Filed 1-6-64.

789,136. AMERICANA. Schenley Industries, Inc., assignee of Schenley Distillers, Inc. SN 188,805. Pub. 2-16-65. Filed 3-16-64.

789,137. ROYAL WEDDING. Joseph S. Finch and Company, assignee of Schenley Distillers, Inc. SN 188,807. Pub. 2-16-65. Filed 3-16-64.

Class 51 — Cosmetics and Toilet Preparations

789,138. MISTI. Wesley J. Richards, d.b.a. Research Specialties Co. SN 143,672. Pub. 2-16-65. Filed 5-2-62.

789,139. FOAM POEM. L'Oreal. SN 167,482. Pub. 2-16-65. Filed 4-24-63.

789,140. SUNGARD. Pharmafac, Inc. SN 183,104. Pub. 2-16-65. Filed 12-16-63.

Class 52 — Detergents and Soaps

788,892. (See Class 4 for this trademark.)

788,904. (See Class 6 for this trademark.)

789,141. TETRALENE. Texas Refinery Corp. SN 142,661. Pub. 2-16-65. Filed 4-19-62.

789,142. WIL! . . . WILL DO IT! Magnolia Paper Co. SN 146,640. Pub. 2-16-65. Filed 6-11-62.

789,143. TINOLAN. The Tinolan Corporation of America. SN 184,763. Pub. 2-16-65. Filed 1-16-64.

Service Marks

Class 100 — Miscellaneous

789,144. HEP STAMP OUT HOME COOKIN AND DESIGN. 7 Steers, Inc. SN 187,808. Pub. 2-16-65. Filed 3-2-64.

789,145. COTTON IS A NATURAL AND DESIGN. National Cotton Council of America, d.b.a. National Cotton Council or as the Cotton Council. SN 188,779. Pub. 2-16-65. Filed 3-16-64.

789,146. MISCELLANEOUS DESIGN. Adaptronics, Inc. SN 189,131. Pub. 2-16-65. Filed 3-20-64.

Class 101 — Advertising and Business

789,147. LANCASTER BRAND. Acme Markets, Inc., by change of name from American Stores Company. SN 142,009. Pub. 2-16-65. Filed 4-11-62.

789,148. BAR (DESIGN). Wright Engineering Company, Inc. SN 160,522. Pub. 2-16-65. Filed 1-10-63.

789,149. SPIN & WIN. Spin & Win, Inc. SN 168,241. Pub. 2-16-65. Filed 5-6-63.

789,150. QUEEN'S-WAY. Queen's-Way, Inc. SN 175,058. Pub. 2-16-65. Filed 8-14-63.

789,151. SAV-A-COIN. Sav-A-Coin, Inc. SN 179,067. Pub. 2-16-65. Filed 10-15-63.

Class 102 — Insurance and Financial

789,152. FLEXIBLE FUND ANNUITY AND DESIGN. United Benefit Life Insurance Company. SN 141,905. Pub. 2-16-65. Filed 4-9-62.

789,153. THE NORTH AMERICAN COMPANY ETC. AND DESIGN. The North American Company for Life, Accident and Health Insurance. SN 173,671. Pub. 2-16-65. Filed 7-24-63.

789,154. NA AND DESIGN. The North American Company for Life, Accident and Health Insurance. SN 173,672. Pub. 2-16-65. Filed 7-24-63.

789,155. STATESMAN INSURANCE COMPANY AND DESIGN. The Statesman Insurance Company. SN 176,967. Pub. 2-16-65. Filed 9-13-63.

789,156. DIVI-CHEK. Ohio Federal Savings & Loan Association of Columbus. SN 181,058. Pub. 2-16-65. Filed 11-13-63.

789,157. THE BANK AT THE HUB OF THE EAST AND DESIGN. Montgomery County Bank and Trust Company. SN 186,879. Pub. 2-16-65. Filed 2-17-64.

789,158. AMRECO. American Mutual Reinsurance Company. SN 189,134. Pub. 2-16-65. Filed 3-20-64.

Class 103 — Construction and Repair

789,159. ACCENT ON VALUE GE AND DESIGN. General Electric Company. SN 163,624. Pub. 2-16-65. Filed 2-28-63.

789,160. ACCENT ON VALUE AND DESIGN. General Electric Company. SN 163,625. Pub. 2-16-65. Filed 2-28-63.

789,161. DON'T MOVE OUT—MOVE UP. Starline Structures, Inc. SN 169,885. Pub. 2-16-65. Filed 5-28-63.

789,162. CARTOON MAN (DESIGN). Kerr-McGee Oil Industries, Inc. SN 188,369. Pub. 2-16-65. Filed 3-10-64.

Class 104 — Communication

789,163. MEGALOPOLIS AT NIGHT. Columbia Broadcasting System, Inc. SN 188,079. Pub. 2-16-65. Filed 3-6-64.

Class 105 — Transportation and Storage

789,164. USAC. U.S.A.C. Transport, Inc. SN 151,102. Pub. 2-16-65. Filed 8-13-62.

789,165. NARCO INC. AND DESIGN. National Auto Renting Co., Inc. SN 165,527. Pub. 2-16-65. Filed 3-27-63.

789,166. HELIFREIGHT. Omniflight Helicopters, Inc. SN 182,889. Pub. 2-16-65. Filed 12-12-63.

Class 106 — Material Treatment

789,167. COLORSPEC. Providence Metallizing Company, Inc. SN 184,508. Pub. 2-16-65. Filed 1-18-64.

Class 107 — Education and Entertainment

789,168. WHEELING IRONMEN AND DESIGN. Ohio Valley Professional Athletic Association Inc. SN 161,273. Pub. 2-16-65. Filed 1-28-63.

789,169. AUTOLYMPICS. International Car Club Association. SN 183,266. Pub. 2-16-65. Filed 12-19-63.

789,170. THE PACERS. Bobby Crafford. SN 188,832. Pub. 2-16-65. Filed 3-9-64.

Collective Membership Mark

Class 200

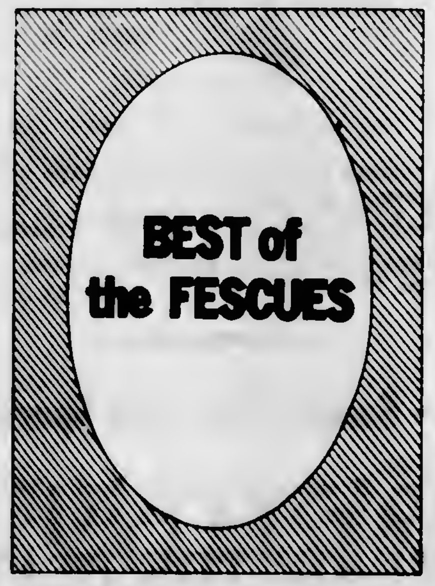
789,171. GTA ETC. AND DESIGN. The Gravure Technical Association, Inc. SN 177,790. Pub. 2-16-65. Filed 9-26-63.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

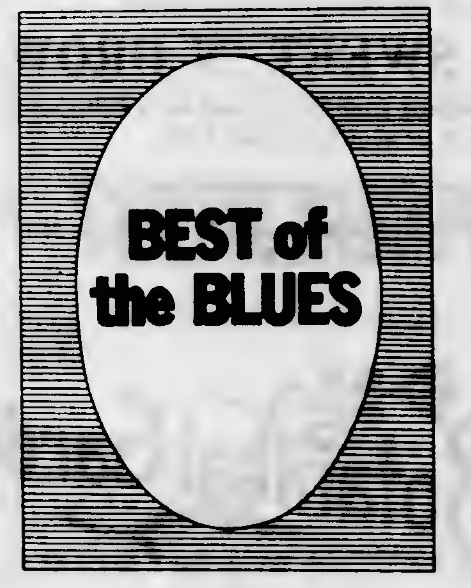
Class 1 — Raw or Partly Prepared Materials

789,172. Vaughan's Seed Company, Chicago, Ill. SN 161,123. Filed P.R. 1-21-63; Am. S.R. 1-8-65.



The drawing is lined for green.
For Grass Seed Mixture.
First use on or about Jan. 7, 1963.

789,173. Vaughan's Seed Company, Chicago, Ill. SN 161,124. Filed P.R. 1-21-63; Am. S.R. 1-8-65.



The drawing is lined for blue.
For Grass Seed Mixture.
First use on or about Jan. 7, 1963.

789,174. Delmonte Plastics Corporation, Los Angeles, Calif. SN 186,336. Filed P.R. 2-10-64; Am. S.R. 3-1-65.

ALUMINUM WOOD

For Liquid Synthetic Resin Compositions for Use in Industry.
First use on or about Feb. 1, 1963.

Class 5 — Adhesives

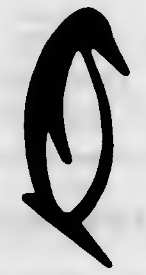
789,175. General Foods Corporation, White Plains, N.Y. SN 185,666. Filed P.R. 1-30-64; Am. S.R. 2-3-65.

BINDORE

For Binding Agent for Agglomeration of Industrial Fines.
First use Nov. 6, 1961.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

789,176. Penguin Associates, Inc., Malvern, Pa. SN 142,444. Filed P.R. 4-17-62; Am. S.R. 5-20-63.



PENGUN

For Tear Gas Projectors and Distress and Highway Flare Projectors.
First use January 1961.

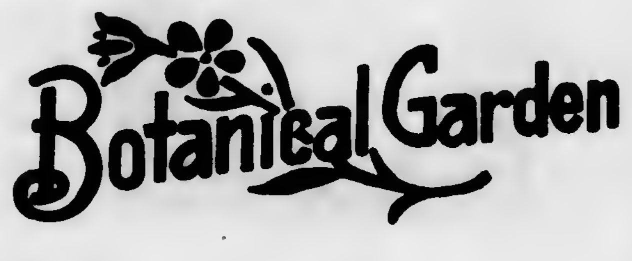
Class 10 — Fertilizers

789,177. The J. E. Baker Company, York, Pa. SN 161,460. Filed P.R. 1-28-63; Am. S.R. 2-10-65.

SWEET 'N GROW

For Pulverized Limestone Used as a Soil Conditioner.
First use on or about Aug. 28, 1962.

789,178. J. J. Brouk & Company, St. Louis, Mo. SN 168,688. Filed P.R. 5-13-63; Am. S.R. 2-26-65.



For Fertilizer.
First use Apr. 29, 1963.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

789,179. Raymond Perlov, d.b.a. Whitecliff Laboratories, Inc., Los Altos, Calif. SN 185,312. Filed P.R. 1-24-64; Am. S.R. 3-15-65.

BREW-A-CUP

For Plastic, One Cup Coffee Brewer.
First use Nov. 21, 1963.

Class 14 — Metals and Metal Castings and Forgings

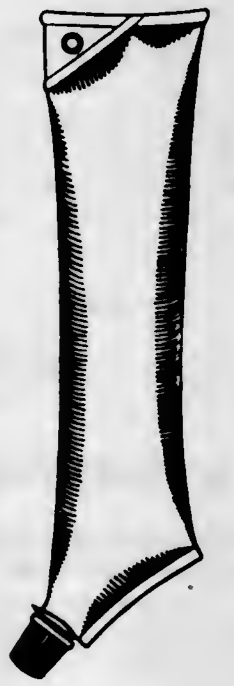
789,180. Stanley Kessler & Co. Inc., King of Prussia, Pa. SN 172,014. Filed P.R. 6-27-63; Am. S.R. 3-15-65.

SUPER WELDWIRE

For Welding Electrodes.
First use Sept. 25, 1959.

Class 18 — Medicines and Pharmaceutical Preparations

789,181. The Kendall Company, Walpole, Mass. SN 207,305. Filed 12-2-64.



The mark consists of the distinctive shape or configuration of the container for the goods.

For Veterinary Preparation for the Treatment of Cuts, Bruises, Chapped and Swollen Udders.
First use Sept. 20, 1963.

Class 22 — Games, Toys, and Sporting Goods

789,182. Milton Bradley Company, Springfield, Mass. SN 171,847. Filed P.R. 6-26-63; Am. S.R. 2-17-65.

GAME OF THE STATES

For Equipment Sold as a Unit for Playing a Board Game.
First use Dec. 20, 1960.

789,183. Anderson & Thompson Ski Co., Inc., Seattle, Wash. SN 201,791. Filed 9-14-64.

ST. MORITZ

For Snow Skis and Parts Thereof.
First use Oct. 1, 1962.

Class 31 — Filters and Refrigerators

789,184. Uniflow Manufacturing Company, Erie, Pa. SN 163,003. Filed P.R. 2-18-63; Am. S.R. 3-12-65.

KWIK FLAKER

For Ice Making Machines.
First use Jan. 2, 1961.

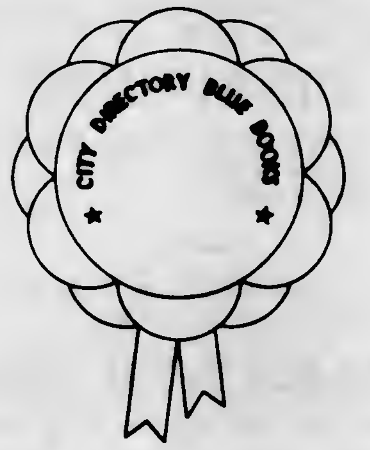
Class 38 — Prints and Publications

789,185. Green Publications, Inc., Chicago, Ill., assignee of Haywood Publishing Company, Chicago, Ill. SN 146,819. Filed P.R. 6-12-62; Am. S.R. 10-12-64.

consumer & industrial
PACKAGING

For Trade Magazine.
First use Mar. 26, 1962.

789,186. Rocky Mountain Directory Co., Loveland, Colo. SN 161,562. Filed P.R. 1-28-63; Am. S.R. 2-26-65.



For City Directories and County Directories.
First use Dec. 15, 1962.

789,187. Rodale Press, Inc., Emmaus, Pa. SN 162,789. Filed P.R. 2-14-63; Am. S.R. 3-19-64.

HEALTH BULLETIN

For Weekly Report Covering Pertinent Health News.
First use Jan. 18, 1963.

789,188. Rodale Press, Inc., Emmaus, Pa. SN 165,633. Filed P.R. 3-28-63; Am. S.R. 3-19-64.

health BULLETIN

For Weekly Report Covering Pertinent Health News.
First use Mar. 16, 1963.

789,189. RC Publications, Inc., New York, N.Y. SN 180,445. Filed P.R. 11-4-63; Am. S.R. 11-4-64.

PACKAGING NEWSLETTER

For Newsletter Issued Between Issues for Supplementing a Magazine.
First use Nov. 1, 1963.

789,190. National Science Teachers Association, Inc., Washington, D.C. SN 184,168. Filed P.R. 1-7-64; Am. S.R. 1-29-65.

SCIENCE AND CHILDREN

For Magazine Published for Science Teachers at the Elementary School Level.
First use Aug. 15, 1963.

789,191. Sheldon Freund, d.b.a. Freund Enterprises, New York, N.Y. SN 185,128. Filed P.R. 1-22-64; Am. S.R. 2-16-65.

RELAX WITH CARTOONS BY

For Advertising Booklets Containing Cartoons, Published From Time to Time.
First use on or about Dec. 10, 1963.

789,192. Pharmaceutical Manufacturers Association, Washington, D.C. SN 192,186. Filed P.R. 4-24-64; Am. S.R. 11-17-64.

For Periodical Magazine.
First use January 1961.

789,193. Haire Publishing Company, New York, N.Y. SN 200,251. Filed P.R. 8-20-64; Am. S.R. 2-9-65.

HOUSEWARES REVIEW SHOW SHOPPER

For Trade Publication Produced From Time to Time.
First use Jan. 8, 1964.

789,194. Association of Records Executives and Administrators, Incorporated, New York, N.Y. SN 201,388. Filed P.R. 9-4-64; Am. S.R. 3-8-65.

RECORDS MANAGEMENT JOURNAL

For Professional Magazine.
First use June 8, 1963.

789,195. Farm Journal Inc., Philadelphia, Pa. SN 203,954. Filed P.R. 10–14–64; Am. S.R. 3–12–65.

TODAY IN THE SOUTHEASTERN STATES

For Feature in Magazine.
First use Mar. 18, 1961.

789,196. Farm Journal Inc., Philadelphia, Pa. SN 203,955. Filed P.R. 10–14–64; Am. S.R. 3–5–65.

TODAY IN THE CENTRAL STATES

For Feature in Magazine.
First use Mar. 24, 1956.

789,197. Farm Journal Inc., Philadelphia, Pa. SN 203,957. Filed P.R. 10–14–64; Am. S.R. 3–12–65.

TODAY IN THE SOUTHWESTERN STATES

For Feature in Magazine.
First use Mar. 18, 1961.

789,198. Farm Journal Inc., Philadelphia, Pa. SN 203,958. Filed P.R. 10–14–64; Am. S.R. 3–5–65.

TODAY IN THE WESTERN STATES

For Feature in Magazine.
First use Mar. 18; 1961.

789,199. Farm Journal Inc., Philadelphia, Pa. SN 203,960. Filed P.R. 10–14–64; Am. S.R. 3–5–65.

TODAY IN THE EASTERN STATES

For Feature in Magazine.
First use Mar. 18, 1961.

789,200. Farm Journal Inc., Philadelphia, Pa. SN 204,375. Filed P.R. 10–20–64; Am. S.R. 3–12–65.

DEAR POLLY

For Section of a Magazine.
First use Mar. 25, 1946.

789,201. OA Business Publications, Inc., Elmhurst, Ill. SN 206,068. Filed 11–12–64.

INTERNATIONAL BUSINESS AUTOMATION

For Trade Journal of Data Processing and Related Office Equipment.
First use Aug. 16, 1963.

Class 39 — Clothing

789,202. Kanter & Alpert, Inc., Chicago, Ill. SN 166,288. Filed P.R. 4–8–63; Am. S.R. 3–12–65.

WESTCOTT

For Wearing Apparel for Boys and Young Men—Namely, Suits and Sport Coats.
First use Mar. 29, 1963.

789,203. Edward Stern, Inc., New York, N.Y. SN 204,852. Filed 10–26–64.

WINSTON

For Ladies', Misses', Children's, and Infants' Hosiery.
First use Apr. 27, 1956.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

789,204. John Boyle and Company, Incorporated, New York, N.Y. SN 172,044. Filed P.R. 6–28–63; Am. S.R. 7–8–64.

jb

FLAME TEST

For Fabrics Utilised for Industrial, Outdoor, and Marine Purposes.
First use June 14, 1963.

Class 45 — Soft Drinks and Carbonated Waters

789,205. Flavorex Company, Inc., Baltimore, Md. SN 147,096. Filed P.R. 6–18–62; Am. S.R. 2–24–65.

PINAPUNCH

For Beverage Base Used for Making Non-Alcoholic Maltless Beverages Sold as Soft Drinks.
First use September 1939.

789,206. Merit House, Inc., New York, N.Y. SN 190,406. Filed P.R. 4–6–64; Am. S.R. 3–9–65.

ADAMS AND CLAY

For Non-Alcoholic Mix for Use in Preparing Alcoholic Cocktails.
First use Mar. 5, 1964.

789,207. Merit House, Inc., New York, N.Y. SN 190,407. Filed P.R. 4–6–64; Am. S.R. 3–11–65.

MASON-DIXON

For Non-Alcoholic Mix for Use in Preparing Alcoholic Cocktails.
First use Mar. 5, 1964.

789,208. Derry Products, Inc., Brooklyn, N.Y. SN 192,900. Filed P.R. 5–7–64; Am. S.R. 3–10–65.

"Hi-Sour"

For Non-Alcoholic Cocktail Mix.
First use Mar. 1, 1964.

Class 46 — Foods and Ingredients of Foods

789,209. Patrick Cudahy Inc., Cudahy, Wis. SN 170,892. Filed P.R. 6–13–63; Am. S.R. 3–4–65.

HOME OF SWEET APPLE-WOOD SMOKE FLAVOR

For Pork Sausage, Canned Hams, Pork Sausage With Bacon, Bratwurst, Smoked Butts, and Bologna.
First use August 1959.

789,210. Rod's Food Products, Inc., d.b.a. Quality Restaurant Supply, Los Angeles, Calif. SN 173,286. Filed P.R. 7–18–63; Am. S.R. 12–22–64.

COHEN'S

For Vegetable Base Sour Cream Substitute.
First use July 10, 1963.

789,211. Spaulding Bakeries Incorporated, Binghamton, N.Y. SN 176,403. Filed P.R. 9–5–63; Am. S.R. 8–17–64.

FRENCH CRUST

For Bakery Products—Namely, Bread.
First use Aug. 1, 1963.

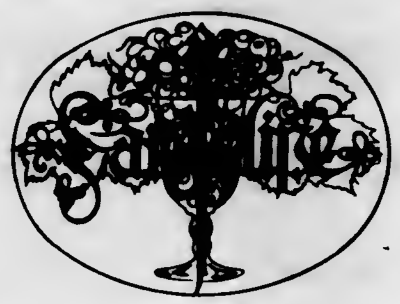
789,212. Leaf Brands, Inc., Chicago, Ill. SN 198,184. Filed 7–20–64.

"THE TALKING" BUBBLE GUM

For Bubble Gum.
First use Apr. 22, 1960.

Class 47 — Wines

789,213. La Rural Vinedos y Bodegas S.A. Ltda., Maipu, Mendoza, Argentina. SN 182,275. Filed P.R. 12–3–63; Am. S.R. 3–1–65.



Owner of Argentine Reg. Nos. 263,377, dated Jan. 31, 1949.
For Bottled Wines (Except Port).

Class 49 — Distilled Alcoholic Liquors

789,214. Bohemian Distributing Company, d.b.a. International Distilleries Co., Los Angeles, Calif. SN 169,694. Filed P.R. 5–27–63; Am. S.R. 3–5–65.

SEÑOR CHAVEZ

For Tequila.
First use Mar. 20, 1963.

789,215. Societe Anonyme des Liqueurs Combier, Paris, France. SN 172,111. Filed P.R. 6–28–63; Am. S.R. 1–8–65.

COMBIER

For Liqueurs.
First use 1832; in commerce Sept. 28, 1932.

789,216. Consolidated Distilled Products, Inc., d.b.a. Robert Bruce and Company, Chicago, Ill. SN 175,725. Filed P.R. 8–26–63; Am. S.R. 2–17–65.

WHITESIDE

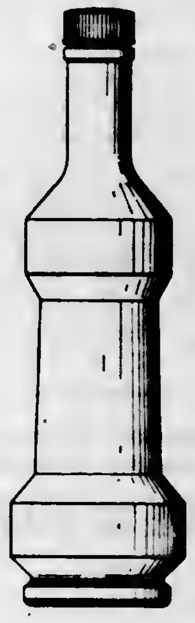
For Scotch Whisky.
First use July 1959.

789,217. Schenley Distillers, Inc., d.b.a. Edward Archer Company, New York, N.Y. SN 187,690. Filed P.R. 2–28–64; Am. S.R. 2–18–65.

KINROSS

For Blended Scotch Whisky.
First use Jan. 31, 1964.

789,218. Julius Wile Sons & Co., Inc., New York, N.Y. SN 203,047. Filed 9–30–64.



The mark comprises the configuration of the container for the goods.
For Domestic Cordials and Brandies.
First use August 1962.

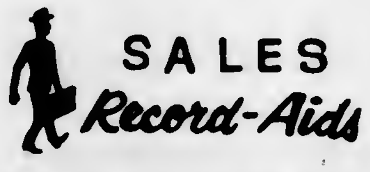
Class 50 — Merchandise Not Otherwise Classified

789,219. Simon A. Bahr, New Brunswick, N.J. SN 191,026. Filed P.R. 4–14–64; Am. S.R. 3–3–65.

KAR GUIDE

For Vehicle Parking Aid Comprising a Ball and Means for Suspending the Ball in the Parking Path of the Vehicle.
First use March 1956.

789,220. Richard D. Evans, Burlingame, Calif., assignee, by mesne assignments, of Halo Manufacturing Company, San Francisco, Calif. SN 191,552. Filed P.R. 4-20-64; Am. S.R. 2-8-65.



For Kit Containing Binders for Sales Records.
First use Oct. 21, 1963.

789,221. General Crafts Corporation, Baltimore, Md. SN 193,272. Filed P.R. 5-12-64; Am. S.R. 2-9-65.

CHIPICTURES

For Kits Containing Materials Such as a Pre-Numbered, Pre-Sketched Background Panel, Colored Cardboard Chips in Various Shapes, Numbered To Correspond to the Respective Numbered Areas of the Background Panel, Glue, Applicator and Instructions for Making a Colored Picture or Plaque.
First use Jan. 22, 1964.

Class 51 — Cosmetics and Toilet Preparations

789,222. The Andrew Jergens Company, Cincinnati, Ohio. SN 163,239. Filed P.R. 2-21-63; Am. S.R. 3-9-65.

NATURALLY LOVELY

For Cosmetic Skin Lotion.
First use Jan. 25, 1963.

789,223. Maradel Products, Inc., New York, N.Y. SN 169,861. Filed P.R. 5-28-63; Am. S.R. 1-25-65.

COVER OVER

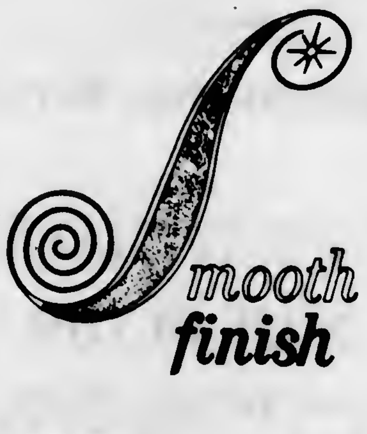
For Blemish Cream.
First use Apr. 9, 1963.

789,224. Lusier Incorporated, Kansas City, Mo. SN 171,462. Filed P.R. 6-20-63; Am. S.R. 2-23-65.

VELVET FINISH

For Translucent Face Powder.
First use Mar. 15, 1963.

789,225. Helene Curtis Industries, Inc., Chicago, Ill. SN 181,726. Filed P.R. 11-21-63; Am. S.R. 12-11-64.



For Hair Fixative Spray.
First use on or about Nov. 1, 1963.

789,226. New York Pencil Co., Inc., New York, N.Y. SN 187,789. Filed P.R. 3-2-64; Am. S.R. 3-5-65.

BRUSH 'N POWDER

For Powder for Eyebrow Make Up.
First use Jan. 16, 1964.

789,227. Clairol Incorporated, New York, N.Y. SN 188,331. Filed P.R. 3-10-64; Am. S.R. 3-3-65.

CLEARLY BEIGE

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Nov. 21, 1963.

789,228. Clairol Incorporated, New York, N.Y. SN 188,334. Filed P.R. 3-10-64; Am. S.R. 3-3-65.

INNOCENT BEIGE

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Nov. 13, 1963.

789,229. Clairol Incorporated, New York, N.Y. SN 188,335. Filed P.R. 3-10-64; Am. S.R. 3-3-65.

FLUFFY BEIGE

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Nov. 21, 1963.

789,230. Clairol Incorporated, New York, N.Y. SN 188,338. Filed P.R. 3-10-64; Am. S.R. 3-3-65.

PALE BEIGE

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Nov. 13, 1963.

789,231. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 188,380. Filed P.R. 3-10-64; Am. S.R. 3-1-65.

ANTIQUE ROSE

For Lipstick.
First use Aug. 19, 1963.

789,232. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 188,381. Filed P.R. 3-10-64; Am. S.R. 3-1-65.

SAMPAN TAN

For Face Powder.
First use Aug. 19, 1963.

789,233. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 188,382. Filed P.R. 3-10-64; Am. S.R. 3-1-65.

TAHITIAN TAN

For Powder Base.
First use Aug. 19, 1963.

789,234. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 188,383. Filed P.R. 3-10-64; Am. S.R. 3-1-65.

DUSKY APRICOT

For Lipstick.
First use Aug. 19, 1963.

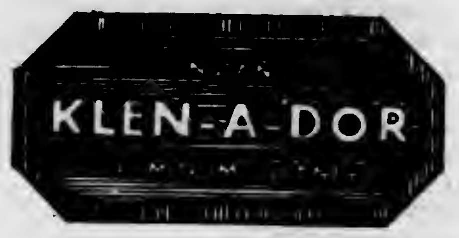
789,235. Richard Hudnut, Morris Plains, N.J. SN 202,800. Filed 9-28-64.

FLIGHT RED

For Lipstick.
First use July 6, 1962.

Class 52 — Detergents and Soaps

789,236. Joseph P. Sineri, d.b.a. J. P. Sineri Company, Alliance, Ohio. SN 175,806. Filed P.R. 8-26-63; Am. S.R. 2-4-65.



The drawing is lined for red and blue.
For Chemical Cleaning Composition for Aluminum.
First use July 9, 1963.

789,237. Maradel Products, Inc., New York, N.Y. SN 184,866. Filed P.R. 1-9-64; Am. S.R. 2-12-65.

COLOR-SECURE

For Shampoo Concentrate for Color Tinted Hair.
First use Nov. 11, 1963.

789,238. Paul Rahr Enterprises, Inc., St. Germain, Wis. SN 187,426. Filed 2-25-64.

RID-SCALE

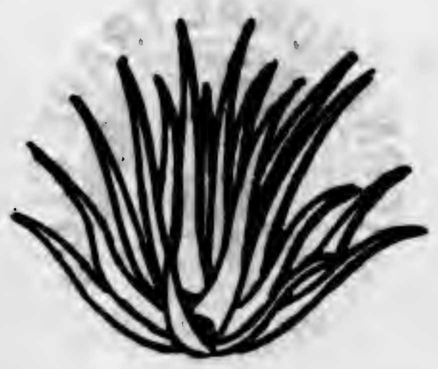
For Liquid Solvent for the Removal of Lime Scale, Rust and Stains From Water-Heated, Water-Cooled or Water-Operated Equipment.
First use Jan. 7, 1964.

789,239. Heatbath Corporation, Springfield, Mass. SN 190,260. Filed P.R. 4-3-64; Am. S.R. 10-29-64.

DEOXIDE

For Cleaning Chemicals—Namely, Chemicals for Preparing Solutions for Deoxidising, Desmutting and Removing Heat Scale From Alminum and Aluminum Alloys.
First use June 17, 1963.

789,240. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. SN 198,803. Filed 7-30-64; Am. S.R. 3-2-65.

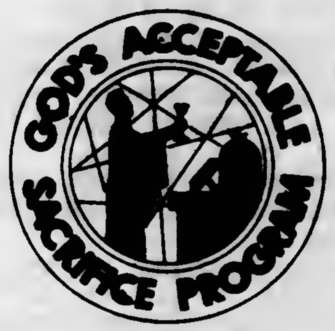


For Hair Shampoo.
First use Jan. 10, 1961.

Service Marks

Class 101 — Advertising and Business

789,241. Parish Tithing, Inc., Detroit, Mich. SN 149,868. Filed P.R. 7-26-62; Am. S.R. 2-10-65.



For Advice and Consultation Services in the Field of Fund Raising for Religious Organizations.
First use Nov. 27, 1961.

789,242. Teen-Mail, Inc., Chicago, Ill. SN 171,718. Filed P.R. 6-24-63; Am. S.R. 2-18-65.

TEEN-MAIL

For Direct Mail Advertising Service.
First use June 21, 1963.

Class 102 — Insurance and Financial

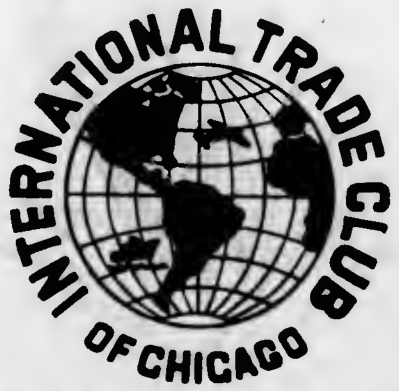
789,243. Southern Discount Company, Atlanta, Ga. SN 186,200. Filed P.R. 2-6-64; Am. S.R. 2-9-65.

FOLKS FIND US FRIENDLY

For Loan and Financial Services—Namely, Small Personal Loan and Finance Services.
First use Dec. 15, 1948.

Class 107 — Education and Entertainment

789,244. International Trade Club of Chicago, Chicago, Ill. SN 134,986. Filed P.R. 1-2-62; Am. S.R. 2-18-65.



For Furthering the Participation of Middle West Firms in World Trade by Such Means as: Sponsoring Legislation Appropriate to Such an Objective, Giving Technical Assistance in the Export-Import Field to Members, Assisting Schools in Developing Foreign Trade Curricula and by Arranging for Business Meeting of Members To Discuss World Trade Problems.

First use July 1, 1959.

789,245. Hans J. Burger, d.b.a. Burger Furniture Company, Chicago, Ill. SN 183,881. Filed P.R. 1-2-64; Am. S.R. 2-5-65.

DONAUSCHWAEBISCHE HEIMATSTUNDE

The German words "Donauschwaebische Heimatstunde" when translated into English mean "Danube Schwabian Homeland Hour."

For Musical and Other Entertainment Service Rendered Through the Medium of Radio.

First use on or about Sept. 27, 1958.

TRADEMARK REGISTRATIONS RENEWED

44,785. CASCADE. Cl. 31. 7-25-05.
44,913. SEM RIVAL AND DESIGN. Cl. 23. 7-25-05.
45,078. CYCLONE. Cl. 23. 8-8-05.
45,543. WHITE ROCK AND DESIGN. Cl. 45. 8-22-05.
188,650. ONEIDA COMMUNITY. Cl. 23. 9-2-24.
191,920. E.Z. Cl. 18. 11-25-24.
194,620. REPRESENTATION OF SPEAR HEAD (DESIGN). Cl. 13. 2-3-25.
194,621. ANACONDA AND DESIGN. Cl. 13. 2-3-25.
194,655. THE ULTIMATE AND DESIGN. Cl. 59. 2-3-25.
195,282. DRYDINE. Cl. 15. 2-17-25.
195,340. DRAGOON. Cl. 39. 2-24-25.
195,813. CAMOGRAPH. Cl. 34. 3-3-25.
195,814. RADIAGRAPH. Cl. 34. 3-3-25.
195,985. AMERICAN AND DESIGN. Cl. 46. 3-10-25.
196,914. MORO AND DESIGN. Cl. 46. 3-31-25.
197,288. PENSAL. Cl. 52. 4-14-25.
197,616. IRON CLAD AND DESIGN. Cl. 12. 4-21-25.
199,436. THE OLD AMERICAN AND DESIGN. Cl. 12. 6-9-25.
199,556. THE BOSTON GLOBE. Cl. 38. 6-9-25.
199,754. MARKWELL. Cl. 13. 6-16-25.
199,874. DESIGN OF HERALDIC LION. Cl. 39. 6-16-25.
199,929. MARKWELL. Cl. 23. 6-23-25.
200,107. MMJCO AND DESIGN. Cl. 28. 6-23-25.
200,696. HAND'S. Cl. 18. 7-7-25.
201,854. DALE BRAND AND DESIGN. Cl. 46. 7-21-25.
201,779. HENRY POURCELLE. Cl. 36. 8-4-25.
201,968. GLEE CLUB. Cl. 36. 8-11-25.
202,106. RAINBOW AND DESIGN. Cl. 37. 8-18-25.
202,328. COMET. Cl. 37. 8-18-25.
411,871. D-D. Cl. 6. [illegible]-16-45.
411,553. REPRESENTATION OF STATUE OF LIBERTY (DESIGN). Cl. 19. 1-23-45.
412,386. SOL-A-NUT. Cl. 13. 3-6-45.
412,639. TESTRONE. Cl. 18. 3-20-45.
412,694. PROMENADE. Cl. 51. 3-20-45.
412,708. EL-BEE CEMENT CLEANER. Cl. 52. 3-20-45.
412,800. TI-NAMEL. Cl. 14. 3-27-45.
412,801. RCA AND DESIGN. Cl. 36. 3-27-45.
413,028. AJAX-NORTHRUP. Cl. 26. 4-3-45.
413,132. BUSTER BROWN. Cl. 39. 4-10-45.
413,548. ALUMON. Cl. 6. 5-1-45.
413,550. RHINAZINE. Cl. 18. 5-1-45.
413,657. DECOR-GRAPH. Cl. 38. 5-8-45.
413,662. TRELLIS. Cl. 46. 5-8-45.
413,972. DRESSY DAN. Cl. 39. 5-22-45.
414,217. EMU. Cl. 43. 5-29-45.
414,409. SKINTEES. Cl. 39. 6-12-45.
414,542. NEPTUNE. Cl. 5. 6-12-45.
414,622. TAK-OFF. Cl. 39. 6-19-45.
414,653. SIERRA SNOW. Cl. 46. 6-19-45.
414,769. SYTON. Cl. 6. 6-26-45.
415,105. THE KIND THAT MOTHER USED TO MAKE AND DESIGN. Cl. 45. 7-10-45.
415,113. ROYAL BLUE. Cl. 32. 7-10-45.
415,311. LA PARISETTE. Cl. 39. 8-7-45.
415,354. MAYZEE. Cl. 46. 8-7-45.
415,407. QUAKER-QUASOL. Cl. 52. 8-7-45.
415,495. THE WORLD'S DAY. Cl. 38. 8-7-45.
415,610. ALOX. Cl. 15. 8-14-45.
415,615. ELEKTRO-PURJ-IT. Cl. 52. 8-14-45.
415,755. COKE. Cl. 45. 8-14-45.
416,328. ZANTRATE. Cl. 18. 9-4-45.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

780,510. LADY NANCY. Cl. 46. 4-24-62.

Section 8

The following registrations issued Mar. 17, 1959

675,391. ALKYDIT. Cl. 1.
675,394. CAR GRILL. Cl. 1.
675,398. DESIGN OF PICK. Cl. 2.
675,399. BOYCO. Cl. 2.
675,400. CYMAC. Cl. 2.
675,402. DURABRASIVE. Cl. 4.
675,404. FRAC-FOS. Cl. 6.
675,410. STAUFFER. Cl. 6.
675,411. GUTENTITE. Cl. 6.
675,416. CURBMASTER. Cl. 12.
675,419. ROLL-WELD AND DESIGN. Cl. 13.
675,428. KEELATITE. Cl. 13.
675,430. RONDO. Cl. 13.
675,436. FENSCO ACORN. Cl. 13.
675,444. PHOSPHINUZ. Cl. 14.
675,453. PREMALLOY. Cl. 14.
675,455. ALUMA-TAN. Cl. 14.
675,463. SHUR-SEAL. Cl. 16.
675,468. SOYACOTE. Cl. 16.
675,474. SIGNET. Cl. 18.
675,475. AMP. Cl. 18.
675,478. LINARUB. Cl. 18.
675,480. PERLONGETTEN. Cl. 18.
675,483. .TN. Cl. 18.
675,486. BANATOL. Cl. 18.
675,489. VELVASAN. Cl. 18.
675,493. RANALETS. Cl. 18.
675,495. DAQUIN. Cl. 18.
675,499. FORTIZYME. Cl. 18.
675,502. CORTACET. Cl. 18.

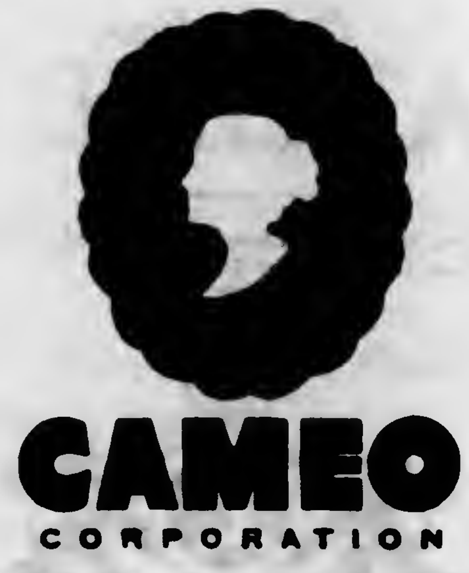
675,505. JANAANGON. Cl. 18.
675,506. HYAPERTIN. Cl. 18.
675,508. MEGENSATE. Cl. 18.
675,509. PIC-A-VITA. Cl. 18.
675,510. FXL. Cl. 18.
675,511. ANTI-SEP. Cl. 18.
675,512. VT AND DESIGN. Cl. 18.
675,513. SS THE SPARTAN SPRITE. Cl. 19.
675,514. FUEL-MASTER. Cl. 19.
675,515. WHISPER-DIESEL. Cl. 19.
675,516. WHISPER-ENGINE. Cl. 19.
675,525. PALOMAR AND DESIGN. Cl. 21.
675,528. TUFF-SKIN. Cl. 21.
675,530. PIED PIPER. Cl. 21.
675,536. RUSTY. Cl. 22.
675,537. PHOTOSTAT AND DESIGN. Cl. 23.
675,540. ULTRA-MATIC. Cl. 23.
675,541. ELECTROL. Cl. 23.
675,542. CLARK-AIKEN PIGGY BACK. Cl. 23.
675,548. THUNDERBIRD. Cl. 23.
675,560. AMC CORINTH. Cl. 23.
675,561. CONS-TEN-TROL. Cl. 23.
675,570. CALIFORNIA RAINBOW. Cl. 30.
675,576. JUMBO. Cl. 31.
675,577. LITE KITE. Cl. 32.
675,582. WINDO-WIND. Cl. 34.
675,583. ANTI-BAC. Cl. 34.
675,586. ACADEMY. Cl. 36.
675,591. HI-FI. Cl. 37.
675,594. ZELL. Cl. 37.
675,601. ROYAL CREATIONS AND DESIGN. Cl. 38.
675,604. INTERNATIONAL AGRICULTURE AND DESIGN. Cl. 38.
675,606. ATOMIKNEE AND DESIGN. Cl. 39.
675,608. FEATUREMAKER. Cl. 39.
675,609. TWIRLER. Cl. 39.
675,610. PARIS SPECTAL. Cl. 39.
675,615. NEWCOTT. Cl. 39.
675,616. O'LYLE. Cl. 39.
675,621. THE BIG A AND DESIGN. Cl. 39.
675,626. MR. PANDORA. Cl. 39.
675,635. SWADEROY. Cl. 42.
675,640. COSMIC. Cl. 42.
675,641. SUPER COLUMBIA. Cl. 42.
675,642. BEAUTIWEVE. Cl. 42.
675,644. QUALITEX. Cl. 43.
675,646. LOFTEX. Cl. 43.
675,652. DESIGN OF CHINAMAN ETC. Cl. 46.
675,655. PEANUT PUF. Cl. 46.
675,656. OCOMA AND DESIGN. Cl. 46.
675,657. SNAC'N CRUST. Cl. 46.
675,660. BIG PIXEY. Cl. 46.
675,677. VISAIDS. Cl. 50.
675,690. SOLITAIRE. Cl. 50.
675,691. EXPEND-A-BOARD. Cl. 50.
675,692. PERMA-MAT. Cl. 50.
675,698. WHITE PIQUE. Cl. 51.
675,704. ROYAL-MINK. Cl. 51.
675,707. ROMALDUS. Cl. 51.
675,711. JET KLENTZ AND DESIGN. Cl. 52.
675,723. THE DIXIE LINE. Cl. 105.
675,726. ASK MR. ALBERT. Cl. 107.
675,728. THE ROCKIN BIRD. Cl. 107.
675,729. KNOTHEAD. Cl. 200.
675,730. WILD GOOSE CLUB AND REPRESENTATION OF GOOSE. Cl. 200.
675,737. REPRESENTATION OF BOY AND GIRL SKATING (DESIGN). Cl. 22.
675,738. RIBBON WRITER. Cl. 23.
675,740. HOBBIES ARE FAMILY FUN. Cl. 38.
675,744. FOR THE WOMAN WHO THOUGHT SHE HAD EVERYTHING. Cl. 39.
675,745. STAY-IN-STAYS. Cl. 40.
675,748. MICHIGAN AND DESIGN. Cl. 46.
675,754. E DOLCE. Cl. 46.
675,759. DESIGN OF RED AND GOLD LABEL. Cl. 48.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

412,244. SKYRITER. Cl. 23. 2-27-45. L. C. Smith & Corona Typewriters, Inc. SCM Corporation, New York, N.Y. Amended to appear:

SKYRITER

696,200. CAMEO CORPORATION AND DESIGN. Cl. 52. 4-12-60. B. T. Babbitt, Inc., New York, N.Y. Amended to appear:



701,377. TRIPHANE. Cl. 31. 7-19-60. Pall Corporation, Glen Cove, N.Y. Amended: In the statement, column 2, lines 1 and 2, the description of goods is deleted and *filters and filter assemblies* is inserted.

780,206. LEONARD HICKS AND DESIGN. Cl. 101. 4-17-62. Leonard Hicks, Jr., Chicago, Ill. Amended to appear:

LEONARD HICKS

766,356. CAMBRIDGE. Cl. 28. 3-10-64. Simon Golub & Sons, Inc., Seattle, Seattle, Wash. Corrected: In the statement, column 1, line 1, after "Inc." , *Seattle* should be inserted.

766,357. EXETER. Cl. 28. 3-10-64. Simon Golub & Sons, Inc., Seattle, Seattle, Wash. Corrected: In the statement, column 1, line 1, after "Inc." , *Seattle* should be inserted.

775,936. ASCOTT. Cl. 51. 8-25-64. L'Oreal, Paris, France. Corrected to appear:

ASCOTT

780,882. LILLI PICHELLE. Cl. 39. 11-17-64. Louis H. Salvage Shoe Company, Inc., Boston, Mass. Corrected: In the statement, column 1, line 1, "Massachusetts" should be deleted and *New Hampshire* should be inserted.

780,866. LEXACOTE. Cl. 16. Industrial Asphalt, Inc., assignee of Colorpave, Inc., Van Nuys, Calif. Corrected: In the statement, column 1, before line 1, *Industrial Asphalt, Inc. (Delaware corporation), assignee of* should be inserted.

784,641. WEY AND DESIGN. Cl. 6, Cl. 12. 2-9-65. Wey Aktiengesellschaft, Vaduz, Liechtenstein. Corrected: In the statement, column 2, line 1, after "agents" *for cements* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 4 — Abrasives and Polishing Materials

411,536. Jan. 23, 1945. John C. Stalfort & Sons Inc., Baltimore, Md. Pub. by registrant.

SHOWEY

For Silver Polish, Window, Glass, Porcelain, Tile, Furniture, Wood, Wall, Rug, Upholstery, Woolen and Other Fabric and Automobile Washing and Cleaning Preparations in Liquid, Solid, and Paste Form.

411,537. Jan. 23, 1945. John C. Stalfort & Sons Inc., Baltimore, Md. Pub. by registrant.

STA-ALL

For Silver Polish, Window, Glass, Porcelain, Tile, Furniture, Wood, Wall, Rug, Upholstery, Woolen and Other Fabric and Automobile Washing and Cleaning Preparations in Liquid, Solid, and Paste Form.

Class 5 — Adhesives

411,973. Feb. 13, 1945. The Pennsylvania Salt Manufacturing Company, Philadelphia, Pa. Pub. by Pennsalt Chemicals Corporation, Philadelphia, Pa.

PENNSALT MS-1

For Molding and Core Binder Solutions.

Class 6 — Chemicals and Chemical Compositions

200,335. June 30, 1925. Orbis Products Trading Co., Inc., New York, N.Y. Pub. by Orbis Products Corporation, New York, N.Y.

ORBIS

For Gum Arabic, Gum Tragacanth, Perfumery Essential Oils, Thymol, Menthol, Oxalic Acid, Starch, and Bay Rum.

411,438. Jan. 16, 1945. L. Sonneborn Sons, Inc., New York, N.Y. Pub. by Witco Chemical Company, Inc., New York, N.Y.

RAYTHRO

For Finishing Oil Compositions for Rayon Yarn and Fabric.

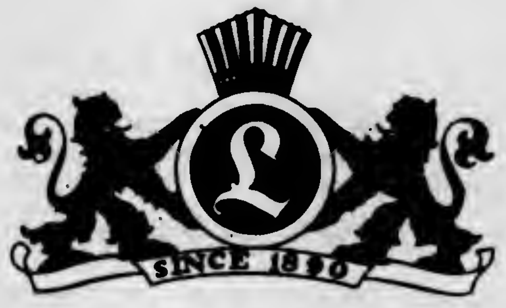
413,257. Apr. 17, 1945. L. Sonneborn Sons, Inc., New York, N.Y. Pub. by Witco Chemical Company, Inc., New York, N.Y.

RAYOLENE

For Finishing Oil Compositions for Rayon Yarn and Thread.

Class 8 — Smokers' Articles, Not Including Tobacco Products

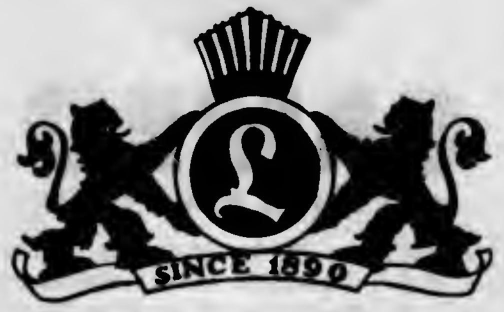
410,904. Dec. 26, 1944. Lane Tobacco, Ltd., New York, N.Y. Pub. by Lane Limited, New York, N.Y.



Royal Canadian

For Pipes, Pipe Cases, Pipe Stands, etc.

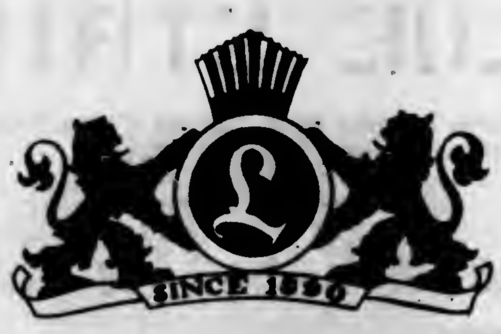
411,677. Jan. 30, 1945. Lane Tobacco, Ltd., New York, N.Y. Pub. by Lane Limited, New York, N.Y.



GOLDEN BRIAR

For Pipes, Pipe Cases, Pipe Stands, Combination Humidor and Pipe Cases, etc.

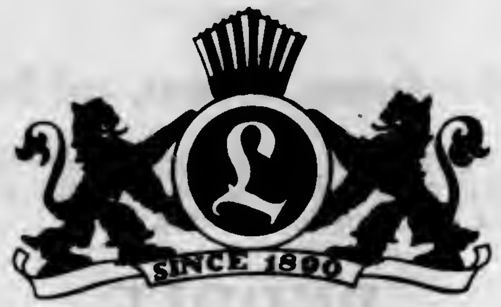
411,678. Jan. 30, 1945. Lane Tobacco, Ltd., New York, N.Y. Pub. by Lane Limited, New York, N.Y.



Mountbatten

For Pipes, Pipe Cases, Pipe Stands, Combination Humidor and Pipe Cases, etc.

411,679. Jan. 30, 1945. Lane Tobacco, Ltd., New York, N.Y. Pub. by Lane Limited, New York, N.Y.



THE ROYAL LANE

For Pipes, Pipe Cases, Pipe Stands, Combination Humidor and Pipe Cases, etc.

Class 12 — Construction Materials

187,490. Aug. 5, 1924. Gardiner and Lewis, Inc., New York, N.Y. Pub. by Karnak Chemical Corporation, New York, N.Y.

KORKSEAL

For Asphalt Composition for Use in Waterproofing, and Dampproofing for Concrete, and Other Construction.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

413,962. May 22, 1945. Philco Corporation, Philadelphia, Pa. Pub. by registrant.

PHILCO

For Bolts, Brads, Eyelets, Metal Clips, Nuts, Rivets, Screws, Metal Washers, etc.

Class 14 — Metals and Metal Castings and Forgings

413,676. May 8, 1945. Philco Corporation, Philadelphia, Pa. Pub. by registrant.

PHILCO

For Solder.

Class 16 — Protective and Decorative Coatings

411,346. Jan. 16, 1945. John C. Stalfort & Sons Inc., Baltimore, Md. Pub. by registrant.

SHOWEY

For Polishing Wax in Liquid, Solid, and Paste Form for Floors, etc.

411,347. Jan. 16, 1945. John C. Stalfort & Sons Inc., Baltimore, Md. Pub. by registrant.

STA-ALL

For Polishing Wax in Liquid, Solid, and Paste Form for Floors, etc.

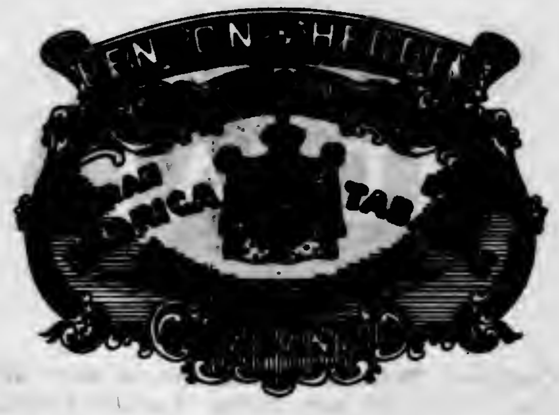
413,677. May 8, 1945. Philco Corporation, Philadelphia, Pa. Pub. by registrant.

PHILCO

For Furniture Polish, and Aluminum Paste Paint.

Class 17 — Tobacco Products

411,340. Jan. 16, 1945. Benson & Hedges, New York, N.Y. Pub. by Philip Morris Incorporated, New York, N.Y.



For Cigars.

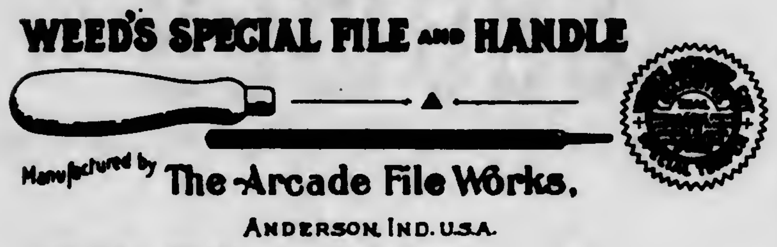
414,224. June 5, 1945. Larus and Brother Company, Richmond, Va. Pub. by registrant.

UNION
JACK

For Smoking Tobacco.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

198,299. May 12, 1925. Arcade File Works, Anderson, Ind. Pub. by Nicholson File Company, Providence, R.I.


WEED'S SPECIAL FILE AND HANDLE
Manufactured by The Arcade File Works,
ANDERSON, IND. U.S.A.

For Files and Rasps.

411,861. Feb. 6, 1945. Geneva Forge, Inc., Geneva, N.Y. Pub. by Ekco Products Company, Chicago, Ill.

For Culinary Tools—Namely, Peeling and Paring Knives, Butcher Knives, etc.

Class 24—Laundry Appliances and Machines

410,746. Dec. 19, 1944. Wm. Cameron & Co., Inc., Waco, Tex. Pub. by Certain-Teed Products Corporation, Ardmore, Pa.

IDEAL

For Combined Built In Ironing Boards and Cabinets and Ready Cut, Machined, and Partly Assembled Materials Intended for Use in the Final Construction of Combined Built In Ironing Boards and Cabinets.

411,939. Feb. 13, 1945. Wm. E. Hooper & Sons Co., Baltimore, Md. Pub. by registrant.

BLUE STRIPE

For Cotton Laundry Pads, Knitted Cotton Padding in the Piece for Use on Laundry Machines, etc.

Class 26—Measuring and Scientific Appliances

413,813. May 15, 1945. Philco Corporation, Philadelphia, Pa. Pub. by registrant.

PHILCO

For Hydrometer Syringes, Circuit Testers for Testing Radio Circuits, etc.

Class 29—Brooms, Brushes, and Dusters

197,896. Apr. 28, 1925. The South-Western Broom Mfg. Co., Evansville, Ind. Pub. by D. W. Swindle, d.b.a. D. W. Swindle & Sons Company, Nashville, Tenn.

PURPLE
ROYAL

For Brooms.

Class 30—Crockery, Earthenware, and Porcelain

413,814. May 15, 1945. Philco Corporation, Philadelphia, Pa. Pub. by registrant.

PHILCO

For Porcelain Pans Used as Containers for Food, Particularly for Holding Food To Be Placed in Refrigerators.

Class 31—Filters and Refrigerators

411,022. Jan. 2, 1945. The Hilliard Corporation, Elmira, N.Y. Pub. by registrant.

HILITE

For Filter Materials in Sheet, Bulk, Filter Pack, and Other Forms.

Class 32—Furniture and Upholstery

411,006. Jan. 2, 1945. Wm. Cameron & Co. Inc., Waco, Tex. Pub. by Certain-Teed Products Corporation, Ardmore, Pa.

IDEAL

For Household and Kitchen Furniture—Namely, Kitchen Cabinets, Broom Cabinets, etc.

Class 38—Prints and Publications

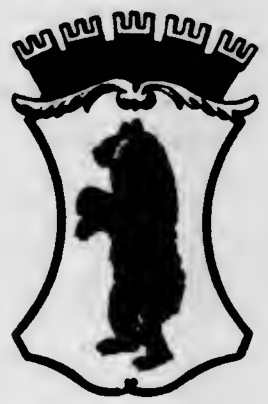
340,403. Nov. 10, 1936. The Wedding Embassy, Inc., New York, N.Y. Pub. by Embassy Publishing Co. Inc., New York, N.Y.

WEDDING EMBASSY
YEAR BOOK

For Annual Publications.

Class 43—Thread and Yarn

44,686. July 18, 1905. Bernhard Ulmann & Co., New York, N.Y. Pub. by Indian Head Mills, Inc., New York, N.Y.



For Worsted, Woolen and Cotton Yarns.

Class 46—Foods and Ingredients of Foods

194,334. Jan. 20, 1925. New England Fish Company, Seattle, Wash. Pub. by registrant.

"FROZEN WITH
THE WIGGLE IN ITS TAIL"

For Fresh Frozen Fish.

200,711. July 7, 1925. Orbis Products Trading Co., Inc., New York, N.Y. Pub. by Orbis Products Corporation, New York, N.Y.

ORBIS

For Powdered Egg-Albumen and Powdered Egg-Yolk Alone and in Combination With Each Other.

414,352. June 5, 1945. Pacific American Fisheries, Inc., South Bellingham, Wash. Pub. by Pacific American Corporation, Bellingham, Wash.

For Canned Salmon.

Class 51—Cosmetics and Toilet Preparations

412,028. Feb. 13, 1945. Lentheric, Incorporated, New York, N.Y. Pub. by Helene Curtis Industries, Inc., d.b.a. Lentheric, Chicago, Ill.

Lenthéric

For Perfumes and Perfume Preparations; Toilet Waters; Bath, Talcum, Sachet and After Shaving Powders; etc.

412,407. Mar. 6, 1945. Lentheric, Incorporated, New York, N.Y. Pub. by Helene Curtis Industries, Inc., d.b.a. Lentheric, Chicago, Ill.

Lenthéric

For Toilet and Bath Soaps.

INDEX OF REGISTRANTS

MAY 4, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A/S De-No-Fa og Lilleborg Fabriker, Oslo, Norway. 788,918, pub. 2–16–65. Multiple Class (Classes 12 and 32).

Abitibi Power and Paper Co., Ltd., Toronto, Ontario, Canada. 788,917, pub. 2–16–65. Cl. 12.

Acme Markets, Inc., from American Stores Co., Philadelphia, Pa. 789,147, pub. 2–16–65. Cl. 101.

Adaptronics, Inc., Alexandria, Va. 789,146, pub. 2–16–65. Cl. 100.

Admiral Sportswear, Inc., St. Louis, Mo. 675,621, canc. Cl. 39.

Aerojet-General Corp., El Monte, Calif. 788,885, pub. 2–16–65. Cl. 1.

Aetzlon Textile Co., Union City, N.J. 789,095, pub. 2–16–65. Cl. 42.

Agway, Inc., Syracuse, N.Y., from Cooperative Grange League Federation, Ithaca, N.Y. 788,948, pub. 8–18–64. Cl. 15.

Air Reduction Co., Inc., to Air Reduction Co., Inc., New York, N.Y. 195,813–14, ren. 5–4–65. Cl. 34.

Ajax Electrothermic Corp., Trenton, N.J., to Ajax Magnethermic Corp., Warren, Ohio. 413,028, ren. 5–4–65. Cl. 26.

Ajax Magnethermic Corp. : *See—*
  Ajax Electrothermic Corp.

Albright & Wilson (Mfg.) Ltd., London, England. 788,891, pub. 2–16–65. Cl. 4.

Albright & Wilson (Mfg.) Ltd., London, England. 788,894, pub. 2–16–65. Cl. 6.

Ald, Inc., Chicago, Ill. 788,940, pub. 2–16–65. Cl. 15.

Alexander, Genevieve T., d.b.a. The Lillipot Schoolhouse, Corpus Christi, Tex. 789,085, pub. 2–16–65. Cl. 38.

Albert, Alfred R., d.b.a. Albert Publishing Co., Cleveland, Ohio. 675,726, canc. Cl. 107.

Allied Chemical Corp., New York, N.Y. 789,117, pub. 2–16–65. Cl. 43.

Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. 789,240. Cl. 52.

Alox Corp., Niagara Falls, N.Y. 415,610, ren. 5–4–65. Cl. 15.

Alsip, John H., d.b.a. Southwest Machinery Co., Garland, Tex. 789,036, pub. 2–16–65. Cl. 24.

Aluma-Tan, Minneapolis, Minn. 675,455, canc. Cl. 14.

Aluminum Tubing Co. : *See—*
  Roll-Weld Pipe and Tube, Inc.

America Air-Master, La Crescenta, Calif. 789,010, pub. 2–16–65. Cl. 23.

American Asphalt Roof Corp., Kansas City, Mo., to The Ruberoid Co., New York, N.Y. 199,486, ren. 5–4–65. Cl. 12.

American Biltrite Rubber Co., Inc., Trenton, N.J. 788,970, pub. 2–16–65. Cl. 20.

American Biscuit Co., San Francisco, Calif., to National Biscuit Co., New York, N.Y. 195,985, ren. 5–4–65. Cl. 46.

American Cyanamid Co. : *See—*
  Lederle Laboratories, Inc.

American Cyanamid Co., New York, N.Y. 675,400, canc. Cl. 2.

American Ferment Co., Inc., New York, N.Y. 675,499, canc. Cl. 18.

American Mutual Reinsurance Co., Chicago, Ill. 789,158, pub. 2–16–65. Cl. 102.

American Radiator & Standard Sanitary Corp., New York, N.Y. 789,071, pub. 2–16–65. Cl. 34.

American Screen Products Co., Chicago, Ill. 788,928, pub. 2–16–65. Cl. 13.

American Steel Foundries, Chicago, Ill. 675,540–1, canc. Cl. 23.

American Stores Co. : *See—*
  Acme Markets, Inc.

American Tradition Foods : *See—*
  American Tradition Inc.

American Tradition Inc., d.b.a. American Tradition Foods, Chicago, Ill. 789,125, pub. 2–16–65. Cl. 46.

Amphenol-Borg Electronics Corp., Broadview, Ill. 789,108, pub. 2–16–65. Cl. 42.

Anaconda Co., The : *See—*
  Anaconda Copper Mining Co.

Anaconda Copper Mining Co., to The Anaconda Co., New York, N.Y. 194,620–1, ren. 5–4–65. Cl. 13.

Anchor Hocking Glass Corp., Lancaster, Ohio. 788,905, pub. 2–16–65. Cl. 8.

Anderson & Thompson Ski Co., Inc., Seattle, Wash. 789,183. Cl. 22.

Andrew Jergens Co., The, Cincinnati, Ohio. 789,222. Cl. 51.

Ansa Fone Corp., Inglewood, Calif. 788,981, pub. 2–16–65. Cl. 21.

Arbax Packing Co., Lodi, Calif. 675,754, canc. Cl. 46.

Arcade File Works, Anderson, Ind., by Nicholson File Co., Providence, R.I. 198,299, 12(c) pub. 5–4–65. Cl. 23.

Archer, Edward, Co. : *See—*
  Schenley Distillers, Inc.

Aristo Mfg. Co., Chicago, Ill. 789,120, pub. 2–16–65. Cl. 44.

Arizona Orchard Co., Phoenix, Ariz., to Tal-Wi-Wi Ranches, Litchfield Park, Ariz. 201,354, ren. 5–4–65. Cl. 46.

Arkell Safety Bag Co., New York, N.Y. 789,078, pub. 12–1–64. Cl. 37.

Arrowhead and Puritas Waters Inc., Los Angeles, Calif. 789,055, pub. 2–16–65. Cl. 31.

Ascot Textile Corp., New York, N.Y. 789,105, pub. 2–16–65. Cl. 42.

Associated Merchandising Corp., The, New York, N.Y. 675,560, canc. Cl. 23.

Associated Products Co. : *See—*
  Gibbs, Malcolm G.

Association of Records Executives and Administrators, Inc., New York, N.Y. 789,194. Cl. 38.

Ateliers Partiot Cementation Rueil-Malmaison, Seine-et-Oise, France. 675,444, canc. Cl. 14.

Atlantic Fabrique d'horlogerie S.A. Bettlach (Atlantic Uhrenfabrik Ag Bettlach), Bettlach, Switzerland. 789,040, pub. 2–16–65. Cl. 27.

Atlantic Refining Co., The, Philadelphia, Pa. 788,904, pub. 2–16–65. Multiple Class (Classes 6, 15, and 52).

Atterbury, A. D., Co. : *See—*
  Atterbury, A. D.

Atterbury, A. D., d.b.a. A. D. Atterbury Co., Yuba City, Calif., to Green Giant Co., Le Sueur, Minn. 414,653, ren. 5–4–65. Cl. 46.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 788,909, pub. 2–16–65. Cl. 10.

Bahr, Simon A., New Brunswick, N.J. 789,219. Cl. 50.

Baker Enterprises : *See—*
  Baker, Eugene H.

Baker, Eugene H., d.b.a. Baker Enterprises, Lincoln, Nebr. 675,398, canc. Cl. 2.

Baker, J. E., Co., The, York, Pa. 789,177. Cl. 10.

Bally Block Co., Bally, Pa. 789,014, pub. 2–16–65. Multiple Class (Classes 23 and 32).

Bally Case and Cooler, Inc., Bally, Pa. 789,062, pub. 2–16–65. Cl. 31.

Barber Mfg. Co., Cleveland, Ohio. 789,070, pub. 2–16–65. Cl. 34.

Bar-Brook Mfg. Co., Inc., The, Shreveport, La. 675,582, canc. Cl. 34.

Barnes-Hind Laboratories, Inc., Sunnyvale, Calif. 675,475, canc. Cl. 18.

Bastian-Blessing Co., The, Chicago, Ill. 788,933, pub. 2–16–65. Cl. 13.

Bata Shoe Co. of Canada Ltd., Batawa, Ontario, Canada. 789,027–9, pub. 2–16–65. Cl. 23.

Bathurst Containers Ltd., Montreal, Quebec, Canada. 788,888, pub. 2–16–65. Cl. 2.

Belcor Corp., Inc., The, Newark, N.J. 789,077, pub. 2–16–65. Cl. 36.

Bell Textile Co., Inc., New York, N.Y. 675,642, canc. Cl. 42.

Belson Corp., New York, N.Y. 789,001, pub. 1–12–65. Cl. 28.

Benson & Hedges, by Philip Morris, Inc., New York, N.Y. 411,340, 12(c) pub. 5–4–65. Cl. 17.

Bert, Louis, & Cie, Barsac, Gironde, France. 789,130, pub. 2–16–65. Cl. 47.

Bethesda Cinder Block Mfg. Co., Inc., Bethesda, Md. 788,925, pub. 2–16–65. Cl. 12.

Birckhead, Edward F., Manassas, Va. 675,601, canc. Cl. 38.

Black-Clawson Co., The, Hamilton, Ohio. 675,561, canc. Cl. 23.

Black Mfg. Co., The, Baltimore, Md. 675,528, canc. Cl. 21.

Bloch Bros. Tobacco Co., The, Wheeling, W. Va. 788,955, pub. 2–16–65. Cl. 17.

Blue Gem Mfg. Co. : *See—*
  Greensboro Overall Co., Inc.

Boar Equipment Co. : *See—*
  Ram Enterprises.

Boehringer, C. H., Sohn, Ingelheim am Rhein, Germany. 675,480, canc. Cl. 18.

Bohemian Distributing Co., d.b.a. International Distilleries Co., Los Angeles, Calif. 789.214. Cl. 49.

Bonis Bros. Fur Machinery Corp., New York, N.Y. 789,004, pub. 2–16–65. Cl. 23.

Boss Mfg. Co., Kewanee, Ill. 789,089, pub. 2–16–65. Cl. 39.

Bougie, Lucien, Inc. : *See—*
  Bougie, Lucien.

Bougie, Lucien, Shoe Mfg. : *See—*
  Bougie, Lucien.

Bougie, Lucien, d.b.a. Lucien Bougie Shoe Mfg., to Lucien Bougie Inc., Montreal, Quebec, Canada. 415,811, ren. 5–4–65. Cl. 39.

Boyle, John, and Co., Inc., New York, N.Y. 789,204. Cl. 42.

Brach, E. J., & Sons, Chicago, Ill. 789,124, pub. 2–16–65. Cl. 46.

Bradley and Foster Ltd., Darlaston, England. 675,402, canc. Cl. 4.

Bradley, Milton, Co., Springfield, Mass. 789,182. Cl. 22.

Brenham Broom & Mop Works, Inc., Brenham, Tex. 789,048, pub. 2–16–65. Cl. 29.

Brewer Pharmacal Co., Upper Darby, Pa. 675,505, canc. Cl. 18.

Brookglad Corp., Brooklyn, N.Y. 675,536, canc. Cl. 22.

Brooks Mfg. Co., from L. A. Brooks, d.b.a. Brooks Mfg. Co., Cincinnati, Ohio. 788,893, pub. 2–16–65. Cl. 5.

Broughton Specialty Foods, Inc., Marietta, Ohio. 789,127, pub. 2–16–65. Cl. 46.

Brouk, J. J., & Co., St. Louis, Mo. 789,178. Cl. 10.

Bruno, C., & Son, Inc., New York, N.Y. 201,779, ren. 5–4–65. Cl. 36.

Bruno, C., & Son, Inc., New York, N.Y. 201,968, ren. 5–4–65. Cl. 36.
Buescher Band Instruments, Elkhart, Ind. 675,586, canc. Cl. 36.
Burger Furniture: *See*—
  Burger, Hans J.
Burger, Hans J., d.b.a. Burger Furniture, Chicago, Ill. 789,245. Cl. 107.
Buster Brown Textiles, Inc.: *See*—
  United Hosiery Mills Corp.
Byford & Morris, Inc., McGregor, Tex. 788,966, pub. 2–16–65. Cl. 19.
CBS-Hytron Sales Corp., Danvers, Mass. 675,525, canc. Cl. 21.
Calk-It Corp., Pasadena, Calif. 789,018, pub. 2–16–65. Cl. 23.
Cameron, Wm., & Co., Inc., Waco, Tex., by Certain-Teed Products Corp., Ardmore, Pa. 410,746, 12(c) pub. 5–4–65. Cl. 24.
Cameron, Wm., & Co., Inc., Waco, Tex., by Certain-Teed Products Corp., Ardmore, Pa. 411,006, 12(c) pub. 5–4–65. Cl. 32.
Capco Chemical Corp., Providence, R.I. 675,463, canc. Cl. 16.
Cappa Big Pixey Drive-Ins: *See*—
  Capps, Olen D.
Capps, Olen D., d.b.a. Capps Big Pixey Drive-Ins, North Wales, Pa. 675,660, canc. Cl. 46.
Carbidex Corp., Wyandotte, Mich. 789,016, pub. 2–16–65. Cl. 28.
Carbon Paper Co., Ltd., Oyodo-ku, Osaka, Japan. 788,910, pub. 2–16–65. Cl. 11.
Cargill, Inc., Minneapolis, Minn. 675,394, canc. Cl. 1.
Carpet Engineers Inc., Beverly Hills, Calif. 789,094, pub. 2–16–65. Cl. 42.
Carrtone Laboratories, Inc., New Orleans, Metairie, La. 675,502, canc. Cl. 18.
Certain-Teed Products Corp.: *See*—
  Cameron, Wm., & Co., Inc.
Chetley Products, Inc., New York, N.Y. 675,690, canc. Cl. 50.
Christian Science Publishing Society, The, Boston, Mass. 415,495, ren. 5–4–65. Cl. 38.
Chun King Sales, Inc., Duluth, Minn. 675,652, canc. Cl. 46.
Clairol Inc., New York, N.Y. 789,227–30. Cl. 51.
Clark-Aiken Co., The, Lee, Mass. 675,542, canc. Cl. 23.
Cleveland Twist Drill Co., The, Cleveland, Ohio. 789,007, pub. 2–16–65. Cl. 23.
Club Aluminum Products Co., La Grange Park, Ill. 788,987, pub. 2–16–65. Cl. 13.
Coca-Cola Co., The, Atlanta, Ga. 415,755, ren. 5–4–65. Cl. 45.
Columbia Broadcasting System, Inc., New York, N.Y. 789,168, pub. 2–16–65. Cl. 104.
Compania Insular Tabacalera, S.A., Las Palamas de Gran, Canaria, Canary Islands. 788,954, pub. 2–16–65. Cl. 17.
Comtex, Inc., Woburn, Mass. 788,976, pub. 2–16–65. Cl. 21.
Conal Pharmaceuticals, Inc., Chicago, Ill. 788,964, pub. 2–16–65. Cl. 18.
Conks Ltd., from Daniel Buckley Enterprises Ltd., London, England. 788,989, pub. 2–16–65. Cl. 22.
Consolidated Distilled Products, Inc., Chicago, Ill. 789,216–17. Cl. 49.
Cook, H. C., Co., The, Ansonia, Conn. 789,081, pub. 2–16–65. Cl. 37.
Cooperative Grange League Federation: *See*—
  Agway, Inc.
Cordrey, A. A., d.b.a. Cordrey Industries, St. Petersburg, Fla. 675,676, canc. Cl. 31.
Cordrey Industries: *See*—
  Cordrey, A. A.
Coronet Industries, Inc., Dalton, Ga. 789,112, pub. 2–16–65. Cl. 42.
Cory Corp., Chicago, Ill. 789,079–80, pub. 2–16–65. Cl. 37.
Cory Corp., Chicago, Ill. 675,591, canc. Cl. 37.
Crafford, Bobby, Newport, Ark. 789,170, pub. 2–16–65. Cl. 107.
Cranston Print Works Co., New York, N.Y. 675,685, canc. Cl. 42.
Crompton & Knowles Corp., Worcester, Mass. 789,023, pub. 2–16–65. Cl. 28.
Crooker: *See*—
  Crooker, Robert M.
Crooker, Robert M., d.b.a. Crooker, Cold Spring Harbor, N.Y. 788,908, pub. 2–16–65. Multiple Class (Classes 9, 22, 37, and 38).
Cudahy, Patrick, Inc., Cudahy, Wis. 789,209. Cl. 46.
Curtis, Helene, Industries, Inc.: *See*—
  Lentheric, Inc.
Curtis, Helene, Industries, Inc., Chicago, Ill. 789,225. Cl. 51.
Cyclone Seeder Co., The: *See*—
  Speicher, Daniel E.
David, John, Inc.: *See*—
  David, John.
David, John, to John David, Inc., New York, N.Y. 194,655, ren. 5–4–65. Cl. 59.
Davis, Al, Radio, Inc., Los Angeles, Calif. 788,974, pub. 2–16–65. Cl. 21.
Davis, Esther K., d.b.a. Davis Mfg. Co., Alamo, Tenn. 789,088, pub. 2–16–65. Cl. 89.
Davis Mfg. Co.: *See*—
  Davis, Esther K.
Dawe's Laboratories, Inc., Chicago, Ill. 789,123, pub. 2–16–65. Cl. 46.
Dearborn Gage Co., Garden City, Mich. 788,990, pub. 2–16–65. Cl. 22.
Debevoise Co., The, Brooklyn, N.Y. 788,952, pub. 11–24–64. Cl. 16.
Delmonte Plastics Corp., Los Angeles, Calif. 789,174. Cl. 1.
De Luxe Reading Corp., Elizabeth, N.J. 788,992, pub. 2–16–65. Cl. 22.
Dependable Chemical Co., Inc., Rocky River, Ohio. 788,914, pub. 2–16–65. Cl. 12.
Derry Products, Inc., Brooklyn, N.Y. 789,208. Cl. 45.
Designs by Lotte, Inc., New York, N.Y. 789,098, pub. 2–16–65. Cl. 42.
De Wolf Furnace Co., Inc., Garden City, N.Y. 789,072, pub. 2–16–65. Cl. 34.
Dickel, Geo. A., & Co., Nashville, Tenn., to Geo. A. Dickel & Co., Tullahoma, Tenn. 44,785, ren. 5–4–65. Cl. 31.
Dickstein, George, d.b.a. Kit's Mfg. Co., University Heights, Ohio. 675,606, canc. Cl. 39.
Diversey Corp., The: *See*—
  Trojan Products & Mfg. Co.
Dow Chemical Co., The, Midland, Mich. 788,901–2, pub. 2–16–65. Cl. 6.
Drackett Co., The, Cincinnati, Ohio. 789,047, pub. 2–16–65. Cl. 29.
Dram Pharmaceuticals, Inc., Hempstead, N.Y. 788,959, pub. 2–16–65. Cl. 18.
Drew Chemical Corp., New York, N.Y. 788,896, pub. 2–16–65. Cl. 6.
Drewrys Ltd., U.S.A., Inc., South Bend, Ind. 789,134, pub. 2–16–65. Cl. 48.
Dryden, Frank W., & Sons: *See*—
  Dryden, Frank W.
Dryden, Frank W., d.b.a. Frank W. Dryden & Sons, to Dryden Oil Co., Inc., Baltimore, Md. 195,282, ren. 5–4–65. Cl. 15.
Dryden Oil Co., Inc.: *See*—
  Dryden, Frank W.
Dualube, Inc., Burbank, Calif. 788,942, pub. 2–16–65. Cl. 15.
Duplan Corp., The, Winston-Salem, N.C. 675,644, canc. Cl. 43.
Dyersburg Cotton Products, Inc., Dyersburg, Tenn. 789,102–4, pub. 2–16–65. Cl. 42.
Eagle-Picher Co., The, Cincinnati, Ohio. 788,985, pub. 2–16–65. Cl. 21.
Eaton Mfg. Co., Cleveland, Ohio. 789,075, pub. 2–16–65. Cl. 35.
Eberhard Faber Inc.: *See*—
  Eberhard Faber Pencil Co.
Ekco Products Co.: *See*—
  Geneva Forge, Inc.
Electrical Automation Co., Inc., Paterson, N.J. 788,975, pub. 2–16–65. Cl. 21.
Electronic Assistance Corp., Red Bank, N.J. 788,979, pub. 2–16–65. Multiple Class (Classes 21 and 26).
Elgin Sweeper Co., Elgin, Ill. 789,026, pub. 2–16–65. Cl. 23.
Eliason Refrigerator Co., Hartford, Mich. 789,057, pub. 2–16–65. Cl. 31.
Embassy Publishing Co., Inc.: *See*—
  Wedding Embassy, Inc., The.
Emsig Mfg. Co., New York, N.Y. 675,745, canc. Cl. 40.
Emu Wools Ltd.: *See*—
  Wool Processes Ltd.
Encinal Terminals, Alameda, Calif. 675,691, canc. Cl. 50.
Engelberg Inc.: *See*—
  Engelberg Huller Co., The.
Engelberg Huller Co., The, to Engelberg, Inc., Syracuse, N.Y. 44,913, ren. 5–4–65. Cl. 23.
Enthone Co., The, to Enthone, Inc., New Haven, Conn. 413,548, ren. 5–4–65. Cl. 6.
Enthone, Inc.: *See*—
  Enthone Co., The.
Equality Plastics, Inc., New York, N.Y. 788,890, pub. 2–16–65. Cl. 2.
Espe Fabrik Pharmazeutischer Praeparate G.m.b.H., Seefeld, Upper Bavaria, Germany. 675,506, canc. Cl. 18.
Establecimientoes Morso S.A.: *See*—
  Tomasco Moro & Figli.
Evans, Richard D., Burlingame, from Halo Mfg. Co., San Francisco, Calif. 789,220. Cl. 50.
Everfast Fabrics, Inc., New York, N.Y. 789,101, pub. 2–16–65. Cl. 42.
Eversharp, Inc., Milford, Conn. 789,017, pub. 2–16–65. Cl. 23.
FXL & Co., Lowell, Mass. 675,510, canc. Cl. 18.
Faber, Eberhard, Pencil Co., Brooklyn, N.Y., to Eberhard Faber Inc., Wilkes-Barre, Pa. 202,106, ren. 5–4–65. Cl. 37.
Faber, Eberhard, Pencil Co., Brooklyn, N.Y., to Eberhard Faber Inc., Wilkes-Barre, Pa. 202,328, ren. 5–4–65. Cl. 37.
Fairchild Publications, Inc., New York, N.Y. 789,083, pub. 2–16–65. Cl. 38.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 675,391, canc. Cl. 1.
Faribault Woolen Mill Co., Faribault, Minn. 789,106, pub. 2–16–65. Cl. 42.
Farm Journal Inc., Philadelphia, Pa. 789,195–200. Cl. 38.
Feature Products Inc., Chicago, Ill. 789,031, pub. 2–16–65. Cl. 23.
Fensco Products, Inc., Amarillo, Tex. 675,436, canc. Cl. 13.
Finch, Joseph S., and Co., from Schenley Distillers, Inc., New York, N.Y. 789,137, pub. 2–16–65. Cl. 49.
Flavorex Co., Inc., Baltimore, Md. 789,205. Cl. 45.
Fleet-Wing Corp., Cleveland, Ohio. 788,948, pub. 2–16–65. Cl. 15.
Flintkote Co., The: *See*—
  Glens Falls Portland Cement Co., The.
Formica Corp., Cincinnati, Ohio. 788,969, pub. 2–16–65. Cl. 20.
Formulabs, Inc., Escondido, Calif. 788,911, pub. 2–16–65. Cl. 11.
Frank, S. M., & Co., Inc., New York, N.Y. 788,906, pub. 2–16–65. Cl. 8.
Freund Enterprises: *See*—
  Freund, Sheldon.
Freund, Sheldon, d.b.a. Freund Enterprises, New York, N.Y. 789,191. Cl. 38.

Frohlich, Franklin, Teufen, Switzerland. 789,067, pub. 2–16–65. Cl. 34.
Fuchs, John E., Corp., New York, N.Y. 789,086, pub. 2–16–65. Cl. 39.
Fyr-Fyter Co., The, Dayton, Ohio. 789,011, pub. 2–16–65. Cl. 23.
Gardiner and Lewis, Inc., by Karnak Chemical Corp., New York, N.Y. 187,490, 12(c) pub. 5–4–65. Cl. 12.
Geier Industries, Inc.: *See*—
  Geier Mattress Co., The.
Geier Mattress Co., The, to Geier Industries, Inc., Cincinnati, Ohio. 415,113, ren. 5–4–65. Cl. 32.
General Crafts Corp., Baltimore, Md. 789,221. Cl. 50.
General Electric Co., Schenectady, N.Y. 789,056, pub. 2–16–65. Cl. 31.
General Electric Co., New York, N.Y. 789,159–60, pub. 2–16–65. Cl. 103.
General Foods Corp., White Plains, N.Y. 789,128, pub. 2–16–65. Cl. 46.
General Foods Corp., White Plains, N.Y. 789,175. Cl. 5.
General Tire & Rubber Co., The, Akron, Ohio. 789,074, pub. 2–16–65. Cl. 35.
Genesco, Inc.: *See*—
  Laird, Schober & Co.
Geneva Forge, Inc., Geneva, N.Y., by Ekco Products Co., Chicago, Ill. 411,861, 12(c) pub. 5–4–65. Cl. 23.
Georgia-Pacific Corp., Portland, Oreg. 788,889, pub. 2–16–65. Cl. 2.
Gibbs, Malcolm G., d.b.a. Key Chemical Co., to The Associated Products Co., Washington, D.C. 191,920, ren. 5–4–65. Cl. 18.
Gilfry, Kenneth R., d.b.a. The Rustic Shop, Buena Park, Calif. 789,005, pub. 2–16–65. Cl. 23.
Girdler Corp., Louisville, Ky. 788,998, pub. 2–16–65. Cl. 23.
Glens Falls Portland Cement Co., The, Glens Falls, to The Flintkote Co., New York, N.Y. 197,616, ren. 5–4–65. Cl. 12.
Glidden Co., The, Cleveland, Ohio. 675,468, canc. Cl. 16.
Globe Newspaper Co., Boston, Mass. 199,556, ren. 5–4–65. Cl. 38.
Granco Steel Products Co.: *See*—
  Granite City Steel Co.
Granite City Steel Co., d.b.a. Granco Steel Products Co., Granite City, Ill. 788,919, pub. 2–16–65. Cl. 12.
Graton & Knight Co., Worcester, Mass., to L. H. Shingle Co., Camden, N.J. 414,542, ren. 5–4–65. Cl. 5.
Gravure Technical Association, Inc., The, New York, N.Y. 789,171, pub. 2–16–65. Cl. 200.
Great Bend Mfg. Co., Inc., Great Bend, Kans. 789,018, pub. 2–16–65. Cl. 28.
Green Giant Co.: *See*—
  Atterbury, A. D.
  Minnesota Valley Canning Co.
Green Publications, Inc., from Haywood Publishing Co., Chicago, Ill. 789,185. Cl. 38.
Greensboro Overall Co., Inc., to Blue Gem Mfg. Co., Greensboro, N.C. 413,972, ren. 5–4–65. Cl. 39.
Grube, Clarence G., Brookfield, Wis. 789,006, pub. 2–16–65. Cl. 23.
Hagan Chemicals & Controls, Inc., Pittsburgh, Pa. 675,404, canc. Cl. 6.
Haines, Clara E.: *See*—
  National Paving and Contracting Co., The.
Haire Publishing Co., New York, N.Y. 789,193. Cl. 38.
Hall, James H., Co., Inc., Providence, R.I. 789,046, pub. 2–16–65. Cl. 28.
Halo Mfg. Co.: *See*—
  Evans, Richard D.
Hammond Organ Studios of Boston, Inc., Newton, Mass. 789,076, pub. 2–16–65. Cl. 36.
Hand Medicine Co., Stamford, Conn. 200,696, ren. 5–4–65. Cl. 18.
Harris, A. H., & Sons, Inc., New Britain, Conn. 789,088, pub. 2–16–65. Cl. 26.
Hartman Metal Fabricators, Inc., Waterloo, N.Y. 789,012, pub. 12–29–64. Cl. 23.
Haywood Publishing Co.: *See*—
  Green Publishing Co.
Heald, Jerome I., d.b.a. Sudsation Shower Co., Long Beach, Calif. 788,931, pub. 2–16–65. Cl. 13.
Heatbath Corp., Springfield, Mass. 789,239. Cl. 52.
Hechinger Co., Washington, D.C. 788,929, pub. 2–16–65. Cl. 18.
Hedaya & Co., New York, N.Y. 788,988, pub. 2–16–65. Cl. 22.
Hess, Grant W., d.b.a. Hess Michigolden Farms, Hess Michigolden Duck Farms, and Hemlock Poultry Farms, Hemlock, Mich. 675,748, canc. Cl. 46.
Hess Michigolden Farms, Hess Michigolden Duck Farms, and Hemlock Poultry Farms: *See*—
  Hess, Grant W.
Heyman Mfg. Co., Kenilworth, N.J. 788,984, pub. 2–16–65. Cl. 21.
High Nelson-Columbia Carpet Mills, Inc., Philadelphia, Pa. 675,640, canc. Cl. 42.
Hill, Walter P., Inc., Troy, Mich. 788,999, pub. 2–16–65. Cl. 23.
Hilliard Corp., The, Elmira, N.Y. 411,022, 12(c) pub. 5–4–65. Cl. 31.
Hind Brothers & Co. Ltd., Umbilo, Durban, Republic of South Africa. 789,122, pub. 2–16–65. Cl. 46.
Hobbin Associates, Inc., Baltimore, Md. 675,740, canc. Cl. 38.
Hodges Research & Development Co., New York, N.Y. 789,115, pub. 2–16–65. Cl. 42.
Hoffman Electronics Corp., Los Angeles, Calif. 675,530, canc. Cl. 21.
Holland Industries, Inc., from Kars Petersen, Inc., Holland, Mich. 788,930, pub. 2–16–65. Cl. 13.
Hooper, Wm. E., & Sons Co., Baltimore, Md. 411,939, 12(c) pub. 5–4–65. Cl. 24.
Huber-Warco Co., Marion, Ohio. 788,993, pub. 2–16–65. Cl. 23.
Hudnut, Richard, Morris Plains, N.J. 412,694, ren. 5–4–65. Cl. 51.
Hudnut, Richard, Morris Plains, N.J. 789,235. Cl. 51.
Hudson Hosiery Co., Charlotte, N.C. 675,610, canc. Cl. 39.
Huntington Creek Corp., The, d.b.a. Lerons & Co., Ruffsdale, Pa. 789,135, pub. 2–16–65. Cl. 49.
Huyck Corp., Rensselaer, N.Y. 789,109–10, pub. 2–16–65. Cl. 42.
Illinois Shade Division of Slick Industrial Co.: *See*—
  Slick Industrial Co.
Imperial Chemical Industries Ltd., London, England. 788,963, pub. 2–16–65. Cl. 18.
Implement & Tractor International Corp., Kansas City, Mo. 675,604, canc. Cl. 38.
Indian Head Mills, Inc.: *See*—
  Ulmann, Bernhard, & Co.
Inland Steel Co., Chicago, Ill. 412,800, ren. 5–4–65. Cl. 14.
International Car Club Association, Los Angeles, Calif. 789,169, pub. 2–16–65. Cl. 107.
International Distilleries Co.: *See*—
  Bohemian Distributing Co.
International Latex Corp., Dover, Del. 675,483, canc. Cl. 18.
International Trade Club of Chicago, Chicago, Ill. 789,244. Cl. 107.
Jack-Sons Products Corp., Lahabra, Calif. 789,049, pub. 2–16–65. Cl. 29.
Jacobsen Mfg. Co., Racine, Wis. 788,995, pub. 2–16–65. Cl. 23.
Jet Klents Corp., Elizabeth, N.J. 675,711, canc. Cl. 52.
Johns-Manville Corp., New York, N.Y. 788,927, pub. 2–16–65. Cl. 12.
Johnson, Endicott, Corp., Endicott, N.Y. 789,090, pub. 2–16–65. Cl. 39.
Johnson & Johnson, New Brunswick, N.J. 788,920, pub. 2–16–65. Cl. 12.
Jumelles Corp., New York, N.Y. 675,693, canc. Cl. 51.
Kanter & Alpert, Inc., Chicago, Ill. 789,202. Cl. 39.
Karnak Chemical Corp.: *See*—
  Gardiner and Lewis, Inc.
Kayser, Julius, & Co., to Kayser-Roth Corp., New York, N.Y. 414,622, ren. 5–4–65. Cl. 39.
Kayser-Roth Corp.: *See*—
  Kayser, Julius, & Co.
Keelavite Hydraulics, Ltd., from Keelavite Rotary Pumps & Motors Ltd., Allesley, Coventry, England. 675,428, canc. Cl. 13.
Keelavite Rotary Pumps & Motors Ltd.: *See*—
  Keelavite Hydraulics, Ltd.
Kelsey-Hayes Co., Romulus, Mich. 789,080, pub. 2–16–65. Cl. 28.
Kemper, Morton L., d.b.a. Littlestown Metal Products, Littlestown, Pa. 675,416, canc. Cl. 12.
Kendall Co., The, Walpole, Mass. 789,181. Cl. 18.
Kenney Mfg. Co., Warwick, R.I. 788,934, pub. 2–16–65. Cl. 13.
Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. 789,162, pub. 2–16–65. Cl. 103.
Kessler, Stanley, & Co. Inc., King of Prussia, Pa. 789,180. Cl. 14.
Key Chemical Co.: *See*—
  Gibbs, Malcolm G.
King Kullen Grocery Co., Inc., Jamaica, N.Y. 730,510, canc. Cl. 46.
Kirban Corp., from Pedigree Fabrics, Inc., New York, N.Y. 789,092, pub. 2–16–65. Cl. 42.
Kit's Mfg. Co.: *See*—
  Dickstein, George.
Knitweave Associates, Inc., New York, N.Y. 789,111, pub. 2–16–65. Cl. 42.
Knotheads, Uninc. Assoc., Bothell, Wash. 675,729, canc. Cl. 200.
Kraemer, Arthur L., d.b.a. Kraemer Products, Batavia, N.Y. 675,478, canc. Cl. 18.
Kraemer Products: *See*—
  Kraemer, Arthur L.
Kuhne, Carl, KG, Ltd., Hamburg, Altona, Germany. 789,126, pub 2–16–65. Cl. 46.
KVP Sutherland Paper Co., Kalamazoo, Mich. 789,082, pub. 2–16–65. Cl. 37.
L.O.F. Glass Fibers Co., Toledo, Ohio. 675,646, canc. Cl. 43.
Lentheric, Inc., New York, N.Y., by Helene Curtis Industries, Inc., d.b.a. Lentheric, Chicago, Ill. 412,407, 12(c) pub. 5–4–65. Cl. 51.
Lentheric, Inc., New York, N.Y., by Helene Curtis Industries, Inc., d.b.a. Lentheric, Chicago, Ill. 412,028, 12(c) pub. 5–4–65. Cl. 51.
Laird, Schober & Co., Philadelphia, Pa., to Genesco, Inc., Nashville, Tenn. 199,874, ren. 5–4–65. Cl. 39.
Lan-Allen Drug & Pharmacal Corp., Brooklyn, N.Y. 675,704, canc. Cl. 51.
Lane Ltd.: *See*—
  Lane Tobacco, Ltd.
Lane Ltd., New York, N.Y. 788,956, pub. 2–16–65. Cl. 17.
Lane Tobacco, Ltd., by Lane Ltd., New York, N.Y. 410,904, 12(c) pub. 5–4–65. Cl. 8.
Lane Tobacco, Ltd., by Lane Ltd., New York, N.Y. 411,677–9, 12(c) pub. 5–4–65. Cl. 8.
La Rural Vinedos Y Bodegas S.A. Ltda., Maipu, Mendoza, Argentina. 789,213. Cl. 47.
Larus and Bro. Co., Richmond, Va. 414,324, 12(c) pub. 5–4–65. Cl. 17.
Lawrence Process Co., Inc., The, North Andover, Mass. 675,692, canc. Cl. 50.
Lawson Products, Inc., Pawtucket, R.I. 789,096, pub. 2–16–65. Cl. 42.
Leaf Brands, Inc., Chicago, Ill. 789,212. Cl. 46.

Lederle Laboratories, Inc., New York, N.Y., to American Cyanamid Co., Wayne, N.J. 413,550, ren. 5-4-65. Cl. 18.
Lee, Boyd, Hosiery Mills, Inc., Hickory, N.C. 789,097, pub. 2-16-65. Cl. 42.
Lentheric: *See*—
  Lentheric, Inc.
Lerona & Co.: *See*—
  Huntington Creek Corp.
Levolor Lorentzen, Inc., Hoboken, N.J. 789,064, pub. 2-16-65. Cl. 32.
Levy, Georges, Paris, France. 789,087, pub. 2-16-65. Cl. 39.
Liberty Coach Co., Inc., Syracuse, Ind. 411,553, ren. 5-4-65. Cl. 19.
Lillipot Schoolhouse, The: *See*—
  Alexander, Genevieve T.
Littlestown Metal Products: *See*—
  Kemper, Morton L.
Lockheed Aircraft Corp., Burbank, Calif. 788,968, pub. 2-16-65. Cl. 19.
L'Oreal, Paris, France. 789,139, pub. 2-16-65. Cl. 51.
Louisville and Nashville Railroad Co., Louisville, Ky. 675,723, canc. Cl. 105.
Lowe, William, Inc., New York, N.Y. 789,044, pub. 2-16-65. Cl. 28.
Lucky Lager Brewing Co., San Francisco, Calif. 675,759, canc. Cl. 48.
Luzier Inc., Kansas City, Mo. 789,224. Cl. 51.
Lyall Electric, Inc., Albion, Ind. 788,973, pub. 2-16-65. Cl. 21.
Magnolia Paper Co., Houston, Tex. 789,142, pub. 2-16-65. Cl. 52.
Malco Products Inc., Akron, Ohio. 788,949, pub. 2-16-65. Cl. 15.
Manning Mfg. Corp., Chicago, Ill. 675,737, canc. Cl. 22.
Maradel Products, Inc., New York, N.Y. 789,223. Cl. 51.
Maradel Products, Inc., New York, N.Y. 789,237. Cl. 52.
Margolis, A., & Sons Corp., Brooklyn, N.Y. 788,941, pub. 2-16-65. Cl. 15.
Marietta, Martin, Corp., New York, N.Y. 788,923, pub. 2-16-65. Cl. 12.
Markwell Mfg. Co., Inc., New York, N.Y. 199,754, ren. 5-4-65. Cl. 13.
Markwell Mfg. Co., Inc., New York, N.Y. 199,929, ren. 5-4-65. Cl. 23.
Marquette Coppersmithing Co., Inc., Philadelphia, Pa. 788,932, pub. 2-16-65. Cl. 13.
Maschinenfabrik Augsburg-Nurnberg A.G., Nurnberg, Germany. 675,514-16, canc. Cl. 19.
Massengill, S. B., Co., The, Bristol, Tenn. 788,957, pub. 2-16-65. Cl. 18.
Matheny, W. V., d.b.a. Protect-A-Mat-Co., Grafton, W. Va. 789,098, pub. 2-16-65. Cl. 42.
Massie, E. C., d.b.a. Massie Farms, Arvin, Calif. 415,354, ren. 5-4-65. Cl. 46.
Massie Farms: *See*—
  Massie, E. C.
McDonough Co., Parkersburg, W. Va. 788,994, pub. 2-2-65. Cl. 23.
Melville Knitwear Co., Inc., New York, N.Y. 675,608, canc. Cl. 39.
Mereen-Johnson Machine Co., Minneapolis, Minn. 200,107, ren. 5-4-65. Cl. 23.
Merit House, Inc., New York, N.Y. 789,206-7. Cl. 45.
Merit Pharmaceutical Corp. of America, North Miami, Fla. 675,508, canc. Cl. 18.
Metal-Matic, Inc., Minneapolis, Minn. 788,965, pub. 2-16-65. Cl. 19.
Meyer, Louis J., Inc., Philadelphia, Pa. 675,577, canc. Cl. 32.
Midwest Automotive Research, Inc., Sheboygan, Wis. 788,997, pub. 2-16-65. Cl. 23.
Miller, E. S., Laboratories, Inc., Los Angeles, Calif., to Smith, Miller & Patch, Inc. 412,689, ren. 5-4-65. Cl. 18.
Mills, Erwin, Inc., Durham, N.C. 789,114, pub. 2-16-65. Cl. 42.
Minnesota Valley Canning Co., to Green Giant Co., Le Sueur, Minn. 413,662, ren. 5-4-65. Cl. 46.
Moeller Mfg. Co., Inc., Greenville, Miss. 789,087, pub. 2-16-65. Cl. 26.
Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 414,769, ren. 5-4-65. Cl. 6.
Monsanto Co.: *See*—
  Monsanto Chemical Co.
Monsanto Co., St. Louis, Mo. 789,116, pub. 2-16-65. Cl. 48.
Montgomery County Bank and Trust Co., Morristown, Pa. 789,157, pub. 2-16-65. Cl. 102.
Morgan & Co., Inc., Boston, Mass. 789,065, pub. 2-16-65. Cl. 33.
Moro, Tomaso, & Figli, Genoa, Italy, to Establecimientoes Moro S.A., Malaga, Spain. 196,914, ren. 5-4-65. Cl. 46.
Morris, Philip, Inc.: *See*—
  Benson & Hedges.
Moss, Theron V., d.b.a. South Eastern Cordage, Cleveland, Ohio. 789,051, pub. 2-16-65. Cl. 29.
Myzon, Inc., Chicago, Ill. 675,511, canc. Cl. 18.
National Auto Renting Co., Inc., New York, N.Y. 789,165, pub. 2-16-65. Cl. 105.
National Biscuit Co.: *See*—
  American Biscuit Co.
National Cotton Council of America, d.b.a. National Cotton Council or as the Cotton Council, Memphis, Tenn. 789,145, pub. 2-16-65. Cl. 100.
National Cotton Council or as the Cotton Council: *See*—
  National Cotton Council of America.
National Distillers and Chemical Corp., New York, N.Y. 788,985, pub. 2-16-65. Cl. 18.
National Paving and Contracting Co., The, from Arthur T. Ward, Jr., and Clara E. Haines, Baltimore, Md. 788,912, pub. 2-16-65. Cl. 12.
National Science Teachers Association, Inc., Washington, D.C. 789,190. Cl. 38.
Nelson, Hugh-Columbia Carpet Mills, Inc., Philadelphia, Pa. 675,641, canc. Cl. 42.
New England Fish Co., Seattle, Wash. 194,884, 12(c) pub. 5-4-65. Cl. 46.
New York Pencil Co., Inc., New York, N.Y. 789,226. Cl. 51.
Nicholson File Co.: *See*—
  Arcade File Works.
Nicholson File Co., Providence, R.I. 789,015, pub. 2-16-65. Cl. 23.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 789,281-4. Cl. 51.
Norris, Ezra M., d.b.a. Zados Laboratories, Los Angeles, Calif. 788,958, pub. 2-16-65. Cl. 18.
North American Co. for Life, Accident and Health Insurance, The, Chicago, Ill. 789,153-4, pub. 2-16-65. Cl. 102.
Oa Business Publications, Inc., Elmhurst, Ill. 789,201. Cl. 38.
Ocoma Foods Co., Omaha, Nebr. 675,656, canc. Cl. 46.
Ohio Federal Savings & Loan Association of Columbus, Columbus, Ohio. 789,156, pub. 2-16-65. Cl. 102.
Ohio Valley Professional Athletic Association, Inc., Wheeling, W. Va. 789,168, pub. 2-16-65. Cl. 107.
Old Fashion, Inc.: *See*—
  Old Fashion Ma's Root Beer Bottling Co.
Old Fashion Ma's Root Beer Bottling Co., to Old Fashion, Inc., Wilkes-Barre, Pa. 415,105, ren. 5-4-65. Cl. 45.
Olin Mathieson Chemical Corp., New York, N.Y. 788,960, pub. 2-16-65. Cl. 18.
Omiflight Helicopters, Inc., Beulah, Mich. 789,166, pub. 2-16-65. Cl. 105.
Omni Spectra, Inc., Detroit, Mich. 788,971, pub. 2-16-65. Cl. 21.
Oneida Community, Ltd., to Oneida Ltd., Oneida, N.Y. 188,650, canc. Cl. 23.
Oneida Ltd.: *See*—
  Oneida Community, Ltd.
Oral Hygiene Industries: *See*—
  Tatelbame, Joyce, Inc.
Orbis Products Corp.: *See*—
  Orbis Products Trading Co., Inc.
Orbis Products Trading Co., Inc., by Orbis Products Corp., New York, N.Y. 200,711, 12(c) pub. 5-4-65. Cl. 46.
Orbis Products Trading Co., Inc., by Orbis Products Corp., New York, N.Y. 200,885, 12(c) pub. 5-4-65. Cl. 6.
Ottawa Chemical Co., The, Toledo, Ohio. 788,895, pub. 2-16-65. Cl. 6.
Pacific American Corp.: *See*—
  Pacific American Fisheries, Inc.
Pacific American Fisheries, Inc., South Bellingham, Wash., by Pacific American Corp., Bellingham, Wash. 414,352, 12(c) pub. 5-4-65. Cl. 46.
Packard-Bell Electronics Corp., Los Angeles, Calif. 788,980, pub. 2-16-65. Cl. 21.
Pall Corp., Glen Cove, N.Y. 789,060-1, pub. 2-16-65. Cl. 31.
Pandora Knitwear, Inc., New York, N.Y. 675,626, canc. Cl. 39.
Parish Tithings, Inc., Detroit, Mich. 789,241. Cl. 101.
Paymaster Corp., The, Chicago, Ill. 675,738, canc. Cl. 23.
Peanut Fluf Co.: *See*—
  Sunshine Biscuits, Inc.
Pedigree Fabrics, Inc.: *See*—
  Kirban Corp.
Pell, Oliver, Control Ltd., Woolwich, London, England. 788,978, pub. 2-16-65. Multiple Class (Classes 21 and 26).
Pellon Corp., New York, N.Y. 789,052, pub. 2-16-65. Cl. 29
Penguin Associates, Inc., Malvern, Pa. 789,176. Cl. 9.
Pennsalt Chemicals Corp.: *See*—
  Pennsylvania Salt Mfg. Co.
  Pennsylvania Salt Mfg. Co., The.
Pennsylvania Salt Mfg. Co., to Pennsalt Chemicals Corp., Philadelphia, Pa. 197,233, ren. 5-4-65. Cl. 52.
Pennsylvania Salt Mfg. Co., The, by Pennsalt Chemicals Corp., Philadelphia, Pa. 411,978, 12(c) pub. 5-4-65. Cl. 5.
Perlov, Raymond, d.b.a. Whitecliff Laboratories Inc., Los Altos, Calif. 789,179. Cl. 13.
Petersen, Kars, Inc.: *See*—
  Holland Industries, Inc.
Pfizer, Chas., & Co., Inc., New York, N.Y. 788,962, pub. 2-16-65. Cl. 18.
Pharmaceutical Manufacturers Association, Washington, D.C. 789,192. Cl. 38.
Pharmacrest, Inc., Dawson, Ga. 675,486, canc. Cl. 18.
Pharmafac, Inc., Austin, Tex. 789,140, pub. 2-16-65. Cl. 51.
Philco Corp., by Philco Corp., Philadelphia, Pa. 413,676, 12(c) pub. 5-4-65. Cl. 14.
Philco Corp., by Philco Corp., Philadelphia, Pa. 413,677, 12(c) pub. 5-4-65. Cl. 16.
Philco Corp., by Philco Corp., Philadelphia, Pa. 413,813, 12(c) pub. 5-4-65. Cl. 26.
Philco Corp., by Philco Corp., Philadelphia, Pa. 413,814, 12(c) pub. 5-4-65. Cl. 30.
Philco Corp., by Philco Corp., Philadelphia, Pa. 413,962, 12(c) pub. 5-4-65. Cl. 13.
Photostat Corp., Providence, R.I. 675,537, canc. Cl. 23.
Pickens, Willis C., Niland, Calif. 675,509, canc. Cl. 18.
Pitman, J. C., & Sons Engineering Corp., Concord, N.H. 789,068, pub. 2-16-65. Cl. 34.
Polymer Corp. Ltd., Sarnia, Ontario, Canada. 788,886, pub. 2-16-65. Cl. 1.
Prairie States Corp., Danville, Ill. 788,946, pub. 2-16-65. Cl. 15.
Premier Industrial Corp., Cleveland, Ohio. 789,066, pub. 2-16-65. Cl. 34.

Premier Mfg. Co.: *See*—
  Weiss, Dewey S.
Protect-A-Mat-Co.: *See*—
  Matheny, W. V.
Providence Metallizing Co., Inc., Providence, R.I. 789,167, pub. 2-16-65. Cl. 106.
Purdy-Ammon Lumber Co., The, Cincinnati, Ohio. 788,926, pub. 2-16-65. Cl. 12.
Quaker Chemical Corp.: *See*—
  Quaker Chemical Products Corp.
Quaker Chemical Products Corp., to Quaker Chemical Corp., Conshohocken, Pa. 415,407, ren. 5-4-65. Cl. 52.
Quality Restaurant Supply: *See*—
  Rod's Food Products.
Queen's-Way, Inc., Skokie, Ill. 789,150, pub. 2-16-65. Cl. 101.
RC Publications, Inc., New York, N.Y. 789,189. Cl. 38.
Radio Corp. of America, New York, N.Y. 412,801, ren. 5-4-65. Cl. 36.
Rahr, Paul, Enterprises, Inc., St. Germain, Wis. 789,238. Cl. 52.
Rainier Plywood Co., Tacoma, Wash. 788,913, pub. 2-16-65. Cl. 12.
Ram Enterprises, d.b.a. Boar Equipment Co., Shreveport, La. 789,025, pub. 2-16-65. Cl. 23.
Raybestos-Manhattan, Inc., Manheim, Pa. 789,073, pub. 2-16-65. Cl. 35.
Rayonier Inc., New York, N.Y. 788,900, pub. 2-16-65. Cl. 6.
Recipe Foods, Inc., from Recipe Foods, Inc., Baltimore, Md. 789,129, pub. 12-29-64. Cl. 46.
Red Plastic Co., Inc., City of Industry, Calif. 788,924, pub. 2-16-65. Cl. 12.
Regal Rugs, Inc., North Vernon, Ind. 789,107, pub. 2-16-65. Cl. 42.
Research Specialties Co.: *See*—
  Richards, Wesley J.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 788,953, pub. 2-16-65. Cl. 17.
Rhinopto Co., d.b.a. Rhinopto Co., Dallas, Tex. 675,493, canc. Cl. 18.
Riccar America Co., Anaheim, Calif. 789,033, pub. 2-16-65. Cl. 23.
Richards, Wesley J., d.b.a. Research Specialties Co., Santa Monica, Calif. 789,138, pub. 2-16-65. Cl. 51.
Riker Laboratories, Inc., Los Angeles, Calif. 675,495, canc. Cl. 18.
Rocky Mountain Directory Co., Loveland, Colo. 789,186. Cl. 38.
Rodale Press, Inc., Emmaus, Pa. 789,187-8. Cl. 38.
Rod's Food Products, d.b.a. Quality Restaurant Supply, Los Angeles, Calif. 789,210. Cl. 46.
Roll-Weld Pipe and Tube, Inc., formerly Aluminum Tubing Co., Jacksonville, Fla. 675,419, canc. Cl. 13.
Romaldus Co.: *See*—
  Szpaczynski, Romuadus.
Ronnie Jewelry, Inc., Providence, R.I. 789,045, pub. 2-16-65. Cl. 28.
Rosenberg Bros. & Co., Rochester, to Fashion Park, Inc. New York, N.Y. 195,340, ren. 5-4-65. Cl. 39
Rotolite Corp., Stirling, N.J. 789,039, pub. 2-16-65. Cl. 26.
Royal McBee Corp., New York, N.Y. 789,035, pub. 2-16-65. Cl. 23.
Royce Hosiery Mills, Inc., New York, N.Y. 675,616, canc. Cl. 39.
Ruberoid Co., The: *See*—
  American Asphalt Roof Corp.
Rustic Shop, The: *See*—
  Gilfry, Kenneth R.
Sackett, A. J., & Sons Co., The, Baltimore, Md. 789,022, pub. 2-16-65. Cl. 23.
St. Lawrence Mfg. Co., Inc., Giffard, Quebec, Canada. 788,991, pub. 2-16-65. Cl. 22.
Sav-A-Coin, Inc., Philadelphia, Pa. 789,151, pub. 2-16-65. Cl. 101.
Schenley Distillers, Inc.: *See*—
  Schenley Industries, Inc.
Schenley Distillers, Inc., d.b.a. Edward Archer Co., New York, N.Y. 789,217. Cl. 49.
Schenley Industries. Inc., from Schenley Distillers, Inc., New York, N.Y. 789,186, pub. 2-16-65. Cl. 49.
Schertz Umbrellas, Inc., New York, N.Y. 789,091, pub. 2-16-65. Cl. 41.
Schou, H., A/S, Gentofte, Denmark. 675,583, canc. Cl. 34.
Schreiber, A. H., Co.: *See*—
  Schreiber, A. H., Co., Inc.
Schreiber, A. H., Co., Inc., to A. H. Schreiber Co. of New York, N.Y., to A. H. Schreiber Co., Inc., New York, N.Y. 414,409, ren. 5-4-65. Cl. 39.
Scott Aviation Corp., Lancaster, N.Y. 789,024, pub. 2-16-65. Cl. 23.
Scott Chemical Corp., Tujunga, Calif. 788,947, pub. 2-16-65. Cl. 15.
Semlac Corp., Houston, Tex. 788,967, pub. 2-16-65. Cl. 19.
7 Steers, Inc., Atlanta, Ga. 789,144, pub. 2-16-65. Cl. 100.
Shawnee Pottery Co., Zanesville, Ohio. 675,430, canc. Cl. 13.
Shell Oil Co.: *See*—
  Shell Union Oil Corp.
Shell Union Oil Corp., San Francisco, Calif., to Shell Oil Co., New York. N.Y. 411,371, ren. 5-4-65. Cl. 6.
Shingle, L. H., Co.: *See*—
  Graton & Knight Co.
Siemens & Halske Aktiengesellschaft, Munich, Germany. 788,962, pub. 2-16-65. Cl. 21.
Sigma Instruments, Inc., South Braintree, Mass. 788,972, pub. 2-16-65. Multiple Class (Classes 21 and 26).
Signet Corp., The, Chicago, Ill. 675,474, canc. Cl. 18.
Sims Castings Corp., Syracuse, N.Y. 788,939, pub. 2-16-65. Cl. 14.
Sims, Ransomes & Jefferies Ltd., Ipswich, Suffolk, England. 788,977, pub. 2-16-65. Cl. 21.
Sineri, J. P., Co.: *See*—
  Sineri, Joseph P.
Sineri, Joseph P., d.b.a. J. P. Sineri Co., Alliance, Ohio. 789,236. Cl. 52.
Slick Industrial Co., d.b.a. Illinois Shade Division of Slick Industrial Co., Chicago Heights, Ill. 789,063, pub. 2-16-65. Cl. 32.
Smith, Miller & Patch, Inc.: *See*—
  Miller, E. S., Laboratories, Inc.
Snac'N Crust, Inc., Kalamazoo, Mich. 675,657, canc. Cl. 46.
Societe Anonyme Des Liqueurs Combier, Paris, France. 789,215. Cl. 49.
Solar Aircraft Co., San Diego, Calif., to United-Carr Inc., Boston, Mass. 412,886, ren. 5-4-65. Cl. 13.
Sonneborn, L., Sons, Inc., by Witco Chemical Co., Inc., New York, N.Y. 411,488, 12(c) pub. 5-4-65. Cl. 6.
Sonneborn, L., Sons, Inc., by Witco Chemical Co., Inc., New York, N.Y. 413,257, 12(c) pub. 5-4-65. Cl. 6.
Sossner Steel Stamps, Inc., Long Island City, N.Y. 789,082, pub. 2-16-65. Cl. 23.
South Eastern Cordage: *See*—
  Moss, Theron V.
Southern Discount Co., Atlanta, Ga. 789,243. Cl. 102.
Southern States Cooperative Inc., Richmond, Va. 789,084, pub. 2-16-65. Cl. 38.
Southwest Machinery: *See*—
  Alsip, John H.
South-Western Broom Mfg. Co., The, Evansville, Ind., by D. W. Swindle, d.b.a. D. W. Swindle & Sons Co., Nashville, Tenn. 197,896, 12(c) pub. 5-4-65. Cl. 29.
Sparkler Mfg. Co., Conroe, Tex. 789,053, pub. 2-16-65. Cl. 31.
Spartan Shipbuilding Corp., New York, N.Y. 675,513, canc. Cl. 19.
Spaulding Bakeries Inc., Binghamton, N.Y. 789,211. Cl. 46.
Speicher, Daniel E., to The Cyclone Seeder Co., Inc., Urbana, Ind. 45,078, ren. 5-4-65. Cl. 23.
Spin & Win, Inc., Dallas, Tex. 789,149, pub. 2-16-65. Cl. 101.
Sport-Wear Hosiery Mills, Inc., Etowah, Tenn. 675,609, canc. Cl. 39.
Sprague Electric Co., North Adams, Mass. 788,983, pub. 2-16-65. Cl. 21.
Stalfort, John C., & Sons, Inc., Baltimore, Md. 411,346-7, 12(c) pub. 5-4-65. Cl. 16.
Stalfort, John C., & Sons, Inc., Baltimore, Md. 411,536-7, 12(c) pub. 5-4-65. Cl. 4.
Standard Motor Co., Ltd., The, Canley, Coventry, England. 789,069, pub. 2-16-65. Cl. 34.
Standard Oil Co., The, Cleveland, Ohio. 788,944, pub. 2-16-65. Cl. 15.
Star X-Ray Co., Inc., New York, N.Y. 789,119, pub. 2-16-65. Cl. 44.
Starline Structures, Inc., Foxboro, Mass. 789,161, pub. 2-16-65. Cl. 108.
Statesman Insurance Co., The, Indianapolis, Ind. 789,155, pub. 2-16-65. Cl. 102.
Stauffer, Bernard H.: *See*—
  Stauffer, Bonnie H.
Stauffer, Bonnie H., executrix of the last will of Bernard H. Stauffer, deceased, from Bernard H. Stauffer, San Marino, Calif. 789,118, pub. 2-16-65. Cl. 44.
Stauffer Chemical Co., San Francisco, Calif. 675,410, canc. Cl. 6.
Stellenbosch Farmers' Winery Ltd., The, Stellenbosch, Cape Province, South Africa. 789,181-3, pub. 2-16-65. Cl. 47.
Stern, Edward, Inc., New York, N.Y. 675,615, canc. Cl. 39.
Stern, Edward, Inc., New York, N.Y. 789,203. Cl. 39.
Stetson China Co., Inc., Lincoln, Ill. 675,570, canc. Cl. 30.
Steuart, Son & Co., Inc., Baltimore, Md. 788,897, pub. 2-16-65. Cl. 6.
Stevens, J. P., & Co., Inc., New York, N.Y. 789,113, pub. 2-16-65. Cl. 42.
Stewart In-Fra-Red, Inc., Harvard, Ill. 789,121, pub. 2-2-65. Cl. 46.
Storer Broadcasting Co., Miami Beach, Fla. 675,728, canc. Cl. 107.
Stowe-Woodward, Inc., Newton Upper Falls, Mass. 789,000, pub. 2-16-65. Cl. 28.
Straza Industries, El Cajon, Calif. 789,008, pub. 2-16-65. Cl. 23.
Sudsation Shower Co.: *See*—
  Heald, Jerome I.
Sullivan, Carol B., New York, N.Y. 675,744, canc. Cl. 39.
Sun City Pharmaceutical Corp., The, Phoenix, Ariz. 788,961, pub. 2-16-65. Cl. 18.
Sunshine Biscuits, Inc., Long Island City, N.Y., from Peanut Fluf Co., Detroit, Mich. 675,655, canc. Cl. 46.
Swindle, D. W.: *See*—
  South-Western Broom Mfg. Co., The.
Swindle & Sons Co.: *See*—
  South-Western Broom Mfg. Co., The.
Szpaczynski, Romuadus, d.b.a. Romaldus Co., Chicago, Ill. 675,707, canc. Cl. 51.
Tal-Wi-Wi Ranches: *See*—
  Arizona Orchard Co.
Tatelbame, Joyce, Inc., d.b.a. Oral Hygiene Industries, Chicago, Ill. 789,050, pub. 2-16-65. Cl. 29.
Teen-Mall, Inc., Chicago, Ill. 789.242. Cl. 101.
Texas Refinery Corp., Fort Worth, Tex. 789,141, pub. 2-16-65. Cl. 52.
Textron Inc., Providence, R.I. 789,041-2, pub. 2-16-65. Cl. 28.
Thompson Ramo Wooldridge Inc., Cleveland, Ohio. 788,907, pub. 2-16-65. Multiple Class (Classes 9, 21, and 35).
Thompson-Hayward Chemical Co., Kansas City, Kans. 788,950, pub. 2-16-65. Cl. 16.

Thunderbird Mfg. Co., Los Angeles, Calif. 675,548, canc. Cl. 28.

Tinolan Corp. of America, The, Toledo, Ohio. 789,143, pub. 2–16–65. Cl. 52.

Tippy Taster Corp. of America, New York, N.Y. 789,043, pub. 2–16–65. Cl. 28.

Tomah Engineering Corp., Milwaukee, Wis. 675,411, canc. Cl. 6.

Trask-Ad Press, Inc., New York, N.Y. 413,657, ren. 5–4–65. Cl. 38.

Trojan Products & Mfg. Co., to The Diversey Corp., Chicago, Ill. 415,615, ren. 5–4–65. Cl. 52.

Trophy Industries, Inc.: *See*—
  Trophy Mfg. Corp.

Trophy Mfg. Corp., Glendale, from Trophy Industries, Inc., Los Angeles. Calif. 788,915–16. pub 2–16–65. Cl. 12.

Tyler, Brooks & Co., Inc., Miami, Fla. 675,489, canc. Cl. 18.

U.S.A.C. Transport, Inc., Detroit, Mich. 789,164, pub. 2–16–65. Cl. 105.

Ulmann, Bernhard, & Co., by Indian Head Mills, Inc., New York, N.Y. 44,686, 12(c) pub. 5–4–65. Cl. 43.

Uniflow Mfg. Co., Erie, Pa. 789,184. Cl. 31.

Union Carbide Corp., New York, N.Y. 788,887, pub. 2–16–65. Cl. 1.

Union Carbide Corp., New York, N.Y. 788,903, pub. 2–16–65. Cl. 6.

Union Tank Car Co., Chicago, Ill. 789,054, pub. 2–16–65. Cl. 31.

United Benefit Life Insurance Co., Omaha, Nebr. 789,152, pub. 2–16–65. Cl. 102.

United Hosiery Mills Corp., Chattanooga, Tenn., to Buster Brown Textiles, Inc., Wilmington, Del. 413,132, ren. 5–4–65. Cl. 39.

United-Carr Inc.: *See*—
  Solar Aircraft Co.

United-Greenfield Corp., Northbrook, Ill. 789,034, pub. 2–16–65. Cl. 23.

United States Mineral Products Co., from United States Mineral Wool Co., Stanhope, N.J. 788,921–2, pub. 2–9–65. Cl. 12.

United States Mineral Wool Co.: *See*—
  United States Mineral Products Co.

U.S. Products Co., Phoenix, Ariz. 788,938, pub. 2–16–65. Cl. 13.

United States Rubber Co., New York, N.Y. 788,898, pub. 2–16–65. Cl. 6.

United States Steel Corp., Pittsburgh, Pa. 675,399, canc. Cl. 2.

Upjohn Co., The, Kalamazoo, Mich. 788,996, pub. 2–16–65. Cl. 28.

Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 416,328, ren. 5–4–65. Cl. 18.

Valentine, J. W., Co., Inc., New York, N.Y. 789,099–100, pub. 2–16–65. Cl. 42.

Vann Industries, Inc., Clinton, N.C. 789,019, pub. 2–16–65. Cl. 28.

Varian Associates, Palo Alto, Calif. 788,986, pub. 2–16–65. Cl. 21.

Vaughan's Seed Co., Chicago, Ill. 789,172–3. Cl. 1.

Velsicol Chemical Corp., Chattanooga, Tenn. 788,899, pub. 2–16–65. Cl. 6.

Viking Corp., Minneapolis, Minn. 789,020, pub. 2–16–65. Cl. 23.

Viking Tool Co., The, Shelton, Conn. 789,002–3, pub. 2–16–65. Cl. 23.

Visaids: *See*—
  Zaccardi, Michael J.

Vita & Plus Corp., Madison, Wis. 675,512, canc. Cl. 18.

Ward, Arthur T., Jr.: *See*—
  National Paving and Contracting Co., The.

Water Refining Co., Inc., Middletown, Ohio. 789,058–9, pub. 2–16–65. Cl. 31.

Webb, Jervis B., Co., Detroit, Mich. 789,021, pub. 2–16–65. Cl. 23.

Wedding Embassy, Inc., The, by Embassy Publishing Co., Inc., New York, N.Y. 340,403, 12(c) pub. 5–4–65. Cl. 38.

Weiss, Dewey S., d.b.a. Premier Mfg. Co., Portland, Oreg. 675,458, canc. Cl. 14.

Werner & Mertz, G.m.b.H., Mainz, Germany. 788,892, pub. 2–16–65. Multiple Class (Classes 4, 5, 6, 29, and 59).

White Rock Corp.: *See*—
  White Rock Mineral Spring Co., The.

White Rock Mineral Spring Co., The, Waukesha, Wis., to White Rock Corp., Brooklyn, N.Y. 45,543, ren. 5–4–65. Cl. 45.

White Stores, Inc., Wichita Falls, Tex. 788,987, pub. 2–16–65. Cl. 22.

Whitecliff Laboratories Inc.: *See*—
  Perlov, Raymond.

Wild Goose Club, The, Washington, D.C. 675,730, canc. Cl. 200.

Wile, Julius, Sons & Co., Inc., New York, N.Y. 789,218. Cl. 49.

Witco Chemical Co., Inc.: *See*—
  Sonneborn, L., Sons, Inc.

Wool Processes Ltd., Bradford, to Emu Wools Ltd., London, England. 414,217, ren. 5–4–65. Cl. 43.

Wright Engineering Co., Inc., Pasadena, Calif. 789,148, pub. 2–16–65. Cl. 101.

Wyandotte Chemicals Corp., Wyandotte, Mich. 412,708, ren. 5–4–65. Cl. 52.

"X" Laboratories, Inc., New York, N.Y. 788,951, pub. 9–27–64. Cl. 16.

Yale & Towne, Inc., New York, N.Y. 788,936, pub. 2–16–65. Cl. 13.

Zaccardi, Michael J., d.b.a. Visaids, Oak Park, Ill. 675,677, canc. Cl. 50.

Zados Laboratories: *See*—
  Norris, Ezra M.

Zamboni, Frank J., & Co., Paramount, Calif. 789,009, pub. 2–16–65. Cl. 23.

Zell Products Corp., The, Norwalk, Conn. 675,594, canc. Cl. 37.

U.S. GOVERNMENT PRINTING OFFICE : O—1965

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

May 11, 1965 Volume 814 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of March 1965

Examiner affirmed	291
Examiner affirmed in part	54
Examiner reversed	95
Total	440

Decisions of the Commissioner of Patents

The 1964 Edition of the Decisions of the Commissioner of Patents has been released from the printer and is available from the Superintendent of Documents, Government Printing Office, Washington, D. C., 20402 ________________ Price $4.50

Reminder—Automatic Furnishing of References

Letters authorizing automatic furnishing of references are not honored if received *after* the prosecution has been closed by:

Final Rejection
Allowance (or Patenting)
Ex Parte Quayle Action
Abandonment

Effective May 17, 1965, such letters will not be returned.

R. A. WAHL,
Superintendent, Patent Examining Corps.

Concur:
C. A. KALK,
Director of Administration.
April 16, 1965.

International Convention for the Protection of Industrial Property

Adherence of Mauritania to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of the Islamic Republic of Mauritania to the Convention of Union of Paris for the Protection of Industrial Property, as last revised at Lisbon on October 31, 1958.

The note also confirms the membership of that State in the International Union of Paris for the Protection of Industrial Property.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.
Apr. 7, 1965.

International Convention for the Protection of Industrial Property

Adherence of South Africa to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 17, 1965, of the Republic of South Africa to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.
Apr. 7, 1965.

International Convention for the Protection of Industrial Property

Adherence of Yugoslavia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of Yugoslavia to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.
Apr. 7, 1965.

Notice of Tentative Recordation of a Trade Name

[T.D. 56394]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., April 14, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946 and section 11.16, Customs Regulations:

> "FANON-MASCO," the trade name used by Fanon Electronic Industries, Inc., a corporation organized under the laws of the State of New York, located and doing business at 439 Frelinghuysen Avenue, Newark, New Jersey. The trade name is associated with merchandise comprising electronic amplification, communication, recording, reproducing and signaling equipment and components thereof, manufactured in Japan.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after May 14, 1965, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for

New Applications Received During March 1965

Patents	8708
Designs	547
Plant Patents	5
Reissues	19
Total	9279

Issue—May 11, 1965

Patents	1187—No.	3,182,335 to No.	3,183,521, incl.
Designs	49—No.	201,070 to No.	201,118, incl.
Plant Patents	6—No.	2,507 to No.	2,512, incl.
Reissues	3—No.	25,775 to No.	25,777, incl.
Total	1245		

recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after May 14, 1965, of any opposition proceeding.

Until 45 days after May 14, 1965, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

LESTER D. JOHNSON,
Acting Commissioner of Customs.

Disclaimers

2,744,089.—*John R. Caldwell,* Kingsport, Tenn. LINEAR HIGHLY POLYMERIC POLYESTERS FROM P,P′ SULFONYL DIBENZOIC ACID AND PENTAMETHYLENE OR HIGHER GLYCOLS. Patent dated May 1, 1956. Disclaimer filed Feb. 1, 1965, by the assignee, *Eastman Kodak Company.*

Hereby enters this disclaimer to claims 17–28 inclusive of said patent.

2,855,803.—*James Knowles,* Bloomfield Hills, Mich. TWIN TURBINE TRANSMISSION. Patent dated Oct. 14, 1958. Disclaimer filed Jan. 25, 1965, by the inventor; the assignee, *Ford Motor Company,* consenting.

Hereby enters this disclaimer to claims 8 and 13 through 20 of said patent.

2,874,277.—*John Richard Orr,* Merchantville, N.J. SOUND IF GAIN REGULATION. Patent dated Feb. 17, 1959. Disclaimer filed Jan. 22, 1965, by the assignee, *Radio Corporation of America.*

Hereby enters this disclaimer to claims 1 through 6 inclusive of said patent.

3,126,657.—*Eugene Hajos,* Fort Lee, N.J. FOLDING AND STACKING MACHINE FOR ARTICLES OF LINEN. Patent dated Mar. 31, 1964. Disclaimer filed Jan. 28, 1965, by the inventor and assignee, *Premier Laundry, Inc.*

Hereby enter this disclaimer to claims 1, 18 and 19 of said patent.

Patents Available for Licensing or Sale

3.030.878. MECHANICAL PRESSES, PARTICULARLY GANG PRESSES. Th. Kieserling & Albrecht, Solingen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

3,088,361. TURNING MACHINES. Th. Kieserling & Albrecht, Solingen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

3,159,204. WINDOW BLIND WITH VERTICAL SLATS. Andreas Kruell, Neuss, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

3,164,355. SUSPENDING ARRANGEMENT. Quarzlampen Gesellschaft m.b.H., Hanau/Main, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York 17, N.Y.

3,170,741. DEVICE FOR STORING FLAT ARTICLES. James B. Richards, Jr., 8021 Morningside, Wichita, Kans., 67207.

General Electric Company is prepared to grant non-exclusive licenses under the following patent upon reasonable terms (or such other terms as may apply) to domestic manufacturers.

Applications for license may be addressed to: General Electric Company, Attn: Patent Counsel, 1285 Boston Ave., Bldg. 1–B, Bridgeport, Conn., 06602.

3,167,372. INTERCHANGEABLE WIRING DEVICES.

The following patent is granted for exclusive licensing upon reasonable terms to any interested manufacturer by: Alfred Green, 8036 11th Ave. NE., Seattle, Wash., 08115.

3,126,047. MULTIPLE GAS BURNER AND INTERNAL DIVERTER.

Eastman Kodak Company announces that, in accordance with its policy, non-exclusive licenses upon reasonable terms are available to responsible domestic applicants (under the circumstances prevailing at the time) under the following patents.

Applications for license may be addressed to the Director, Patent Department, Eastman Kodak Company, 343 State St., Rochester, N.Y., 14650.

2,944,886. REDUCTION OF SILVER LOSS IN BURNING PHOTOGRAPHIC WASTE.
3,025,779. FILM PROCESSING MACHINE.
3,077,466. POLYESTERS FROM DISULFONYL DICARBOXYLIC ACIDS AND ESTERS.
3,082,407. DEVICE FOR TRANSFERRING DIGITAL DATA FROM A MEDIUM TO A RECORDING DEVICE.
3,086,862. ROLL FILM FOR PHOTOGRAPHIC CAMERAS.
3,096,699. CAMERA LOCKING DEVICE.
3,132,528. INTERMITTENT DRIVE CONTROL DEVICE.
3,138,081. ROLL FILM MAGAZINE.
3,138,084. ROLL FILM MAGAZINE AND CAMERA ADAPTED TO USE SAME.
3,139,825. METHOD FOR PREVENTING SILICON DIOXIDE CONTAMINATION OF LITHOGRAPHIC PRINTING MASTERS.
3,143,053. PHOTOGRAPHIC APPARATUS WITH AUTOMATIC EXPOSURE CONTROL.
3,147,090. DRYER FOR A FILM PROCESSING MACHINE.
3,148,605. FILM METERING MECHANISM.
3,148,607. EXPOSURE CONTROL APPARATUS FOR PHOTOGRAPHIC CAMERAS.
3,153,698. SYSTEM IN FACSIMILE SCANNING FOR CONTROLLING CONTRAST.
3,157,284. DEVICE FOR SELECTING AND SORTING DISCRETE DATA BEARING ELEMENTS.
3,157,425. DEVICE FOR HANDLING A PLURALITY OF INFORMATIONAL MEDIUMS.

Patents Available for Licensing

In accordance with the provision of 10 C.F.R. §§ 81.10–81.12 the U.S. Atomic Energy Commission is prepared to grant nonexclusive, revocable, royalty-free licenses under the following patents.

Applications for licenses should be addressed to the Assistant General Counsel for Patents, U.S. Atomic Energy Commission, Washington, D.C., 20545, indicating the State of incorporation, if a business firm, or citizenship, if an individual.

3,163,915. METHOD OF FABRICATING SURFACE BARRIER DETECTORS.
3,164,019. MASS FLOW MEASURING DEVICE.
3,164,440. GAS-SOLIDS CONTACTING METHOD.
3,164,462. PREPARATION OF THORIUM METAL FROM THE OXIDE.
3,164,718. ION PULSE GENERATOR COMPRISING DEFLECTOR MEANS TO SWEEP AN ION BEAM ACROSS AN APERTURED MEMBER.
3,164,897. METHOD OF BRAZING.
3,165,376. PROCESS FOR SEPARATION AND RECOVERY OF VOLATILE FLUORIDE IMPURITIES FROM URANIUM HEXAFLUORIDE CONTAINING THE SAME.
3,165,377. SEPARATION OF STAINLESS STEEL FROM A NUCLEAR FUEL.
3,165,417. HIGH STRENGTH BERYLLIA ARTICLES.
3,165,422. CERAMIC COATED FUEL PARTICLES.
3,165,427. METHOD OF HEAT TREATING TUNGSTEN WIRE OR RIBBON.
3,165,448. NUCLEAR REACTOR CORE AND FUEL ASSEMBLY.
3,165,475. STRONTIUM COMPOSITION AND PROCESS OF MAKING IT.
3,165,835. APPARATUS FOR CHECKING THE ALIGNMENT OF VERTICAL CHANNELS.
3,165,922. METHOD OF APPLYING LAMB WAVES IN ULTRASONIC TESTING.
3,166,133. SEALING MEANS.
3,166,136. APPARATUS FOR WEIGHING MATERIAL IN A SEALED ENCLOSURE.
3,166,595. N,N-DIFLUOROALKYLAMINES.
3,167,070. RESPIRATOR WITH POSITIVE AIR SEAL.
3,167,447. CARBON BODY TREATMENT.
3,167,482. FUEL ELEMENT.
3,167,654. DOUBLE PULSE RECOGNITION CIRCUIT.

3,167,655. TARGET FOR A NEUTRON GENERATOR CONSISTING OF A COATING OF ONE OF THE LANTHANON ELEMENTS ON A BASE METAL.
3,167,695. LIQUID LEVEL CAPACITANCE PROBE.
3,169,057. SEPARATION OF PLUTONIUM, URANIUM AND FISSION PRODUCTS FROM EACH OTHER.
3,169,117. NUCLEAR REACTOR FUEL PASTE COMPOSITION.
3,169,187. LOW ENERGY BETA RADIATION SYSTEM FOR FLUENT MATERIALS WITH PLURAL SCINTILLATION FIBERS IN HEXAGONAL ARRAY.
3,169,200. THERMOTUNNEL CONVERTER.
3,170,234. JOINTING OF REFRACTORY METALS BY SOLID-STATE DIFFUSION BONDING.
3,170,759. METHOD OF MAKING PLUTONIUM MONOCARBIDE.
3,170,788. URANIUM BASE ALLOY.
3,170,812. METHOD OF VITRIFYING CERAMIC COATINGS.
3,170,824. IRON ALLOY.
3,170,841. PYROTRON THERMONUCLEAR REACTOR AND PROCESS.
3,170,843. PASTE REACTOR.
3,170,844. CONTROL ROD DRIVE MECHANISM.
3,170,846. STEAM GENERATOR.
3,170,847. SELF-MODERATING FUEL ELEMENT.
3,170,884. NAPHTHALENE DERIVATIVE SCINTILLATORS.
3,171,025. LONG STRAIGHT SECTIONS FOR ALTERNATING GRADIENT SYNCHROTRONS.
3,171,037. SEMICONDUCTOR BISTABLE CIRCUIT WITH INTEGRAL GATE.

ACCUMULATIVE NASA PATENT LIST No. 8

In accordance with the provisions of 14 C.F.R. § 1245.200 et seq., and 42 U.S.C. 2457(g) (1958), the National Aeronautics and Space Administration is prepared to grant royalty-free licenses, of the types specified, under the following patents.

Applications for licenses should be addressed to the Administrator, National Aeronautics and Space Administration, Washington, D.C., 20546.

Patents available for exclusive, revocable, royalty-free licensing

2,898,889. MECHANICALLY-LIMITED ELECTRICALLY OPERATED HYDRAULIC VALVE SYSTEM FOR AIRCRAFT CONTROLS.
2,903,307. TWO COMPONENT BEARING.
2,926,123. TEMPERATURE REDUCING COATING FOR METALS SUBJECT TO FLAME EXPOSURE.
2,934,331. APPARATUS FOR MAKING A METAL SLURRY PRODUCT.
2,940,259. ROCKET PROPELLANT INJECTOR.
2,944,316. PROCESS OF CASTING HEAVY SLIPS.
2,945,667. FLEXIBLE SEAL FOR VALVES.
2,956,772. LIQUID-SPRAY COOLING METHOD.
2,971,837. HIGH TEMPERATURE NICKEL-BASE ALLOY.
2,974,925. EXTERNAL LIQUID-SPRAY COOLING OF TURBINE BLADES.
2,984,735. RUNWAY LIGHT.
2,991,671. WIRE GRID FORMING APPARATUS.
2,991,961. JET AIRCRAFT CONFIGURATION.
2,996,212. SELF SUPPORTING SPACE VEHICLE.
2,997,274. TURBO-MACHINE BLADE VIBRATION DAMPER.
3,001,363. SPHERICAL SOLID-PROPELLANT ROCKET MOTOR.
3,001,395. AIR FRAME DRAG BALANCE.
3,001,739. AERIAL CAPSULE EMERGENCY SEPARATION DEVICE.
3,004,735. PARTICLE DETECTION APPARATUS.
3,005,081. HIGH INTENSITY HEAT AND LIGHT UNIT.
3,005,339. WIND TUNNEL AIRSTREAM OSCILLATING APPARATUS.
3,008,229. PROCESS FOR APPLYING A PROTECTIVE COATING FOR SALT BATH BRAZING.
3,010,372. FOLDING APPARATUS.
3,011,760. TRANSPIRATION COOLED TURBINE BLADE MANUFACTURED FROM WIRES.
3,012,400. NOZZLE.
3,012,407. INSULATING STRUCTURE.
3,016,693. ELECTRO-THERMAL ROCKET.
3,016,863. HYDROFOIL.
3,022,672. DIFFERENTIAL PRESSURE CELL.
3,024,659. MAGNETICALLY CENTERED LIQUID COLUMN FLOAT.
3,028,122. LANDING ARRANGEMENT FOR AERIAL VEHICLES.
3,028,126. THREE AXIS CONTROLLER.
3,028,128. REENTRY VEHICLE LEADING EDGE.
3,038,077. INFRARED SCANNER.
3,038,175. SURVIVAL COUCH.
3,041,587. ANGULAR MEASUREMENT SYSTEM.
3,041,924. MOTION PICTURE CAMERA FOR OPTICAL PYROMETRY.
3,045,424. METHOD FOR CONTINUOUS VARIATION OF PROPELLANT FLOW AND THRUST IN PROPULSIVE DEVICES.
3,049,876. ANNULAR ROCKET MOTOR AND NOZZLE CONFIGURATION.
3,053,484. VARIABLE SWEEP WING CONFIGURATION.
3,057,597. MODIFICATION AND IMPROVEMENTS TO COOLED BLADES.
3,059,220. APPARATUS FOR COUPLING A PLURALITY OF UNGROUNDED CIRCUITS TO A GROUNDED CIRCUIT.
3,063,291. HIGH VACUUM CONDENSER TANK FOR ION ROCKET ENGINES.
3,064,928. VARIABLE SWEEP WING AIRCRAFT.
3,067,573. TELESCOPING-SPIKE SUPERSONIC INLET FOR AIRCRAFT ENGINES.
3,068,658. VENTING VAPOR APPARATUS.
3,069,123. INSTRUMENT SUPPORT WITH PRECISE LATERAL ADJUSTMENT.
3,070,330. ATTITUDE AND PROPELLANT FLOW CONTROL SYSTEM AND METHOD.
3,070,349. MULTISTAGE MULTIPLE-REENTRY TURBINE.
3,070,407. AIR BEARING.
3,072,574. GAS LUBRICANT COMPOSITIONS.
D187,350. AIRCRAFT.
D187,351. AIRCRAFT.
D187,352. AIRCRAFT.
D187,353. AIRCRAFT.
D193,454. AIRCRAFT.

Patents available for nonexclusive, revocable, royalty-free licenses

3,076,065. HIGH-SPEED LOW-LEVEL ELECTRICAL STEPPING SWITCH.
3,077,599. COLLAPSIBLE LOOP ANTENNA FOR SPACE VEHICLE.
3,079,113. VEHICLE PARACHUTE AND EQUIPMENT JETTISON SYSTEM.
3,080,711. PENSHAPE EXHAUST NOZZLE FOR SUPERSONIC ENGINE.
3,083,611. MULTI-LOBAR SCAN HORIZON SENSOR.
3,084,421. REINFORCED METALLIC COMPOSITES.
3,085,165. ULTRA-LONG MONOSTABLE MULTIVIBRATOR EMPLOYING BISTABLE SEMICONDUCTOR SWITCH TO ALLOW CHARGING OR TIMING CIRCUIT.
3,087,692. VARIABLE-SPAN AIRCRAFT.
3,088,441. VALVE ACTUATOR.
3,090,212. SANDWICH PANEL CONSTRUCTION.
3,090,580. SPACE AND ATMOSPHERIC RE-ENTRY VEHICLE.
3,093,000. CHECK VALVE ASSEMBLY FOR A PROBE.
3,093,346. SPACE CAPSULE.
3,098,630. ANNULAR SUPERSONIC DECELERATOR OR DROGUE.
3,100,294. TIME-DIVISION MULTIPLEXER.
3,100,990. TWO-PLANE BALANCE.
3,102,948. ELECTRIC ARC WELDING.

3,104,079.	VARIABLE-GEOMETRY WINGED REENTRY VEHICLE.
3,104,082.	VARIABLE SWEEP AIRCRAFT WING.
3,105,515.	PRESSURE REGULATING SYSTEM.
3,106,603.	HIGH VOLTAGE CABLE.
3,108,171.	RADIANT HEATER HAVING FORMED FILAMENTS.
3,110,318.	SLOSH SUPPRESSING DEVICE AND METHOD.
3,112,672.	UMBILICAL SEPARATOR FOR ROCKETS.
3,115,630.	REFLECTOR SPACE SATELLITE.
3,118,100.	ELECTRIC BATTERY AND METHOD OF OPERATING THE SAME.
3,119,232.	ROCKET ENGINE.
3,120,101.	CHANNEL TYPE SHELL CONSTRUCTION FOR ROCKET ENGINE AND THE LIKE.
3,120,361.	LANDING ARRANGEMENT FOR AEROSPACE VEHICLE.
3,120,738.	IGNITION SYSTEM FOR MANOPROPELLANT COMBUSTION DEVICES.
3,121,809.	SPERICALLY SHAPED ROCKET MOTOR.
3,122,000.	APPARATUS FOR TRANSFERRING CRYOGENIC LIQUIDS.
3,122,098.	APPARATUS AND METHOD FOR CONTROL OF A SOLID FUELED ROCKET VEHICLE.
3,122,885.	INJECTOR FOR BIPROPELLANT ROCKET ENGINES.
3,123,248.	EXPULSION BLADDER EQUIPPED STORAGE TANK STRUCTURE.
3,127,157.	MULTIPLE BELLEVILLE SPRING ASSEMBLY.
3,128,389.	VARIABLE FREQUENCY MAGNETIC MULTIVIBRATOR.
3,128,845.	DESPIN WEIGHT RELEASE.
3,130,940.	HEAT SHIELD.
3,132,342.	ANTENNA SYSTEM USING PARASITIC ELEMENTS AND TWO DRIVEN ELEMENTS AT 90° ANGLE FED 180° OUT OF PHASE.
3,132,476.	THRUST VECTOR CONTROL APPARATUS.
3,132,479.	UNIVERSAL RESTRAINER AND JOINT.
3,132,903.	SLIT REGULATED GAS JOURNAL BEARING.
3,135,089.	DECOMPOSITION UNIT.
3,135,090.	ROCKET MOTOR SYSTEM.
3,136,123.	ROCKET ENGINE INJECTOR.
3,137,082.	CHARACTER INDICATING DISPLAY DEVICE.
3,138,837.	METHOD OF MAKING FIBER REINFORCED METALLIC COMPOSITES.
3,139,725.	STEERABLE SOLID PROPELLANT ROCKET MOTOR.
3,140,728.	HIGH PRESSURE FOUR-WAY VALVE.
3,141,340.	GAVITY DEVICE.
3,141,769.	METHOD OF PRODUCING POROUS TUNGSTEN IONIZERS FOR ION ROCKET ENGINES.
3,141,932.	SWITCHING MECHANISM WITH ENERGY STORAGE MEANS.
3,143,321.	FRANGIBLE TUBE ENERGY DISSIPATION.
3,144,219.	MANNED SPACE STATION.
3,144,999.	PROPELLANT BLADE LOADING CONTROL.
3,147,422.	ELECTRONIC MOTOR CONTROL SYSTEM.
3,149,897.	PRINTED CABLE CONNECTOR.
3,150,329.	VARIABLE FREQUENCY MAGNETIC COUPLED MULTIVIBRATOR.
3,150,387.	FOAM GENERATOR.
3,152,344.	LIFE PRESERVER.
3,155,992.	LIFE RAFT.
3,156,090.	ION ROCKET.
3,157,529.	BONDED SOLID LUBRICANT COATING.
3,158,172.	HIGH-TEMPERATURE, HIGH-PRESSURE SPHERICAL SEGMENT VALVE.
3,158,336.	ASSEMBLY FOR RECOVERING A CAPSULE.
3,158,764.	TWO-FLUID MAGNETHYDRODYNAMIC SYSTEM AND METHOD FOR THERMAL-ELECTRIC POWER CONVERSION.
3,159,967.	VARIABLE THRUST ION ENGINE UTILIZING THERMALLY DECOMPOSABLE SOLID FUEL.
3,160,567.	SOLID STATE POWER MOPPING INSTRUMENT.
3,160,825.	TEMPERATURE COMPENSATING MEANS FOR CURITY RESONATOR OF AMPLIFIER.
3,160,950.	METHOD AND APPARATUS FOR SHOCK PROTECTION.
3,162,012.	FORMED METAL RIBBON WRAP.
3,163,935.	MECHANICAL COORDINATE CONVERTER.
3,164,222.	NON-REUSABLE KINETIC ENERGY ABSORBER.
3,164,369.	MULTISTAGE MULTIPLE-REENTRY TURBINE.
3,165,356.	SHOCK ABSORBING SUPPORT AND RESTRAINT MEANS.
D198,249.	SWEPT WING ASSEMBLY.

Terminal Disclaimers Filed in Applications

In view of the increasing number of terminal disclaimers being filed in pending applications under 35 U.S.C. 253, it is considered advisable to point out the practice to be followed in such cases.

Since the claims of pending applications are subject to cancellation, amendment or renumbering, a terminal disclaimer directed to a particular claim or claims will not be accepted; the disclaimer must be of a terminal portion of the term of the entire patent to be granted. The statute does not provide for conditional disclaimers and accordingly, a proposed disclaimer which is made contingent on the allowance of certain claims cannot be accepted. The disclaimer should identify the disclaimant and his interest in the application and should specify the date when the disclaimer is to become effective. An acceptable form for such a disclaimer is as follows:

To the Commissioner of Patents:

Your petitioner, John Doe, residing at __________ in the county of __________ and State of __________ represents that he is (here state exact interest of the disclaimant and, if he is an assignee, set out the liber and page or reel and frame where the assignment is recorded) of application No. __________, filed on the __________ day of __________ 19__ for __________. Your petitioner hereby disclaims all that portion of the term of any patent to be issued on the said application subsequent to __________ 19__.

The disclaimer must be accompanied by the statutory fee.

EDWARD J. BRENNER,
Commissioner.

Apr. 26, 1965.

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF APRIL 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 3-58
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	10-31-62	9-15-58
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	9-23-58
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	5-14-59
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Supervisory Examiner Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-11-62	12-22-58
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	7-20-62	6-24-59
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	1-14-59
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	1- 5-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	4-12-60
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	4-15-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	12-28-59
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	5-16-57
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	1- 5-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner Optics; Radiant Energy; Measuring.	9-10-62	2-11-59
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner Conductors; Switches; Miscellaneous.	1-24-63	3-23-60

Total number of pending applications (excluding Designs)	198,445
Total number of Design applications pending	5,230
Total number of applications awaiting action (excluding Designs)	141,516
Total number of Design applications awaiting action	1,911
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	May 16, 1957

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during May 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1953*

Patents	Numbers 2,440,671 to 2,442,329, inclusive
Plant Patents	Numbers 797 to 798, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, (Acting) Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6- 3-63	12- 1-60
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	3- 1-63	1-23-61
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	10-26-62	9-26-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	2- 5-63	9-29-59
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	2-16-60
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	12-19-62	8-11-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	3- 4-63	6- 7-60
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	4- 8-63	9-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	7-29-63	4-26-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	10-22-59
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-23-63	6-23-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	4-25-63	11-15-60
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner Printing; Typewriters; Stationery; Material Treatment.	7-17-62	12-31-58
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—A. RUEGG, Acting Supervisory Examiner Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	3-22-63	9-27-61
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner Industrial Arts; Household, Personal and Fine Arts.	5-19-64	3-26-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

In re Bernhard W. A. Weber and Hugh D. McLeese

No. 7291. Decided February 18, 1965

[52 CCPA —; 341 F.2d 143; 144 USPQ 495]

1. Patentability—Evidence—Affidavits as to Obviousness—35 U.S.C. 103.

"We find no merit in appellants' contention that the affidavits conclusively establish that their invention would not have been obvious to a person of ordinary skill in the art under 35 U.S.C. 103. That is the ultimate legal question which the court must decide. So far as the affidavits undertake to tell the court the answer to that question, they are but incompetent expressions of opinion. See *In re Chilowsky*, 50 CCPA 806, 306 F.2d 908, 134 USPQ 515. Other assertions in the affidavits, such as the statement by an affiant that pelleting was not obvious to him, are at best no more than evidence to be evaluated along with the other evidence of record, including the prior art."

2. Same—Obviousness—Pelletizing to Eliminate Dusting and Caking.

"We are satisfied from the entire record that the Board did not err in finding that it would be obvious to a person of ordinary skill in the art to pelletize chromic acid materials and use them in plating baths. Certainly pelletizing would be an obvious expedient to reduce dusting * * *. Additionally, we find no reason for disagreement with the Board's conclusion that pelletizing is commonly resorted to in the elimination of various problems, including caking as well as dusting. * * * There seems to be no reason why a person skilled in the art would regard it as unexpected that dry material which was pelletized to prevent dusting, rather than watered for that purpose, would be more free from caking."

3. Same—Evidence—Allegations in Brief Must Be Supported by Evidence of Record.

"Appellants also argue, as an unobvious result, that their pellets dissolve in an aqueous media 'much more quickly' than flake material. However, there is no evidence in the record establishing substantial superiority of pellets in that respect and the absence of such supporting evidence is not overcome by the allegations in the brief."

4. Same—Particular Subject Matter—"Chemical Process and Product."

The refusal of certain claims in an application entitled "Chemical Process and Product," involving the addition of pelletized chromium acid—containing materials to aqueous chromic acid baths, as unpatentable over the prior art, is affirmed.

Appeal from the Patent Office. Serial No. 827,714.

AFFIRMED.

Carl G. Seutter, *Herbert H. Goodman*, for appellant.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, and Rich, Martin, Smith, and Almond, Jr., *Associate Judges*

Martin, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Board of Appeals affirming the Examiner's rejection of claims 1 through 17 of appellants' application Serial No. 827,714, filed July 17, 1959, for Chemical Process and Product.

The application relates to an improved process in the field of applying chromium, chromate conversion coatings, and chromate anodizing coatings, and more particularly to an improved process of adding chemicals to aqueous chromic acid baths. The chemicals, which may be chromic acid or chromic acid-containing materials including additives such as strontium sulfate and potassium silicofluoride, are dusty and toxic, and when they are added to baths from a bag or drum, "dusting" becomes a severe health and corrosion problem. When powdered chromic acid-containing materials are added to a bath, they often settle to the bottom in a mass and do not readily dissolve. Some formulations are more hygroscopic than chromic acid itself and when they cake in their storage container, it somewhat reduces the dusting problem because lumps of material may be added to the bath. The lumps, however, must be physically broken and the bath agitated to dissolve them.

Appellants state that they solve those problems by adding the chromic acid-containing materials to the bath in the form of small compact pellets. It is stated that when pellets containing chromic acid, or chromic acid with additives, are added to water or to replenish a chromic acid bath, they dissolve quickly and there is no dust problem.

Claims 1 and 9, which are representative, read:

> 1. A process for adding chromium to an aqueous chromic acid bath comprising incorporating in the aqueous bath pre-formed chromic acid pellets at least ⅛'' long in the smallest diameter.
>
> 9. A composition of matter for making up and for maintaining chromic acid baths comprising pre-formed chromic acid pellets at least ⅛'' long in the smallest diameter.

The references are:

Willcox, 309,117, December 9, 1884.
Huber, 593,100, November 2, 1897.
Brown, 2,750,334, June 12, 1956.
Harris, 2,905,546, September 22, 1959 (filed December 5, 1957).

Willcox discloses that there are various granular or powdery and pasty substances that have to be massed together or molded into forms in order that they may be better utilized either directly or in manufacture. Among the substances mentioned are coal dust, charcoal dust, coke dust, wood dust, resinous powders, cement materials, artificial stone materials, and mineral, metallic and ore powders.

Huber relates to compressing powdered or granular materials into the form of disks or tablets and discloses a machine for that purpose.

Brown describes chromic acid bath compositions for electrodeposition of chromium.

Harris discloses processes for the chemical upgrading of chromium bearing materials. It states it is advantageous to pelletize mixed reducing agent and chromite material to get more effective reduction in a roasting process and also to decrease the dusting of the material as it is roasted.

The Examiner considered the claims obvious over the prior art, holding them unpatentable over Brown in view of Willcox or Huber. His view was that, it being known to add a chromic acid mixture to acidic chromium solutions as disclosed by Brown, the addition of such material in pellet form would be obvious in view of the teachings of Willcox and Huber because it is well known that pelletizing reduces the dust problem. He referred to Harris as a further showing of the state of the art in its disclosure of the pelletizing of powder containing chromium to reduce dusting.

A first group of affidavits submitted by appellants was also in the record before the Examiner. Those affidavits are by four persons with training and long experience in the chromium plating industry. The affidavits include reference to caking of chromium-containing materials as resulting in chunks being dropped into the tank and causing splashing on workers or their clothes and statements that the materials were also subject to dusting. Pelletizing, the affiants state, decreased the amount of caking and dusting, resulting in greater safety, convenience, and lower cost operations.

The Examiner did not find the affidavits persuasive of patentability. In particular, he considered the advantages which the affiants assert are attained from the invention to be only the obvious result of employing pellets instead of powdered material.

Subsequent to the Examiner's answer, appellants submitted additional affidavits by three of the persons making the first affidavits. The affiants in the later affidavits state in substance that pelleting chromic acid materials and using them in electroplating was not obvious to them and that either they did not believe it was obvious to others in the field or that it "was not obvious."

In affirming, the Board agreed with the Examiner's reasons for rejecting the claims and further stated:

> After a careful consideration of all the arguments, we are of the opinion that it would be obvious to pelletize powdered chromic acid materials to eliminate the problem of dusting. Pelletizing, as such, is a well-known process and is an expedient commonly resorted to in the elimination of various problems including dusting and caking. The cited Harris patent is illustrative of one application of this expedient. Even if it be determined that the references are from nonanalogous art, their disclosures may not be ignored. There would be no invention in the method claimed if it were within the exercise of the skill of the worker in that art to use an expedient of general application from a nonanalogous art. *In re O'Connor*, 34 CCPA 1055; 73 USPQ 433; 1947 CD 389; 603 O.G. 194; 161 F.2d 221.

Appellants urge that they have solved a problem in connection with the addition of chromium-containing materials to electroplating baths which existed since chromium plating started. The affidavits, they contend, "clearly and conclusively establish" that the solution achieved was not one which would have been obvious to a person of ordinary skill in the art under 35 U.S.C. 103. Appellants further state that the Board made no reference to the affidavits "but substituted its own independent appraisal of the problem."

Appellants further urge that the Examiner and Board concentrated on the problem of dusting in finding the prior art to show their invention obvious, whereas the invention achieved the additional result that pelletizing reduced caking. They also urge that their pellets unexpectedly dissolve in aqueous media much more quickly than the prior art flake material.

[1] We find no merit in appellants' contention that the affidavits conclusively establish that their invention would not have been obvious to a person of ordinary skill in the art under 35 U.S.C. 103. That is the ultimate legal question which the court must decide. So far as the affidavits undertake to tell the court the answer to that question, they are but incompetent expressions of opinion. See *In re Chilowsky*, 50 CCPA 806, 306 F.2d 908, 134 USPQ 515. Other assertions in the affidavits, such as the statement by an affiant that pelleting was not obvious to him, are at best no more than evidence to be evaluated along with the other evidence of record, including the prior art.

[2] We are satisfied from the entire record that the Board did not err in finding that it would be obvious to a person of ordinary skill in the art to pelletize chromic acid materials and use them in plating

baths. Certainly pelletizing would be an obvious expedient to reduce dusting, the Harris patent being an example showing the application of that expedient to chromium-containing materials. Additionally, we find no reason for disagreement with the Board's conclusion that pelletizing is commonly resorted to in the elimination of various problems, including caking as well as dusting. Appellants contend that elimination of dusting was not the primary problem they faced because, as stated in the affidavit of one Fahy, dusting could be solved by adding water. However, that affidavit refers to dusting as a problem only with *dry* chromium-containing compounds and it appears that the problem of caking arises from the addition of water to the dry material in powder or flake form to prevent dusting. There seems to be no reason why a person skilled in the art would regard it as unexpected that dry material which was pelletized to prevent dusting, rather than watered for that purpose, would be more free from caking.

[3] Appellants also argue, as an unobvious result, that their pellets dissolve in an aqueous media "much more quickly" than flake material. However, there is no evidence in the record establishing substantial superiority of pellets in that respect and the absence of such supporting evidence is not overcome by the allegations in the brief. *In re Elliott et al.*, 47 CCPA 807, 275 F.2d 484, 125 USPQ 135.

[4] The decision of the Board of Appeals is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

In re Charles Sheer and Samuel Korman

No. 7302. Decided February 11, 1965

[52 CCPA —; 341 F.2d 155; 144 USPQ 434]

1. Patentability—Evidence—Patentability Not Determined On Basis of Undisclosed and Unclaimed Subject Matter.

"Appellants' arguments concerning the importance of 'shock chilling' the ionized vapor immediately upon formation to produce ultra fine powder of 30 to 200 Å size are irrelevant since the disclosure and the appealed claims fail to allude to that technique or result. We are persuaded that the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to one of ordinary skill in this particular field."

2. Same—Particular Subject Matter—"Production of Micro-Sized Metal Particulates."

The refusal of certain claims in an application entitled "Production of Micro-Sized Metal Particulates," as unpatentable over the prior art, is affirmed.

Appeal from the Patent Office. Serial No. 781,803.

AFFIRMED.

Willis B. Rice for appellants; *Charles Sheer pro se.*

Clarence W. Moore (*Raymond E. Martin* of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, and Rich, Martin, Smith, and Almond, Jr., *Associate Judges*

Worley, *Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board which affirmed the Examiner's rejection of claims 1 through 5 and 9 in appellants' application [1] for "Production of Micro-Sized Metal Particulates."

---

[1] Serial No. 781,803, filed December 19, 1958.

Appellants' application involves a process of converting metal to a finely divided form. The metal in its original form is utilized as the anode of a "high erosion arc," termed a "hierarc." When a sufficiently high current density is established between the metal anode and a cathode material, a "hierarc" forms, vaporizing the metal anode, and the vapor is projected from the anode as a high speed ionized jet (tail flame) several feet in length. As the material in the tail flame loses its energy by radiation, the ionized vapor rapidly cools and condenses to form minute, discrete particles, called "fume," which are subsequently collected. The arc may be established in an inert atmosphere or vacuum to assist cooling of the vapor in the tail flame. The process is reflected in claim 4:

> 4. The process of converting metals to fume form which comprises maintaining a high erosion arc with such materials as anode and with a cathode in an inert atmosphere and cooling the resultant vapors and separating out the resultant fume.

The references relied on are:

Sheer et al., 2,616,842, November 4, 1952.

Torikai (Great Britain), 441,921, January 27, 1936.

Sheer et al. disclose a process for producing a refractory material, such as silica, in finely divided form by vaporizing an anode of the material, utilizing a high erosion arc. The vaporized material is emitted from that electrode in the form of a high velocity tail flame. The vapor is quickly cooled and condenses, forming finely divided particles of silica fume. Sheer et al. describe the high erosion arc as "an entirely different electrical phenomena from the common arc." It is described as coming into being as a sudden transition from the common arc when current densities at the anode face are employed which exceed a critical value. The higher current density results in a higher temperature at a part of the anode known as the crater, yielding a sharp increase in the rate of erosion or vaporization of the electrode. The temperature of the common arc is said to be insufficient "to cause more than a negligible vaporization of the anode."

Torikai discloses a method of manufacturing fine powders of various metals or metal oxides. Two metallic electrodes are placed in a chamber in which air or an inert gas is maintained at sub-atmospheric pressures. The striking of an arc between the electrodes results in formation of finely divided powder which settles in the electrode chamber or may be collected in a second condensing chamber. As stated by Torikai, "It is well known that when electric discharge takes place between electrical conductors the molecules of electrode material become disintegrated owing to ionization and serve as a current carrier." Further on, Torikai says "The particles vaporized from the electrodes then produce a powder * * *."

The Examiner rejected claims 1–5 and 9 as unpatentable over Torikai in view of Sheer et al. He recognized that Torikai does not disclose the use of a "high erosion arc," but instead apparently uses a common arc to form the finely divided metal powder. Nevertheless, he was of the opinion that it would be obvious to one of ordinary skill in the art to utilize the high erosion arc of Sheer et al. in place of the specific arc used by Torikai, particularly since Sheer et al. make it clear that a high erosion arc results in a much higher temperature and a concomitant faster electrode vaporization. The Board agreed.

In our analysis of the record in light of appellants' contentions, we find nothing which demonstrates that the Examiner and Board erred in rejecting the claims. We subscribe to the view that the worker in this art would have no difficulty in recognizing the efficacy of using the high erosion arc of Sheer et al. in the process of Torikai.

[1] Appellants' arguments concerning the importance of "shock chilling" the ionized vapor immediately upon formation to produce ultra fine powder of 30 to 200 Å[2] size are irrelevant since the disclosure and the appealed claims fail to allude to that technique or result. We are persuaded that the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to one of ordinary skill in this particular field.

[2] The decision is affirmed.

AFFIRMED.

---

[2] We note that Sheer et al. obtain silica fume of 100–1000 Å. size. 1 Å.$=1\times10^{-8}$ centimeter.

U.S. Court of Customs and Patent Appeals

IN RE LU CELIA WISE

No. 7294. Decided February 4, 1965

[52 CCPA —; 340 F.2d 982; 144 USPQ 354]

1. DESIGN—PATENTABILITY—OBVIOUSNESS.

"Appellant argues that her design is patentable over the cited art inasmuch as none of the references disclose an object within a *hollow teardrop shape.* * * *, both Stonberg and King disclose display devices inside of hollow transparent containers. Certainly they clearly teach that such devices could be used in containers of any suitable shape. Such enclosure of a device in a teardrop configuration would manifestly be obvious to one of ordinary skill in the subject art."

2. SAME—SAME—SIMULATION OF TEARDROP.

In connection with the rejection of appellant's claimed design as a mere simulation of the long known and conventionalized teardrop, and the showing in appellant's drawing, in dotted lines, of a planar member, and with reference to Section 1503.02 MPEP, *Held* that appellant "stated in her specification that 'The dominant features of the design are those shown in full lines,' and considered the portion shown on dotted lines as, in the language of the cited section of the Manual, 'an immaterial part of the design' "; and *Held* that "As did the Board, we so regard the 'dotted line' phase of this case."

3. SAME—SAME—PARTICULAR SUBJECT MATTER—ADVERTISING NOVELTY.

The decision of the Board of Appeals, refusing appellant's application for a design patent on an advertising novelty, is affirmed.

APPEAL from the Patent Office. Serial No. 61,338.

AFFIRMED.

Harvey B. Jacobson, *Robert C. Garber*, for appellant.

Clarence W. Moore (*S. Wm. Cochran* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

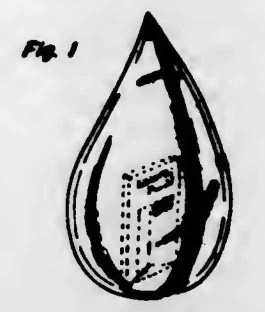
Lu Celia Wise appeals from a decision of the Board of Appeals affirming the action of the Examiner in rejecting her application[1] for a design patent on an advertising novelty.

The claim reads:

> The ornamental design for a promotional advertising souvenir as shown and described.

The drawing shows the following configuration:

Fig. 1



The article is hollow with transparent walls, within which appears a planar member shown in dotted lines, on which advertising matter is to be placed.

The specification recites: "The dominant features of the design are those shown in full lines."

The references relied on below are:

Stonberg, D174,102, February 22, 1955.
King, D181,153, October 8, 1957.
Fueloil and Oil Heat, July 1958, page 6, top left configuration.

Stonberg shows a pendant with a spherical lower portion having transparent walls. The lower portion of the article appears to contain a liquid. A planar cross-shaped member is mounted within the article.

King shows a globe with transparent walls having mounted therein an object on which advertising matter appears. The design is described as "an illuminable advertising display."

Fueloil and Oil Heat discloses a representation of a conventionalized teardrop.

The Board sustained the rejection on two distinct grounds. It held the claim unpatentable over the cited prior art under 35 U.S.C. 103. It held that appellant's claimed design was a mere simulation of the long known and conventionalized teardrop.

Appellant's design was considered obvious over the Fueloil teardrop in view of Stonberg or King. The Board took note of appellant's argument that the mounted member outlined in dotted lines within the article must be given consideration in determining the over-all appearance of the design, considering that the advertising device was disclaimed by the "showing in dotted lines." The Board stated:

> This dotted line showing merely indicates that it is wholly immaterial what character of device is included within the transparent article * * *. It could well be a cross, as in Stonberg, advertising faith, or a device as in King, advertising something else.
>
> As is well known and as shown by these two subsidiary references, it is common practice to incorporate articles of various kinds to be viewed on the interior of transparent walled articles of manufacture. The particular utility, whether in advertising one thing or another, has nothing to do with any possible patentability of the article based on its novel dominant appearance.
>
> Thus, the concept of making a transparent conventionalized teardrop as an article of manufacture is clearly without patentable merit in view of the art as applied above.

[1] Appellant argues that her design is patentable over the cited art inasmuch as none of the references disclose an object within a *hollow teardrop shape*. As hereinabove noted, both Stonberg and

---

[1] Serial No. 61,338 filed July 18, 1960.

King disclose display devices inside of hollow transparent containers. Certainly they clearly teach that such devices could be used in containers of any suitable shape. Such enclosure of a device in a teardrop configuration would manifestly be obvious to one of ordinary skill in the subject art.

As noted, the Board affirmed the Examiner's rejection on the further ground that the claimed design is a mere simulation of that which is already well known.

Appellant concedes that she "has utilized a teardrop shape in creating her design" but asserts that she has gone a step forward by adding an advertising object within the hollow interior of the teardrop shape and that the fact that the interior object is shown in broken lines does not mean that it has no significance in determining design patentability.

As pointed out by the Solicitor, the only feature of appellant's disclosed design other than the teardrop shape of the container is the interior object shown in dotted lines. The Solicitor cites section 1503.02 of the Manual of Patent Examining Procedure which, in material substance, provides that a dotted or broken line showing is employed to show that such portions of the article claimed are not important and that such showing should be explained in the specification by "a statement that the dominant features of the design reside in the portions shown in full lines."

[2] As previously noted, appellant, evidently cognizant of the efficacy of this rule, stated in her specification that "The dominant features of the design are those shown in full lines," and considered the portion shown in dotted lines as, in the language of the cited section of the Manual, "an immaterial part of the design." As did the Board, we so regard the "dotted line" phase of this case.

[3] For the reasons stated, we agree with the Board that appellant's claimed design patent is obvious in view of the cited art and that it is a "mere simulation of that which has long been known as conventional."

The decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,500,715, M. S. Steiner, SCOURING PADS, **filed** Aug. 2, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1378, *Triangle Manufacturing Company* v. *Kurly Kate Corporation*. Consent judgment; defendant enjoined Nov. 10, 1964. **Same, filed** Feb. 27, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c360, *ACS Industries* v. *Triangle Manufacturing Company*. Consent judgment; patent held valid and infringed by plaintiff; plaintiff enjoined Nov. 10, 1964.

2,627,014, J. E. Kolb, RADIANT HEATER; **2,824,944**, G. E. Ammerman, ELECTRIC HEATING APPARATUS; **2,930,881**, same, HEATER MOUNTING MEANS; **2,973,428**, Ammerman and Errol, MAGNETICALLY SUPPORTED HEATER ASSEMBLY; **2,977,454**, J. F. Volker, ELECTRIC IMMERSION HEATER; **3,072,775**, Ammerman and Benko, ELECTRIC HEATER ASSEMBLY AND METHOD; **3,111,572**, L. D. Drugmand, ELECTRIC IMMERSION HEATER ASSEMBLY, **filed** Nov. 27, 1964, D.C. Md. (Baltimore), Doc. 15997, *Edwin L. Wiegand Company, Incorporated* v. *Electro-Therm, Incorporated et al.*

2,656,508, W. H. Coulter, MEANS FOR COUNTING PARTICLES SUSPENDED IN A FLUID; **2,869,078**, same, FLUID METERING APPARATUS; **2,985,830**, W. H. Coulter et al., SCANNER ELEMENT FOR PARTICLE ANALYZERS, **filed** Nov. 11, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1032, *Coulter Electronics, Inc.* v. *Particle Data Laboratories, Inc.*

2,668,065, C. A. Baresch, ACTIVATOR CONTROL, **filed** Apr. 23, 1964, D.C., S.D. Tex. (Houston), Doc. 64–H–203, *Morse Boulger, Inc. et al.* v. *Consolidated Engineering Co., Inc.* Final consent judgment; patent held valid and infringed; defendant enjoined Nov. 17, 1964.

2,675,628, C. S. O'Neil, LAUNDRY DRIER, **filed** Nov. 10, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1898, *Hamilton Manufacturing Company* v. *Westinghouse Electric Corporation.*

2,687,464, T. J. Crawford, HIGH-FREQUENCY INDUCTION TUBE WELDING; **2,817,364**, same, WELDING TUBE, **filed** Mar. 5, 1962, D.C., E.D. Pa. (Philadelphia), Doc. 31094, *Thomas J. Crawford et al.* v. *Lock Seam Tube Company.* Stipulation of dismissal with prejudice (notice Nov. 2, 1964).

2,703,772, R. R. Keithly, TRANSFER METHOD FOR MANUFACTURING INFRARED REFLECTING FABRIC, **filed** Nov. 16, 1964, D.C. Del. (Wilmington), Doc. 2939, *Minnesota Mining and Manufacturing Company* v. *Gentex Corporation.*

2,705,492, M. H. Chandler, TEETH PROTECTOR, **filed** Nov. 16, 1964, D.C., S.D. Tex. (Houston), Doc. 64–H–591, *Dr. M. H. Chandler et al.* v. *Stern Dental Laboratory Co., Inc. et al.*

2,719,330(*a*), L. L. Stott, METHOD FOR MAKING POLYAMIDE ROD STOCK, **filed** Feb. 26, 1960, D.C., E.D. Mich. (Detroit), Doc. 19874, *Polymer Processes, Inc.* v. *Cadillac Plastic and Chemical Co., Inc.* Patent held invalid; final judgment for defendant and order dismissing complaint July 30, 1963. **Appealed** C.C.A., 6th Cir., Doc. 15,645, *Polymer Processes, Inc.* v. *Cadillac Plastic and Chemical Co., Inc.* Judgment of District Court affirmed Nov. 2, 1964.

2,719,330(*b*); **2,736,057**, Davis and Koch, EQUIPMENT FOR MAKING ELONGATED SHAPES FROM POLYAMIDES; **2,747,222**, Koch and James, Jr., PRODUCTION OF NYLON ROD; **2,747,224**, same, METHOD AND APPARATUS FOR CONTINUOUSLY FORMING ELONGATED SHAPES FROM THERMOPLASTIC MATERIALS, **filed** Feb. 18, 1960, D.C., E.D. Pa. (Philadelphia), Doc. 27743, *Foster Grant Co., Inc.* v. *Polymer Corp.* Ordered Patent 2,719,330 held invalid; Patent 2,736,057 held not infringed; Patent 2,747,222 held not infringed; and Patent 2,747,224 held invalid as to claims 9, 10, 14 and 15 and held not infringed as to claims 1 to 8, 11 to 13, and 16, Feb. 5, 1965.

2,736,057. (See 2,719,330(*b*).)

2,747,222. (See 2,719,330(*b*).)

2,747,224. (See 2,719,330(*b*).)

2,817,364. (See 2,687,464.)

2,824,944. (See 2,627,014.)

2,869,078. (See 2,656,508.)

2,930,881. (See 2,627,014.)

2,973,428. (See 2,627,014.)

2,977,454. (See 2,627,014.)

2,985,830. (See 2,656,508.)

3,072,775. (See 2,627,014.)

3,111,572. (See 2,627,014.)

REISSUES

MAY 11, 1965

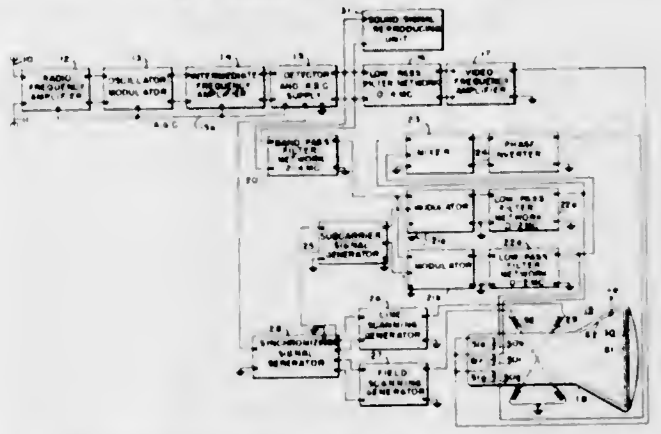
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,775
SCREEN STRUCTURE FOR CONSTANT LUMINANCE COLOR RECEIVER

Bernard D. Loughlin, Huntington, N.Y., assignor to Hazeltine Research, Inc., Chicago, Ill., a corporation of Illinois

Original No. 2,905,749, dated Sept. 22, 1959, Ser. No. 355,637, May 18, 1953. Application for reissue Sept. 19, 1961, Ser. No. 140,167

10 Claims. (Cl. 178—5.4)



9. In a color-television receiver in which there is supplied a received composite video signal, including a component primarily representative of the luminance of a composite color image to be reproduced and at least two components jointly primarily representative of the chrominance of said image and being subject to undesired signal components which tend to undesirably affect the reproduced luminance, color image-reproducing apparatus comprising: color image-reproducing means having a predetermined field-scanning period and responsive to said luminance and chrominance components and including at least three types of image-display light sources in spaced display areas and all of the light sources having light-persistence time constants differing from each other by a minor fraction of said period for developing three color images individually representative of predetermined primary colors of said image and jointly representative of said component image, thereby reducing the resultant luminance response of the receiver to said undesired signal components.

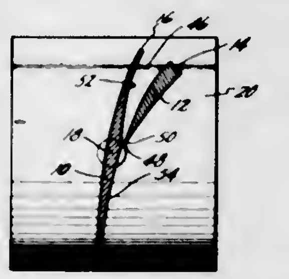
10. In a color-television receiver in which there is supplied a received composite video signal, including a component primarily representative of the luminance of a composite color image to be reproduced and at least two components jointly primarily representative of the chrominance of said image and being subject to undesired signal components which tend to undesirably affect the reproduced luminance, color image-reproducing apparatus comprising: cathode-ray color image-reproducing means having a predetermined field-scanning period and responsive to said luminance and chrominance components and comprising a cathode-ray tube including three types of cathode-ray-responsive fluorescent image-display materials in spaced display areas and all of the fluorescent materials having light-persistence time constants different from each other by less than one-tenth said period for developing three color images individually representative of predetermined primary colors of said image and jointly representative of said composite image, thereby reducing the resultant luminance response of the receiver to said undesired signal components.

25,776
MARINE PROPELLER

George Rosen, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Original No. 3,082,827, dated Mar. 26, 1963, Ser. No. 189,134, Apr. 20, 1962. Application for reissue Aug. 18, 1964, Ser. No. 402,675

25 Claims. (Cl. 170—135.24)



18. In a variable camber, supercavitating marine propeller, an outwardly extending blade having a sharp leading edge and a blunt trailing edge portion, said blade formed of a longitudinal section pivoted on an axis extending longitudinally of the blade and a fixed portion, said fixed portion having a leading edge and a blunt trailing edge portion forming substantially the entire trailing edge portion of said blade and extending from the blade trailing edge to adjacent said axis of said pivoted section.

25,777
METHOD FOR PREPARING ALKALI-METAL BOROHYDRIDES

Friedrich Schubert and Konrad Lang, Leverkusen, Werner Schabacher, Cologne-Mulheim, and Alex Burger, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Original No. 3,077,376, dated Feb. 12, 1963, Ser. No. 753,204, Aug. 5, 1958. Application for reissue Jan. 20, 1964, Ser. No. 348,317

Claims priority, application Germany Aug. 12, 1957

10 Claims. (Cl. 23—14)

9. Process for the production of sodium borohydride which comprises reacting a borosilicate glass selected from the group consisting of alkali metal borate-silicon dioxide borosilicate glass and alkaline earth metal borate-silicon dioxide borosilicate glass with sodium and hydrogen at a temperature between 300 and 600° C. and recovering the sodium borohydride from the reaction mixture.

PLANT PATENTS

GRANTED MAY 11, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,507
AZALEA PLANT

Anthony M. Shammarello, 4590 Monticello Blvd., Cleveland, Ohio

Filed Nov. 5, 1963, Ser. No. 321,709

1 Claim. (Cl. Plt.—57)

A new and distinct variety of azalea plant of the hardy evergreen type, substantially as herein shown and described, characterized particularly as to novelty by the radiant red color of its flowers, by the absence of fading of the flowers when exposed to the sun, by the hardiness of the plant and buds at low temperatures greater than the parent Hino-Crimson, by flowers larger than the parent plant Hno-Crimson, and retaining the good qualities of the plant character of Hino-Crimson.

2,508
AZALEA PLANT

Anthony M. Shammarello, 4590 Monticello Blvd., Cleveland, Ohio

Filed Jan. 28, 1964, Ser. No. 340,839

1 Claim. (Cl. Plt.—55)

A new and distinct variety of azalea plant of the hardy evergreen type, substantially as herein shown and described, characterized particularly as to novelty by the hardiness of the plant and buds at low temperatures greater than the parent Hino-Crimson, by flowers larger than the parent Hino-Crimson, and retaining the bushy dwarf character of Hino-Crimson.

2,509
GLADIOLUS PLANT

Winston Roberts, Boise, Idaho, assignor to Selected Glads, Inc., New Albany, Ind., a corporation of Tennessee

Filed Nov. 6, 1963, Ser. No. 321,986

1 Claim. (Cl. Plt.—85)

The new and distinct variety of gladiolus plant, substantially as herein shown and described, characterized by its beautiful color and texture of blossoms, rugged growth and intense ruffling.

2,510
SUGAR CANE

Leslie M. Weetman and Benjamin A. Bourne, Clewiston, Fla., assignors to United States Sugar Corporation, Clewiston, Fla., a corporation of Delaware

Filed May 24, 1963, Ser. No. 283,113

1 Claim. (Cl. Plt.—89)

The new and distinct variety of sugar cane herein shown and described, identified by the combination of the characteristics enumerated above.

2,511
SUGAR CANE

Leslie M. Weetman and Benjamin A. Bourne, Clewiston, Fla., assignors to United States Sugar Corporation, Clewiston, Fla., a corporation of Delaware

Filed Oct. 22, 1963, Ser. No. 318,132

1 Claim. (Cl. Plt.—89)

The new and distinct variety of sugar cane herein shown and described, identified by the combination of the characteristics enumerated above.

2,512
APPLE TREE

William E. Silva, 408 Water Trough Road, Sebastopol, Calif.

Filed Dec. 3, 1963, Ser. No. 327,854

1 Claim. (Cl. Plt.—34)

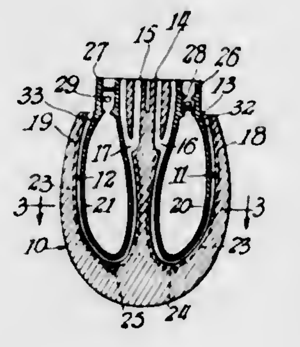
A new and distinct variety of apple tree, substantially as shown and described, particularly characterized as to novelty by the predominant pineapple-like flavor of its golden yellow fruit, by the early maturity season for its fruit, by the persistent pleasing aroma of the fruit as fresh fruit and throughout cooking and canning procedures, and by the relatively high content of sugar and solids in the ripened fruit.

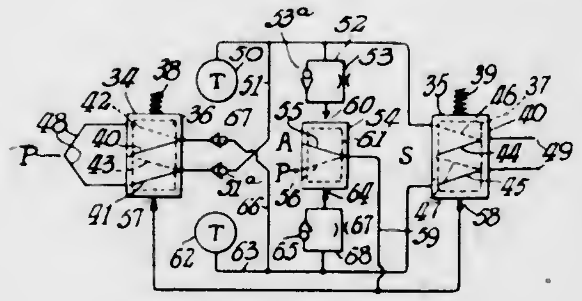
PATENTS

GRANTED MAY 11, 1965

GENERAL AND MECHANICAL

3,182,335
DUAL-CHAMBER ARTIFICIAL HEART
Victor W. Bolie, Ames, Iowa, assignor to Iowa State University Research Foundation, Inc., Ames, Iowa, a corporation of Iowa
Filed Feb. 27, 1963, Ser. No. 261,426
8 Claims. (Cl. 3—1)





1. In an artificial heart,

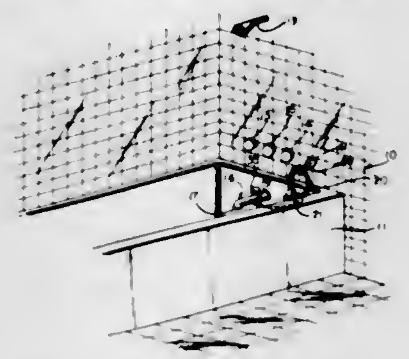
a rigid receptacle adapted to be installed in a body cavity and defining a pair of chambers, said receptacle comprising a generally elliptical body with said chambers being disposed in side-by-side, longitudinally-extending relation,

a flexible bag in each chamber equipped with inlet and outlet check valves, each bag comprising a generally elongated hollow body having a constricted end, the wall of said body at said constricted end being relatively thicker than the wall of the remainder of said body, said valves being mounted in side-by-side relation in said constricted end,

pressure fluid conduit means communicating with each chamber adapted to alternately compress said bags, said conduit means being coupled to each chamber adjacent one end thereof, with flow passages for said pressure fluid in the chamber walls communicating with the other chamber ends, and

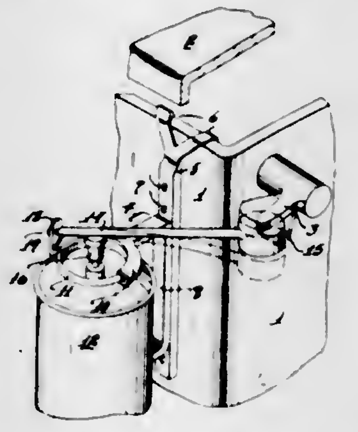
a pneumatic oscillator coupled to said conduit means, said oscillator comprising a pair of pilot-operated, four-way valves, one of said valves being coupled to said pipe means, a source of pressure fluid coupled to other of said valves, a pair of pressure fluid reservoirs coupled to both of said valves, and other conduit means including constriction means coupling said reservoirs to said valve for operating said valves.

3,182,336
TUB SPOUT DIVERTER WITH FIXED AND FLEXIBLE SHOWER HEADS
Juliette E. Greuter, Scarswold, Garth Road, Scarsdale, N.Y.
Filed Apr. 10, 1963, Ser. No. 271,921
4 Claims. (Cl. 4—148)



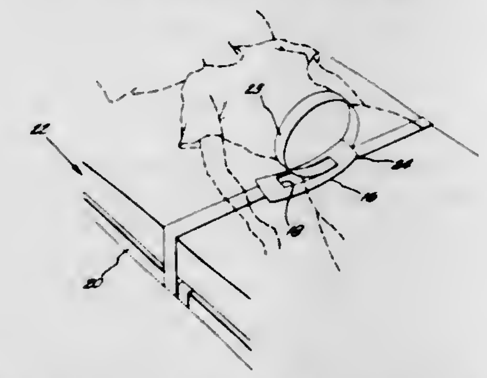
1. The combination with a bath tub and an overhead shower including a common water supply, of a spout for filling the bath tub having a main passage connecting with said common water supply, said spout having a primary outlet and a secondary outlet, a single control means contained in said spout for selectively directing water from said common water supply to said overhead shower, said primary outlet or said secondary outlet, a flexible tube connected at one end to said secondary outlet, and a spray head connected to the other end of said tube, said means for selectively directing water including a valve positioned in a valve chamber in said spout and a control handle on said spout operable to move said ball valve to a position to direct water from said supply to said passage outlet, said secondary outlet, or to close said spout whereupon water will be directed to said overhead shower.

3,182,337
FLUSH TANK ATTACHMENT FOR LEVER OPERATION OF ATOMIZER DEODORANT CANS
Nathaniel W. Price, 193 Main St., White Plains, N.Y.
Filed Mar. 19, 1963, Ser. No. 266,331
1 Claim. (Cl. 4—222)



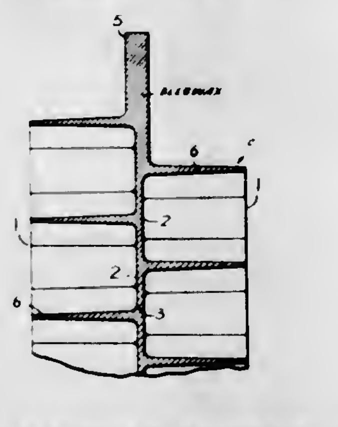
A flush tank attachment for lever operation of the valve of an atomizer deodorant can or the like, consisting of holding means for supporting an atomizer can and adapted for mounting the can upon a flush tank in various adjusted positions, said holding means being a first bracket member adapted to be received by and supported upon a wall of a flush tank adjacent a corner thereof, a second bracket member having a channel adapted to receive the rim of a can for supporting the latter, co-acting interfitting means carried by the two bracket members, consisting of a vertical line of spaced apertures in one bracket member and at least one stud carried by the second bracket member, the second bracket member adapted to snap into said apertures for adjustment of the position of the second bracket member relative to the first bracket member, and enabling the second bracket member to be held by the first bracket member for vertical adjustment thereof, a straight can valve-actuating lever extending angularly across said bracket members, and means carried by the second bracket member for holding one end of said actuating lever, and in such manner that the opposite end of the lever may be positioned in registration with a flush tank operating lever.

3,182,338
RESTRAINING BELT
Barbara N. Shirrod, San Diego, Calif., assignor to J. Thornton Posey, Altadena, Calif.
Filed Nov. 2, 1962, Ser. No. 235,014
6 Claims. (Cl. 5—336)



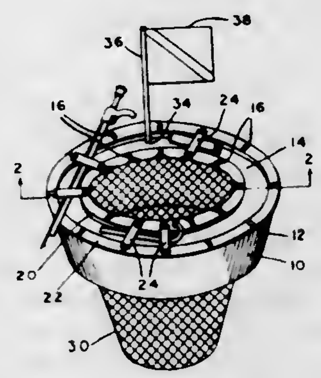
1. A belt for restraining a patient in bed and permitting the patient to roll from side to side, the belt comprising an elongated strap having an elongated slot in its intermediate portion to permit one end of the strap to be disposed through the slot and form a restraining loop for the patient.

3,182,339
ARTIFICIAL HONEYCOMB
Auston Roy Ellis, 4 First Crescent, Fish Hoek, Cape Province, and Hilda Grace Marshall, "Carlisle," Main Road, Kommetje, Cape Province, both of Republic of South Africa
Filed Aug. 8, 1963, Ser. No. 300,866
Claims priority, application Republic of South Africa, Aug. 9, 1960, Ser. No. 3,249/60
4 Claims. (Cl. 6—11)



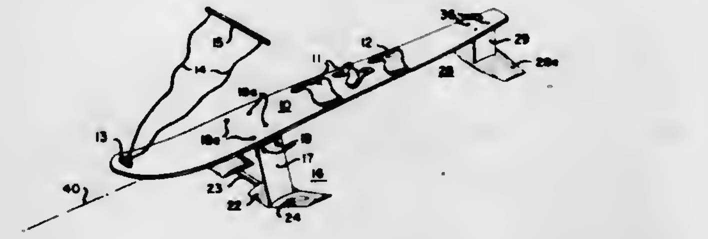
1. An artificial honeycomb acceptable to honey bees comprising a slab entirely of wax, made up of hexagonal cells adjoining one another on all sides of the hexagons in imitation of the essentially complete cells of a natural honeycomb, the longitudinal axes of the cells being transverse to the plane of the face of the slab, the individual cells being closed at the back and open in front and tapering very slightly throughout from the open front towards the back, said tapering of the cells resulting from a complementary tapering of the side walls of the cell, and said side walls tapering by not more than 2°.

3,182,340
FLOAT
Robert Gentile, Woburn, Mass., assignor to Sea-All, Inc., Billerica, Mass., a corporation of Massachusetts
Filed Apr. 9, 1962, Ser. No. 185,982
6 Claims. (Cl. 9—8)



1. A float which comprises a body having a single, substantially centrally disposed opening therethrough, said body comprising a cellular plastic material having a plurality of fastening means spaced about the top surface thereof, some of said fastening means being adjacent to and spaced around said opening to form an inner ring of fastening means, and some of said fastening means being predeterminedly spaced from said inner ring of fastening means to form an outer ring of fastening means, said fastening means of said inner ring and said outer ring being aligned so as to form pairs of directly opposed fastening means, said pairs of directly opposed fastening means being joined together by a brace member embedded in said body, a reinforcing ring embedded in said body adjacent said brace member, said reinforcing ring extending completely around said body, and at least one groove between said inner and outer rings of fastening means.

3,182,341
HYDROFOIL SKIS
Paul F. Rieffle, 234 Institute St., Pittsburgh 10, Pa.
Filed Nov. 30, 1962, Ser. No. 241,259
5 Claims. (Cl. 9—310)



1. A water sports device comprising a water ski, means intermediate the ends of said ski receiving the foot of a user, a hydrofoil member depending from the ski intermediate the foot receiving means and the forward end of said ski, said hydrofoil having two spaced portions generally parallel to the plane of the ski and an angularly upwardly extending portion extending from the outer end of each of said generally parallel portions, said portions parallel to the plane of the ski having inner end surfaces forming a dihedral angle with the bottom of said surfaces, a second hydrofoil adjacent the rearward end of said ski, and tow receiving means on the ski adjacent the forward end.

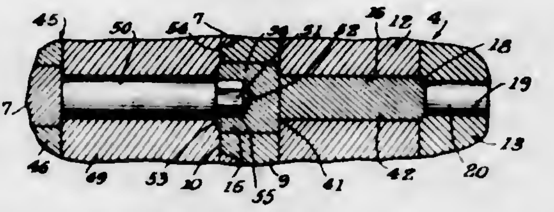
3,182,342

METHOD AND DIE SET FOR FORMING SOCKET HEADS

Robert F. Kolec, Whittier, and Eugene F. Dean, Downey, Calif., assignors to Olympic Screw & Rivet Corporation, Downey, Calif., a corporation of California

Filed Oct. 9, 1961, Ser. No. 143,723

2 Claims. (Cl. 10—7)



1. A three-part die set for use in a two-blow header that comprises:

(*a*) a die having a head-forming cavity and provided with a longitudinal bore to hold a cylindrical metal slug with an end thereof extending through and partly beyond the open end of said cavity,

(*b*) an upsetting punch movable to close said cavity and provided with a socket-forming upset pin to deform the mentioned end of the slug to the shape of a preformed head that partly fills the die cavity, and has a socket in its end, said punch having an end face with a conical seat that directs the flow of the metal of the pre-formed head to form a conical bulge in the outer face thereof; and

(*c*) a finish-forming punch engaged with said die after the upsetting punch is separated from the die and while the slug with its pre-formed head remains in the die,

(*d*) said finish-forming punch having a concave seat in the face thereof directed toward the die cavity to partly flatten said bulge in the outer face of the pre-formed head, and

(*e*) a polygonal socket-forming end of greater size than said socket-forming upset pin fixedly projecting from the finish-forming punch beyond the concave seat therein and which enters and finish-forms the socket in the head and further displaces the metal of the preformed head to fill the die cavity.

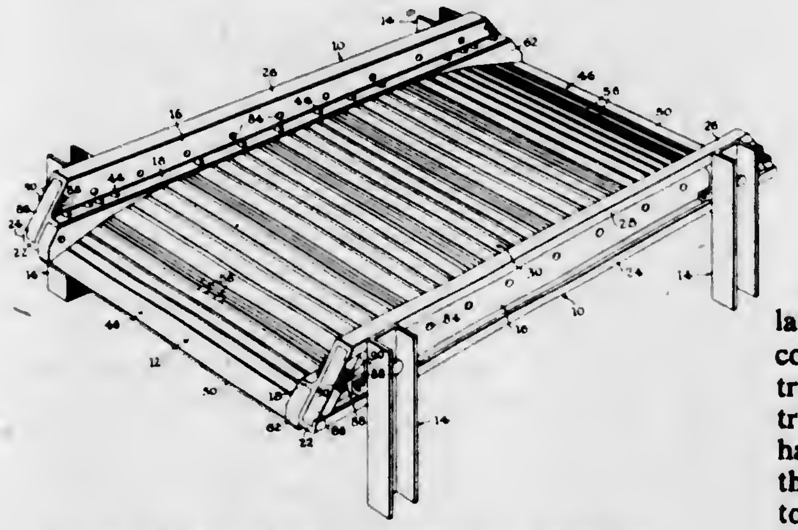
3,182,343

DOCKBOARDS

Clayton E. Larson, Brooklyn, N.Y., assignor to White Metal Rolling & Stamping Corporation, Brooklyn, N.Y., a corporation of New York

Filed June 24, 1960, Ser. No. 38,560

3 Claims. (Cl. 14—72)



1. A dockboard of the type described including:

(A) a deck,

(B) spaced side rails substantially as long as the length of said deck supporting said deck, said side rails each including a web and upper and lower outwardly extending flange portions terminating in downwardly and upwardly extending portions respectively to define an outwardly directed undercut face,

(C) each of said side rails comprising at least two sections,

(D) means for joining the said sections including a plate positioned within said undercut face and fixed to said side rail web, and

(E) a supporting pier carried by said plate.

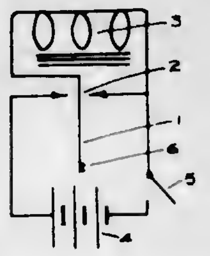
3,182,344

APPARATUS FOR IMPROVING THE WRITING CHARACTERISTICS OF BALL POINT PENS

Richard F. Harvey, Pittsburgh, Pa., assignor to Metaltronics, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 14, 1961, Ser. No. 131,304

2 Claims. (Cl. 15—94)



1. A vibratory apparatus for imparting vibration to the ball pointed ends of pens which comprises an electromagnetic coil and pole piece; a reed having one end fixed and the other movable; said movable end of said reed being arranged with respect to the said pole piece that during the period in which the said coil is energized, the said movable end of the said reed moves towards the pole piece to open a circuit to the coil; means for energizing the said coil by the pressure of a ball pointed pen against the said movable end of the said reed to impart vibration to the said reed at its movable end and to the said ball pointed pen in contact therewith.

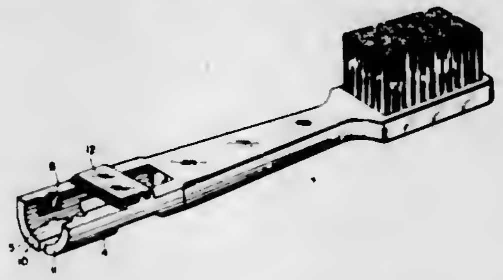
3,182,345

MEANS FOR ATTACHING APPLIANCE HANDLES TO A POWER DRIVE SHANK

Alan D. Smith, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 17, 1963, Ser. No. 281,264

2 Claims. (Cl. 15—176)



1. A toothbrush attachment comprising a handle having laterally extending bristles adjacent one end thereof and a coupling at the other end thereof, said coupling having a trough-shaped recess in a side thereof with an end of the trough opening through the corresponding end of the handle, said trough-shaped recess having an opening through its bottom wall intermediate the ends of said bottom wall, a bridging member secured to the upper free edges of the trough side walls and overlying the opening in the trough bottom wall, and detent means integral with the inner side wall surfaces of the recess between the bridging member and the open end of the trough-shaped recess.

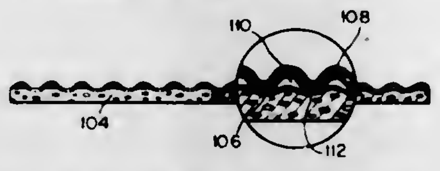
3,182,346

CLEANING ARTICLE AND METHOD OF MANUFACTURE

Adolph A. Winston, Darien, Conn., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

Filed Apr. 29, 1963, Ser. No. 276,585

7 Claims. (Cl. 15—209)



1. A composite scouring article comprising a corrugated metal wool ply; a compressible spongiform backing ply; and an intermediate laminating ply of thermoplastic resin adhesive; the laminating ply having undulations therein complementary to the nadir portions of the corrugations in the metal wool ply and anchoring individual filaments thereof in the composition of the laminating ply at the nadir portions thereof; the backing ply having undulating indented compressed porous portions therein complementary to those of the laminating ply, the composition of the laminating ply being adhered to the compressed undulating portions of the backing ply and occupying the pores at the surface thereof.

3. Process for laminating a compressible spongiform backing ply to a metal wool ply which comprises pressing said metal wool ply into a corrugated form having alternate nadir and crest portions, introducing said backing ply to the corrugated metal wool ply through the intermediation of a molten thermoplastic laminating resin deposited between juxtaposed surface of the backing ply and the metal wool ply, applying on the nadir portions of said corrugated metal wool ply laminating pressure to the juxtaposed plies sufficient to cause the nadir portions of the corrugated ply to transmit laminating pressure through the intermediate molten laminant and produce complementary depressions in the backing ply whereby the laminant ply assumes a pattern substantially complementary to the pattern of the nadir portions of the corrugated metal wool ply and the molten laminant is caused to anchor the filaments in place.

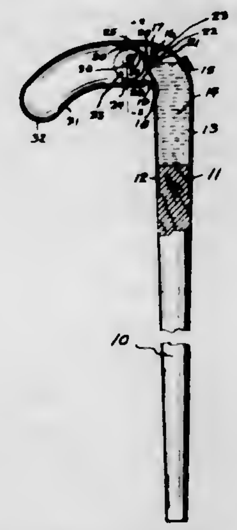
3,182,347

ROLLER APPLICATOR FOR MARKING ANIMALS

William R. Haines, 821 Jackson St., Sioux City, Iowa

Filed June 3, 1963, Ser. No. 285,028

1 Claim. (Cl. 15—575)



An animal marking device comprising a cane member having an elongated cane portion and a hollow handle portion, said cane portion having a hollow portion for containing ink therein, a roll adapted to receive ink thereon from said hollow portion journalled within said cane portion, said roller having a raised cam surface, a wall attached to said hollow portion for confining a portion of said ink, said wall including an opening, a ball received against said opening to normally close said opening, pressure of said cam against said ball being adapted to provide a flow of ink onto said roller, a spring member abutting against said ball, said hollow handle portion having an open end receiving said roller, said handle portion engaging said cane portion and being detachable therefrom, whereby said roller can be exposed for animal marking purposes.

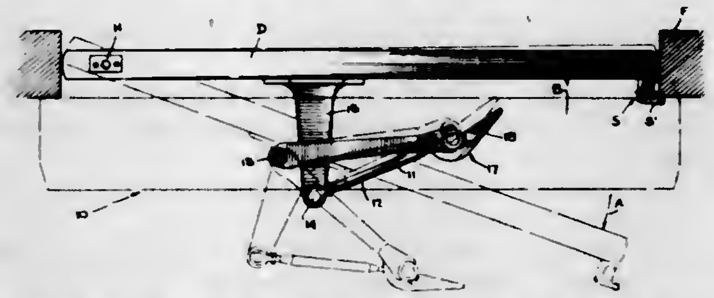
3,182,348

DOOR CONTROL ARM PANIC RELEASE

Raymond Wells, Norristown, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio

Filed May 18, 1962, Ser. No. 195,825

5 Claims. (Cl. 16—49)



1. In a door control having a pair of operating arms for connecting the door to the door frame, a pivot joint secured to one arm, a recess in the end of the other arm for receiving a portion of the outer surface of said pivot joint, a latch member pivotally secured to the other arm and movable between a position locking said pivot joint in said recess in the end of said other arm and a position releasing said pivot joint from said recess in the end of said other arm, and means on said latch member engageable with said door frame for pivoting said latch member to said position releasing said pivot joint from said recess when said door is opened in a direction opposite to the normal direction of operation of said control.

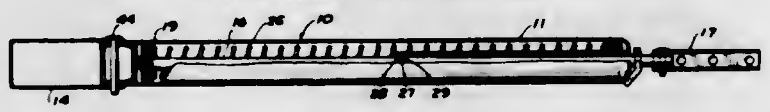
3,182,349

HYDRAULIC DOOR CLOSER

Kaloust P. Sogoian, 23633 Berg Road, Southfield, Mich.

Filed June 13, 1963, Ser. No. 287,641

18 Claims. (Cl. 16—52)



1. A hydraulic door closer comprising

a housing defining a chamber,

a piston rod reciprocably mounted in said housing with one end thereof extending within said chamber and the other end thereof extending externally of said housing,

valve means on the end of said piston rod within said chamber adapted to selectively restrict communication between one side of the valve means and the other,

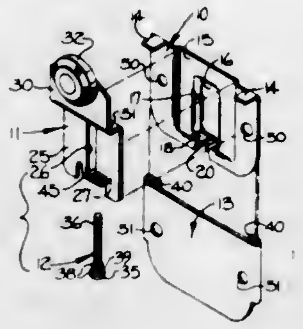
a re-entrant wall extending axially inwardly from the end of said housing through which the piston rod extends and surrounding said rod,

said re-entrant wall having an internal surface with greater cross sectional dimensions than the corresponding cross sectional dimensions of said rod so that a space is provided between the internal surface of said re-entrant wall and said rod,

and sealing means carried by and movable with said rod at a point intermediate the ends of said rod,

said sealing means sealingly engaging said internal surface of said re-entrant wall to provide a seal.

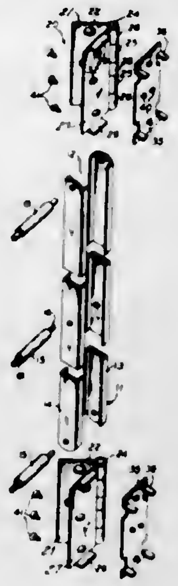
3,182,350
ADJUSTABLE HANGER DEVICE FOR SLIDING DOORS
Alvin E. Witten, 1007 Woodland Drive, Gastonia, N.C.
Filed Mar. 18, 1963, Ser. No. 265,723
3 Claims. (Cl. 16—105)



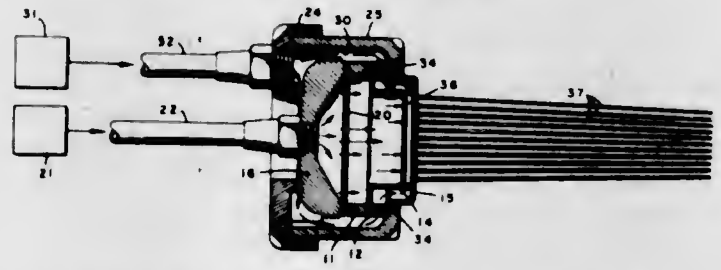
1. A hanger device for mounting a door for movement along a longitudinally extending track, said device comprising
- (*a*) a base member adapted to be affixed to the door adjacent one end edge thereof,
- (*b*) said base member having a centrally positioned, elongated raised portion outwardly offset from the remainder of said base member and adapted to be spaced outwardly of the door,
- (*c*) said raised portion defining an inwardly opening elongated recess in said base member,
- (*d*) a hanger member carrying track-engageable roller means and comprising,
  - (1) a body portion positioned in juxtaposition to said base member and located between said base member and the door, and
  - (2) an outwardly extending lateral flange on said body portion;
- (*e*) said lateral flange being received in the elongated recess defined in said base member and having opposite side edges adjacent to the side walls of said recess provided by said raised portion to aline said hanger member for guided sliding movement with respect to said base member, and
- (*f*) a single movable adjustment and retaining means carried by an end wall of said raised portion and connected to said lateral flange for securing said hanger member to said base member in a selected adjustable position.

3,182,351
MOUNTING STRUCTURAL MEMBERS
Stanley R. Kaufman, 10 Stokes Road, Yonkers, N.Y., and David M. Kaufman, 701 Palmer Court, Mamaroneck, N.Y.
Filed Mar. 20, 1963, Ser. No. 266,588
6 Claims. (Cl. 16—130)

1. Mounting means for a structural member such as a door, window, collapsible gate, or the like, said means comprising in combination:
- slideway means formed as part of the structural member;
- anchoring means slidably mounted in said slideway means;
- spacer means on said anchoring means limiting the transverse movement of said anchoring means in said slideway means;
- supporting means arranged adjacent said anchoring means externally of said slideway means; locating means extended between said anchoring means and said supporting means to limit the relative axial movement between said anchoring means and said supporting means; and
- fastening means adjustably extended between said supporting means and said anchoring means, whereby upon tightening of said fastening means the relative position of said anchoring means, supporting means and slideway means may be fixed to orient the structural member in desired operative position.



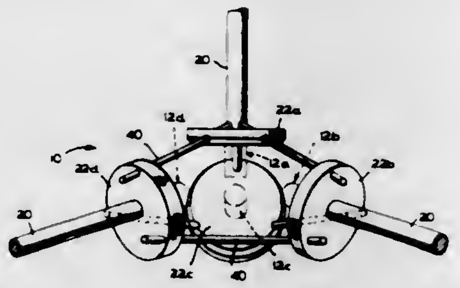
3,182,352
SPINNERETTE
Russel F. Baer, Decatur, Ala., assignor to Monsanto Company, a corporation of Delaware
Filed June 25, 1962, Ser. No. 204,693
3 Claims. (Cl. 18—8)



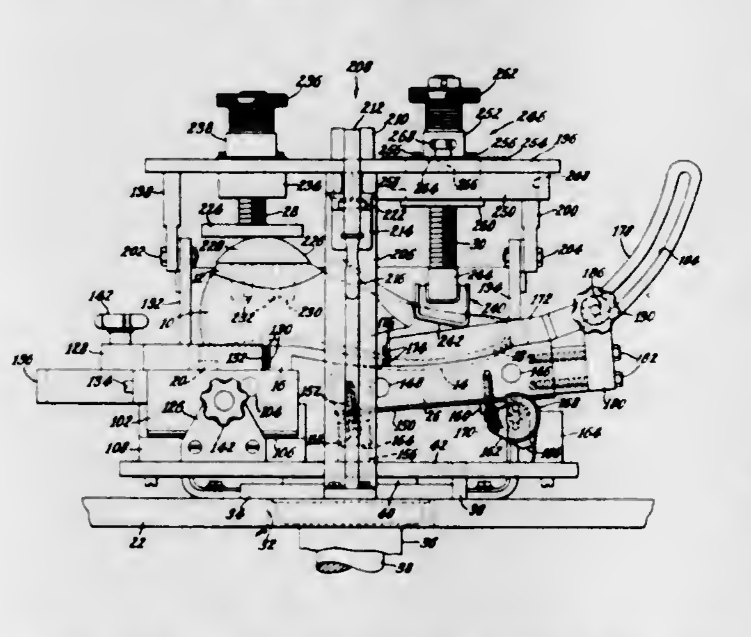
1. A device for spinning filaments, comprising a housing having a first passageway therethrough, a pair of spinnerette plates mounted in spaced relationship on the housing in such a manner that a spinning composition forced through spinning orifices in the first passageway flows axially through both of said spinnerette plates, and means surrounding the housing to form a second passageway, said housing having therein a plurality of apertures interconnecting the second passageway and the space between the spinnerette plates, said apertures being substantially equi-distant between the spinnerette plates, each of said spinnerette plates having therein an array of spinning orifices extending substantially across and covering the face thereof so that substantially all of the face of each said spinnerette plate is provided with spinning orifices.

3,182,353
GUIDE MEANS FOR HIGH PRESSURE PRESS
Howard T. Hall, Provo, Utah, assignor to Research Corporation, New York, N.Y., a corporation of New York
Filed Jan. 29, 1963, Ser. No. 254,747
5 Claims. (Cl. 18—16)

1. In a high pressure press including a plurality of press members, means for moving each of the press members rectilinearly toward a common point to form a closed polyhedral press cell; guide means interconnecting the press members whereby each press member is simultaneously guided toward the common point comprising a guide block secured to move with each press member toward the common point, a rectilinear opening in each of the guide blocks axially aligned with a cooperating rectilinear opening in each adjacent guide block, and a rectilinear guide rod having opposite end portions slidably positioned in each cooperating pair of openings in adjacent guide blocks.



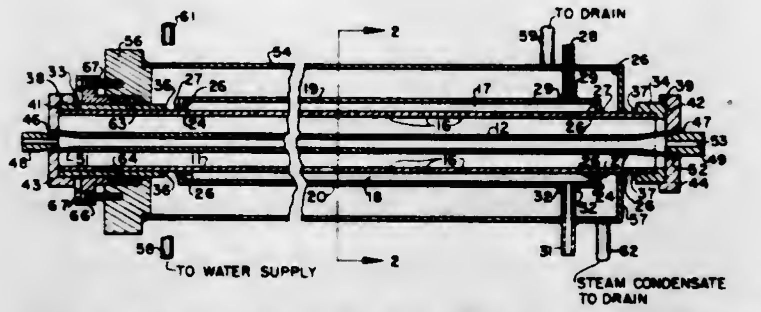
3,182,354
MOLDING MACHINES FOR REPAIRING SHOE SOLE AND HEEL UNITS
William H. Berrill, Hubert O. Chaplin, and Peter B. Pratt, Leicester, England, assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Apr. 26, 1963, Ser. No. 275,945
Claims priority, application Great Britain, May 3, 1962, 16,947/62
4 Claims. (Cl. 18—17)



3. In a shoe repairing machine, a heel tread mold member, a forepart tread mold member, an elevator on which the mold members are mounted, means for adjusting the heel tread mold member heightwise of a shoe in the machine relatively to the elevator, means mounting the forepart tread mold member for angular adjustive movement heightwise of the shoe, means for locking the forepart tread mold member in its adjusted angular position, and holddown means for clamping the shoe upon the mold members.

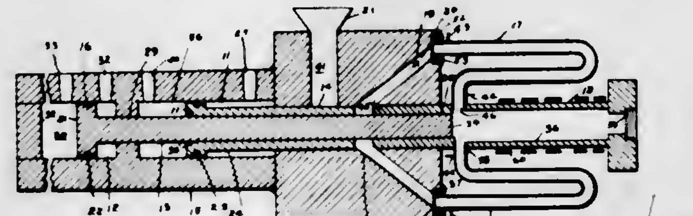
3,182,355
TUBE STRETCHING APPARATUS
Edwin H. Arnaudin, Jr., Marion, Ind., assignor, by mesne assignments, to Anaconda Wire and Cable Company, a corporation of Delaware
Filed May 6, 1963, Ser. No. 278,085
6 Claims. (Cl. 18—19)

1. Apparatus for stretching tubing comprising:
- (A) a length of pipe having a wall sufficiently thick to withstand atmospheric pressure,
- (B) a plurality of perforations through said pipe,
  - (*a*) said perforations being positioned in a straight line on the surface of said pipe,
- (C) means forming a chamber lengthwise of said pipe
  - (*a*) having said pipe as one of the walls thereof,
  - (*b*) said chamber enclosing said line of perforations and
  - (*c*) said chamber being hermetically sealed to said pipe so as to leave a major area of said pipe uninclosed thereby,



- (D) means evecuating said chamber thereby stretching said tubing,
- (E) means sealing a length of flexible tubing contained within said pipe to the ends thereof
  - (*a*) while permitting fluid to enter said tubing, and
- (F) means heating said pipe.

3,182,356
PLASTIC HEATING DEVICE
Henry J. Witkowski, 561 E. 18th St., Erie, Pa.
Continuation of application Ser. No. 77,663, Dec. 22, 1960. This application June 5, 1963, Ser. No. 285,821
7 Claims. (Cl. 18—30)

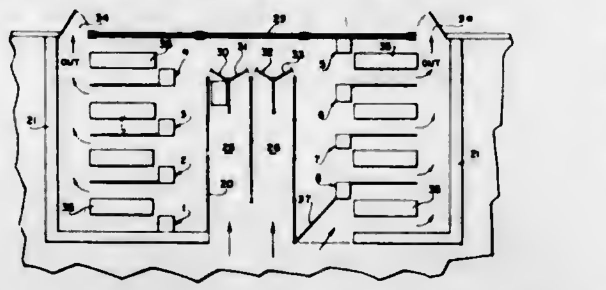


1. A heater for an injection molding machine comprising
- a hollow body,
- an outlet,
- a plurality of hollow, relatively thin tubes connecting said hollow body to said outlet,
- said tubes being made of electrically conductive, relatively high electrical resistance material adapted to engage plastic material flowing therethrough,
- means to connect a supply of eteclrical power to said tubes providing a circuit whereby electrical power may flow through said electrically conductive material of said tubes and heats said tubes, providing a source of heat directly within the material of said tubes themselves for plastic therein,
- and means to force plastic through said body and through said tubes.

3,182,357
CHECK-OUT REGULATOR SYSTEM FOR STORES
Robert G. Tuttle, 547 Tuallitan Road, Los Angeles, Calif.
Filed Oct. 18, 1961, Ser. No. 145,790
9 Claims. (Cl. 20—1.7)

1. A customer check-out regulator system including:
- (*a*) a closed customer service area having a plurality of normally closed entrance gates and exits,
- (*b*) a plurality of check-out stations in the service area between the entrance gates and the exits,
- (*c*) means in front of each entrance gate to sense the presence of each customer desiring entry to the service area,

(*d*) means to select each of the plurality of gates for sequential opening according to the time sequence of customer arrival at the plurality of gates as sensed by said means in front of the said gates,



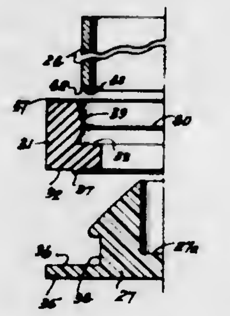
(*e*) means at each check-out station operable by a service person there to operate the gate selecting means,

(*f*) director signal lights at each gate to direct the customer to the check-out station responsive to opening of the selected gate.

3,182,358

MOLD FORMING DEVICE

Walter J. van Rossem, 1917 Thayer Ave., Los Angeles, Calif.
Filed Aug. 21, 1961, Ser. No. 132,794
15 Claims. (Cl. 22—9)



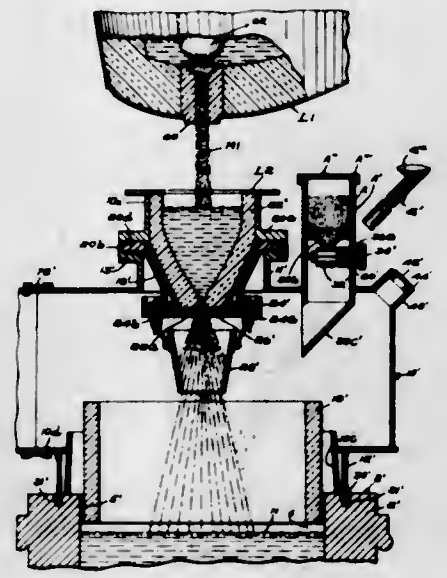
10. A casting ring assembly for investment casting comprising:
- a cylindrical casting ring open at both ends and adapted to hold a quantity of investment material;
- a base closing one end of said ring;
- and gasket means engaging the base and the ring in air tight sealing relation to mount the ring on the base to prevent admission of air at the closed end of the ring to investment material in the ring, the gasket means comprising a resilient body having a generally angular recess receiving one end of the ring, one wall of the recess being a substantially radial surface engaging the end surface of the ring and the other wall of the recess being a surface of revolution that is inwardly convex and engages the casting ring externally over a narrow annular area spaced from the end of the ring in engagement with the radial surface of the recess.

3,182,359

VACUUM CASTING APPARATUS

John B. Gero, Manchester by the Sea, Mass., assignor to Gero Metallurgical Corporation, Boston, Mass., a corporation of Delaware
Filed Nov. 7, 1962, Ser. No. 235,953
9 Claims. (Cl. 22—73)

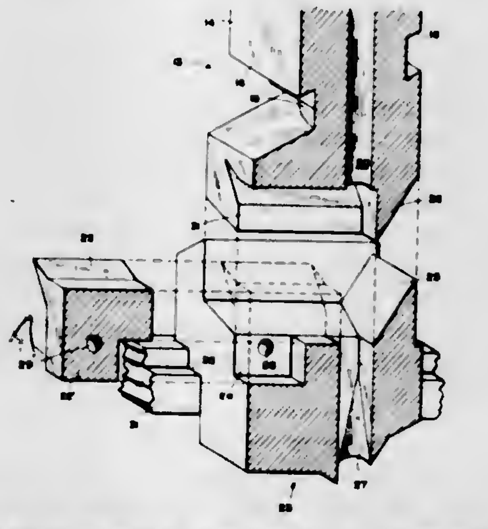
1. Apparatus for vacuum casting molten metal comprising casting mold means constructed of metal which expands and contracts in response to temperature changes induced by the presence or absence of molten metal in the casting mold means, a degassing enclosure body member positioned above said casting mold means, said mold means having an abutment providing a continuous outer face thereabout, said degassing enclosure body member having a depending yieldable extensible skirt portion formed with a continuous lower inner face opposing the continuous outer face of said abutment, and a sealing mass interposed between said opposing faces to provide a seal therebetween, means for evacuating air from said degassing chamber and said mold means to cause atmospheric pressure to compress said depending yieldable and extensible skirt portion into compressing engagement with said sealing mass and against the continuous outer face of said abutment, and means for introducing molten metal into said mold means to heat said mold means and cause the same to expand to further compress said sealing mass against the opposing lower inner face of the skirt means, said depending yieldable extensible skirt portion being formed of a plurality of wall portions disposed in angular relation to each other and angularly movable relative to each other when compressed by atmospheric pressure or expanded by movement of the mold means by presence of molten metal therein.



3,182,360

DISCHARGE NOZZLE FOR METALLURGICAL LADLE

Kenneth W. Ott, 1122 29th St., Portsmouth, Ohio
Filed June 9, 1961, Ser. No. 116,021
2 Claims. (Cl. 22—84)

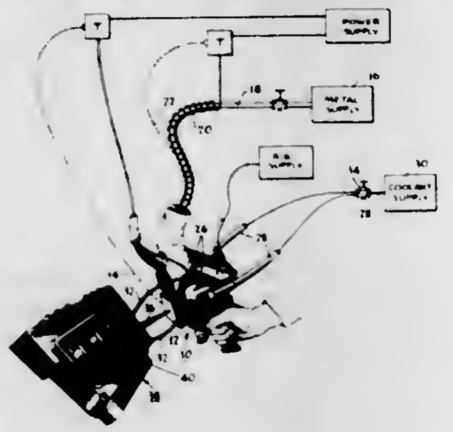


1. A valved discharge nozzle for a metallurgical ladle comprising a first refractory member adapted to be positioned and retained in the bottom wall of the ladle and having a centrally disposed vertical bore therethrough, the bottom end portion of said first member having a downwardly opening groove therein extending in upwardly inclined direction from the lower end of said bore to a side wall of said first member, a second refractory member mounted for sliding movement in said upwardly inclined direction parallel with the upper wall of said groove and carrying a refractory valve block received in said groove and slideable along said upper wall, said block having a flat inner end and the lower portion of said bore having a flat side wall facing said inner end of said block and being angularly disposed with respect to the plane of the inner end of said block whereby said bore is closed off by the upper edge of the block engaging said angularly disposed flat side wall, the upper portion of said first refractory member being rectangular in horizontal plan so as to be insertable from below in a rectangular opening in the bottom wall of said ladle, and said upper portion of said first refractory member having an annular neck immediately below said rectangular portion so that upon said first refractory member being inserted in said opening in the ladle bottom wall it may be rotated 90° and be thus supported on said bottom wall.

3,182,361

SPRAYING APPARATUS AND METHOD

John O. Trimble, Malvern, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 8, 1961, Ser. No. 87,810
4 Claims. (Cl. 22—193)



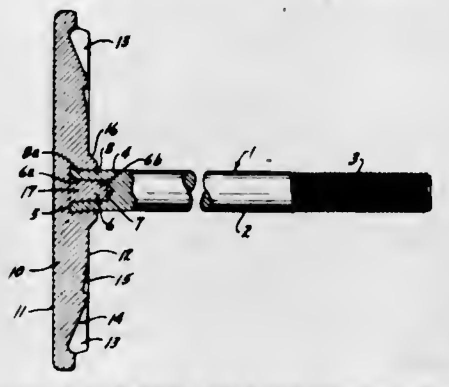
1. In an improved method of producing molds by spraying a plurality of layers of molten metal on a pattern and removing the built-up layers as a metal mold, the steps comprising,
- heating a mass of low temperature metal to a molten state barely above its melting temperature;
- spraying a jet of the pre-molten metal on a small area portion of the pattern;
- spraying simultaneously a jet of liquified gas coolant apart from and adjacent to said jet of pre-molten metal;
- simultaneously moving said jets so that the jet of molten metal is deposited on the pattern and the jet of liquified gas coolant impinges on the just deposited molten metal, sufficiently cooling the deposited metal to the temperature of the pattern to avoid heating the pattern;
- building up a spray metal mold as a plurality of layers on the pattern by continuously spraying the jet of pre-molten metal on the pattern and simultaneously cooling the just deposited metal to the temperature of the pattern;
- and removing from the pattern a shrink-free and distortion-free spray metal mold.

3,182,362

METHOD OF FORMING A MEMBER AND SHAFT ASSEMBLY

Harold L. Dobrikin, Highland Park, Ill., assignor to Berg Airlectro Products Co., Chicago, Ill., a corporation of Illinois
Filed Dec. 12, 1961, Ser. No. 158,830
1 Claim. (Cl. 22—203)

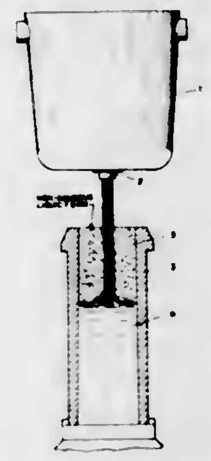
The method of attaching a solid shaft to a plate which comprises the steps of drilling an end face of said shaft in axial alignment with said shaft to form an outwardly open well therein of sufficient depth to extend inwardly beyond the entire rear surface of said plate when said plate is attached to said shaft, thereafter flaring an outer end portion of the resulting wall surrounding said well to form an outwardly flared portion at said end of said shaft, forming said outer end portion of said wall in a continuous rectilinear cross-sectional configuration having inwardly tapering side walls and a maximum width greater than the diameter of said shaft, and thereafter casting said plate about said flared portion and about an adjacent circumferential portion of said resulting wall and causing the metal of said plate completely to fill said well in contact with all inner surfaces of said well and to surround said flared portion in contact with the entirety of the inner and outer surfaces thereof.



3,182,363

INGOT MOLD TEEMING METHOD

Roy E. Ferree, Valencia, Pa., assignor to Eastern Splash-Mats Incorporated, Valencia, Pa.
Filed Oct. 3, 1962, Ser. No. 228,002
6 Claims. (Cl. 22—215)



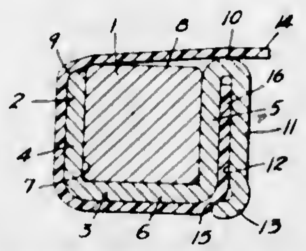
1. The method of pouring molten steel into an ingot mold which comprises introducing nonaqueous, liquid foam into the mold during pouring of the molten metal therein so as to minimize splash as well as oxidation.

3,182,364

COUPLING DEVICE FOR STRAPS OR WEBBINGS

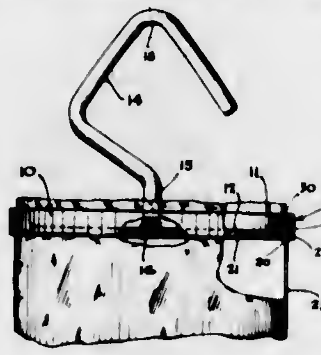
Charles P. Molla, Old Westbury, Long Island, and Anthony Ladogana, Bronx, N.Y., assignors to Molla Incorporated, Westbury, Long Island, N.Y., a corporation of New York
Filed Nov. 1, 1963, Ser. No. 320,665
1 Claim. (Cl. 24—20)

A coupling device for securing a webbing to a support of rectangular cross-sectional form, said device comprising a strip of sheet metal having a wide rectangular channel portion defined by spaced parallel walls joined by a crosshead, a narrow webbing gripping channel portion, said narrow channel portion being formed by one of the first named walls and a supplemental wall integral with and spaced outwardly from said one wall, the said one wall being of greater length than its complemental parallel wall, said narrow channel portion opening in a direction opposed to the direction of opening of said wide channel portion, said supplemental wall of the narrow channel portion being of a greater length than the said one wall and having an end portion extending toward the said one wall to form a webbing engaging gripper, and said device, when in use, having an end of a webbing fixed in said narrow channel by said gripper with the webbing first extending over said crosshead, then over the other of said first named walls of the wide channel and finally over the opening of said wide channel between said spaced parallel walls.



3,182,365
MEAT CASING CLAMP

Louis L. Crawford, Chicago, Ill., and Bert S. Harrington, Jr., Chamblee, Ga., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 11, 1963, Ser. No. 250,796
9 Claims. (Cl. 24—30.5)

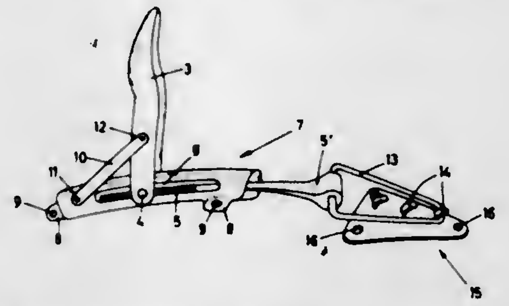


1. A combined clamp and support for meat casings comprising an inner member presenting a solid end surface and a tapering peripheral outer surface for receiving a casing therearound, means carried by said inner member for attachment to a support, said peripheral surface tapering outwardly in a direction away from said means, and an outer member having an inner surface for interfering and seating relationship with the tapered surface of said inner member to limit the movement of said outer member away from said means, when said meat casing is placed over the outer surface of said inner member and said outer member is placed over the casing, so that a force exerted on the casing away from said clamp will cause said outer member to more firmly force the casing against the outer surface of the inner member.

3,182,366
FASTENERS FOR SKI BOOTS

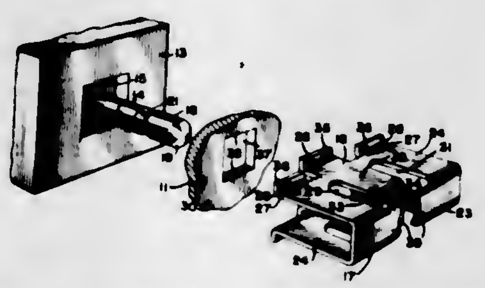
Ewald Teufel, Tuttlingen, Germany, assignor to Rieker & Co., Tuttlingen, Germany
Filed Dec. 9, 1963, Ser. No. 329,149
Claims priority, application Germany, Dec. 13, 1962, R 34,059
5 Claims. (Cl. 24—68)

1. A fastener for a ski boot comprising a mounting member secured to a first of two closure flaps of the boot and extending substantially at a right angle to the longitudinal axis of the boot, a lever, at least one arm pivotably connected at one end to said mounting member and at the other end to said lever at a point intermediate the ends thereof forming the pivot axis of said lever, said lever being pivotable about said axis within a plane substantially at a right angle to said longitudinal axis of the boot, a drawing member having a loop at one end thereof, pivot means slidably mounted in said mounting member and pivotably connecting one end of said lever to said drawing member near the other end thereof and for slidably connecting said end of said lever to said mounting member so as to be slidable in the longitudinal direction thereof when said lever is being pivoted, and a plurality of hooks secured to the second flap of said boot and spaced from and substantially in alignment with each other, said loop on said drawing member adapted to be hooked selectively over one or another of said hooks, whereby said lever can be swung to a closed position to secure the flaps together by moving the other end of said lever serving as a handle in the direction toward said loop, to thereby exert a tension by said loop on one of said hooks to draw said two closure flaps toward each other, while when said handle is drawn away from said loop, said tension is released and said loop may be disconnected from said hook.



3,182,367
FASTENER

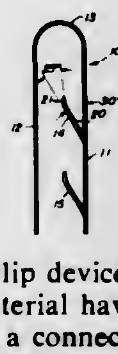
Harry L. Hamann, Toledo, Ohio, and Harry F. Silstorf, Petersburg, Mich., assignors, by mesne assignments, to The Bishop and Babcock Corporation, Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1961, Ser. No. 158,311
5 Claims. (Cl. 24—73)



1. A stud clip for panel mounting comprising a trough-shaped body of resilient sheet material; sides for said body spaced greater than the transverse dimension of the stud to be secured and of a height less than the length of the stud to be secured; means for blind mounting said clip comprising a mounting tab on each side having a portion formed generally perpendicular thereto to extend outwardly of the trough in a common plane and a shoulder tab on each side having a portion formed generally perpendicular thereto in a common plane spaced along said side from the plane of said mounting tabs such that the adjacent surfaces of the mounting and shoulder tabs are spaced the distance corresponding to the thickness of the panel; a stud-engaging finger integral with each trough side; a notched end on each finger turned inwardly of said trough, said respective ends being spaced less than the minimum transverse dimension of said stud and being formed whereby said ends each have spaced points of contact with said stud and are resiliently biased against an intervening stud; a trough bottom for said body joining said sides and having a cut out region in alignment with the stud receiving region between said mounting tabs and said stud engaging fingers; and bearing surfaces formed by the margins of said cut out regions, adapted to bear against the side walls of said intervening stud in a region longitudinally spaced along said stud from the region of said fingers, said surfaces generally conforming to said stud cross section over opposed portions of the margin of said cross section to contact said stud in regions overlapping the longitudinal projection along the stud of the points of contact between said stud and said fingers and support said stud in quadrature to the support of said fingers.

3,182,368
DISENGAGEABLE CLOTHING CLIP DEVICE

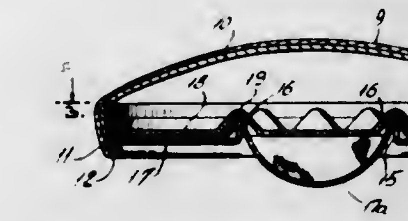
William J. Fair, 12060 Medford Drive, Los Altos, Calif.
Filed Dec. 11, 1963, Ser. No. 329,658
3 Claims. (Cl. 24—86)



1. A disengageable clip device comprising: a U-shaped member of resilient material having a pair of substantially flat, spaced legs and a connecting portion; and at least one lanced spur projecting upwardly from one leg towards said connecting portion and outwardly towards the other leg, said spur being of generally triangular shape and having a base portion generally perpendicular to the longitudinal axis of said clip and spaced closer to one outer edge of said one leg than the other, and having one side parallel to and adjacent to said one outer edge, said spur projecting from said one leg at an angle of approximately 30°, the side of the spur opposite the closer edge making a substantially larger angle with the edge than the immediately adjacent side to thereby facilitate disengaging said clip device by rotating the same about an axis which is perpendicular to the flat side of said legs and which passes through the connecting portion and the edge of said U-shaped member closest to said offset plane.

3,182,369
FABRIC-COVERED BUTTON

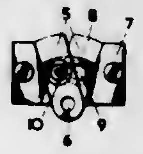
Stephen L. Lerma, Flushing, N.Y., assignor to C & C Button & Trimming Co., Inc., New York, N.Y., a corporation of New York
Filed Oct. 2, 1963, Ser. No. 313,316
1 Claim. (Cl. 24—92)



A button comprising a face plate having a circumferential flange extending downwardly substantially at right angles to said plate, a fabric cover material stretched over the face of said face plate and flange and around and under the edge of said flange into the interior of said plate, a back piece in the form of a disc having a central opening and having upstanding inwardly directed points around said opening, said disc having a cylindrical flange around its periphery of a size and shape to fit tightly within the inturned portion of said cover material, an inner plate lying above the interior side of said back piece and of a size and shape to press the flange of said back piece tightly against the inturned edge of said cover material, and a piece of flexible button-attaching material clamped between said disc and said inner plate, said inner plate having recesses in alignment with the points upon said disc whereby said attaching material is pressed against said points and the pressure exerted by said inner plate urges the flange of said disc against the flange of said back piece.

3,182,370
LOCKING DEVICE FOR A PULL CHAIN

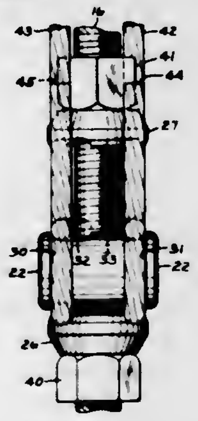
Willem Hendrik Braskamp, Voorburg, Netherlands, assignor to N.V. Industriele Onderneming W. H. Braskamp, Handelshade, Rijswijk, Netherlands, a corporation of Dutch law
Filed Aug. 9, 1963, Ser. No. 301,116
Claims priority, application Netherlands, Aug. 24, 1962, 282,470
5 Claims. (Cl. 24—116)



1. In combination: a pull member and a device for detachably locking said pull member, said pull member including a plurality of alternating interconnected enlarged portions and narrow portions, said device comprising a locking member constituted of a plate provided with a keyhole opening constituted of a first larger opening and a second smaller opening, the keyhole opening having a central axis, said openings being respectively larger and smaller than the enlarged portions of the pull member whereby the later will pass through the larger opening but will be restrained from passing through the smaller opening by the engagement of the narrow portion of the pull member therein, a guide member having a central slot, said locking member being accommodated in said slot such that the guide member straddles said locking member, said guide member having a hole with a diameter sufficient to permit passage of the pull member, said pull member extending through the opening in the guide member and means securing the locking member and guide member together for relative movement between first and second end positions along a path parallel to the axis of said keyhole opening, said hole in said guide member in the first position being coincident with the larger opening of the keyhole opening to thereby permit passage of the pull member, whereas said hole in the guide member in the second position is coincident with the smaller opening of the keyhole opening to thereby prevent passage of the pull member by the retention of the narrow portion of the pull member in the smaller opening of the keyhole hole opening.

3,182,371
GUY LINE APPARATUS

Chester R. Pieper, 790 Lilac Drive, Santa Barbara, Calif.
Filed July 31, 1963, Ser. No. 298,973
15 Claims. (Cl. 24—135)



1. A clamping device for a guy line comprising:
(*a*) a clamping body,

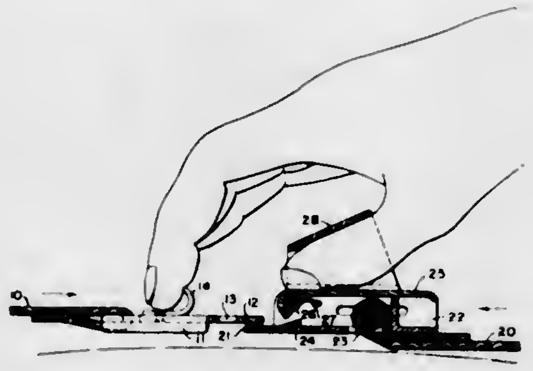
(*b*) a rod fixed to and extending through the body, the body being provided with at least one substantially encircling groove disposed in a plane extending generally in the direction of the guy line, the groove receiving a wire end looped about the body,

(*c*) a pair of plates mounted on the rod and located on opposite sides of the body in overlapping relation to the groove, the plates being axially movable on the rod toward or away from the body and groove, and

(*d*) means adjustably mounted on the rod and selectively moving the plates toward the body to clamp the wire in the groove.

3,182,372
SEPARABLE FASTENER

George H. Darrell, 25 Chestnut St., Dedham, Mass.
Filed Jan. 22, 1964, Ser. No. 339,550
1 Claim. (Cl. 24—230)



A seat belt fastener constructed and arranged for one-hand connection and release and having sections with interfitting terminal fittings, one fitting having a perforated pilot with an upstanding transverse flange adapted to be engaged by the fingers of one hand, and the other having an overlapping pilot with detents for engaging the perforations of the perforated pilot, and a hold-down angle plate adapted to engage the perforated pilot and hold the perforated pilot locked to the detents, said plate being pivotally mounted for upward movement from locking position and having an upstanding thumb-engaging loop projecting from one side of the fastener and said loop providing an opening for receiving a thumb, said angle plate being movable therewith into positions of increased leverage in releasing the pilots for separation of the detents of one pilot from the perforations of the other and located to be in position to be engaged by the thumb of the same hand for drawing the two fittings into engagement.

3,182,373
HOSE CLAMP

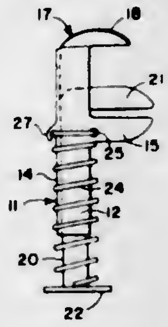
Erling K. Strand, Bloomington, Minn., assignor to Margaret C. L. Strand and Patricia A. O'Hare, St. Paul and Minneapolis, Minn, respectively
Filed Sept. 3, 1963, Ser. No. 306,253
3 Claims. (Cl. 24—263)

3. A clamp for shutting off flow in a flexible hose or tubing, which clamp comprises:

(A) a body including
  (1) an elongated outer body member including a pair of substantially parallel spaced apart elongated side walls interconnected along one longitudinal edge and open along the other edge, and
  (2) an elongated inner body member
    (*a*) fitted telescopically within the outer body member between the side walls of the outer body member in the open edge thereof
    (*b*) for longitudinal sliding movement with respect thereto;

(B) a pair of opposed jaws,
  (1) one of said jaws being bifurcated and connected to and extending outward from said outer body member, the elements thereof each extending outwardly from one of the outer body member side walls,
  (2) the other of said jaws being connected to and extending outward from said inner body member;

(C) a pair of opposed finger grips at opposite ends of the body,
  (1) one of said finger grips being connected to the free end of said outer body member,
  (2) the other of said finger grips being connected to the free end of said inner body member;



(D) said jaws and finger grips being disposed relative to one another so that
  (1) said jaw connected to said inner body member lies between said other jaw and the finger grip connected to said outer body member, and
  (2) said other jaw connected to said outer body member lies between the jaw connected to said inner body member and the other finger grip connected to said inner body member, whereby
  (3) said jaws are separated when said finger grips move toward one another;

(E) compression spring means
  (1) disposed between the finger grip connected to the inner body member and the jaw member connected to the outer body member,
  (2) around said telescoped body members,
  (3) normally urging said jaws together into clamping position and
  (4) normally urging said finger grips apart,
  (5) said compression spring means being compressible to open said jaws by finger pressure on said finger grips urging said finger grips toward one another; and

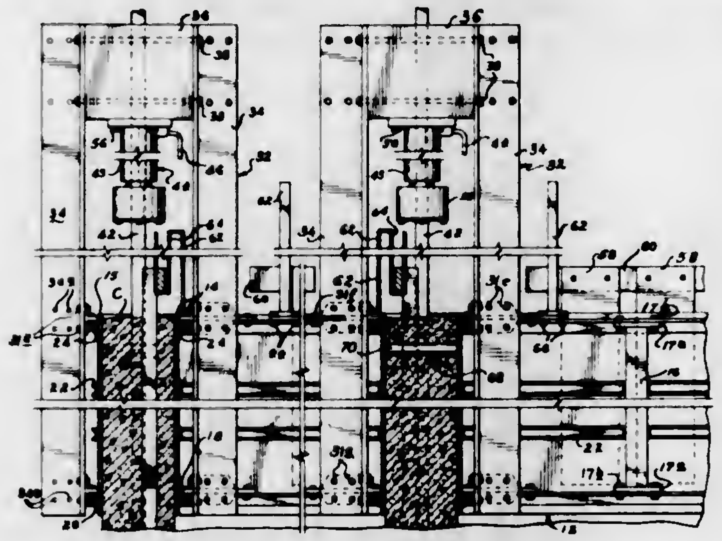
(F) stop means limiting movement of said jaws past one another.

3,182,374
METHOD OF AND APPARATUS FOR MOLDING CONCRETE BUILDINGS MONOLITHICALLY

Carl E. Cook, 1345 Turner St., Borger, Tex.
Filed Feb. 8, 1961, Ser. No. 87,962
8 Claims. (Cl. 25—131)

1. An apparatus for molding a monolithic concrete building structure, which apparatus comprises inner and outer, spaced apart, upright, movable form sheets to form a cavity the thickness of the wall to be poured, said respective inner and outer form sheets being joined at a right angle to form a rectangular mold of a size and shape to define the exterior wall plan of said building structure, pairs of upright members secured to said inner and outer mold form sheets and extending upwardly, connecting members, which connecting members connect said upright members in spaced apart, rigid, abridging relation at the upper ends thereof and forming vertically movable straddle braces, each connecting member having a vertical aperture formed therethrough, each said aperture being adapted to receive an upright support member therein, jack members, each said jack member having an axial

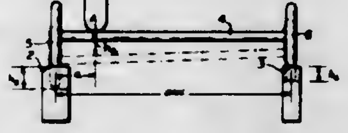
opening formed therethrough, one said jack member being secured to each said connecting member and surrounding one said upright support member, U-shaped support means secured to the upper side of only one of said mold form sheets, a horizontal header bar, core forming fingers secured to said horizontal header bar, said horizontal header



bar being supported on said U-shaped support means so said core forming fingers extend downward between said inner and outer form sheets, said fingers being movable with said inner and outer form sheets, and means selectively actuating certain of said jack members to move said upright members, said inner and outer form sheets and said core forming fingers progressively upward.

3,182,375
APPARATUS FOR COMPENSATION OF THE ERROR OF A GUIDE ON MEASURING DEVICES AND TOOL MACHINES

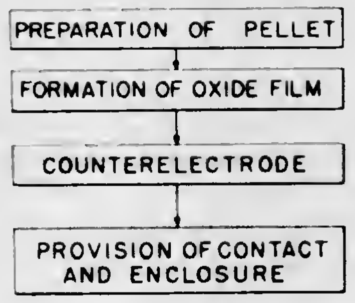
Christian Hoffrogge, Braunschweig, Germany, assignor to Fa. Wenczler & Heidenhain, Traunreut, near Traunstein, Upper Bavaria, Germany, a corporation of Germany
Filed Dec. 12, 1961, Ser. No. 158,777
Claims priority, application Germany, Dec. 14, 1960, H 41,258
7 Claims. (Cl. 29—1)



1. An apparatus for guiding an object along a guide support, the surface of the latter having deviations from an intended straight line, comprising
  a first supporting member constituting a first guiding path and permitting movement of an object along its upper surface,
  a second supporting member constituting a second guiding path and disposed spaced apart from said first supporting member and having an upper surface,
  the upper surface of one of said supporting members being the mirror image of the other of said supporting members,
  an adding device sensing the upper surfaces of said first supporting member and of said second supporting member,
  said adding device adding deviations of said upper surfaces from imaginary lines,
  a member supporting the object to be guided,
  means for transmitting the sum obtained by said adding device to said member,
  the upper surface of said first supporting member and of said second supporting member being coordinated such that the individual points forming jointly said second guiding path are disposed at a distance from an imaginary relation face, which distance is proportional to the distance of the corresponding points on said first supporting member from said imaginary relation face,
  said distance of said corresponding points of said first and second guiding paths having a predetermined proportionality value, and
  said adding device being set corresponding to said predetermined porportionality factor, so that the sum arrived at by said adding device has the same value in all positions of the object to be guided.

3,182,376
SILICON DIOXIDE CAPACITOR

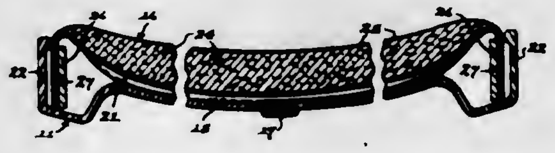
John L. Sprague and Otto J. Wied, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Feb. 21, 1963, Ser. No. 260,136
7 Claims. (Cl. 29—25.41)



1. The method of producing a capacitor comprising the steps of providing a porous body of particles made up of a metal having a coefficient of expansion compatible with silicon dioxide, treating the irregular surfaces of said porous body to provide a film of silicon dioxide in intimate and thorough contact thereon permeating the porous body with a fluid capable of penetrating the interstices between the particles and contacting the surfaces of the film, depositing a conductive material obtained from said fluid into intimate contact on said film, and applying an electrically conductive connection to said conductive material.

3,182,377
THEATER CHAIR BACKS AND METHOD OF CUSHION ASSEMBLY

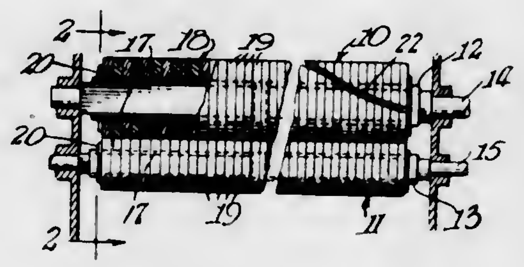
Alfred C. Hoven and Walter E. Nordmark, Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of New Jersey
Filed Nov. 29, 1963, Ser. No. 326,840
5 Claims. (Cl. 29—91.1)



1. The method of making upholstered chair backs of different desired widths for receiving seat cushions, which method comprises forming pairs of complementary halves of outer shells adapted for joining together to form complete outer shells of desired maximum width with the joint of each shell lying in the vertical center thereof, each half of each pair consisting of a single wall lying in a generally flat vertical plane and terminating at one side in a free edge and at the other side in an

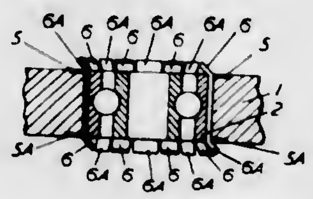
angularly-extending side wall, trimming the contiguous free edge portions of a pair of complementary halves to adapt them for joining together to form complete outer shells of desired less-than-maximum width with the joint of each shell lying in the vertical center thereof, fusing the free edges of the trimmed halves under heat and pressure to integrate said halves and form a complete shell, and applying inner upholstered panels of conforming widths to the completed outer shells.

3,182,378
HAY CRUSHING ROLL
George L. Shorner, 1928 N. Kedvale Ave., Chicago, Ill.
Filed Sept. 12, 1962, Ser. No. 223,144
1 Claim. (Cl. 29—125)



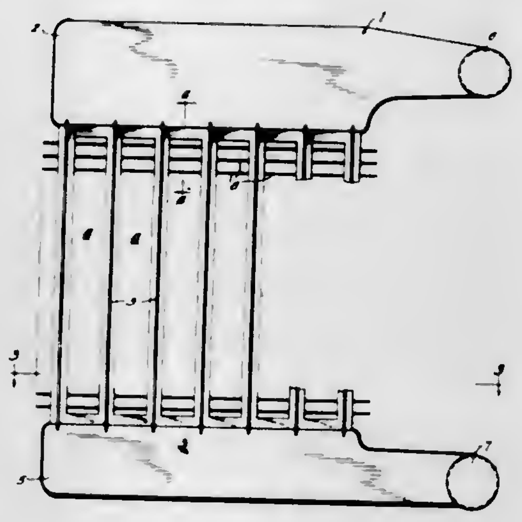
A hay crusher roll, comprising an elongated shaft having a general rectangular cross section and having cylindrical journals at the ends thereof, a plurality of generally rectangular tubular elements ensleeved on said shaft in end-to-end relation between said journals and providing four elongated corners, each element being equipped with a plurality of annular discs of tire carcass material, each disc having a generally rectangular central opening conforming to its associated element, each element being notched in the corners thereof adjacent each end, and a split ring mounted in the notches of each element to confine said discs, whereby the disc assembled on each element may be machined into a cylindrical shape prior to use and while in place on said element, two additional discs being mounted on said shaft between confronting ends of the end discs on adjacent tubular elements.

3,182,379
METHOD OF FORMING BEARING MOUNTINGS
Gilbert H. Bachelet and Désiré Bruiet, Orly, France, assignors to Air France, Paris, France
Filed Jan. 28, 1963, Ser. No. 254,504
Claims priority, application France, July 11, 1960, 832,578
4 Claims. (Cl. 29—148.4)



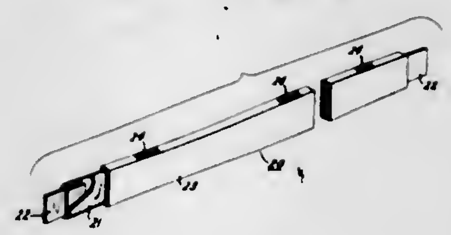
1. A method of mounting a ball or roller bearing in a through bore in a support, comprising inserting between the bearing and the bore wall a cylindrical sleeve gapped by an axial slot extending throughout the sleeve length, forming peripheral series of axial slits in end portions of the sleeve projecting from the bore, said slits defining peripheral series of tongues, one series at each end of the sleeve, and bending tongues of each series in opposite directions from one another to form outwardly and inwardly projecting radial tongues which extend over the support and bearing to retain the sleeve in the bore and retain the bearing in the sleeve.

3,182,380
METHOD OF MAKING A HEAT EXCHANGER
Edward P. Oddy, Detroit, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application Aug. 14, 1956, Ser. No. 603,950. Divided and this application June 25, 1962, Ser. No. 204,689
8 Claims. (Cl. 29—157.3)



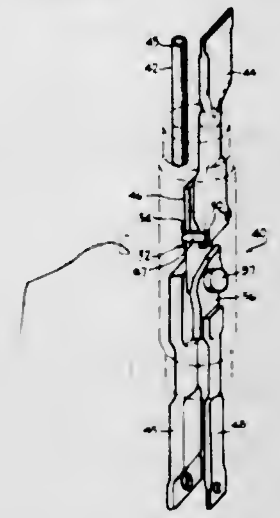
1. A method for making a heat exchanger of the tube sheet type comprising the steps of integrally bonding two sheets of metal each to the other to form a tube sheet having a plurality of spaced apart unbonded zones, expanding said unbonded zones to form a plurality of tubes with intermediate flat portions extending between said tubes, transversely slitting said flat portion between said tubes to form a series of fins extending between said tubes with end portions of said fins being such that said flat portion adjacent said tubes is not severed from said tubes, bending said fins to provide a fin structure extending transverse to the plane of the tube sheet with one edge of the fin disposed on one side of the tube sheet and the other edge of the fin disposed on the opposite side of the tube sheet.

3,182,381
METHOD OF FORMING APERTURED HOLLOW INSULATED BUSBARS
Frank C. Johnston, West Hartford, Conn., and Paul Krauss, Broomall, Pa., assignors to General Electric Company, a corporation of New York
Original application May 26, 1958, Ser. No. 737,954, now Patent No. 3,042,889, dated July 3, 1962. Divided and this application Apr. 16, 1962, Ser. No. 187,665
3 Claims. (Cl. 29—155.5)



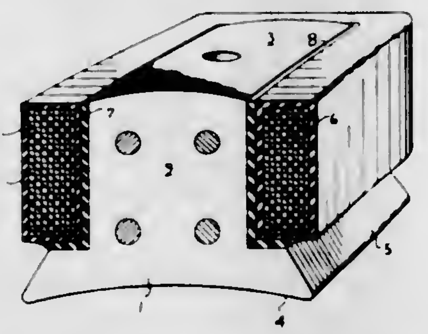
1. The method of making an apertured hollow insulated busbar comprising the steps of extruding a coating of insulating material on an elongated hollow metallic member having a series of longitudinally spaced apertures therein, said coating of insulating material being extruded over said apertures, hardening said extruded coating, and removing said hardened coating at areas aligned with said apertures to expose said apertures.

3,182,382
METHOD OF MAKING SEALED SWITCHES
Wilhelm Juptner, Costa Mesa, Calif., assignor to C. P. Clare & Company, Chicago, Ill., a corporation of Delaware
Original application Aug. 14, 1957, Ser. No. 678,236, now Patent No. 3,033,956, dated May 8, 1962. Divided and this application Sept. 7, 1961, Ser. No. 136,590
9 Claims. (Cl. 29—155.55)



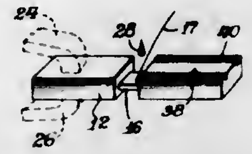
1. A method of assembling a switching unit of the type comprising a plurality of terminals respectively extending from opposite ends of a tubular housing and a magnetic armature pivotally secured to one of said terminals, the armature and at least one of the terminals including contact portions selectively movable into and out of engagement with each other, which comprises sealing said one terminal in one end of said housing, inserting the armature into said housing and pivotally securing it to said one terminal, thereafter inserting the other of said terminals into the end of said housing opposite said one end with a portion of the other terminal overlapping and spaced from a portion of the armature, and sealing said other terminal to said housing.

3,182,383
ELECTROMAGNETIC CONSTRUCTION
Joseph Rosenberg, Framingham, Mass., and Walter N. Larsen, Erie, Pa., assignors to General Electric Company, a corporation of New York
Filed Sept. 13, 1960, Ser. No. 55,623
4 Claims. (Cl. 29—155.57)



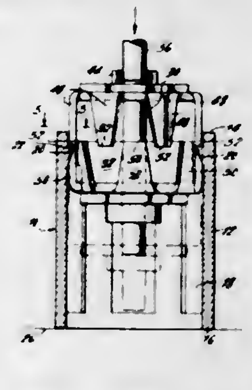
1. A method of manufacturing a dynamoelectric machine pole and coil assembly comprising the steps of applying a flowable solventless adhesive resinous material to an insulated magnet wire, winding the magnet wire about a form so as to cause the adhesive resinous material to fill the spaces between the wires, curing the adhesive resinous material to bond the turns of wire together and to provide a self-supporting essentially void-free coil, encapsulating the coil by immersing it slowly into a thixotropic resinous electrically insulating material, slowly removing said coil from said insulating material to provide a uniform coating thereon, at least partially curing the coating, placing the coil about the pole, filling the space defined by the facing surfaces of the coil and pole with a flowable solventless resinous material and completely curing the coating and the resinous material between the coil and the pole to provide an essentially void free bond between the pole and the coil.

3,182,384
METHOD OF MAKING SELF-SUPPORTING COILS AND MANDREL THEREFOR
Elmer V. Carlson, Prospect Heights, and Orville E. Pyle, Des Plaines, Ill., assignors to Industrial Research Products, Inc., Franklin Park, Ill., a corporation of Delaware
Filed Dec. 27, 1960, Ser. No. 78,743
7 Claims. (Cl. 29—155.57)



1. The method of making a self-supporting coil whose tunnel has a substantially uniform cross section which comprises the steps of making a mandrel of a material possessing plastic flow characteristics at room temperature and having formed integrally therewith an enlarged block at each end, the wall of each block facing the mandrel constituting the retaining wall of a coil to be wound thereon, of winding wire in the presence of an adhesive on the mandrel between the retaining walls, and of pulling the two blocks in opposite directions after the adhesive has set until the mandrel breaks.

3,182,385
ALTERNATOR FIELD ROTOR SEPARATING TOOL
Frank Esposito, 2167 E. 12th St., Brooklyn, N.Y.
Filed Mar. 29, 1963, Ser. No. 269,097
6 Claims. (Cl. 29—205)

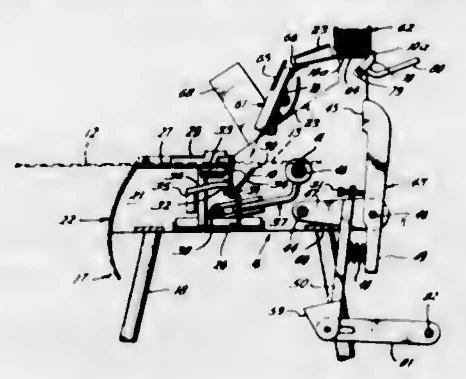


1. A tool for facilitating the separation of the fingered pole pieces of an alternator field rotor comprising a hollow shell, a plurality of inwardly projecting integral generally wedge shaped seat elements having planar surfaces disposed in circumferentially spaced relation along the interior of the wall of said shell for engagement with the fingers only of one of said pole pieces whereby said pole piece is supported during the application of a separating force to a portion of said rotor to effectuate the separation of said pole pieces from each other and thereby disassemble said pole pieces from an alternator field rotor.

3,182,386
BUCKLE ATTACHING APPARATUS
William J. McGee, Box 227, Chapman Ranch, Tex.
Filed Oct. 31, 1961, Ser. No. 148,967
20 Claims. (Cl. 29—212)

1. Apparatus for attaching a buckle to a strap, comprising means to support the strap, means for supporting the buckle in a position to receive the strap therethrough as the strap is moved into supported position, and means

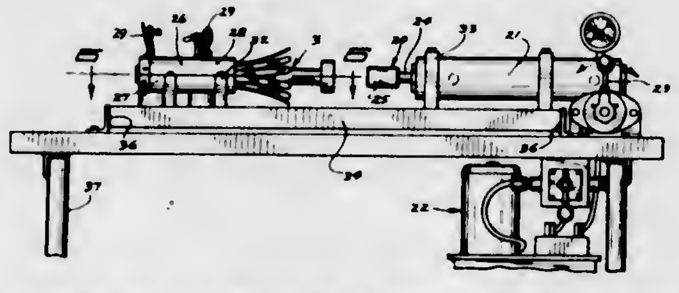
for bending an end of the strap on one side of the buckle over upon a portion thereof on the other side of the buckle and then hammering said bent end against said portion.



3,182,387
FILTER FABRICATING APPARATUS

Bertil J. Sundberg, Minneapolis, Minn., assignor to G. H. Tennant Company, Minneapolis, Minn., a corporation of Minnesota

Filed Aug. 13, 1962, Ser. No. 216,521
7 Claims. (Cl. 29—234)



1. Apparatus for inserting a filter core in a retaining sheath comprising:

(*a*) a mold adapted to hold a confining sheath into which a filter core is to be inserted,

(*b*) said mold having a tapered opening at one end of said mold and an open exit at the other end of said mold,

(*c*) an inserting mechanism having a cylindrical block and a guide shaft axially and fixedly secured to said cylindrical block at one end thereof, said mechanism being adapted for axial movement through said mold and filter core,

(*d*) a plurality of outwardly flared compression fingers secured to said end of said cylindrical block and extending rearwardly to overlying said guide shaft in spaced relation thereto,

(*e*) said inserting mechanism also having a mandrel mounted for axial movement upon said guide shaft,

(*f*) said mandrel being adapted to receive a filter core in contact with the outside cylindrical surface thereof and inwardly of said compression fingers, and

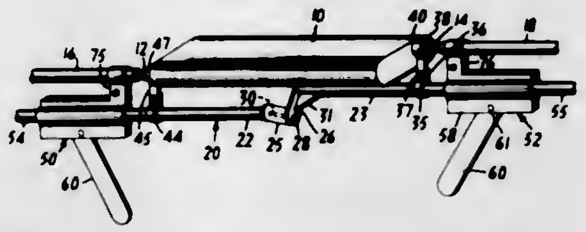
(*g*) driving means for advancing said insertion mechanism into said mold whereby said compression fingers will frictionally engage said tapered opening and then evenly compress the outer circumference of said filter core radially inward simultaneously with the advancement of said filter core to a final position within said sheath.

3,182,388
TOOL FOR REMOVING AND REPLACING ENGINE MUFFLERS

Walter R. Hart, 33 5th Ave., Port Washington, N.Y., and Alexander Klein, Wantaugh, N.Y.; said Klein assignor to said Hart

Filed Jan. 30, 1963, Ser. No. 255,064
3 Claims. (Cl. 29—267)

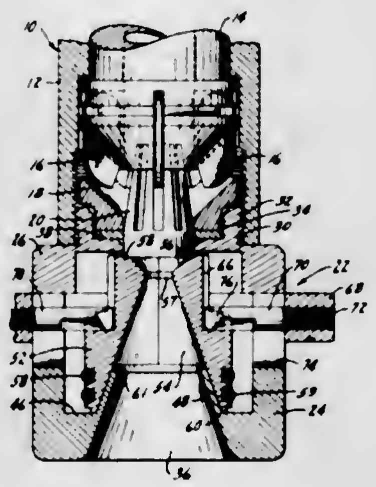
1. A muffler tool for separating a muffler from the manifold pipe and the tail pipe telescopically engaged with the inlet pipe stub and the outlet pipe stub respectively, of the muffler in an engine exhaust train, said tool comprising, in combination, main longitudinal support means adapted to be disposed in parallel relationship with respect to the muffler when said tool is used, said support means being provided with grooved portions, a first arm carried by said support means and provided with a hook to engage the pipe stub at one end of said muffler, a second arm carried by support means and provided with a hook to engage the pipe stub at the other end of the muffler, both of said arms being adjustable longitudinally along said support means and being adjustable angularly relatively to one another, and a pair of reversible jack elements engageable with said grooved portions of said support means, one of said elements being provided with a clamp for clamping engagement with the tail pipe, and the other said jack element being provided with a clamp for clamping engagement with the manifold pipe, said jack element forcibly moving the respective clamps respectively in opposite directions relative to said support means and said hooks.



3,182,389
EJECTOR ATTACHMENT FOR A WIRE CONNECTOR ASSEMBLING MACHINE

James F. Phillips, Philadelphia, Pa., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware

Filed June 30, 1961, Ser. No. 121,242
5 Claims. (Cl. 29—283)



1. In an ejection mechanism for use with an automatic assembling device for assembling connectors on the stripped ends of wires or the like, a housing, means defining a passage through the housing having an inlet and an outlet to provide for the movement of connectors from the assembling device, a plurality of radially movable elements in the housing surrounding the passage, resilient means for urging the elements inwardly so as to releasably prevent connectors from passing through the housing, the inner surfaces of the elements together defining a conical passage, large end toward the outlet of the housing, adapted to be contacted by the wires and moved outwardly thereby against the bias of the resilient means when the wires are inserted in the outlet of the housing, means for overcoming the resilient means to allow the connectors to move freely through the housing, the radial movable elements including a plurality of radially disposed longitudinally arranged elements surrounding the passage, pivoted about one end and constructed so that the other end, under the urging of the resilient means, projects into the passage somewhat, opposed cam surfaces between the elements, a frame on the housing having a plurality of inwardly projecting fingers, each such finger being disposed opposite the cam surfaces between two of the elements, the frame being accessible so that it may be manually moved, movement thereof forcing the fingers between the cam surfaces to spread the elements circumferentially and thereby pivot them outwardly opening the passage to allow connectors to move freely through the housing.

3,182,390
METHOD OF DIE-EXPRESSING A MAGNESIUM-BASE ALLOY

George S. Foerster, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

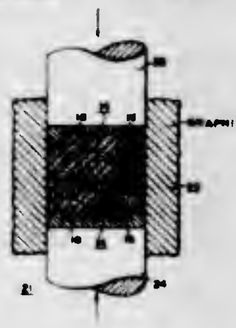
No Drawing. Original application May 1, 1959, Ser. No. 810,257. Divided and this application Feb. 24, 1961, Ser. No. 91,312
4 Claims. (Cl. 29—420)

1. The method of making a die-expressed article of a magnesium-base alloy comprising at least about 70 percent by weight of magnesium and from 0.5 to 20 percent by volume of a solid insoluble metal phase having a solid solubility in solidified magnesium of less than 0.1 percent by weight which includes the steps of atomizing the requisite alloy so as to convert the same into a mass of fine individually frozen particles having dispersed therethrough fine crystallites of the said solid insoluble phase, heating the mass of as-atomized alloy to a temperature within the range of plastic deformation of the alloy, applying pressure upon the heated mass so as to compact the same and ram-extruding the resulting compacted mass at a temperature within the aforesaid range, the reduction in cross-sectional area of the compaced mass effected by the ram extrusion being at least about 80 percent.

3,182,391
PROCESS OF PREPARING THERMOELECTRIC ELEMENTS

Telesphore L. Charland, Pittsburgh, Pa., and Yung Tao, Dallas, Tex., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 29, 1960, Ser. No. 11,673
6 Claims. (Cl. 29—420.5)

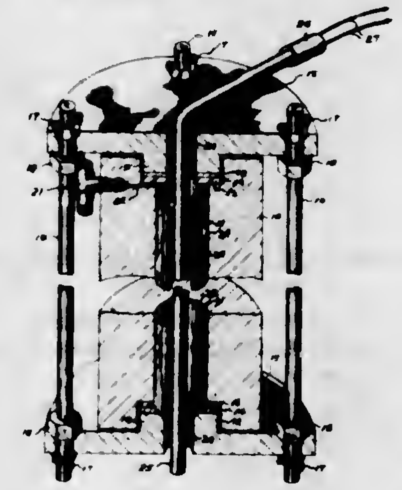


1. A process for forming in one step a thermoelectric element with a metallic electrical contact at one end thereof which comprises, consolidating, within a die cavity, a mass of particles consisting exclusively of at least one thermoelectric composition selected from the group consisting of cadmium antimonide, indium antimonide, indium arsenide, germanium telluride, bismuth selenide, bismuth antimony telluride, lanthanum barium titanium oxide, germanium antimony telluride, sodium manganese telluride, manganese germanium telluride and mixtures thereof, under a pressure of from 1000 to 15,000 p.s.i., while heated to a temperature of from 20° C. to 100° C. below the melting point of the composition, without the use of any bonding material, while in contact with a metal electrical contact plate at at least one end thereof to produce a compact body with the at least one aforesaid metal electrical contact bonded at the end of the body.

3,182,392
METHOD AND APPARATUS FOR EXPLOSIVELY BONDING A PLURALITY OF METAL LAMINAE TO URANIUM ALLOY

Jackson Neal, Baltimore, and Harry P. Kling, Glenarm, Md., assignors to Martin-Marietta Corporation, Baltimore, Md., a corporation of Maryland

Filed Jan. 19, 1962, Ser. No. 168,316
20 Claims. (Cl. 29—421)

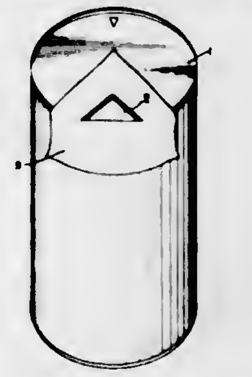


1. The method of bonding a plurality of metal laminae comprising first assembling said laminae in surface-to-surface adjacency upon a die face, next evacuating air from the spaces between said laminae, next immersing the said die and laminae in a fluid, and finally detonating an explosive outwardly of said laminae with respect to said die face.

3,182,393
PROTECTIVE COVERING

Mannel Chevillon, 14506 Fairacres Road, Silver Spring, Md.

Filed June 14, 1962, Ser. No. 202,433
1 Claim. (Cl. 29—428)



The method of sanitization of a beverage can providing the steps of placing a napkin on the can to extend over the rim and a section of the side and top surface, and punching a hole through the can and napkin simultaneously to permit drinking from the hole.

3,182,394
METHOD OF MAKING CAPILLARY COLUMNS

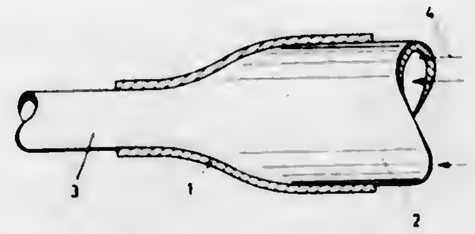
Dietrich Jentzsch, Uberlingen (Bodensee), Germany, assignor to Bodenseewerk Perkin-Elmer & Co. G.m.b.H., Uberlingen (Bodensee), Germany

Filed Oct. 1, 1962, Ser. No. 227,350
Claims priority, application Germany, Oct. 4, 1961, B 64,235
8 Claims. (Cl. 29—460)

1. In a method for producing capillary columns useful for gas chromatography, wherein a larger diameter tub-

ing is drawn to form a small diameter capillary tube, the improvement which comprises:

introducing into the larger diameter tubing a solid granular material prior to and during the drawing process;



and controlling the rate of such introduction, the temperature, and the rate of drawing of the capillary tube in such a manner as to cause the granular material to become at least partially embedded in the interior wall of said capillary tube.

3,182,395
PROCESS FOR CLADDING METALS WITH TITANIUM

Herbert F. Scott, Jr., Prince George County, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,737

10 Claims. (Cl. 29—498)

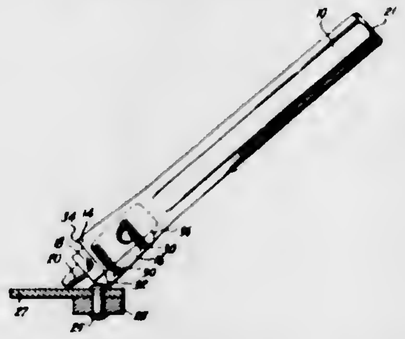
1. The process of cladding titanium onto a base metal, which comprises forming an assembly of base metal and titanium with at least one of the adjacent surfaces of the metals wet with liquid nitrogen tetroxide and subjecting the assembly to impact energy of at least 125 foot pounds per square inch of base metal surface to be clad to ignite at least a portion of the titanium and clad the base metal with the titanium.

3,182,396
DEVICE FOR REPAIRING THE CUTTER BARS OF MOWERS AND OTHER TYPES OF AGRICULTURAL MACHINERY

Peter A. Konzak, Brinsmade, N. Dak.

Filed Apr. 19, 1963, Ser. No. 274,256

2 Claims. (Cl. 30—168)



1. A tool for shearing rivets from mower blades and the like comprising: a shank portion, a chisel blade offset from said shank portion, a guide element extending forward from said chisel blade, said guide element being substantially coaxial with said shank portion, the tip of said guide element and the edge of said chisel blade, defining a plane forming an angle to the axial direction of said shank portion.

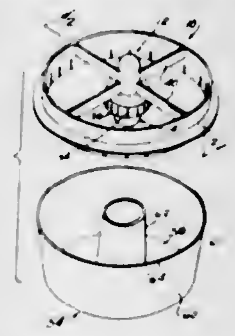
3,182,397
CAKE RELEASE CUTTER

Charles E. Entenmann, 1724 5th Ave., Bay Shore, N.Y.

Filed Dec. 20, 1963, Ser. No. 332,024

3 Claims. (Cl. 30—301)

1. A kitchen utensil comprising a cutter plate for separating a baked product from a baking pan having substantially cylindrical centrally-apertured base wall, a sidewall flaring outwardly from the outer peripheral marginal edge of said base wall, and a frusto-conical centrally-disposed flute projecting laterally from said base wall in the same direction as said sidewall with the base of said frusto-conical flute surrounding said aperture at its circumferential marginal edge, said cutter comprising a substantially hollow cylindrical cutter plate having a pair of opposed ends, said cutter plate having a sharpened edge at one end thereof for sliding engagement with said sidewall, a handle member comprising an elongated substantially hollow cylindrical member having a pair of opposed normally open lower and closed upper ends, respectively, said handle member including a substantially cylindrical sidewall, said handle member being disposed centrally of said cutter plate, a plurality of braces having one of their respective ends fixedly secured to said cylindrical sidewall adjacent said open lower end of said cylindrical sidewall and the other of their respective ends fixedly secured to said cutter plate, said cylindrical sidewall at its open end terminating in an outwardly-turned substantially circumferential flange, an annular member telescopically mounted over said cylindrical sidewall and resting on said flange below said braces, means fixedly securing said annular member on said flange, said annular member having a second hollow cylindrical cutter plate depending therefrom, said second cutter plate being adapted to engage the frusto-conical center flute to disengage food particles therefrom, and guide means for centering said cutter plates, said guide means comprising a substantially hollow cylindrical sidewall depending from said circumferential flange, said last-named cylindrical sidewall of said guide means being adapted for insertion through the open apex end of said center flute.



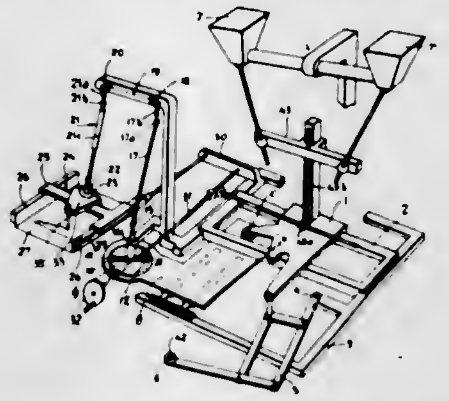
3,182,398
PANTOGRAPH OPERATED STEREO-PHOTOGRAPHIC APPARATUS FOR PLOTTING PROFILES

Ermenegildo Santoni, Florence, Italy, assignor of one-half to Officine Galileo Societa per Azioni, Florence, Italy, a corporation of Italy

Filed Apr. 18, 1961, Ser. No. 103,759

Claims priority, application Italy, Apr. 23, 1960, Patent 629,178

9 Claims. (Cl. 33—20)



1. A plotting device of the class described, comprising: photogrammetric means for viewing a pair of stereo images, said photogrammetric means comprising a vertically and horizontally movable elevation measuring member the vertical position of which, above a predetermined level, is determined by coincidence of corresponding points of the pair of stereo images, horizontal movement of said elevation measuring member permitting the selection of the particular corresponding points in the stereo images the elevation of which is to be measured; supporting means for said elevation measuring member; a first horizontally rectilinearly movable carriage member upon which said supporting means is mounted; a second rectilinearly horizontally movable carriage member upon which said first carriage member is mounted; a base member upon which said second carriage member is mounted, the directions of movement of said first and second carriage members being mutually perpendicular; angularly adjustable guide means interconnecting said first carriage member and said base member, said guide means constraining said first and second carriage members to produce a resultant rectilinear horizontal movement of said measuring member in a predetermined direction determined by the adjustment of said guide means; an elevational plotting table with mutually perpendicular "X" and "Y" axes; a stylus movable over said table; first manually operable means for displacing said measuring member horizontally in said predetermined direction; means controlled by said first manually operable means for displacing said stylus in the direction of the X-axis of said plotting table in accordance with the horizontal displacements of said measuring member in said predetermined direction; second manually operable means for displacing said measuring member vertically; and means controlled by said second manually operable means for displacing said stylus in the direction of the Y-axis of said plotting table in accordance with the vertical displacements of said measuring member.

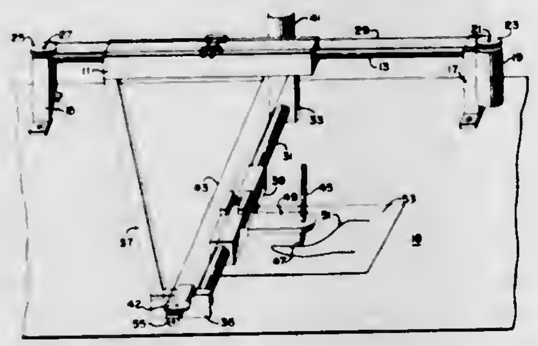
3,182,399
TRACING CONVERTER

Robert S. Price, 3839 Dustin Road, P.O. Box 31, Burtonsville, Md.

Filed Oct. 14, 1960, Ser. No. 62,810

2 Claims. (Cl. 33—23)

(Granted under Title 35, U.S. Code (1952), sec. 266)



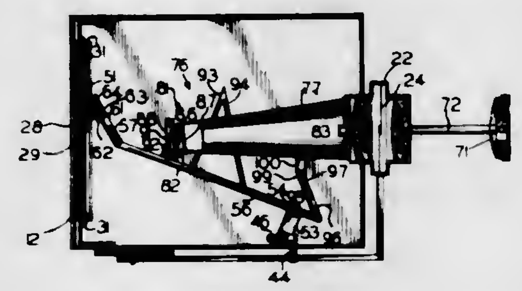
1. Tracing apparatus for reproduction of graphical data comprising a tracing implement for following graphical data on *x* and *y* coordinate axes, first guide means, said tracing implement slideably connected to said guide means to provide displacement of said implement along a *y* axis, second guide means slideably mounted on said first guide means to provide displacement of said tracing implement along an *x* axis, a first enclosed rotary potentiometer mounted at one end of said first guide means having a pair of terminals and a moveable tap, said moveable tap having a rotatable shaft connected thereto with a first pulley fastened thereon, means connecting the terminals of said potentiometer to first source of D.-C. voltage, a second pulley mounted on the other end of said first guide means, a first endless line rotatably engaging said first and second pulleys, means fastening said first endless line to said tracing implement such that said tap will move in linearly proportional relationship with the movement of said tracing implement along said first guide means whereby the voltage at said tap will be proportional to the instant position of said tracing implement with respect to said first guide means, a second enclosed rotary potentiometer having a pair of terminals and a moveable tap, said moveable tap having a rotatable shaft connected thereto with a third pulley fastened thereon, said terminals connected to a second source of D.-C. voltage, a fourth pulley mounted at the other end of said second guide means, a second endless line rotatably engaging said third and fourth pulleys, means fastening said second endless line to said first guide means such that said tap of said second potentiometer will move in linearly proportional relationship with the movement of said first guide means along said second guide means whereby the voltage at the tap of said second potentiometer will be proportional to the instant position of said first guide means, a first sensitivity potentiometer connected between the tap of said first potentiometer and the *y* axis input of an *x–y* plotter such that a desired portion of the voltage at the tap of said first potentiometer may be independently selected and applied to said *y* axis input of said *x–y* plotter, a second sensitivity potentiometer connected between the tap of said second potentiometer and the *x* axis input of said *x–y* plotter such that a desired portion of the voltage at the tap of said second potentiometer may be independently selected and applied to said *x* axis input of said *x–y* plotter.

3,182,400
DEVICE AND METHOD FOR MEASURING THE SURFACE VELOCITY OF MOVING WATER

Wladimir Nyc, 3125 U St., Sacramento 17, Calif.

Filed Oct. 31, 1961, Ser. No. 149,001

3 Claims. (Cl. 33—46)



1. A device for measuring the surface velocity of moving water comprising:

(*a*) a primary lens system having a fixed optical axis and including a shutter;

(*b*) a secondary lens system having an optical axis movable in a horizontal plane between a first and a second angular position said secondary lens system including a shutter;

(*c*) a photographic film disposed at right angles to said fixed optical axis;

(*d*) an obscuration plate movable from a first position wherein a first half of said film is covered to a second position wherein the other half of said film is covered; and

(*e*) means for tripping the shutters of said primary and said secondary lens systems in cooperation with the movement of said plate from said first position to said second position.

3,182,401
GOLFING AID

Wayne E. Stevens, 209 N. 11th, Ponca City, Okla.

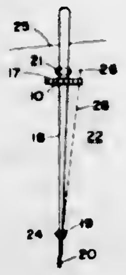
Filed Mar. 15, 1963, Ser. No. 265,417

1 Claim. (Cl. 33—46)

The method of determining the proper initial direction with relation to a cup to direct a ball on a nonhorizontal green which comprises the steps of:

sighting past a first point on a vertically held rod to said cup, and past a second point on said rod to said ball;

pivoting said rod around the second point until the rod is normal to the horizon on said green;



determining the deviation distance along a line normal to said rod to the line of sight to the cup;

returning said rod to its initial vertical position, and;

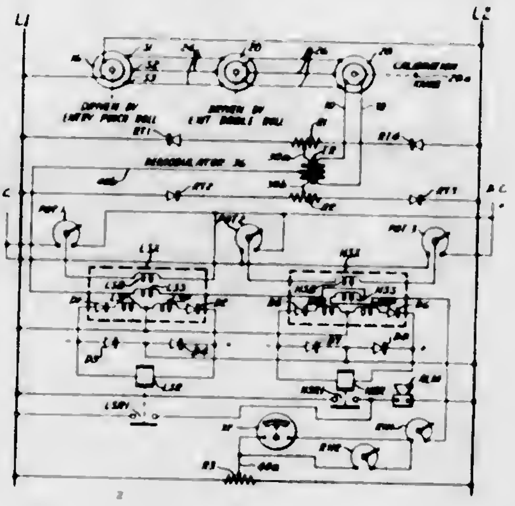
sighting past said rod a distance equal to the deviation distance to a point on the green toward which the ball is to be directed.

3,182,402
MEASURING SYSTEM

Wallace K. Klager, Brookfield, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed July 20, 1962, Ser. No. 211,319

16 Claims. (Cl. 33—132)



1. In a strip processing apparatus having strip moving means including independently operable strip feeding means and strip withdrawing means, strip measuring apparatus for providing a continuous indication of the length of strip between said feeding means and said withdrawing means comprising:

(*a*) means responsive to said feeding means for providing an electrical signal which is a function of the length of strip fed by said feeding means;

(*b*) means responsive to said electrical signal and to said withdrawing means for providing a second electrical signal which is a function of the difference between the length of strip fed and the length of strip withdrawn by said withdrawing means;

(*c*) a meter for indicating the length of strip accumulated between said feeding and withdrawing means;

(*d*) and signal translating means for translating said second electrical signal and applying it to operate said meter and comprising manually adjustable means for adjusting said second electrical signal for zero indication at said meter when no strip is accumulated between said feeding and withdrawing means.

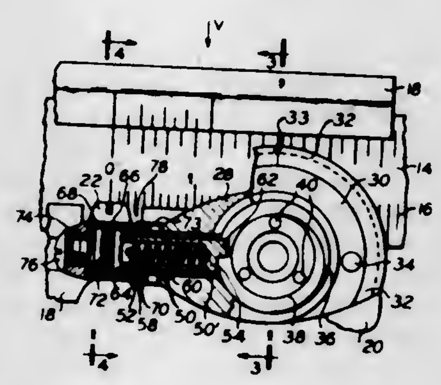
3,182,403
SLIDE RULE

Kurt Zwick, Munich, Germany, assignor to Wenczler & Heidenhain, Traunreut, Upper Bavaria, near Traunstein, Germany, a corporation of Germany

Filed Mar. 26, 1963, Ser. No. 268,112

Claims priority, application Germany, Mar. 26, 1962, Z 9,328

5 Claims. (Cl. 33—143)



1. A slide rule comprising

a longitudinal carrier bearing a main measuring scale thereon,

a slide extending parallel to and at least partly surrounding said longitudinal carrier,

means permitting movement of said slide in longitudinal direction of said longitudinal carrier,

two measuring jaws,

one of said measuring jaws being connected with said longitudinal carrier and the other of said measuring jaws being connected with said slide,

said slide having a marker index and the latter being movable relative to said slide along said carrier to bring into alignment said marker index with the next lower scale line of said measuring scale of said carrier,

said slide including a supporting member having a central recess,

a cam plate rotatably mounted in said central recess of said supporting member and formed as an Archimedean spiral disposed parallel to the face of said longitudinal carrier,

a piston resiliently mounted in said slide for resilient engagement with said cam plate,

an operating disk disposed coaxially with and operatively connected with said cam plate,

said operating disk having an auxiliary scale thereon,

the diameter of said operating disk being larger than the largest diameter of said cam plate, and the adjustment of said operating disk being readable on said auxiliary scale, and

said marker index being formed as a forked member to operate as a reading mark, and connected with said piston, so that the position of said forked member is responsive to the position of said cam plate by means of said piston.

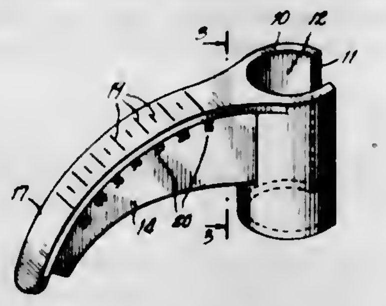
3,182,404
BOWLING BALL GRIP MEASURING DEVICE

Robert S. Fleming, Pompton Plains, and Edward G. Neibling, Franklin Lakes, N.J., assignors to Amerace Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 2, 1962, Ser. No. 163,624

7 Claims. (Cl. 33—174)

1. A small, light and easily portable bowling ball grip measuring device, adapted for individual use by a person interested in acquiring a bowling ball, and comprising a thumb hole-providing member which is substantially C-shaped in cross-section and which is formed of flexible material so as to accommodate and retain thumbs of different sizes, the C-shaped member extending more than 180° around the thumb hole, means fixedly attached to, and adapted to be rigid with said member in use and comprising at least a part which is disposed as a substantially arcuate wall terminating in an edge portion having a radius of curvature corresponding to that of a bowling ball, said wall being disposed in a substantially radial plane containing said radius of curvature and said radial plane being disposed substantially as an extension of a diametrical plane of the thumb hole provided by said member, and numbered scale markings adjacent to said edge portion; so that when a user has his thumb in said thumb hole as far as possible, the span distance to each finger to be measured may be read by means of said scale markings by the position of the crease at the second joint of each such finger, so as to enable a bowling ball to be drilled for the individual user from the measurements so made.

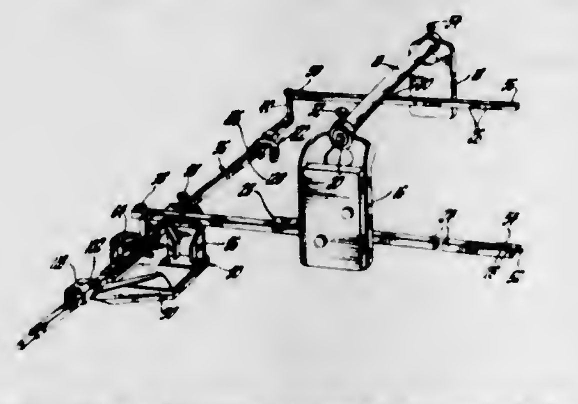


3,182,405
APPARATUS FOR ADJUSTING STEERING AND WHEEL ALIGNMENT

Carl S. Taylor, Springfield, Ill., assignor to Dura Corporation, Oak Park, Mich., a corporation of Michigan

Filed Nov. 1, 1961, Ser. No. 149,326

6 Claims. (Cl. 33—203.2)



1. Vehicle wheel alignment apparatus, comprising:

a gauge bar member having means of support provided near its ends and having one of the support means thereof adjustable lengthwise on the bar,

means for engaging the spindles of a pair of vehicle steering road wheels and including members which extend forward and rearward of the wheels for receiving the support means of the bar in engagement therewith and for supporting the bar extended first across and behind the wheels and then across and in front of the wheels,

a linear scale provided on the bar and cooperatively disposed relative to the adjustable support means for indicating the relative location of the support on the bar,

the difference in the relative location of the adjustable support on the bar when disposed behind and ahead of the wheels being a measure of the total toe of the vehicle wheels,

means received in operative engagement with the bar and one of the bar supporting members for indicating the angular relation therebetween as a measure of the toe of one of the wheels,

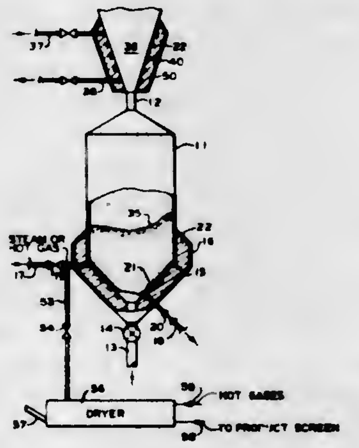
and means for positively engaging the support means of the bar to the bar supporting members for adjustment of the adjustable support means relative to the linear scale, in the course of toe corrective adjustment of the one wheel measured, for indicating the remaining toe between the wheels as a measure of the toe correction required of the other of said wheels.

3,182,406
TREATMENT OF CARBON BLACK

Bruno F. Loewen, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 14, 1961, Ser. No. 103,062

6 Claims. (Cl. 34—39)



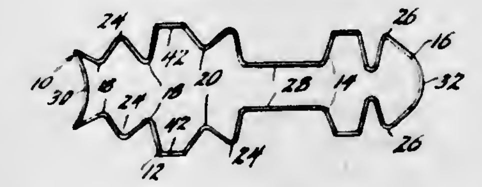
1. A method for flowing apparently dry, flocculent carbon black from the lower portion of an enclosed zone, said carbon black having a tendency to pack and cake in said enclosed zone and to resist flowing therefrom, comprising passing hot gases from a wet carbon black pellet drying operation into contact with the lower wall portion of the exterior of said zone, heat from said hot gases passing through said lower wall portion into said zone and into the carbon black therein, thereby eliminating said tendency to pack and cake and to lessen the resistance to flowing, and passing the heated carbon black from said lower portion of said zone.

3,182,407
ICE CREEPER

Elmer Harde, R.D. 2, Russell, Pa.

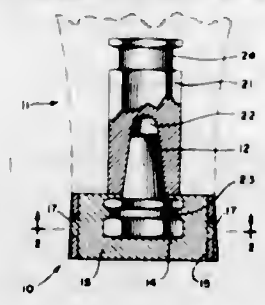
Filed June 21, 1963, Ser. No. 289,630

3 Claims. (Cl. 36—7.6)



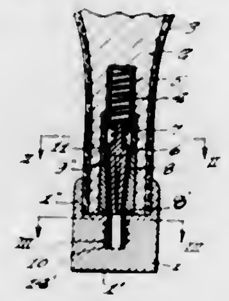
1. An ice creeper for grasping the sole and heel of a shoe, said creeper formed of two continuous lengths of resilient wire, each bent in a generally zig-zag manner to surround the sole and heel of a shoe, respectively, a first portion of each wire forming tread portions for said creeper, adapted to extend under the sole and heel of the shoe, a second portion of each wire extending upwardly, generally at right angles to the tread portion of said creeper to grip the upper portion of a shoe, the ends of each wire extending towards each other as pairs of parallel wires and being bent at right angles, and a pair of clamping plates each having a plurality of coincident slots therein selectively engaging said ends of each wire to permit adjustment of said creeper to a plurality of shoe sizes.

3,182,408
TOP HEEL LIFT
Jose P. E. Ortega Torres and Julio L. J. Savon, both of Emilio Civit 5447, Buenos Aires, Argentina
Filed July 17, 1963, Ser. No. 295,697
1 Claim. (Cl. 36—34)



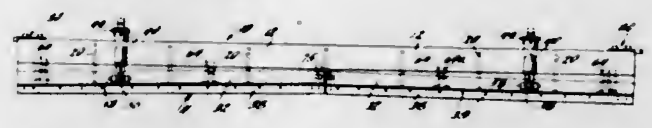
In a ladies' shoe, a heel having a vertically disposed housing embedded therein with the lower end thereof flush with the bottom of said heel, said housing being provided with a centrally disposed frusto-conical socket which extends upwardly and inwardly from the lower end of said housing, a replaceable heel lift, of molded thermo-plastic material, which is adapted to be removably secured to said heel, a base member embedded in said heel lift, a frusto-conical plug which is integral with said base member and extends out through and upwardly from the top surface of said heel lift, said frusto-conical plug which is complementary to said frusto-conical socket being adapted to be wedged into said socket to thereby removably secure said heel lift to said heel, and said heel lift having a semi-circular band applied to the periphery thereof with the ends of said band turned inwardly and rearwardly into said heel lift.

3,182,409
SHOE HEEL WITH A DETACHABLE WEAR LIFT
Edgard Marie Ghislain Herremans, Wilrijk lez-Anvers, Belgium, assignor of one-half to Freddy Leidgens, Sclessin lez-Liege, Belgium
Filed May 19, 1961, Ser. No. 111,368
Claims priority, application Belgium, Jan. 31, 1961, 477,090, Patent 599,704
5 Claims. (Cl. 36—42)



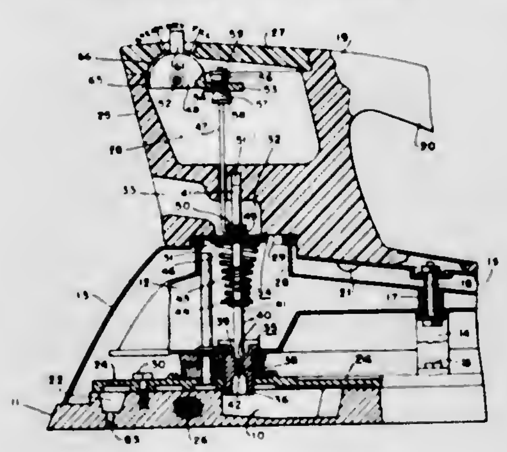
1. Heel for ladies' shoes comprising an elongated heel body, a socket disposed longitudinally in said body, said socket having a closed top and an open bottom end portion, a conical spike having a base and a conical end mounted in said heel body axially of said socket and extending with its conical end downwardly of said socket's open end portion, a helical spring in said socket, one end of said spring pressing against said closed top of said socket, the other end of said spring pressing against the base of said conical spike, an annular member having an inner conical wall and an outer wall in said heel body, in which said conical spike is displaceable, the inner wall of said annular member being spaced from the outer surface of said conical spike, a wear lift, a yieldable hollow element for securing said wear lift to said heel body, said hollow element consisting of a cylindrical end formed with a plurality of laterally projecting flanges and mounted in said wear lift, said hollow element further comprising a split conical portion consisting of four elastic lamellae, said split conical portion being received in said space formed between the inner wall of said annular member and the outer surface of said conical spike, whereby the wear lift is detachably secured to said heel body.

3,182,410
ADJUSTABLE SCRAPER BLADE FOR ROAD-GRADING EQUIPMENT
Vincent Schiavi, P.O. Box 1087, Wilmington 99, Del.
Filed July 9, 1963, Ser. No. 293,617
6 Claims. (Cl. 37—179)



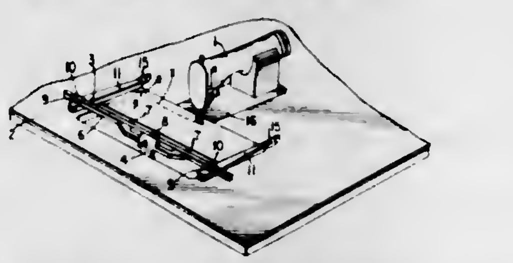
3. A scraper blade for a road-grading machine, said blade in operative position being substantially vertical and movable longitudinally over a road surface to be graded and comprising a transversely-extending stationary upper blade section having a pair of spaced pivot pins substantially centrally thereof, a pair of transversely-extending similar lower blade sections together co-extensive in length with said upper section, each lower blade section having a bottom scraping edge and an inner edge generally normal to said scraping edge, each lower blade section being hinged adjacent its inner edge on one of said pivot pins, adjustable supports carried by the stationary upper blade section outwardly of said pivot pins, one of said supports being connected to each lower blade section for hingedly swinging same on its pivot pin to adjust the scraping edge of said last-mentioned lower blade section angularly with respect to said road surface.

3,182,411
STEAM IRON
Samuel R. Bricker, Shelby, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 13, 1962, Ser. No. 179,357
3 Claims. (Cl. 38—77)



1. An electric steam iron having
a soleplate provided with
a steam generating chamber and
apertures connected to said chamber for discharging steam from said chamber,
a water tank disposed above said soleplate,
a fill opening at the top of said tank,
a fill valve for said fill opening,
a drip valve in the bottom of said tank connecting said tank to said steam generating chamber and being vertically aligned with said fill opening, said fill valve and said drip valve having
seats facing each other, said drip valve having
an operating stem extending upwardly through said fill opening, said fill valve having
an opening therein adapted to slidably receive said valve stem,
resilient means operably associated between said fill valve and said valve stem adapted to resiliently bias said fill valve and said drip valve in opposite directions toward their respective seats, and
an actuating element adapted to engage said fill valve to push the latter from its closed position against said resilient means when moved in one direction and being operably associated with said drip valve to move the latter to open position when said actuating element is moved in the opposite direction beyond the point where said fill valve has returned to closed position.

3,182,412
DEVICE FOR STRETCHING A PLURALITY OF FABRIC PIECES ON A FABRIC HOLDING FRAME
Luigi Bono, Pavia, Italy, assignor to Necchi Societa per Azioni, Pavia, Italy
Filed Mar. 21, 1963, Ser. No. 266,996
Claims priority, application Italy, Apr. 10, 1962, Patent 672,955
6 Claims. (Cl. 38—102.1)

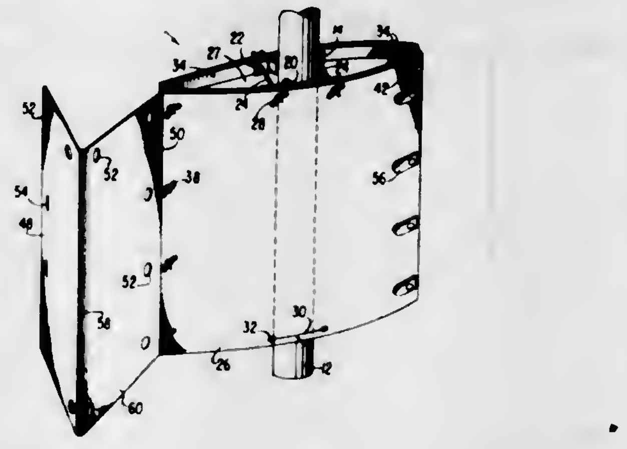


1. A device for loading a fabric holding frame with stretched fabric pieces, said device comprising a base, a pair of spaced guides seated on said base, means at first ends of said guides for positioning the fabric holding frame, means at second ends of said guides for aligning the fabric pieces, pivot means carried by said base intermediate said guide ends and clamp plates pivoted on said pivot means between positions overlying said guide ends whereby fabric may be first clamped between said clamp plates while engaged by said fabric aligning means and then pivoted to a position overlying said guides first ends for clamping by the fabric holding frame.

3,182,413
FRAMED SIGN
Robert E. Karoly, 1165 N. Rio Vista Blvd., Fort Lauderdale, Fla.
Filed Dec. 5, 1962, Ser. No. 242,529
3 Claims. (Cl. 40—10)

1. A framed sign comprising, in combination, an endless tubular frame of generally rectangular contour, a relatively thin display board sized to substantially agree with the outside dimensions of the frame adapted to rest removably against the frame back face on all four sides thereof, a resilient closure plate carried at the frame back, the closure plate being turned through approximately 90 degrees at points relatively close to three of its edges to provide flanges each formed with a further inward bend near its free edge, each flange being extended forwardly of the frame to embrace an outer face thereof and contact therewith at two spaced lineal points circumferentially thereof, one coincident with a plane intersecting the axes of the several sides of the tubular frame and the other forwardly thereof and close to the free edge of the flange, and means interconnecting three of the tubular frame sides with the proximate flanges at lineal points located circumferentially rearwardly of the plane aforesaid and acting to hold each flange tightly against an outer face of the frame with a pressure such as to place the several flanges under tension transversely thereof whereby to transmit to the body of the closure plate a force tending to maintain the latter resiliently against the back face of the frame, the closure plate being free along the fourth side of the frame for yielding away therefrom, in response to pressure applied thereto for the purpose, to provide lengthwise along the rearward face of said fourth side of the frame a narrow opening through which the sign board may be slid into and out of operative positions relative to the frame.

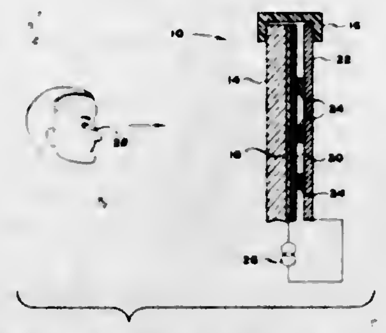
3,182,414
DISPLAY MEANS
Robert R. Snediker, Winnetka, Ill., assignor to Chicago Show Printing Company, Chicago, Ill., a corporation of Illinois
Filed May 15, 1962, Ser. No. 194,803
5 Claims. (Cl. 40—125)



3. A display assembly adapted to be removably fastened to a pole comprising a front display member, a rear display member, a clamp means located on said pole, means for attaching the display members to said clamp means, and means for securing said display members at their respective vertical edges in back-to-back relationship whereby said members assume an arcuate configuration, a movable display member attached to said assembly along one side of said first mentioned display members for swinging movement with respect to said first mentioned display members, and means for securing the free end of said movable member over one or the other of the surfaces of said first mentioned display members, each of said display members being adapted to carry displays whereby said movable member can provide for covering and exposing of different ones of said displays.

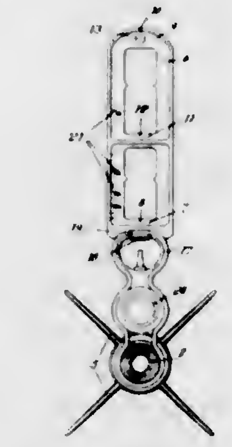
3,182,415
ELECTROLUMINESCENT DISPLAY PANELS
William Brooks, Sunnyvale, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Nov. 9, 1962, Ser. No. 236,538
1 Claim. (Cl. 40—130)

An electroluminescent display panel comprising: five layers including an insulative transparent support member, a transparent conductive layer superimposed on one side of said support member, a layer of electroluminescent phosphor material superimposed over said conductive layer, and a second conductive layer having a removable symbolic message of conductive material sandwiched between said phosphor layer and said second conductive layer; clamping means for keeping said symbolic message sandwiched between said phosphor layer and said second conductive layer; and electrical connection means to said first conductive layer and said second conductive layer for applying an alternating current voltage thereto for exciting said electroluminescent phosphor layer in regions defined by a conductive symbolic message adjacent thereto which may be viewed by one facing the unobstructed surface of the transparent support layer.



3,182,416
SIGHTING SYSTEMS FOR RIFLE GRENADES

Giulio Wyser, Geneva, Switzerland, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland, a society of Switzerland
Filed Aug. 3, 1961, Ser. No. 132,259
Claims priority, application Luxembourg, Sept. 16, 1960, 39,184
2 Claims. (Cl. 42—1)

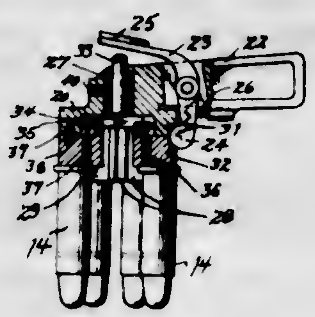


2. In combination, a rifle grenade having a tail, a rifle comprising a barrel, a grenade launching extension carried by the front end of said barrel, on which extension said grenade tail can be fitted, a sight for bullet firing carried by said barrel at the rear of said grenade launching extension, and a sight protector carried by said barrel to surround said sight, a sight corresponding to said grenade for the launching thereof by means of said rifle, a downward projection carried by the lower end of said second mentioned sight, said sight protector being provided in its upper part with a housing adapted to accommodate said projection.

3,182,417
PISTOL LOADING CLIP

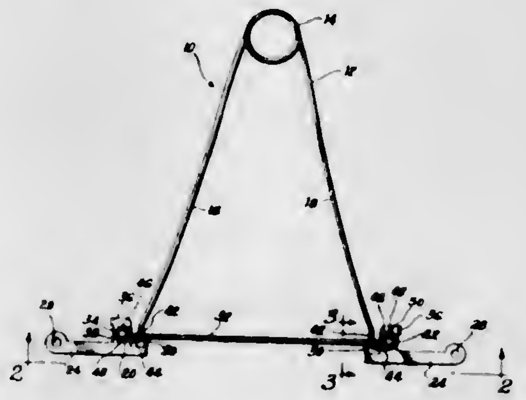
Lyman L. Hamilton, 401 Holly Ave., South San Francisco, Calif.
Filed Apr. 30, 1962, Ser. No. 191,036
6 Claims. (Cl. 42—89)

1. A clip for charging of a revolver cylinder, comprising a first member having recesses upon one side into each of which the rim end of a cartridge may be positioned, said recesses being open at the inner and outer sides thereof, and being defined by spaced projections having arcuate walls terminating at the perimeter of said member, a second member having an arm for turning same with respect to said first member, and a shaft keyed to said second member and extending through said first member having a slotted end forming a plurality of longitudinally extending resilient fingers with shoulders for retaining said first and second members in cooperating relation, and characterized by the fact that the resilient fingers of said shaft each also have radially projecting nibs with arcuate sides adapted and arranged to conform with the arcuate walls of said recesses and at their ends overlay the rim of a cartridge in each of the recesses of said first member when said fingers are in one position and release said cartridges when said fingers are moved into a second position by relative rotation of said first and second members.



3,182,418
AUTOMATIC HOOKER

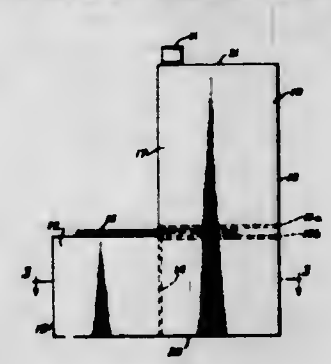
Robert L. Hawks, Chicago, Ill., assignor to F & F Enterprises, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 19, 1964, Ser. No. 345,896
15 Claims. (Cl. 43—15)



15. A piece of fishing tackle comprising a unitary length of spring material having a looped portion substantially midway between its ends with the remainder extending angularly outwardly therefrom as spring arms, an elongate holder member extending crosswise between the spring arms and operatively engaging the arms for free sliding movement thereon, said spring arms having a portion spaced inwardly from the ends turned inwardly by an amount to extend substantially parallel one from the other when the spring arms are tensioned in the direction towards each other to space the turned-in portions by an amount corresponding to the effective length of the holder member, a trigger arm in the form of an elongate member, means on the outer end of the trigger arm for attachment of a fishhook, means on the inner end portion of the trigger arm positioned operatively to engage the holder member when the latter is seated between the in-turned portions releasably to maintain the spring arms in tensioned relation, and means pivotally mounting the trigger arm intermediate its ends onto the end portion of a spring arm for rocking movement between cocked and uncocked position.

3,182,419
BAIT BOXES

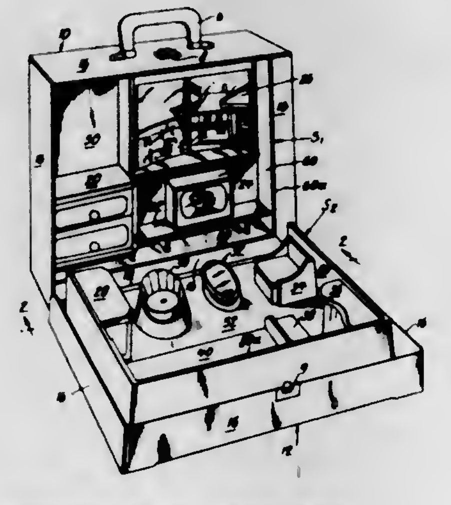
Ernest R. Zimmerman, 911 Mound St., Baraboo, Wis.
Filed Jan. 13, 1964, Ser. No. 337,502
1 Claim. (Cl. 43—55)



A bait box comprising a rectangular upright body open on one side from the top downwardly for a portion of its length, a projecting portion on the lower end of the same side, a sliding cover for said projecting portion slidable into said upright body, and a plurally perforated removable vertical partition between said projecting portion and the lower part of the body portion.

3,182,420
PORTABLE AND STORABLE DOLL HOUSE OR DISPLAY

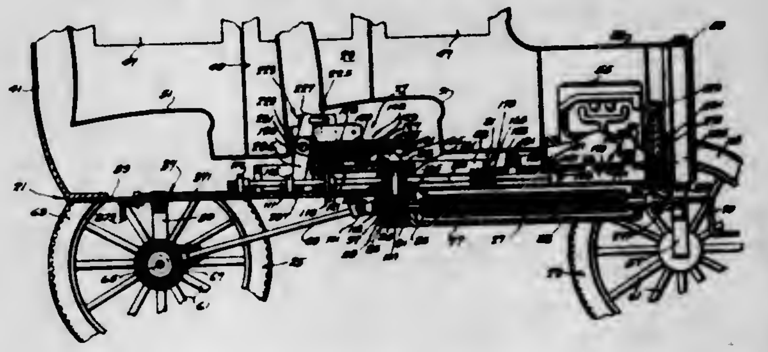
Louis Bender, Plainfield, N.J., assignor of one-half to Leo Miller, Plainfield, N.J.
Filed Dec. 31, 1962, Ser. No. 248,668
1 Claim. (Cl. 46—12)



A portable representation comprising:
an openable and closeable carrying case;
said case including a first half and a second half, each of said case halves having a side wall and rim walls projecting therefrom;
the side wall of said first half establishing a plane on which to represent the floor of a room;
a unitary sheet of moldable material having a plurality of spaced-apart three-dimensional shapes integrally molded therein and projecting from one face thereof;
the opposite face of said sheet being formed with substantially flat areas;
said shapes simulating the shapes, on a reduced scale, of articles of a human environment including at least part of the walls of said room, and articles of furniture situated on said floor between said walls;
said sheet being further formed with a substantially flat flange at the margin thereof outside said wall-representing projection;
said opposite face of said sheet abutting and being fastened to the interior surface of said side wall of said first carrying case half at said flat areas and at said flange;
said carrying case halves being adapted to close with each other in such manner that said rim walls of said second half are disposed over said flange and fit between said rim walls of said first half and said wall-representing projection;
said carrying case having sufficient interior room to accommodate said article-simulating shapes.

3,182,421
WHEELED SOUNDING TOY

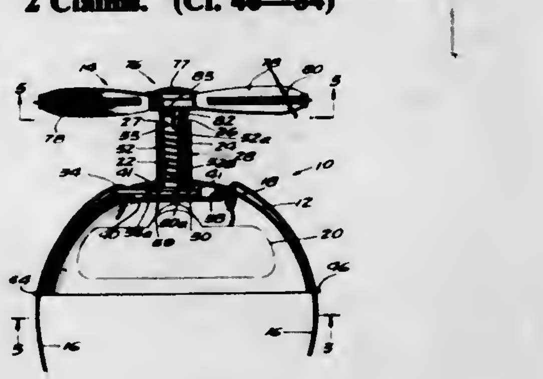
Marvin I. Glass, 57 E. Ohio St., Chicago, Ill., and Gunars Licitis, Chicago, Ill.; said Licitis assignor to said Glass
Filed May 24, 1961, Ser. No. 112,379
11 Claims. (Cl. 46—17)



2. A toy vehicle comprising, a frame, a plurality of wheels for supporting said frame and for propelling said frame along a supporting surface, at least one of said wheels being positionable between an operative position adapted for vehicle-supporting engagement with the supporting surface and an inoperative position, a series of elements detachably carried by said frame, sound producing means on said frame, programming means on said frame for causing planned sequential detachment of said elements from said body and movement of said one wheel from said operative position to said inoperative position, and energy storing means on said frame connected to said wheels, to said sound producing means, and to said programming means so that, incident to release of energy, said wheels are rotated to propel said frame along the supporting surface, said sound producing means is actuated, and said programming means causes detachment of said elements and movement of said one wheel from said operative position to said inoperative position.

3,182,422
ACTION HEADGEAR WITH SPRING ACTUATED FLYING PROPELLER

John W. Ryan, 11027 Cashmere St., Bel Aire, Calif.
Filed Mar. 30, 1962, Ser. No. 183,786
2 Claims. (Cl. 46—84)



1. An action toy in the form of a headgear with a launchable propeller means, said toy comprising:
(*a*) a cap adapted to rest on the head of the wearer,
(*b*) rotatable propeller means releasably supported on said cap,
(*c*) a rotary drive means on said cap engageable with said propeller means to rotate said propeller means and thereby launch it,

(*d*) a latch on said cap releasably restricting the rotation of said drive means, and

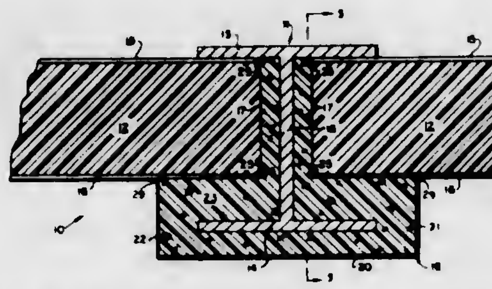
(*e*) a cord connected to said latch and adapted to extend underneath the jaw of the wearer in close enough proximity thereto to be movable by the movement of the jaw to release said latch, whereby the wearer may free said propeller means to rotate upwardly and clear of said cap by merely moving his jaw.

3,182,423
ERECTING PARTITION WALLS

Roger G. Jennings, Kensington, Calif., assignor to Pacific Vegetable Oil Corporation, San Francisco, Calif., a corporation of California

Filed Feb. 13, 1963, Ser. No. 258,261

4 Claims. (Cl. 50—70)



1. A curtain wall type of structure, comprising

a plurality of spaced-apart I-beams having webs parallel to each other and flanges aligned with each other, each I-beam having one web and two flanges, one on each side of said web,

a plurality of sheet-like flat panels each longer than the distance between flanges of adjacent I-beams and each shorter than the distance between the webs thereof and each narrower than the distance between the flanges of a said I-beam, disposed at each end between said flanges of one I-beam and bridging between two I-beams and lying against the flange on one side only of each said I-beam and spaced from the other flange thereof,

a rigid cap member on the opposite side of each I-beam from said panel, lying outside of and generally around the opposite flange thereof and having a portion generally parallel to said opposite flange and end portions lying beyond said opposite flange and extending in toward and against said two panels,

means adhesively affixing said end portions to said panels,

plastic foam filling the space enclosed by said panel, I-beam, and cap and bonded thereto, and

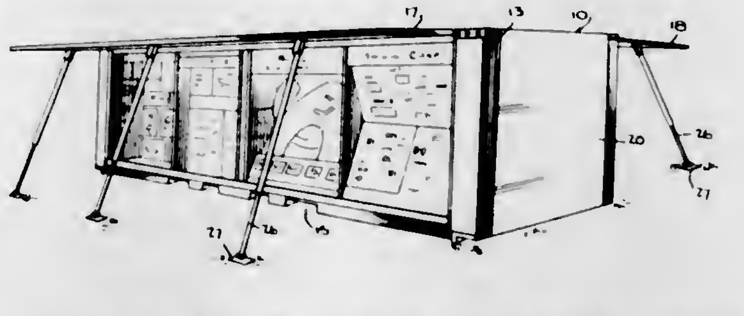
a cutting wire at each juncture of a panel with an I-beam, said wire being in said plastic foam and extending across the thickness of said panel and down each side edge thereof and having an end available for pulling, so as to tear said plastic foam and aid thereby in taking down said structure.

3,182,424
COMBINATION SHIPPING CONTAINER AND SHOWCASE

Christopher Betjemann, Lambertville, N.J., assignor to Isbrandtsen Company, Inc., New York, N.Y., a corporation of New York

Filed Oct. 12, 1962, Ser. No. 230,217

4 Claims. (Cl. 50—80)



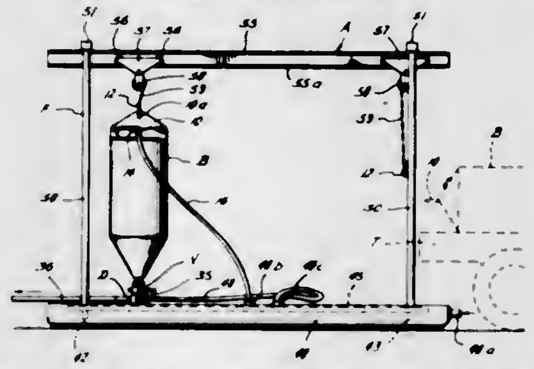
1. A combination cargo shipping container and showcase adapted to provide a portable mobile trade fair, comprising a rectangular shipping box having four vertical corner posts attached to and supporting a rectangular floor and roof at their respective corners, two opposed end walls being connected to and extending between adjacent pairs of said corner posts and a pair of side doors each having a height and length substantially equal, respectively, to the distance between said floor and roof and the distance between said opposed end walls, said pair of side doors being hingedly connected at one longitudinal edge of each thereof to opposed longitudinal side edges of said roof, whereby said doors may be raised to form a canopy and when lowered form the side walls of said box, a central bulkhead extending between said opposed end walls dividing said box into two main sections, removable partitions dividing said main sections into alcoves for display purposes, said floor having skid channels opening to the exterior of said box and said corner posts having fittings on the upper ends thereof whereby said box may be lifted by engaging said skid channels or said fittings, and retractable legs pivotally connected to said side doors adjacent the longitudinal edges thereof opposite the hingedly connected edges thereof to maintain them in their raised position to expose the interior of said box for display purposes.

3,182,425
METHOD AND APPARATUS FOR SURFACE-BLASTING WITH ABRASIVE

John B. Goss and Robert H. E. Schmidt, both of 2604 Knoblock St., Houston 23, Tex.

Filed Oct. 8, 1962, Ser. No. 228,963

10 Claims. (Cl. 51—8)



1. An apparatus for use in blasting with an abrasive, comprising:

(*a*) a pressurizable flexible bag having flexible walls forming the body thereof and being of sufficient strength to withstand pressures above atmospheric pressure,

(*b*) means for opening said bag for introducing abrasive material into said bag and for subsequently discharging same therefrom,

(*c*) means for closing said bag after the insertion of the material into the bag, and

(*d*) means for introducing fluid under pressure into said bag for feeding the material therefrom under pressure.

3,182,426
HELIXING LATHE HAVING AUTOMATICALLY CHANGEABLE CHUCKS

Anthony J. Vrsecky, Winston-Salem, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

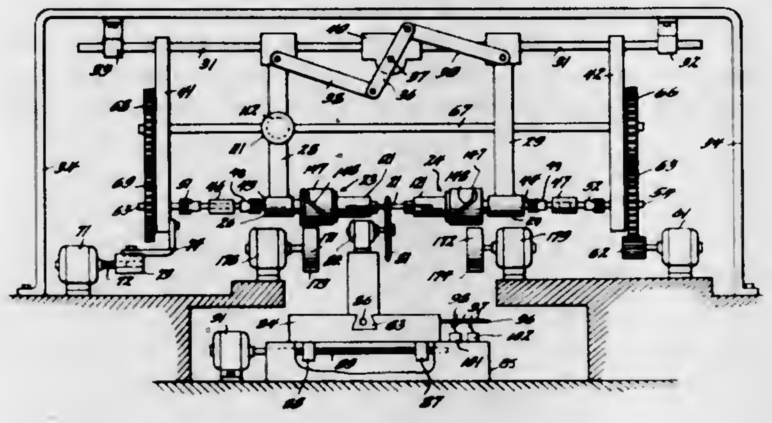
Filed June 15, 1962, Ser. No. 202,725

6 Claims. (Cl. 51—95)

1. In a lathe for helixing cylindrical resistor blanks of varying diameters,

a pair of opposed chucks spaced along a longitudinal axis for supporting a blank to be helixed, each chuck including

an outer chucking member having an axial bore therein and a concave outer work holding face thereon,



an inner chucking member having a concave inner work holding face thereon slidably positioned within the bore with the inner work holding face facing the same direction as the outer work holding face, and

means for imparting relative movement between the inner and outer chucking members to selectively project or retract the inner work holding face relative to the outer work holding face;

a cutter; and

means for imparting simultaneous longitudinal and transverse movement to the chucks to engage and disengage the cutter with a blank supported between the chucks.

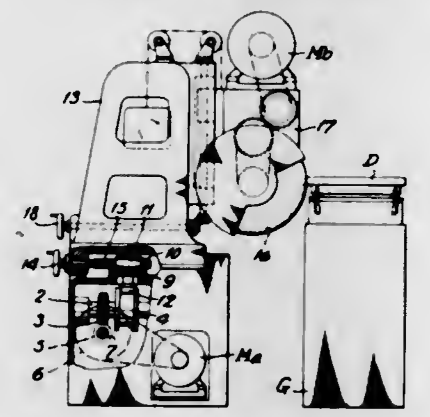
3,182,427
GRINDING MACHINE FOR BRAKE DRUMS FOR WHEELS

Shigekichi Miyabayashi, Chigusa-ku, Nagoya-shi, Aichi-ken, Japan, assignor to The Nippon Toki Kaisha Ltd., Nagoya-shi, Aichi-ken, Japan, a corporation of Japan

Filed Oct. 8, 1962, Ser. No. 229,069

Claims priority, application Japan, Oct. 26, 1961, 36/38,832

2 Claims. (Cl. 51—105)



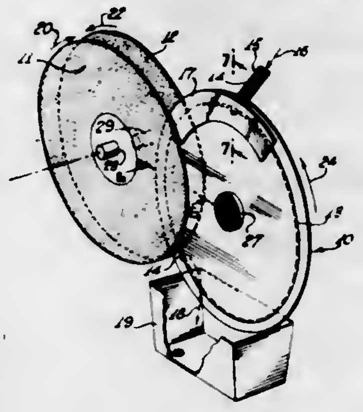
1. A grinding machine for brake drums for wheels comprising a column on which a grinder wheel and a motor for driving said grinder wheel are attached slidably in a vertical direction, a bed having an upper surface and supporting said column and said column being reciprocably slidable in a horizontal direction on said upper surface, a sliding member mounted on the bed, a feed screw rotatably mounted in a lower part of the column and extending in a horizontal direction and screwed into a screw hole provided in said sliding member, a grooved circular cam rotatably mounted below the sliding member, and a guide roller provided at the bottom of the sliding member and inserted into a groove of said cam.

3,182,428
APPARATUS FOR GRINDING A BEVEL ON CIRCULAR OBJECTS

William F. Hannon, Berlin, Conn., assignor to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut

Filed Dec. 17, 1959, Ser. No. 860,228

6 Claims. (Cl. 51—118)



1. Apparatus for grinding an entire peripheral portion of a circular object to a bevel comprising

a movable, substantially flat grinding surface,

means to rotate said grinding surface,

another substantially flat surface facing said grinding surface and spaced therefrom a predetermined distance,

a conveyor positioned for movement through the space between said grinding surface and said another surface,

said conveyor having supporting means for the object to position the plane including the circular cross section of the object at a predetermined bevel angle relative to the direction of movement of said conveyor and to contact said surfaces,

and moving means to move said conveyor supporting means in a path between said surfaces in which torques applied by said contacting surfaces to said objects cause the rotational velocity of said object to alternatingly increase and decrease during such time as the object is between said surfaces.

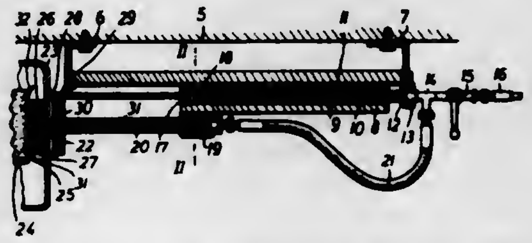
3,182,429
METHOD AND APPARATUS FOR REGULATING THE SPEED OF ROTATING BODIES

Arthur Klein, Netphen, and Paul Enders, Eiserfeld, Sieg, Germany, assignors to H. A. Waldrich G.m.b.H., Siegen, Westphalia, Germany

Filed Apr. 5, 1963, Ser. No. 270,966

Claims priority, application Germany, Apr. 11, 1962, W 32,030

10 Claims. (Cl. 51—134.5)

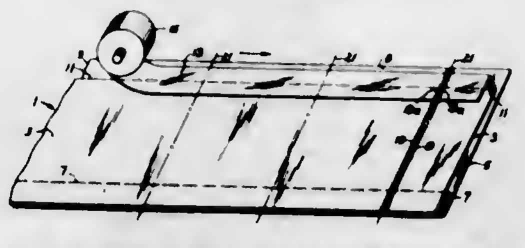


1. An apparatus for regulating the speed of the peripheral surface of a rotating body the diameter of which decreases during operation, said apparatus comprising a nozzle having an end mounted for movement toward the periphery of said body and for directing a jet of fluid against the peripheral surface of said body, a fluid motor connected to said nozzle for moving the same toward said body, a common source of fluid pressure connected to said nozzle and said motor, means for regulating the speed of rotation of said body and means for adjusting said speed regulating means by

movement of said nozzle, said motor being so designed as to exert a moving force on said nozzle which is equal to the back pressure on said nozzle resulting from said jet impinging on said peripheral surface when said nozzle is at a predetermined distance from said peripheral surface.

3,182,430
METHODS OF MAKING BAGS

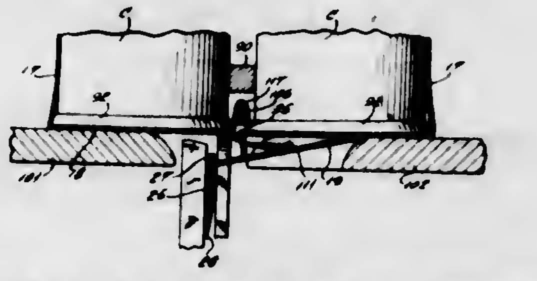
Arthur D. Hoeppner, Terre Haute, Ind., assignor to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri
Original application Aug. 22, 1958, Ser. No. 756,633. Divided and this application Jan. 16, 1964, Ser. No. 338,223
14 Claims. (Cl. 53—29)



13. The method of forming and filling a bag which comprises feeding a relatively narrow strip in superposed relation to a simultaneously fed relatively wide strip, folding said wide strip along an edge parallel to said narrow strip with the folded portion of said wide strip terminating intermediate said narrow strip, simultaneously severing and sealing the side edges of said bag, filling said bag and severing a portion of said bag and simultaneously sealing together the edges formed by said last named severing step following the filling of said bag.

3,182,431
PACKAGING MACHINE AND METHOD

Henry Ganz, 610 Churchill Road, Teaneck, N.J.
Filed May 10, 1963, Ser. No. 279,482
22 Claims. (Cl. 53—32)

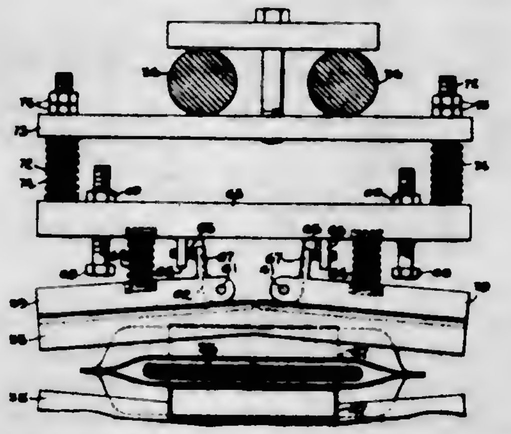


15. A method of forming a package including two rows of containers and a wrap-around carton having a central panel, side panels and terminal closure panels, the method comprising the steps of applying the central panel to first end portions of the containers and moving the carton and containers in unison, folding the side panels alongside the containers, separately folding the closure panels towards the other ends of the containers with one of the closure panels being in advance of the other, shaping a keel from the one closure panel, forcing the keel between the rows of containers, and then locking together said closure panels.

3,182,432
MACHINE FOR PACKAGING PRODUCTS IN A CONTROLLED ATMOSPHERE

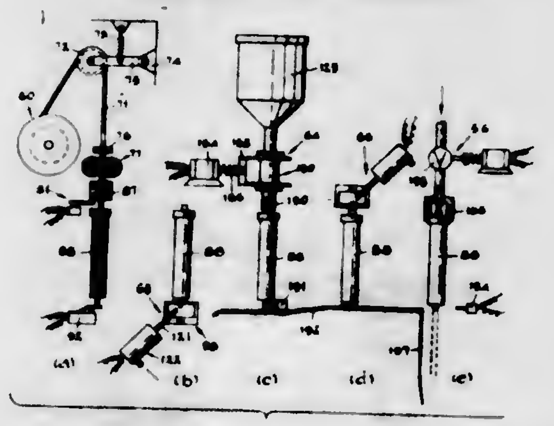
Allen B. Canfield, Rockford, Ill., assignor to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware
Filed May 21, 1962, Ser. No. 196,006
2 Claims. (Cl. 53—112)

1. Mechanism for operating on bags comprising, a base, means on said base supporting a filled bag open end up, a generally upright tube mounted on said base to reciprocate vertically into and out of said bag through the open end thereof, means for flowing a gas through said tube when the tube is projected into the bag, two supports disposed on opposite sides of said bag and mounted on said base to move toward and away from each other, a pair of horizontally elongated pads, one mounted on each of said supports adjacent the upper end of the bag to oppose the other of said pads, said pads being made of a resiliently deformable material, two horizontally elongated sealing bars, one mounted on each of said supports and opposing each other, said bars being vertically spaced from said pads and disposed behind the associated pad, a lost motion connection between each of said pads and the corresponding one of said bars operable first to clamp the bag between said pads upon movement of said supports toward each other and to cause said bars to engage the bag upon continued movement of the supports, and mechanism for raising said tube after the bag is engaged by said pads but before engagement by said bars.



3,182,433
APPARATUS FOR LOADING A DEHUMIDIFYING DEVICE

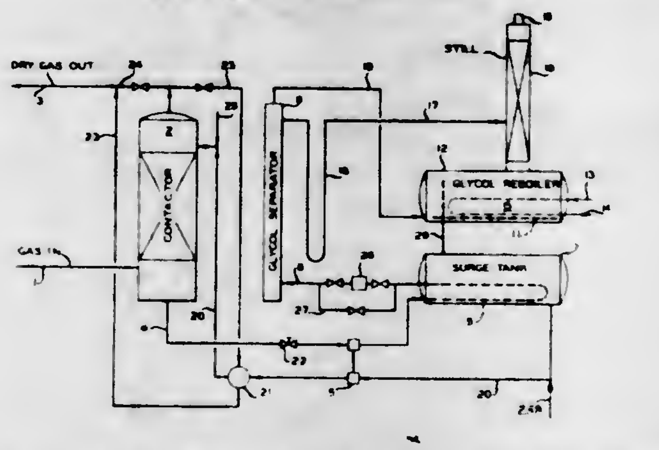
Robert R. Beckham, Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Mar. 24, 1961, Ser. No. 98,034
17 Claims. (Cl. 53—183)



1. Apparatus for producing a sealed tube containing granular material comprising, in combination, means for advancing hollow tubing from a continuous supply along a definite path, elongated chamber means of predetermined length disposed in said path for receiving the tubing, cutting means for severing the tubing substantially at the entrance to said chamber means when said tubing has advanced through said chamber means, first closing means for sealing one end of the severed length of tubing, granular material supply means for depositing granular material in the tube through the remaining open end, second closing means for sealing said remaining open end, and means for transferring the filled, sealed tube from said chamber into a storage receptacle.

3,182,434
GLYCOL-GAS SEPARATOR SYSTEM AND METHOD

Jack R. Fryar, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 23, 1961, Ser. No. 146,863
8 Claims. (Cl. 55—32)

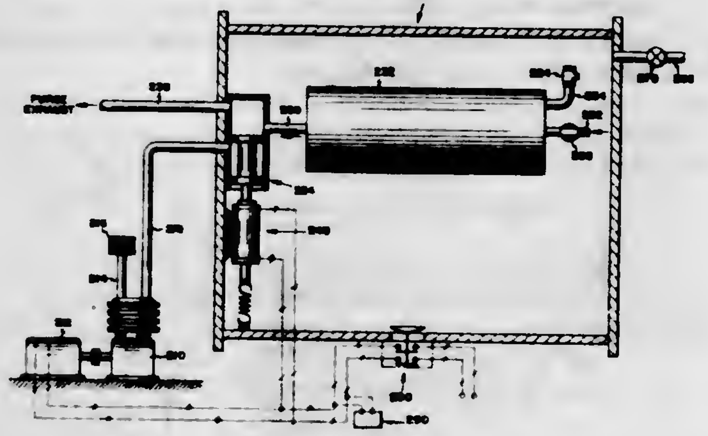


1. A method for dehydrating a moisture-laden natural gas comprising the steps of:
(1) contacting said gas with a dehydrating absorbent liquid at superatmospheric pressure in a contacting zone, and absorbing moisture and a minor portion of said gas in said liquid to form a rich liquid;
(2) recovering the dried gas from step (1) as a product;
(3) passing the rich liquid from step (1) thru the prime mover end of a pumping zone so as to expand same and simultaneously pump lean liquid from a surge zone to said contacting zone;
(4) passing said rich liquid from step (3) thru said surge zone in indirect heat exchange with said lean liquid so as to heat said rich liquid and cool said lean liquid;
(5) passing the heated rich liquid from step (4) into a lower level of a gas-liquid separation zone so as to separate a portion of the absorbed gas and moisture vapor therefrom in the upper end of said separation zone and less-rich liquid in the lower end thereof;
(6) passing less-rich liquid from step (5) by gravity flow to an intermediate section of an upright stripping zone communicating with a subjacent reboiler zone of substantially greater horizontal cross section than said stripping zone to cause said less-rich liquid to flow downwardly toward said reboiler zone;
(7) dispersing said gas from step (5) upwardly thru substantially the entire mass of boiling liquid in said reboiler zone and then thru said stripping zone to strip additional moisture and gas therefrom to provide lean liquid in said reboiler zone;
(8) venting said gas and moisture vapor from the upper section of said stripping zone; and
(9) passing hot lean liquid from said reboiler zone to said surge zone for heat exchange with said rich liquid in step (4).

3,182,435
APPARATUS FOR FRACTIONATION OF GASEOUS MIXTURES

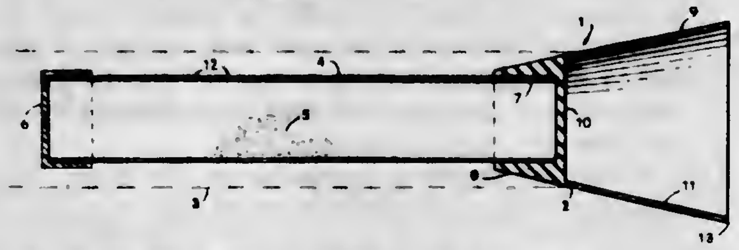
Robert C. Axt, Short Hills, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Apr. 29, 1960, Ser. No. 25,636
4 Claims. (Cl. 55—162)

4. An apparatus which requires no external heat for the continuous fractionation of a gaseous mixture, which apparatus comprises: (1) at least one closed continuous container vessel having upper and lower ends, said vessel having inlet and outlet means at said upper and lower ends of smaller diameter than said vessel; (2) said vessel being so constructed and arranged to hold a bed of adsorbent material within said container vessel, said material being preferentially adsorptive of at least one component of said mixture; (3) valve means so constructed and arranged to supply said vessel alternate streams of said gaseous mixture; (4) valve means so constructed and arranged to discharge at different times from said vessel an effluent stream of gaseous material having a relatively low concentration of said one component and a secondary effluent stream of gaseous material having a relatively high concentration of said one component compared with the concentration of said one component in said gaseous mixture; (5) an accumulator chamber, said container vessel and said valve means being located completely within the said accumulator chamber wherein said inlet and outlet means at said upper end of said vessel terminates within said accumulator and wherein said inlet and outlet means at said lower end of said vessel terminates without said accumulator.



3,182,436
ENGINE DRIER PLUG

Irving Cigliano, 566 Bothmer St., Oceanside, N.Y.
Filed Nov. 20, 1961, Ser. No. 153,615
3 Claims. (Cl. 55—387)



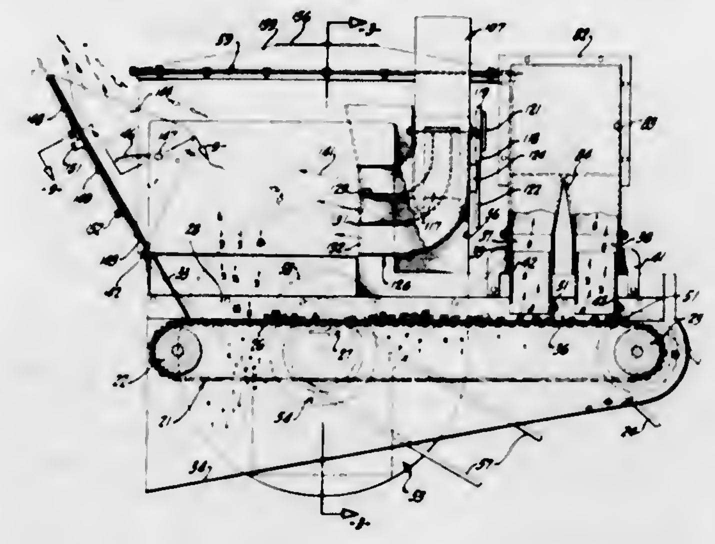
1. A device for drying air moisture in a cylindrical pipe, comprising a resilient coned frustum adapted to be plugged in part into an open end of the pipe with its minor diameter end foremost, the coned frustum having an axial recess extending therein from its minor diameter end, an elongated tube seated and closed at one end in the axial recess and closed at its opposite end, a moisture absorbent disposed in the interior of the tube, and a plurality of holes in the tube communicating with the interior thereof.

3,182,437
NUT HARVESTER

Leslie Ramacher and Rudolph H. Ramacher, both of P.O. Box 506, Linden, Calif.
Filed May 13, 1963, Ser. No. 279,891
4 Claims. (Cl. 56—328)

1. In a nut harvester having a frame for advancing over ground strewn with loose material including nuts, and means on the frame for picking up the loose material, the combination of:
(*a*) a delivery station comprising a partial enclosure defined by a transverse foraminous belt movably

mounted on the frame, a pair of side plates upstanding from the opposite edges of said belt, an outlet box at one end for the delivery of air across said enclosure and an inclined gate at the other end affording an outlet for the lighter components of the loose material dropped from above into said enclosure, said lighter components being blown outwardly through said gate by air discharging from said outlet box, said belt having openings large enough to pass the heavier components of the loose material which are smaller than nut size, said belt openings being small enough, however, to retain objects of nut size and larger;



(*b*) a pickup station located at the discharge end of said transverse foraminous belt, said pickup station comprising a plurality of vertically adjustable intake nozzles above said belt, blower means for inducing the flow of air upwardly through said foraminous belt adjacent the bottom openings of said nozzles, and means for controlling the upward velocity of the air flow to afford a selective lifting from the surface of said foraminous belt and upwardly into said nozzles of objects having the specific gravity of the nuts and less, and a flexible lip adjacent said discharge end of said foraminous belt capable of flexing to pass objects having a specific gravity greater than that of the nuts and thus not removed by the air flow into said intake nozzles;

(*c*) a vortical separator mounted on the frame, said separator being interposed between said nozzles and said air flow inducing means and being effective to separate the nuts from the material lighter than the nuts discharging from said intake nozzles;

(*d*) a duct connecting said vortical separator to said air-flow inducing means for directing the discharge of air and any entrained material lighter than the nuts into said air-flow inducing means; and,

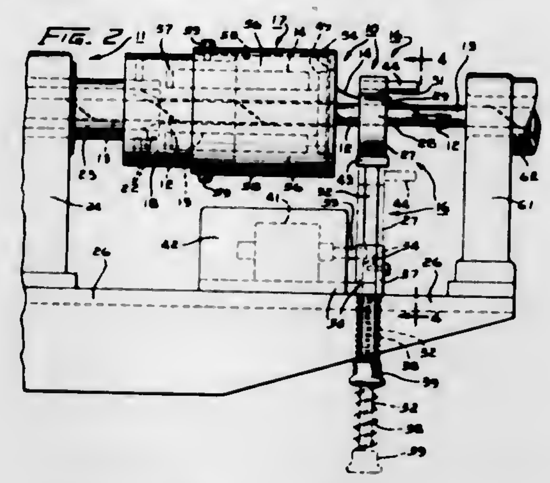
(*e*) a duct connecting the discharge of said air-flow inducing means to said outlet box for movement of air and any lighter entrained material cross said partial enclosure and outwardly through said inclined gate into the atmosphere.

3,182,438
ARTICLE BINDING APPARATUS

Lloyd W. Myers, Flemington, N.J., Robert W. Rake, Omaha, Nebr., and Bernard J. Van Vooren, Sioux City, Iowa, assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 28, 1963, Ser. No. 291,551
10 Claims. (Cl. 57—6)

2. Apparatus for attaching a binder to an elongated article and for wrapping the binder about the article, which comprises:

a binding head for supporting a supply of the binder and arranged so that when the binder is attached to the elongated article the binder is wrapped about the article as the article is advanced longitudinally;



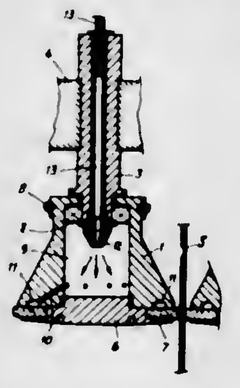
means for supporting a piece of adhesive material having a free end of the binder supply attached thereto;

means for moving said support means relative to the article to attach the adhesive material and the free end of the binder supply to the article for the wrapping of the binder about the article; and

brush means movable relative to the article for pressing the adhesive material firmly into engagement with the article.

3,182,439
TWISTING AND HUMIDIFYING APPARATUS FOR TEXTILE ROVINGS

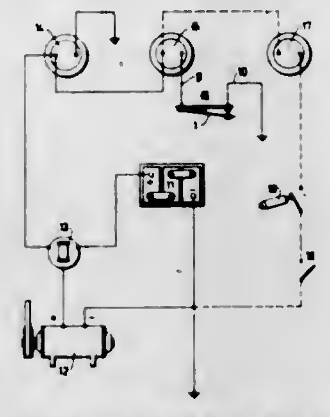
Anna Cecchi, née Gori, Prato, Florence, Italy, assignor to Bruno Cecchi, Prato, Italy
Filed Nov. 21, 1962, Ser. No. 239,191
Claims priority, application Italy, Nov. 29, 1961, Patent 660,126
5 Claims. (Cl. 57—35)



1. Twist imparting apparatus of the class described, comprising: a supporting structure; at least three similar rotary carrier members each having a central cavity formed therein, said rotary members being carried by said supporting structure for rotation about spaced parallel axes lying in a common plane; an annular twisting member formed of resilient porous spongy material carried by each of said rotary members concentrically therewith, adjacent ones of said annular members having confronting peripheral surface portions which pass through the plane defined by their rotational axes radially outwardly of the respective rotary members by which they are carried; means for driving all of said rotary members simultaneously in the same diection of rotation; means for feeding a roving parallel to said axes and between said confronting surface portions for simultaneous engagement by said annular members to impart a twist thereto; moisture supply means for introducing moisture into said cavities; and moisture distributing means defining a plurality of passages leading from each cavity to the annular member carried by the rotary member in which said cavity is formed, said passages communicating with said annular members radially inwardly of said confronting surface portions.

3,182,440
APPARATUS FOR INDICATING THE EFFECTIVE OPERATING TIME OF WORKING-MACHINES

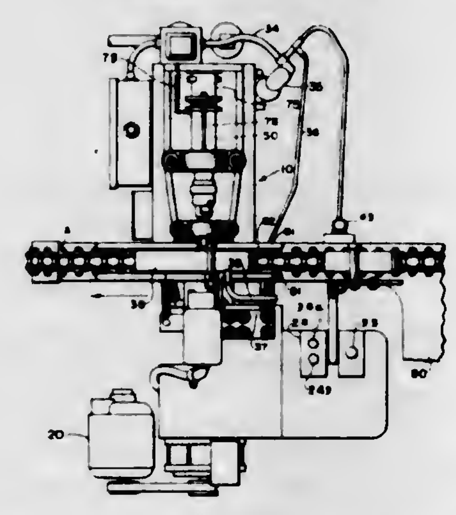
Lars Harald Widegren, Arent Grapegatan 31, Kiruna, Sweden
Continuation of application Ser. No. 285,458, June 3, 1963. This application Sept. 28, 1964, Ser. No. 404,998
Claims priority, application Sweden June 4, 1962
2 Claims. (Cl. 58—145)



1. In a time measuring and indicating apparatus for controlling the effective operating time of a working-machine in combination, an electrical timing circuit, a time instrument inserted into said circuit and adapted to be advanced stepwise when said timing circuit is closed, and a switching device responsive to vibrations of said working-machine, the switching device comprising a spring being at one end fixed to a bracket of insulating material and being also provided with a weight and having further contact operating means adapted to close said timing circuit when the switching device is exerted to such vibrations, said switching device being also provided with adjusting means for adjusting its sensitivity so as to be responsive to the vibrations of the working-machine above a predetermined minimum amplitude of said vibrations.

3,182,441
CHAIN RIVETING MACHINE

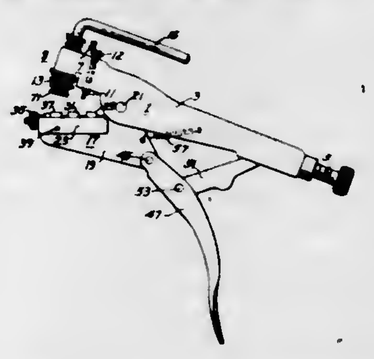
Cecil E. Simmons, Durham County, Ontario, and Jack Rudniski, Oshawa, Ontario, Canada, assignors, by mesne assignments, to Grinnell Corporation, Providence, R.I., a corporation of Delaware
Filed Sept. 25, 1961, Ser. No. 140,594
Claims priority, application Canada, Mar. 30, 1961, 820,266, Patent 685,356
7 Claims. (Cl. 59—7)



1. In a chain riveting machine, a motor, means connected to said motor for advancing a chain of joined links and unheaded pintles, means for interrupting the advance of said chain at periodic intervals, a fluid operated riveting hammer, a piping circuit for carrying fluid under pressure to said hammer, means in said circuit for permitting the transmission of fluid to said hammer only when the advance of said chain is interrupted and a pintle is in proper position to have a head formed by said hammer, means in said hammer for advancing said hammer into operating position in response to said transmitted fluid and for permitting the flow of fluid therethrough to operate said hammer, means for retracting said hammer as said chain is advanced, said hammer containing an elongated peen having a conically shaped indented end face with a plurality of holes bored therein parallel to the axis of said peen, said face and said holes presenting fresh shaping edges for forming heads on said pintles as said peen wears whereby no intermediate grinding to shape of said face is required until the usable portion of said peen is consumed.

3,182,442
SAW CHAIN SERVICE TOOL

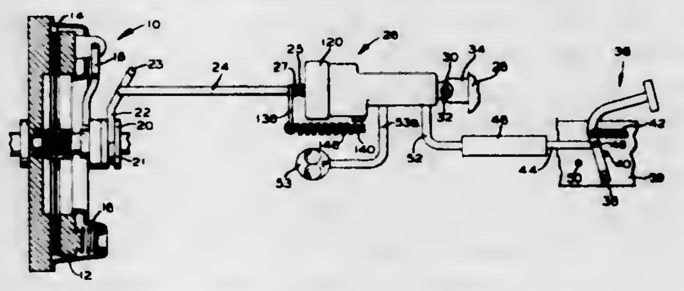
Elof Granberg, 2659 Mira Vista Drive, Richmond, Calif.
Filed Feb. 8, 1963, Ser. No. 257,125
3 Claims. (Cl. 59—7)



2. A saw chain service tool comprising a punch head assembly including a rivet punch and a rivet spinner, an anvil assembly for supporting a saw chain to be serviced, said anvil assembly including an anvil support, a split anvil including a pair of anvil components, means adjustably mounting said anvil components on said anvil support for simultaneous adjustment of both components symmetrically with respect to the axis of said rivet punch, and a fixed anvil affixed to said support on the axis of said rivet spinner, said fixed anvil having a recess in the side facing said rivet spinner.

3,182,443
OPERATING MECHANISM INCLUDING AN ASSIST DEVICE

Martin J. Hermanns, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed June 21, 1962, Ser. No. 204,254
6 Claims. (Cl. 60—10.5)



1. An operating mechanism having an assist device incorporated therein comprising in combination,

(A) a housing mean,

(B) a piston rod disposed in said housing,

(C) a first and a second piston means disposed in said housing for cooperatively imposing urging forces on said piston rod and urging the latter relative to said housing means,

(D) a first fluid pressure of manually controllable magnitude and first supply means for supplying the same,

(E) a second fluid pressure and second supply means for supplying the same,

(F) a first conducting means connecting said first supply means to said housing for conducting said first fluid pressure thereto and having a portion thereof disposed in said housing whereby said first fluid pressure is operative to act upon said first piston means,

(G) a second conducting means connecting said second supply means to said housing for conducting said second fluid pressure thereto and having a portion thereof disposed in said housing whereby said second fluid pressure is operative to act upon said second piston means,

(H) said second conducting means including therein a first bore and a chamber formed axially adjacent said bore with said chamber being radially larger than said first bore,

(I) valve means for regulating the pressure magnitude of said second fluid pressure including

    (1) a plunger means slidably mounted in said first bore of said conducting means and axially movable relative thereto,

    (2) an actuating means having opposed first and second actuating surfaces with said first surface being disposed in said first conducting means and operable to be acted upon by said first fluid pressure and said second surface being disposed in said chamber of said second conducting means and operable to be acted upon by said second fluid pressure,

    (3) sealing means carried by said actuating portion for sealing said first and second conducting means from each other, and

    (4) biasing means,

(J) said plunger means being a hollow cylinder defining a venting bore and having a first engaging surface on the periphery thereof,

(K) said second conducting means having a second engaging surface in said first bore therein cooperable with said first engaging surface and

    (1) engageable therewith to block said second conducting means, and

    (2) disengageable therewith to open said second conducting means whereby said second fluid pressure may pass through said second conducting means peripherally of said plunger means,

(L) said biasing means normally biasing said plunger means for biasing said engaging surfaces into engagement with each other,

(M) said second surface of said actuating means is

    (1) engageable with said plunger for blocking said venting bore and urging said plunger against the biasing effect of said biasing means thereby moving said engaging surfaces into a disengaged relationship with each other,

    (2) radially larger than said plunger means and therefore having a portion thereof extending radially beyond said plunger means whereby

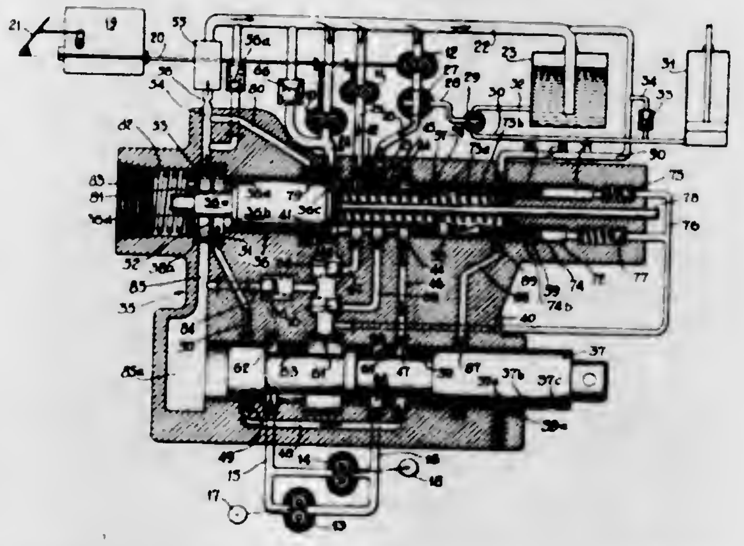
        (*a*) said second fluid pressure in said chamber is operative to act upon said extending portion of said second surface while the latter is engaged with said plunger means and blocking said venting bore and impose an urging force on said actuating means in opposition to the urging force thereon of said first fluid pressure on said first surface,

        (*b*) when said urging force of said second fluid pressure acting upon said actuating means exceeds the urging force of said first fluid pressure acting upon said actuating means the latter moves from engagement with said plunger means and opens said venting bore while allowing said biasing means to bias said engaging surfaces into engagement with each other.

3,182,444
HYDRAULIC DRIVE FOR INDUSTRIAL TRUCK

George F. Quayle, Philadelphia, Pa., assignor, by mesne assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio

Filed June 25, 1963, Ser. No. 290,552
44 Claims. (Cl. 60—19)



1. A hydraulic drive for an industrial truck comprising, an engine,

a driver operated engine throttle control element effective to control the speed of said engine,

hydraulic pump means driven by said engine,

hydraulic motor means connected with traction wheels of the truck and adapted to be driven by fluid supplied by said hydraulic pump means,

control means responsive to increases in the speed of the engine to increase the volume of fluid supplied to said hydraulic motor means by said hydraulic pump means as the speed of the engine is increased, whereby to decrease the mechanical advantage between the engine and the hydraulic motor means and increase the speed of the hydraulic motor means, and

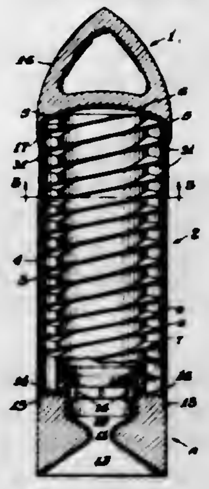
means responsive to a predetermined load on the hydraulic motor means for overruling said control means to decrease the volume of fluid supplied to the hydraulic motor means by the hydraulic pump means whereby to increase the mechanical advantage between the engine and the hydraulic motor means and prevent overloading and stalling of the engine.

3,182,445
LIQUID-SOLID PROPELLANT ROCKET CASE AND METHOD

Fred J. Lowes, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Dec. 21, 1959, Ser. No. 860,831
6 Claims. (Cl. 60—35.3)

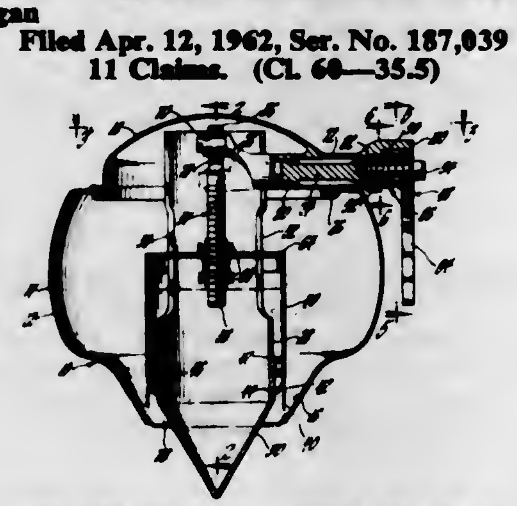
4. In a process for the production of thrust involving burning a solid propellant system within an inner combustion chamber of a rocket, the improvement which consists in burning a solid propellant system deficient in a vaporizable makeup propellant ingredient contained in an annular compartment surrounding the inner combustion chamber and simultaneously therewith injecting the vaporizable makeup propellant ingredient in vapor form into the exhaust gases of the solid propellant system in the high velocity region of the nozzle throat, such injection of the makeup propellant ingredient being accomplished at least in part by vapor pressure generated by heat absorbed in the makeup propellant ingredient from the inner combustion chamber walls.



3,182,446
FLOW CONTROL VALVE

Walter R. Kaminski, Ferndale, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed Apr. 12, 1962, Ser. No. 187,039
11 Claims. (Cl. 60—35.5)



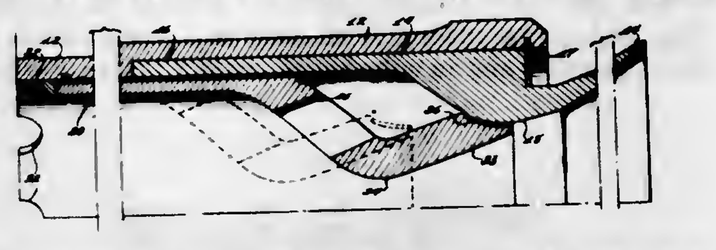
1. A thrust control valve, comprising: an air chamber member including a spherical shell having a conical exit opening provided therein and a removable dome member disposed opposite thereto, a member secured to said dome and extended through said exit opening, said last mentioned member including a conical portion disposed concentrically within said conical exit opening and forming an extended conical and annular passageway therewith, a cylindrical valve member guided on said dome secured member and reciprocal from a position extended across and closing said passageway at the outer end thereof to a position removed from said passageway at the inner end thereof, and control means extended through said dome member and engaged with said valve member for metered reciprocation thereof.

3,182,447
REACTION MOTOR

Harold S. Bell, Jr., Whippany, N.J., assignor, by mesne assignments, to Thiokol Chemical Corporation, a corporation of Delaware

Filed Feb. 27, 1957, Ser. No. 642,910
18 Claims. (Cl. 60—35.6)

1. A rocket powerplant comprising a combustion chamber terminating in a first expansion nozzle, a smaller expansion nozzle concentric therewith and having axially arranged slots concentrically formed therein and extending therethrough slidably mounted in and along the walls of said chamber and adapted to slide from a forward position and seat in and against said first nozzle and close said slots, means for generating gases in said chamber and exhausting them through said smaller nozzle and said slots in a forward position and through said first nozzle,

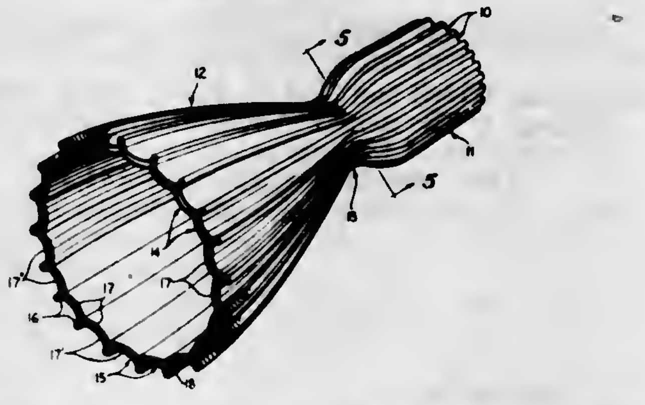


and means connected to said smaller nozzle and responsive to gas pressure for effecting movement of said smaller nozzle to seat in said first nozzle and close said slots to throttle the exhaust gases passing through said first nozzle.

3,182,448
ROCKET MOTOR CONSTRUCTION

George B. Rabe, Sparta, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed June 22, 1960, Ser. No. 37,882
4 Claims. (Cl. 60—35.6)



1. A tube-bundle liquid-cooled axial flow thrust chamber for a rocket motor comprising, plural longitudinally coextensive inner female channel members arranged in the circumference of a circle and secured together to form a hollow elongated chamber wall, the longitudinal contour of each said inner channel member being constructed and arranged to give said chamber wall conventional longitudinal contour to include an upstream combustion chamber section of suitable geometrical form and a convergent-divergent downstream nozzle section, each of said inner channel members being substantially U-shaped in cross-section to include substantially parallel side walls and a connecting cross wall and being arranged with said cross wall inwardly presented and the free edges of said side walls outwardly presented, the adjoining side walls of adjacent inner channel members being evenly abutting, and plural separate outer male channel members of substantially U-shaped cross-section corresponding in number to said inner female channel members and being constructed and arranged in partially inset relation to the latter to predetermined depths with their cross walls inwardly presented and the free edges of their side walls outwardly presented like the inner female channel members to provide an axial coolant passage of predetermined cross-sectional area between the cross walls of the inner and outer channel members of each mated pair.

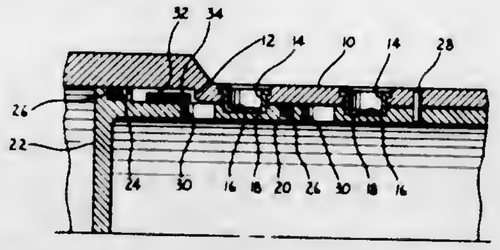
3,182,449
ENERGY ABSORBER

Francis W. Kerney, Pompton Plains, Milton Gershon, Morristown, and Donald Zimmet, River Edge, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed June 26, 1961, Ser. No. 123,924
8 Claims. (Cl. 60—35.6)

1. A cushioning device for a rocket engine having a combustion chamber and a shear slide movable there-

within and in sliding contact therewith at high velocity from an initial to a final position comprising, in combination, a first shoulder formed on the wall of the combustion chamber, a second shoulder formed on the shear slide and being spaced from said first shoulder in the initial position and in substantial contact therewith in the final position, the wall of the combustion chamber defining an annular cushioning chamber with the slide and said shoulders, and a cushion positioned in said cushioning chamber to absorb the shock of the contact of said second shoulder with said first shoulder on movement of the slide to said final position.



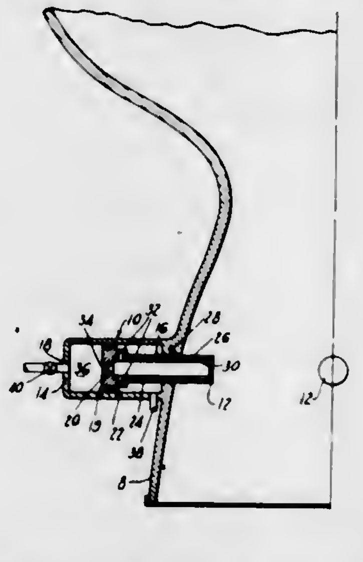
3,182,450

MEANS TO INSULATE THRUST VECTOR INTERCEPTOR SURFACE

George M. Widell and Carl D. Hawk, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Mar. 21, 1962, Ser. No. 181,349

9 Claims. (Cl. 60—35.54)



1. For use with a nozzle subject to supersonic flow of a gaseous current therethrough, a device for deflecting a supersonic gaseous jet including a movable jet intercepting surface comprising:

a cylinder attached to the nozzle wall having an opening into the nozzle;

a means in said cylinder separating said cylinder into two variable volume chambers and provided with an extension connected thereto for traversing said opening in the nozzle wall;

a restricted orifice in said means separating said cylinder into two variable volume chambers to allow fluid to flow from one side of said separating means to the other;

a fluid supply opening connected to supply pressurized fluid to one of said variable volume chambers from which the fluid flows through said restricted orifice to the other of said variable volume chambers thereby pressurizing said separating means causing the same to move toward said fluid supply opening; and

a means for directing a major portion of the fluid entering said fluid supply opening through said extension into the gaseous current to form a vapor insulant for said extension in the gas stream.

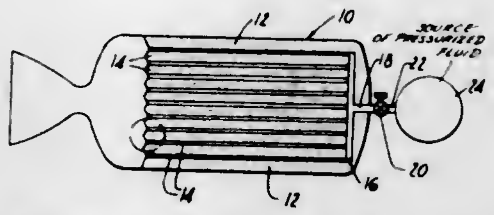
3,182,451

THRUST CONTROL MEANS

George H. Messerly, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Jan. 15, 1962, Ser. No. 166,257

7 Claims. (Cl. 60—35.6)



1. In a solid propellant rocket motor, a means for controlling the combustion of the solid propellant comprising,

a rocket motor case,

a solid propellant contained by said case,

a plurality of spaced apart relatively high heat conductivity, capillary type tubes interspersed in said propellant in heat transfer relationship therewith and openly communicating at one end with the surface of combustion of said propellant,

a source of fluid,

a conduit connecting said source of fluid with the opposite ends of said plurality of tubes,

valve means operatively connected to said conduit for controlling fluid flow therethrough,

said plurality of tubes being operative to transfer heat between said propellant surrounding the tubes and the fluid flowing through the tubes to control the temperature of said propellant and thus the rate of combustion thereof.

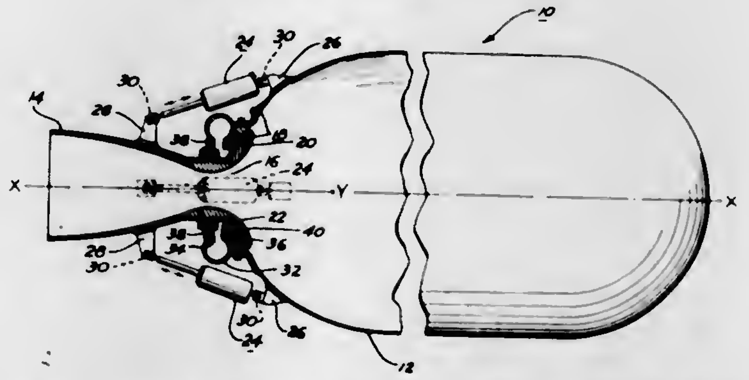
3,182,452

MOVABLE THRUST NOZZLE AND SEALING MEANS THEREFOR

Wendell E. Eldred, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed Apr. 15, 1959, Ser. No. 806,505

10 Claims. (Cl. 60—35.55)



1. In combination with a jet propelled vehicle having a casing with a longitudinal axis and provided with a combustion chamber and a rearwardly directed opening through which hot motive gases are expelled during the combustion process, a thrust nozzle having an annular bearing surface forming a mounting for said nozzle which is adapted for movement in said opening to control the line of action of the gases flowing therethrough, means operatively connected to said thrust nozzle for actuating said thrust nozzle to effect angular displacement of said thrust nozzle relative to said axis, an annular flexible elastomeric enclosure having sealing edges along its inner diameter which are spread apart to provide access to the interior of said enclosure, an annular flanged member fixedly secured to said casing, and an annular flanged member fixedly secured to said nozzle, the spread apart sealing edges of said annular flexible seal in abutting relationship with said flanged members and defining a sealed

enclosure surrounding the bearing surface between said nozzle and casing and open to the ingress of gases leaking past said bearing surface which is terminated as a flow within said flexible enclosure, said flexible seal being deformable in accordance with universal pivotal actuation of said thrust nozzle.

3,182,453

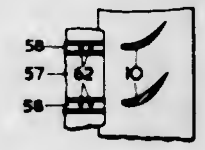
COMBUSTION SYSTEM

Rhys Price Probert, Farnborough, Peter Martin, Farnham, and Edward Langford Hartley, Farnborough, England, assignors, by mesne assignments, to Power Jets (Research and Development) Limited, London, England, a British company

Original application Mar. 22, 1957, Ser. No. 647,918, now Patent No. 3,126,705, dated Mar. 31, 1964. Divided and this application Oct. 4, 1961, Ser. No. 142,799

Claims priority, application Great Britain, Mar. 26, 1956, 9,313/56

5 Claims. (Cl. 60—39.66)



1. Gas turbine plant comprising a compressor, an annular combustion chamber and a turbine; said combustion chamber comprising an annular flame tube having inner and outer walls, an inlet from the compressor at one end and an outlet connected to the turbine inlet at the other end, means for supplying fuel to the interior of the flame tube, and an aircasing enclosing said flame tube and defining with said outer wall thereof an annular duct for conducting air from the compressor to the turbine inlet; said turbine comprising a row of turbine inlet guide vanes having opposite concave and convex faces; and said flame tube outer wall being formed at its downstream end into longitudinally extending chutes forming circumferentially alternating passages for discharging streams of air from said annular duct and combustion gases from said flame tube, the chutes extending to the plane of the turbine inlet and being arranged so that each said stream of air is so aligned with one of said inlet guide vanes that a small portion of said stream is discharged on to the concave face of the vane and the greater portion on to the convex face of the vane.

3,182,454

CONTROLLING MECHANISMS AND HYDRAULICALLY OPERATED POWER TRANSMISSION SYSTEMS

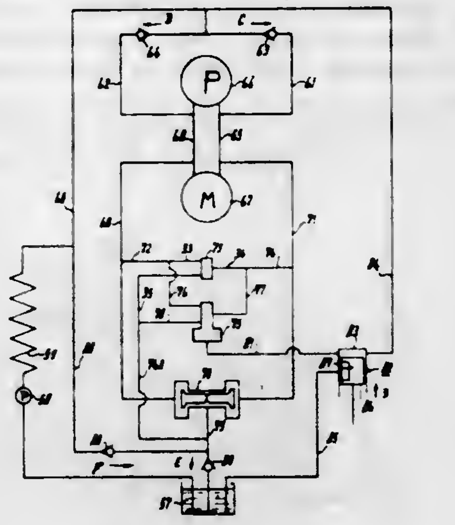
Cornelius Otto Jonkers, Delft, and Foppe Hilbertus Fockens, Maasland, Netherlands, assignors to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company

Filed July 10, 1962, Ser. No. 209,484

Claims priority, application Netherlands, July 18, 1961, 267,231

26 Claims. (Cl. 60—53)

18. A hydraulically operated power transmission system including a hydraulic pump and a hydraulic motor, wherein fluid subjected to higher pressure flows from the pump to the motor and fluid subjected to lower pressure flows from the motor towards the pump, a higher pressure part of the fluid circuit being adapted to communicate with a first space in which a lower pressure prevails, a first blocking device for closing said communication, a second space containing fluid under pressure for urging said first blocking device in closed position, said second space being normally closed by a second blocking device, a third space, said second space being adapted to automatically establish communication, when the pressure in the second space is excessive, between the second space and the third space so that the first blocking device may be opened.



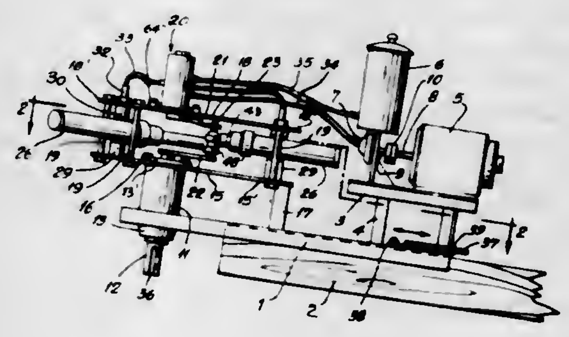
3,182,455

HYDRAULIC DRIVE

Donatien Racicot, St. Paul d'Abbotsford, Quebec, Canada, assignor of fifty percent to Hector Vincent Inc., St. Valerien, Quebec, Canada

Filed Dec. 16, 1963, Ser. No. 331,030

7 Claims. (Cl. 60—53)



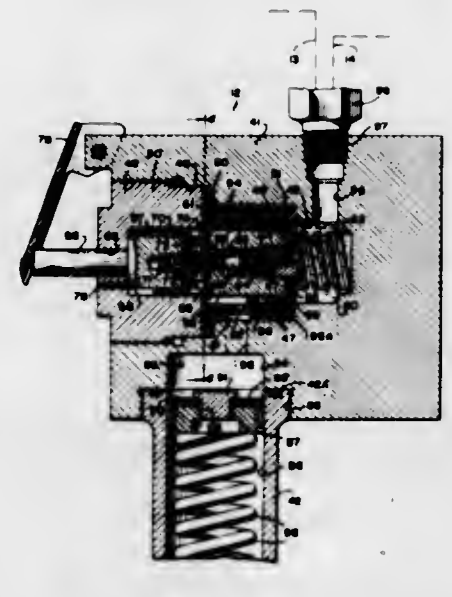
1. A hydraulic drive for driving an endless conveyor, comprising a base frame including two spaced support members rigidly interconnected, a drive shaft extending through one of said support members, a crank arm secured to one end of said drive shaft and disposed between said support members, at least three pivot members mounted between said support members and equally angularly spaced with respect to the axis of said drive shaft, at least three single acting hydraulic cylinder and piston units disposed between said support members, having their piston pivotally connected to said crank arm and their cylinders supported by said pivot members, whereby said units are capable of driving said crank arm and drive shaft, a continuously rotatable valve having a body secured on the other one of said support members and a rotor mounted co-axially with said drive shaft, a second crank arm secured to said rotor and pivotally connected at its outer end to said first crank arm, whereby said rotor is rotated by said drive shaft through said second crank arm, a source of pressure fluid, separate feeding and return tubing connecting said valve to said source, a single feeding and return hosing connecting each cylinder to said valve, said valve having fluid passageways made in said body and rotor for the successive feeding and return

of fluid to and from said cylinders and a pressure release by-pass connected to the said feeding and return tubing.

3,182,456
REMOTE CONTROL MECHANISM

Elmer B. Burnett, Monroeton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

Filed May 9, 1963, Ser. No. 279,133
3 Claims. (Cl. 60—54.5)



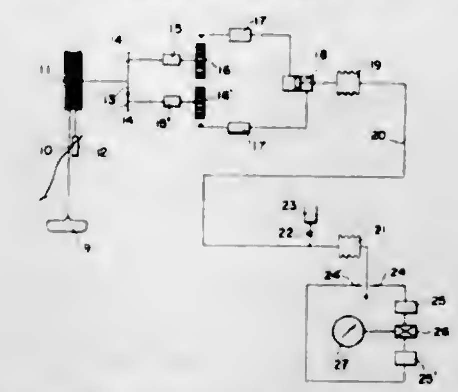
2. A hydraulic control device for transmitting liquid to and receiving liquid from a slave mechanism to selectively to effect operation of the latter comprising,

(*a*) a housing having a liquid reservoir therein,
(*b*) said housing having at least one piston chamber therein,
(*c*) a piston disposed for axial movement in said piston chamber,
(*d*) biasing means for urging said piston in a direction toward one end of the piston chamber to define between the piston and the opposite end of the piston chamber a working chamber,
(*e*) a coaxial by-pass passageway formed in said piston communicating at one end with the working chamber and at the opposite end with said liquid reservoir to provide flow of liquid past the piston,
(*f*) a plunger disposed in said housing adjacent said piston for axial movement to engage and axially move said piston toward said opposite end of the piston chamber,
(*g*) trigger means disposed to engage said plunger and to axially move the latter,
(*h*) a valve seat formed in said by-pass passageway,
(*i*) a ball valve disposed in said by-pass passageway and biased toward said valve seat in said by-pass passageway, and
(*j*) a ball valve control plate carried by said plunger adjacent said piston,
(*k*) said ball valve control plate having a projection disposed to extend into said by-pass passageway and into engagement with said ball valve to maintain said ball off said valve seat when the piston is at the said one end of the piston chamber,
(*l*) said ball valve control plate carried by said plunger and capable of restricted axial movement relative to the plunger so that, upon movement of the plunger and the piston, the control plate and its projection move relative to the plunger and piston to allow the ball valve to rest against the valve seat and thereby prevent flow of liquid through the by-pass passageway.

3,182,457
SYSTEM FOR TRANSMITTING SIGNALS

Takehiko Sato, Tokyo, and Tadashi Akiyama, Yokohama, Japan, assignors to Honeywell Inc., a corporation of Delaware

Filed July 31, 1963, Ser. No. 298,983
3 Claims. (Cl. 60—54.5)

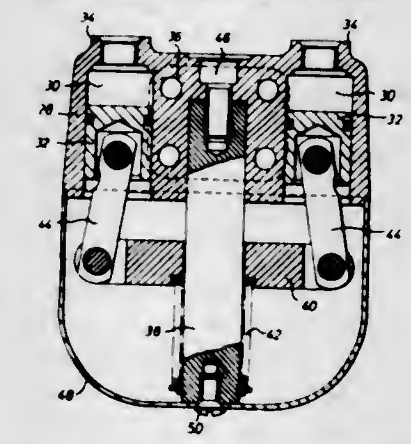


1. Signal transmitting apparatus, comprising
a transmitting bellows having an outlet connection,
a receiving bellows having an inlet connection,
a liquid conduit interconnecting said inlet and outlet connections,
both of said bellows and said conduit being hermetically filled with a substantially incompressible liquid so that an impact force given to one of said bellows produces a pressure impulse in said liquid which is propagated as a steep pressure change through said liquid to cause the rapid displacement of the other of said bellows,
first conversion means for providing pulses representative of a value to be transmitted,
force producing means interconnecting said conversion means and said transmitting bellows to apply thereto impact forces corresponding to said pulses,
responsive means associated with said receiving bellows and responsive to said displacement thereof to provide an electrical impulse upon the occurrence of each such displacement,
and second conversion means connected to said responsive means to receive said electrical impulses and to convert the latter into a manifestation representative of said value.

3,182,458
TEMPERATURE COMPENSATOR UNITS FOR HYDRAULIC CIRCUITS

Richard D. Smith, Market Weighton, England, assignor to Armstrong Patents Co. Limited, London, England, a British company

Filed May 8, 1964, Ser. No. 366,033
Claims priority, application Great Britain, May 10, 1963, 18,508/63
2 Claims. (Cl. 60—54.5)

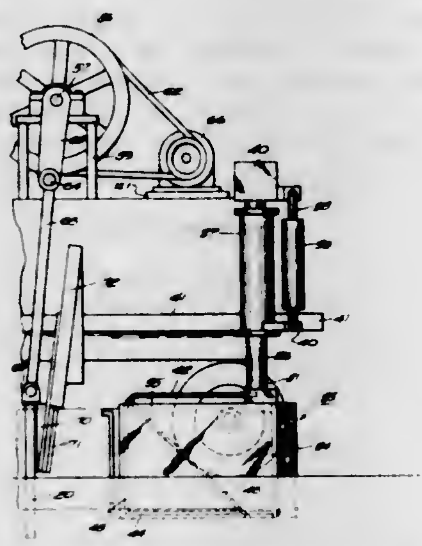


1. A hydraulic compensator unit comprising a body member formed with a pair of hydraulic ports, a pair of spaced, parallel hydraulic cylinders in said body member and each communicating with one of said ports, a piston slidable in each cylinder responsive to the appearance of hydrauliic pressure in the associated port, a pillar fixedly located in said body member to extend centrally between and behind said hydraulic cylinders in a direction parallel thereto, a bridge member engaged with rocking clearance upon and slidable along said pillar, said bridge member extending symmetrically and transversely relative to said pillar and behind said pistons, said pistons acting against said bridge member, and spring means urging said bridge member towards said pistons for balancing the forces exerted on said bridge member by said pistons, said rocking clearance permitting said bridge member to tilt and lock upon said pillar whenever unbalance occurs in the piston load exerted on said bridge member.

3,182,459
APPARATUS FOR POSITIONING FLUID BARRIERS

Tobias H. Grether, Camarillo, and James Bermann, Oxnard, Calif., assignors to Consolidated Thermoplastics Company, Stamford, Conn., a corporation of Delaware

Filed Dec. 5, 1962, Ser. No. 242,548
8 Claims. (Cl. 61—63)



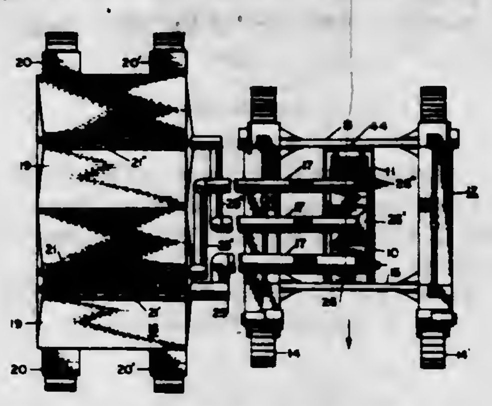
5. An apparatus for providing a water barrier along a predetermined path; comprising: a vehicle movable along the earth in said path; plow means affixed to the vehicle operable to cut a narrow slit in the earth conforming to said path, feed means on the vehicle operable to supply vertically disposed continuous plastic film to said slit behind said plow; stake driving means on the vehicle operable to imbed the lower ends of vertically disposed stakes in the earth along said path, and fastening means mounted on the vehicle to affix said film to the upper end of each stake such that the film is maintained in a vertically disposed position along said path.

3,182,460
APPARATUS FOR MAKING PERMEABLE CONDUITS IN SUBTERRANEAN LINES OF DRAINAGE

Harry D. Durston, Pasco, and Alfred Perry, Moses Lake, Wash., assignors to J. A. Terteling & Sons, Inc., Boise, Idaho, a corporation of Idaho

Filed Mar. 18, 1964, Ser. No. 352,866
13 Claims. (Cl. 61—63)

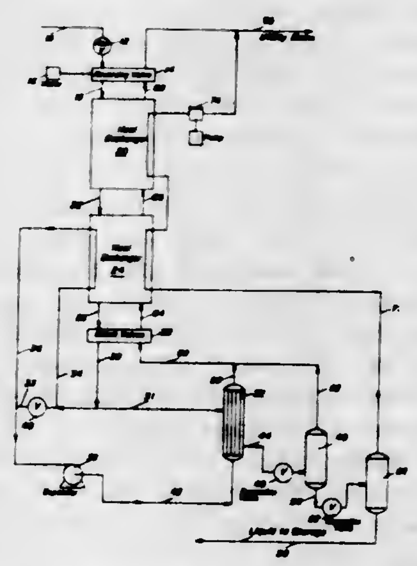
1. Apparatus for formation of a permeable conduit in an open trench in the foundation for a surface structure, by movement of the apparatus along the trench, said conduit being composed of a core of relatively coarse interstitial material separated from the trench walls by a layer of denser interstitial material, comprising a plurality of bottomless distributing compartments spaced apart in the direction of movement of the apparatus, each compartment being defined by front and rear walls, with respect to the direction of movement of the apparatus, and opposite spaced sidewalls joining the front walls to the rear walls, the side walls of the front compartment being spaced apart farther than the side walls of the next compartment to be offset outwardly thereof so that a wider layer may be deposited through the front compartment than through the next compartment, forming means extending forwardly from the side walls of said next compartment to at least the rear wall of said front compartment and vertically to the bottom edges of the walls of said front compartment, the bottom edge of the rear wall of said next compartment being spaced above the bottom edges of the walls of said front compartment, said forming means being operable in movement through the trench to divert a central portion of the material discharged from the front compartment into the trench toward the side walls of the trench and hold that material against those side walls, while material from the next compartment is discharged between the material held against the side walls, and means operable to deliver a relatively dense interstitial material to said front compartment and relatively coarser interstitial material to said next compartment.



3,182,461
NATURAL GAS LIQUEFACTION AND SEPARATION

Edwin S. Johanson, Princeton, N.J., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed Sept. 19, 1961, Ser. No. 139,194
5 Claims. (Cl. 62—13)

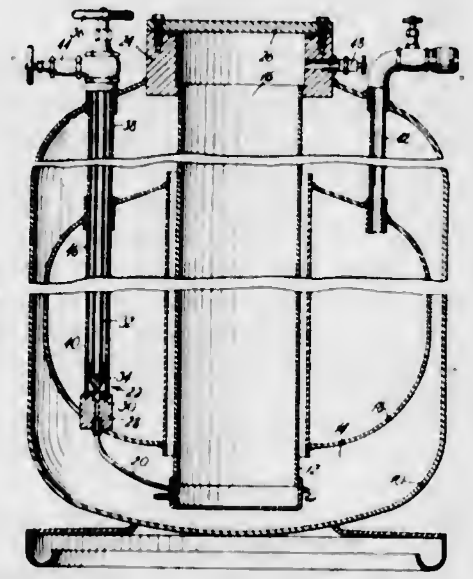


1. A method of operating a plant for converting a high pressure natural gas predominantly methane supplied by a transmission line to a substantially lower pressure heating gas and for distributing said heating gas to consumers with a minimum of interruption, which comprises: (1) withdrawing said natural gas under transmission line pressure from the transmission line by which said gas is supplied to said plant; (2) cooling said gas in a reversing heat exchanger while under substantially transmission line pressure to form a gaseous fraction; (3) removing a part of the cooled gaseous fraction and returning it as an

unexpanded unbalance stream to the exchanger; (4) expanding said part of said gaseous fraction to a pressure substantially corresponding to the distribution line pressure maintained by said gas plant; (5) passing said cold expanded gaseous fraction in heat exchange relationship with the balance of said natural gas to liquefy a part thereof at the high pressure; (6) substantially continuously, at least during periods of ample supply of said natural gas, conducting said liquid fraction in the liquid state to at least one storage vessel; and (7) passing the expanded gaseous fraction after the heat exchange of step 5 in heat exchange relation to the first mentioned gas to accomplish the cooling of step (2).

3,182,462
CRYOGENIC REFRIGERATOR

Hugh M. Long and Stanley L. Wilson, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed July 19, 1963, Ser. No. 296,190
8 Claims. (Cl. 62—55)

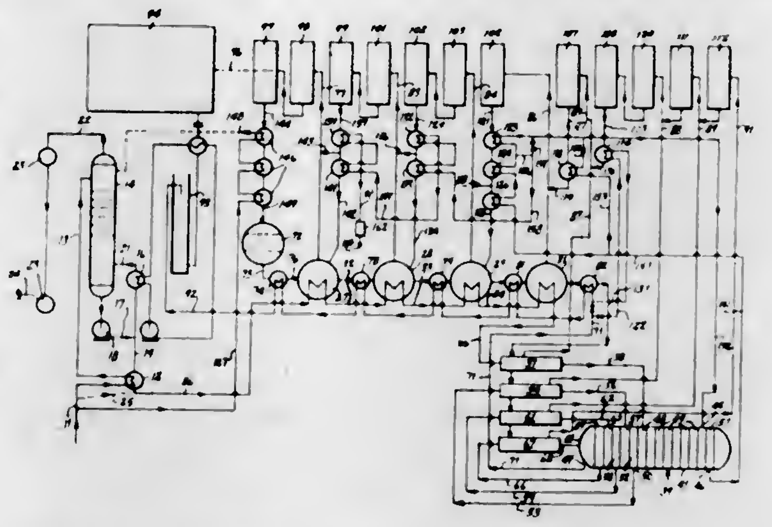


1. Apparatus for refrigerating a component with a cryogenic liquid which comprises an outer jacket; an elongated inner compartment suspended within said outer jacket from the upper section thereof and positioned within said outer jacket such that an evacuable insulating space is provided therebetween and having an opening at the upper end such that the interior of the inner compartment is accessible from the exterior of said outer jacket; removable closure-sealing means for said opening; a cryogenic liquid storage vessel positioned within said outer jacket around at least a section of said inner compartment and spaced from said inner compartment and said outer jacket such that said evacuable insulating space extends therebetween; means for suspending the storage vessel from the upper section of said outer jacket independently of said inner compartment, a cryogenic liquid supply line connected at opposite ends to said inner compartment and the storage vessel, and a valve housing positioned at least partially in said storage vessel in fluid communication with the supply line and constructed to permit cryogenic liquid flow from said storage vessel to said inner compartment.

3,182,463
REFRIGERATION METHOD FOR REDUCING THE SALT CONTENT OF BRINE

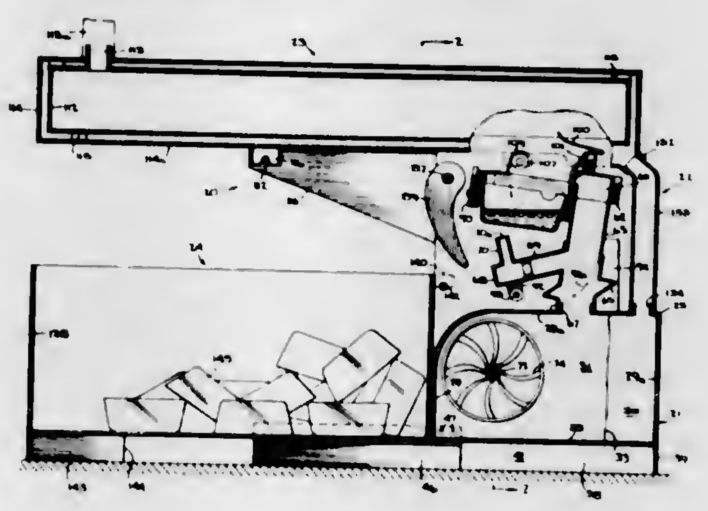
Walter V. Stearns, White Plains, N.Y., assignor of one-half to Dayton R. Stemple, Jr., New York, N.Y.
Filed July 20, 1959, Ser. No. 828,284
25 Claims. (Cl. 62—58)

1. A method of reducing the salt concentration of an original brine comprising freezing said original brine to form an original slurry, introducing said original slurry intermediate the ends of a countercurrent washer said washer having a cold end and a warm end, moving the liquid toward said cold end, moving the ice toward said warm end, removing a further brine from said washer intermediate said cold end and the original slurry inlet point, freezing said further brine to form a further slurry, introducing said further slurry at said cold end, withdrawing brine concentrated relative to said original brine intermediate said cold end and the further brine outlet point, melting said ice at said warm end to produce cold water, and withdrawing brine diluted relative to said original brine at said warm end.



3,182,464
AUTOMATIC ICE MAKING DEVICES

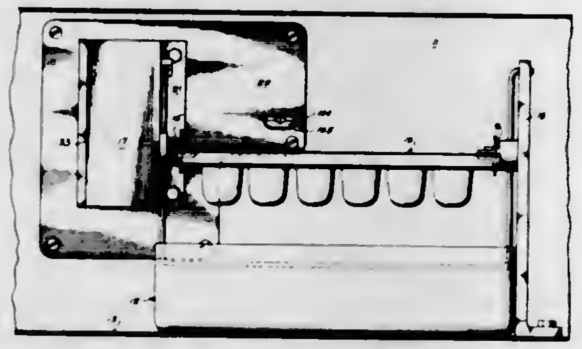
Erling B. Archer, 33—74 191st St., Flushing 58, N.Y.
Continuation of abandoned application Ser. No. 206,218, June 29, 1962. This application Dec. 14, 1962, Ser. No. 245,364
20 Claims. (Cl. 62—135)



19. In an automatic ice cube freezing and harvesting apparatus; an ice cube tray comprising frame means and a water-receiving body secured to said frame means and defining a plurality of side by side pockets in which water is adapted to be frozen into ice cubes, means mounting said tray for angular movement about its longitudinal axis, a plurality of rigid ejector fingers extending into said pockets, respectively, from one side of said body and contoured in accordance with the bottom surfaces of said pockets, a member integral with said fingers and supported by said frame means for pivotal movement about an axis substantially parallel to said longitudinal axis of said tray, means operable on said member and said fingers for biasing the same so as to normally position said fingers in contact with said bottom surfaces of said pockets, and means arranged for engagement with said member for effecting a pivotal movement of the same against the force of said biasing means so as to cause said fingers to be raised out of said pockets for ejecting frozen ice cubes therefrom.

3,182,465
SLUG VALVE DRIVEN ICE MAKER

Donald E. Miller, Mount Prospect, and Carl C. Bauerlein, Lincolnwood, Ill., assignors to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed June 29, 1961, Ser. No. 120,631
4 Claims. (Cl. 62—137)

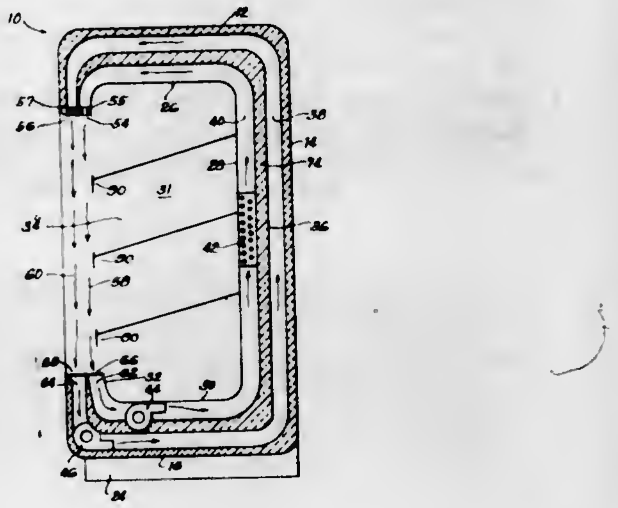


3. An ice making assembly comprising a housing having spaced input and output shafts journalled therein, a flexible ice tray disposed within a freezing compartment and having one end mounted on said output shaft, a storage tray positioned beneath said ice tray to collect ice blocks ejected therefrom, stop means limiting the degree of rotatable movement of the opposite end of said ice tray, a chamber formed within said housing having a port and having a wall which is movable to vary the volumetric capacity of said chamber, means biasing said wall in a first direction to decrease the volumetric capacity of said chamber, valve means operable to communicate said port with a source of pressurized water to urge said wall in an opposite direction and to subsequently permit said biasing means to urge said wall in said first direction to discharge liquid through said port, second valve means operable in series with said first-mentioned valve means to control the communication of said port with the source of pressurized water, means sensing the level of ice blocks within said storage tray and controlling the operation of said second valve means as a function of that level, passageway means directing water discharged from said port to said ice tray, a member connected to and extending from said wall, a segmental driving gear mounted on and corotatable with said input shaft, a driven gear mounted on and corotatable with said output shaft and engaged with said driving gear, motion translation means for converting linear motion of said member to rotary motion of said driving gear, and power means for controlling the operation of said valve means.

3,182,466
CONDITIONED STORAGE CABINET

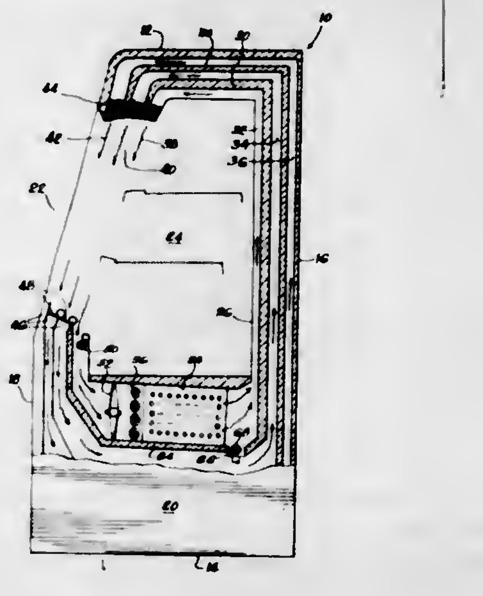
Sterling Beckwith, Libertyville Township, Ill., assignor, by mesne assignments, to Dual Jet Refrigeration Company, a corporation of Illinois
Filed Mar. 22, 1962, Ser. No. 181,525
2 Claims. (Cl. 62—256)

1. In a cabinet having an enclosed space with an access opening on one wall communicating the otherwise enclosed space with the ambient atmosphere in an air flow system which consists of, outlet nozzles extending continuously only across one edge of the opening in side by side parallel relation and corresponding inlet means extending only across the opposite edge of the opening, means for projecting a continuous curtain of air across the opening from the outlet nozzles to the inlets, said curtain defining an interior face moving directly in contact with the relatively still air within the enclosed space, with all the air entering the inlets being recirculated to the outlets without intermediate bleeding off of air into the enclosed space and a solid barrier exending continuously across an intermediate portion of the enclosed space from the far end portion thereof to a line substantially flush with a line drawn from the outlet nozzles to the inlets across the access opening, said line extending beyond the plane of movement of said interior face whereby said barrier terminates at a point partially within the line of travel of said curtain, said barrier being positioned to extend crosswise of the direction of flow of the air curtain from the outlet nozzles to the inlets and which includes a lip on the edge of the barrier adjacent the end curtain and in which the lip extends upwardly and downwardly beyond the barrier from the edge of the barrier to redirect air in the space beyond the barrier into the end curtain.



3,182,467
REFRIGERATION SYSTEM WITH DEFROST

Sterling Beckwith, Libertyville Township, Ill., assignor, by mesne assignments, to Dual Jet Refrigeration Company, a corporation of Illinois
Filed May 9, 1962, Ser. No. 193,483
2 Claims. (Cl. 62—256)

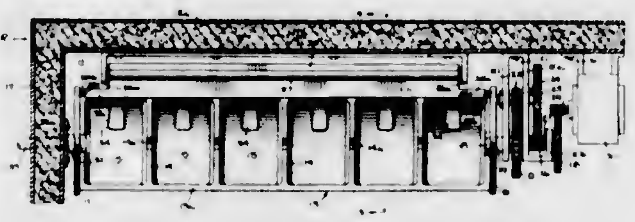


1. In a refrigerated cabinet defining an access opening in one wall communicating the otherwise enclosed space with the outside atmosphere, means for circulating a plurality of air panels across said opening and through passages within said enclosure, and means for refrigerating at least the innermost one of said panels, the improvement wherein said refrigeration means comprise spaced apart coils, heating means located over the faces of each of said coils which are exposed to the oncoming air panel,

said heating means being adapted to heat substantially all of said oncoming air panel during a defrosting operation whereby heated air is circulated to said refrigerating means thereby accelerating the defrosting operation, and additional heating means located between the inlet for the passage confining said innermost panel and the circulating means in said passage, said additional heating means also being adapted to be energized during said defrosting operation.

3,182,468
AUTOMATIC ICE CUBE FREEZING APPARATUS

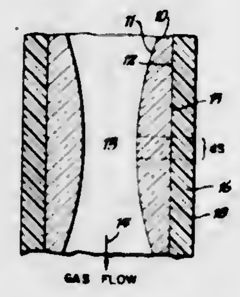
Erling B. Archer, 33—74 191st St., Flushing 58, N.Y.
Filed Dec. 14, 1962, Ser. No. 244,830
8 Claims. (Cl. 62—353)



1. In an automatic ice cube freezing and harvesting apparatus; a tray defining a plurality of pockets for receiving water to be frozen into ice cubes, means mounting said tray for angular movement, abutment means disposed adjacent the path of said angular movement, rigid ejector means pivotally supported by said tray and comprising a plurality of ejector fingers each projecting into a respective one of said pockets of said tray, and a member connected to said ejector means and adapted to come into engagement with said abutment means during said angular movement of said tray for raising said ejector fingers out of said pockets so as to expel frozen ice cubes therefrom.

3,182,469
WALL STRUCTURE SUITABLE FOR EXPOSURE TO HIGH TEMPERATURE GAS

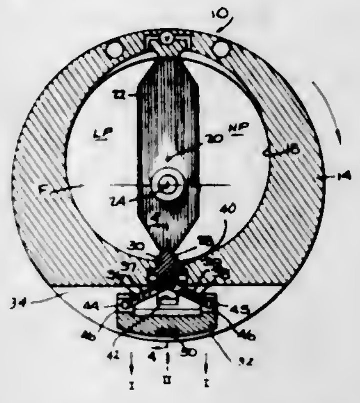
Henry P. Kirchner, Williamsville, N.Y., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York
Filed Jan. 5, 1962, Ser. No. 167,997
4 Claims. (Cl. 62—467)



1. A wall structure suitable for exposure to a gas having a temperature of more than 3000° R. and capable of dissipating heat from the solid-hot gas interface so provided, comprising a first body composed of non-ablative dielectric solid material transparent to thermal radiation and having one surface providing the solid side boundary of said interface and having another surface remote from said one surface, and a second body composed of ablative material transparent to thermal radiation and having a first surface contacting said another surface and also having an ablative surface remote from said first surface, whereby heat is transferred by radiative transport from said one surface through said bodies to said ablative surface to be absorbed by the latter.

3,182,470
SEALING DEVICE

George N. Smith, Bedminster, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 8, 1963, Ser. No. 271,443
5 Claims. (Cl. 64—26)



1. An improved sealing device for an impulse tool having a housing means adapted to contain a fluid, spindle means in said housing means and in said fluid and drive means operatively associated with one of said housing means and said spindle means for causing relative rotary movement between said housing means and said spindle means, said sealing device comprising:

(*a*) a sealing member reciprocable in said one,

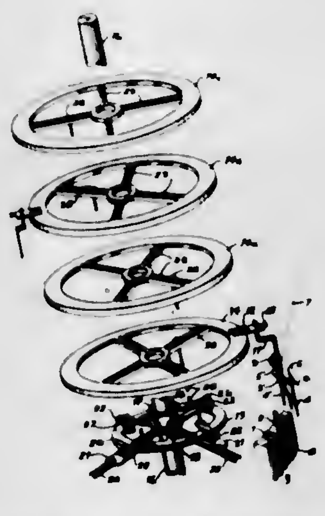
(*b*) mass means reciprocable toward and away from said one and movable outwardly in response to centrifugal force caused by the rotation of said one and

(*c*) operating means connected to said sealing member and said mass means and operable by movement of said mass means away from said one to force said sealing member into sealing engagement with the other of said housing means and said spindle means during a portion of each revolution of said one to substantially eliminate leakage between said one and said other to impulse the other,

(*d*) said sealing member being movable away from said other after the impulsing operation to provide resultant large porting between said one and said other.

3,182,471
STRIPING DEVICE FOR A KNITTING MACHINE

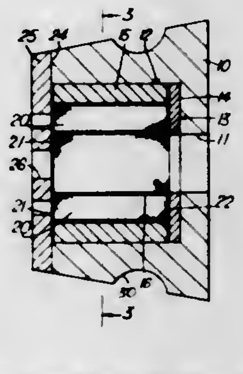
Benjamin Fried, 2375 Arthur Ave., Bronx, N.Y.
Filed Nov. 18, 1960, Ser. No. 70,318
15 Claims. (Cl. 66—35)



1. In a knitting machine having a needle cylinder, a plurality of elongated needles positioned in the needle cylinder and each having a hook portion and a shank portion; at least one of said needles being adapted to have the hook portion thereof move radially to a position radially disposed from the remaining needles when said one needle is moved to a yarn-receiving position, the hook portions of said remaining needles moving substantially in the paths of the respective shank portions during longitudinal movement of said shank portions; and a yarn carrier mounted on the machine for oscillating movement along a circular path concentric with the needle cylinder; said carrier being associated with said one needle so as to be oscillated past said one needle.

3,182,472
CATALYTIC IGNITERS FOR COMBUSTION EQUIPMENT

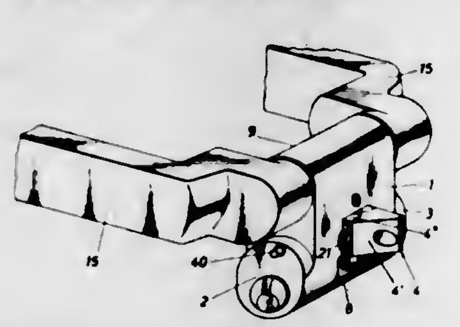
Brian Toone, Littleover, Derby, England, and Allan M. Barham, Pennard, Swansea, Wales, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Dec. 2, 1963, Ser. No. 331,077
Claims priority, application Great Britain, Dec. 14, 1962, 47,374/62
12 Claims. (Cl. 67—19)



1. A prime mover ignition device for promoting ignition of liquid fuel injected into a stream of combustion supporting gas, said device comprising a plurality of substantially cylindrical foraminate rolls of a material having catalytic properties in the promotion of combustion, a mass of refractory material supporting said rolls in an annular formation with adjacent rolls touching one another, and an upstream end of said mass of refractory material provided with a plurality of apertures through which a combustion mixture may flow directly into the interior of said rolls.

3,182,473
LOCKS

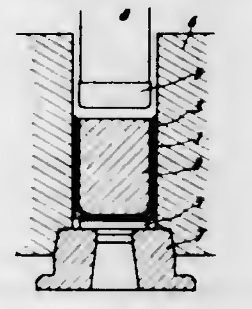
Heinz Wolter, Cologne-Lindenthal, Germany, assignor to Firma Josef Voss KG, Bruhl, Bezirk Cologne, Germany, a corporation of Germany
Filed Feb. 18, 1963, Ser. No. 258,989
Claims priority, application Germany, Nov. 10, 1962, V 14,542; Nov. 24, 1962, V 14,579
5 Claims. (Cl. 70—149)



1. A deadlock comprising
a lock casing,
a latch reciprocating in said lock casing,
a double-cylinder lock, latch handles and a latch guide mounted in said lock casing and operatively connected with said latch,
means operating said latch selectively by said latch handles and said double-cylinder lock,
means for excluding operation of said latch handles by said cylinder lock,
said lock casing being adapted to be introducible lengthwise into a matching aperture of a hollow section of a door frame, and
said latch comprising a dovetail portion corresponding to the width of said lock casing, said latch operating means comprising a double-armed lever rotatably mounted in said lock casing and engageable with said dovetail portion, said lock casing including a head portion, a latch guide mounted in said head portion, and the free arm of said double-armed lever being in and out of engagement with said latch guide, respectively, depending upon the position of said latch.

3,182,474
HOT EXTRUSION OF MATERIALS

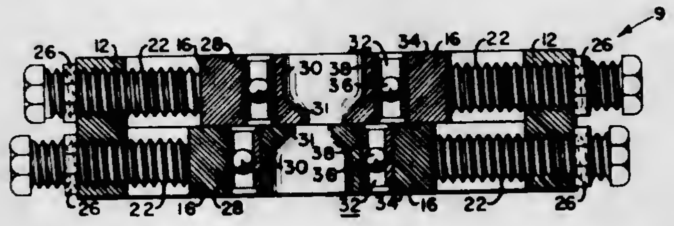
Jean Buffet, Versailles, France, assignor to Compagnie Du Filage des Metaux et des Joints Curty, Paris, France
Filed Oct. 29, 1964, Ser. No. 408,465
Claims priority, application France Oct. 7, 1959, 807,081
2 Claims. (Cl. 72—41)



1. A method of hot extruding material selected from the group consisting of steels, alloy steels, refractory alloys, and cermets which comprises encasing a billet of said material in a sheath so that there is a clearance space between said billet and said sheath, said sheath being made from a rigid material, interposing in said clearance space a substance selected from within the group of substances having a substantial viscosity in the range of temperatures including the desired hot extrusion temperature of said billet, heating said billet, said sheath and said substance to a hot extrusion temperature of said billet, placing said heated billet and its sheath into a press chamber of an extrusion press having a die opening at one end thereof and extruding said billet through said die opening by application of extrusion pressure directly to said billet but not to said sheath which does not undergo hot extrusion and which remains in its position in said press chamber.

3,182,475
METAL WORKING TOOL

Elmer D. Dilling, Las Vegas, Nev., assignor to Titanium Metals Corporation of America, New York, N.Y., a corporation of Delaware
Filed Dec. 27, 1960, Ser. No. 78,469
10 Claims. (Cl. 72—77)



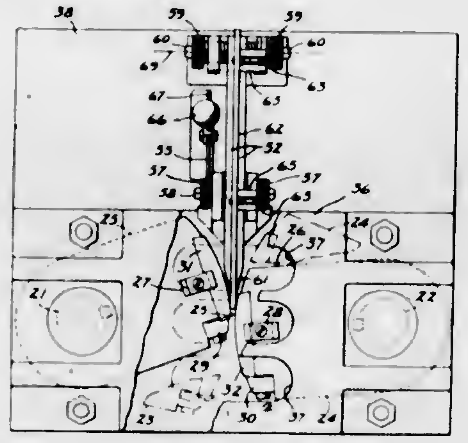
1. A metal working tool comprising: an outer frame; a plurality of inner frames adjustably mounted in parallel relationship in said outer frame; means for locking said inner frames in set adjustments with respect to said outer frame; and a plurality of working rings freely rotatably mounted one in each of said inner frames, the inner

edges of said working rings being smooth and of blunt cross section and adapted to flow-turn a workpiece against which said edges are rotatively pressed.

3,182,476
THREAD ROLLING MEANS

Howard D. Prutton, Parkview, Ohio, assignor to Wire Machinery Company, Chicago, Ill., a corporation of Illinois

Filed Aug. 20, 1963, Ser. No. 303,372
7 Claims. (Cl. 72—88)

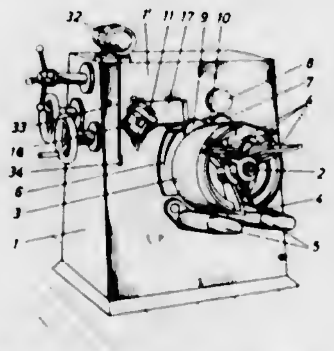


1. A thread rolling device comprising first and second arcuate thread-rolling die means mounted in apposition to define between them a workpiece-passing throat for passing workpieces in a given direction and rolling and forming them during their passage, means for repetitively displacing said first and second die means each from its own starting position through its own cycle of arcuate back and forth movement along a side of said throat and back to its starting position to thereby establish an over-all die operating cycle, with the instantaneous directions of movement of said first and second die means being opposed to each other throughout at least substantial portions of said over-all die operating cycle and, taking said aforementioned given direction as positive, the algebraic sum of the respective displacements of the first and second die means from their starting positions remaining positive throughout at least initial portions of said over-all operating cycle.

3,182,477
FLYING-OFF REEL WITH ROLLERS TRUING A WIRE FED THERETO

Franz Gerst, Schulstrasse 10, Ihmert, Westphalia, Germany

Filed Aug. 24, 1962, Ser. No. 219,225
Claims priority, application Germany, Aug. 25, 1961, G 33,013
5 Claims. (Cl. 72—183)



1. A flying-off reel with rollers truing a wire fed thereto from a wire ring, comprising

a stand including a front wall,

a drum secured to said front wall and adapted to support a wire ring,

rollers having a profile complementary to the cross-section of wire to be trued and rotatably mounted on on said front wall,

a gripping-member disposed in front of said rollers and movement controlled during movement of said wire in the direction of removal,

said gripping-member including means for clamping the free end of said wire to be trued and for advancing the free end of said wire,

said clamping means comprising a mouth formation radially open toward said wire ring and clamping the free end of said wire,

a slide secured to said front wall for linear movement parallel to said front wall,

said gripping-member head being rotatably mounted on said movable slide,

said front wall having a longitudinal solt with an angularly shaped end portion and defining marginal edges and receiving said gripping-member,

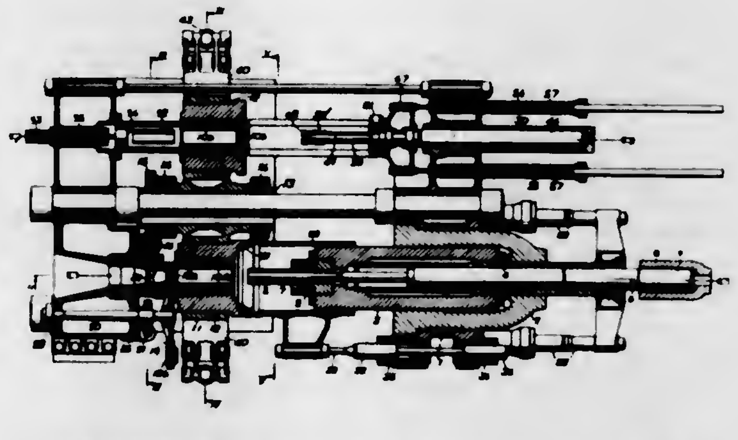
means reciprocating in said mouth formation for gripping said wire, and

means effecting said reciprocating motion.

3,182,478
HYDRAULIC METAL EXTRUDING MACHINE

Akira Asari, Asahi-ku, Osaka, Japan, assignor to Kobe Steel Works, Ltd., Kobe, Japan

Filed July 8, 1963, Ser. No. 293,361
Claims priority, application Japan, July 9, 1962, 37/28,846; Nov. 22, 1962 (utility model) 37/70,114
1 Claim. (Cl. 72—255)

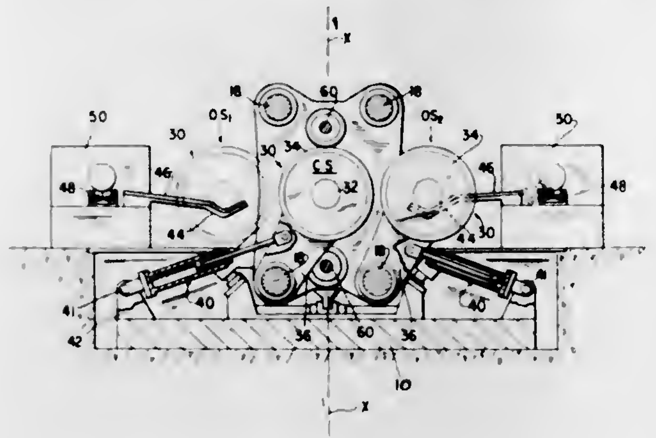


An apparatus for extruding metals comprising a press having a press centerline and at least one preparatory-work centerline, at least two billet containers each supported by a container holder the position of which is variable in such a manner that said containers may be successively brought into alignment with each of said various centerlines, at least two die holders disposed immediately forwardly of said containers and supported by a die holder frame the position of which is variable in such a manner that said die holders may be successively brought into alignment with said press centerline, a shearing means disposed forwardly of the container on said press centerline for cutting extruded products, a pusher stem adapted to move forwards and backwards under hydraulic pressure and disposed backwardly of said container, a container tightening cylinder disposed adjacent to said container for tightening the latter, a preparatory-work mechanism capable of moving forward and backward and equipped with a spindle rod having a pusher means at its end for pushing out the extrusion remains from the containers, said rod being connected to a hydraulic pressure means, and a revolving cylinder having brushes on its exterior surface for cleaning the containers, which cylinder is sleeved over said spindle rod.

3,182,479
EXTRUSION PRESS WITH TWIN CONTAINERS

Salli Alfred Rosenthal, Poole, Dorset, England, assignor to The Loewy Engineering Company Limited, Bournemouth, England, a corporation of Great Britain

Filed Nov. 7, 1961, Ser. No. 150,780
4 Claims. (Cl. 72—263)

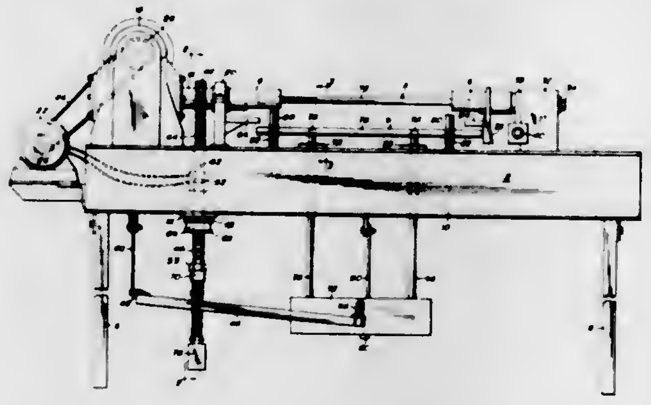


1. A metal extrusion press, having a frame including tie-rods, extending parallel to the press axis and two billet containers, one of said containers being adapted to move along the arc of a circle from an extrusion position in the press axis to a billet-loading position situated at one side of the press axis and the other of said containers adapted to move along the arc of a circle from the same extrusion position as the first container to a second billet-loading position at the opposite side of the press axis with respect to the first billet-loading position, separate means for transferring each container between the common extrusion position and its billet-loading position, said means including separate arms for each container adapted to be oscillated about two of said tie-rods, and power means for oscillating said arms.

3,182,480
BAR TWISTER

Kenneth R. Di Menichi, 1735 Butztown Road, and Dante S. Di Menichi, 512 Elmhurst Ave., both of Bethlehem, Pa.

Filed Apr. 23, 1962, Ser. No. 189,514
12 Claims. (Cl. 72—299)

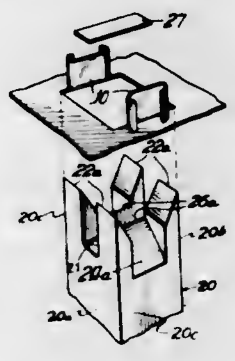


1. An apparatus for automatically twisting stock in a successive series of operations comprising, rotatable chuck means for receiving one end of the stock, stationary chuck means adapted to receive the respective opposite end of said stock, reversible driving means connected with said rotatable chuck means, means operatively connected with said rotatable chuck driving means for lifting stock to be twisted into said chucks for twisting when said rotatable driving means is rotating in one direction, means for reversing the direction of rotation of said rotatable chuck means to twist said stock, and means for braking and reversing said twisting rotation of said rotatable chuck at the end of a predetermined number of rotations, said braking causing the twisted stock to be freed from said chuck means and said cycle beginning again.

3,182,481
HEAT EXCHANGER AND METHOD OF ITS MANUFACTURE

Edward P. Oddy and Lubomyr Kinal, Detroit, Mich., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Dec. 20, 1962, Ser. No. 246,069
2 Claims. (Cl. 72—326)

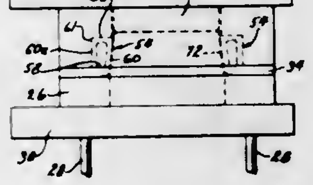


1. A sheet metal punch adapted to form an upwardly extending lug element on a thin metal sheet in a single stroke with respect to said sheet, said lug having convoluted edges comprising a bifurcated body member having a substantially rectangular cross section; a pair of cutting prongs projecting from said body member, said prongs presenting spaced, parallel cutting edges adapted to cut said metal sheet; means defining a transversely extending cutting edge and a face sloping downwardly from said transversely extending edge.

3,182,482
THIN METAL SHEET TAPERED RECEPTACLES AND METHOD AND APPARATUS FOR PRODUCING THE SAME

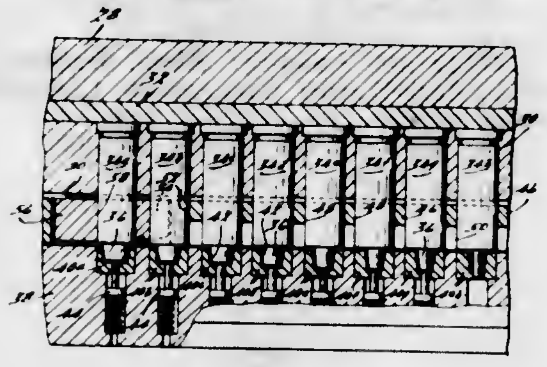
Jens R. L. Moller, Denmark, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Mar. 15, 1961, Ser. No. 95,957
5 Claims. (Cl. 72—350)



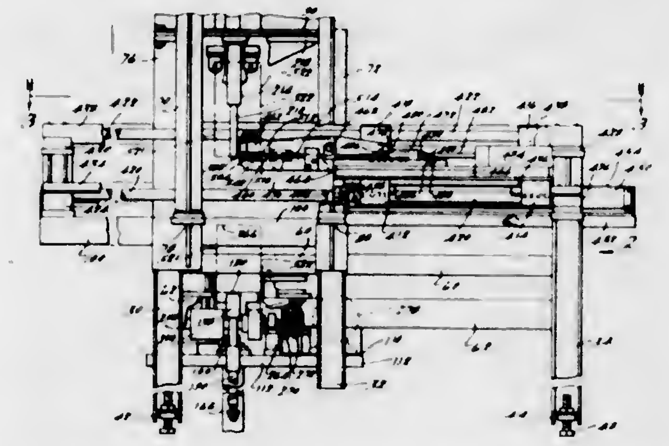
1. A drawing die press comprising: a female die member having a surface surrounding the cavity thereof; a punch member; a press plate cooperable with said surface of said die member to hold a sheet of material thereagainst with said sheet of material spanning said cavity; means for moving said members relatively toward and away from each other to cause said members to draw said sheet of material into said cavity and form a cup-shaped receptacle with the outer peripheral portion of said sheet still being held between said press plate and said surface of said die member; and a wrinkle reducing flexible ring secured on one of said members adjacent the working face of said last named member to provide a flexible work stroking surface for stroking the side wall means of said receptacle while said receptacle is being drawn between said members.

3,182,483
APPARATUS AND METHOD FOR MANUFACTURING TUBE SECTIONS FOR HEAT EXCHANGERS
John Karmazin, % Karmazin Products Corp., Wyandotte, Mich.
Filed Jan. 23, 1962, Ser. No. 168,108
7 Claims. (Cl. 72—350)



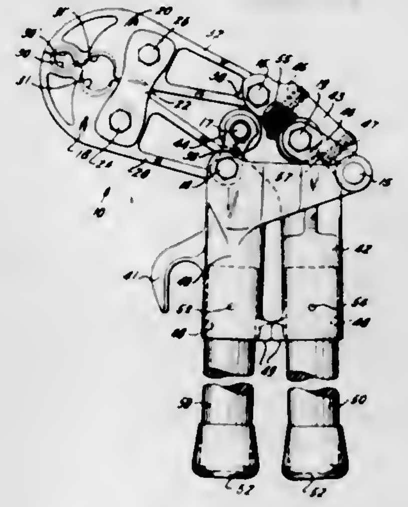
1. A progressive die for drawing tubular projections from a sheet of material including first and second relatively movable die members provided with a plurality of linearly spaced work stations for drawing the material of said sheet, each of said work stations comprising a projection on one of said die members and means on the other of said die members defining a cavity for the reception of said projection, and means on one of said die members engageable with the sheet upon relative movement of said die members toward one another in a location disposed solely between an adjacent pair of work stations to prevent the drawing of material from the area of the sheet immediately adjacent one work station by the operation of the other work station while permitting the flow of material toward said work stations from the areas of the sheet immediately adjacent thereto.

3,182,484
WORK HANDLING DEVICE FOR ANNULAR WORKPIECES
Frederick P. Sharpe, Dearborn, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich.
Filed Feb. 12, 1962, Ser. No. 172,702
18 Claims. (Cl. 72—393)



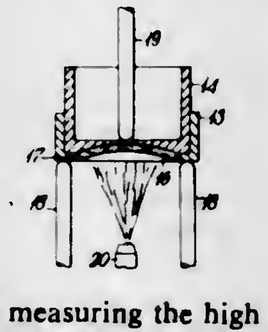
1. In apparatus for transferring annular articles such as cylindrical bands having spaced discontinuous end portions to a work station in a predetermined manner and comprising: support means for rotatably supporting an article, rotation means for rotating an article on said support means, abutment means engageable with a rotating article for obtaining predetermined circumferential orientation of the article relative to said work station, alignment means for obtaining symmetrical alignment of the side surfaces of said articles, spacing means for obtaining symmetrical spacing of a predetermined width of the end portions of said articles, and article transfer means adapted to receive said articles in the oriented and aligned and spaced position and to deliver said articles to said work station in the oriented and aligned and spaced position.

3,182,485
COMPRESSION TOOL
William Sund, Bronx, N.Y., assignor to Burndy Corporation, a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,364
3 Claims. (Cl. 72—410)



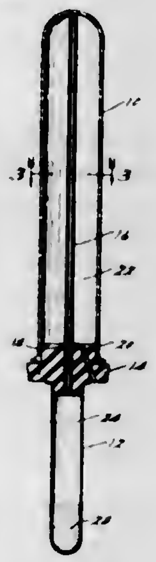
1. A compression force applying tool, comprising: a pair of pivotally attached compressing jaws; an elongate support member pivotally attached to one of said compressing jaws at a first pivot point proximate one end of said member and having a dielectric handle portion at the other end thereof; an actuating arm pivotally attached to the other of said compressing jaws at a first pivot point proximate one end of said arm and having a dielectric handle portion proximate the other end thereof; said support member having a second pivot point proximate said one end thereof; said actuating arm having second and third pivot points proximate said one end thereof, said second pivot point being spaced a given distance from said first pivot point; a first connecting link having a pair of pivot points spaced substantially said given distance apart, said link being pivotally connected to said support member first pivot point and said actuating arm second pivot point; a second connecting link having a pair of pivot points pivotally connected to said support member second pivot point and said actuating arm third pivot point respectively; the center line of said jaws being positioned substantially coincident with a line equidistant from said support member first pivot point and said actuating arm first pivot point, and said actuating arm second pivot point being positioned on said line for movement substantially coincident therewith in response to movement of said actuating arm.

3,182,486
PROCESS AND APPARATUS FOR MEASURING THE THERMAL EXPANSION OF MOLDING SANDS
Wilhelm Patterson, Intzestrasse 5, and Dietmar Boenisch, Haselsteig 11, both of Aachen, Germany
Filed Sept. 14, 1962, Ser. No. 223,617
Claims priority, application Germany, Oct. 2, 1961, P 27,960
19 Claims. (Cl. 73—16)



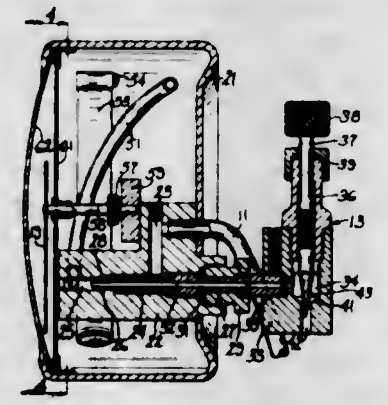
1. A method for measuring the high temperature properties and more particularly the expansive forces of moulding sands and other refractory materials, comprising the steps of compressing the testing material to provide a thin disc of substantially uniform thickness, constraining said disc over at least a part of the edge thereof, heating the thus constrained disc on one side only, and measuring the resulting thermal expansion of the disc.

3,182,487
TESTING FOR VOLUME OF SOLUBLE GASES
Frank O. Graham, 13965 Abington, Detroit, Mich.
Filed Aug. 3, 1962, Ser. No. 214,683
7 Claims. (Cl. 73—19)



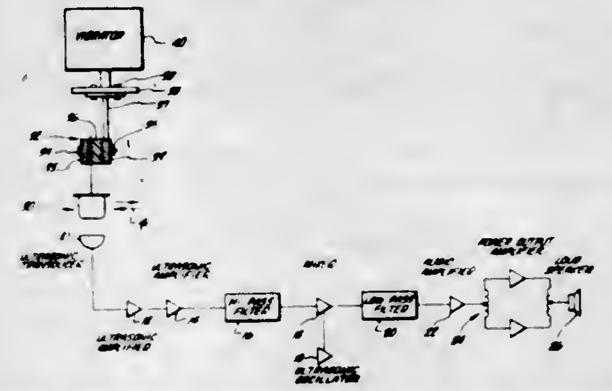
1. A test apparatus of the type described comprising: a first elongated open-ended vessel adapted to contain a test sample of liquid containing a gas in solution; a second elongated open-ended vessel for collecting gas liberated from the test sample, said second vessel being adapted to contain a displaceable liquid above which liberated gas may be collected; a stopper adapted to sealingly engage the open ends of each of said vessels to maintain them in an oppositely disposed substantially coaxial relationship; conduit means for communicating liberated gas from the end of said first vessel adjacent the open end thereof to the end of said second vessel adjacent the closed end thereof, said conduit means extending through said stopper; and means defining a passageway extending between said second vessel and atmosphere when said apparatus is assembled for operation, said passageway being of sufficiently small diameter to prevent the escape of the displaceable liquid due solely to the action of gravity when the liquid is at atmospheric pressure.

3,182,488
FLUID GAGE ADJUSTING UNIT
Allen R. Hollister, East Hartford, Conn., assignor to Pratt & Whitney Inc., a corporation of Delaware
Filed Oct. 24, 1962, Ser. No. 232,776
7 Claims. (Cl. 73—37.5)



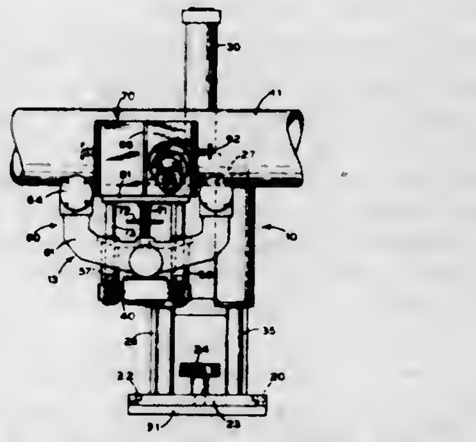
1. In combination with a pressure regulator, a fluid gage and a gaging plug, means for adjusting the sensitivity and setting the zero of the gage comprising a first chamber having an inlet and an outlet, said inlet communicating with the pressure regulator, said outlet communicating with the fluid gage which communicates with the gaging plug, a first valve in said first chamber for controlling the flow between said inlet and said outlet, means for adjusting said first valve, a second chamber having an inlet and an outlet, a passage communicating with the outlet side of said first valve and the inlet of said second chamber through said means for adjusting the first valve, a second valve in said second chamber for controlling the flow between said inlet and said outlet, and means for adjusting said second valve.

3,182,489
ULTRASONIC CONTAMINANT DETECTING
Robert H. Hamilton, Menlo Park, Calif., assignor to Delcon Corporation, Palo Alto, Calif., a corporation of California
Filed Oct. 22, 1962, Ser. No. 231,953
14 Claims. (Cl. 73—67)



1. Apparatus for testing an article which includes a part movable with respect to the rest of the article, the part generating mechanical vibrations in the ultrasonic range when moved with respect to the article, the apparatus comprising vibrating means for producing relative movement of the article and part whereby the part strikes the article and generates vibrations in the ultrasonic range, and means for converting the ultrasonic vibrations to a form perceptible by an observer.

3,182,490
TUBE FOLLOWER AND SEARCH TUBE MOUNTING DEVICE
Walter J. Gibson, Alliance, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 1, 1962, Ser. No. 227,159
4 Claims. (Cl. 73—67.8)

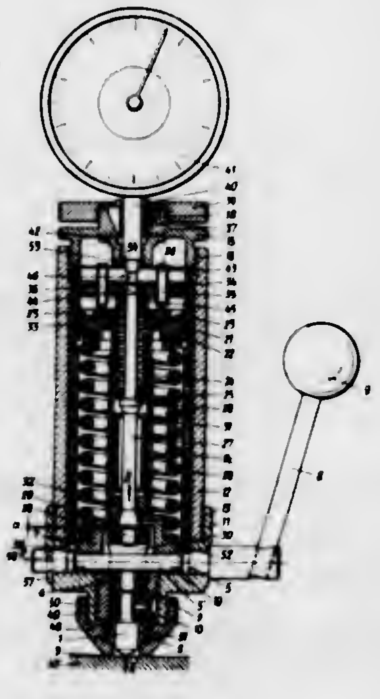


1. A device for maintaining a transducer of an ultrasonic flaw detection system in constant angular relationship with respect to a rapidly advancing longitudinal workpiece that is subject to deviations from strict axial travel, said device comprising a carriage arranged to engage the workpiece, means for supporting said carriage while means allowing movement of the carriage so that it follows all the deviations of the workpiece from strict axial travel,

said means including a shaft extending transversely of the longitudinal axis of the workpiece, bearing means engaged with said shaft, and means allowing relative axial movement of said shaft and said bearing means to allow movement of the carriage so that it follows lateral deviations of the workpiece from strict axial travel, walls forming a receptacle connected to said carriage and containing a liquid, said walls having means forming openings therein, the edges of said openings being adapted to engage the workpiece and permit partial submersion of a portion of the length of the workpiece, a transducer having a vibrating element submerged in the liquid in the receptacle and directed toward said workpiece to transmit and receive ultrasonic energy waves through said liquid into and out of the submerged portion of the workpiece, and an adjustable mount connected to one of the walls of said receptacle and adapted to hold the transducer at a predetermined angle with respect to the workpiece.

3,182,491
ROCKWELL HARDNESS TESTING APPARATUS

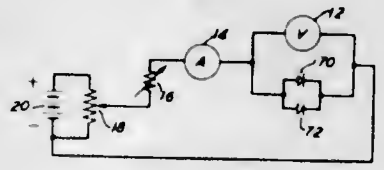
Ludwig Tschirf, Hammerschmidtgasse 33, Vienna XIX, Austria, and Fritz Gärtner, Keisslergasse 18/1, Vienna XIV, Austria
Filed Dec. 14, 1959, Ser. No. 859,265
Claims priority, application Austria, Nov. 13, 1959, A 8,228/59
8 Claims. (Cl. 73—83)



1. Rockwell hardness testing apparatus comprising an indenter, elements for producing an initial load and a main load, a mechanism including a plunger for applying said loads to and removing said loads from the indenter, said indenter being firmly connected to said plunger, means for measuring the indenting depth operably connected to said plunger, a retracting device for the indenter, characterized in that for the successive application of the initial load, of the main load and for retracting the indenter a single lever is provided, said retracting device comprising a testing head surrounding said indenter and having a specimen engaging gripping surface, a base member rigidly connected to said testing head, a bushing slidably guided in said base member, a spring connected between said head and said bushing, an eccentric rotatably mounted in said base member against which said bushing is held by said spring, said lever being operatively connected to rotate said eccentric, said bushing engaging a portion of said plunger upon rotation of said eccentric, said plunger together with said indenter thereby being lifted behind the gripping surface.

3,182,492
STABILIZED TUNNEL DIODE STRESS SENSING DEVICES

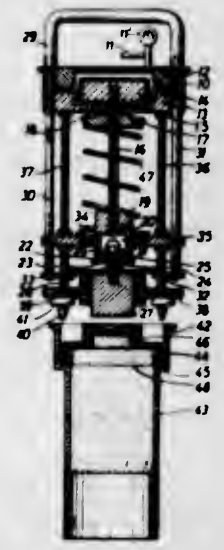
Mathew E. Sikorski, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 4, 1962, Ser. No. 228,355
2 Claims. (Cl. 73—88.5)



1. In combination, a first tunnel diode formed on a p-type wafer of a semiconductive material, a second tunnel diode formed on an n-type wafer of the same semiconductive material, the diodes being connected electrically in parallel, means for biasing said tunnel diodes to substantially the voltage below the negative resistance region of said diodes at which the current through them becomes a maximum, means for subjecting both of said tunnel diodes to a specific stress, and means for determining the change in the current through the diodes resulting from the application of the stress.

3,182,493
APPARATUS FOR MEASURING THE TENSILE STRENGTH OF GREEN SAND

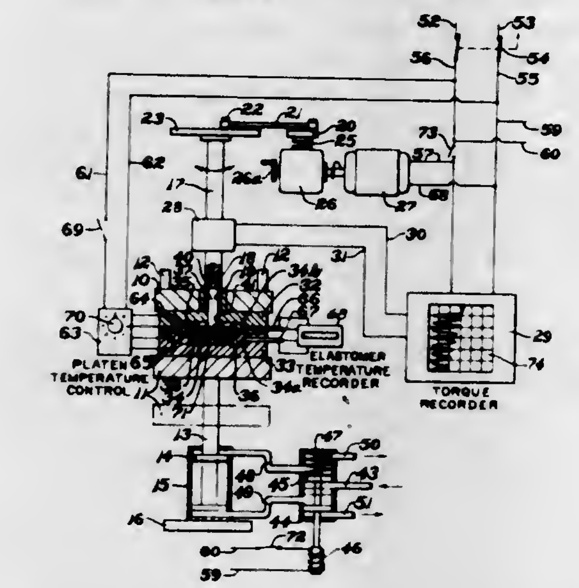
Wilhelm Patterson, Intzestrasse 5, and Dietmar Boenisch, Haselsteig 11, both of Aachen, Germany
Filed Nov. 26, 1962, Ser. No. 240,069
Claims priority, application Germany, June 19, 1962, P 29,648
10 Claims. (Cl. 73—95)



1. An apparatus for measuring the tensile strength of molding sand, said apparatus comprising a measuring head having a recess for receiving and retaining a portion of a body of sand to be tested, a pull rod, coupling means for releasably connecting one end of said pull rod and said head, a piston on the opposite end of said rod, a cylinder slidably receiving said piston, a compression spring for biasing said piston inwardly of said cylinder, means for admitting air pressure to said cylinder and a pressure indicator connected to said cylinder, whereby upon admission of air pressure to said cylinder to move said piston and rod outwardly and coupling of said rod to said head, subsequent release of pressure from said cylinder will permit said spring to move said piston and rod inwardly to move said head and separate the sand therein from the body of sand, the air pressure at the instant of separation of said sand providing an indication of the tensile strength of the sand.

3,182,494
VISCUROMETER

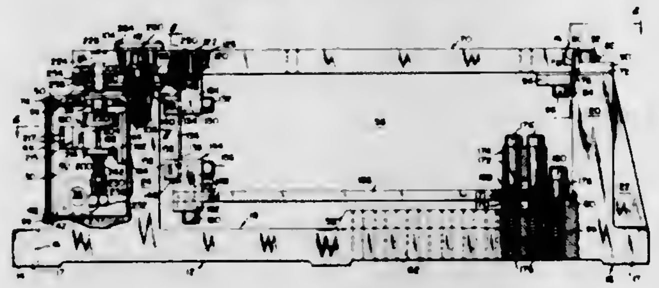
James R. Beatty, Akron, Arthur E. Juve, Peninsula, and Paul W. Karper, Kent, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Oct. 17, 1962, Ser. No. 231,191
11 Claims. (Cl. 73—101)



1. A method for the determination of the relative viscosity of solid elastomeric material, comprising confining a sample of the material under pressure, subjecting the confined material to oscillating rotary shearing forces at a predetermined constant rate and of predetermined constant amplitude and measuring the torsional resistance to these shearing forces.

3,182,495
FORCE MEASURING INSTRUMENT

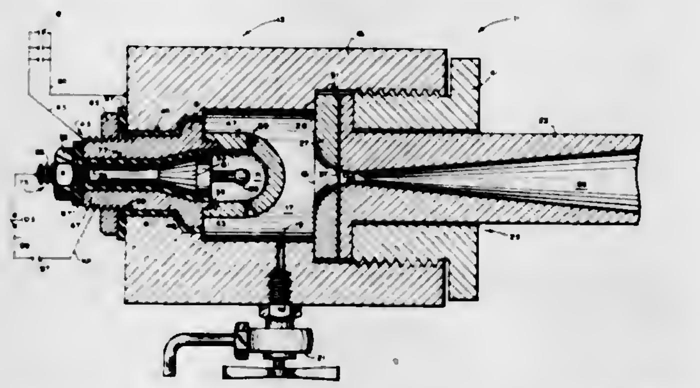
Clarence Johnson, 31649 Trillium Trail, Pepper Pike, Cleveland, Ohio
Filed Jan. 10, 1961, Ser. No. 81,815
17 Claims. (Cl. 73—141)



1. A force measuring instrument comprising a base having a plurality of upstanding support walls of varying height spaced along said base; resilient spring means adjustably cantilever supported on said base; a first horizontally extending load bearing platform in vertically spaced relation above said cantilever supported spring; flexure pivot means yieldingly mounting one end of said platform on one of said support walls; direct force transmitting means comprising a flexure pivot plate fixedly connected at its opposite ends to the free end of said cantilever supported spring means and to said first platform thereby adapting said cantilever spring means to serve as a range controller for said first platform; at least one additional horizontally extending load bearing platform in vertically spaced relation above said first platform; flexure pivot means yieldingly mounting one end of said additional platform on another of said plurality of upstanding support walls; direct force transmitting means comprising a flexure pivot plate fixedly connecting the free end of said additional platform to the platform next below and adapted to transmit an increment of a force applied to said additional platform to the platform next below as an applied force; and means for sensing movement of said first platform and converting said sensed movement into a controlled signal.

3,182,496
ELECTRIC ARC DRIVEN WIND TUNNEL

Oscar C. Holderer, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 12, 1961, Ser. No. 158,914
12 Claims. (Cl. 73—147)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In an arc driven wind tunnel having a housing wall defining the outer limits of a chamber, an expansion nozzle fitted through said wall, a rupturable diaphragm adjacent the inlet of said expansion nozzle, and a high pressure gas within said chamber; an improved arc triggering system comprising:

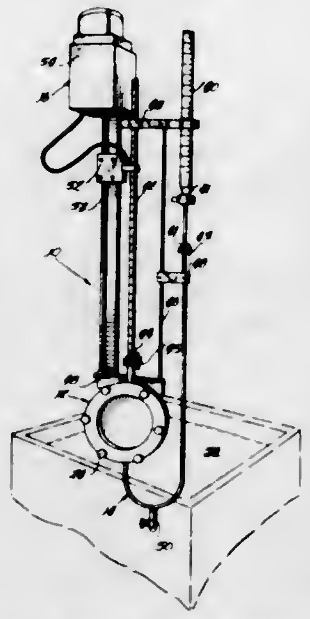
(*a*) a single primary electrode comprising a tubular body section having a hollow dome tip on one end thereof;
  (1) said tubular body section extending through said wall and having its hollow dome tip within said chamber;
  (2) said hollow dome tip having a plurality of orifices which communicate said chamber with the hollow of said dome tip;
(*b*) a secondary electrode fitted within said tubular body section and having an end tip extending into said hollow dome tip and spaced from the inner surface of said dome tip;
(*c*) a series of electrical capacitors having two common terminals, one of said terminals being connected to said wall and the other to said primary electrode; and
(*d*) a secondary capacitor having two terminals, one of which is connected through an opened switch to the secondary electrode and the other of which is connected to the primary electrode whereby closing said switch causes a spark to jump between said secondary electrode tip and the inner surface of said dome tip with the result that the gas within the hollow of said dome tip becomes dissociated and ionized and escapes through said orifices in said dome tip in strong jets against said wall and thus initiates high energy sparks between said dome tip and said wall.

3,182,497
APPARATUS FOR DETECTING DIMENSIONAL CHANGES OF A REACTANT SUBSTANCE

Louis C. Rubens and Richard E. Skochdopole, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 19, 1963, Ser. No. 296,340
10 Claims. (Cl. 73—149)

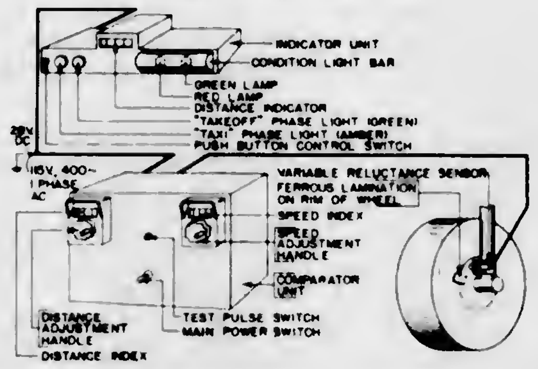
1. A dilatometer useful for determining the characteristics of a reactant substance even though said substance may become viscous comprising a volume change re-

sponse means and a load cell in series with said volume change response means, said cell containing a cavity with a sealed bag therein, said bag containing the substance to be studied.



3,182,498
AIRCRAFT TAKEOFF MONITOR
Harold Koletsky, Syosset, and Albert L. de Graffenried, Douglaston, N.Y., assignors to Avien, Inc., Woodside, N.Y.

Filed Mar. 10, 1959, Ser. No. 798,425
2 Claims. (Cl. 73—178)



2. An aircraft takeoff monitor comprising:

means to generate a first voltage analogous to the known distance from a starting point to a decision point for successful takeoff for an individual aircraft;

means to generate a second voltage analogous to the distance being traversed by said aircraft in course of a takeoff roll;

first comparator means connected to receive said first and second voltages and adapted to yield a first output signal upon exceeding of said first by said second voltage, said first comparator means adapted to yield a zero output upon non-exceeding of said first by said second voltage;

first relay means responsive to said first output signal;

means to generate a third voltage analogous to the known minimum ground speed required by said aircraft at said decision point for successful takeoff;

means connected to receive and adapted to differentiate said second voltage to thereby generate a fourth volt analogous to the ground speed of said aircraft in course of said takeoff roll;

second comparator means connected to receive said third and fourth voltages and adapted to yield a second output signal upon exceeding of said third by said fourth voltage, said second comparator means adapted to yield a zero output upon non-exceeding of said third by said fourth voltage;

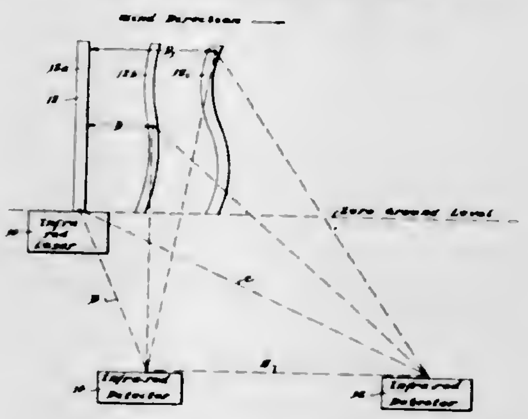
second relay means responsive to said second output signal; and

a first visual signal indicating a "go" condition and a second visual signal indicating a "no go" condition;

said first and second relay means being interdependently interconnected whereby the condition of said first output signal occurring before said second output signal is adapted to energize said first relay to thereby actuate said "no go" signal, and also to disable said second relay whereby any subsequent increase in speed shall be ineffective to actuate said "go" signal, and the condition of said second output signal occurring before said first output signal is adapted to energize said second relay into co-operative connection to said first relay whereby upon the occurrence of said first output signal said "go" signal is actuated.

3,182,499
METHOD OF MEASURING WIND VELOCITY
Harry Moses, Park Forest, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission

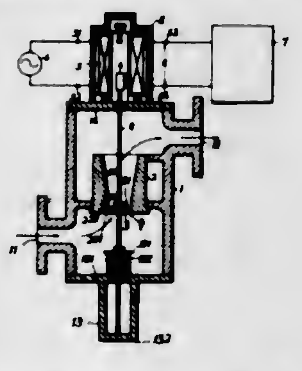
Filed Dec. 28, 1962, Ser. No. 248,168
13 Claims. (Cl. 73—189)



1. A method of measuring wind velocity comprising the steps of generating infrared radiation, transmitting said infrared radiation into the atmosphere to heat a portion thereof, monitoring said heated portion of the atmosphere at measured time intervals to determine the spatial coordinates thereof, and computing from said spatial coordinates and time intervals the velocity of said heated portion of the atmosphere and hence the wind velocity.

3,182,500
ROTAMETER TRANSMITTER
Kinji Ishii, Musashino-chi, Tokyo, Japan, assignor to Kabushikikaisha Yokogawa Denki Seisakusho (Yokogawa Electric Works Ltd.), Tokyo, Japan, a corporation of Japan

Filed Feb. 28, 1962, Ser. No. 176,270
Claims priority, application Japan, Mar. 6, 1961, 36/11,073, 36/11,074
6 Claims. (Cl. 73—209)



1. A rotameter transmitter comprising,

a housing having a fluid inlet and a fluid outlet,

means defining a flow passageway in said housing interposed between said inlet and said outlet,

said passageway having a lower portion and an upper portion having a cross-sectional area greater than said lower portion,

a rod member slidably carried in said housing and extending into said passageway,

a float member situated in said passageway and connected to said rod for axial movement therewith,

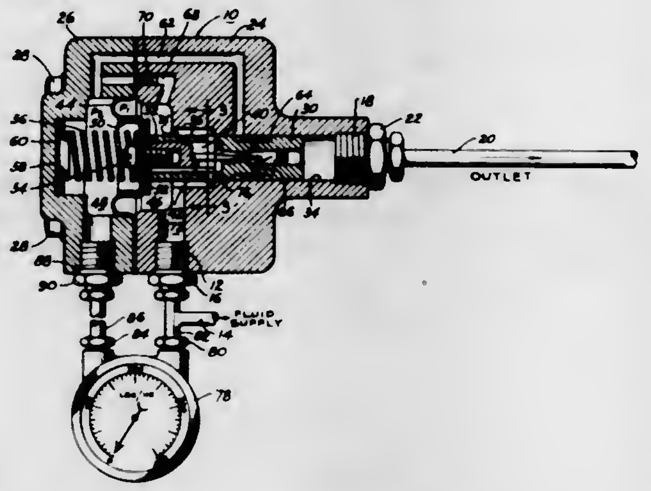
said float having a fluid impingement surface for receiving impinging fluid flowing through said passageway and for displacing said float and said rod as a function of the rate of fluid flow through said passageway,

means coacting with said rod and responsive to the position of said float and operative to indicate rate of flow through said passageway, and

means operative on said rod for exerting an upward force on said rod only when said fluid impingement surface is in said lower portion of said passageway.

3,182,501
FLOW MEASURING APPARATUS
Elmer A. Haase, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed May 18, 1962, Ser. No. 195,691
2 Claims. (Cl. 73—207)



1. A fluid flow meter for measuring the flow of fluid through a conduit comprising:

a casing having an inlet and an outlet;

a venturi in series flow relationship with said inlet and outlet through which the fluid flows to generate a fluid pressure differential;

a flow indicating device responsive to said fluid pressure differential;

a valve member operatively connected to said venturi for varying the throat area thereof to cause a corresponding variation in the fluid pressure differential-fluid flow relationship associated with said venturi;

a first fluid chamber communicating with the fluid pressure at the throat of said venturi;

a second fluid chamber communicating with the fluid pressure upstream from said venturi;

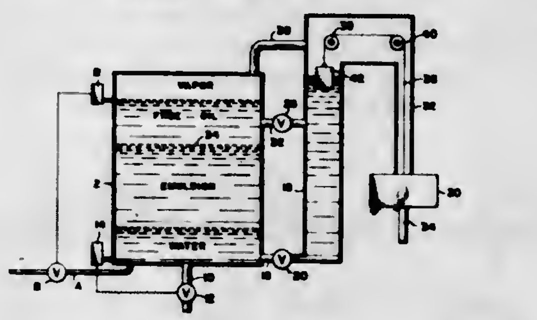
a movable wall separating said first and second fluid chambers and responsive to the fluid pressure differential therebetween and being operatively connected to said valve member for actuating the same at a predetermined value of said fluid pressure differential to cause an increase in the throat area of said venturi;

a resilient member operatively connected to said movable wall for urging said valve member toward a closed position in opposition to said fluid pressure differential and for establishing a force to be overcome by said predetermined pressure differential; and

a fixed stop member engageable with said movable wall for limiting the movement of said valve member in a closing direction to a predetermined position.

3,182,502
TANK GAUGE APPARATUS
Fred M. Mayes, Richardson, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

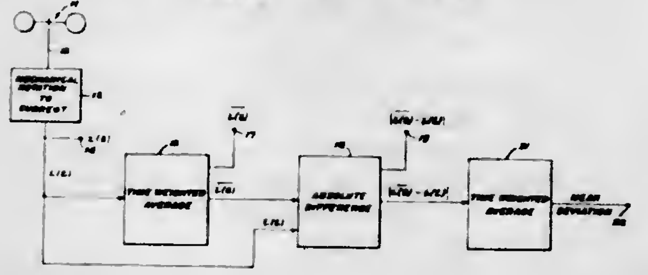
Filed Jan. 24, 1962, Ser. No. 168,340
2 Claims. (Cl. 73—223)



1. The method of gauging the proportion of oil and water in a tank which is filled repeatedly with a mixture of oil and water which may settle in the tank in layers of free oil, an emulsion of oil and water, and free water comprising a cycle of operation including the sequential steps of filling the tank to a predetermined level with the mixture of oil and water to be gauged, connecting a vertically extending manometer tube to said tank during said filling step, the connection to said tank being located to communicate only with the free oil therein so that oil flows into said manometer tube to the same level as the mixture in the tank during filling, closing said first-mentioned connection, providing a pressure responsive connection of the lower end of said manometer tube to said tank through a second connection, said second connection communicating with said tank at a level such that the oil in the tube is responsive to the pressure head of the water in the lowermost layer of the mixture in the tank, whereby the level of the oil in the tube raises an amount in accordance with the proportion of oil and water in the tank, sensing the level of the oil in the tube for making a record of the proportion of oil and water in the tank, and draining the liquid contents of the tank and from the tube, and repeating said cycle for successive fillings of oil-water mixture whereby the amount of oil that is delivered from the tank during repeated cycles may be determined.

3,182,503
METEOROLOGIC INSTRUMENT
John W. Corcoran, Redwood City, Calif., assignor, by mesne assignments, to Beckman & Whitley, Inc., San Carlos, Calif., a corporation of Delaware

Filed Feb. 12, 1962, Ser. No. 172,732
6 Claims. (Cl. 73—229)

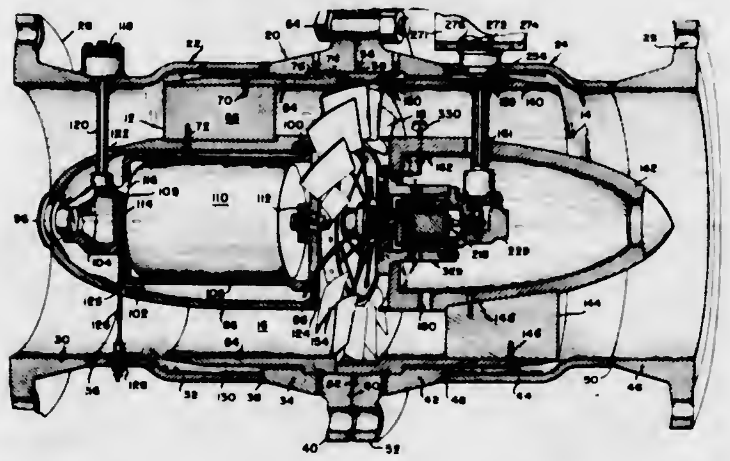


1. In a meteorological instrument for wind velocity measurements the combination comprising an anemometer responsive to wind by the generation of a first electrical signal which is proportional to the velocity of said wind, an averaging means for receiving said first signal and responding thereto by the output of a second signal which is continuous and an average of said first signal, electronic

means for receiving said first and second signals and responding thereto by the output of a third signal which is the absolute difference between said first and second signals, and second averaging means for receiving said third signal and being responsive thereto by the output of a fourth signal which is continuous and an average of said third signal.

3,182,504
FLUID METER

Howard E. Rittenhouse and Sherman L. Wood, Statesboro, Ga., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 3, 1960, Ser. No. 26,502
15 Claims. (Cl. 73—231)

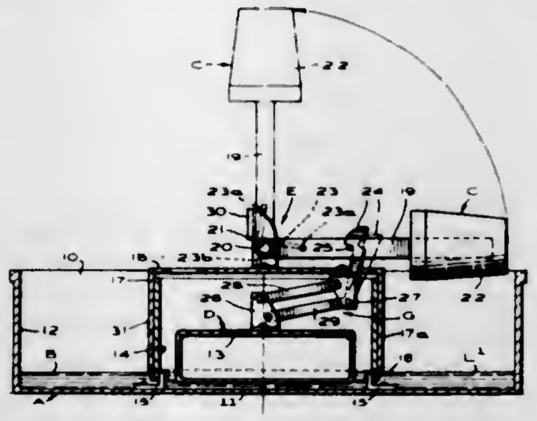


2. In a fluid meter comprising a housing and a fluid flow responsive metering device movably mounted in said housing, a drive train providing for the transmission of mechanical movement from said device to a rotatable element having at least a portion disposed exteriorly of said housing, a fluid tight hollow static seal structure extending from the exterior of said housing to a position adjacent said element and terminating at said position in an imperforate wall of non-magnetic material, a magnetic drive coupling operative through said wall and comprising a pair of magnetically coupled elements disposed from opposite sides of said wall, one of said elements being mechanically connected to said flow responsive device for concomitant movement therewith and being exposed to the metered fluid, the other of said elements being mechanically coupled to drive said rotatable element, said static seal structure including a hollow shaft housing unit through which said rotatable element extends, said hollow shaft housing unit being universally pivotally mounted in fluid tight relation to said housing at one end and universally pivotally mounted in fluid tight relation to said wall at the other end for permitting limited relative movement between said wall and said housing while maintaining the fluid tight integrity of said static fluid seal structure.

3,182,505
LIQUID LEVEL INDICATOR

Walter M. Harks, 210 Eucalyptus Ave., South San Francisco, Calif.
Filed Mar. 28, 1963, Ser. No. 268,717
7 Claims. (Cl. 73—307)

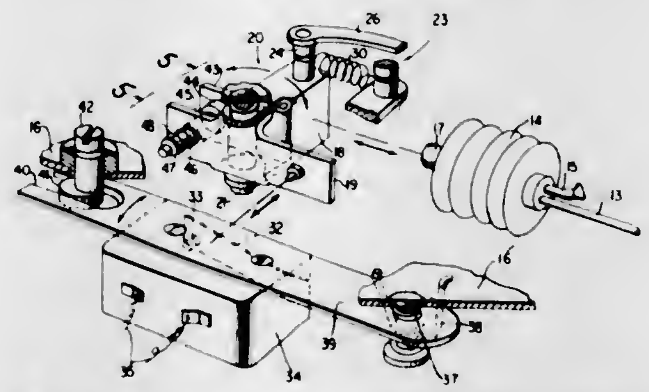
1. In a liquid level indicator:
(*a*) a liquid-collecting basin adapted to hold liquid to various depths;
(*b*) a tubular guide anchored to the basin and extending upwardly relative to a bottom of the basin;
(*c*) an adjustable inverted cup-shaped member telescoping relative to the tubular guide for vertical adjustment;
(*d*) a visual signal associated with the basin and being supported by a bottom of the cup-shaped member for movement between a lowered non-signalling position and a raised telltale signalling position;
(*e*) a buoyant float disposed to be elevated by the liquid as the depth of the latter in the basin increases;



(*f*) a latching catch attached to the bottom of the cup-shaped member for releasably engaging with the signal for holding the signal in its lowered non-signalling position;
(*g*) and means actuated by the float for releasing the latching catch from the signal, when the depth of the liquid in the basin reaches a predetermined level;
(*h*) the cup-shaped member, when adjusted vertically, carrying the signal and latching catch therewith, and determining the level of the liquid in the basin at which the signal will be released.

3,182,506
◆ MILK COOLER TEMPERATURE CONTROL

Siegfried H. A. Schmaus, Philadelphia, Pa., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 8, 1962, Ser. No. 164,801
6 Claims. (Cl. 73—343)

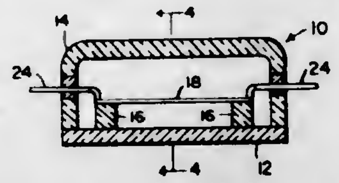


1. The combination comprising condition responsive means, means actuated by said condition responsive means for transmitting motion including two arms positioned on a common pivotal support in a predetermined relation to each other, the line of action of said condition responsive means intersecting one of said arms, indicating means connected to said motion transmitting means and actuated by said one arm, and switch means actuated by the second of said arms of said motion transmitting means for controlling the restoration of a desired condition, whereby said indicating means and said switch means are operated by a common means.

3,182,507
THERMAL HISTORY GAGE

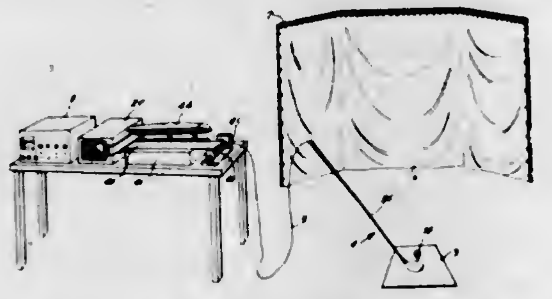
Neil E. Rogen, Cambridge, Mass., assignor to Ilikon, Corporation, Natick, Mass., a corporation of Delaware
Filed Nov. 30, 1960, Ser. No. 72,661
14 Claims. (Cl. 73—362)

1. A thermal history gage for providing an indication of the length of time an environment has been at or above each of a plurality of temperatures, comprising a frame, and a plurality of electrically conductive sensing elements carried by the frame, each of said sensing elements being fabricated from a material which below a threshold temperature is stable and which at or above a threshold temperature undergoes a transformation as a function of temperature and time resulting in a change in physical properties of the material including a change in resistivity thereof, each of said sensing elements having a different threshold temperature.



3,182,508
GOLF DRIVE METERING APPARATUS

Nicholas Varju, Parma, Ohio, assignor to National Castings Company, Cleveland, Ohio, a corporation of Ohio
Filed May 22, 1962, Ser. No. 196,654
7 Claims. (Cl. 73—379)

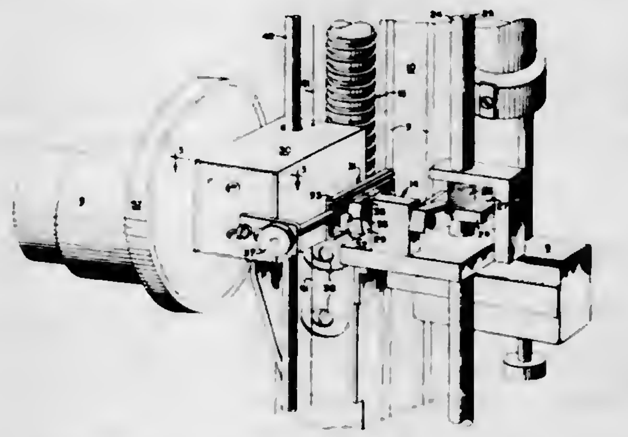


2. An apparatus for producing a signal current adapted for measuring a golf drive comprising:
(A) a golf club having a head providing a striking face and a cavity disposed inwardly from the striking face;
(B) a flat tab-like element;
(C) a support fixed to one end of the element and to the head to dispose the element inside said cavity with the flat sides of the element approximately parallel to said striking face;
  the surfaces defining said cavity being spaced from said element to provide free elastic deflection of the element in response to impact forces normal to golf play sustained by the head;
(D) a serpentine electrically-conductive, electrically-insulated filament attached to one face of the element and formed in convolutions extending in a direction toward and away from the point of attachment of the element to the support; and
(E) an electrical circuit including a constant voltage energy source and said filament wherein deflection of said element and said convolutions toward said striking face effects variations of current in said circuit.

3,182,509
HIGH PRECISION MANOMETER

James M. Kendall, Coral Hills, and George W. Payne, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 30, 1961, Ser. No. 99,638
3 Claims. (Cl. 73—393)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A manometer for determing the fluid pressure of testing apparatus connected thereto, said manometer having a temperature compensating unit, an upright pressure indicating column having a quantity of liquid therein and adapted to be subjected to the pressure of a testing apparatus, a scale fixed adjacent to said column for indicating the height of a liquid in the column, a screw threaded rod rotatably mounted parallel to said column, means for rotating said rod, a moveable optical system mounted on said screw threaded rod and moveable by said rotating means to a position corresponding to the height of said liquid in the column, a temperature compensating means slidably mounted on said optical system and settable to the ambient temperature for automatically varying the compensation for variations in volume of the liquid due to ambient temperature according to the height of the liquid in said column whereby a temperature corrected height of liquid in said column may be ascertained, said temperature compensating means including a bar parallel to said liquid column and having a two turn spiral groove inscribed therein, a bushing mounted on said bar having a lug slidably engaging said groove, said bushing having a threaded outer surface, a threaded nut engaging the threaded surface of said bushing, said nut having first shaft means, projecting radially from said nut, connecting rod means having bearing means at one end thereof for rotatable engagement with said first shaft means, a rotatable block means having a horizontally disposed slot on one side thereof and a second shaft means projecting outwardly from the other side of said block and fixedly attached thereto, a bearing support rotatably supporting said second shaft means, means fixedly connecting the other end of said rod means to said second shaft means, vernier scale means slidably connected to said optical means for indicating a temperature corrected height of said liquid in said column, horizontally disposed channel means fixedly attached to said vernier scale, slidable block means slidably engaging said channel means, said slidable block means having a projecting lug pivotally and slidably engaging the horizontally disposed slot in said rotatable block means, means adjusting the position of said slidable block in accordance with the ambient temperature whereby the corrected height of the liquid column may be read directly.

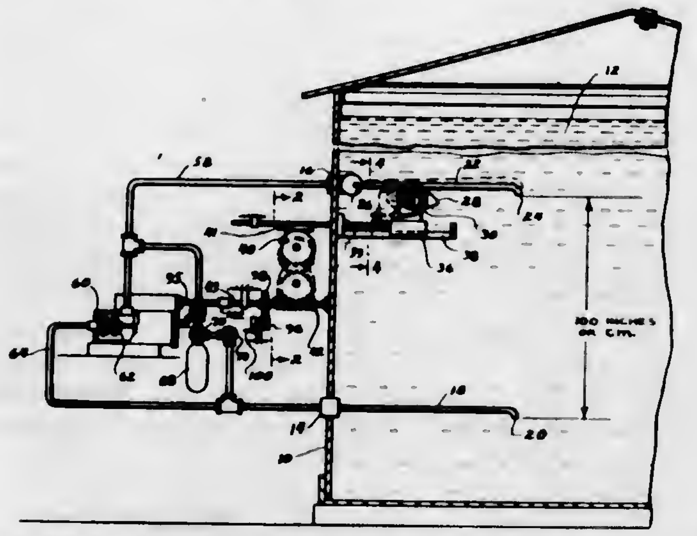


3,182,510
APPARATUS FOR MEASURING SPECIFIC GRAVITIES OF HYDROCARBONS

Frederick C. Melchior, 258 Riverside Drive, New York, N.Y.
Filed Oct. 2, 1962, Ser. No. 227,810
4 Claims. (Cl. 73—438)

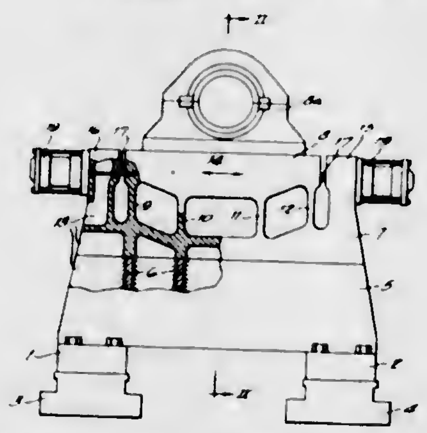
1. An arrangement for measuring the specific gravity of a fluid at ambient temperatures comprising a first substantially horizontal pressure line, a second substantially horizontal pressure line, hingedly coupled at one end thereof, and at fixed predetermined distance above said first line, means for measuring the difference in pressure in said first and second lines and providing an indication therefor, means for rotatably deflecting said second pressure line about said hinged mounting in accordance with changes in temperature, said last named means comprising a cam and a thermostatically responsive element to rotate said cam, said cam being mounted so that the surface of said cam bears against said second pressure line to rotate

said line with changes in temperature, and means for changing the position of said cam along said second pressure line, in response to said indication, said named means comprising a horizontal supporting track and a carriage mounted on said track and movable thereon, said carriage carrying said cam and temperature responsive element.



3,182,511
VIBRATORY TESTING MACHINE, PARTICULARLY BALANCING MACHINE

Klaus Federn, Darmstadt, Heinrich Geiss, Darmstadt-Eberstadt, and Alfred Seibert, Darmstadt, Germany, assignors to Carl Schenck Maschinenfabrik G.m.b.H., Darmstadt, Germany, a corporation of Germany
Filed Oct. 12, 1962, Ser. No. 231,318
Claims priority, application Germany, Oct. 13, 1961, Sch. 30,412
10 Claims. (Cl. 73—477)

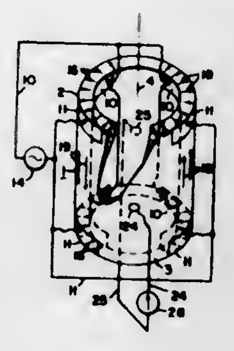


1. A vibratory testing machine, comprising a rigidly fixed base structure, a vibratory workpiece-holding structure having means for accommodating a workpiece and defining a given measuring direction, supporting means joining said structures and comprising a plurality of supporting rod members forming a parallelogram linkage yieldable in said measuring direction and stiff in planes transverse to said direction to limit vibration of said holding structure to said measuring direction, said vibratory holding structure and said base structure as well as said supporting means forming jointly a single integral and gaplessly continuous piece.

3,182,512
ANGULAR VELOCITY MEASURING DEVICE

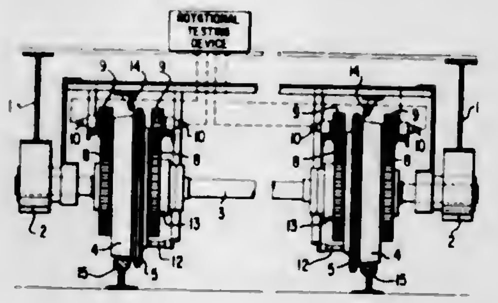
Charles H. Jones, Murrysville, John H. Thompson, Penn Hills, and George R. Douglas, Wilkinsburg, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 27, 1961, Ser. No. 106,116
13 Claims. (Cl. 73—505)

1. In a vibratory gyro device having a base and an input axis for response to rate of turning thereabout, an integrally-associated assemblage of substantially constant cross-sectional mass distribution comprising self-driven vibratory mass portions disposed at opposite sides of said axis for driven vibration in a linear mode in a radial direction relative thereto and extending along said axis for relative vibration of such portions 180° out of phase at opposite sides of a nodal plane perpendicular to said axis, means carried by said base and supporting said assemblage in the vicinity of said nodal plane whereby a vibratory reaction torque is realized exclusively between such portions at opposite sides of said nodal plane upon being turned about said input axis, and a signal-producing portion responsive to said reaction torque.



3,182,513
RAILWAY CAR HAVING INDEPENDENTLY ROTATING WHEELS AND GUIDING RIM

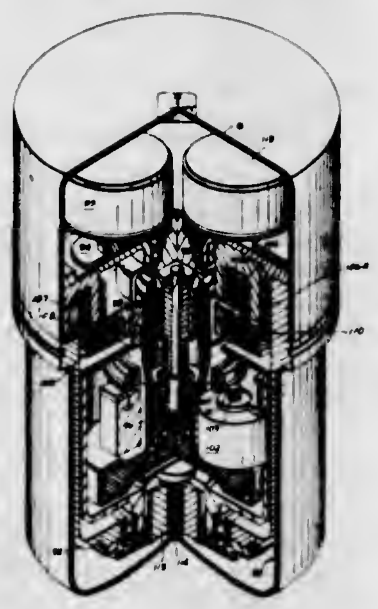
Gustav Mülhaupt, Oberemattstrasse 64, Pratteln, Basel, Switzerland
Filed May 28, 1962, Ser. No. 198,253
Claims priority, application Switzerland, May 30, 1961, 6,318/61
1 Claim. (Cl. 73—514)



A chassis for rail vehicles having an axle, a wheel fixedly mounted to each end of said axle, a projecting rim member mounted on said axle on the inner side of and immediately adjacent to each of said wheels which serves as a guiding rim for the wheel on the rails, a hub extending from the top of said rim member, a friction bearing surrounding said axle which mounts said hub and rim member inwardly from each wheel and parallel to each wheel so that each guiding rim member is mounted for rotation independently of said axle and independently of the wheel body alongside, a first toothed gear which is fixedly mounted on said axle and on the outside of each of said wheels, a second toothed gear which is fixedly mounted to the hub of said rim on the inside of each of said rim members, first pinions mounted above said axle on the outside of each of said wheels on said chassis which are engaged by said first toother gears, second pinions mounted on said chassis above said axle on the inside of each of said rim members which are engaged by said second toothed gears, a shaft for each of the aforesaid pinions, bearings accommodating each of said shafts, and rotational testing devices connected to said shafts for measuring the rotational speed of said rim member.

3,182,514
TWO AXIS CASE ROTATING GYROSCOPE

Walter J. Krupick, Franklin, Jay Hoffman, Livingston, and Claudio Joseph Ballester, Wanaque, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Jan. 5, 1961, Ser. No. 80,879
11 Claims. (Cl. 74—5)

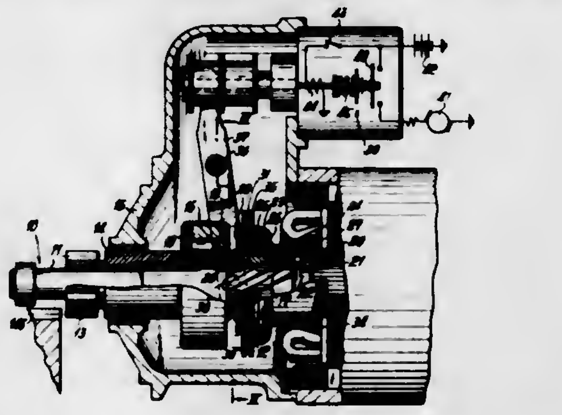


1. A two-axis gyroscopic apparatus, comprising a hollow outer case, a hollow tubular housing fitted to the interior of said outer case, means rotatably supporting the hollow housing, a first pivot roll gimbal fitted to the interior of the hollow housing, pivot means located in a plane substantially perpendicular to the axis of rotation of the hollow housing pivotally supporting said roll gimbal, a second pivot pitch gimbal supported by said first pivot roll gimbal, means located on an axis substantially perpendicular to the pivot axis of the first pivot roll gimbal adapted to pivotally support the second pivot pitch gimbal, and a flywheel mounted co-axially with the hollow housing, rotatably supported by the second pivot pitch gimbal, the pivot means supporting the first pivot gimbal from the hollow housing including a plurality of anti-friction bearings, each of said anti-friction bearings including an inner race and an outer race, located co-axially with one another, and means supported by said first pivot gimbal adapted to selectively reversibly rotate one of the races of each of said bearings relative to the other in order to reduce the frictional resistance of said anti-friction bearings, the pivot support means supporting the second pivot gimbal from the first pivot gimbal, including a plurality of anti-friction bearings supported by the first pivot gimbal, each of said anti-friction bearings including an inner race and an outer race, located co-axially with one another, and means supported by said first pivot gimbal adapted to selectively reversibly rotate one of the races of each of said bearings relattive to the other, in order to reduce the frictional resistance of said anti-friction bearings.

3,182,515
STARTING-MOTOR TRANSMISSION FOR INTERNAL COMBUSTION ENGINES

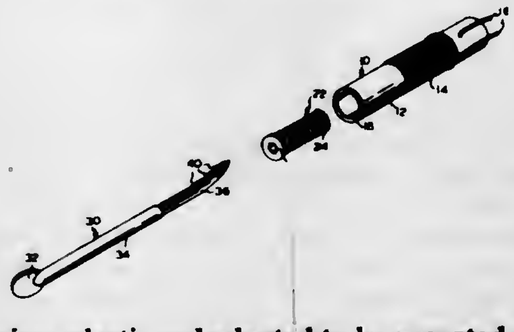
Hermann Klein, Stuttgart-Rohr, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed June 25, 1962, Ser. No. 204,828
Claims priority, application Germany, June 29, 1961, B 63,071
10 Claims. (Cl. 74—7)

1. A starting motor transmission for internal combustion engines, comprising, in combination, an elongated starting motor shaft having a smooth portion and a threaded portion; elongated hollow pinion means carried by said smooth portion of said starting motor shaft for rotational and axial movement relative thereto; a hollow spindle surrounding and threadedly engaging said threaded portion of said motor shaft; overrunning clutch means connecting said elongated hollow pinion means with said hollow spindle; releasable holding means cooperating with said motor shaft and said spindle for releasably holding the latter in a rest position relative to said motor shaft; shiftable means carried by said hollow spindle for axial shiftable movement relative thereto, said shiftable means having a rest position holding said releasable holding means in a position releasably holding said spindle in said rest position thereof on said motor shaft; brake means carried in part by said motor shaft and in part by said shiftable means and said brake means being engaged when said shiftable means is in said rest position thereof holding said releasable holding means in said holding position thereof; spring means urging said shiftable means to said rest position thereof; lever means operatively connected to said shiftable means for shifting the latter and being in a given rest position when said shiftable means is in said rest position thereof, said lever means being turnable from said rest position thereof to an operating position thereof and during turning from said rest to said operating position shifting said shiftable means in opposition to said spring means along said hollow spindle for placing said brake means in a disengaged position and for releasing said holding means so that said spindle can move axially with respect to said motor shaft while said axial movement of said spindle acts on said hollow pinion means to place the latter in a position transmitting a drive from the motor shaft to the internal combustion engine; and means cooperating with said shiftable means to limit turning of the latter so that the part of said brake means carried by said shiftable means remains stationary when engaged by the part of said brake means carried by said motor shaft.



3,182,516
COIL TUNER ROD

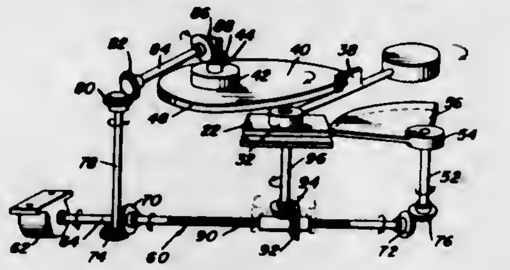
George Martin Rapata, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 20, 1962, Ser. No. 189,152
8 Claims. (Cl. 74—10.85)



1. A one piece plastic rod adapted to be accepted within the complementary bore of a controlled device including an elongated shaft, handle means at one end of said shaft, said shaft having a first portion extending from said handle means to a point intermediate the length of said shaft,

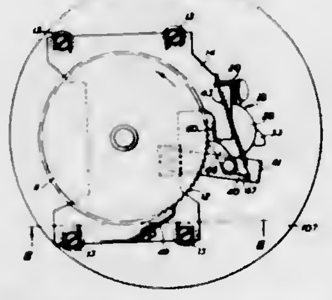
said shaft further having a flexible hook-like second portion extending from said first portion to the free end of the shaft and presenting a convex and concave side, said concave side of said hook having a plurality of axially spaced shoulder means, each of said shoulder means being successively stepped radially outwardly as they progress towards the free end of said hook, the convex surface of said second hook portion being curved and substantially smooth and continuous.

3,182,517
VARIABLE OSCILLATOR SYSTEM
Norman L. Dean, 3601 Wisconsin Ave. NW., Washington 16, D.C.
Filed Mar. 13, 1962, Ser. No. 179,294
11 Claims. (Cl. 74—61)



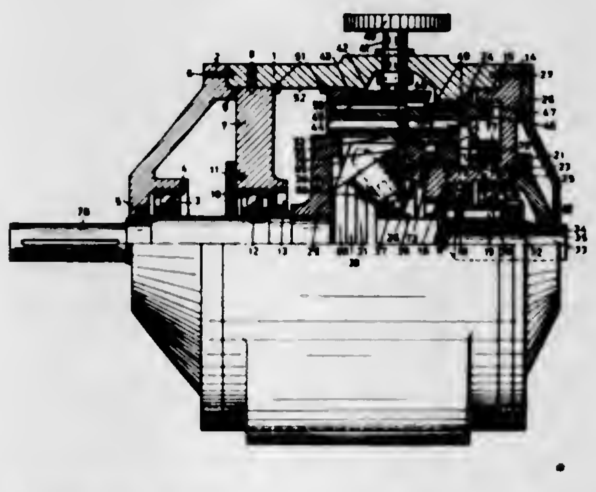
1. A system for producing harmonic motion with respect to a shifting center of movement comprising, frame means, slide means reciprocably mounted by the frame means, rotor means mounted on the slide means operative in response to rotation thereof for inducing harmonic motion of the slide means relative to a center of movement located at one position on the frame means, displacing means operatively mounted on the frame means and cyclically engageable with the rotor means for regulating displacement of said center of movement without disturbing said harmonic motion of the slide means and movement limiting means operatively mounted on said frame means and engageable with said slide means in phase relation to said cyclic engagement of the displacing means for inducing shifting of said center of movement to said one position on the frame means.

3,182,518
DRIVING MECHANISM
Sidney A. Young, East Kilbride, Scotland, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Jan. 2, 1963, Ser. No. 248,940
12 Claims. (Cl. 74—125)



1. In a driving mechanism, a first member defining driving means rotatably mounted on a support for selective clockwise or counterclockwise rotation, a second member defining driven means mounted for reciprocatory movement adjacent said first member, means biasing said second member to a static position against a stop, contact means on one of said members, a pair of oppositely facing cam surfaces on the other of said members, the slope of said cam surfaces being substantially equal, one of said pair of cam surfaces being engageable with said contact means upon clockwise rotation of said first member and the other of said pair of cam surfaces being engageable with said contact means upon counterclockwise rotation of said first member, rotation of said first member in either direction causing one or the other of said cam surfaces to engage said contact means and cam said second member away from said stop against the force of said biasing means, said second member being free to quickly snap back to said static position immediately after said contact means reaches the terminus of the cam surface against which it is engaged regardless of the direction of rotation of said first member.

3,182,519
FRICTION GEAR
Albin Grieshaber, Hauptstrasse 1, Wolfach, Black Forest, Germany
Filed Jan. 21, 1963, Ser. No. 252,847
Claims priority, application Germany, Apr. 21, 1962, G 34,795
5 Claims. (Cl. 74—191)



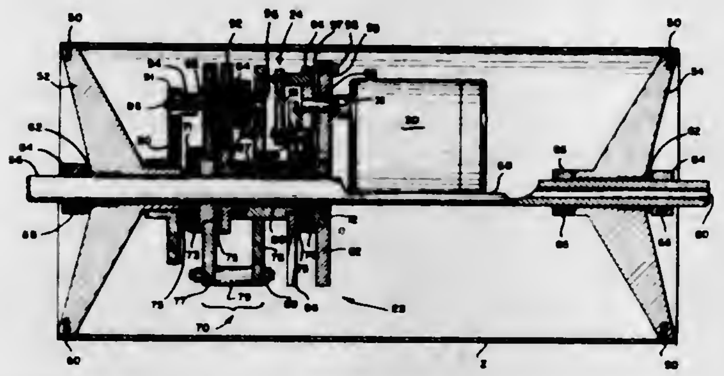
1. A variable speed power transmission comprising a fixed housing, a conical drive member rotatably mounted in said housing, a thrust cone mounted in said housing coaxial with said drive member, a plurality of tapered rollers each formed by two cones of inverse slope, the first of said cones of said tapered rollers being located between said drive member and said thrust cone and forming idler gears with said drive member and said thrust cone, a rotary runner ring mounted in said housing coaxial with said drive member and having an annular contact surface means in friction driving contact with the tapered surfaces of the second of said cones of said tapered rollers, means to shift said annular contact surface means parallel to the axis of said driven member, a driven shaft in alignment with said drive member, a coupling plate on said driven shaft, means connecting said coupling plate to said rotary runner ring, and means for applying an axial thrust on said idler gears whereby the frictional contact between said tapered rollers and said annular contact surface means of said drive member may be increased when the torque to be transmitted by the power transmission increases.

3,182,520
MOUNTING STRUCTURE FOR A TIMER
James S. Roberts, Brookfield, Wis., assignor to Milwaukee Chaplet & Mfg. Company, Inc., Milwaukee, Wis.
Original application June 30, 1961, Ser. No. 121,241. Divided and this application Dec. 14, 1962, Ser. No. 244,773
4 Claims. (Cl. 74—421)

3. A driven drum-type stepping control mechanism comprising, in combination,

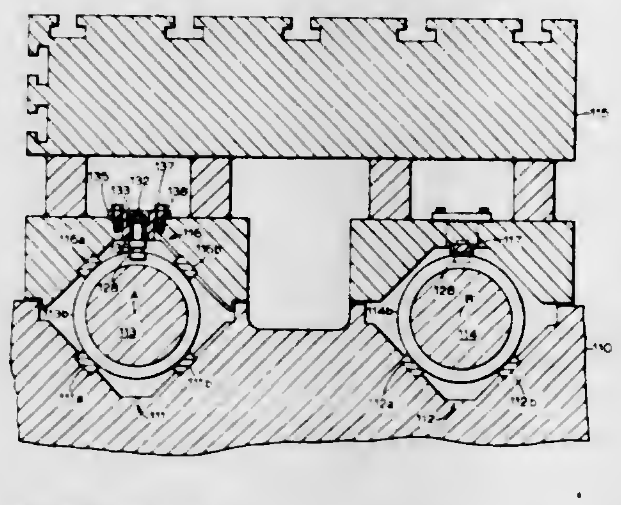
a shaft,
spaced shaft supports adapted to receive the ends of
  said shaft,

means for securing asid shaft against rotation relative
  to said supports,
a drum coaxially mounted for rotation about said shaft
  extending therethrough,



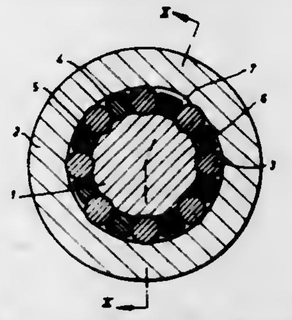
said drum comprising
  a hollow cylinder adapted for use as a memory element capable of controlling a plurality of switches, and
  a pair of hubs removably securing the ends of said cylinder,
  said hubs being revolvably supported on a pair of spaced bearing means disposed on said shaft between said shaft supports,
driving means for rotating said drum mounted on said shaft within said drum, and
hinge means connecting one end of said shaft to one of said supports for swinging movement of said shaft away from the other of said supports,
whereby the cylinder can be placed on and removed from the shaft and the associated hubs by swinging one end of the shaft out of the shaft support and about said hinge and moving said cylinder axially along the shaft.

3,182,521
SUPPORT MECHANISM FOR MOVABLE MACHINE TOOL MEMBER
Lawrence A. Attermeyer, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 15, 1963, Ser. No. 265,500
5 Claims. (Cl. 74—424.8)



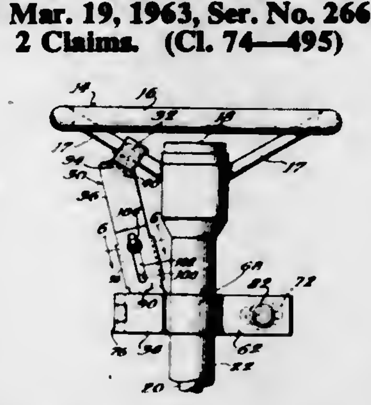
5. In a machine tool
(*a*) a base member having a pair of spaced parallel ways,
(*b*) a slide member having a pair of spaced parallel ways in spaced relation to the ways on the base member,
(*c*) a pair of elongated threaded support shafts journaled in one of said members and engaged with the pairs of ways, respectively, of both members, the weight of the slide member transmitted through the support shafts to the base member,
(*d*) means effecting driving engagement of said slide member with said threaded support shafts for movement of said slide member along said support shafts on rotation of the shafts,
(*e*) and means to rotate said shafts in unison.

3,182,522
ROLLER SCREW
Carl Bruno Strandgren, 12 Chemin Plaisante, Lausanne, Switzerland
Filed July 9, 1963, Ser. No. 293,738
Claims priority, application Switzerland, July 14, 1962, 8,506/62
22 Claims. (Cl. 74—459)



1. Roller screw, comprising a screw and a nut, the diameter of the screwthread of the latter being greater than the diameter of the screwthread of the screw, so that between screw and nut an annular space is formed, and also of rotating bodies which are disposed in said annular space and which engage both in the screwthread of the screw and in the screwthread of the nut, characterised by a cylindrical cage which is disposed in the aforesaid annular space and which has cut in its cylinder wall openings in which the rotating bodies are guided, by at least one groove cut in the screwthread of the nut in the longitudinal direction and of such dimensions that the rotating bodies are out of engagement with the screwthread of the screw during the passing of the groove, and also by cams which are disposed at both ends of the groove and which during the passing of the groove displace the rotating bodies in the axial direction by at least a distance corresponding to the distance between two neighbouring screwthread grooves in the screw.

3,182,523
WHEEL LOCKING DEVICE
Peter P. Ambrose, 8416 Manistee Ave., Chicago, Ill.
Filed Mar. 19, 1963, Ser. No. 266,323
2 Claims. (Cl. 74—495)



1. A device for use on the rotatable steering wheel of a motor vehicle wherein the steering wheel includes an outer rim from which there extends a plurality of spokes inwardly directed to a hub, said hub being connected to a steering column rotatably disposed within a tubular housing, and the tubular housing being stationarily mounted on the vehicle: the device comprising, in combination, a pair of arms, a hinge connection between one end of each of the arms for mounting said arms for pivotal movement, each of said arms including an arcuate portion extending from the other arm and the arcuate

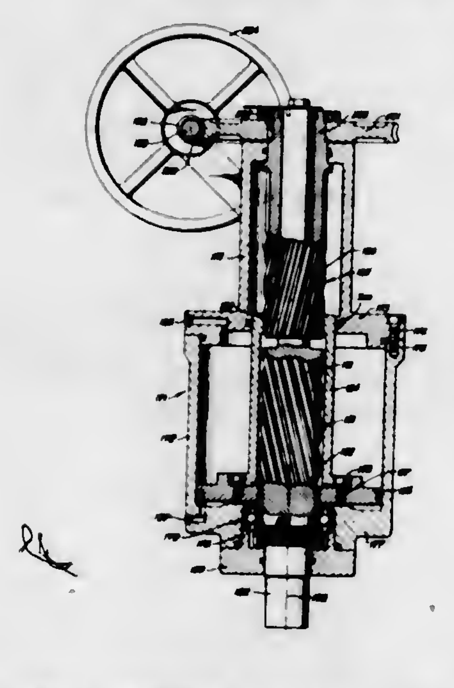
portions confronting each other and being shaped to fit about the tubular housing, a releasable lock mechanism engaging the other end of both arms for locking said arms to the tubular housing, a first elongated rigid member secured to one of the arms and extending toward the steering wheel in the plane of the axis of the housing, the axis of elongation of said first rigid member being disposed at an acute angle relative to the central axis of the tubular housing, a second elongated rigid member having a portion slidably abutting a portion of the first rigid elongated member with the axes of elongation of the first and second members disposed parallel to each other, one of said members having a pair of spaced outwardly extending flanges parallel to the axis of elongation of said member forming a channel and the other member having a pair of parallel walls parallel to the axis of elongation of said other member slidably engaging the channel forming flanges, one of said members having an aperture and the other of said members having an elongated slot disposed parallel to the axis of elongation of the said member and confronting the aperture, a threaded bolt extending through the aperture and the slot having a head, a nut threadedly engaging the bolt, the nut and head abutting the remote surfaces of the first and second members for locking the members against translation, and means located on the second member at the end thereof remote from the first member defining a seat adapted to engage a spoke of the wheel, said means securing the spoke against rotation thereof about the axis of the steering column.

3,182,524
VALVE OPERATOR

Granville S. Knox, La Canada, Calif., assignor to Hydril Company, Los Angeles, Calif., a corporation of Ohio

Filed Feb. 17, 1964, Ser. No. 346,380

2 Claims. (Cl. 74—625)



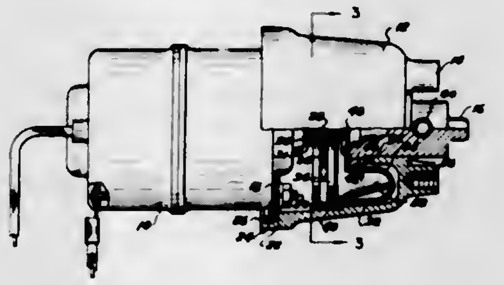
1. A rotary operator assembly comprising a housing having stepped cylindrical bore portions extending coaxially longitudinally, fluid pressure responsive and axially reciprocable driver means having externally stepped cylindrical sealing surfaces, said surfaces respectively received by and having slidable sealing relationship with said bore portions. said driver means being generally tubular and having a bore and longitudinally spaced sets of internal splines, rotary shaft means journaled for rotation within the housing and having external splines engaging one set of said internal splines, and torque means carried by said housing, a fluid seal between said torque means and said housing, said torque means extending within said driver means and having external splines engaging another set of said driver internal splines, means for locking said torque means against rotation so that axial reciprocation of said driver means will result in rotation of said shaft means, said housing and driver forming a pair of chambers alternately to receive actuating fluid pressure at opposite sides of said head section, one of said chambers being in direct communication with the external splines of both said shaft means and torque means through the bore of said driver means whereby the splines of said torque and shaft means are lubricated by pressure fluid received by said one chamber.

3,182,525
POWER ACTUATOR WITH HARMONIC DRIVE

David V. Tinder, Detroit, and William R. Carey, Taylor, Mich., assignors to Dura Corporation, Oak Park, Mich., a corporation of Michigan

Filed Mar. 28, 1962, Ser. No. 183,303

8 Claims. (Cl. 74—640)



1. A gearing system comprising,
an annular housing having gear teeth formed integrally on the inner wall thereof,
a pair of driveshafts mounted coaxially in said housing,
a flex spline member drivingly mounted on the inner end of one of said shafts,
said flex spline member comprising a pair of concentrically disposed radially spaced cylindrical portions, said cylindrical portions being interconnected at one end thereof by a semi-toroidal flexible web member,
the outer surface of the outer cylindrical portion having integral teeth on a smaller pitch diameter than the gear teeth in said housing disposed in radial alignment with the gear teeth in said housing,
a strain inducing element drivingly carried by the other of said shafts and disposed in engagement with the inner surface of said outer cylindrical portion such that said outer cylindrical portion is deflected at a plurality of spaced points sufficiently to engage the teeth of said flex spline member with said housing teeth.

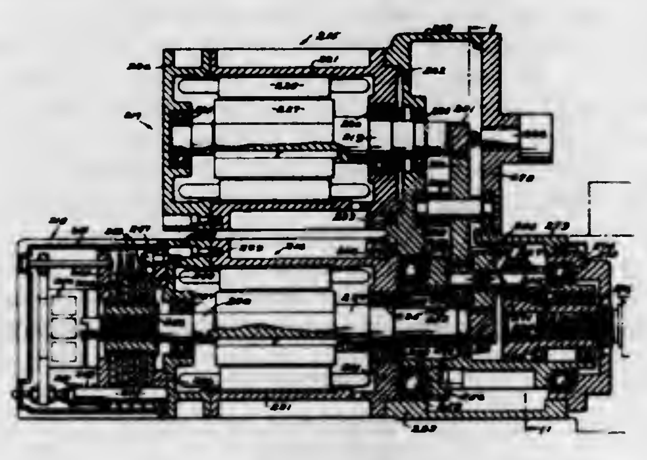
3,182,526
MOTORIZED MACHINE TOOL WAY UNIT

Michael Zajac, Inkster Village, Mich., assignor to Buhr Machine Tool Company, Ann Arbor, Mich., a corporation of Michigan

Filed Dec. 26, 1962, Ser. No. 246,892

8 Claims. (Cl. 74—675)

1. A combined drive for a machine tool or like unit having a movable platen, comprising a motorized mechanism to move said platen in forward and reverse strokes, including a first electrical traverse motor and a second electrical feed motor, said motors having a common output member provided with means connecting the same to said platen to drive the latter, and gear means operatively connecting said motors to said output member to produce a smooth combined forward traverse and feed stroke of said output member and platen at varying speed which is free of a shock transition point between successive traverse and feed components of said stroke, including means to energize said motors simultaneously during an initial forward traverse phase of said stroke and to render the traverse motor ineffective to drive during a following forward feed phase, said gear means including a planetary gear set having a driving connection to said output member and a driven connection to said traverse motor, and a further gear set drivingly connecting said planetary set to said feed motor for the simultaneous drive of the output member by both motors in said initial phase, said further gear set comprising solely a train of spur gearing having a direct driving connection between said feed motor and said planetary set.

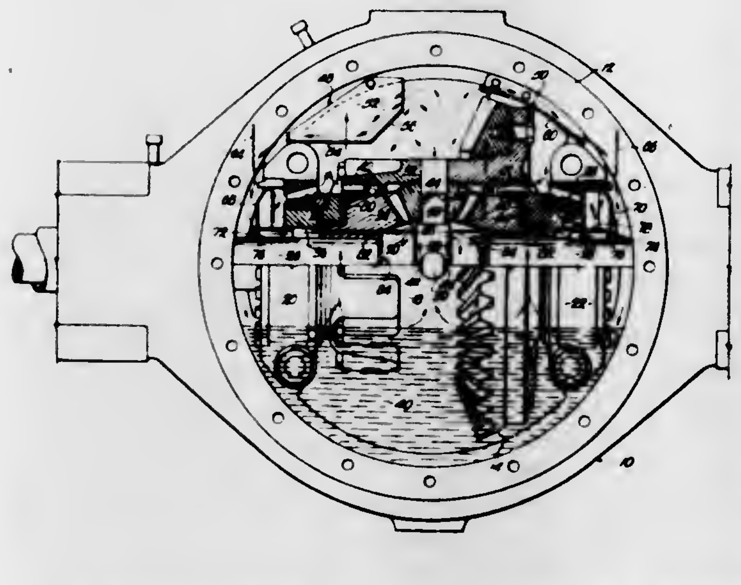


3,182,527
SELF-LUBRICATING DIFFERENTIAL

Darrel L. Bryan, Overland Park, Kans., assignor to Pacific Car and Foundry Company, Renton, Wash., a corporation of Washington

Filed Feb. 28, 1964, Ser. No. 348,197

6 Claims. (Cl. 74—713)



1. A self-lubricating differential comprising a housing having a plurality of movable parts enclosed therewithin; means for imparting movement to said parts, said parts including a ring gear and a differential case; a pair of rotatable axles extending oppositely outwardly from said differential case; a supply of lubricant within said housing, said parts being partially immersed in said lubricant when the parts are at rest, said parts distributing the lubricant within said housing when the parts are placed in motion; means for guiding the flow of the lubricant within said housing as the same is distributed by movement of said parts; and means for guiding the lubricant from the housing to the interior of said differential case, said means including a sleeve surrounding a portion of each of said axles and slightly spaced therefrom whereby to present an annular space around each of said axles whereby lubricant may be drawn therethrough and along said axles upon the rotation of the latter.

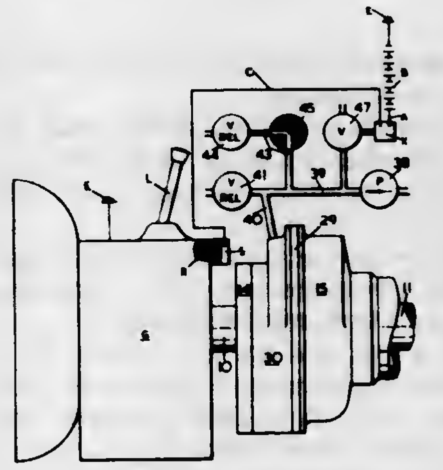
3,182,528
PLANETARY DRIVE TRANSMISSION DEVICE

Alan S. Lamburn, Kencott, via Lechlade, England, assignor to Auto Transmissions Limited, Coventry, England

Filed May 24, 1962, Ser. No. 197,324

Claims priority, application Great Britain, June 9, 1961, 20,875/61

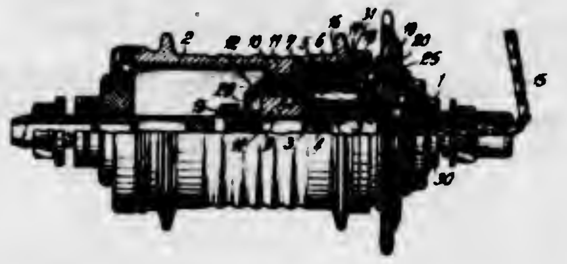
8 Claims. (Cl. 74—740)



4. A planetary drive transmission device comprising a sun gear wheel, an annulus gear wheel, planet gear wheel means and a carrier for said planet gear wheel means, an input shaft and an output shaft, said sun and annulus gear wheels and said carrier and said shafts being coaxial with each other, a drive connection between one of said shafts and said carrier, a drive connection between the other of said shafts and said annulus gear wheel, a stationary casing for said sun and annulus gear wheels and said carrier, said shafts journalled in said casing, a control member coaxial with said shafts, drive means interconnecting said control member and sun gear wheel, said interconnecting drive means permitting said control member to be moved axially relatively to said sun gear wheel, a brake surface on said casing, a clutch surface on said annulus gear wheel, said brake and clutch surfaces coaxial with said control member, means biasing said control member axially in one direction to engage one of said surfaces so as to provide transmission at one ratio, fluid-pressure-operated means, means for supplying fluid pressure to said fluid-pressure-operated means to urge said control member axially in the other direction against said biasing means to engage the other of said surfaces so as to provide transmission at another ratio, said one ratio being lower than said another ratio, first valve means operable to exhaust the said fluid pressure from said fluid-pressure-operated means to allow said biasing means to move said control member to engage said one ratio, and second valve means operable in conjunction with said first valve means to maintain a proportion of the said fluid pressure in said fluid-pressure-operated means partially to oppose the said biasing means whereby to prevent the said one ratio from being engaged by the full effort of the said biasing means, said input shaft adapted to be driven from a change-speed gearbox having a reverse ratio, third valve means operable by selection of said reverse ratio in said change-speed gearbox to exhaust the said maintained proportion of the said fluid pressure whereby to allow the full effort of said biasing means to engage the said one ratio.

3,182,529
DUAL-SPEED HUB

Hans Joachim Schwerdhöfer, Schweinfurt (Main), Germany, assignor to Fichtel & Sachs A.G., Schweinfurt (Main), Germany, a corporation of Germany
Filed May 22, 1963, Ser. No. 282,286
Claims priority, application Germany, May 25, 1962,
F 36,910
10 Claims. (Cl. 74—750)

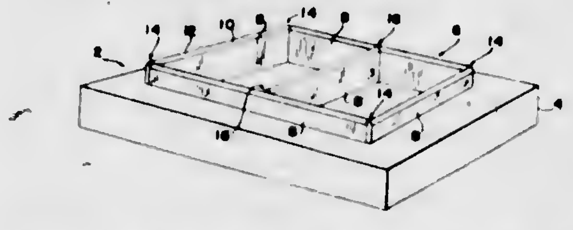


1. A dual-speed hub for a bicycle and the like comprising, in combination:

- (*a*) a normally stationary shaft having an axis;
- (*b*) a hub shell rotatable about said axis;
- (*c*) a driver member mounted on said shaft for rotation about said axis; and
- (*d*) a planetary gear transmission interposed in said hub shell between said driver member and said hub shell, said transmission including
    - (1) a sun gear fixed on said shaft and defining a radial plane relative to said axis, said driver member being axially spaced from said plane in a predetermined direction;
    - (2) a planet carrier engaging said driver member for joint rotation therewith about said axis;
    - (3) a ring gear rotatable about said axis;
    - (4) a planet gear rotatable on said planet carrier in said plane in simultaneous meshing engagement with said sun gear and said ring gear, whereby the rotary speed of said ring gear is higher than the rotary speed of said planet carrier during rotation of said driver member;
    - (5) a first free-wheeling coupling interposed between said planet carrier and said hub shell, said first coupling being axially positioned between said plane and said driver member;
    - (6) a second free-wheeling coupling interposed between said ring gear and said hub shell, said second coupling being axially spaced from said plane in a direction opposite to said predetermined direction; and
- (*e*) operator controlled means for selectively disengaging said second coupling.

3,182,530
CONSTRUCTION FOR STEEL RULE CUTTING DIES

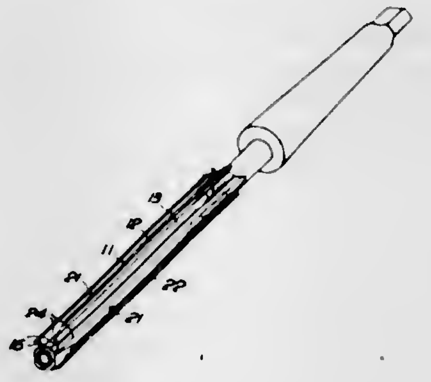
Erhardt K. Scott and Maximillian L. Scott, New York, N.Y., assignors to Accurate Steel Rule Die Manufacturers, New York, N.Y., a partnership
Filed Apr. 11, 1961, Ser. No. 102,306
1 Claim. (Cl. 76—107)



In a method of making a steel rule cutting die of the type in which one double-bevelled cutting rule is disposed in angular end-to-end abutting relationship with another double-bevelled cutting rule, each of said rules having a body portion of generally rectangular transverse cross section and an integral cutting portion which in transverse cross section has generally the shape of an isosceles triangle the apex of which forms a cutting edge, the steps comprising: cutting away the body portion and the cutting portion at one end of each rule so that the body portions, cutting portions and cutting edges of abutting rules engage each other, said cutting operation being performed along a plane which extends perpendicular to the longitudinal axis of the respective rule and which extends through the body portion and cutting portion of the respective rule at an angle to the side of the respective body portion, said cutting operation forming an exposed end edge on each rule; forming intersecting rule-receiving slots in the surface of a base member at a right angle thereto; and inserting the body portions of said cutting rules in said slots with the exposed end edge of each rule disposed at the intersection of said slots and in engagement with the entire exposed end edge of the other rule whereby the space which would ordinarily occur between the cutting edges of abutting rules is eliminated.

3,182,531
REAMER

Arthur I. W. Moore and John H. Porter, Staveley Lodge, Melton Mowbray, England, assignors to Production Engineering Research Association of Great Britain, Melton Mowbray, England, a corporation of Great Britain
Filed Aug. 1, 1962, Ser. No. 214,099
Claims priority, application Great Britain, Aug. 4, 1961,
28,490/61
18 Claims. (Cl. 77—72)

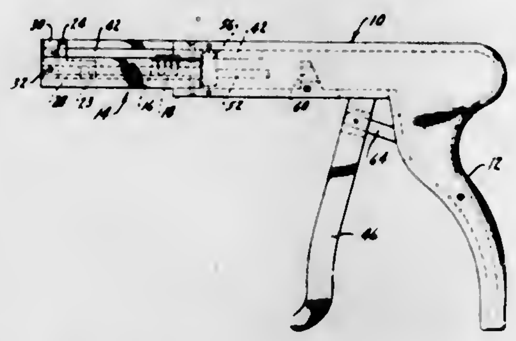


1. A reamer comprising a shank and a plurality of teeth, each tooth including a circular land, a secondary clearance surface following the circular land with a continuously decreasing radius and making a clearance angle which has an appropriate value at the junction of the secondary clearance surface with said circular land but which continuously decreases with distance therefrom down to a value which is not less than a very small negative value at the other end of the secondary clearance surface, and axial rake face making a negative acute angle to the leading edge of said circular land, and a cutting edge formed by the intersection of said axial rake face with said secondary clearance surface.

3,182,532
PISTOL GRIP WIRE STRIPPER

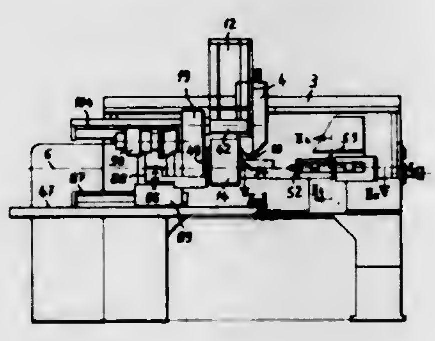
Dean Oehlerking, Sycamore, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,308
11 Claims. (Cl. 81—9.5)

1. A wire stripper including a frame, a pistol grip type handle at one end of said frame, a trigger pivoted to said frame adjacent the handle, a pair of stripper blades mounted on said frame at the end away from the handle, a trough mounted on said frame, a pair of grippers mounted in said trough for slideable movement toward and away from said stripper blades, a push rod mounted in said frame for slideable movement toward said stripper blades and grippers, said push rod having a portion positioned to contact said stripper blades and grippers to close them, said push rod being pivotally connected to said trigger, and means, operable by the trigger, for moving the grippers, when closed, in said trough away from the stripper blades to remove the insulation.



3,182,533
WORKPIECE LOADING AND DISCHARGING DEVICE FOR MACHINE TOOLS

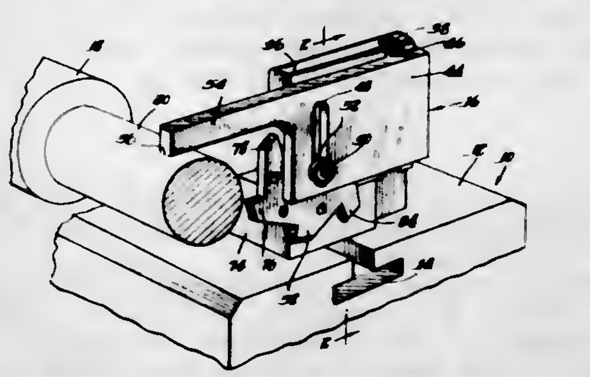
Herbert Gramespacher and Paul Frischknecht, Schaffhausen, Switzerland, assignors to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland
Filed July 30, 1962, Ser. No. 213,403
Claims priority, application Switzerland, Aug. 3, 1961,
9,085/61
8 Claims. (Cl. 82—2.7)



7. In combination with a machine tool, especially lathe, a workpiece loading and discharging apparatus which comprises: a magazine for receiving and releasing workpieces to be machined, distributing means arranged adjacent said magazine and operable to withdraw one workpiece at a time from said magazine, loading drum means arranged adjacent said distributing means and including a plurality of pairs of gripper arms movable from a workpiece releasing position into a workpiece holding position and vice versa, control piston means located centrally within said loading drum means for simultaneously actuating all of said pairs of gripper arms, said pairs of gripper arms being operable successively to receive a workpiece from said distributing means and subsequently to move the same into the axis of rotation of a rotary element of said machine tool about which the workpiece is to be machined, said pairs of gripper arms also being operable following the machining of the workpiece to move the latter into a discharging station, control gear means operable at a substantially constant speed and operatively connected to both said distributing means and said loading drum means for actuating the same, actuating means arranged outside said central control piston means and operatively connected thereto for actuating the same, and means including an element of said machine tool moveable to effect clamping of a workpiece on said axis connected to said actuating means to effect operation thereof.

3,182,534
CUTTING TOOL

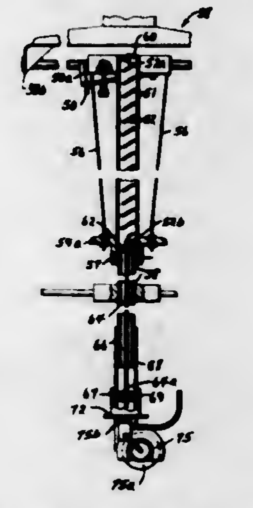
Anton R. Hoffmann, 821 Northmoor Road, Lake Forest, Ill.
Filed Apr. 18, 1962, Ser. No. 188,356
1 Claim. (Cl. 82—35)



A cutting tool for use with a lathe or the like comprising a base, means for mounting said base on a supporting table or the like, a rotatable bit having a plurality of cutting edges spaced about its periphery, means for mounting said bit from said base for rotary adjustment, means for locking said bit in any of a plurality of preselected positions of adjustment with a preselected cutting edge in cutting position for cutting a workpiece, means rigid with the locked bit and including an overarm having a straight horizontal edge extending in the direction of feed of said tool and projecting in spaced relation from the cutting edge in cutting position and engageable with a workpiece in opposition to said cutting edge to take up reaction forces between the workpiece and the cutting edge in cutting position, and means for adjusting the spacing between the cutting edge in cutting position and the projecting means overarm while maintaining the cutting edge at a constant angle to the workpiece, said adjusting means including a bolt-in-slot adjustment with the bolt passing through the bit and forming at least a part of the means for rotatably mounting said bit.

3,182,535
SCORING MACHINE

Howard Menlo Quakenbush, Evansville, Ind., assignor to National Furniture Manufacturing Co., Inc., Evansville, Ind., a corporation of Indiana
Filed Mar. 7, 1962, Ser. No. 178,184
2 Claims. (Cl. 83—8)

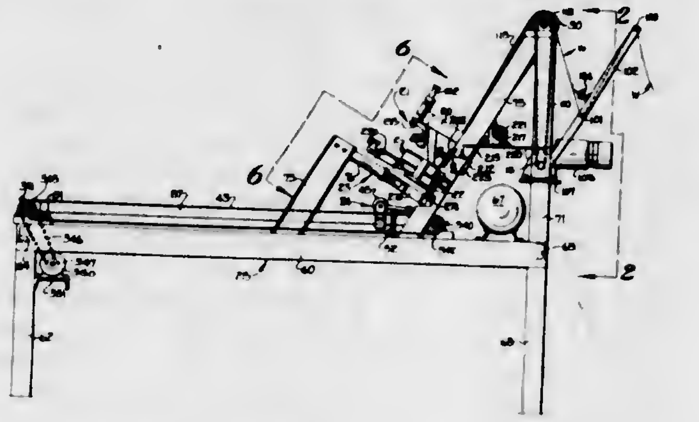


1. A machine for cutting a uniform depth in an upholstery material comprising a framework, a work-receiving surface, and a cutting mechanism disposed on said framework and movable in planes generally parallel with said work-receiving surface and in a direction to and from said work, said cutting mechanism comprising a first hollow support member, a second hollow support member secured to said first hollow support member, spring means disposed within said first hollow support member and having an end thereof secured to a movable

adjustment member, where said movable adjustment member extends through said second hollow support member and adjustably engages a portion of a third hollow support member, said third hollow support member being disposed in sleeve-like fashion with respect to said second hollow support member, and a cutting head disposed on said third hollow support member, where said spring means continually urged said cutting head in a direction away from said work-receiving surface.

3,182,536
APPARATUS AND METHOD FOR SEVERING TOWELING AND THE LIKE INTO INDIVIDUAL LENGTHS

Charles B. Sumpter, Jr., Leaksville, and John T. MacIsaac, Jr., Spray, N.C., assignors to Fieldcrest Mills, Inc., Rockingham, N.C., a corporation of Delaware
Filed Nov. 2, 1962, Ser. No. 234,947
16 Claims. (Cl. 83—18)



1. A method of severing articles from a continuous length of textile web material having recurrent non-uniformly spaced relatively narrow and relatively low transverse bands thereon and intervening relatively high terry pile areas between successive bands; said method comprising

(*a*) moving the web forwardly in a substantially straight path of travel,

(*b*) detecting each successive band as it reaches a particular position in its travel,

(*c*) contacting and arresting the leading edge of each successive terry pile area as it reaches a point adjacent said position and in response to detection of the corresponding band extending forwardly from each successive terry pile area,

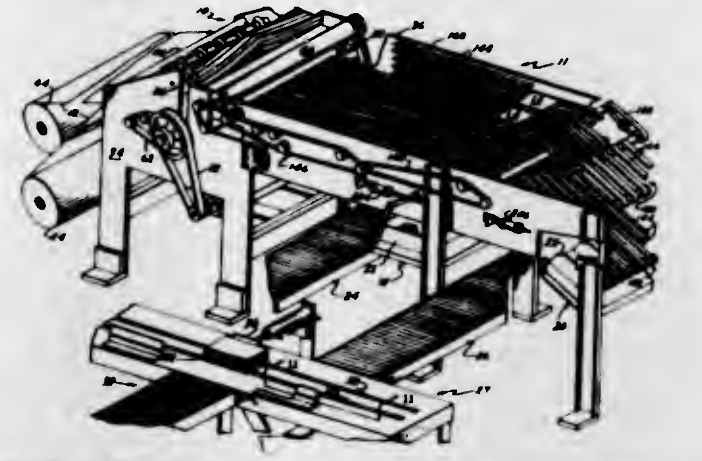
(*d*) advancing any portions of each successive leading edge not previously transversely alined at said point so the corresponding leading edge extends in a straight transverse line, and

(*e*) severing said web along each successive band extending forwardly from the particular leading edge alined at said point.

3,182,537
PAPER CUTTING MACHINE WITH COUNTER CONTROLLED STACKING MEANS

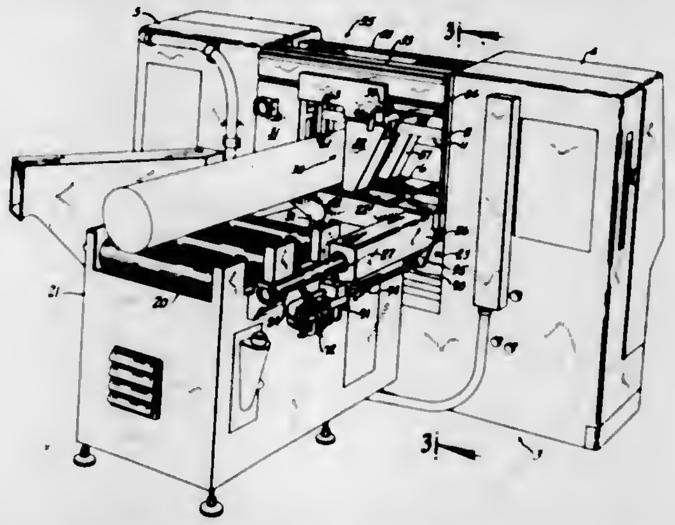
Donald R. Grody, 6 Lee Road, Lenox, Mass.
Filed Jan. 5, 1962, Ser. No. 164,454
3 Claims. (Cl. 83—88)

1. Machine for producing folio and cut size paper as a continuous and uninterrupted process comprising means for severing webs of paper longitudinally, a rotary cutter disposed to cut said webs transversely in their direction of travel to form sheets of predetermined size, means for stacking said sheets including a plurality of tape conveyors, each inclined at a substantial angle to the horizontal, trays pivotably disposed at said angle for receiving sheets from each of said tape conveyors, means for vibrating said trays, means for counting the number of sheets delivered to the stacking means and a gate responsive to the counting means for diverting the flow of sheets from one to the other of said tape conveyors during passage of a sheet over said gate.



3,182,538
MACHINE FOR CUTTING LENGTHS OF STOCK INTO PIECES

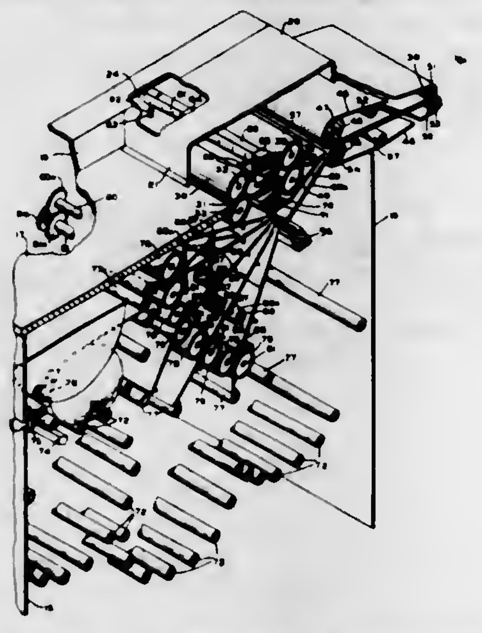
Charles H. Whitmore, Savage, Thomas C. Sebastian, Shakopee, and Russell G. Winquist, St. Paul, Minn., assignors to Continental Machines, Inc., Savage, Minn., a corporation of Minnesota
Filed Aug. 31, 1961, Ser. No. 135,184
17 Claims. (Cl. 83—201)



1. A machine for cutting a length of stock into shorter pieces of selected length comprising: a power driven saw to cut transversely through the stock along a defined fixed plane; a carriage at the rear of the cutting plane; means mounting the carriage for movement along a path substantially normal to said cutting plane between forward and rearward positions; means on the carriage to releasably secure a length of stock thereto so that said length of stock may be advanced by the carriage and have its front end portion projected through and beyond the cutting plane and then held while the saw cuts off the projecting end portion of the stock, said stock securing means being so located on the carriage that in the forward position of the carriage it is closely adjacent to the cutting plane so that the stock is securely held during the cutting operation despite the fast that the length of the stock to the rear of the cutting plane may be relatively short; means to hold the remaining uncut length of stock at its front end so that the stock may be released from securement to the carriage and the carriage retracted without displacing the stock, said holding means being in front of the cutting plane so as not to interfere with advance of the carriage carried stock securing means to its position closely adjacent to the cutting plane; means to effect operative engagement between the front end portion of the remaining uncut length of stock and said holding means; and means to release the hold of said holding means on the front end portion of the stock after the stock has been secured to the carriage.

3,182,539
PAPER FEEDING AND CUTTING MACHINE

Lowdon Richard Williams, Jr., 5229 Fairhaven Road, Clifton Heights, Pa.
Filed Mar. 14, 1961, Ser. No. 95,715
4 Claims. (Cl. 83—209)



1. A paper feeding machine for selectively supplying paper of a width not less than that of a master sheet advanced to the machine comprising a frame, a master sheet receiving member in said frame, members in said frame for advancing a master sheet supplied to said receiving member, said last members comprising pairs of feed rollers in spaced relation, spaced master sheet width detector members interposed between said advancing members and transversely aligned relative to the direction of advancing movement of said master sheet, a plurality of separate paper stock supporting members for rolls of paper stock of different widths, feed rolls in pairs for selectively feeding paper stock from one of said supporting members to facing engagement with the master sheet with the leading edges of said master sheet and stock together at a line of convergence, selective control members interposed between said detector members and said feed rollers and controlled by said detector members for controlling the actuation of said feed rolls, delivery members for delivering said master sheet and said selectively fed stock together with one superposed on the other, and means for severing said stock to a length equal to the length of the master sheet, said means including stock severing members and master sheet length detector members for controlling the actuation of said severing members, said severing members and said width and length detector members being equidistant from the line of convergence of the master sheet and the stock.

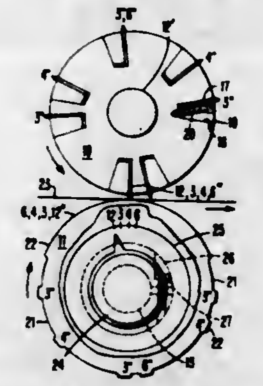
3,182,540
PAPER FORMS CUTTER SELECTIVELY ADJUSTABLE TO CUT EQUAL PORTIONS OF A PREDETERMINED LENGTH

Robert N. Eichorn, Endicott, and Charles Holovka, Jr., Binghamton, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 3, 1962, Ser. No. 241,894
8 Claims. (Cl. 83—346)

1. A cutter device for severing continuous forms into cut forms which comprises:

a rotatable cutter roll for severing a predetermined length form;

cutting means disposed around said cutter roll in positions representing a plurality of predetermined cut-off lengths equal to one-fourth, one-third, one-half and the total of said predetermined length form;



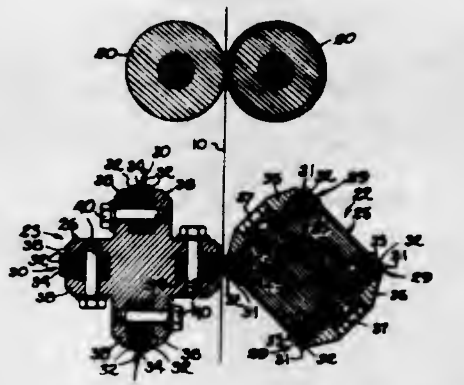
a rotatable relieved platen roll having substantially the same circumference as said cutter roll and having areas disposed for coaction with said cutting means to sever forms fed between said cutter and platen rolls;

said areas being disposed around said platen roll in positions corresponding to said plurality of predetermined cut-off lengths; and

means for adjusting said platen roll into selected co-operative relationships with said cutter roll whereby said forms may be severed into any one of said predetermined cut-off lengths.

3,182,541
ROTARY CUT-OFF DEVICE WITH INTERCHANGEABLE CUTTER AND ANVIL ELEMENTS

Robert G. Nutting, Glenview, Richard C. Wagner, Clarendon Hills, and Kenneth K. Christensen, Lombard, Ill., assignors, by mesne assignments, to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware
Original application Apr. 10, 1961, Ser. No. 102,048. Divided and this application Jan. 31, 1963, Ser. No. 255,318
3 Claims. (Cl. 83—346)

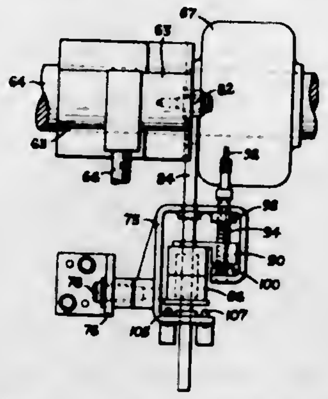


3. In a cut-off device for severing an elongated strip of material advanced along a predetermined path through a cut-off station, the combination of, first and second drums rotatably mounted on opposite sides of said path at said cut-off station, a first elongated bar of regular polygonal cross-section having flat sides and corners formed as knife edges, first means on said first drum for removably supporting said bar thereon with any one of said knife edges facing radially outwardly for engagement with one side of said strip, a second elongated bar also having flat sides and corners formed as knife edges, and second means on said second drum for removably supporting said second bar thereon with any one of said flat sides facing radially outwardly for engagement with the other side of said strip thereby to serve as an anvil for said first bar, said bars being of the same size and shape to be received interchangeably in said first and second supporting means.

3,182,542
CLAMP CONTROL APPARATUS

James J. Cochran, Dayton, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Filed Oct. 2, 1961, Ser. No. 142,304
8 Claims. (Cl. 83—453)

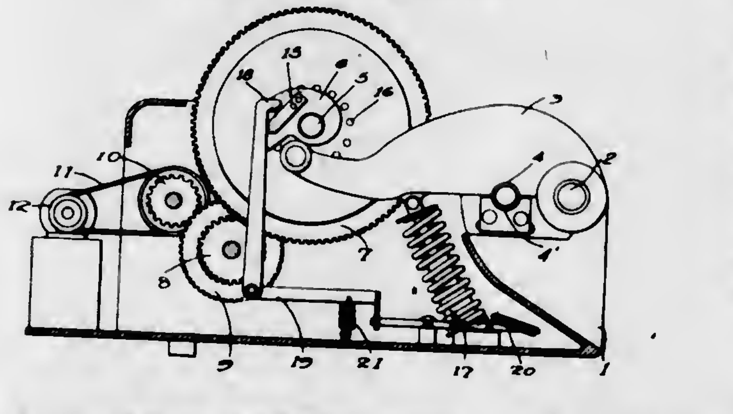


5. In a cutting machine including a work table for receiving piles of material of various heights to be cut, power operated knife means movable towards said cutting table for severing a pile of material thereon, and power operated clamp means movable from a fully raised position to a clamping position for holding the pile on said table during a cutting stroke of said knife; the improvement comprising control means to position said clamp means in a partially raised position a preselected distance above the surface of the pile on said table in accordance with a preselected adjustment, self-adjusting means governing the operation of said control means for positioning said clamp means intermediate the fully raised position and the clamping position thereof by approximately the same relative distance above the top surface of the pile being cut regardless of the height of the pile, and means enabling said clamp means to be moved to its fully raised position while allowing said adjustment to remain the same for enabling said clamp means to be raised the same preselected distance above a second pile in accordance with said adjustment.

3,182,543
SHEARING MACHINE

Shozo Shiokawa, 28 2-chome, Nishimachi, Sone, Toyonakashi, Osaka Prefecture, Japan

Filed Aug. 14, 1962, Ser. No. 216,814
Claims priority, application Japan, July 11, 1962, 37/29,618
6 Claims. (Cl. 83—573)

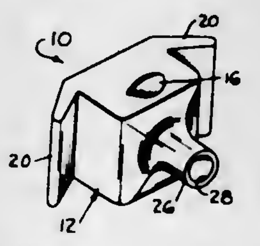


1. Stock shearing apparatus comprising, in combination, a frame; a first cutting jaw fixed to said frame; a relatively massive shear arm pivoted at one end to said frame for oscillation about a first axis, and having a free end; a second cutting jaw carried by said arm nearer to its pivot end and having stock shearing cooperation with said first jaw; a main gear mounted on said frame for rotation about a second axis substantially parallel to said first axis and adjacent the free end of said arm; a cam axially juxtaposed to said main gear for rotation about said second axis, said cam being engaged by the free end of said arm and having an involute working stroke surface and a general radial return stroke surface; means biasing the free end of said arm to engage said cam; driving means for rotating said main gear; spring biased detent means normally coupling said cam to said main gear for rotation by the latter to operate said arm; manually actuable control means effective on said detent means to uncouple said cam from said main gear; and means normally biasing said control means to a position uncoupling said cam from said main gear; said control means, upon manual actuation thereof, being released from said detent means for spring biasing of the latter to a position coupling said cam to said main gear for rotation by the latter to operate said shear arm.

3.182.544
TUNING CORE GROMMET

George Martin Rapata, Park Ridge, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed May 3, 1962, Ser. No. 192,191
3 Claims. (Cl. 85—80)



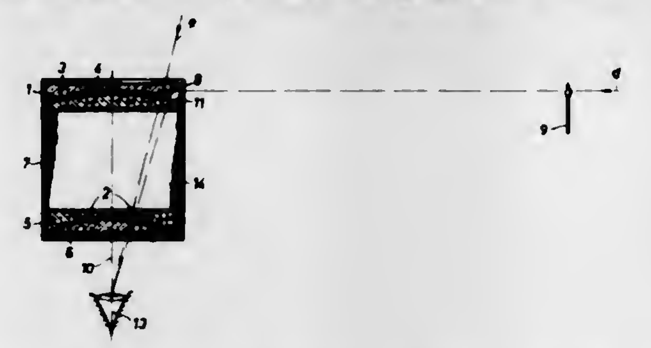
1. A plastic fastener in combination with an apertured sheet material workpiece and a male threaded member, said fastener including a continuous noncircular cup shaped body having walls with an axial extent substantially greater than the thickness of said workpiece, flange means integral with said body and extending laterally outwardly from one end of said body, means integral with and protruding outwardly from said body forming discrete shoulders axially spaced from and in opposed relation to said flanges, an integral circumferentially continuous resilient funnel shaped base means converging downwardly from the end of said body opposite the end carrying said flanges, said funnel shaped base means at its lowest extremity forming a cylinder having a through bore with a transverse dimension less than the major diameter of said threaded member, the aperture in said workpiece being complementary to said body in size and shape, said body being positioned in said aperture with said flange means engaging one side of said workpiece while said shoulders engage the opposite side of said workpiece, said threaded member being initially nonrotatably axially telescoped into said resilient funnel shaped base means with said cylinder of said base means laterally expanding to accept said threaded member and then returning to substantially its initial position and partially imposing the screw thread form on its inner wall, said threaded member after insertion within said cylinder of said base means being radially spaced from the walls of said body.

3,182,545
AIR GAP ALBADA VIEWFINDER WITH LATERAL MIRROR AND LENS ON FRONT ELEMENT FOR VIEWING EXTERNAL INDICATOR

Friedrich Papke, Braunschweig, Gliesmarode, Germany, assignor to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany

Filed June 7, 1960, Ser. No. 34,533
Claims priority, application Germany, June 10, 1959, V 16,681
8 Claims. (Cl. 88—1.5)

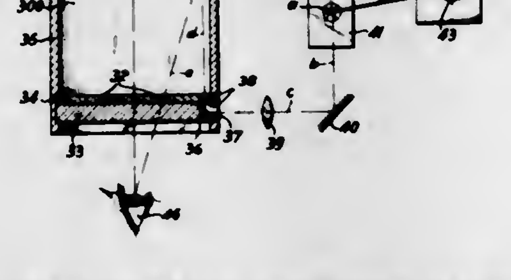
1. In an Albada viewfinder, for photographic cameras, of the type comprising a laterally substantially light impermeable housing having open front and rear ends, a front object facing lens mounted in the front end of said housing and having a rearwardly facing concave surface carrying a semi-transparent mirror, and an ocular mounted in the rear end of said housing and having a convex surface facing said concave surface and carrying a picture limiting frame for imaging by said mirror at substantially infinity, said front lens and said ocular being separated by an air gap having an axial length such that said frame is substantially in the focal plane of said mirror: means for providing, in the field of view of an observer looking through the ocular, an image of the position of an exposure condition indicating element of the camera located extraneous to the viewfinder, said means comprising a mirrored laterally and inwardly facing substantially plane surface of said front lens oblique to the optical axis of the viewfinder adjacent the lateral wall of said housing and in the path of light rays imaging said element and entering the housing unimpeded through a lateral opening therein adjacent said oblique mirrored surface for reflection by the latter toward said ocular; and transparent means providing a convex surface area adjacent and facing said oblique mirrored surface, forming an open substantially V-shaped groove with said mirrored surface, and situated in the path of light rays reflected from the latter toward said ocular, said convex surface area, due to its light ray converging action, providing, in the field of view of a viewer looking into the viewfinder through said ocular and along the optical axis of the viewfinder, a sharply focused image of said element in addition to the sharply focused image of the subject to be photographed and of said picture limiting frame, said oblique mirrored surface extending to the concave surface of said front lens and including a non-mirrored surface portion cemented to a mating surface portion of said means providing said convex surface area.



3,182,546
ALBADA VIEWFINDER FOR PHOTOGRAPHIC CAMERAS WITH OPTICAL MEANS INCLUDING REFLECTOR ON REAR ELEMENT FOR VIEWING EXTERNAL INDICATOR

Friedrich Papke, Braunschweig, Gliesmarode, Germany, assignor to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany

Filed June 27, 1960, Ser. No. 38,880
Claims priority, application Germany, June 27, 1959, V 16,795
3 Claims. (Cl. 88—1.5)

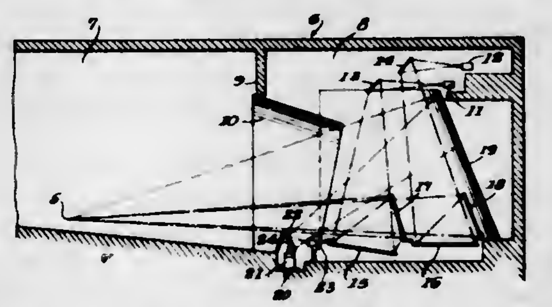


1. An Albada viewfinder combination for photographic cameras, comprising, a front light entry member having an inner surface and carrying on said inner surface a concave partially light-permeable mirror, a rear eye-confronting optical member having central and lateral forwardly directed surface portions, said lateral surface portion being situated in its entirety to one side of an optical axis along which said front and rear members are located and said central surface portion supporting a picture limiting frame which faces said front member, a housing laterally confining and axially separating said front and rear members and defining between the latter an elongated air space axially separating said front and rear members by a distance locating said picture limiting frame substantially in the focal plane of said concave mirror for imaging by the latter substantially at infinity, said housing having a front open end across which said front member extends and closed by said front member, and said housing having a rear open end across which said rear member extends and said rear open end of said housing being closed by said rear member, so that said central and lateral forwardly directed surface portions of said rear optical member are situated within said housing, said housing having a lateral wall formed with an aperture situated substantially at the focal plane of said concave mirror and located beside and extending forwardly from said lateral surface portion of said rear optical member, an indicator, and reflecting means carried at least in part by said lateral surface portion of said rear optical member for reflecting an image of said indicator to said concave mirror for reflection thereby to provide an image of said indicator substantially at infinity in the field of view of the viewfinder, whereby both the image of said picture limiting frame and the image of said indicator are sharply focused at infinity, said indicator being situated outside of said housing and said reflecting means including reflectors and an objective also situated outside of said housing and directing through said aperture and to the part of said reflecting means which is carried by said lateral surface portion of said rear optical element an image of said indicator to be reflected by the part of said reflecting means at said lateral surface portion of said rear optical element toward said concave mirror.

3,182,547
MEANS FOR OBTAINING AN OPTICAL THIRD DIMENSION IN MOTION PICTURES

Samuel Armstrong, P.O. Box 163, Encino, Calif.

Filed Feb. 9, 1961, Ser. No. 88,054
2 Claims. (Cl. 88—24)



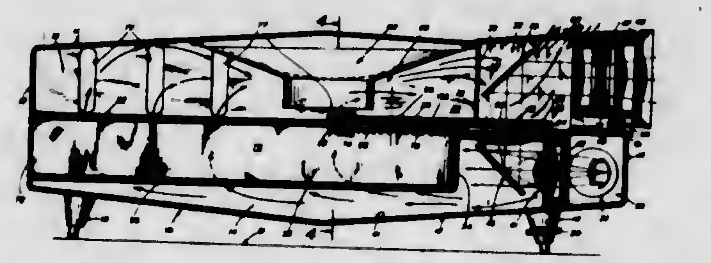
1. Apparatus for producing a composite image entirely behind the proscenium arch of a theatre and transmitting the same to an observer located in the auditorium of said theatre, said apparatus comprising two screens disposed on the stage side of said arch, one forward of the other in a line to said observer, means above said screens to downwardly project a separate picture to each screen, two partial mirrors rearwardly offset from said screens, one of said mirrors being forward of the other in a line to said observer and, respectively, partially reflecting said images on the screens to the observer along a coincidental path whereby the observer sees the reflection of the forward mirror directly and the reflection of the rearward mirror through the partial transparency of the forward mirror,

said screens being disposed substantially horizontally below the line of vision of the observer, and the partial mirrors being disposed in forwardly inclined vertical positions with one mirror between the two screens and the other rearward of the rearward screen.

3,182,548

PICTURE SLIDE PROJECTOR WITH COOLING

Orests B. Berlings, Brooklyn, N.Y., assignor, by meme assignments, to Sono-Slide Corporation, New York, N.Y., a corporation of New York
Filed Sept. 13, 1961, Ser. No. 137,842
8 Claims. (Cl. 88—24)



1. A picture slide projector for projecting a still image comprising, in combination, a casing defined by walls of relatively high heat conductive material circumscribing a housing chamber, partition means subdividing the chamber into a plurality of compartments including a lamp house associated with a blower directing in-drawn cooling currents of atmospheric air against a projection lamp therein and a separate optical projecting beam emission compartment defined and blocked off from said lamp house by air passage-preventing slide-supporting partition structure having a beam-passing optical window against which a slide bearing an image transparency for projection is to be held temporarily with substantial closure of the window and with the emulsion side of the image transparency facing inward in respect to said beam emission compartment for contact only by air in the latter with the image transparency protected from the lamp house air pressure, means defining air flow passages extending from said lamp house along a circuitous path adjacent inner surfaces of some of said casing walls to said beam emission compartment permitting transfer of heat to said walls from cooling air forced by the blower out of said lamp house to said beam emission compartment as it flows along said walls for dissipation from the latter of transferred heat to the surrounding atmosphere, and means defining a limiting flow escape orifice leading from said beam emission compartment to atmosphere to maintain an elevated pressure of the cooling air in said beam emission compartment applied to the emulsion side of the image transparency to prevent undue inward heat bulging or out of focus "popping."

3,182,549

CARD REPRODUCING DEVICE

James R. Thompson, Urbana, Ill., Stuart E. Hotchkiss, Princeton, N.J., and Leroy C. Kleist, Ogden, Ill., assignors to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware
Filed Sept. 15, 1961, Ser. No. 138,741
16 Claims. (Cl. 88—24)

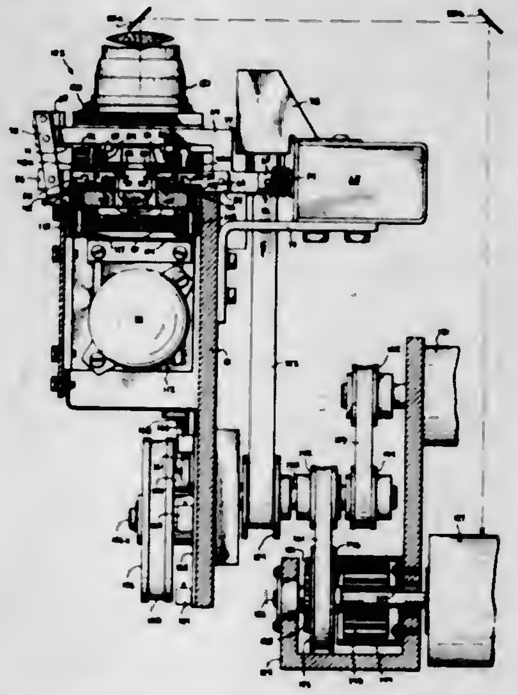
1. In combination for use with a first plurality of cards to obtain a reproduction of information from selective cards in the plurality where each of the cards in the first plurality has a plurality of bits of information and where the information on the selective cards is transferred to cards in a second plurality,

a conveyor constructed to obtain a movement of the cards at a relatively high speed,

means disposed relative to the cards on the conveyor for retaining the cards on the conveyor during the movement of the cards at the relatively high speed,

ramp means selectively movable between a first position displaced from the cards in the conveyor and a second position operatively coupled to the cards on the conveyor for obtaining a transfer of cards from the conveyor in the second position of the ramp means, the ramp means being selectively movable between the first and second positions in accordance with information processed on the cards,

a carriage disposed relative to the ramp means for receiving the selective cards transferred from the conveyor to the ramp means,



a switch arm disposed relative to the carriage to damp the movement of the selective cards along the carriage after the transfer of the selective cards from the conveyor to the carriage,

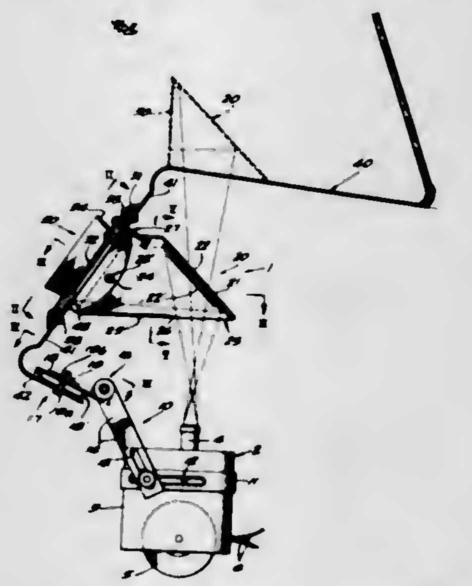
means including the switch arm for initiating the movement of the cards by the carriage at a relatively low speed upon the actuation of the switch arm by each selective card transferred to the carriage, and

means operatively coupled to the last mentioned means for obtaining a reproduction of information to the cards in the second plurality from each selective card transferred to the carriage.

3,182,550

TAXICAB ADVERTISING DEVICE

Mathew Goldine, 1409 Cholla Way, Las Vegas, Nev.
Filed July 30, 1962, Ser. No. 213,172
5 Claims. (Cl. 88—24)



1. A simple, adjustable taxicab advertising device adapted to be easily installed in a wide variety of taxicab body constructions, to be readily accessible when installed and resistant to vibrations of the taxicab body, comprising:

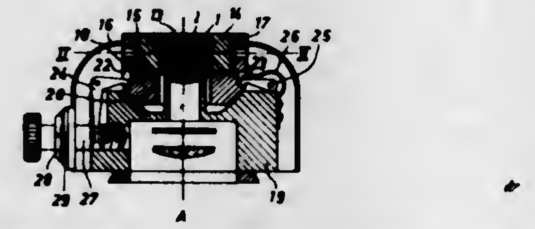
(*a*) projector means independently and adjustably mounted under the dashboard of a taxicab for casting in sequence images of a series of advertising messages, said mounting comprising adjustable bracket means adapted to position said projector means in a range from about adjacent to the vertical portion of the taxicab dashboard and just below the taxicab dashboard to remote from the vertical portion of the taxicab dashboard and far below the taxicab dashboard and spring connector means adapted to adjustably support said bracket means on said taxicab dashboard and to damp out the vibrations of said taxicab dashboard which may be transmitted from said taxicab dashboard to said projector means; and

(*b*) screen means mounted on the taxicab dashboard for receiving said images, said screen means being positioned to be easily viewed by passengers in both the front and rear seats of the taxicab.

3,182,551

DEVICE FOR ADJUSTING BEAMSPLITTER OF INTERFERENCE MICROSCOPE

Horst Piller, Aalen, Wurttemberg, Germany, assignor to Carl Zeiss, Oberkochen, Wurttemberg, Germany
Filed Nov. 30, 1961, Ser. No. 155,939
Claims priority, application Germany, Nov. 30, 1960, Z 8,403
8 Claims. (Cl. 88—39)



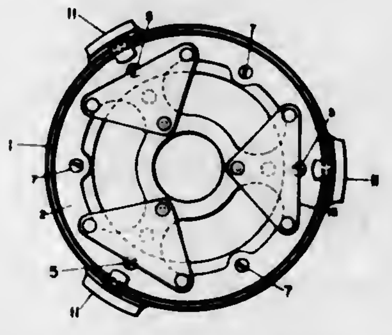
1. In an interference device for microscopes having a tubular objective housing, an objective lens and a polarizing beam recombining element mounted in said sleeve, a condenser housing in axially spaced relation from said objective housing to provide an object scanning area therebetween, a rockably mounted insert in said condenser housing, a bushing in said insert arranged in a pre-adjusted position, a beam splitter and a λ/2 plate mounted in said bushing, lever means on said condenser housing having one end portion engageable with said insert, yielding spring means arranged opposite said lever means for urging said rockable insert in a pre-selected direction, said rockable insert being tiltable about a predetermined angle about an axis which is perpendicular to the principal section of said beam splitter, manually operable means for controlling said lever means and for locking said insert in a pre-selected tilted position.

3,182,552

NINE POINT FLOTATION MIRROR HOLDING DEVICE

Gerard E. Audy, 2207 Van Buren Place, Wilmington, Del.
Filed July 9, 1962, Ser. No. 208,455
3 Claims. (Cl. 88—96)

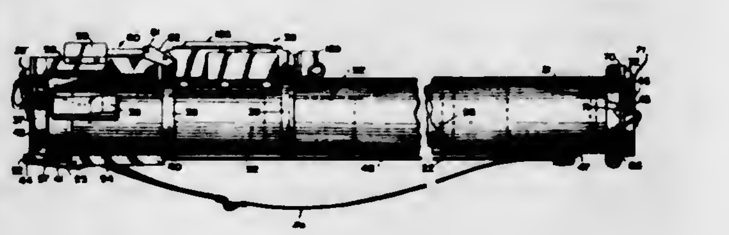
1. In a nine point flotation cell device for holding a circular mirror, said cell having three supporting plate members each having three upward projections for contacting the mirror making a total of nine mirror-contacting projections, the nine projections being spaced with respect to each other in the usual manner so each will support a substantially equal portion of the weight of the mirror, the improvement of having each supporting plate member resting on a single-point pivot connection integral with the bottom of the cell, making a total of three single-point pivot connections which are spaced with respect to each other so each will support a substantially equal portion of the weight of the mirror, said nine projections arranged to form three identical isosceles triangles, each of said three triangles having its apex pointed toward the center of the mirror, each said apex being equidistant from the apex of each other of said triangles and each said apex located on a circle whose center is coincident with the center of the mirror and whose radius is 0.204 times the mirror diameter; the centroid of each of said triangles being equidistant from the centroid of each other of said triangles and each said centroid located on a circle whose center is coincident with the center of the mirror and whose radius is 0.304 times the mirror diameter; and the six base line end points of said three triangles being equally spaced on a circle whose center is coincident with the center of the mirror and whose radius is 0.408 times the mirror diameter.



3,182,553

ROCKET LAUNCHER AND END COVERING MEANS THEREFOR

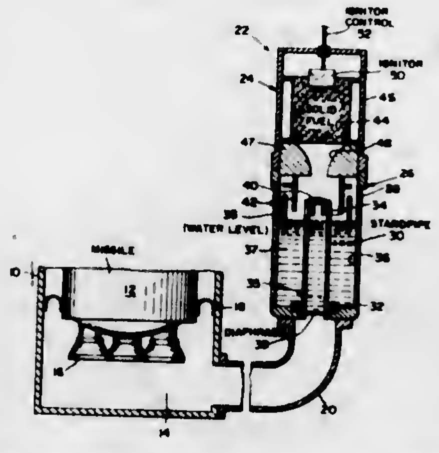
Paul V. Choate, Milton, and Charles B. Weeks, Reading, Mass., assignors, by meme assignments, to Hesse-Eastern, Inc., Everett, Mass., a corporation of Delaware
Original application Nov. 13, 1961, Ser. No. 151,894, now Patent No. 3,122,059, dated Feb. 25, 1964. Divided and this application Oct. 25, 1963, Ser. No. 319,073
4 Claims. (Cl. 89—1.7)



1. In a rocket launcher, first and second tubular sections connected to telescope between a shortened, inoperative position and an extended, operative position, one end of said first section being the breech end of the launcher, the opposite end of the second section being the muzzle of the launcher, a pair of end covers, a strap having resiliency and including end connections, each with an appropriate one of said covers, the connection between said strap and said breech end cover being a hook detachably caught on the edge thereof, a pull-pin connection between said breech cover and said first section opposing the strap resiliency, the connection between the strap and the muzzle cover applying the strap resiliency to seat said muzzle cover against said muzzle end when the breech end cover connection is operative, said strap and muzzle cover being freed and the launcher sections being freed to be extended into said operative position when said pull-pin is removed and said breech cover is opened.

3,182,554
MISSILE EJECTION METHOD AND APPARATUS

Edward J. Barakauskas, Saratoga, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Jan. 17, 1964, Ser. No. 338,540
3 Claims. (Cl. 89—1.7)



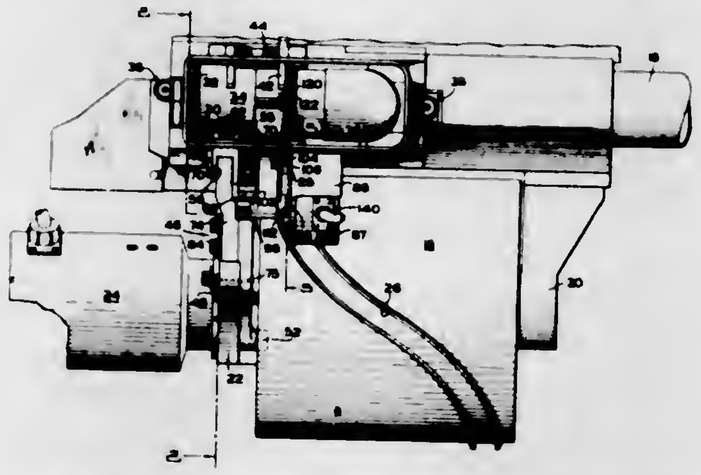
1. In an apparatus designed to be carried by an underwater vessel and controllable by an operator so as to effect the launching on an essentially vertical trajectory of a missile toward a target, said apparatus comprising:

a launching tube within which said missile is vertically supported and positioned so as to establish a closed chamber at the lower end of said tube which, prior to a launching operation, is at substantially ambient temperature and pressure;
a gas generating unit including a cylindrical housing;
a solid gas-producing fuel contained within said housing;
a mixing chamber also of generally cylindrical form and connected to said gas generator;
a body of liquid within said mixing chamber;
a substantially tubular standpipe located within said mixing chamber, of smaller diameter than said chamber, and disposed in coaxial relationship therewith, said standpipe containing a first plurality of apertures at that end thereof proximate to said gas generator and a second plurality of apertures at the other end thereof;
a tubular conduit connecting that end of said mixing chamber opposite to said gas generator to the closed chamber at the lower end of said launching tube;
a frangible closure element extending across the end of said tubular standpipe between said second plurality of apertures and said conduit, said closure element acting to retain said body of liquid within said mixing chamber prior to the ignition of said fuel; and
means controlled by said operator for igniting said fuel;

whereby, when said fuel is ignited, the gas generated thereby will pass into said mixing chamber and divide into two portions, one of which portions impinges the surface of that portion of said body of liquid exterior of said standpipe and the other of which portions enters the first plurality of apertures in said standpipe to pressurize the liquid therewithin and thereby rupture said closure element, so that the fluid initially in said standpipe enters said conduit in a body, and whereby the portion of said gas which impinges that portion of said body of liquid exterior of said standpipe also pressurizes the latter and forces such liquid through the said second plurality of apertures into the interior of said standpipe to mix with the gas passing therethrough from said generating unit, following which such mixture passes through said conduit to enter the chamber at the lower end of said launching tube where it effects the launching of said missile, the temperature of the mixture reaching the said launching tube chamber being lower than the temperature of the gas generated by the burning of said fuel due to the addition to such gas of the liquid ejected thereinto during passage of the gas through said standpipe.

3,182,555
FEED MECHANISM FOR EXTERNALLY POWERED AUTOMATIC GUN

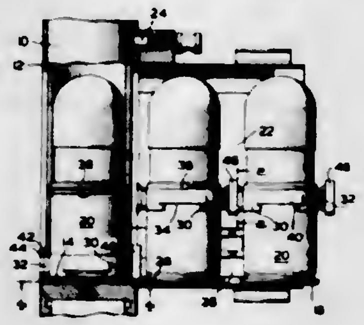
John G. Rocha, Westfield, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed June 13, 1961, Ser. No. 116,884
9 Claims. (Cl. 89—33)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In an automatic gun having a longitudinally reciprocal barrel, the combination of an externally powered rotatable drum for actuating the barrel into and out of firing position, means for feeding a belt of linked cartridges into the gun comprising a pivotal feed pawl, lever means for reciprocating said feed pawl to successively feed each of the cartridges in the belt into firing position relative to the barrel, means for converting continuous rotation of said drum to pivotal reciprocation of said feed lever means, and means initiated by the cessation of power to said drum for holding said feed pawl out of feeding engagement with the cartridge belt during the continued pivotal reciprocation imparted to said feed lever means by the rotational deceleration of said drum.

3,182,556
DISINTEGRATING CARTRIDGE BELT LINK AND CONNECTOR THEREFOR

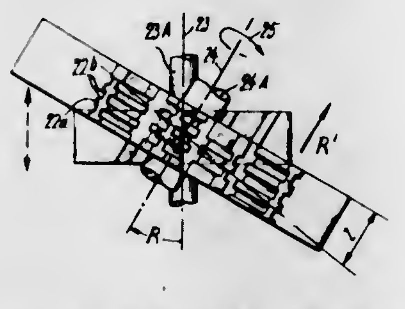
John G. Rocha, Westfield, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed July 5, 1961, Ser. No. 124,290
7 Claims. (Cl. 89—35)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A disintegrating cartridge belt for feeding cartridges into an automatic gun having a reciprocating barrel adapted to be moved rearwardly into firing position to chamber the leading cartridge, said belt comprising a resilient band encircling each of the cartridges in gripping engagement therewith, an arcuate formed ear portion projecting outwardly from opposite sides of each of said bands into the path of the rearward chambering movement of the barrel for rearward displacement thereby along the cartridge, connector means in simultaneous engagement with said opposite ear portions on adjacent cartridges, said connector means having a forwardly facing opening to permit the longitudinal release thereof from said band on the cartridge adjacent the leading cartridge during the chambering movement of the barrel, and retention means for continuing the engagement between said connector means and said band on the leading cartridge during the rearward displacement imparted thereto by the barrel.

3,182,557
APPARATUS FOR SHAVING GEARS

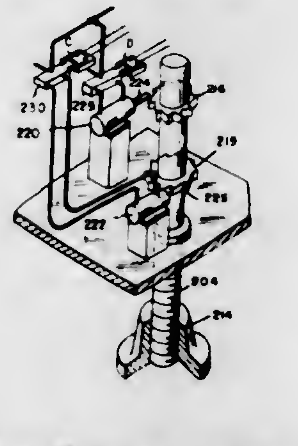
Fritz Hurth, Grunwald, near Munich, Germany, assignor to Carl Hurth Maschinen- und Zahnradfabrik, Munich, Germany
Filed Feb. 6, 1963, Ser. No. 256,750
Claims priority, application Germany, Feb. 8, 1962, H 44,815
12 Claims. (Cl. 90—1.6)



1. In a machine for shaving the flanks of teeth on a work gear, in combination, a rotary gear-like tool comprising at least one group of teeth mating with the teeth of the work gear and having helically arranged cutting edges; and means for rotating the tool at crossed axes with the workpiece in such direction that the helically arranged cutting edges of said group of teeth remove from tooth flanks of the workpiece shavings in directions from the finished toward the unfinished portions of such flanks.

3,182,558
GEAR FINISHING EQUIPMENT

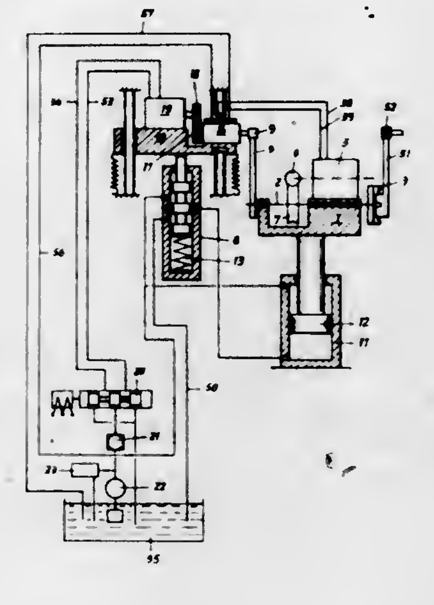
Thomas S. Gates, Grosse Pointe Woods, Mich., assignor to National Broach & Machine Company, Detroit, Mich., a corporation of Michigan
Continuation of abandoned application Ser. No. 812,529, May 11, 1959. This application Mar. 9, 1964, Ser. No. 350,944
14 Claims. (Cl. 90—1.6)



1. An automatic gear finishing machine for finishing work gears to specified dimensions, gauge means for checking the dimensions of each gear as it is finished, and automatic means for adjusting the machine in opposite directions responsive to said gauge means to adjust the machine in a direction to eliminate from successive gears the errors in either direction from the specified dimensions noted in finished work gears.

3,182,559
CHIP-REMOVING COPYING MACHINE TOOL

Erich Schnitzer, Jestetten, Germany, assignor to Schweizerische Industrie-Gesellschaft, Neuhausen am Rheinfall, Switzerland
Filed Jan. 30, 1963, Ser. No. 254,861
Claims priority, application Switzerland, Feb. 5, 1962, 1,398/62
4 Claims. (Cl. 90—13.4)



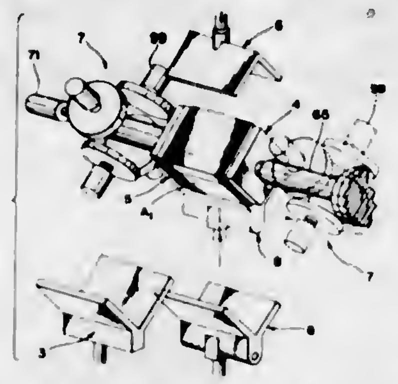
1. In a duplicating machine tool, a movable spindle support, a spindle journaled in said support, hydraulic motor means on said support for driving said spindle, a workpiece and a template affixed to said spindle, a cutter tool presented to said workpiece adapted to be operated at a constant speed, hydraulic means for moving said spindle toward and away from said cutter tool, a sensing support movably mounted adjacent said spindle support, a feeler regulator controlled by the movement of said sensing support, a pressure fluid source for said hydraulic spindle moving means, said feeler regulator being adapted to control the flow of pressure fluid to said hydraulic spindle moving means, a follow-up regulator mounted on said sensing support, hydraulic motor means on said sensing support for driving one of the ported components of said follow-up regulator, a sensing roller adapted to be engaged by the template to control another component of said follow-up regulator, the hydraulic motor means on said sensing support being connected to said source of pressure fluid means and the components of said follow-up regulator being connected to said source of pressure fluid means and said hydraulic motor means on said spindle support whereby the rotational speed of said sensing roller will be maintained constant and the hydraulic motor means drivingly connected to said spindle will be regulated by said sensing roller and thus maintain the speed at which said workpieces advance constant with respect to said cutting tool.

3,182,560
SIZING STACKED TILES AND EQUIPMENT THEREFOR

Robert A. Wonder, Akron, and Woodrow D. Harris, Stow, Ohio, assignors to Ensine Corporation, Tallmadge, Ohio, a corporation of Ohio
Filed Jan. 15, 1963, Ser. No. 251,524
6 Claims. (Cl. 90—15)

1. Tile-sizing means which comprises means for clamping a stack of rectangular tiles at the ends thereof, a cutter head which comprises four rotary cutter discs facing one another spaced to accommodate the stack between them with the individual tiles perpendicular to all of the discs, each of the discs being larger in diameter than each of the respective sides of the tiles, at least one

cutter in each disc, means for rotating the cutter discs and for moving the cutter head and stack relatively to one another whereby to trim the edges of the tiles by the cutters.

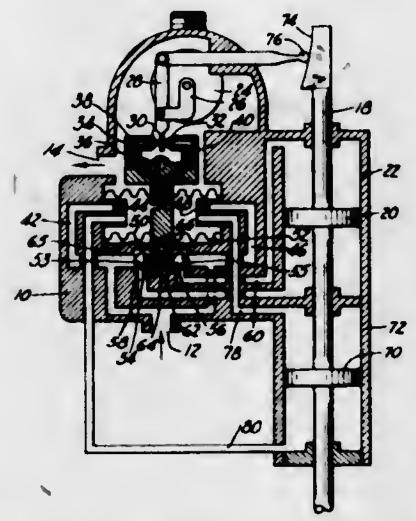


3,182,561
PNEUMATICALLY OPERATED SERVOMECHANISM

Samuel E. Arnett, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Oct. 3, 1960, Ser. No. 59,977

10 Claims. (Cl. 91—364)



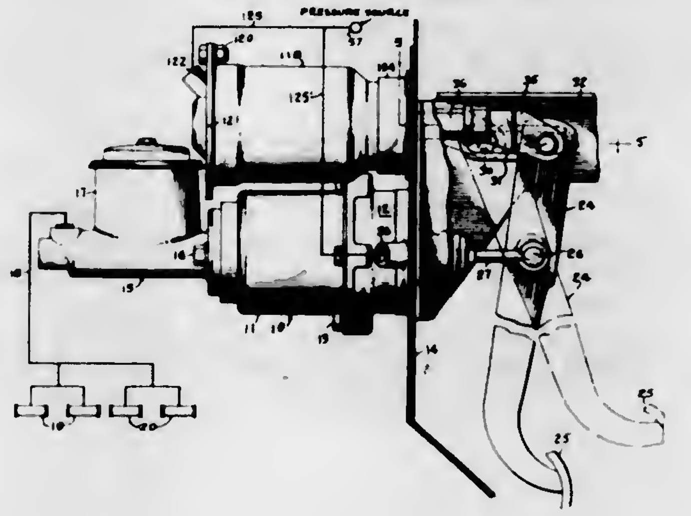
1. A two-stage servomechanism including a housing, an actuating shaft, a cylinder and a piston movable in said cylinder and outwardly connected to said actuating shaft, a source of high pressure fluid, a pair of conduits communicating said source with said cylinder on opposite sides of said piston, an outlet conduit for carrying exhaust flow from said housing, a member adapted for pivotal movement around a stationary point in said housing, first and second means defining oppositely disposed fluid chambers operatively connected to said movable member and communicating with said high fluid pressure source, first and second oppositely disposed orifice in said member and communicating with said first and second means, respectively, for controlling the fluid pressure therein, said member being actuated in response to the differential in pressures between said first and second means, a flapper valve movable between said orifices, electro-responsive means for positioning said flapper valve, a generally cylindrical chamber in each of said pair of conduits, part of the end walls of which form annular valve seats, a pair of generally spherical valve members adapted to co-act with said valve seats connected to said pivotally movable member for controlling the flow through said pair of conduits to vary the pressure level acting on opposite sides of said piston, a cam surface formed on said shaft, and means including a cam follower member for transmitting a position feedback signal varying with the position of said shaft to said flapper valve to cause said flapper valve to seek a null position.

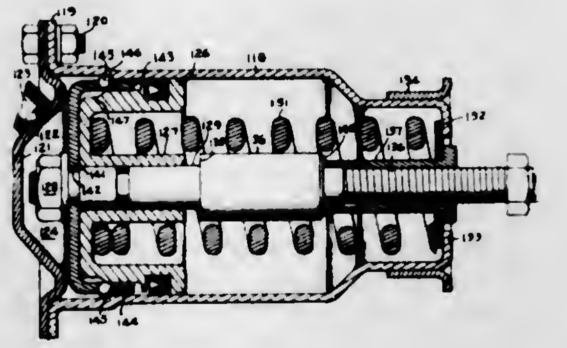
3,182,562
VEHICLE BRAKE MECHANISM

Lawrence E. Pulkownik, Plymouth, and David T. Ayers, Jr., Birmingham, Mich., assignors to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed Nov. 1, 1962, Ser. No. 234,744

15 Claims. (Cl. 91—391)





1. Fluid pressure motor mechanism comprising a motor having a casing and a pressure-movable unit therein, a valve mechanism operative for connecting said motor to a pressure source, a normally stationary axially movable member engageable with said pressure-movable unit, a lever, a pivotal support for said lever, a mechanical connection including lost motion between said axially movable member and said lever at a point spaced from said pivotal support, said mechanical conection engaging said valve mechanism to operate it upon movement of said lever from a first normal position, and means operative independently of said mechanical connection upon a drop in pressure in said source below a predetermined point for moving said pivotal support to and holding it in a different position with said lever moved to a different normal position from which it has greater movement to take up said lost motion and effect movement of said axially-movable member and said pressure-movable unit by force applied to said lever.

3,182,563
HYDRAULIC CYLINDER PISTON

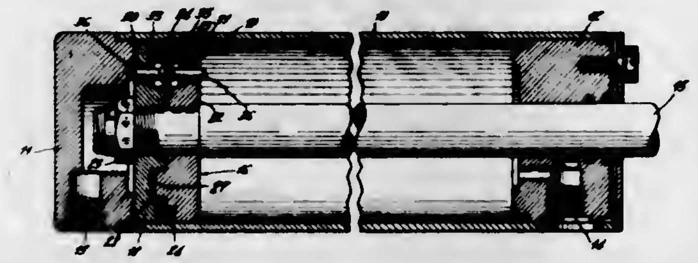
William E. Neilan, Lafayette, Ind., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Euclid, Ohio, a corporation of Ohio

Filed Aug. 19, 1963, Ser. No. 303,040

8 Claims. (Cl. 91—401)

1. In a hydraulic motor comprising a cylinder having end heads, a piston reciprocable in the cylinder between said heads, and a piston rod on which the piston is rigidly mounted, said piston comprising two identical disk-like elements having interengaging inner faces, each of said elements being provided with a pair of through passages and, at its inner face, with a pair of axially projecting bosses and a pair of recesses each adapted to receive a boss on the other element, each of said passages being formed to provide a recessed, inwardly presented valve

seat, said passages, bosses, and recesses being equally spaced from the element-axis and equally spaced about such axis and so arranged that the two elements, when coaxially disposed, can be brought together in either a first relative position wherein both bosses of each element are reecived in the recesses of the other element and the through passages are aligned to provide two flow paths through the piston, a second relative position wherein the two bosses of each element are received respectively in a recess and in a passage of the other element while the other passages of the elements are aligned to provide a single flow path through the piston, or a third relative position wherein both bosses of each element are received in the two passages of the other element and no flow-path through the piston exists, and a valve for each of the flow paths, said valve having a head and aligned stems projecting in opposite directions from said head, said valve being receivable in its flow path with the head axially movable between the valve seats of the passages constituting such flow path and with its stems projecting through such passages for engagement by the the cylinder heads at the limits of the stroke of the piston.

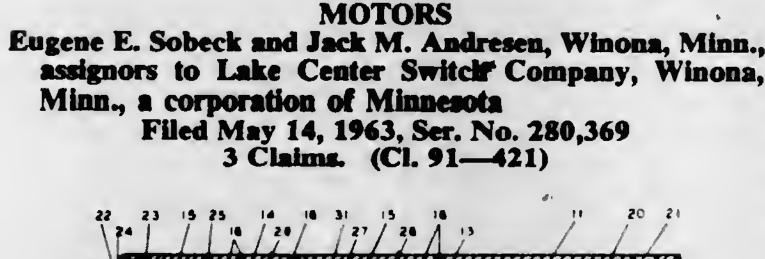


3,182,564
MOTORS

Eugene E. Sobeck and Jack M. Andresen, Winona, Minn., assignors to Lake Center Switch Company, Winona, Minn., a corporation of Minnesota

Filed May 14, 1963, Ser. No. 280,369

3 Claims. (Cl. 91—421)



1. A motor including a tubular cylinder, a metering hub fixed within said cylinder and having an axial guide bore therein and a duct therein, a piston rod slideable in said bore, pistons fixed on said piston rod on opposite sides of said metering hub and spaced a distance greater than the axial width of said metering hub, a valving member carried by said metering hub, said valving member having an annular wall surrounding a portion of said metering hub and located between said hub and said cylinder, said valve also having a top with an opening therein through which said piston rod may pass, said top extending toward the axial center of said cylinder and overlapping said duct in said hub.

3,182,565
PISTON LOCKING MEANS

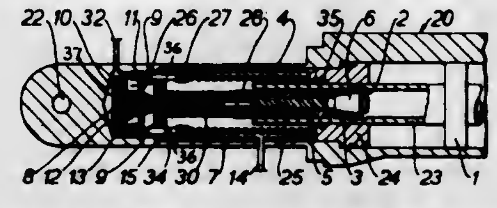
Dennis John Millard, Codsall, near Wolverhampton, England, assignor to Boulton Paul Aircraft Limited, near Wolverhampton, England

Filed Jan. 17, 1963, Ser. No. 252,245

Claims priority, application Great Britain, Jan. 19, 1962, 2,094/62

3 Claims. (Cl. 92—19)

1. In a fluid pressure operated actuator including a ram and a cylinder movable relative to each other under the action of fluid pressure and having secured to said ram and said cylinder inter-engaging locking means for locking the ram and cylinder against relative movement, the locking means comprising an inner member movable axially relative to an outer member, one of the members having at least one projection cooperable in the locked condition of the actuator with a complementary recess in the other member to prevent relative movement between the members, the axial extent of the recess in the outer member being less than the range of relative movement of the ram and cylinder; the improvement comprising an inherently resilient inner member biased by its own resilience into the disengaged position; means for expanding the inner member outwardly of the cylinder axis to cause the inner member to engage the outer member, said means comprising an expansion member connected to a first piston located within an auxiliary chamber structurally connected to the cylinder, a second piston located within the auxiliary chamber the latter being divided into a pressure chamber separated from an intermediate chamber by the second piston, and a sump chamber separated from the intermediate chamber by an apertured dividing wall, the first piston being slidable within the intermediate chamber between a first position in which the inner member is expanded into engagement with the outer member to lock the actuator and the first piston is remote from the dividing wall and a second position in which the inner member is in its non-expanded condition and the first piston is adjacent to the dividing wall, means for supplying fluid under pressure to the pressure chamber, means for exhausting fluid from the sump chamber, and at least one heavy duty spring located within the auxiliary chamber and acting to bias the first piston in an axial direction towards its first position, at least one light duty spring located within the auxiliary chamber and acting to bias the second piston away from the first piston, the second piston having extending through it at least one passageway presenting a high impedance to fluid flow from the pressure chamber to the intermediate chamber, and the first piston having extending through it at least one passageway not in registry with an aperture in the dividing wall whereby the passageway in the first piston in the second position thereof is closed by the dividing wall.



3,182,566
BRAKE SYSTEM AND RELEASE

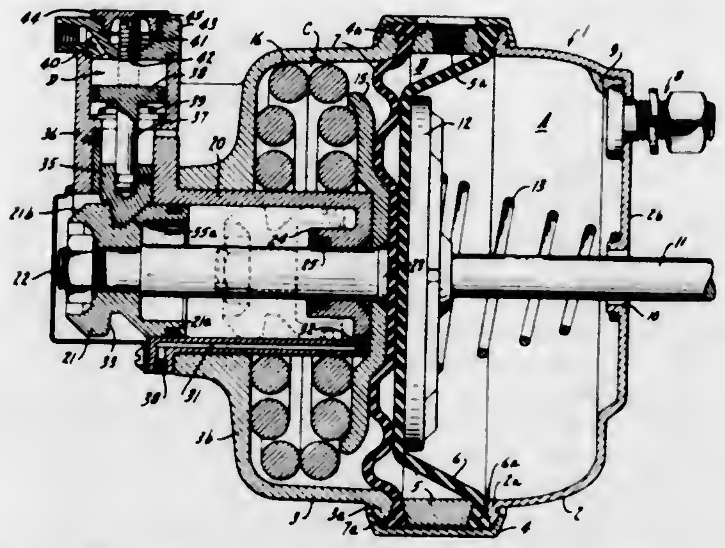
Arthur A. Berg, Lincolnwood, Harold L. Dobrikin, Highland Park, and Charles Horowitz, Chicago, Ill., assignors, by mesne assignments, to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois

Filed Aug. 6, 1962, Ser. No. 215,086

19 Claims. (Cl. 92—24)

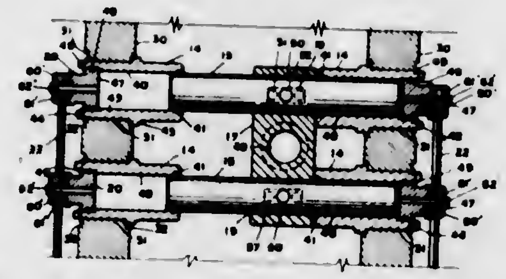
1. Brake-operating means comprising a housing, a pair of diaphragms spacedly dividing said housing into a plurality of chambers, a brake-operating rod operatively engaging one of said diaphragms and extending through one of said chambers and outwardly from said housing, a fluid presure inlet communicating with another of said chambers, a push plate positioned in still another of said chambers and engaging the other of said diaphragms, a spring positioned in said last-named chamber and engaging said plate to urge the same against said last-named diaphragm, a cylinder communicating with said housing, a piston slidable in said cylinder and secured to said plate, a fluid pressure inlet communicating with the area within said cylinder to deliver fluid pressure

to said piston and to urge said piston away from said last-named diaphragm, and fluid-pressure-response means for locking said piston against longitudinal movement within said cylinder.



3,182,567
CLUTCH ACTUATING MECHANISM

Robert H. Shenk, Erie, Pa., assignor to Zurn Industries, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Aug. 30, 1962, Ser. No. 220,430
9 Claims. (Cl. 92—138)

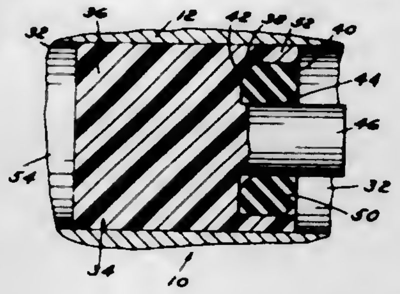


1. An actuating device for a synchronizing clutch comprising a frame having a first and a second fixed member spaced from each other, two holes in each said fixed member, the holes in one said fixed member being aligned with the holes in the other said fixed member, cylinders each having an internal bore disposed in each said hole with the bore of each said cylinder aligned with another said cylinder bore, means engaging said cylinders and said fixed members holding said cylinders in place on said fixed members, two elongated cylindrical shaped pistons, the ends of each said piston being slidably received in said cylinders bore, a yoke having two spaced holes therein each receiving an intermediate part of one said piston, head means closing the end of each said cylinder remote from said piston, means to inject fluid into said cylinders, means fixing said pistons to said yoke, sealing means between said cylinders and said pistons, and a roller member on said yoke intermediate said pistons.

3,182,568
PISTON FOR EXPANDING ARBOR

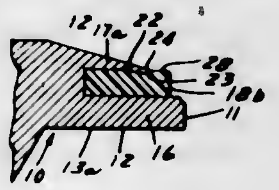
Arthur George Davis, 854 Grand Marais, Grosse Pointe Park, Mich.
Filed Nov. 18, 1963, Ser. No. 324,347
5 Claims. (Cl. 92—194)

1. A piston for use in the cylinder of a hydraulic system, said piston having a solid cylindrical body formed from resilient material and provided at one end with an annular recess opening outwardly through said one end, said recess having a generally radially extending circular inner surface and having an annular longitudinally extending surface connected to said inner surface and concentric with the axis of said cylindrical body, said cylindrical body being provided at the center of said annular recess with an integral axial extension concentric with said annular longitudinally extending surface, the resilient material of the portion of said cylindrical body encircling said recess, and including said longitudinally extending surface, constituting a relatively thin and flexible circular lip, and an O-ring formed from plastic material encircling said axial extension and disposed within said recess, the radial cross-section of said O-ring in its free state being greater than the radial width between said axial extension and said annular longitudinally extending surface, whereby said O-ring is under radial compression between said axial extension and said annular longitudinally extending surface and exerts a radially outward pressure on said relatively thin and flexible circular lip to expand said lip for firm contact with the cylinder.



3,182,569
SEAL AND STRUCTURE FOR SUPPORTING THE SAME

Ellsworth E. Hieber, Glendale, Calif., assignor to Schulz Tool and Manufacturing Co., San Gabriel, Calif., a corporation of California
Filed Nov. 28, 1960, Ser. No. 71,954
5 Claims. (Cl. 92—243)

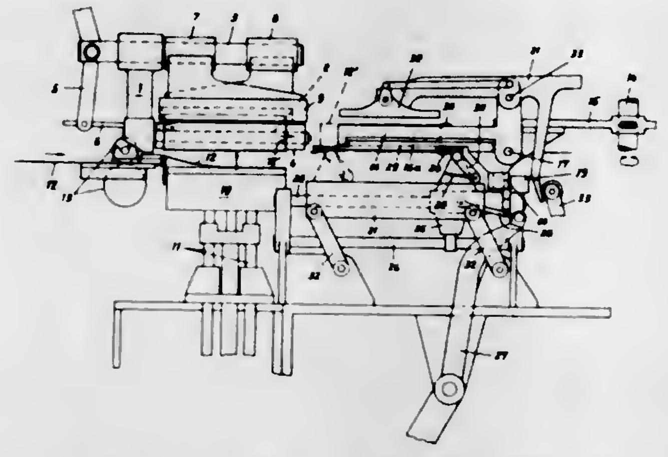


1. A sealing structure comprising: a circular support member; an elastomeric sealing member disposed in an annular groove integral with said support member; means integral with said support member fixedly and compressively securing said sealing member in said groove, said groove having a greater depth than width; and a portion of said sealing member extending outwardly of said groove, a greater volume of said sealing member being within said groove than outwardly thereof, said last portion having a shoulder formed by the compression of said last means and being in overlapping abutting relationship with said means securing said sealing member, said last means in said abutting relationship serving to restrain the sealing member from moving away from a sealing contact on a surface being sealed at extremely low temperatures.

3,182,570
DEVICE FOR THE PRODUCTION OF BAGS

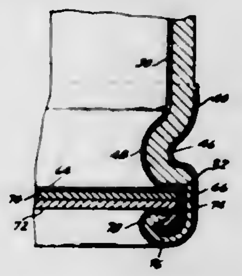
Alwin Egli, Dachsen, Zurich, Switzerland, assignor to Schweizerische Industrie-Gesellschaft, Neuhausen am Rheinfall, Switzerland
Filed June 19, 1963, Ser. No. 289,006
Claims priority, application Switzerland, July 11, 1962, 8,345/62
1 Claim. (Cl. 93—12)

A device for the production of bags of sheet blanks cut to size having at least on its margins to be interwelded a surface consisting of thermo-plastic material, comprising in combination: two main mandrels arranged for being stepwise rotated into various operative positions for the folding and interwelding of the bag bottoms, an auxiliary mandrel cooperating with said main mandrels and axially adjustable relative to the same, said auxiliary mandrel having a folding box for the formation of the hose bag, and heatable clamping and welding jaws, a pair of tongs longitudinally movable in a longitudinal groove of one of said main mandrels for the transfer of the hose bag from said auxiliary mandrel to said main mandrel, an opener rail movable parallel to itself in a vertical direction, a tong slide movable in a direction parallel with said longitudinal groove, said pair of tongs being supported by said tong slide, and having jaws one of which is pivotally mounted on said tong slide, the other of said jaws being fixedly connected with said tong slide, a lever connected to said pivoted jaw of said tongs, said opener rail cooperating with said lever so that when the same is moved in parallelism said opener rail will pivot said lever and jaw connected therewith to move the same away from said fixed lever and open said tongs independent of the position of said tongs slide.



3,182,571
METHOD OF MANUFACTURING PLASTIC LINED FIBER CONTAINERS

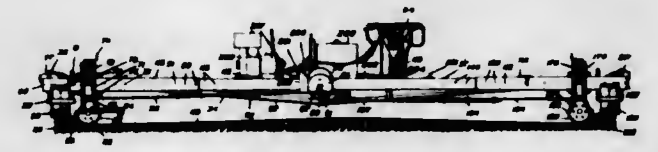
Herbert L. Carpenter, Amityville, and Herbert L. Carpenter, Jr., Babylon, N.Y., assignors to The Greif Bros. Cooperage Corporation, Delaware, Ohio, a corporation of Delaware
Original application Oct. 27, 1961, Ser. No. 148,247, now Patent No. 3,116,001, dated Dec. 31, 1963. Divided and this application July 12, 1963, Ser. No. 299,135
11 Claims. (Cl. 93—55.1)



1. In the method of manufacturing plastic-lined fiber drums, the steps of: Initially providing a tubular shell made from laminated layers of fibrous material and having top and bottom ends, a lower reinforcing metal chime strip disposed around the shell at the bottom end thereof with the shell and lower chime strip being formed into an external groove and an internal shoulder extending completely around the drum a short distance from the lower peripheral edge of the bottom end thereof; lining the interior of said shell with a plastic liner such that said liner is in firm surface-to-surface contact with said shell and follows the contour of the interior thereof; placing a bottom closure having a plastic disk-shaped layer with a laterally extending depending apron, across the bottom end of said shell with said closure in abutting relationship with said internal shoulder and said apron in firm surface-to-surface contact with said liner adjacent the lower peripheral edge of the bottom end of the shell, sealing said apron with said liner adjacent the lower peripheral edge of said shell; and then pressing the lower end of the shell into a bead embraced by the bottom chime strip, with the sealed periphery of said apron and said liner anchored in the bead.

3,182,572
BELT MACHINE

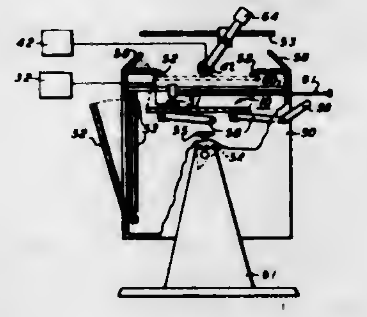
Elisha S. Kubala, 1439 NE. 29th St., Oklahoma City 11, Okla.
Filed Mar. 16, 1962, Ser. No. 180,258
11 Claims. (Cl. 94—45)



11. A machine for smoothing the surface of a freshly laid concrete strip, characterized by:
(*a*) a frame adapted for movement over said strip;
(*b*) a plurality of belts mounts carried by said frame, each of said belt mounts including a pivot and a rockable member carried by said pivot, said rockable member having a generally downwardly disposed convex arcuate surface;
(*c*) a concrete smoothing belt stretched between and secured to said rockable members; and
(*d*) means interconnecting said rockable members for causing them to rock about said pivot points substantially in unison.

3,182,573
MASKED PLATE XEROGRAPHY

Harold E. Clark, Penfield, Robert W. Gundlach, Victor, and Mortimer Levy, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 11, 1961, Ser. No. 130,965
4 Claims. (Cl. 95—1.7)

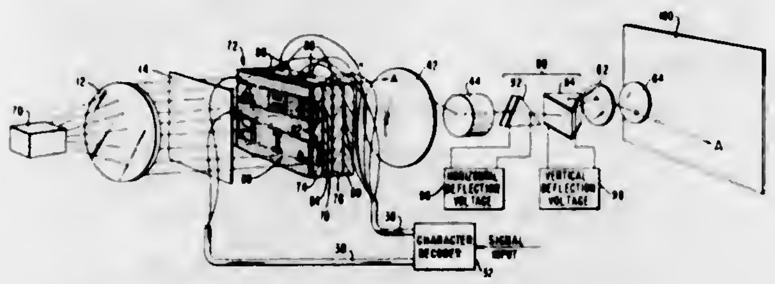


1. A xerographic apparatus comprising in combination a light-tight housing, an aperture in said housing, a xerographic plate positioned relatively to said aperture whereby only the inner surface of said plate is adapted to be shielded from ambient light by said housing, the outer surface of said plate being retentive of electric charge and insensitive to light and the inner surface being sensitive to light, means positioned within said housing to direct a pattern of light and shadow in image configuration on the inner surface of said plate, and means positioned on said housing and external thereto to develop an electrostatic latent image on the outer surface of said plate.

3,182,574
DISPLAY APPARATUS

Harold Fleisher, Thomas J. Harris, and Eugene Shapiro, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 5, 1963, Ser. No. 263,002
20 Claims. (Cl. 95—4.5)



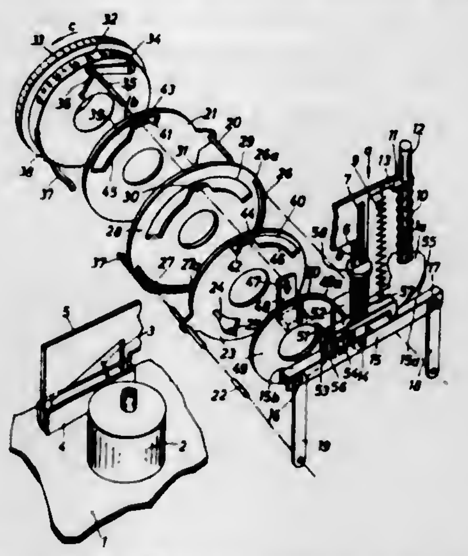
1. A display apparatus comprising:
a source of monochromatic, collimated light;
a plurality of electro-optic cells;
a polarizer for polarizing light mounted between said electro-optic medium and said source of light so that light from said source propagates through said polarizer to and through said medium;
an electrode system associated with said electro-optic cells for applying an electric field to a given cell at one point in time that induces birefringence in said cell thereby effecting the rotation of the plane of polarization of polarized light transmitted through said cell;
a generally opaque character mask having transparent portions in the shape of characters;
each of said transparent portions being aligned with one of said cells to form the light passing through the cells into individual character shaped beams; and
an analyzer medium positioned on the side of the light output electro-optic medium for only transmitting light beams that have had their plane of polarization rotated; and
a display medium for displaying the said beams which have had their plane of polarization rotated.

3,182,575
CAMERA CAPABLE OF BEING OPERATED IN A FULLY AUTOMATIC OR SEMI-AUTOMATIC MANNER

Franz Jakob, Unterhaching, near Munich, and Karl Wagner, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany

Filed Jan. 7, 1963, Ser. No. 249,643
Claims priority, application Germany, Jan. 8, 1962, A 39,173
13 Claims. (Cl. 95—10)

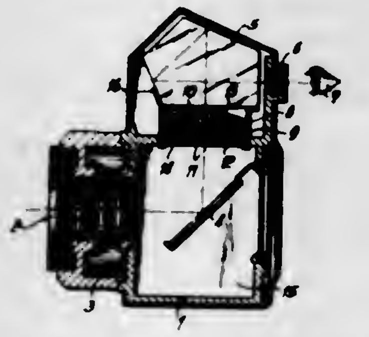
1. In a camera, in combination, exposure time setting means; aperture setting means; light-responsive means having an element whose position is determined by the lighting conditions; scanning means for scanning the position of said element of said light-responsive means; differential means driven by said scanning means and operatively connected to both of said setting means for transmitting the movement of said scanning means in a predetermined ratio to both of said setting means for automatically actuating the latter to set the exposure time and aperture of the camera, said differential means distributing the drive of said scanning means to both of said setting means in said predetermined ratio when said differential means is in a predetermined neutral position; manually operable selecting means having an automatic position in which both of said setting means are to be set automatically and being selectively movable from said automatic position for selectively actuating a selected one of said setting means for manually setting the selected setting means, said differential means operating automatically when said manually operable selecting means is displaced from said automatic position thereof for automatically setting that one of said setting means which is not manually set; and positioning means operatively engaging said differential means and automatically maintaining the latter in said neutral position thereof when said manually operable selecting means is in said automatic position thereof at least until that one of said setting means which has the shorter range of movement has been moved through its entire range.



3,182,576
REFLEX CAMERA VIEWFINDER INCLUDING COMPOSITE SETTING DISK WITH FRESNEL LENS SURFACES AND FOCUSING WEDGES

Friedrich Papke, Braunschweig, Germany, assignor to Voigtländer A.G., Braunschweig, Germany, a corporation of Germany

Filed July 6, 1961, Ser. No. 123,383
Claims priority, application Germany, July 7, 1960, V 18,956
9 Claims. (Cl. 95—42)

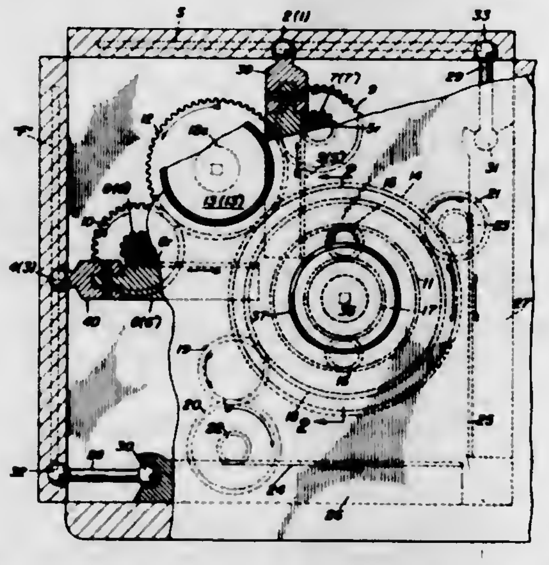


1. In a viewfinder of the type including optical elements for directing light rays, entering a camera through a focusable objective, along a pre-set path to the camera ocular, and a setting device interposed in such path and carrying optical wedges for indicating the focusing of the objective, said setting device comprising superposed integrally united first Fresnel lens disk and filler elements of transparent material, said Fresnel lens element supporting said optical wedges and said filler element being superposed with said first Fresnel lens element and enclosing said optical wedges, at least one of said elements comprising plastic composition material, and said elements having respective and different indices of refraction, and a second Fresnel lens element in axially spaced relation to said first Fresnel lens element, constituting a diffusing disk having a surface, facing said first Fresnel lens element, formed with Fresnel flutings in opposed alignment with those of said first Fresnel lens element, the sloping surfaces of the two sets of flutings being coordinated with each other and said second Fresnel lens element being situated between said objective and said filler element, said filler element completely contacting and conforming to the configuration of said Fresnel lens elements at said flutings thereof and also conforming to the configuration of and contacting said optical wedges which are supported by said first Fresnel lens element, one of said Fresnel lens elements forming an outer element of said setting device and comprising plastic composition material integrally united with the end face of an optical element adjacent said setting device along the light ray path.

3,182,577
MEANS FOR SWINGING AND TILTING THE FILM FACE AS WELL AS THE FOCUS MAT SCREEN FACE OF REFLEX CAMERA

Alubinus Junpei Ohnaka, 1165—1 Mukaiichiba-machi, Kurashiki, Japan

Filed Sept. 27, 1962, Ser. No. 226,575
Claims priority, application Japan, Oct. 3, 1961, 36/36,310
6 Claims. (Cl. 95—50)



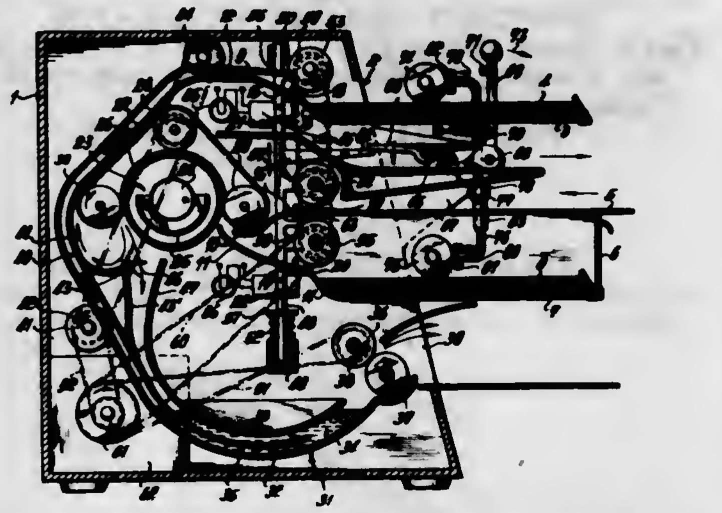
1. A camera having a hollow box with a film holder on one side thereof and a focusing screen on the other side thereof, swinging slide means in said box and connected to opposite sides of said film holder and said focusing screen for swinging said film holder and said focusing screen, swinging drive means in said box and connected to said swinging slide means for simultaneously driving the swinging slide means for both the film holder and focusing screen, tilting slide means connected to corresponding sides of said film holder and focusing screen for tilting said film holder and focusing screen about an axis between the swinging slide means, tilting drive means for said tilting slide means connected to said tilting slide means, and a differential mechanism having a tilting drive knob and coupled to said tilting drive means and swinging drive means for driving said tilting drive means when said swinging drive means is actuated and for driving only said tilting slide means when said tilting drive knob is actuated.

3,182,578
APPARATUS FOR MAKING COPIES

Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Lumoprint Zindler KG., Hamburg, Germany

Filed Nov. 28, 1962, Ser. No. 240,630
Claims priority, application Germany, Dec. 7, 1961, L 40,656
7 Claims. (Cl. 95—77.5)

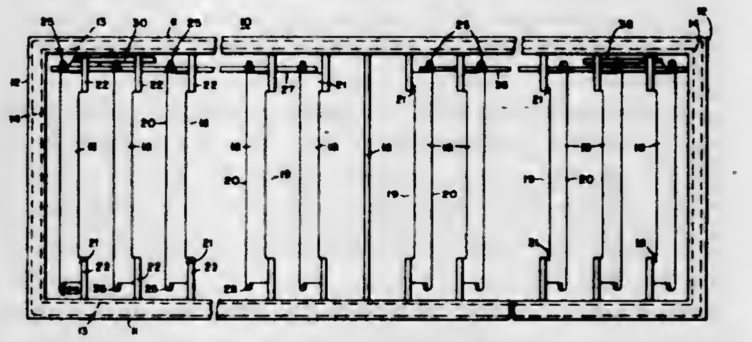
1. In a copying apparatus, in combination, a housing provided with an inlet; a processing station in said housing spaced from said inlet for reproducing copy from a master sheet on a copy sheet; guide means in said housing extending from said inlet to said processing station and forming a transport path for at least one of said sheets thereto; transport means in said housing adjacent said guide means and including a pair of spaced apart rollers respectively engageable with said sheets, mounting means for said rollers normally holding them out of the paths of said sheets, respective abutments carried by said mounting means and normally extending into the paths of said sheets for intercepting them, and drive means for rotating said rollers; feed means at said inlet including at least one magazine for one of said sheets, pusher means for shifting at least one of said sheets from said magazine into contact with the respective abutment while the other of said sheets is brought into engagement with its respective abutment, and actuating means for operating said pusher means; and connecting means coupling said feed means with said mounting means for displacing the latter upon said sheets contacting said abutments for withdrawing said abutments from the path of said sheets and bringing said rollers into engagement with said sheets for shifting them along said guide means.



3,182,579
MOLDED FLEXIBLE LOUVER

Woodrow W. Wiseman, East Longmeadow, Mass., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 12, 1962, Ser. No. 172,500
1 Claim. (Cl. 98—40)



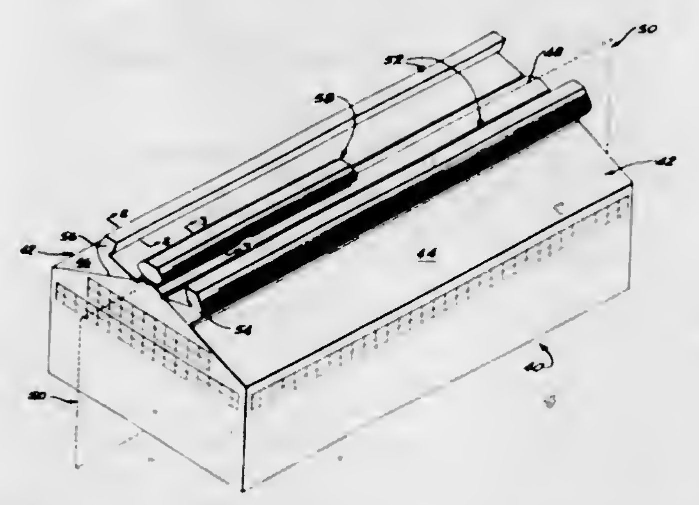
An integral louver structure comprising
a rectangular frame having
molded together, spaced-apart side and end walls,
a plurality of spaced-apart louvers extending transversely of said frame between said side walls, said louvers having
beveled inner portions with minimum thicknesses at their inner edges,
louver support posts molded to said side walls and extending from said side walls alongside of and spaced from the end portions of said inner edges,
and flexible membranes in the spaces between said posts and said end portions and molded to said posts and said end portions, said louvers having
pins extending outwardly from the ends of their outer edge portions,

a slide member having a plurality of openings along its longitudinal center for receiving said pins, whereby said louvers are interconnected for collective movement,
a pivot pin on said slide member,
and a handle adapted to cooperate with said pivot pin for imparting translational movement to said slide member whereby tilting of said louvers is effected.

3,182,580
COMPOSITE GRAVITY VENTILATOR

Carl F. Jueng, Pittsburgh, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 22, 1963, Ser. No. 317,979
1 Claim. (Cl. 98—42)

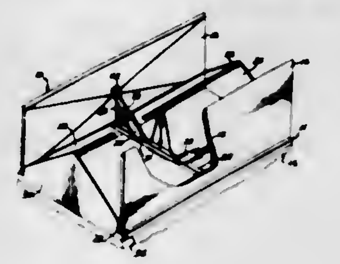


In a building having a roof, the combination comprising a ridge ventilator and a monitor ventilator mounted on the said roof with their rims at substantially the same elevation;
the said roof having three elongated ventilator openings in cooperative ventilating communication with the interior of the said building as follows:
a central horizontal opening; and
a pair of lateral, outwardly presented vertical openings;
said roof having a raised portion on each side of the said central opening defining the said vertical openings;
the said ridge ventilator being disposed above the said central horizontal opening and having:
opposed side walls disposed parallel to each other and extending from (*a*) their base which is adjacent to the lateral edges of the said central horizontal opening upwardly and outboard of the said central horizontal opening to (*b*) an upper rim;
a cap member disposed between and apart from the said side walls and above the said central horizontal opening;
the said ridge ventilator having a pair of parallel gas passageways each located between the lateral edge of the said cap member and one of said side walls;
the said monitor ventilator comprising two cowling sheet elements, each parallel with the said side walls of the said ridge ventilator, and two damper means;
each said cowling sheet element extending (*a*) from its base at the building roof below the bottom edge of one of the said vertical openings upwardly outboard of the said vertical opening (*b*) to an upper rim which is disposed above said vertical opening so as to prevent straight-line entry of precipitation into the interior of the building;
damper means disposed between the said cowling sheet element and the said raised portion of the roof for controllably obstructing the gas passageway between the said cowling sheet element and the said roof.

3,182,581
EXPLOSION AND FIRE RELEASE VENTILATOR

Karl S. Von Poederoyen, Van Nuys, and Wolfram G. Korff, Granada Hills, Calif., assignors to Western Engineering & Mfg. Co., Venice, Calif., a corporation of California

Filed Dec. 3, 1962, Ser. No. 241,610
13 Claims. (Cl. 98—86)



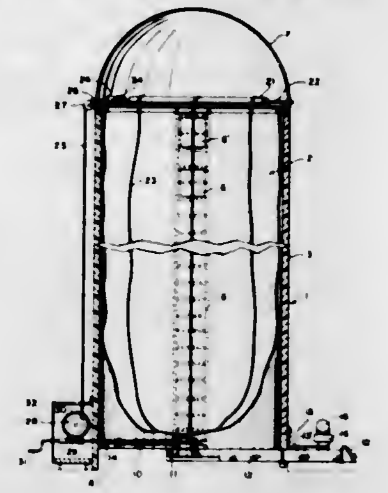
2. A ventilator comprising:
a base adapted for mounting adjacent an opening in a building;
a door mounted to said base for pivotal movement between a closed position over said opening and an open position away from said opening;
an elongated first hinge arm;
an elongated second hinge arm longitudinally and coaxially extendible and retractable relative to said first hinge arm;
an elongated thrust element telescopically carried by one of said hinge arms for longitudinal, coaxial extension and retraction relative to said hinge arms to open and close said door, one of said first and second hinge arms being pivotally connected to said door, and the other of said first and second hinge arms being pivotally connected to said base;
release means normally disengageably connected to said thrust element when said door is in said closed position and constraining said thrust element against extension relative to said first hinge arm;
bias means interposed between said first hinge arm and said thrust element and tending to urge said thrust element into extended relationship to move said door toward said open position, said second hinge arm being freely longitudinally extendible independently of said thrust element and said first hinge arm upon movement of said door toward said open position and during engagement between said thrust element and said release means;
and means normally maintaining said release means in engagement with said thrust element and including a link severable upon exposure to a predetermined temperature to operate said release means for disengagement from said thrust element whereby said thrust element is extendible under the bias of said bias means to move said door into said open position.

3,182,582
MOVABLE TOP FOR MATERIAL IN SILO

Paul H. Beach, P.O. Box 63, Merrill, Mich.

Filed Sept. 25, 1963, Ser. No. 311,444
6 Claims. (Cl. 99—235)

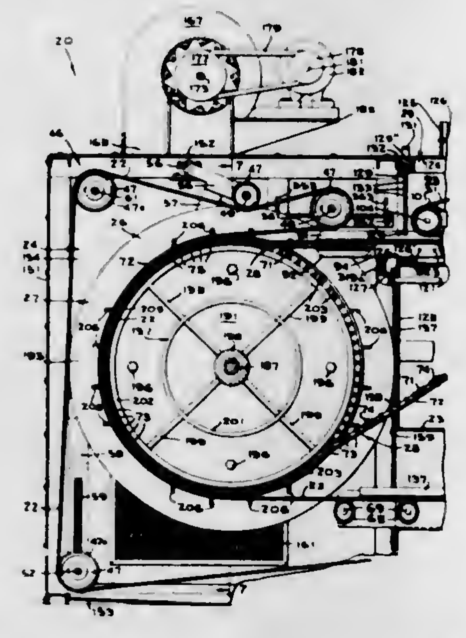
1. A container for the storage of forage crops comprising, a normally upright supporting structure providing a storage chamber therein, means for loading said chamber, means for unloading said chamber, a flexible bag of substantially air impervious material secured adjacent its upper end to said supporting structure in substantially air tight relation thereto adjacent the upper end of said chamber, a shaft across said upper end of said chamber, and means connecting said shaft to the bottom of said bag for pulling the latter upwardly and wrapping said bag about said shaft upon rotation thereof, said shaft being rotatable in opposite directions to alternately wind and unwind said bag.

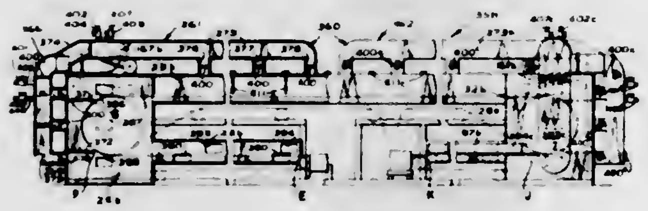


3,182,583
APPARATUS FOR COOKING FISH

Samuel A. Mencacci, St. Nicolas-Waes, Belgium, and Raymond Beacher Bentley, Pacific Grove, Calif., assignors to International Machinery Corporation S.A., St. Nicolas-Waes, Belgium, a Belgian corporation

Filed Dec. 6, 1960, Ser. No. 74,201
19 Claims. (Cl. 99—260)





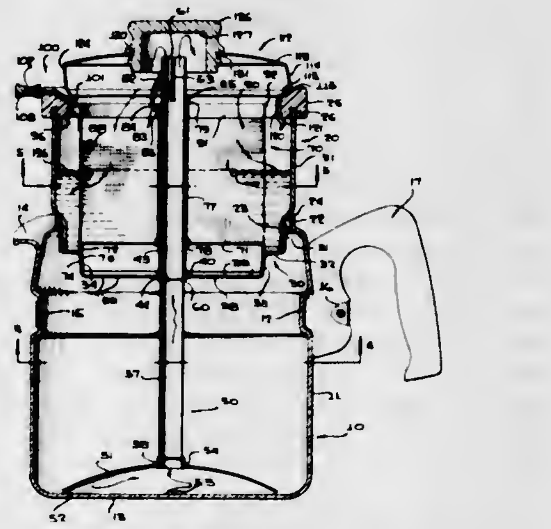
2. A fish cooker comprising a support structure, means providing a plurality of consecutive fish processing chambers on said structure, a conveyor for carrying open-top cans of fish consecutively through said chambers, and means for selectively directing steam or a hot gas into each chamber whereby the order in which fish in said cans may be subjected to said steam and hot gas may be varied to conform to different cooking procedures.

5. A fish cooker comprising, a support structure, a drum-like wheel journalled on said support structure, a cooking chamber connected to said support structure and disposed adjacent said wheel, a fish retaining conveyor trained in driving engagement around said wheel and extending through said cooking chamber, a second conveyor trained in driven engagement around said wheel and around said fish retaining conveyor, means for directing open-top fish-filled cans in upright position onto said second conveyor, means connected to said fish retaining conveyor to drive said conveyors and to advance the cans between said conveyors whereby said cans are inverted and deposited in inverted position on said fish retaining conveyor for movement through said chamber, and means comprising rollers bearing upon said second conveyor at spaced points, and being yieldably mounted, to allow that portion of the second conveyor that is trained around said wheel to move radially relative to said wheel so that cans of different heights can be clamped between said conveyors.

3,182,584
BEVERAGE BREWING APPARATUS

Anthony W. Serio, Elmira, N.Y., assignor to Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio

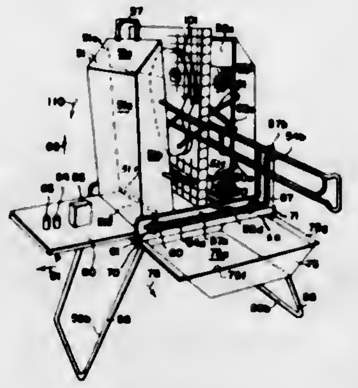
Filed Dec. 12, 1962, Ser. No. 244,149
18 Claims. (Cl. 99—284)



8. Beverage brewing apparatus comprising a first container means having an open upper end portion, second container means supported at the upper portion of said first container means and having a perforated bottom portion, said second container means including a tubular portion extending upwardly from the central bottom portion thereof and sealed with respect thereto, third container means for positioning within said second container means, said third container means having a closed bottom portion and a perforated outer wall portion for permitting liquid flow therethrough but preventing coffee grounds and the like from passing therethrough, said outer wall portion being spaced from the inner wall portion of said second container means to provide a space therebetween for receiving liquid, means for providing a seal between the lower portions of said second and third container means for preventing liquid flow into the lower portion of said second container means and from said second container means downwardly into said first container means through the perforated bottom portion thereof, said third container means including a tubular portion extending upwardly from the central bottom portion thereof and sealed with respect thereto, said last-mentioned tubular portion being disposed in surrounding relationship to the tubular portion of said second container means and operating means extending outwardly of said second container means for moving said third container means relative to said second container means to disengage said sealing means and permit liquid flow therebetween.

3,182,585
PORTABLE GRILL

Joseph T. Rensch and Eugene F. Rensch, Makoti, N. Dak.
Filed Aug. 21, 1962, Ser. No. 218,256
12 Claims. (Cl. 99—340)



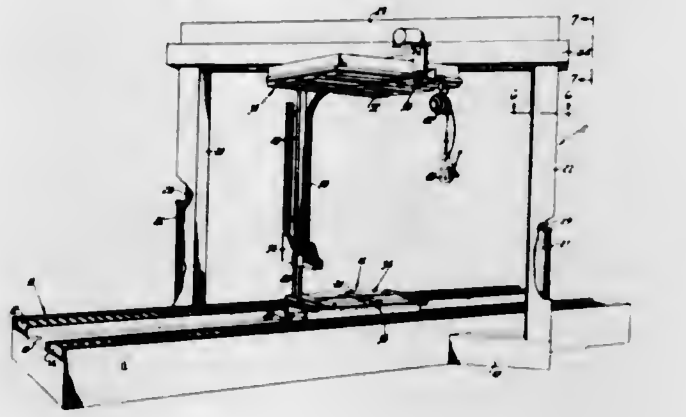
1. A portable grill comprising a first and second fuel pan, each having a bottom wall, side walls, a perpendicular end wall and an inclined end wall joined together to enclose an open top fuel chamber, a metal grate secured to each fuel pan to cover a substantial portion of the open top of the fuel chamber including that which is adjacent the respective perpendicular end wall, a generally rectangular frame having side frame members to enclose a central opening, means mounted on said side frame members and connected to said fuel pan side walls adjacent each corner portion of a perpendicular end wall, and bottom wall for slidably hingedly mounting said pans for movement to a first position with the pan grates adjacent one another, a second position with the grates in nearly the same plane, and a third position with the grates substantially spaced from one another and extending in a direction outwardly from the frame and to lock said fuel pans in any one of said positions, and a pair of foldable frame support means foldably connected to the frame on the opposite side from said pans for supporting said frame in an elevated condition.

10. In a portable grill, a first fuel pan having sidewalls, end walls and a bottom wall to enclose a chamber having a top opening, a metal grate mounted on the fuel pan to close a substantial portion of the top opening, a pair of risers pivotally mounted on the side walls in spaced relationship, each riser having a web portion parallel to the bottom wall and to the web portion of the other riser, means pivotally connected to each riser for mounting said riser web portions in movably parallel relationship and handle means connected to a riser for adjusting the positions of the risers and selectively retaining the riser web portions in selected spaced relationship to the bottom wall, said handle means including a hand grip portion, a web portion joined to said hand grip portion, means for pivotally connecting the handle and riser web portion, and means joined to the handle web portion for extending into a grate aperture to cooperate with the risers for retaining said risers in an adjusted position.

3,182,586
PRESS APPARATUS FOR PACKAGE COMPRESSING AND STRAPPING

Donald Talbot Armington, Southington, and James E. Dimmett, South Glastonbury, Conn., assignors to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Jan. 24, 1963, Ser. No. 253,539
1 Claim. (Cl. 100—7)

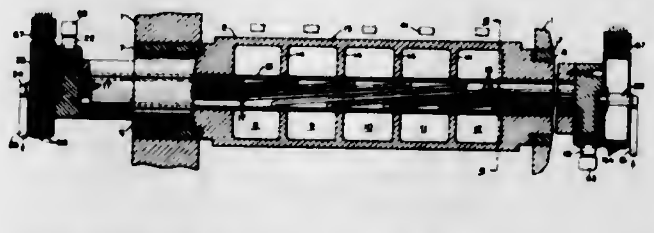
In combination with a package strapping apparatus,
- (*a*) a package conveyor including, in at least a portion thereof at a compressing station, a pair of spaced apart horizontally extending substantially parallel conveyor rows,
- (*b*) a top press platen support structure positioned adjacent the conveyor and extending over the top thereof at a strapping and compressing station,
- (*c*) a rotatable top press platen,
- (*d*) a rotatable center supported bottom press platen positioned between the spaced conveyor rows and underneath the top platen for supporting the package near the center thereof,



- (*e*) fluid operated means for mounting the top press platen on the top platen support structure connected to the center of said top press platen and for moving the top press platen toward the bottom press platen for concentrating maximum pressure at the center portion of the package during the strapping operation and for accommodating the rotation of the package without removing the compressive forces thereon.

3,182,587
APPARATUS FOR CALENDERING OR SHEETING DEFORMABLE MATERIAL

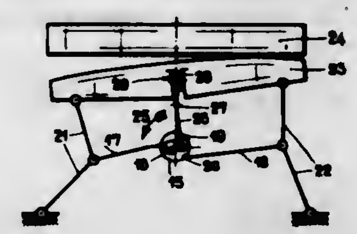
Edwin S. Woodhall, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Jan. 19, 1962, Ser. No. 167,322
5 Claims. (Cl. 100—47)



4. An apparatus for roll forming sheet material of uniform thickness transversely of the sheet comprising, a plurality of cooperative rolls for forming a sheet therebetween, said rolls having journalled ends with a working area therebetween, the working area of one of said rolls having a plurality of isolated annular heating chambers located internally of the roll and spaced axially of the roll to heat axially spaced annular portions of said roll between said journals, a plurality of conduits equal in number to said chambers, each connected respectively to one chamber for independently supplying heating fluid respectively to each of said heating chambers, exhaust means for each of said chambers and valve means associated with each of said conduit means adapted to vary the amount of heating fluid supplied to each of said chambers, and control means to independently selectively actuate each of said valve means to thereby selectively thermally expand at least one of said annular portions to bring the surfaces of the roll into substantial parallelism regardless of the pressure required to affect the sheeting of the material.

3,182,588
PRESSES COMPRISING A MOVABLE PLATEN DRIVEN BY TOGGLE LEVERS

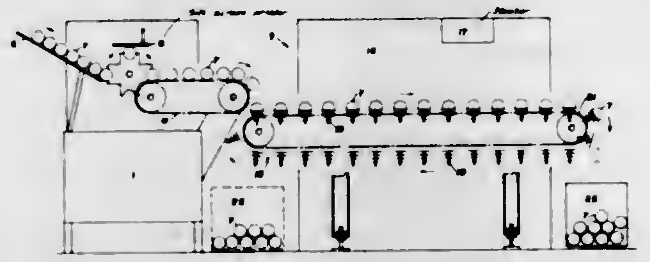
Edwin Bolliger, Prilly, Switzerland, assignor to J. Bobst and Son S.A., Prilly, Switzerland, a corporation of Switzerland
Filed Dec. 26, 1962, Ser. No. 247,250
Claims priority, application Switzerland, Oct. 23, 1962, 12,457/62
5 Claims. (Cl. 100—286)



1. A platen press comprising a fixed platen, a movable platen having a convex surface and opposite ends, toggle levers connected to said movable platen, a drive shaft adapted for rotation, a pair of connecting rods connected to the drive shaft and to the toggle levers to cause the toggle levers to alternately lift one end of the movable platen and then the other end of the movable platen as the drive shaft undergoes rotation, a cam supported on said drive shaft, a lever having opposite ends and secured for pivotal movement intermediate said ends about a fixed axis, one of said ends of said lever being in contact with said cam to follow the motion thereof as the drive shaft undergoes rotation, and means connecting the opposite end of the lever to the movable platen for pivotal movement and for sliding motion in a direction normal to the surface of the movable platen to constrain the movable platen to undergo a swaying movement concurrent with the raising and lowering of the ends thereof to cause the surface of the movable platen to roll without sliding on the fixed platen and then be withdrawn from the fixed platen for each rotation of the drive shaft.

3,182,589
PRINTING AND DRYING APPARATUS

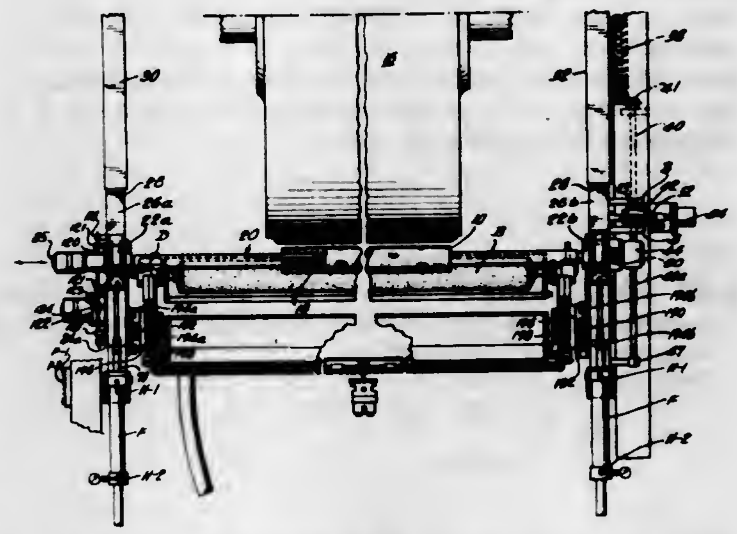
Melvin E. Green, Skokie, and Charles H. Derrickson, Chicago, Ill., assignors to American Screen Process Equipment Co., Chicago, Ill., a corporation of Illinois
Filed Jan. 22, 1962, Ser. No. 167,725
15 Claims. (Cl. 101—40)



1. In combination, apparatus for printing on the outer surface of smooth cylindrical objects, including means for receiving and printing said objects, and means for discharging said objects; and drying means positioned adjacent said discharging means and comprising a conveyor including a pair of endless chain belts disposed in substantially parallel vertical planes with open sided baskets supported therebetween, said baskets being movable in coordination with said discharging means and positioned to receive a smooth cylindrical object from said discharging means, said baskets having a pair of open sides which are arcuate in section and intersect along each end and bottom thereby decreasing in size toward the bottom, whereby the sides have a curvature such that a smooth cylindrical object may be supported therein with only its ends touching the sides of the basket.

3,182,590
PRINT ROLL ADJUSTING MEANS FOR PRINTING APPARATUS

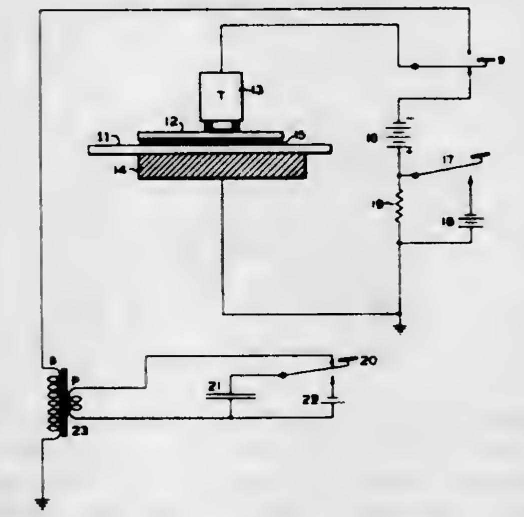
James Reid Johnson, Stonington, Conn., assignor to Johnson Operating Corporation, New York, N.Y., a corporation of Connecticut
Filed Nov. 23, 1962, Ser. No. 239,678
14 Claims. (Cl. 101—248)



1. A device for facilitating the rotative register of print rolls which are marked with a pitch mark and keyed on mandrels of apparatus for printing different portions of a composite pattern successively within the same area, said apparatus comprising support means defining a plurality of, bearing means in which the mandrel ends are rotatably supported, and related flat horizontal areas radially disposed at equal distance around a common center, a member adapted to be supported on a mandrel end, without interfering with the rotation of the mandrel, between one end of a print roll and the bearing in which the mandrel end is supported, said member having an indicator at one end, and a positioning foot adapted to rest on an outer surface portion of the bearing and to co-act with the said surface portion to determine the rotary position of the indicator and thus enable it to serve as a point of reference with which to align a pitch mark on a roll.

3,182,591
IMAGE FORMING APPARATUS AND METHOD

Chester F. Carlson, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 22, 1963, Ser. No. 284,283
6 Claims. (Cl. 101—426)

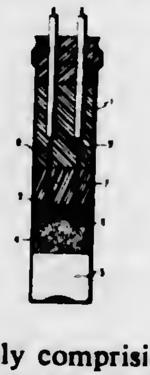


5. A method of electrostatic recording which comprises, placing a charged powder layer electrostatically adhering to an insulating developer web against a recording web to form a sandwich, placing said sandwich between a backing electrode spaced opposite a print elec-

trode shaped in the form of a symbol to be reproduced, said electrodes being positioned relative to each other to include a gap of from about one to about five mils between said sandwich and at least one of said electrodes, and transferring powder in the configuration of said print electrode by applying an electrical potential of a duration as short as a few microseconds across said electrodes, said potential being of a magnitude sufficient to initiate an ionizing field discharge between said electrodes and said sandwich and said potential being of a polarity to cause electrostatic transfer of said powder configuration from said developer web to said recording web forming a recording on said recording web.

3,182,592
BLASTING CAPS

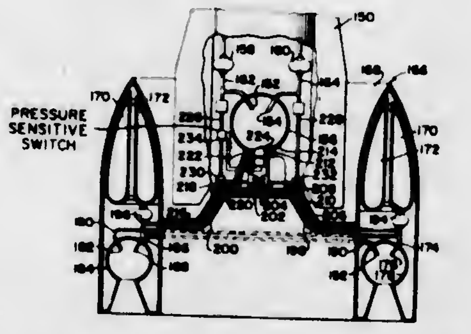
Aldo Joseph Barocca, Alton, Ill., assignor, by mesne assignments, to Commercial Solvents Corporation, a corporation of Maryland
Original application Feb. 8, 1960, Ser. No. 7,102. Divided and this application Aug. 1, 1963, Ser. No. 303,708
2 Claims. (Cl. 102—28)



1. A blasting assembly comprising a liquid oxygen explosive charge and an electric detonator for said charge, said detonator having an ignition mixture of from about 95% to about 99% normal lead styphnate and from about 5% to about 1% graphite, a lead azide initiator and a base charge selected from the group consisting of cyclonite and pentaerythritoltetranitrate.

3,182,593
ROCKET VEHICLE WITH AUXILIARY STAGING STRUCTURE AND COMMON FUEL SUPPLY

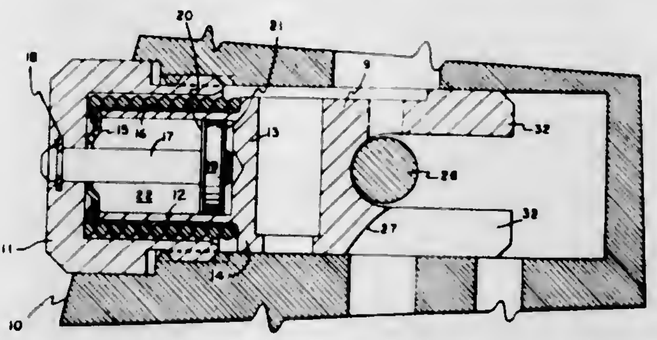
Orville R. Seidner, Alhambra, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Original application June 13, 1955, Ser. No. 515,183, now Patent No. 2,962,934. Divided and this application Dec. 1, 1960, Ser. No. 73,022
8 Claims. (Cl. 102—49)



1. Propulsion apparatus for a rocket vehicle comprising: a primary thrust producing rocket motor; an auxiliary staging structure; a plurality of auxiliary thrust producing rocket motors mounted within said auxiliary staging structure; means coupling said auxiliary staging structure to said rocket vehicle; means for uncoupling said auxiliary staging structure from said rocket vehicle at the completion of one phase of flight by said rocket vehicle; means within said rocket vehicle for supplying fuel and oxidant to said primary rocket motor; and common means within said auxiliary staging structure for supplying fuel and oxidant selectively to said primary and auxiliary rocket motors.

3,182,594
TEMPERATURE INDEPENDENT TIMING DEVICE, DASHPOT TYPE

Wilbur Harris, Waukesha, Wis., and Harry M. Day, New Canaan, Conn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 17, 1963, Ser. No. 281,373
4 Claims. (Cl. 102—82)



1. In a delay timing mechanism, the combination of a fuze body containing a fuze and having a dash-pot mounted thereon, said dash-pot being the delay element between firing and activation of the fuze and consisting of a housing containing a movable cylinder, said cylinder having peripheral flanges at one end and containing a fluid sealed therein, a coiled spring encircling said cylinder bearing against the peripheral flanges at one end and biased against the housing at the other end, a firing solenoid connected to a bore riding pin retaining said cylinder against the action of the spring, a piston rod within said cylinder having a piston head at one end and firmly keyed to the housing at the other end, spiders acting as closures for both sides of said piston head and as guides for piston head in the cylinder, said piston head made of a coiled flat bi-metallic strip forming an expandable periphery varied by temperature changes, said expandable periphery changing the clearance with the cylinder to regulate the passage of fluid forced past the piston head by the spring pressed cylinder when the firing solenoid is activated to compensate for variations of temperature and/or viscosity to permit the dash-pot to operate within a designed delay period at any temperature within the range of −65° F. to +160° F. and means for resetting the mechanism.

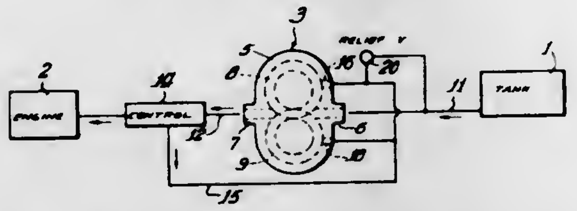
3,182,595
IGNITER ASSEMBLY CONTAINING STRANDS OF BENITE

Harry F. Hassmann, Sparta, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed July 20, 1962, Ser. No. 211,461
1 Claim. (Cl. 102—86.5)
(Granted under Title 35 U.S. Code (1952), sec. 266)

An igniter assembly for use in high velocity ammunition comprising a tubular body having flash holes therein, a tubular liner fitted within said body and shorter than the body, a threaded plug closing one end of said body and maintaining said liner in spaced relation with said end, said liner loaded with fine strands of potassium nitrate, sulphur and charcoal in a nitrocellulose matrix, said strands in axial alignment with the liner and slightly shorter than the liner, a head of greater diameter than said body for closing the opposite end of the body, said head having a reduced threaded portion adapted to be screwed into the body to maintain the liner in position, said head provided with a channel extending therethrough and open to said strands, a mushroom-shaped percussion primer with the umbrella portion facing away from said strands positioned in said channel in that portion of the head extending beyond said body, a firing plug within said channel of the head having a pin pointed toward the umbrella portion of the percussion primer and a battery cup securing said firing plug in position in the channel of said closing head.

3,182,596
HYDRAULIC SYSTEMS AND PUMPS

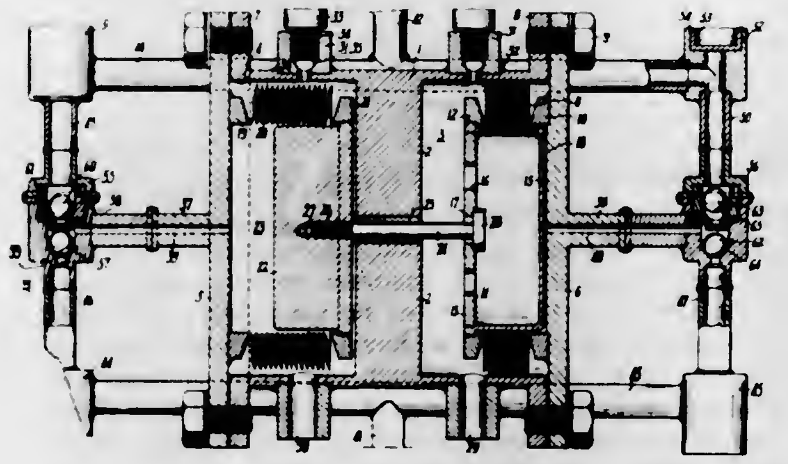
Edward A. Prijatel, Lyndhurst, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 31, 1963, Ser. No. 284,554
13 Claims. (Cl. 103—2)



1. A hydraulic system comprising:
a positive displacement pump having main fluid inlet means and fluid discharge means;
auxiliary fluid inlet means in said pump;
fluid passage means interconnecting said discharge means and said auxiliary inlet means; and
means for maintaining the fluid pressure in said auxiliary inlet means above the fluid pressure in said main inlet means.

3,182,597
PROPORTIONING PUMP

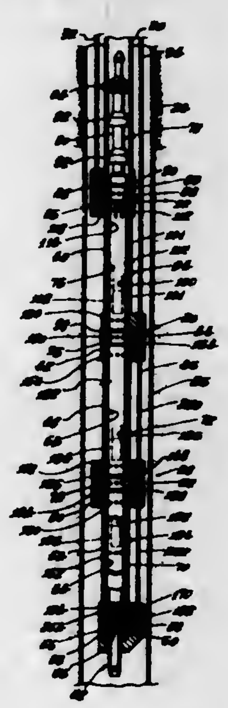
Max Malizard, 13 Rue Versigny, Paris, Seine, France, and André Pattoret, Chatillon-sous-Bagneux, Seine, France (80 Ave. L. Wiener, Watermael, Belgium)
Filed Apr. 15, 1963, Ser. No. 273,102
Claims priority, application France, Apr. 21, 1962, 895,323
10 Claims. (Cl. 103—44)



1. A proportioning pump for gaseous fluid comprising a pump body, a transverse partition dividing said body internally into two chambers of substantially identical volume, characterized in that a metallic bellows is disposed in each of said chambers, one end of said bellows being secured to the pump body, a movable piston disposed within and closing the other end of each of said bellows and being rigidly fixed thereto, said movable piston providing within said bellows a volume which is variable as a function of the position of said piston inside the chamber, a rigid unidirectional coupling connecting the movable pistons of the two chambers to each other through the transverse partition; means for connecting the interior of each of said bellows to a gaseous fluid proportioning circuit; and means for connecting each of said chambers to a fluid motor circuit.

3,182,598
SEALING MEANS FOR FLUID OPERATED PUMP SYSTEM

Ralph F. McArthur, Huntington Park, and Mathew R. Mecusker, La Habra, Calif., assignors to Kobe, Inc., Huntington Park, Calif., a corporation of California
Original application June 8, 1959, Ser. No. 818,870, now Patent No. 3,078,804, dated Feb. 26, 1963. Divided and this application Aug. 3, 1962, Ser. No. 214,635
4 Claims. (Cl. 103—46)



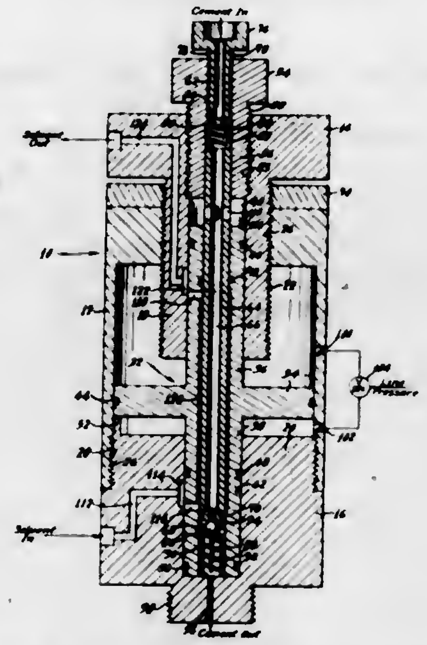
1. In a fluid operated well pump system which includes a bottom hole assembly having housing means for housing a fluid operated pump assembly and which includes high pressure and low pressure fluid sources, said housing means including a sealing collar and said pump assembly including a sealing adapter registrable with said sealing collar when said pump assembly is in an operative position in said housing means, the combination of:
(*a*) means providing an external annular shoulder on and encircling said sealing adapter;
(*b*) an elastomeric annular seal encircling said sealing adapter and engageable with said annular shoulder;
(*c*) said annular seal being engageable with the interior of said sealing collar when said pump assembly is in said operative position;
(*d*) a sleeve which encircles and is slidable axially of said sealing adapter and one end of which is engageable with said annular seal;
(*e*) the other end of said sleeve being larger in cross sectional area than said one end thereof;
(*f*) said sleeve having an internal annular surface which faces in the same direction as said one end of said sleeve and the cross sectional area of which is equal to the difference between the cross sectional areas of said ends of said sleeve;
(*g*) means connecting said annular surface of said sleeve to said low pressure source when said pump assembly is in said operative position; and
(*h*) means connecting said other end of said sleeve to said high pressure source when said pump assembly is in said operative position.

3,182,599
TWO-STAGE PUMP WITH INTERNAL WASHING SYSTEM

Harry Nelson Blakeslee, Barrington, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed May 27, 1963, Ser. No. 283,391

10 Claims. (Cl. 103—50)



1. A two-stage pump for viscous material comprising a casing; an end member assembly mounted at each end of said casing and having an aperture therein, one of said apertures defining an inlet and the other of said apertures defining an outlet; valve means at said inlet and outlet; a central tube extending between said end member assemblies and having an axial bore which directs the flow of material between said inlet and said outlet; a piston concentrically surrounding said central tube; said piston being movable to a pump position in which it is at the end of its stroke in the outlet direction, and also being movable to a retracted position in which it is at the end of its stroke in the inlet direction; a first cavity being formed between said inlet end member assembly and said piston when said piston is in its pump position; said central tube having lateral passage means therein in the region of said first cavity to permit flow between said axial bore and said first cavity; a second cavity being formed below the outlet end of said central tube between said outlet end member assembly and said piston when said piston is in its retracted position; and means for selectively moving said piston to a pump position whereat material from said inlet will fill said first cavity and simultaneously material from said second cavity will be discharged under pressure through said outlet; said means also selectively operable for moving said piston to a retracted position whereat material from said first cavity will be forced under pressure into said central tube axial bore and simultaneously material from said central tube axial bore will be forced under pressure into said second cavity.

3,182,600
PUMPS PROVIDED WITH A HELICAL ROTOR OF REVOLUTION AND A ROTATING OBTURATOR PLATE MESHING WITH THIS ROTOR

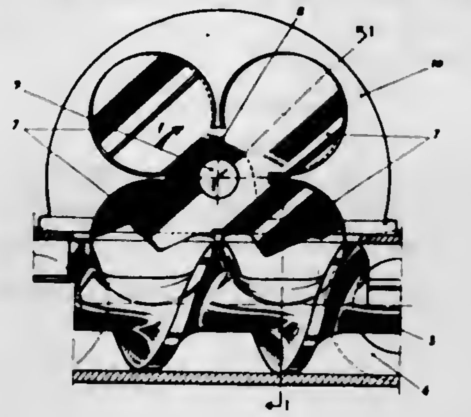
Paul André Guinard, 6 Rue Montesquiou, Saint-Cloud, Seine-et-Oise, France

Filed May 13, 1963, Ser. No. 280,011

Claims priority, application France, May 15, 1962, 897,557

9 Claims. (Cl. 103—125)

1. A pump comprising a rotor including a core and a thread on said core defining a helical groove, a housing having opposite ends, said core being mounted in the housing for rotation about an axis, a suction opening provided at one of the ends of said housing and a discharge opening provided at the other of the ends, at least one planar disk extending into said housing and constituting a piston, said disk including flat lobes peripherally mounted thereon and extending outwardly in the plane of the disk normal to the axis of rotation thereof, said lobes being positioned on the disk to successively engage the thread on said core by entering into said groove of the rotor, and a casing in which said shaft is trunnioned and comprising two flanges connected to said housing and between which said disk is mounted, said disk being laterally displaced with respect to the axis of the core to be arranged in a plane in which the lobes are laterally tangent to said core, said disk having a radius greater than the distance between the axis of the shaft carrying said disk and the axis of the rotor, such that the inner face of at least one of the lobes on the said disk always remains in lateral sealing contact against said core during rotation of the disk.

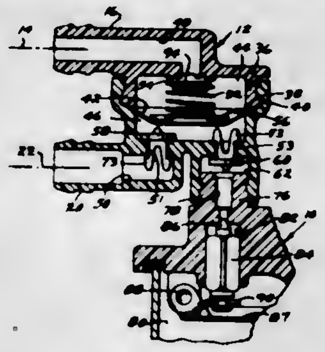


3,182,601
FUEL PUMP

Eldon A. Johnson, Sunset Hills, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Nov. 26, 1962, Ser. No. 239,898

3 Claims. (Cl. 103—150)



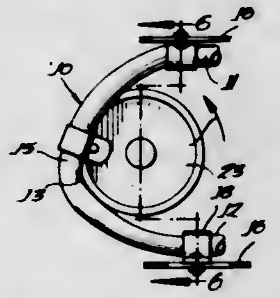
1. A pulse pump for a fuel system, said pump comprising a body member enclosing a cavity, a diaphragm sealed around its periphery across said cavity and forming with said body member an air chamber on one side of said diaphragm and a fuel chamber on the other side of said diaphragm, said diaphragm having a movable portion, inlet and outlet passages through said body member and opening into said fuel chamber to provide fuel flow therethrough, an inlet check valve in said inlet passage and an outlet check valve in said outlet passage, an air passage through said body member opening into said air chamber to provide pulses thereto, resilient means in said air chamber between said body member and said diaphragm portion to bias said diaphragm into said fuel chamber in a pumping stroke, a valve seat in said air passage adjacent the air chamber and extending generally in a horizontal plane, and a free floating valve disk within the air passage over the valve seat adapted to seat by gravity against the valve seat, said valve disk responsive to pressure within the air passage and being unseated upon a predetermined negative pressure being exerted in the air passage, a positive pressure in the air passage aiding gravity seating of said valve disk so that the disk is seated across said air passage upon movement of the diaphragm in its pumping stroke and is opened upon movement of the diaphragm in its suction stroke thereby to control the effect of positive pressure in the air passage on the pumping stroke of the diaphragm.

3,182,602
METHOD OF AND APPARATUS FOR PUMPING

William B. Price, 1111 E. Jefferson St., Bloomington, Ill.

Filed Sept. 16, 1963, Ser. No. 309,261

11 Claims. (Cl. 103—152)



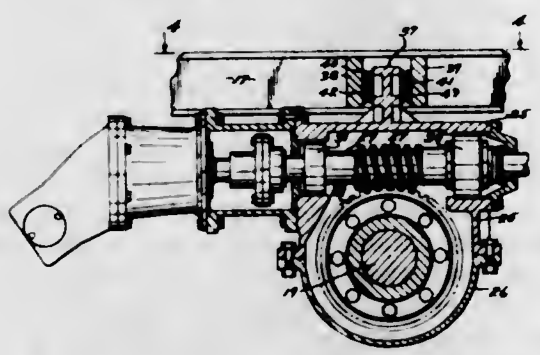
1. In a pump, the combination of a support, an elongated tube of resilient material, clamps securing spaced inlet and outlet end portions of said tube to said support in laterally spaced generally parallel relation to form a U with such portions constituting legs of the U, a rotary member mounted on said support to rotate about an axis extending transversely of the plane of said legs and spaced substantially equidistantly from the legs, and an intermediate clamp secured to said tube at a point approximately equidistant from said inlet and outlet clamps and pivotally connected to said rotary member at a point spaced from said axis whereby, when the member is rotated unidirectionally, the portions of the tube between the intermediate clamp and the respective inlet and outlet clamps, are alternately bent and extended to form bends which shift along the tube and to open such bends in a sequence to cause a fluid flow from said inlet portion to said outlet portion, the maximum spacing between said intermediate clamp and the respective inlet and outlet clamps in each revolution of said member being greater than the lengths of the tube between such clamps in the relaxed condition of the tube so that each tube length is stretched longitudinally as the length is extended to open the bend in the length.

3,182,603
LOCOMOTIVE DRIVE

Eugene W. Schellentrager, Shaker Heights, Ohio, assignor to The Atlas Bolt & Screw Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 18, 1963, Ser. No. 252,332

9 Claims. (Cl. 105—99)



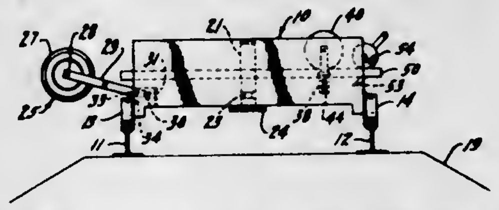
1. A stabilizer for a driving element of a vehicle of the type having a body, a frame member fixed to said body and resiliently carried on a plurality of axles, and a drive gearing carried on at least one said axle for rotation thereof, means connecting said drive gearing to a power source, said stabilizer including a guide member fixed on said frame member above said drive gearing, a transverse vertical slot in said guide member and a projecting lug fixed with respect to said drive gearing and extending slidably upwardly into said vertical slot, said vertical slot having a transverse dimension greater than the transverse dimension of said lug and allowing freedom of movement of said lug laterally and vertically within said slot, said slot having a close clearance fit against movement against the lug forwardly and rearwardly so as to restrain the lug in the direction of locomotive travel.

3,182,604
SET-OFF DEVICE AND METHOD FOR RAILWAY MACHINES

Robert J. Foxx, Greenfield, and Edward H. Krause, Jr., Hales Corners, Wis., assignors to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Dec. 13, 1962, Ser. No. 244,360

7 Claims. (Cl. 105—177)



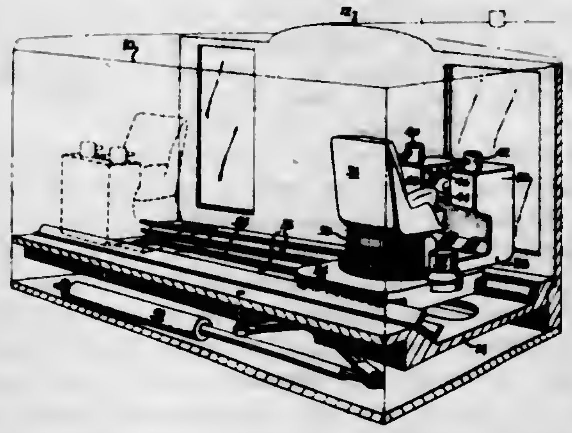
1. A set-off device for a railway machine having a carriage and flanged wheels riding rail heads which includes, in combination, a transverse track adapted to straddle the rail heads at below about the middle of the carriage, a track wheel joined to the carriage and movable to ridably engage the transverse track, means to raise the carriage free from the rail heads so that the track wheel, which is moved to engage the track, may movably support the carriage, at least a pair of supporting wheels joined to the carriage and movable to rolling engagement with a surface adjoining the rail heads, means to fix the track wheel in its track engaged position, and means to fix the supporting wheels in their surface engaged positions.

3,182,605
VEHICLE CONTROL

Lawrence J. Brasher, 18671 Lancashire Road, Detroit, Mich.

Filed Oct. 7, 1963, Ser. No. 314,150

10 Claims. (Cl. 105—342)

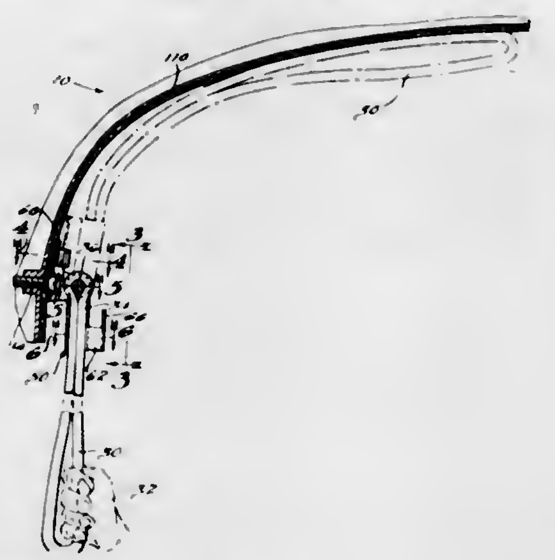


1. In a vehicle having a frame and vehicle operating means on said frame, a vehicle operator's control station comprising a first member mounted on the vehicle frame for movement transversely of said vehicle from one side of the vehicle to the other, first power means for driving said first member in movement on said frame, an operator's support platform mounted upon said first member

for rotation relative to said first member about a vertical axis, second power means for driving said platform in selected increments of rotation on said first member, a control console mounted upon said platform for movement therewith, and control means on said console for controlling said vehicle operating means and said first and said second power means.

3,182,606
VEHICLE ENTRY AND EXIT ASSIST STRAP AND BRACKET

Bradley D. Osgood, 200 Tuxedo, Highland Park, Mich.
Filed May 14, 1963, Ser. No. 285,177
1 Claim. (Cl. 105—354)

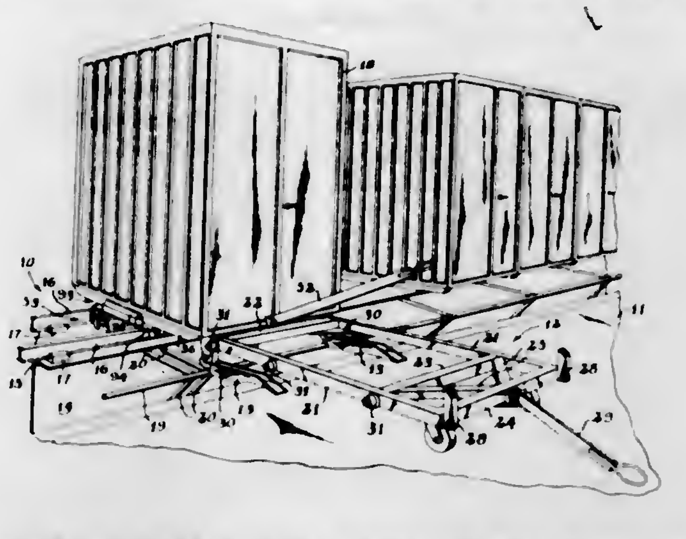


In a passenger vehicle having a roof panel, a retractable combination entry and exit assist strap and coat hanger comprising a mounting bracket supported by the vehicle roof panel, a pair of longitudinally spaced resilient fingers on said mounting bracket, a strap clip pivotally supported by said bracket for rotation about a horizontal axis generally parallel to a longitudinal axis of the vehicle between a downwardly extending operative position and an upwardly extending retracted position, a hand strap secured to said strap clip, and means on said strap clip resiliently latchable between the fingers on said bracket for locking said hand strap in the upwardly extending retracted condition against the roof panel of the vehicle, said locking means comprising a coat hanger when said assist strap is in the downwardly extending position.

3,182,607
CONTAINER TRANSFER ARRANGEMENT

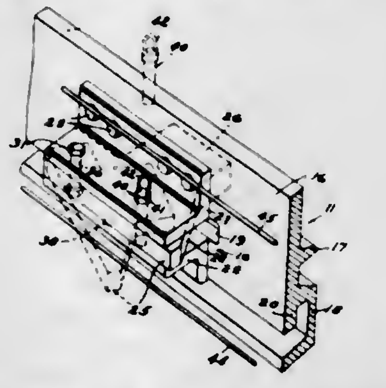
Robert M. Sherrie, Lansing, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 11, 1961, Ser. No. 158,406
8 Claims. (Cl. 105—366)

1. In a container transfer system wherein a railway car is spaced from a platform surface along at least one side margin thereof for clearance therebetween, said car being of skeleton type basically formed from a longitudinal center sill provided with a plurality of longitudinally spaced transverse container support means at least substantially confined thereto for longitudinal supporting alignment of a plurality of containers thereon, and wherein container transfer cart means are movable along said platform surface and carry containers for transfer between said car and platform surface, the improvement comprising the provision of longitudinally arranged and outwardly projecting support members mounted on opposite sides of said center sill in spaced relation with ends of adjacent transverse support means, a pair of bridging plates selectively aligned with a pair of said transverse support means and extending between said support members of said car and said platform surface to bridge the clearance therebetween, means forming a part of said support members of said car receiving one end portion of each bridging plate in vertically supported relation, the other end portion of each bridging plate being in resting engagement with said platform surface, said one end portion of each bridging plate being provided with means detachably engaging said support members to prevent lateral displacement therefrom, and container transfer cart means at least partially advanced onto said bridging plates from said platform surface into close association with said support members and at least partially straddling the clearance between said car and platform surface over said bridging plates into spaced association with the aligned pair of said transverse support means, said bridging plates being dimensioned and constructed for portable movement longitudinally of said car into selective alignment with successive pairs of said transverse support means.



3,182,608
PALLET LOCKING MECHANISM

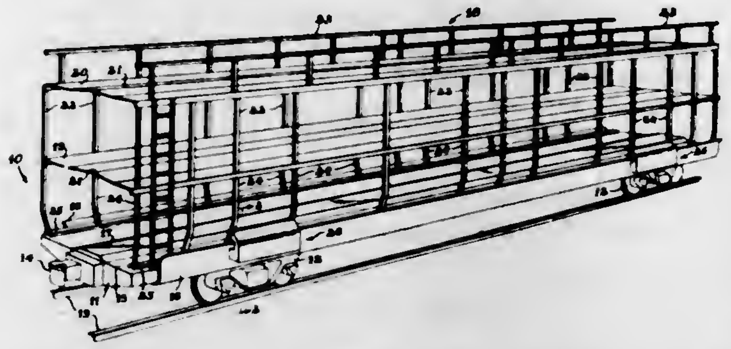
Leslie Mollon, Detroit, Mich., assignor to Brooks & Perkins, Inc., Detroit, Mich., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 174,021
18 Claims. (Cl. 105—366)



1. In a load latching mechanism for application to a longitudinally extending, upright side restraining rail to laterally restrain a load for longitudinal movement in either direction relative to said rail, a latching device adapted to be fixedly applied to a side of said rail, said device comprising a latch dog pivotally mounted to swing in a horizontal plane paralleling the direction of movement of said load and into and out of a latching position in which said latch dog is latched to project substantially outwardly of a side of said rail, said latch dog having generally parallel front and rear surfaces engageable by said load when the dog thus projects to restrain movement of the load in either longitudinal direction, said device having means to latch said dog in said restraining position, the dog being engaged and swung in said plane by the load to a retracted position relative to the rail when unlatched by said means and when the load moves in one of said directions.

3,182,609
MULTIPLE DECK RACK MEANS ATTACHMENT FOR RAILWAY CARS

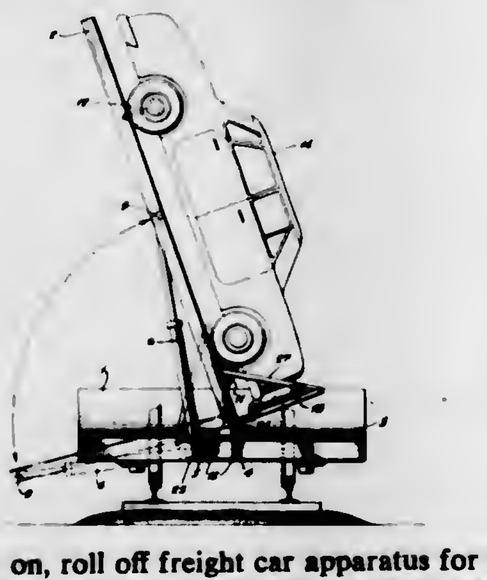
Jack W. Borger, Calumet City, and Andrew J. Christian, Chicago, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed May 22, 1961, Ser. No. 111,601
4 Claims. (Cl. 105—368)



1. In a railway car having a lading receiving deck portion on which a lading supporting rack member is longitudinally movably received, said car including a pair of spaced supporting wheel trucks adjacent opposite ends thereof, the side margins of said deck portion being defined by longitudinally continuous upstanding side sill structures constituting load bearing members of said car, the provision of car and rack member interconnecting means permitting longitudinal relative travel between said rack member and car, said interconnecting means including cushion means mounted outboard of said side sill structures solely along opposite sides of said car and over each of said wheel trucks and limited in longitudinal length to the areas of said wheel trucks, and cooperating cushion stop means, some of which stop means are carried on outer surface portions of the side sill structures and others of which stop means are carried on plate means forming a part of said rack member and overhanging said side sill structures outboard thereof in longitudinally clearing relation, said stop means and plate means being limited to the areas of said wheel trucks and said stop means receiving said cushion means therebetween and cooperatively functioning to compress said cushion means therebetween during longitudinal relative movement between said rack member and said car, whereby said deck portion and the operational clearance of said car are unimpeded by said interconnecting means and the load bearing continuity of said side sill structures is maintained.

3,182,610
FREIGHT CARRYING APPARATUS

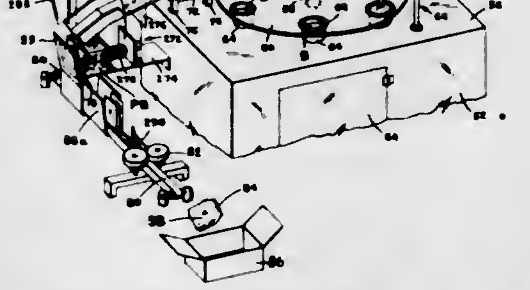
Louis B. Jones, 5020 Devonshire Road, Richmond, Va.
Filed Sept. 13, 1963, Ser. No. 308,732
10 Claims. (Cl. 105—368)



1. A roll on, roll off freight car apparatus for the transportation of wheeled cargo comprising an elongated body frame, a center portion of said elongated body frame being lower than the end portions thereof, said lowered body frame portion including a recessed marginal edge defining a recessed car surface in registry therewith, a number of I beams longitudinally extending beneath and reinforcing said freight car surface, one of said I beams in registry alignment with a recessed portion of said marginal edge, a first number of brackets on said lowered surface, said brackets spacedly extending longitudinally of said lowered surface and adjacent said recessed surface portion, each said bracket including an end perforation remote from said surface, a second number of brackets longitudinally spaced along and fixed to an outwardly facing portion of an I beam, each of said second number of brackets positioned below and substantially equidistant between each pair of said first number of brackets, each bracket of the second group including an end perforation remote from said I beam, a plurality of load carrying platforms spaced along the long axis of the frame, each platform having its pivotal axis extending longitudinally of the lowered portion of the frame and hinged for pivotal movement with a pair of said first number of brackets, pivoting means under each platform for the pivoting thereof from a down position in which the free end protrudes substantially beyond the longitudinal edge of the frame and in which a wheeled cargo can be rolled on and off to an up position in which the free end of the platform is within the permissible width for such vehicles, said pivoting means having one end operatively hinged to the under mid-portion of a platform adjacent its free end, and the other end hinged to one of said second number of brackets, wheel stop and anchoring means mounted on the platform for engaging and anchoring a wheeled cargo positioned on the platform, lock means on the pivoting means to lock each platform in its up position, shock absorbing means mounted on each platform adjacent its pivoted end in substantial right angle engagement therewith against which shock absorbing means a cargo can bear when the platform has been pivoted to its up position.

3,182,611
APPARATUS FOR MAKING AND PACKAGING ICE CREAM SANDWICHES

Irving Rubenstein, 670 Peeton Ave., Staten Island, N.Y.
Filed Apr. 8, 1963, Ser. No. 271,147
1 Claim. (Cl. 107—1)



A machine for making ice cream sandwiches, which have protective bands, comprising:

- **(*a*) a housing;**
- **(*b*) a turret having a plurality of pockets therein and connected to a shaft extending from the housing for intermittent rotation thereof;**
- **(*c*) a plurality of socket means having an opening in the bottom thereof and disposed in the pockets, one socket means in each pocket with each of said socket means adapted to receive a protective band and wafer for retention therein;**

(*d*) an ice cream charging means connected to the housing and disposed above the turret whereby ice cream may be discharged therefrom onto the wafer within the socket means so that thereafter a second wafer may be disposed thereon;

(*e*) a compactor means, having a yieldable linkage, connected to the housing and disposed above the turret;

(*f*) a compactor plate means formed at the end of the compactor means adjacent the turret, and adapted to engage the second wafer and urge it in the direction of the first wafer so that the ice cream will be uniformly forced against the protective band and adhere thereto to form said ice cream sandwich;

(*g*) an ejector means connected to the housing including:

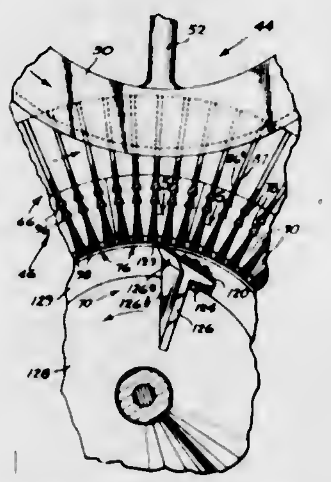
 (1) a raising means disposed normally below the socket means and adapted to extend through the opening of the socket means to raise said ice cream sandwich out of the socket means, and

 (2) a pushing means disposed above the turret to push the raised ice cream sandwich in a direction away from the turret whereby said sandwich may be disposed for shipping;

(*h*) a power means connected to said shaft and each of said charging, compactor and ejector means and to intermittently operate the turret and to successively operate the ice cream charging means, the compactor means and the ejector means; and

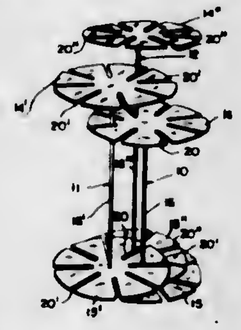
(*i*) the linkage of the compactor means adjacent the plate means formed to yield on the compactor means exerting over a predetermined amount of pressure so that on compaction of the sandwich, the wafers thereof will not be broken.

3,182,612
PELLETING APPARATUS
James W. Ogle, Rte. 6, Box 40, Lakeview, Oreg.
Filed Aug. 26, 1963, Ser. No. 304,347
8 Claims. (Cl. 107—14)



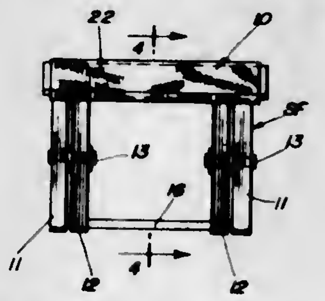
1. A pellet forming wheel comprising
an annular rim section including opposed rim elements having opposed axially spaced and radially projecting opposed wall portions,
said rim section further including plural vanes disposed in planes extending radially and substantially axially of the annular rim section, circumferentially distributed about said rim section, joined to said wall portions, and extending between them,
said wall portions projecting radially beyond the radially outer edges of said vanes and defining a groove extending about the perimeter of said wheel,
said vanes and wall portions defining plural extrusion passages extending radially in the wheel with feed ends communicating with the periphery of the wheel adjacent the base of the groove, and
an axially extending removable knife element mounted on said wheel associated with each vane,
each of said knife elements including a knife blade portion radially outwardly of its associated vane, occupying substantially the plane of such vane,
said knife elements having sharpened edges facing outwardly operable to produce initial division of material forced radially inwardly toward said extrusion passages into separate agglomerates spaced along the perimeter of the pellet-forming wheel which are to be turned into pellets.

3,182,613
CLUSTER TABLES AND THE LIKE
Leo Francis Hagan, 244 Townsend St., Birmingham, Mich.
Filed Apr. 3, 1963, Ser. No. 270,384
10 Claims. (Cl. 108—91)



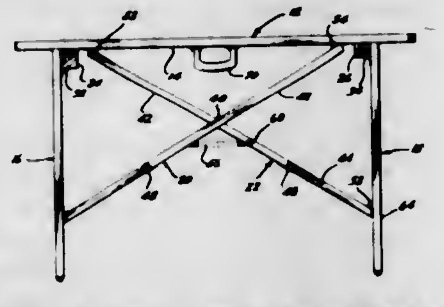
1. A cluster table set comprising a plurality of generally similar tables each having a table panel member and an upright supporting stem member, said stem members being connected to the respective panel members to support the latter at different elevations, at least some of said panel members having an inwardly extending slot proportioned in width for horizontal straddling engagement with the stem member of another table, thereby enabling an adjustable, laterally overlapped and clustered positioning of the tables, with their stem and panel members thus engaged, upon relative movement of said stem members in said slots.

3,182,614
SAFETY SEAT
Scott McLean, Bowling Green, Ky., assignor to L. F. Strassheim Company, Bowling Green, Ky., a corporation of Kentucky
Filed July 16, 1964, Ser. No. 383,176
1 Claim. (Cl. 108—118)



A collapsible seat comprising a support frame including an outer pair of supporting legs and an inner pair of supporting legs, pin means pivotally interconnecting adjacent legs in said outer and inner pair of supporting legs, said pin means being located between the ends of said supporting legs, a pair of seat rails, one of said seat rails connecting together the upper outer ends of said outer pair of legs, the other seat rail connecting together the upper outer ends of said inner pair of legs, each of said supporting legs having a rounded and slightly upwardly flared lower outer end portion, the flared portion of each supporting leg being in a plane parallel to the planes containing the flared portions of the other legs, said flared portions of said legs spaced from the extreme lower end thereof constituting the bearing surface on which said seat rests when used, a brace member extending between each pair of the said legs and being attached thereto immediately inwardly and upwardly of said rounded and slightly upwardly flared lower end portions of said legs, a flexible seat member of a width for a major portion of its length greater than the outer dimension of said outer pair of supporting legs extending between said seat rails and having a relatively fixed end portion attached to the seat rail connecting said inner pair of supporting legs and having a relatively free end portion extending over and partially encircling the other one of said seat rails and terminating in a welt which extends between the said outer legs adjacent the upper end portion thereof, the said upper end portion of each of said outer legs having a row of spaced holes therein, each hole extending completely through the leg in which it is formed and being spaced from the ends and other sides of the leg, the said row of holes extending lengthwise of said outer legs in which they are formed, the said holes in each row of said holes being aligned in pairs, a dowel pin of a length greater than the outer dimensions of said outer pair of supporting legs inserted through the said welt in said flexible seat member and being selectively insertable through an aligned pair of said holes in the upper end portion of the said outer legs in which said holes are formed, said seat being so constructed and arranged that on pivotal collapse of said frame, said seat rails limit further collapse prior to breaking of said dowel pin by engagement thereof with the inner pair of legs when said dowel pin is in the pair of holes immediately above said pin means.

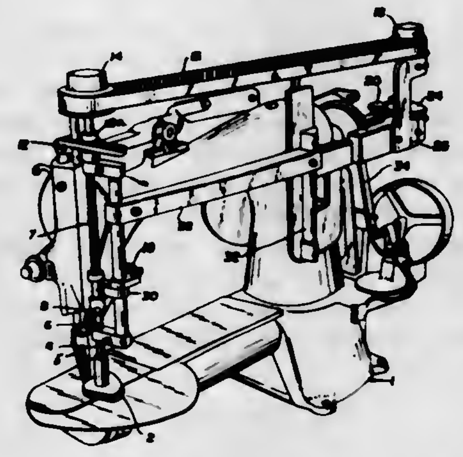
3,182,615
FOLDABLE FURNITURE UNIT
Kenneth C. Mees, R.R. 3, Box 42, Albion, Mich.
Filed Mar. 22, 1963, Ser. No. 267,293
9 Claims. (Cl. 108—131)



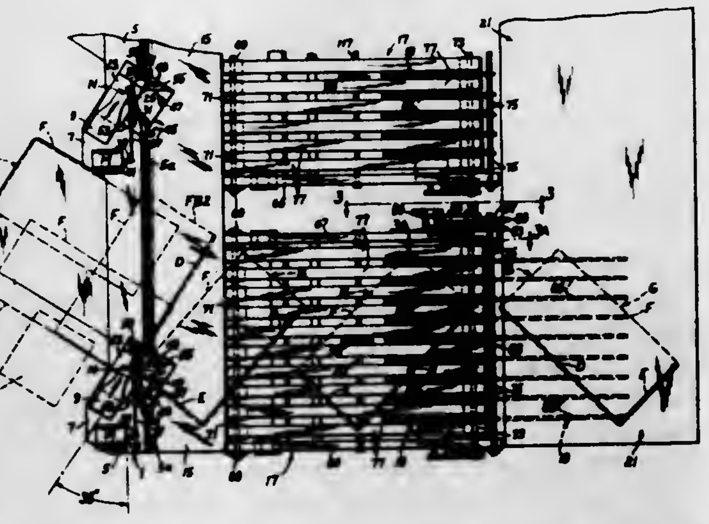
1. A foldable furniture unit comprising a top member, a pair of downwardly extending legs pivotally connected at spaced points to said top member such that said legs can be folded toward each other and toward said top member, a pair of cross braces extending diagonally between said top member and said legs and intersecting each other in sidewise spaced parallel planes, each of said cross braces having one end thereof pivotally connected to one respectively of said legs and the other end pivotally connected to said top member, said cross braces each having a pivotal connection therein such that said cross braces can be folded toward said top member with said legs, and means connecting said pair of cross braces together and releasably holding same extended when said furniture unit is in unfolded position.

3,182,616
SEWING MACHINE WITH PATTERN ATTACHMENT
William C. Cremer, Reading, Pa.
Filed Oct. 11, 1962, Ser. No. 229,834
2 Claims. (Cl. 112—2)

1. In combination with a sewing machine having a drive shaft, a head and a vertically movable presserfoot extending downwardly thereof, a driven shaft extending parallel to and adjacent said presserfoot, an element shaped in the form of a patch to be sewn on a garment and rigidly secured to the bottom of said shaft, pivotal means on which said driven shaft is journalled including spring means for urging said element into contact with said presserfoot and for swinging said driven shaft toward and away from said head of the machine, a driven pulley connected to said driven shaft, a driving pulley located on the opposite end of the sewing machine from said driven pulley, a belt connecting said driving pulley to said driven pulley, said driven pulley being driven by said sewing machine drive shaft, a return spring for yieldingly urging said driven shaft downwardly, and means for lifting said pivotal means and driven shaft against the action of said return spring.



3,182,617
BAG APPARATUS
Howard M. de Laittre, Houston, Tex., assignor to Bemis Bro. Bag Company, Minneapolis, Minn., a corporation of Missouri
Filed Dec. 13, 1962, Ser. No. 244,420
4 Claims. (Cl. 112—10)



1. Apparatus for sewing folded textile bag blanks to form a side seam and a bottom seam on each blank thereby to form each blank into a bag, and for conveying away and stacking the completed bags, comprising a table, a sewing machine on the table for sewing said side and bottom seams, said sewing machine being adapted to have a folded blank fed therethrough first to sew one of said seams and then turned 90° to sew the other of said seams thereby to form the folded blank into a bag, said table having a rear edge over which bags are discharged, a slide extending down from said rear edge, a conveyor having one end constituting its receiving end located under the lower end of the slide for receiving bags sliding down the slide and extending rearward from

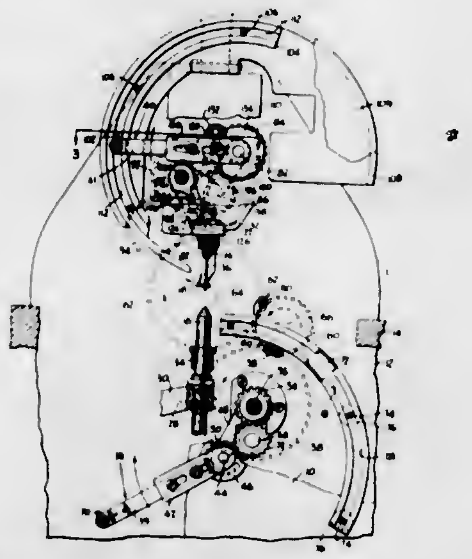
the table generally perpendicular to the rear edge of the table, said sewing machine being positioned on the table at an acute angle to the rear edge of the table in a plane intermediate the sides of the conveyor with its needle toward said rear edge and its throat opening toward said rear edge, said sewing machine having its bed plate located above the top of the table, guide means extending down from the bed plate over the slide, each bag after the sewing of the said other seam being positioned at an acute angle relative to the rear edge of the table spread out over the slide with one corner of the bag draped over the guide means and the lower portion of the bag lying on the conveyor, means on the bed plate of the sewing machine at the rear of the needle of the sewing machine for cutting the chain of thread trailing a completed bag, each bag, upon cutting of the chain of thread, sliding down the slide and being carried rearward by the conveyor in flat unrumped condition lying on the conveyor at an acute angle to the direction of movement of the conveyor, and means for picking up bags as they approach the other end of the conveyor and stacking them.

3,182,618
BUTTON STITCHING MACHINES

Mathias Pedersen, Valley Stream, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey

Original application Apr. 5, 1960, Ser. No. 20,142, now Patent No. 3,132,613, dated May 12, 1964. Divided and this application Apr. 30, 1963, Ser. No. 276,842

2 Claims. (Cl. 112—110)



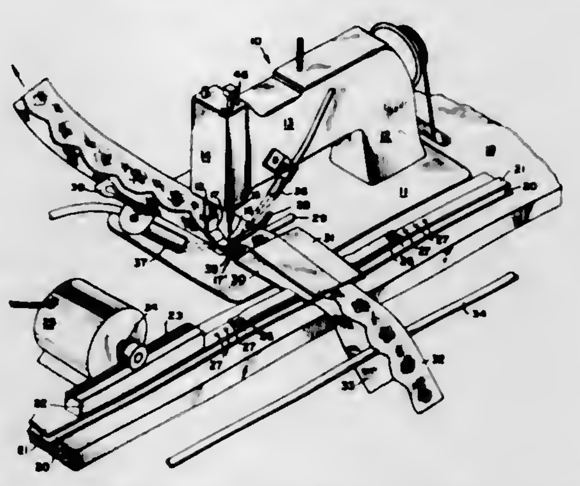
1. In a button sewing machine having a movable work supporting table for supporting material to which a button is to be sewed, a button holding member for holding a button in position to be sewed to said material, and means comprising opposed axially aligned needle bars for projecting a double pointed needle and a thread back and forth through selected holes in said button and said work to attach said button to said work, a needle guiding device for constraining said needle to move along a predetermined straight line path of movement through a selected button hole and said material, said device comprising a finger adapted to be moved laterally into a position closely adjacent said needle, means mounting said finger for movement into said position only during the travel of said needle in one of said needle bars to prevent flexing of said needle out of its normal straight line path of travel upon engagement with said material and in passing through a hole of said button, and operating means for controlling the movement of said finger into said position when said needle is to be moved downwardly by said one of said needle bars through said button and into said material.

3,182,619
AUTOMATIC GUIDED SEWING MACHINE

John Sally, West New York, N.J., assignor to Superior Petticoat Co., Inc., New York, N.Y., a corporation of New York

Filed Aug. 21, 1962, Ser. No. 218,246

7 Claims. (Cl. 112—203)



1. In a sewing machine comprising a stitching mechanism, work feeding apparatus for continuously disposing the irregular edge of at least one fabric, to be joined to at least another fabric, in sewing juxtaposition relative to the stitching mechanism thereof, comprising:

guide means particularly adapted to receive said fabrics and individually guide the same forwardly of said machine as the fabrics are fed towards said stitching mechanism;

reversible reciprocating means for incrementally reciprocating said guide means laterally of the direction of advance of said fabrics, enabling the irregular edge of that one of said fabrics presenting the same to be continuously disposed in sewing juxtaposition relative to said stitching mechanism, to join said fabrics together along a line of stitching continuously substantially adjacent the said irregular edge;

means responsive to the varying lateral position of said irregular edge relative to said stitching mechanism for reversibly reciprocally actuating said reciprocating means; and

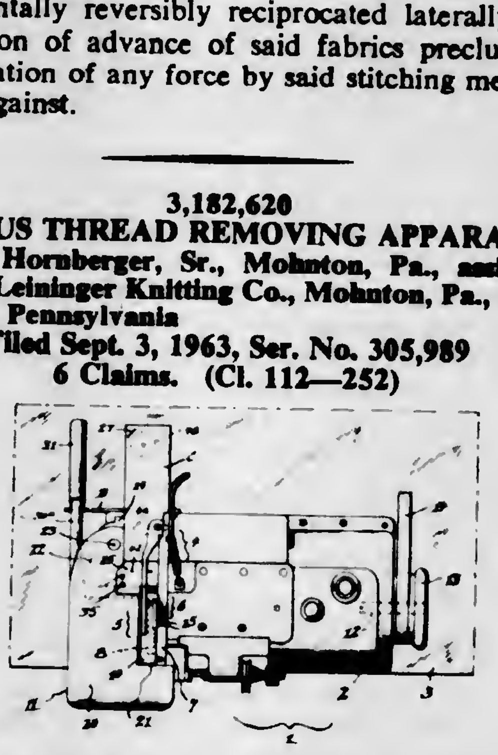
means responsive to the position of said stitching mechanism relative to said fabrics for causing the reversible reciprocal movements of said reciprocating means to occur in increments, enabling said fabrics to be incrementally reversibly reciprocated laterally of the direction of advance of said fabrics precluding the application of any force by said stitching mechanism thereagainst.

3,182,620
SURPLUS THREAD REMOVING APPARATUS

Harry M. Hornberger, Sr., Mohnton, Pa., assignor to Wm. G. Leininger Knitting Co., Mohnton, Pa., a corporation of Pennsylvania

Filed Sept. 3, 1963, Ser. No. 305,989

6 Claims. (Cl. 112—252)



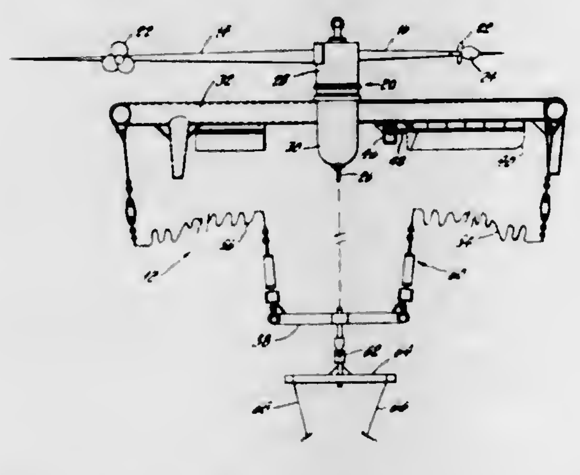
1. An apparatus of the character described which comprises in combination; a sewing needle; means for feeding a work piece to the needle so as to effect a stitching operation; a surplus thread removing cutter unit having a horizontally disposed blade provided with a cutting area defining surface portion arranged in interposed substantially coplanar relation along a horizontal path of travel of the work piece beyond the location where the stitching operation is performed and in such manner as to enable the work piece to be contactingly moved along said surface portion; and means for effecting operation of said cutting unit.

3,182,621
LIFT-APPENDAGE FOR UNDERWATER VEHICLE

Theodore F. Fletcher, Los Angeles, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 22, 1961, Ser. No. 133,277

22 Claims. (Cl. 114—16)



1. An underseas lift-appendage for an underseas vehicle comprising, in combination: support means comprising a hub assembly and a support framework, said hub assembly having a casing with a fixed section and a rotatable section and said support framework being affixed to and extending outward from said fixed casing section; rotor means adapted to provide lift and thrust forces for said lift-appendage and comprising a plurality of rotor blades and drive means, the surface and cross-section of each of said blades being similar to that of an air foil, each respective drive means being mounted upon and arranged to drive a different one of said blades, said blades being attached to said rotatable casing section at equally spaced points, and said rotor means operating within the underseas medium; suspension means affixed to said support framework for suspending said underseas vehicle from said support framework; and means for supplying power to said drive means.

3,182,622
MERCURY TILTING SYSTEM FOR WATERCRAFT

Jacques Yves Cousteau, Paris, Seine, France, Emile Gagnan, Montreal, Quebec, Canada, and Andre Laban and Jean Mollard, Marseille, Bouches-du-Rhone, France, assignors to La Spirotechnique

Original application July 12, 1960, Ser. No. 42,391, now Patent No. 3,103,195, dated Sept. 10, 1963. Divided and this application June 7, 1963, Ser. No. 286,227

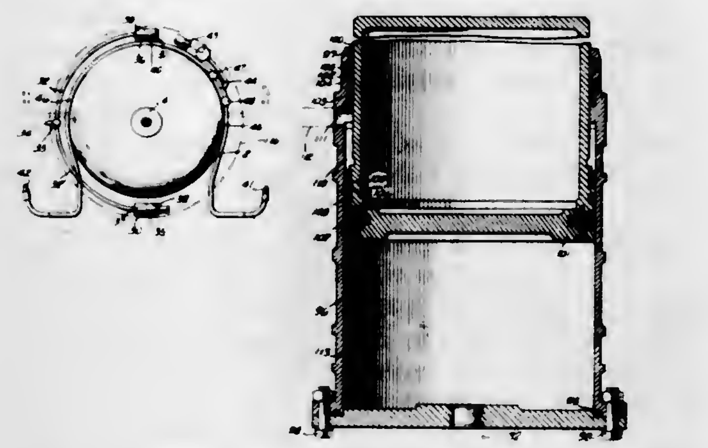
Claims priority, application France, July 22, 1959, 800,999, Patent 1,241,757

4 Claims. (Cl. 114—16)

1. A mercury tank system for tilting a submersible craft comprising a water-tight hull and shroud means mounted on and extending around said hull and open to the water surrounding said vessel, said mercury tank system comprising

a set of two cylinders mounted on the outside of said hull and substantially in alignment with the fore-and-aft axis of the vessel,

a piston movable in each of said cylinders, said piston defining in the corresponding cylinder by one of its sides a chamber containing mercury and being in contact on its other side with a driving liquid,



a pipe disposed externally of said hull and connecting both said chambers, a three-way valve in said pipe for selectively establishing communication between said chambers or from said chambers with the water surrounding the vessel,

and means located within said hull for putting the driving liquid for each of the pistons under pressure and for controlling said three-way valve.

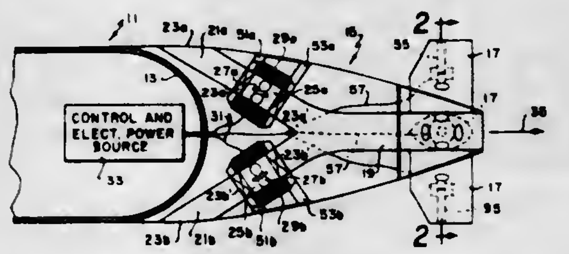
3,182,623
STRUCTURE FOR SUBMARINE JET PROPULSION

Guenther Wolfgang Lehmann, Annapolis, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Oct. 28, 1963, Ser. No. 319,619

2 Claims. (Cl. 114—16)

(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A submarine structure comprising:

a rigid pressure hull;

a non-pressure hull tail section secured to said pressure hull and extending therefrom;

said tail section comprising first and second rigid portions and first and second deformable portions, said first rigid portion being connected to said pressure hull by said first deformable portion, and said second rigid portion being connected to said first rigid portion by said second deformable portion; and

jet stream propulsion means housed in said tail section and comprising jet stream impeller means mounted in said first rigid portion and connected by deformable duct means to an intake in said tail section and to a jet stream outlet in said second rigid portion.

3,182,624
ANCHORS

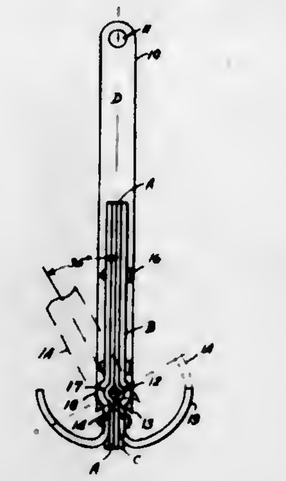
Charles A. Winslow, 205 Martinique Ave., Tiburon, Calif.

Filed Dec. 6, 1962, Ser. No. 242,811

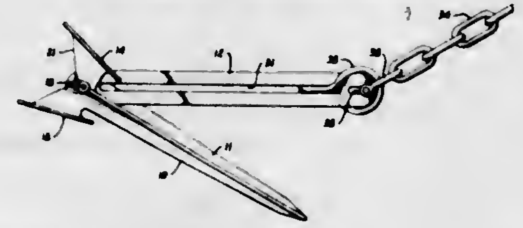
8 Claims. (Cl. 114—208)

1. An anchor comprising a shank having one end with a cable attachment and a second end having a central pivot opening; a pivot bar extending through said pivot opening; and a pair of fluke assemblies supported on said pivot bar, one assembly on each side of said shank, each

assembly comprising a pair of flat strips bent into a J shape as seen in cross-section taken transverse to the plane of said bar, said strips being secured to each other on opposite sides of said bar.

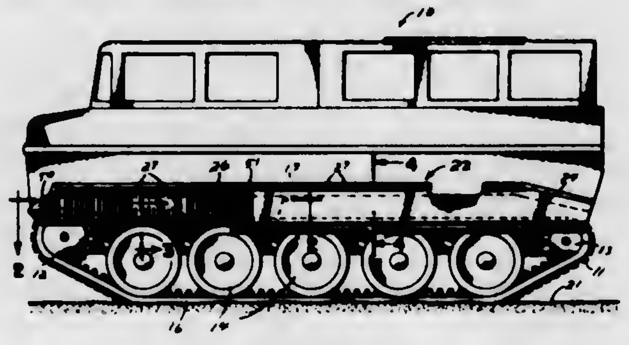


3,182,625
ANCHOR CONSTRUCTION
Wilfrid Gordon White, Portland, Maine, assignor to The Eastern Company, a corporation of Connecticut
Filed Feb. 3, 1964, Ser. No. 341,950
3 Claims. (Cl. 114—208)



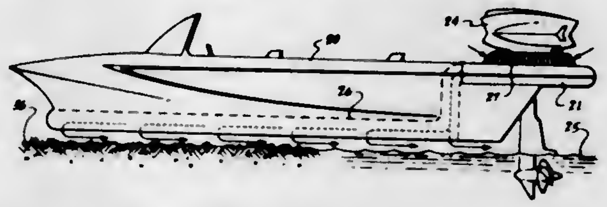
1. In an anchor of the pivoting fluke type having a shank, the improvement comprising an aperture at the outer end of the shank for attachment of a shackle for connection to an anchor chain, a slot extending along the length of the shank, said slot being perpendicular to the pivot axis of the fluke, and a ring slidable in said slot and connectable to said shackle.

3,182,626
AMPHIBIOUS TRACKED VEHICLE
Donald L. Stephens, Renton, Wash., assignor to Pacific Car and Foundry Company, Renton, Wash., a corporation of Washington
Filed June 29, 1961, Ser. No. 120,734
8 Claims. (Cl. 115—1)



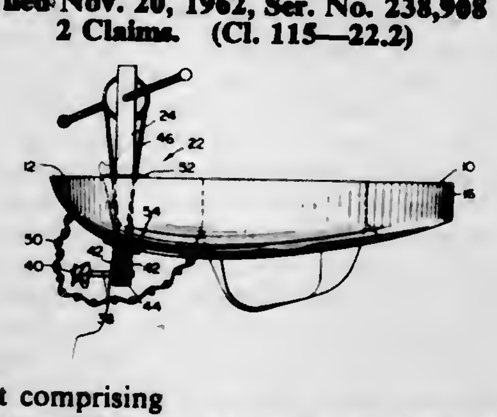
1. In an amphibious vehicle employing endless tracks for propulsion at each of the two sides of the vehicle, a vane structure overlying at least a portion of the upper return run of the tracks and so formed as to capture water carried forwardly by said return run, redirect said captured water, and propel the same rearwardly along the sides of the vehicle to augment the propulsion force obtained from the lower run of the track, at least a portion of said water being redirected from a location near the forward portions of said tracks.

3,182,627
OUTBOARD GEM
Scott C. Rethorst, 1661 Lombardy Road, Pasadena, Calif.
Filed May 13, 1963, Ser. No. 280,764
10 Claims. (Cl. 115—1)



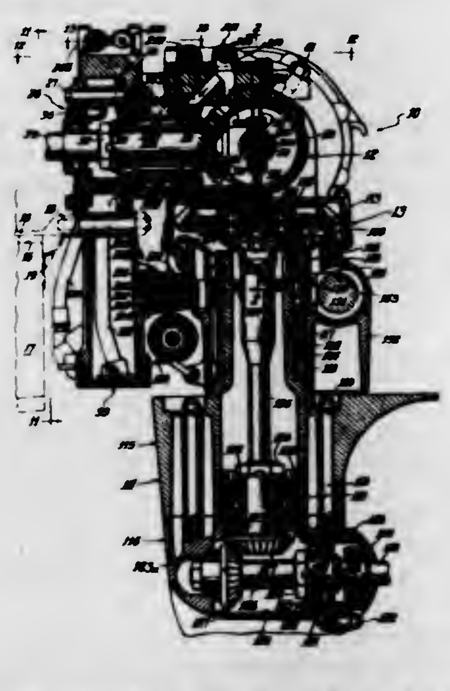
1. An amphibious GEM, comprising:
a boat hull;
sectionalized downwardly directed nozzle means disposed peripherally around the boat hull to provide an air cushion between the hull and a water or land surface underneath said hull as well as thrust for translation;
means for sectionally closing said nozzle means;
a motive power source;
a fan connected to said power source for delivering pressurized air to said nozzle means to lift said hull completely from the water or land surface;
a water propeller pivotally mounted for operation under water and for retraction from the water to a position above the surface;
and means for selectively connecting and disconnecting said propeller and said power source permitting said power source to drive said fan independently from the position of said propeller.

3,182,628
TOY BOAT
Sebastian Avellino, 631 American Legion Highway, Roslindale, Mass.
Filed Nov. 20, 1962, Ser. No. 238,908
2 Claims. (Cl. 115—22.2)



1. A boat comprising
an annular solid body made of low density material and having a hydrodynamically shaped bow,
a seat suspended beneath the body under its open central portion and upon which a rider sits straddling the seat with his legs extending downwardly and with the lower portion of his body submerged and with his head, shoulders and arms extending through the central portions and disposed above the annular body,
said seat being adapted to support the rider facing toward the bow,
a mast having a portion extending upwardly of the body and a second portion extending below the body and disposed at the forward portion of the body and in front of the rider when seated on the seat,
a pair of crank handles mounted on the mast above the upper surface of the body and connected by a horizontal shaft extending transversely of the body of the boat,
said handles being positioned to be turned about the shaft axis by the hands of the rider seated in the seat,
and propelling means mounted on the body and operatively connected to the shaft for propelling the boat when the cranks are turned, said propelling means being disposed forward of the seat and pulling the boat forward through the water when the handles are turned in one direction and pushing the boat rearwardly when the handles are turned in the other direction.

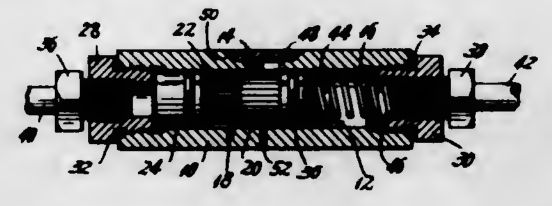
3,182,629
DRIVE UNIT FOR BOATS
Kenneth M. Armantrout and Donald W. Kelbel, Muncie, Ind., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 5, 1961, Ser. No. 115,012
25 Claims. (Cl. 115—41)



1. A marine outboard drive unit for a boat having an inboard engine and an outboard propeller comprising the combination of a series of three interconnected casings containing a continuous drive train connecting the engine to the propeller, the first of said casings defining a longitudinal axis and being mounted on the engine and extending through a rear portion of the boat, the connection between said first and second casings being a pivotal connection through a horizontal axis lateral to the longitudinal axis defined by said first casing; said drive train including a drive shaft mounted in said first casing and adapted to be driven by the engine, a propeller shaft in said third casing for driving the propeller, and hydraulically actuatable forward and reverse drive means for completing forward and reverse drive connections between said drive shaft and said propeller shaft for driving the boat in forward and reverse directions; said forward and reverse drive means including an idler shaft, forward and reverse bevel gears rotatably mounted on said idler shaft and in constant mesh with a drive bevel gear mounted on said drive shaft, hydraulically actuatable clutches for selectively clutching the forward or reverse bevel gears to the idler shaft and means for drivingly connecting the idler shaft to the propeller shaft.

3,182,630
PRESSURE RESPONSIVE INDICATOR
David Martin Claeys, Orange, Conn., assignor to Orange Research, New Haven County, Conn., a company of Connecticut
Filed Sept. 9, 1963, Ser. No. 307,501
4 Claims. (Cl. 116—70)

1. A compact, small-diameter cylindrical indicator device comprising, in combination:
(*a*) an elongate cylinder having a length greatly in excess of its bore,
(*b*) a solid cylindrical piston movable in the cylinder between two positions,
(*c*) said piston having substantially similar axially spaced cylindrical bearing portions at its two ends, which have a combined length substantially in excess of the piston diameter and which closely slidably fit the piston,
(*d*) shouldered end stop threaded into the ends of the cylinder and engageable with the ends of the piston, to prevent movement of the latter beyond the said two positions
(*e*) sealing rings clamped by the end stops between shoulders thereof and the ends of the cylinder, effecting a sealing of the cylinder ends
(*f*) one of said end stops having a central through bore and an annular shoulder in said bore
(*g*) means for yieldably holding the piston in, and for moving the piston to one of said positions, said means including a compression coil spring having one end engaged with the said annular shoulder in the bore of the end stop

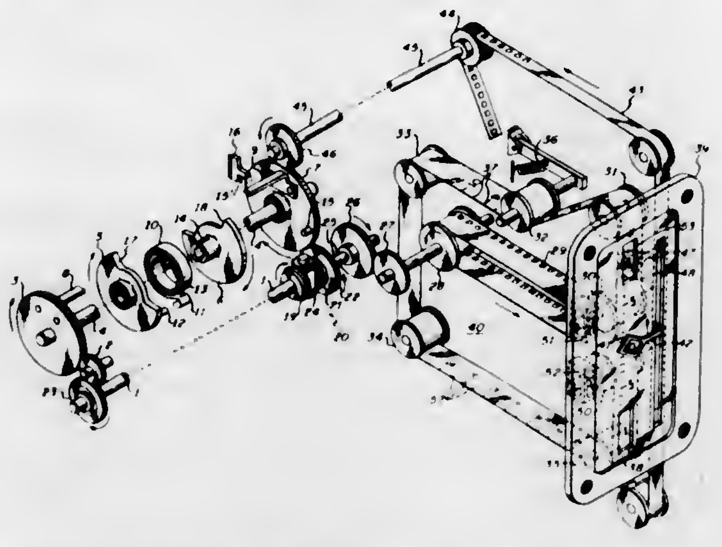


(*h*) fluid fittings at both ends of the cylinder for introducing fluid into the two ends of the same to subject the opposite ends of the piston to oppositely acting fluid pressures,
(*i*) an indicator device actuated by the piston, providing indications of the positions of the same in the cylinder thereby to indicate the pressure differential acting on the piston,
(*j*) said cylinder having a window in its side substantially midway of the ends, to enable a portion of the piston to be viewed,
(*k*) said indicator device comprising indicia on the said portion of the piston, said indicia being visible through the window for at least one position of the piston,
(*l*) said piston having two annular resilient sealing means disposed one at each of its two ends,
(*m*) the indicia-carrying portion of the piston being of reduced diameter and being disposed intermediate the said annular sealing means,
(*n*) said cylinder having a vent opening in its side wall, disposed in a location which places it intermediate the two sealing means for all positions of the piston.

3,182,631
DUAL SCALE SHAFT ANGLE INDICATOR
Ronald J. Gomes, Huntington Station, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed Nov. 9, 1962, Ser. No. 236,648
10 Claims. (Cl. 116—115)

1. Means for drivably coupling a first shaft to only one of second and third shafts depending upon the total angular displacement of said first shaft, said means comprising
an analogue storage mechanism having an input member resiliently coupled to an output member, said output member rotating in synchronism with said input member when said output member is not restrained, said input member being angularly displaceable whether or not said output member is restrained.
said first shaft being drivably coupled to said input member and said output member being drivably coupled to said second shaft,

means for restraining said output member when the angular displacement of said output member corresponds to an angular displacement of said first shaft in excess of a predetermined amount,

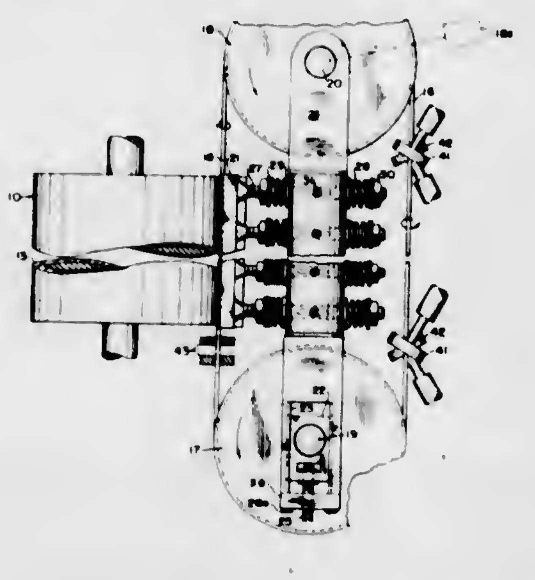


and a mechanical differential having two inputs and an output, said first shaft being drivably coupled to one input of said differential to drive said one input at a rate in a first sense, and said output member being drivably coupled to the other input of said differential to drive said other input at said rate but in the opposite sense, said output of said differential being drivably coupled to said third shaft.

3,182,632
COATING APPARATUS WITH IMPROVED DOCTOR MEANS

Janis Alfred Vazdikis, Easton, Pa., assignor to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 5, 1962, Ser. No. 171,105
4 Claims. (Cl. 118—104)

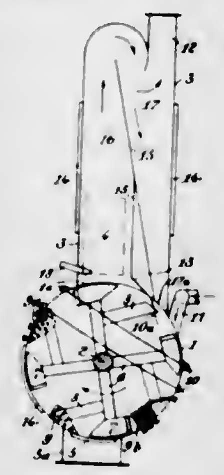


1. Apparatus for coating a traveling web comprising
(*a*) a coating station,
(*b*) means for conveying a web continuously past said coating station and web supporting means engaging the back surface of the web in the region of said coating station and providing continuous support for said traveling web,
(*c*) means for applying a coating composition to the outer surface of said traveling web,
(*d*) said coating station being provided with a doctor means positioned to bear against the outer surface of said traveling web in the region of said web supporting means to meter and smooth the coating composition on said web,
(*e*) said doctor means comprising an endless cylindrical flexible wire element forming a doctoring edge,
(*f*) said flexible wire element being disposed generally transversely of said traveling web and engaging said web across its full width,
(*g*) said flexible wire element having an effective length not substantially less than twice the width of said traveling web,
(*h*) means for controllably tensioning said wire and for moving said flexible wire element continually along its longitudinal axis and across the surface of said traveling, coated web,
(*i*) means for guiding said flexible wire element in its transverse movements and for supporting said flexible wire element in predetermined pressure engagement with said surface of said traveling web,
(*j*) means for cleaning said flexible wire element of coating composition cooperating with and movable relative to said flexible wire element, and
(*k*) at least two wheels rotating in opposite directions, said wheels engaging opposite sides of the moving flexible wire element to impart rotary movement thereto about its own longitudinal axis.

3,182,633
METHOD AND APPARATUS FOR ENVELOPING GRANULAR AND/OR SHORT FIBRED SUBSTANCES IN COATINGS OF OTHER SUBSTANCES, PREFERABLY IN THIN FILMS OF SYNTHETIC PLASTIC SUBSTANCES

Wilhelm Lödige, Elsener Strasse 9c; Fritz Lödige, Elsener Strasse 9b; and Josef Lücke, Im Lohfeld 13; all of Paderborn, Germany

Filed May 3, 1962, Ser. No. 193,072
Claims priority, application Germany, May 16, 1961, L 38,986/61
10 Claims. (Cl. 118—417)

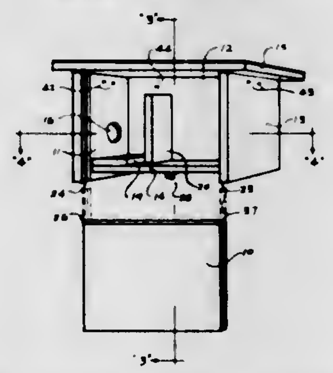


1. An apparatus for enveloping the particles of granular materials and fibrous materials with coatings of other substances, starting with a solution of the coating substances, removing the solvent from the mixture, and maintaining the structure of the granular and fibrous materials, comprising, in combination, a mixing drum which is mounted substantially horizontally, at least one coaxially arranged rotatable shaft extending through said mixing drum, carrier arms arranged helically on said shaft and at right angles thereto, ploughshare-like mixing members which are mounted on the ends of said carrier arms and extend close to the drum wall, friction members which are mounted on the inner wall of said mixing drum parallel to the direction of movement of said mixing members between each two mixing members and which cooperate with the lateral faces of the mixing members, a drive means for said shaft which moves said mixing members at a peripheral speed of about 2.5 to 6 metres per second, a feed aperture in the upper portion of said mixing drum, means for feeding the solution of the coating substance into the mixing drum, and a closable discharge aperture in the lower portion of said mixing drum, at least one air-injection aperture which is mounted above said shaft at the side of said mixing drum past which aperture said mixing members travel downwards, a ventilating shaft on the upper part of said mixing drum connecting therewith, knife-like cutting members which run in the direction of movement of said carrier arms and which are mounted on said arms close to said mixing members and between the same and said shaft extending through the mixing drum, and dividing and deflecting rods which are mounted below said ventilating shaft between each two mixing members and which divide up the material being mixed during its movement, remove it from the drum wall and deflect it towards the shaft extending through the mixing drum.

3,182,634
OBSTRUCTED ENTRANCE TYPE BIRDHOUSE

Grace B. Myaida and Shogo J. Myaida, both of 21 Searingtown Road, Albertson, N.Y.

Filed Dec. 10, 1963, Ser. No. 329,550
7 Claims. (Cl. 119—23)

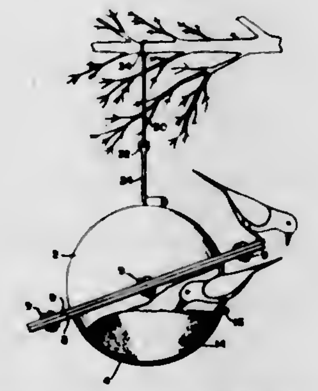


2. A birdhouse comprising wall means defining an enclosed chamber, a portion of said wall means having an orifice for passing small birds, an interior partition extending generally parallel to the portion of said wall means containing said orifice and facing said orifice a distance therefrom generally twice the width of said orifice to separate said chamber into a small non-nesting vestibule area and a larger nesting area.

3,182,635
BIRD FEEDER

James R. Waite, 95 N. Woods Road, Flower Hill, Manhasset, N.Y.

Filed May 17, 1963, Ser. No. 281,196
5 Claims. (Cl. 119—51)

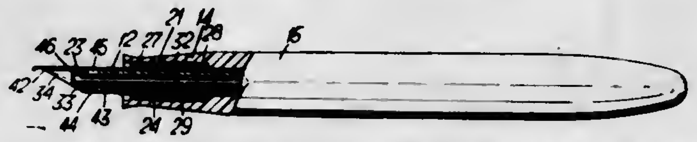


3. In a bird feeder, the combination comprising a hollow spherical container adapted to hold bird seed internally thereof, said container having an opening through the wall thereof, a rigid projection extending externally and integrally of the wall of said container, a rigid rod having one end thereof pivotally connected to said projection, and a flexible line attached to the other end of said rigid rod, said rod forming a vertical axis and a flat circular flange secured to said container and extending outwardly therefrom, said flange lying in a sloping plane making an acute angle with the vertical axis of the rod on the side of the container having said opening and said flange extending above the opening.

3,182,636
FOUNTAIN PEN

Michael Aidan Perry, Gosport, England; Alice Mary Perry, executrix of said Michael Aidan Perry, deceased, assignor to E. S. Perry Limited, Gosport, Hampshire, England, a British company

Filed July 17, 1961, Ser. No. 124,590
3 Claims. (Cl. 120—50)

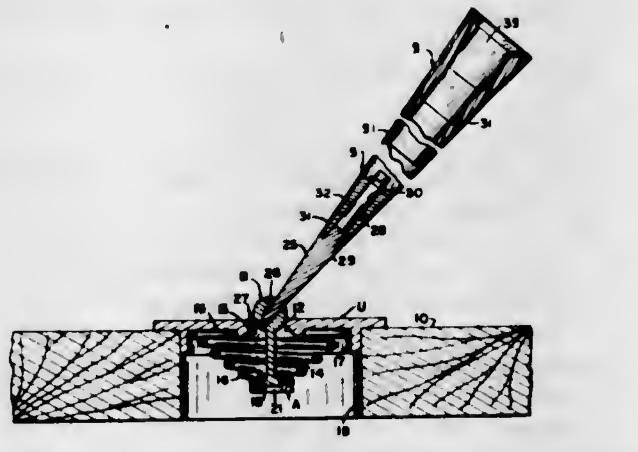


2. In a fountain pen, a reservoir for liquid ink, a writing nib, a feed bar whereover said writing nib lies, said feed bar communicating by one end with said reservoir and having a substantially circular cross-section except for a longitudinal rectangular sectioned groove formed in the surface thereof, said longitudinal groove extending from end to end of said feed bar, a feed member having relieved side surfaces located in the bottom of said longitudinal groove, a longitudinal closure member arranged to be a press fit within said longitudinal groove and to lie above said feed member but entirely within said substantially circular cross-section of said feed bar, said longitudinal closure member and said feed member being of more flexible material than said feed bar and said longitudinal closure member being grooved in that surface arranged to confront a channelled surface of said feed member so as to define a closed longitudinal duct extending, in said feed bar, from the ink reservoir and thereof to a point short of the other end of said feed bar, said closure member being transversely apertured adjacent its end remote from said reservoir in register with the adjacent end of said longitudinal duct so as to provide communication between said duct and the under surface of said writing nib, said feed member having an upwardly curved end projecting forwardly of said feed bar from said longitudinal groove and constituting a support for said writing nib, said end of said feed member having lands, with grooves therebetween, on that surface arranged to confront said writing nib, said grooves communicating with said longitudinal duct to improve the flow of ink to said nib.

3,182,637
HOLDER FOR PENS AND THE LIKE

Charles U. Deaton, Jefferson County, Colo. (Genesee Mountain Rte. 3, Golden, Colo.)

Filed May 11, 1962, Ser. No. 194,012
16 Claims. (Cl. 120—108)

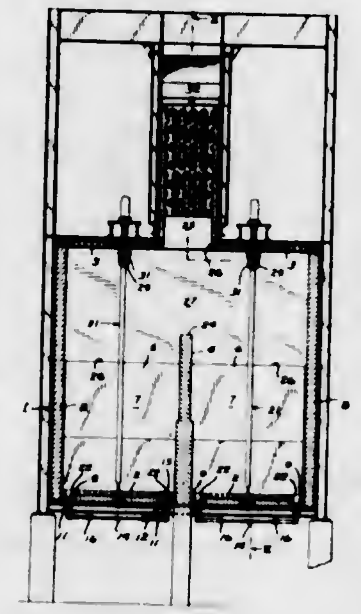


1. A holder for pens and the like comprising a support having an aperture therein; a ball rotatable in the upper

edge of said aperture and provided with a pin extending above said support, said pin being provided with means for receiving a pen and the like and said means being rotatable with respect to said pin; a stem depending from said ball and extending through said aperture, said stem being disposed angularly with respect to said pin; resilient means extending between the lower end of said stem and the underside of said support; and means for permitting relative rotation between said ball and said resilient means.

3,182,638
FIRED HEATER

Frank A. Lee, Westwood, N.J., Peter von Wiesenthal, New York, N.Y., and Kenneth R. Wagner, Jersey City, N.J., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Feb. 19, 1963, Ser. No. 259,564
3 Claims. (Cl. 122—240)



2. A heater comprising

a rectangular setting having a floor and a roof,

at least one interior longitudinal wall projecting upward from the floor,

at least one interior transverse wall projecting upward from the floor,

said walls and the setting defining at least two longitudinal rows of cells in the setting,

each cell having a pair of side walls faced with refractory and disposed oppositely relative each other and trough means immediately adjacent, approximately coextensive and parallel to each of the side walls longitudinally relative the setting,

a plurality of short burst flame burners disposed to inject flame into each of the troughs to fill the troughs so that hot combustion gases pass in sweeping relationship over substantially the entire surface of each of the side walls for heating the refractory to a uniform temperature,

each of the interior walls having an upper end spaced from the roof to define a common passage communicating among the cells,

a flue housing connected to the roof of the setting and defining a flue passage,

the roof describing a flue port communicating the common passage with the flue passage to exhaust products of combustion from all of the cells therethrough,

a single row of aligned vertical tubes disposed in each of the cells and spaced approximately midway between a pair of opposite side walls,

each of the trough means having means on the side adjacent the associated tubes to divert the hot combustion gases so that they will not impinge thereon,

each of the tubes spaced apart sufficiently so that each receives radiation evenly around the periphery thereof from both of the side walls over substantially the entire length of the tube between the side walls,

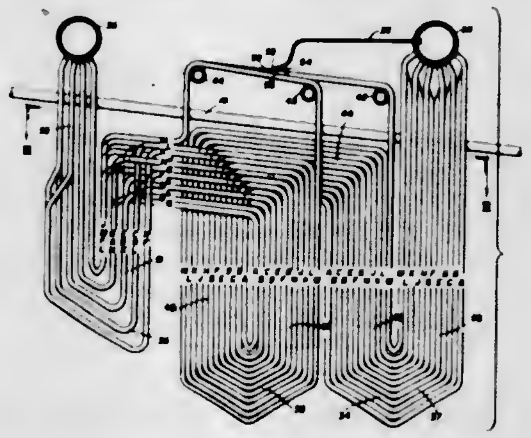
means connecting the tubes in each row of aligned tubes in flow series,

at least one of the tubes of each row of aligned tubes connected serially with a tube in the next adjacent cell whereby a process fluid is passed in series through adjacent cells,

each row of aligned vertical tubes constituting a flow pass, the interior walls permitting independent pass control.

3,182,639
STEAM GENERATING UNIT

Arthur J. Alix, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Sept. 23, 1963, Ser. No. 310,702
4 Claims. (Cl. 122—478)



2. A steam generating unit, comprising

(*a*) an elongated combustion chamber having a gas offtake at one end,

(*b*) a plurality of superheater tube platens hanging in the combustion chamber at the said one end and formed in a first and a second loop, the said first loop being located closer to the combustion chamber than the second loop,

(*c*) an inlet header located outside the chamber to which one end of each superheater tube is connected,

(*d*) an outlet header located outside the chamber to which the other end of each superheater tube is connected,

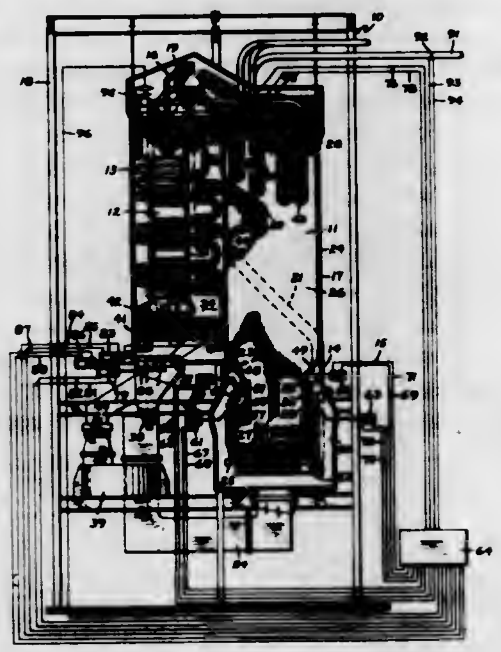
(*e*) means passing at least a portion of the steam in the outside tube of the second loop directly to the second loop from the inlet header,

(*f*) and means passing all of the steam in the other tubes of the second loop through the first loop.

3,182,640
STEAM GENERATING UNIT

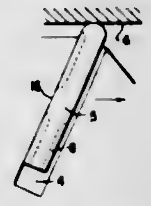
Earle C. Miller, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts
Continuation of abandoned application Ser. No. 168,060, Jan. 23, 1962. This application May 19, 1964, Ser. No. 370,756
2 Claims. (Cl. 122—479)

2. A steam generating unit, comprising a vertically-elongated combustion chamber having a first set of opposed walls of similar heat-exchange characteristics and a second set of opposed walls having substantially different amounts of heat exchange surface, a pass connected to the upper end of the chamber, a convection superheater located in the pass, fuel-burning apparatus located at the lower end of the chamber for producing a mass of hot gas, the gas passing upwardly through the chamber and through the pass to flow in heat exchange relationship to the convention superheater, means to by-pass gas around the said convection superheater, and regulating means associated with the fuel-burning apparatus to control the degree of diffusion of the gas across the chamber, the said regulating means causing the gas to be concentrated adjacent the portion of the chamber intermediate the walls of the second set at low load and causing the gas to be diffused evenly between the walls of the second set at high load to aid in maintaining the temperature of superheated steam at a pre-determined value, the concentration of gas at a given load being the same throughout a given vertical plane extending between the walls of the first set in a direction parallel to the walls of the second set.



3,182,641
ROTARY PISTON ENGINE

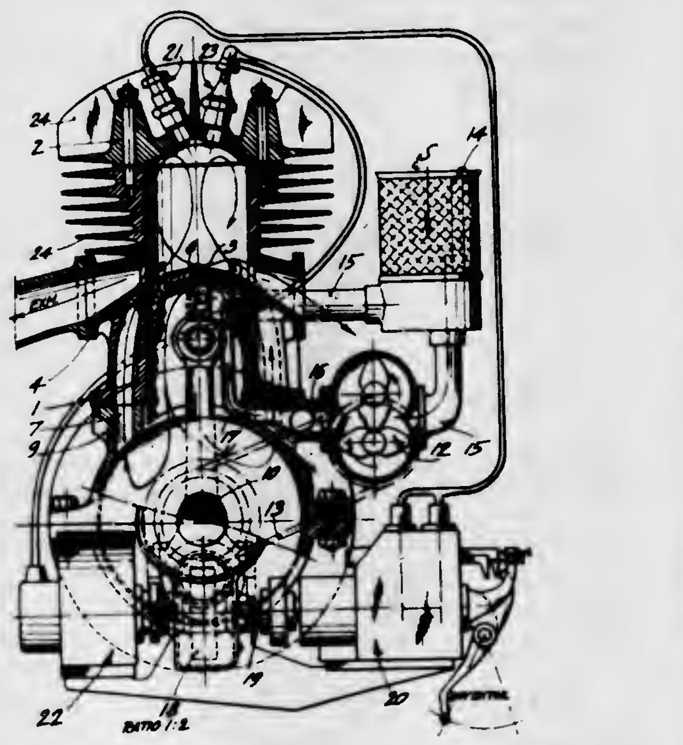
Heinz Lamm, Stuttgart-Bad, Cannstatt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Jan. 26, 1962, Ser. No. 169,028
Claims priority, application Germany, Feb. 1, 1961, D 35,305
7 Claims. (Cl. 123—8)



1. A construction of the sealing members which are movable substantially in the radial direction within grooves disposed substantially parallelly to the axis within pistons of rotary engines, especially within pistons of rotary piston internal combustion engines and which slide with the outer end surfaces thereof against the cam track of the piston provided within the housing of the engine, the improvement essentially consisting of first channel means arranged at the front side of a sealing member and extending substantially in the radial direction, said first channel means commencing at the end surface of a respective sealing member facing the groove bottom and terminating in the side wall thereof within the area of the groove walls, and second channel means arranged at the rear side of the sealing member and extending substantially in the radial direction, said second channel means commencing at least directly below the radially outer end face of a respective sealing member and terminating in the side wall of said sealing member at a point radially outward of the said end surface thereof facing said groove bottom, and said channel means being of a length approximately one-quarter to one-half the height of a respective sealing member and being in the form of a plurality of channels spaced with respect to each other and of relatively small dimension in a direction parallel to said axis.

3,182,642
INTERNAL COMBUSTION ENGINE WITH ENFORCED DOUBLE-LOOP SCAVENGING AND OVERALL COOLING

Otto V. Drtina, Cleveland, Ohio
(1052 Kenneth Drive, Lakewood 7, Ohio)
Filed Oct. 20, 1961, Ser. No. 146,661
5 Claims. (Cl. 123—41.35)



1. In an internal combustion engine of a 2-stroke per cycle principle, a combination of a scavenging pump provided by the underside of the engine-piston itself cooperating with a sealed crankcase, said scavenging pump receiving its air from a pressurized inlet air-filter and thru a crankcase inlet port exposed by the bottom edge of the reciprocating piston when it reaches top dead position, and an additional booster-blower driven from the engine and receiving its air from same inlet air filter, with a nozzle directed upwardly toward the underside of the engine piston and a connection from booster-blower to the nozzle to supplement unsufficient volume of scavenging air delivered by the crankcase scavenging pump to the cylinder's scavenging air inlet ports thru pass-over passages, this combination to provide together up to 1½ times more volume of scavenging air than is the cylinder's cubic displacement and precompressed to at least 12 p.s.i. before entering the cylinder space, to improve the efficiency of the scavenging exchange and to cool off the piston.

3,182,643
TWO STROKE CYCLE CRANKCASE SCAVENGED INTERNAL COMBUSTION ENGINE

William L. Tenney, Crystal Bay, Minn.
Filed Apr. 9, 1963, Ser. No. 271,727
11 Claims. (Cl. 123—51)

1. An improved two-cycle crankcase-scavenged internal combustion engine compirsing:

a cylinder having a main cylinder portion and a supplemental cylinder portion directly connected to each other,

a main piston in said main cylinder portion, and a supplemental piston in said supplemental cylinder portion, a main crankcase for said main cylinder portion having a main crankshaft therein,

a main connecting rod connecting the main crankshaft and main piston for oscillating the piston as its crankshaft rotates,

an induction passage into the main crankcase having value means therein for preventing outflow of gases from the main crankcase when gases are compressed therein,

induction ports in the wall of the main cylinder portion positioned to be uncovered by the main piston as it is moved towards the main crankcase by the main connecting rod and main crankshaft, transfer passages connecting said induction ports to the interior of the main crankcase;

said main crankcase and main piston forming the sole pumping means for scavenging said cylinder,

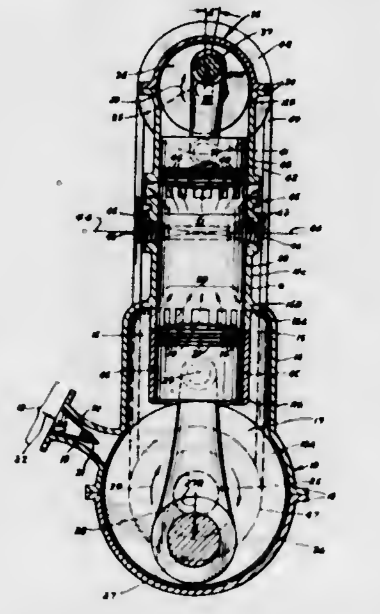
a supplemental crankcase for said supplemental cylinder portion, having a supplemental crankshaft therein,

a supplemental connecting rod connecting the crankshaft and supplemental piston for oscillating said supplemental piston as its crankshaft rotates,

exhaust ports in the wall of the supplemental cylinder portion positioned to be uncovered by said supplemental piston as it moves towards said supplemental crankcase,

mechanical means connecting the main and supplemental crankshafts for driving them in unison and for thereby reciprocating the main and supplemental pistons towards each other and then away from each other,

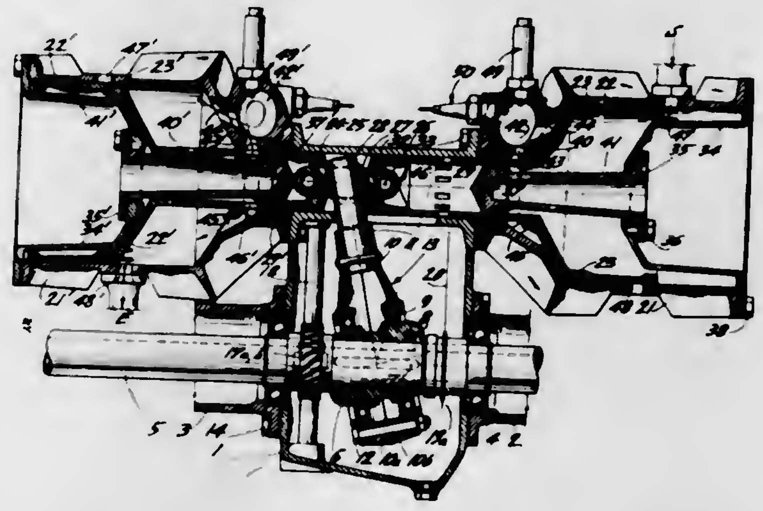
the dimensions of the portions of said cylinder and the amount of movement of the pistons therein being such that the volume displaced by the movement of the supplemental piston is from about 10% to about 50% of the volume displaced by movement of the main piston, an opening for ignition means fuel injecting means or the like in the cylinder and leading into that portion of said cylinder which is between the pistons when they are closest together.



3,182,644
INTERNAL COMBUSTION ENGINE

Otto V. Drtina, Cleveland, Ohio
(1052 Kenneth Drive, Lakewood 7, Ohio)
Filed July 24, 1961, Ser. No. 128,338
2 Claims. (Cl. 123—58)

1. In an internal combustion engine having a main shaft and a pair of cylinder blocks with axially aligned cylinders, inlet and outlet ports in each cylinder intermediate the ends thereof, and pass-over passages communicating from a groove in each small diameter bore with the respective cylinder, an engine housing interconnecting said cylinder blocks and having a bore interconnecting said cylinders for receiving pass-over tubes, a piston-spool extending with one piston into each cylinder, each piston consisting of a large diameter piston part and a small diameter pass-over tube and being hollow and having such an extension as to close one of said ports and clear the other one when it is at one end of its stroke, inwardly acting seal rings between said housing and pass-over tube, a coupler connecting said pistons through their pass-over tubes, ports in the two sides of each pass-over tube, said ports being so located as to open into the cylinder when the piston is at one end of its stroke, said pistons and ports controlling the admission and exhaust to and from said cylinders, and wobble means connecting said piston-spool through a universal joint with the engine main shaft, an air-tight cylinder closing lid fastened to the outer end of each cylinder and reaching far into the cylinder, following closely the inner contour of the hollow reciprocating piston part, and ended inside the piston part with a small flanged opening, a stationary seal-ring holder secured in said opening and extending into the hollow reciprocating pass-over tube, seal-ring means for the inner bore of the pass-over tube being arranged on the end of the stationary holder in a location opposite said inwardly acting seal-rings, all acting together for sealing off the combustion side of the piston from the scavenging side thereof and also sealing off both said sides from the engine housing, a compact scavenging pump space, larger in its piston displacement than the piston displacement of the combustion space, being thereby created between the piston part and the cylinder closing lid and being sealed off from remaining spaces, the cylinder inlet ports being so disposed as to be exposed to the scavenging space by the piston part at the end of its suction stroke to draw in a volume of scavenging air in excess of the piston displacement volume of the combustion side, the ports in the pass-over tube being so disposed as to interconnect the scavenging side with the combustion side at the end of the succeeding stroke to permit the precompressed scavenging air to be passed-over into the combustion space, the precompression ratio of said scavenging pump space being such that the scavenging air is compressed between the piston and the lid during such succeeding stroke to at least 12 p.s.i.



3,182,645
INTERNAL COMBUSTION ENGINE

Ora E. Wilson, Peggy Lane, Dixie Grove Trailer Park,
Tarpon Springs, Fla.
Filed July 24, 1963, Ser. No. 297,447
3 Claims. (Cl. 123—76)

1. In an internal combustion engine:

(*a*) a cylinder substantially closed at one end by an end wall,

(*b*) a piston reciprocable in said cylinder in cycles comprising an intake stroke, compression stroke, power stroke and exhaust stroke,

(*c*) means cooperating with said piston when said piston is toward said end wall of said cylinder for forming a barrier in said one end of said cylinder to provide substantially separate combustion and reserve air chambers between said piston and said end wall,

(*d*) a fuel inlet valve means in said one end of said cylinder in the area encompassed by said combustion chamber and operable to admit a fuel mixture into said cylinder during said intake stroke of said piston,

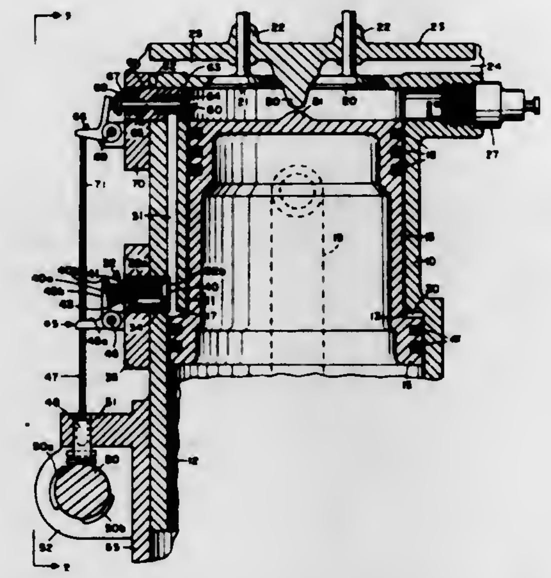
(*e*) exhaust valve means operable to divert spent gasses from said cylinder during said exhaust stroke of said piston,

(*f*) ignition means in the area encompassed by said combustion chamber for igniting the fuel mixture in said cylinder when said piston is substantially at the end of said compression stroke,

(*g*) said combustion chamber substantially enclosing therein said inlet valve means and said ignition means when said piston is at the end of said compression stroke,

(*h*) means for introducing air into said reserve air chamber including an auxiliary valve in said one end of said cylinder and in the area encompassed by said reserve air chamber, and

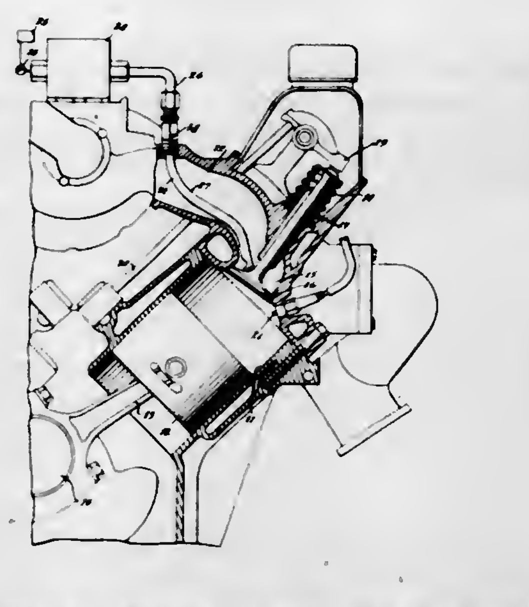
(*i*) means operable to open said auxiliary valve means when said piston is toward the end of its compression stroke and to close said auxiliary valve during said intake and power strokes.



3,182,646
AIR-BLED COAXIAL INJECTOR

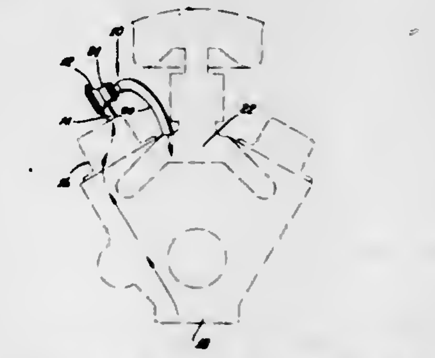
Craig Alfred Kuechenmeister, Box 295–B, Rte. 1,
Manistee, Mich.
Filed June 15, 1961, Ser. No. 117,318
9 Claims. (Cl. 123—119)

1. A fuel injection mechanism for an internal combustion engine comprising an elongated uniform diameter first tube forming an air conduit for extending through an air intake manifold to an injection point having an air intake opening outside of the manifold and being closed to the manifold interior, an elongated uniform diameter second tube substantially coaxial with the first tube forming a fuel conduit within said air conduit having a pressure fuel inlet and a discharge end, a fuel atomizing nozzle opening at the discharge end of the fuel conduit externally of the air conduit, a fuel nozzle in the fuel conduit upstream of the atomizing nozzle, an air opening in the fuel conduit between the fuel nozzle and the atomizing nozzle for the intake of air from the air conduit so that air and fuel flow through said atomizing nozzle, and means between said intake opening on the first tube and said air opening for supporting the tubes on a manifold wall.



3,182,647
FLAME ARRESTOR FOR CRANKCASE VENTILATING APPARATUS

Louis J. Bintz, Placente, Calif., assignor to Norris-Thermador Corporation, Los Angeles, Calif., a corporation of California
Filed Feb. 28, 1964, Ser. No. 348,217
17 Claims. (Cl. 123—119)



1. A flame arrestor for use in a crankcase ventilating conduit extending between the crankcase and the intake manifold of an internal combustion engine, said flame arrestor comprising a housing adapted to be disposed in said conduit, said housing having a passage therethrough forming a part of said conduit, a valve seat proximate said passage in said housing facing downstream for the normal direction of gas flow from the crankcase to the intake manifold, a valve element in said housing on the downstream side of said seat, said valve element being held by the flow of gases in an open position spaced downstream of said valve seat during normal engine operation when the intake manifold is at a lower pressure than the crankcase to permit the substantially unimpeded flow of blowby exhaust gases from the crankcase through the conduit to the intake manifold, and the valve element being movable to a closed position against said seat to block the flame front from the crankcase upon a pressure reversal resulting from backfiring in the engine fuel intake system, and means lightly biasing said valve element toward said seat, whereby the position of repose of said element when the engine is inoperative and there is no pressure differential between the crankcase and the intake manifold is the closed position of the element against the seat, said biasing means exerting a biasing force which is sufficiently light so that during normal engine

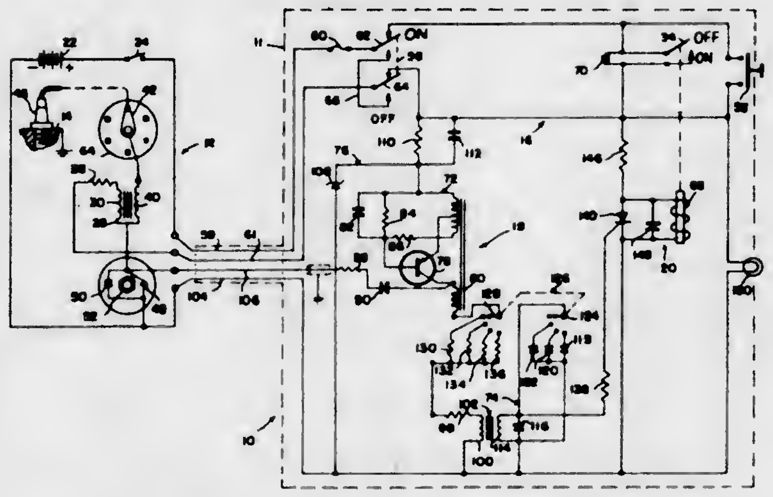
operation said element will not substantially impede the flow of blowby exhaust gases from the crankcase to the intake manifold.

3,182,648
SPEED RESPONSIVE SWITCHING APPARATUS

Alfred Schneider, Detroit, Robert K. Frank, Mount Clemens, and Walter S. Fichuk, Detroit, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed Apr. 2, 1962, Ser. No. 184,277

12 Claims. (Cl. 123—148)



1. In combination with an internal combustion engine having an ignition circuit including a battery and a primary ignition coil winding in series with the parallel combination of distributor breaker points and the series combination of the ignition secondary coil winding and the distributor rotor which is intermittently connected to a plurality of spark plugs, a speed responsive engine cutout device comprising a double pole, double throw switch, the poles of which are connected in series in the ignition circuit between the battery and primary ignition coil winding, means for shorting said poles together in one position thereof, solenoid actuated on-off contacts and a push button switch in parallel, means for connecting the on-off contacts and push button switch in parallel across the poles of the double pole, double throw switch in the other position thereof, a relay solenoid for actuating the on-off contacts and a controlled rectifier in parallel with each other and connected in series in the ignition circuit and with the parallel combination of the on-off contacts and push button switch, a blocking oscillator connected across the distributor breaker points having an output circuit, a resonant circuit in the output circuit of the blocking oscillator resonant at selected frequencies representative of different engine speeds as sensed by the blocking oscillator and means for connecting the resonant circuit to the controlled rectifier for shorting out the relay solenoid on resonance of the resonant circuit whereby the on-off contacts are permitted to open and the engine is cut off at a predetermined engine speed.

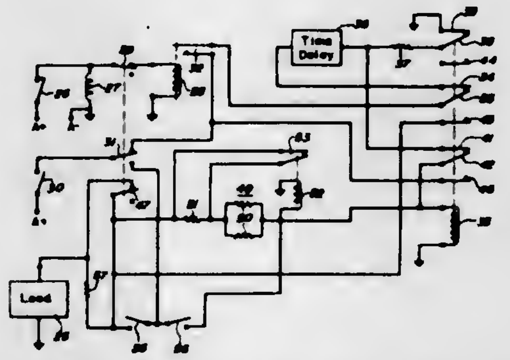
3,182,649
ELECTRICAL CONTROL SYSTEM

Burton J. Downs, R.D. Rte. 2, Canfield, Ohio

Filed Dec. 4, 1961, Ser. No. 156,711

22 Claims. (Cl. 123—179)

1. A control system comprising: a first source of electrical energy; a second source of electrical energy; a load system which upon actuation initially requires finite energization of no more than a given level and after a delay interval requires energization at a substantially greater level; means responsive to energy from said first source for applying energy of no more than said given level from said second source to said load system during said interval; and means responsive upon termination of said delay interval for abruptly increasing the level of the energy supplied to said load from said second source substantially above said given level.



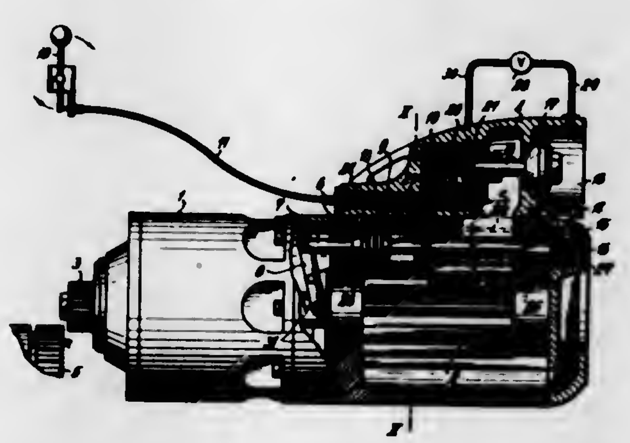
3,182,650
COMPRESSED AIR OPERABLE STARTER FOR INTERNAL COMBUSTION ENGINES

Heinz Heckt, Sprockhovel, Westphalia, Germany, assignor to G. Düsterloh, Fabrik für Bergwerksbedarf G.m.b.H., Sprockhovel, Westphalia, Germany

Filed June 8, 1962, Ser. No. 201,084

Claims priority, application Germany, June 12, 1961, D 36,305

6 Claims. (Cl. 123—179)



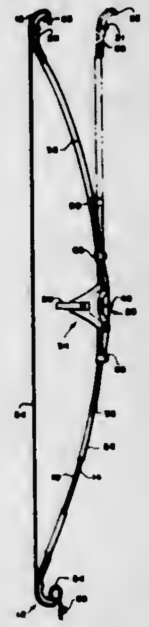
1. A fluid pressure operable starter for internal combustion engines, especially Diesel engines, which comprises: a housing, a pinion at one end of the housing movable axially from an ineffective position into an effective position for engagement with gear means of the engine to be started and vice versa, fluid pressure operable pinion control piston means in the housing operatively connected to said pinion and having first surface means adapted to be acted upon by fluid pressure for moving said pinion from its ineffective into its effective position, said pinion control piston means also having second surface means adapted to be acted upon by fluid pressure for moving said pinion from its effective into its ineffective position, fluid operable rotor means in said housing rotatably connected to said pinion means for rotating the same, restricted passage means establishing a restricted communication only between said first surface means and said rotor means for admitting only a restricted fluid pressure to said rotor means to rotate the latter and thereby said pinion at a minimum speed, and control means including a first valve operable to admit pressure fluid selectively to said first surface means and said second surface means, said control means also including a second valve operable to admit full fluid pressure to said rotor means and means responsive to said pinion reaching its effective position for actuating said second valve to admit full fluid pressure to said rotor means for rotating the same at full speed.

3,182,651
COMPOSITE BOW AND HAND GRIP FOR THE SAME

Roy A. Huntley, 1108 9th Ave., Seattle, Wash.

Filed Nov. 13, 1962, Ser. No. 237,005

4 Claims. (Cl. 124—24)



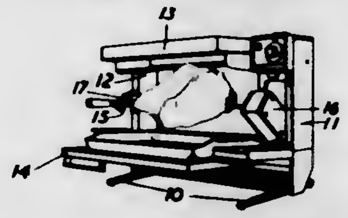
1. A composite bow and hand grip, comprising: a body strip of metal extending throughout the length of the bow; recurvature ends, grooves on their back side formed in the ends of the body strip; nock members fitting the outside curvature of said recurvature ends and bifurcated to provide nock slots to engage the ends of an end knotted bow string; compression means to secure said nock members to said body strip; a backing strip of metal overlaying the outside of said body strip and extending substantially the length of the same; said backing strip having its ends secured by said nock members; a metal reinforcing strip extending substantially one eighth of the length of said bow on each side of its center; a base member overlaying said reinforcing strip on its outside surface and having a relatively thick grip portion and end positions of reduced thickness; compression means for securing said strips and said base member in close operational relationship and a handle secured at the longitudinal center of said bow and at right angles to the plane of the bow and bowstring when the bow is drawn.

3,182,652
GRILLING APPLIANCE HAVING PIVOTED SUPPORT MEANS

Arthur Frederick Oatley, Wilton Lodge, Wergs Road, Tettenhall, Wolverhampton, England

Filed May 2, 1963, Ser. No. 277,505

1 Claim. (Cl. 126—38)



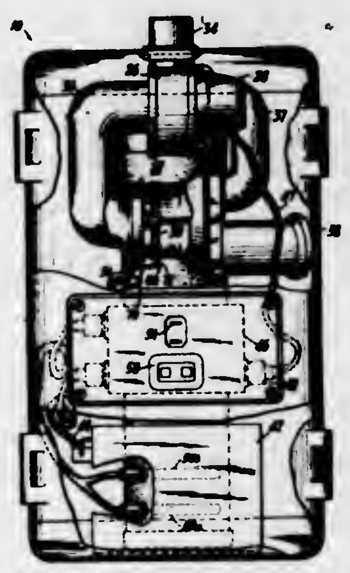
In an independent portable grilling appliance having a supporting structure the depth of which is considerably less than its height and a radiant including means for movably mounting the radiant on the supporting structure, the radiant having a substantially horizontal position of use in which it extends forward from the supporting structure in the direction of the depth of the supporting structure and a vertical stored position against the supporting structure, the improvement comprising a pair of supporting feet mounted underneath the supporting structure, each of said feet being of general triangular shape and pivotally mounted near the center of the area thereof to the support structure about a vertical axis, each of said feet having supporting protrusions proximate each corner thereof, two of said protrusions being spaced apart a distance less than the depth of the supporting structure, the third of said protrusions being spaced from each of the other of said protrusions a distance substantially greater than the depth of the supporting structure, said feet being movable about the pivotal mounting thereof between a condition in which they lie substantially within the plan area of the supporting structure such that the protrusions afford a base which is well spread in the depth of the supporting structure and a condition in which one protrusion of each foot extends forward from the supporting structure in the same direction as the radiant in its position of use so that the feet form a base more widely spread in the direction of the depth of the supporting structure.

3,182,653
LITHIUM HYDRIDE BODY HEATING DEVICE

Michael G. Mavleos, Westbury, and Jacques J. Dery, North Babylon, N.Y., assignors to Avien, Inc., Woodside, N.Y.

Filed Dec. 5, 1961, Ser. No. 157,088

2 Claims. (Cl. 126—204)



1. A portable, body heating device for use under conditions of extreme cold comprising, in combination:

(*a*) an enclosed, air tight, flexible suit adapted to be worn by a human being; and

(*b*) a portable air heating unit adapted for the heating of air supplied to said suit, said unit comprising:

(1) a heat conductive container;

(2) lithium hydride stored in said container;

(3) an electric heating element immersed in said lithium hydride, said element adapted to heat said lithium hydride above its melting point;

(4) means to temporarily connect said heating element to a source of electrical energy;

(5) means to pass air to be heated over said container in a heat transfer relationship so as to cool said lithium hydride below its freezing point and thereby release heat to said air; and

(6) means to force the resultant heated air into said suit.

3,182,654
SOLAR ENERGY HEATING APPARATUS

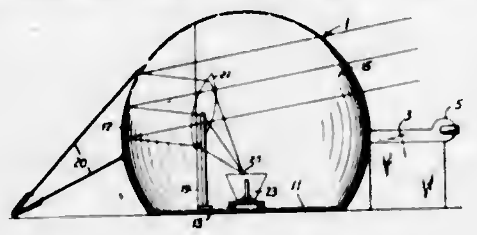
John H. Culling, Kirkwood, Mo., assignor to Carondelet Foundry Company, St. Louis, Mo., a corporation of Missouri

Filed Aug. 25, 1960, Ser. No. 51,846

6 Claims. (Cl. 126—270)

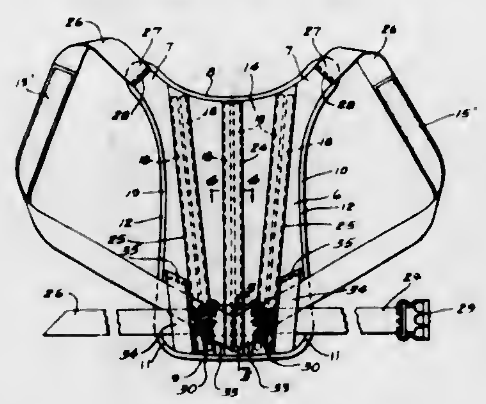
1. A solar energy heating apparatus comprising an inflatable tent-like structure for housing personnel, a first

portion of said structure being adapted to transmit solar energy, a second portion having a reflector integrally attached to the interior surface of said second portion, and means within said structure adapted to concentrate solar energy directed thereon toward an object within said structure, said reflector being adapted to reflect solar energy transmitted through said first portion toward said means, said means being movable to receive said solar energy from said reflector as the sun moves relative to the structure.



3,182,655
SHOULDER BRACE

Henry G. Nelkin, Kansas City, Mo., assignor to H. G. Enterprises, a co-partnership
Filed Nov. 19, 1962, Ser. No. 238,453
8 Claims. (Cl. 128—78)

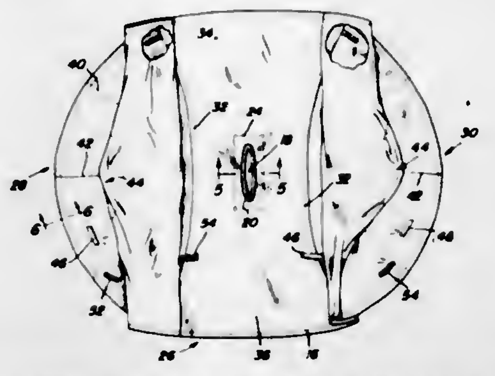


1. In a shoulder brace, a back engaging body portion of greater length than width having a plurality of elongated stiffening structures extending longitudinally thereof from adjacent the top end thereof to adjacent the bottom end thereof and including a central stiffening structure, a pair of upwardly and divergently extending flaps on said body portion at the upper corners thereof, straps each having an end secured to and extending from one of said flaps, a pair of guide strips extending lengthwise of said body portion adjacent the lower corners thereof, said guide strips being secured to said body portion adjacent their ends, a pair of metal loops through which said straps extend, means for mounting said loops to extend at an oblique angle in upwardly converging transversely spaced relation to each other comprising tabs extending from said central stiffening structure, said straps each extending from the secured end thereof between a guide strip and said body portion and thence through one of said loops and back between said guide strip and said body portion, and means for detachably adjustably securing the other ends of said straps to each other.

3,182,656
SURGICAL SHEET

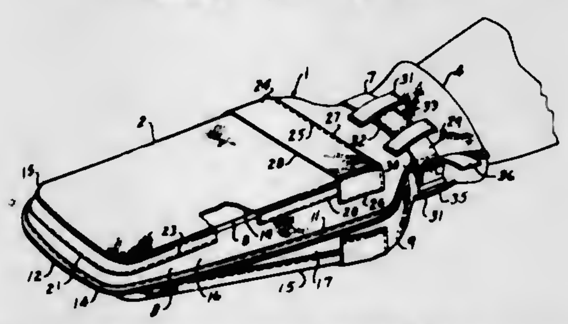
Jessie L. Pyne, 425 Pinal Ave., Orcutt, Calif.
Filed Apr. 24, 1962, Ser. No. 190,962
6 Claims. (Cl. 128—132)

1. For use in an operating room during the course of performing a vaginal-hysterectomy and during which procedure the patient assumes a supine position with her limbs constrained and oriented in a given manner with customarily used knee-chest stirrups, and wherein there is a tray atop the operating table to accommodate a culdoscopy or the like; an improved anti-contamination cover-all one piece surgical sheet made of two-ply autoclavable surgical sheeting, said sheet being generally ovate in plan and consisting of three component parts; namely, an elongated centrally located component generally rectangular in plan and constituting an apron, and a pair of companion segmental-shaped components to the left and right, respectively, of and complemental to said apron, said segmental-shaped components having inward lengthwise edges abutting and stitched to the respective lengthwise edges of said apron and consituting skirt portions, said apron having a forward half-portion and a rearward half-portion adapted to drape itself over the operating end of the operating table with the terminal free end approaching the floor and hanging down in front of the seated surgeon, that portion of said apron at the juncture of said forward and rearward half-portions having a single marginally reinforced elongated aperture for incision use by the surgeon, and all of said components being otherwise imperforate and of ample stiffness to maintain the shape and position imparted thereto when the sheet is being used.



3,182,657
HAND RESTRAINING DEVICE

Hazel Marie Zurbuchen, 319 N. 16th, Kansas City, Kans.
Filed Dec. 31, 1962, Ser. No. 248,794
3 Claims. (Cl. 128—133)



1. A hand restraining device comprising,

(*a*) an envelope of fabric having a generally rectangular top wall and bottom wall and side and end margins, said walls being opposed and joined at said side and one of said end margins, said envelope having an open end opposite said one end margin and a length and width to receive a hand therein through said opening with a portion of said envelope adjacent said open end surrounding the wrist adjacent said hand,

(*b*) a generally rectangular layer of fabric on said top wall and bottom wall, said layers of fabric being a lesser length and width than said walls and each having front and side edges respectively spaced inwardly from said side and end margins, said layers of fabric having three of the four edges thereof secured to said respective walls in opposed positions forming respective flat opposed pockets of a size extending substantially the length of the fingers and palm and the width of the palm of the hand,

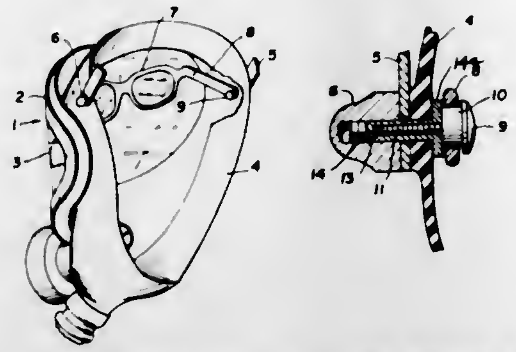
(*c*) a normally flat stiffening member of limited flexibility received in each of said pockets and substantially filling same without deformation of said member,

(*d*) means cooperating with said respective walls at the unsecured edges of said pockets to restrict the opening of said pockets to retain said stiffening members therein, and

(*e*) means cooperating with said envelope at said portion of said envelope adjacent the wrist for tightening same about the wrist to retain the hand in the envelope.

3,182,658
SPECTACLE MOUNTING FOR GAS MASK

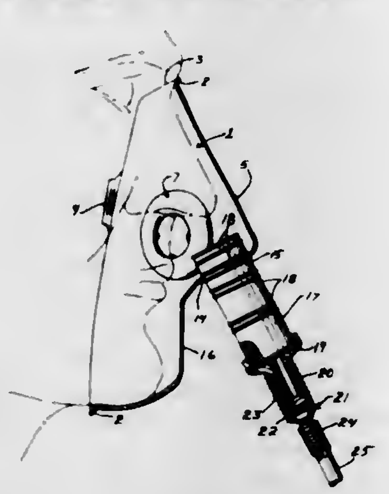
Guy G. Klinger, Wernersville, Pa., assignor to The Electric Storage Battery Company, Philadelphia, Pa.
Filed Oct. 19, 1962, Ser. No. 231,729
4 Claims. (Cl. 128—141)



1. In combination with a gas mask having a peripheral sealing portion adapted to form an air-tight seal with the face of the wearer and having a head-gear which is joined to said mask by pivotal mountings adapted to confront the temple portions of the wearer's head, in combination, a pair of spectacles having temple portions of a fraction of normal size, means for pivotally mounting the end portions of said temple portions on said pivotal mountings coaxially thereof, and means for varying the length of the temple portions between the frame of the spectacles and the axis of said pivotal mountings so as to fit different head sizes and nose sizes of different wearers.

3,182,659
OXYGEN AND INHALANT MASK

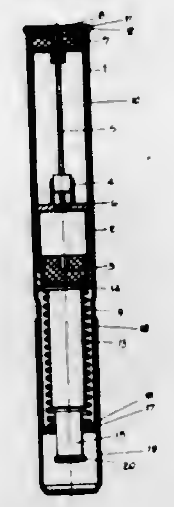
Lester L. Blount, Midway City, Calif., assignor to Gordon D. McMaude, Midway City, Calif.
Filed Jan. 15, 1962, Ser. No. 166,058
9 Claims. (Cl. 128—205)



1. A gas inhalation mask comprising: a mask body of yieldable plastic material proportioned to cover the mouth and nose of a wearer, said body having a downwardly facing offset portion spaced below the wearer's nose when the mask is worn, said offset portion having an aperture; and an inlet tube projecting through said aperture, said tube having axially spaced grooves proportioned to selectively receive said offset portion at the margin of said aperture so as to axially adjust said inlet tube with reference to said mask body, whereby to position said inlet tube with its inner end adjusted to proximity to the wearer's nose such as to provide a highly concentrated gas delivery to the nose, said inlet tube being so proportioned with relation to said aperture margin to accommodate axial shift of said inlet tube in said aperture from one of said grooves to another.

3,182,660
HYPODERMIC SYRINGE WITH SPRING BIASSED PISTON

Wilhelm Weydanz, Bruder Grimm Allee 22, Gottingen, Germany, Walter Hubensack, Konigsallee 5, Gottingen, Germany, and Rudi Ronnenberg, Weenderlandstr. 80, Gottingen, Germany
Filed Oct. 5, 1962, Ser. No. 229,283
Claims priority, application Germany Oct. 7, 1961, P 28,001; May 29, 1962, P 29,506
4 Claims. (Cl. 128—218)

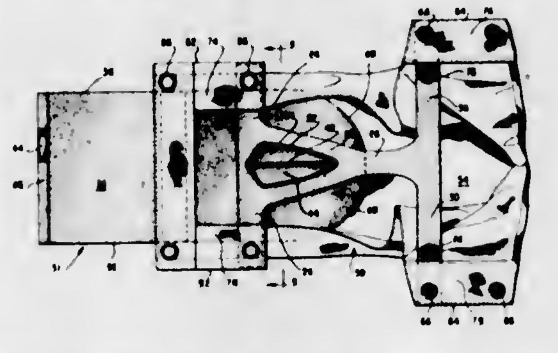


1. A hypodermic syringe for self administering injections comprising
a first unit and
a second unit receiving said first unit,
said first unit comprising a cylindrical housing open at one end and having a bottom wall to close the other end,
said bottom wall defining a central opening,
a release cap telescopically surrounding said closed other end of said cylindrical housing,
a piston having a shaft extending therefrom and disposed in said cylindrical housing adjacent said bottom wall and said shaft extending through said central opening of said bottom wall,
said piston having a collar at its end remote from said shaft,
a compression spring in said cylindrical housing and engaging the inner face of said bottom wall and said collar of said piston, respectively, thereby urging said piston into the innermost position in said cylindrical housing,
releasable locking means cooperating with said shaft for retaining said piston in its withdrawn position against the force of said compression spring, and
said second unit comprising a cylindrical metal container fittingly and immovably disposed in and at the open end of said cylindrical container,
an ampule of plastic material immovably received in and at the inner end of said metal container and disposed adjacent said piston,
a first diaphragm closing one end of said ampule,
a first plug disposed at the other end of said ampule and axially displaceable in the latter,
said plug engaging the end face of said piston and being actuated by the latter,
a second plug secured to and retained at the outer end of said metal container,
a second diaphragm disposed in said second plug,

a hypodermic needle axially movably disposed in said metal container between said first diaphragm and said second diaphragm and having pointed ends,
so that upon releasing of said locking means said piston pushes by means of said compression spring said first plug into said ampule simultaneously piercing both said diaphragms by the pointed ends of said hypodermic needle in order to discharge the content of said ampule through said axially moved hypodermic needle and said ampule is retained vapor-proof and sterile in said metal container.

3,182,661
SANITARY GARMENTS FOR INFANTS

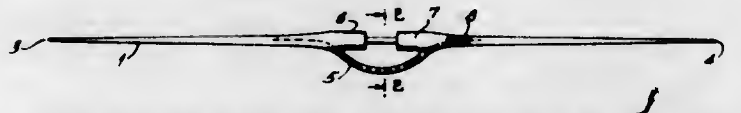
Louis P. Ribeiro, 608–A Beechwood Ave., Middlesex, N.J., and Hasel W. Ribeiro, Middlesex, N.J., by court order, to Louis P. Ribeiro, heir of said Hasel W. Ribeiro, deceased
Filed Oct. 5, 1962, Ser. No. 228,685
9 Claims. (Cl. 128—286)



1. The combination of a garment with a portable toilet receptacle comprising a loin piece of soft, liquid-proof material having an opening defined by a substantially oval, resilient, peripheral ring having a size such as to surround both the urinating and fecal organs of a wearer and for forming a liquid-tight seal with the wearer's body about said organs, a liquid-tight bag closeably opened at one end and having front and rear walls, an opening in said bag rear wall formed as a slit whose edges are folded rearwardly and connected to said ring of the loin piece so that said bag opening communicates with the interior of said ring, said means of supporting said loin piece and connected bag in the crotch of said garment, said garment comprising a one piece fabric sheet cut out at its sides to admit the thighs of a wearer, and being foldable into front and real panels which overlie each other, said front and rear panels having side extensions and fasteners therein for securement about the waist of a wearer, and said means supporting the loin piece and bag being fastened to said front and rear panel extensions at a level just above the crotch of a wearer.

3,182,662
PLASTIC PROSTHESIS USEFUL IN GYNAECOLOGICAL SURGERY

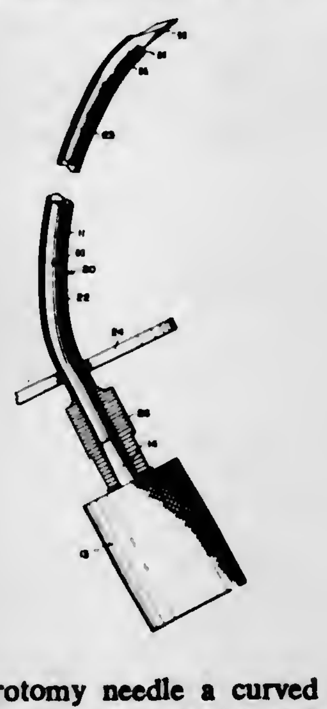
Vithal N. Shirodkar, Patel Chambers, French Bridge, Bombay 7, Maharashtra, India
Filed July 25, 1962, Ser. No. 212,382
5 Claims. (Cl. 128—303)



1. An internal splint useful in preventing post operative occlusion of the tubal lumen following a tuboplasty operation, comprising a sterile and flexible elongated rod that is substantially straight and made of a molded form retaining plastic material, said rod having a small diameter relative to its length and having a loop integral therewith and centrally located approximately equidistant between each end, said loop being of relatively small size as compared to the length of the rod and protruding only a relatively short distance off the axis of the rod.

3,182,663
CRICOTHYROTOMY NEEDLE

Louis Abelson, 585 McLean Ave., Yonkers, N.Y.
Filed Mar. 8, 1961, Ser. No. 94,287
2 Claims. (Cl. 128—305)

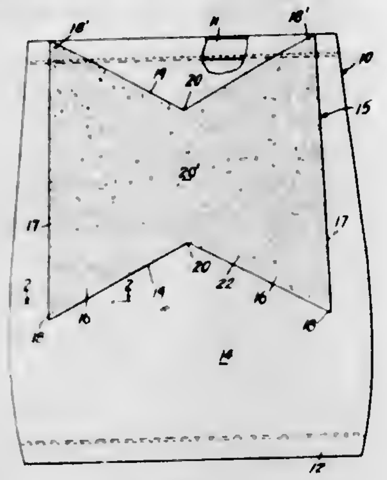


1. In a cricothyrotomy needle a curved tubular part adapted to extend into the trachea of a patient and a unitary stilette part removably inserted in said tubular part
said stilette part comprising a main shaft portion with an arcuate axis approximately equal in length to a quadrant of a circle having a radius of curvature of approximately 2 inches, said shaft having an enlarged integral forward end terminating in
a sharp point and handle means at the opposite end,
said tubular part coaxially surrounding the shaft of said stilette,
the axis of said tubular part having a curvature substantially identical with that of said stilette part and a length such that the point of the stilette projects from the forward end of the tubular part with the handle of the stilette resting against the second end thereof,
the forward end of said tubular part comprising an inwardly bevelled rim having an internal diameter which tightly fits said enlarged forward end of the shaft of the stilette,
said tubular part comprising permanent slightly indented marking means extending around the same approximately ½ inch from said rim,
flange means surrounding the tubular part in a plane substantially at right angles to the axis of the tubular part, said plane intersecting the axis of said tubular part at a point distance from said rim by a length approximately equal to the length of said quadrant,
notch means on said flange means to indicate the position of said tubular part in the trachea of a patient.

3,182,664
ALL-WAY STRETCH FABRIC GIRDLE WITH A FRONT LATEX REINFORCEMENT

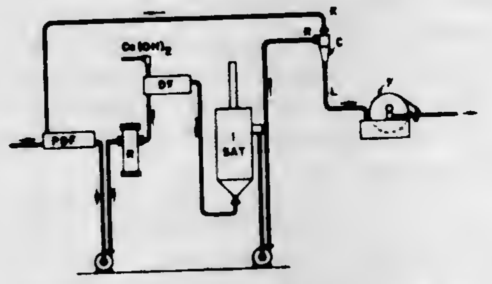
Ernest Bradd, Shawanese, Pa., assignor to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York
Filed Sept. 13, 1961, Ser. No. 137,763
1 Claim. (Cl. 128—539)

An all-way stretch tubular fabric girdle of the character described having a latex reinforcing section vulcanized directly on and adhered to the front abdominal supporting area of the girdle, said section having upper and lower edges contracted to the central portion of said section in forming wing portion sides extending onto front sides of the girdle, said sides of the section being of vertical dimensions substantially greater than the vertical dimensions of said central portion, said sides extending from the waistband to positions substantially at the hip line of the girdle, the latex of said section conforming with the contour of the loops of the fabric of the girdle at the surface only thereof to which the section is adhered while maintaining stretch of the reinforcing section of the girdle, and a flock on the exposed surface of said section.



3,182,665
PROCESS FOR PURIFYING SUGAR JUICES

Vittorio Simoni, Milan, Italy, assignor to The Eimco Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed Feb. 15, 1962, Ser. No. 173,541
1 Claim. (Cl. 127—50)

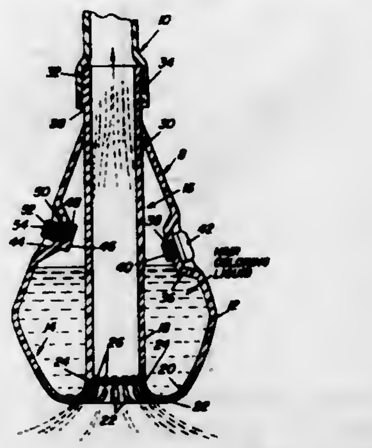


The process of purifying sugar-bearing juice yielded from beets, comprising the steps of forming a reacted mass containing juice and precipitated solids by introducing said juice into a first reaction zone and there reacting it with a lime-bearing material to effect precipitation of discrete sized solids, thence introducing said juice and solids into a second reaction zone and there contacting the same with carbon dioxide gas, passing the resulting reacted mass through a hydrocyclone to separate said mass by centrifugal classification into a first fraction containing juice and relatively fine solids and a second fraction containing juice and the relatively coarse solids, subjecting said second fraction to vacuum filtration to separate solids therefrom, and returning at least a portion of only said first fraction including both juice and fine solids directly to said first reaction zone prior to subjecting said fraction to any further reaction.

3,182,666
HAIR COLORING APPLICATOR

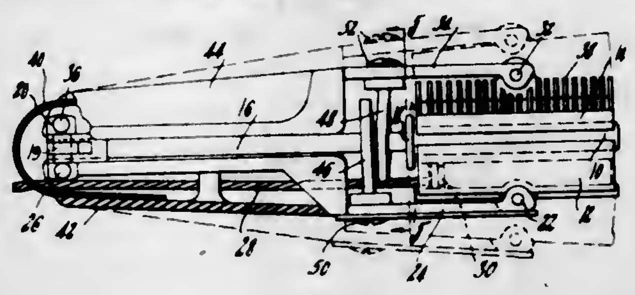
Willie R. Watkins, Greensboro, N.C., assignor of one-half to Alfred T. Staples, Greensboro, N.C.
Filed July 12, 1962, Ser. No. 209,338
10 Claims. (Cl. 132—9)

2. A multipurpose appliance for manually controllable use in a beauty salon, barber shop or home comprising: applicator means embodying an unobstructed open-ended duct capable of enabling the user to collect and confine a selected lock of one's hair therein for rinsing, drying, tinting or coloring the same, said duct having an intake end which when in use is held proximal to the scalp to guide and draw the loose hair of the selected lock into said duct to be acted on, said intake end having means to suck atmospheric air distributively into said duct, also having orifice means for atomizing a mist-forming rinsing, tinting or coloring liquid which is sucked into the duct to film-coat the hair which is being acted on, means for creating the desired suction in said duct, and liquid containing and supply means acted on by the suction for delivering the desired amount of tinting or similar liquid to the duct by way of and to be atomized by said atomizing means.



3,182,667
HAIR CURLER WITH HEATING AND COOLING HAIR CONTACTING JAWS

Marion Den Beste, Prospect Heights, Ill., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Oct. 18, 1962, Ser. No. 231,411
6 Claims. (Cl. 132—32)



1. A device for changing the configuration of human hair which comprises a first forming jaw having a hair-contacting surface adapted to be moved along a tress of hair, said surface being of heat conductive material and said jaw including heating means mounted in heat-transferring relation to said surface, a second forming jaw spaced from the first having a hair-contacting surface adapted to be moved along a tress of hair, said second mentioned surface being of heat conductive material and said second jaw including cooling means mounted in heat-transferring relation to said second mentioned surface, heat insulating means mating with the surfaces of said first and second jaws to engage a hair tress against said surfaces, and means for pressing said insulating means and said mating jaw surfaces toward each other.

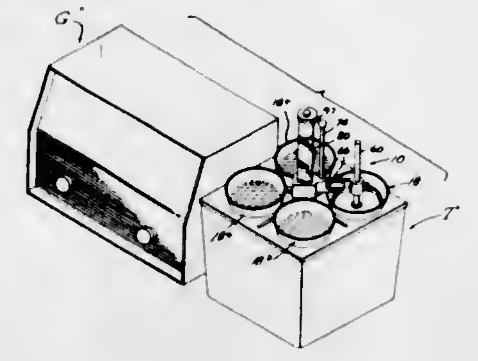
3,182,668
ULTRASONIC CLEANING ATTACHMENT

Harold E. Hartsell, 342 Washington Ave., Oil City, Pa.
Filed Mar. 6, 1964, Ser. No. 349,839
5 Claims. (Cl. 134—77)

1. The combination with an ultrasonic cleaning machine having a fluid-containing tank and an ultrasonic

generator in vibrative relation to the fluid in the tank of:

- (*a*) a base plate resting upon and closing the tank, said base plate being formed with a plurality of opening means disposed in surrounding relation about a vertical axis;



- (*b*) cleaning solution containing cup means supported in each of said opening means and immersed in the fluid in the tank;
- (*c*) a perforated parts basket smaller in diameter than the cup, and adapted to be immersed in the solution in one of the cup means; and
- (*d*) means mounted upon the base plate for supporting the basket within said cup means and for elevating and depressing the basket relative to the cup means and for rotating the basket to a position in registry with respect to a selected one of said cup means.

3,182,669

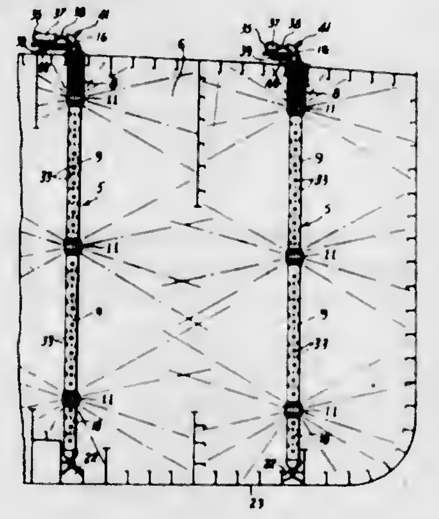
COMBINED TANKER SERVICE UNIT

George T. R. Campbell, Montreal, Quebec, and Norman V. Laskey, St. Lambert, Quebec, Canada, assignors to Algonquin Shipping and Trading Limited, Montreal, Quebec, Canada

Filed May 7, 1963, Ser. No. 278,622

Claims priority, application Canada, Mar. 30, 1963, 872,164

10 Claims. (Cl. 134—105)



1. A service unit for installation within fluid containing tanks, the said service unit comprising a vertically disposed tubular structure anchored within the said tank, the said tubular structure having one or more heating sections, and one or more diffusion sections, nozzles in said diffusion sections directed exteriorly of the sections, means to supply a heating medium to said heating sections, means to exhaust heating medium condensate from said heating sections, and means to supply a cleaning fluid to the said diffusion sections for ejection through the said nozzles.

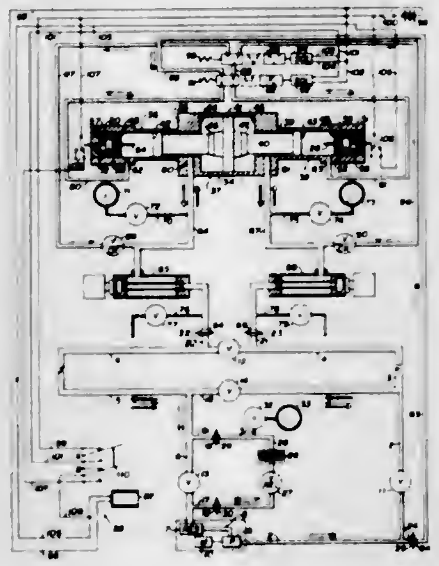
3,182,670

MEANS FOR DECONTAMINATING FLUID SYSTEMS

Richard A. Howell, Glenarm, Md., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland

Filed Jan. 16, 1963, Ser. No. 251,869

10 Claims. (Cl. 134—107)



9. In an apparatus for removing contamination from a substantial segment of a fluid system wherein a specific amount of fluid flows through said substantial segment of said fluid system during periods of normal system operation, said fluid system including a fluid pressure source, the improvement comprising:

- (*a*) a flow amplifier including at least one piston driven by the fluid from said pressure source connected to a larger flow amplifying piston, said flow amplifier connected into said fluid system between said fluid pressure source and said substantial segment of said system; and
- (*b*) means for directing the amplified fluid flow from said larger flow amplifying piston of said flow amplifier through said substantial segment of said system and thence returning said amplified fluid flow to said flow amplifier.

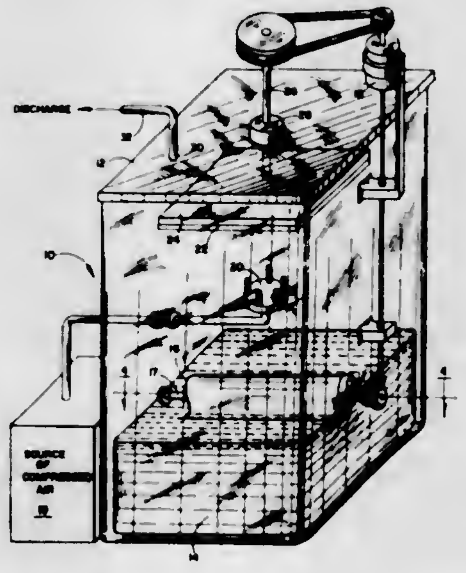
3,182,671

ETCHING APPARATUS

Innokent N. Vorie, Newport Beach, Calif., assignor to North American Aviation, Inc.

Filed Dec. 19, 1962, Ser. No. 245,784

1 Claim. (Cl. 134—148)



In combination:

a container having an upper and lower portion, and having an etchant in said lower portion;

means for holding an element whose surface is to be etched substantially horizontal and facing downward in the upper portion of said container;

means for rotating said element to be etched; and

means for producing a fog of etchant in said container from said etchant;

vertically-directed nozzle means directing a gas upward through said fog towards said element for breaking said fog into smaller particles, and for accelerating said particles in a vertical direction toward said surface to be etched whereby said particles are carried by gravity away from said surface to be etched in a direction perpendicular thereto.

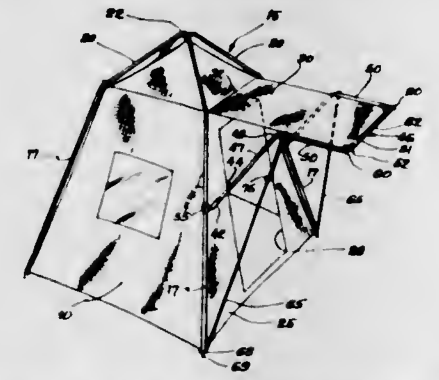
3,182,672

TENT

George J. Biller, Jr., Union, Mo., assignor to Hawthorn Company, a Division of Kellwood Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 4, 1962, Ser. No. 221,155

7 Claims. (Cl. 135—5)



1. In combination with a tent having a fabric body with an opening therein and a cover flap secured to the body over said opening and adapted to serve alternatively as an awning over said opening, and a frame supporting said body and comprising a pair of ground-engaging upright poles on opposite sides of said opening, means for supporting said flap in elevated position as an awning, comprising

- (*a*) an awning frame comprising
- (*b*) a generally rectangular portion encompassing the free end portion of said flap and secured thereto to maintain said flap in tension, and
- (*c*) a pair of struts continuous with said rectangular portion and extending downwardly and rearwardly therefrom, each strut being pivotally connected to one of said poles at a fixed point thereof,
- (*d*) means in each strut for adjusting the length thereof for varying the elevation of said awning, and
- (*e*) an adjustable tension member connected to each side of the awning frame at a point remote from the forward end thereof and to the pole on the same side for applying a downward and rearward force on said frame.

3,182,673

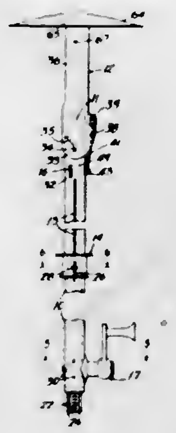
TILTABLE UMBRELLA HAVING GEAR RACK OPERATING MEANS

Samuel N. Small, Valley Stream, N.Y., assignor to Alfred G. Cohen and Paul Weiss, both of Flushing, N.Y.

Filed July 15, 1963, Ser. No. 295,059

3 Claims. (Cl. 135—46)

1. In umbrellas of the character defined employing an elongated post and a runner slidably engaging the post in movement of an umbrella top into several positions, a crank unit mounted in connection with the lower portion of said post, said crank unit employing a driven gear, a rack mounted in connection with the post and coupled and movable with said runner and actuated by the gear of said crank unit in movement of the runner upwardly and downwardly along the post into several operative positions, the upper portion of the post including means for movement of an umbrella top into tilted position, means movably and yieldably supported in the upper portion of the post operatively engaging said last named means and



actuated by said runner in positive movement of said tilting means into tilted position with respect to the post, and said post including auxiliary latch means in operative engagement with said tilting means and said runner in movement of the tilting means from a tilted position into a position in alinement with said post.

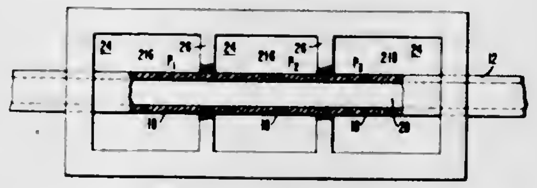
3,182,674

SYSTEM AND APPARATUS FOR PRODUCING, MAINTAINING AND CONTROLLING LAMINAR FLUID STREAM FLOW

Harold Burke Horton, Norwalk, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed July 24, 1961, Ser. No. 126,214

3 Claims. (Cl. 137—81.5)



1. A system for controlling laminar flow in a fluid stream applied thereto, said system including fluid conveying means having a passageway therein through which said fluid stream may pass, said fluid conveying means having a plurality of porous control portions, means for defining a pressure zone about each porous portion of said fluid conveying means, control fluid disposed within each pressure zone, and means associated with each pressure zone for effecting a different pressure differential between the control fluid in each pressure zone and said fluid stream tending to force a portion of said fluid stream into each pressure zone.

3,182,675

PURE FLUID VELOCITY MODULATED AMPLIFIER

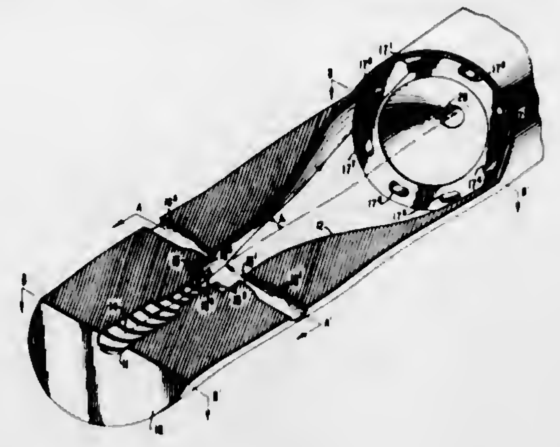
Saul N. Zilberfarb and Eugene M. Polker, both of Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 17, 1961, Ser. No. 153,164

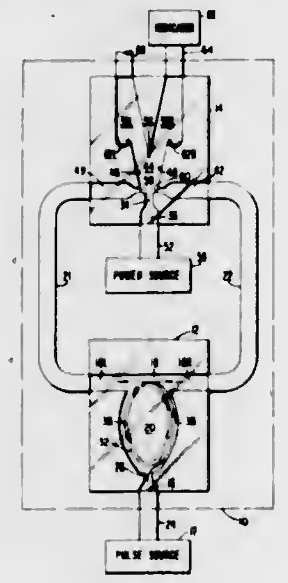
16 Claims. (Cl. 137—81.5)

1. In a pure fluid device, the combination comprising: first means for producing a power fluid jet stream rotating about its longitudinal flow axis, at least one second means for producing a control fluid jet stream directed to impinge upon said power stream such that the moving control fluid coacts with the rotating power fluid to create a pressure differential in a direction substantially trans-

verse to a first plane defined by the undiverted trajectory of said power stream and the longitudinal flow axis of said control stream, to thereby divert said power stream out of said first plane, and at least one receiving port whose flow axis is located in a plane different from said first plane for receiving said diverted power stream.

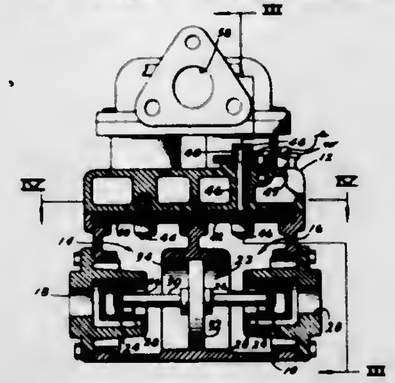


3,182,676
BINARY COUNTER
Peter Bauer, Ambler, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 23, 1962, Ser. No. 189,597
8 Claims. (Cl. 137—81.5)



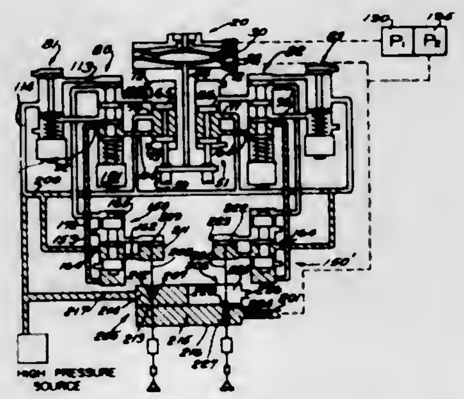
1. The combination comprising: a bistable pure fluid amplifier having first and second opposed orifices through which control streams may flow; means for producing a power stream between said orifices, one stable state of said amplifier being manifested by flow of said power stream nearer to said first orifice and the other stable state of said amplifier being manifested by flow of said power stream nearer to said second orifice; fluid conveying means for conveying fluid from said first to said second orifice when said amplifier is in said other stable state and from said second to said first orifice when said amplifier is in said one state; a bistable vortex amplifier having a chamber for creating vortex flow, said vortex amplifier having an output channel connected to said vortex chamber and forming a part of said fluid conveying means whereby a portion of the fluid being conveyed between said orifices enters said vortex chamber to create a control vortex flow therein; and means for intermittently introducing fluid pulses into said vortex chamber.

3,182,677
MIXING VALVE
Gerhard G. Thiem, West Springfield, Mass., assignor to Gilbert & Barker Manufacturing Company, West Springfield, Mass., a corporation of Massachusetts
Filed Oct. 5, 1962, Ser. No. 228,718
10 Claims. (Cl. 137—100)



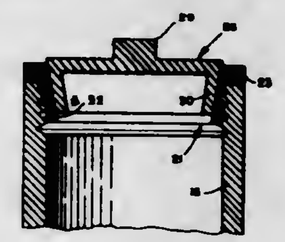
1. A mixing valve construction for accurate delivery of preselected percentages of different liquids and comprising first and second passageways for different liquids, said passageways each having inlet and outlet openings in combination with pressure balancing valve means at the inlet ends of said passageways for maintaining substantially equal pressures in said passageways, a pair of orifice plates overlying said outlet openings in sealing engagement therewith, each plate having a plurality of orifice openings of different sizes, each orifice of one plate having an orifice corresponding to it in the other plate for delivery of liquid therewith, each pair of such corresponding orifices being arranged to pass a predetermined ratio of the two liquids through said outlet openings when brought into register therewith, and means for simultaneously shifting said plates to bring a selected pair of corresponding orifices into register with said outlet openings.

3,182,678
VALVE ASSEMBLY FOR SUPPLYING AND VENTING PRESSURE FLUID
Edward T. Dahl, Warren, R.I., assignor to George W. Dahl Company, Inc., a corporation of Rhode Island
Continuation of application Ser. No. 81,155, Jan. 6, 1961. This application Jan. 16, 1964, Ser. No. 339,843
9 Claims. (Cl. 137—102)



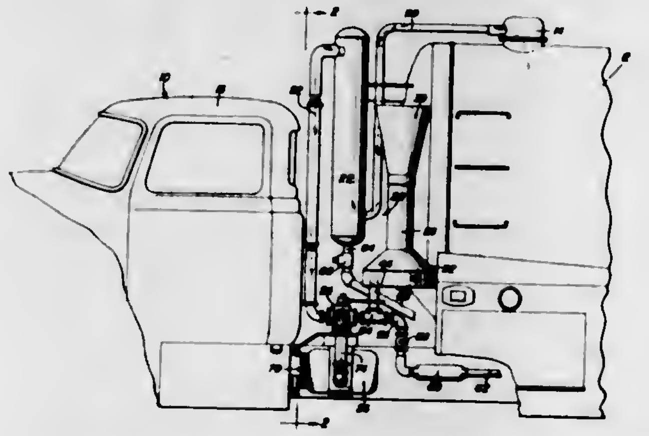
1. In an apparatus, for maintaining the pressure as $P_1-P_2=k$ between two vessels, a differential pressure sensing device for connection between said vessels, a means providing a source of pressure fluid, a conduit connecting said pressure fluid to one of said vessels, valve means controlling said conduit and the exhausting of pressure fluid from said one vessel, piston means actuating said valve means, pilot valve means mechanically coupled to said sensing device, said pilot valve means being fed with said source of pressure and having an output, control valve means also fed with said source of pressure and with an output to said piston means and having a shuttle with a piston section reciprocating in a casing, the output of said pilot valve means being connected to said casing at a location to actuate said piston section and shuttle therewith whereby movement of said sensing device in one direction actuates said valve means to cause pressure fluid to be supplied to said one vessel and upon movement in the other direction causes pressure fluid to be exhausted from said one vessel.

3,182,679
CLOSURES FOR CLEAN-OUT OPENINGS IN DRAIN TRAPS AND FOR OTHER PURPOSES
Peter Valentino, 565 Autumn Ave., Brooklyn, N.Y.
Filed Apr. 10, 1963, Ser. No. 272,010
3 Claims. (Cl. 137—247.51)



1. In a drain trap of hard metal including a riser which is open at the top, the riser having an internal shoulder spaced below the top thereof, extension means for increasing the height of the riser comprising a ferrule of hard metal resting on said shoulder and extending above said open top and provided with axially spaced internal grooves, means sealing the joint between the riser and the ferrule and means for forming a closure for the open upper end of the ferrule, said last-named means comprising a tapering lead sleeve having axially spaced circumferential ridges on the external surface thereof, the sleeve registering in said upper end of the ferrule and having an external flange on the larger end thereof resting on the rim of said upper end of the ferrule with said ridges completely filling said internal grooves, and a complementarily tapering plug of hard metal frictionally engaged in said sleeve.

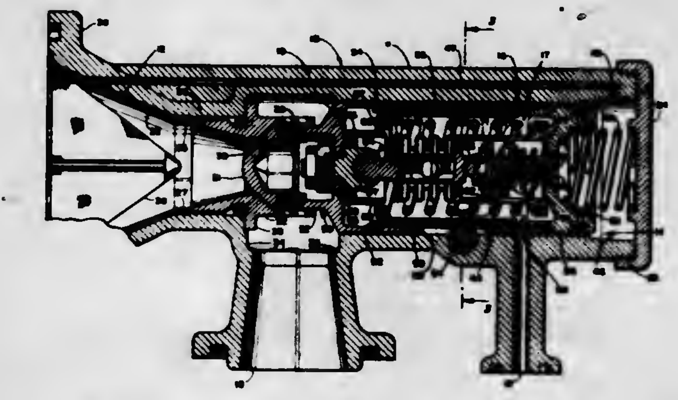
3,182,680
VENTURI TYPE SAFETY DEVICE
Enal E. Baldwin, P.O. Box 691, Alice, Tex.
Filed Nov. 26, 1962, Ser. No. 240,034
5 Claims. (Cl. 137—351)



1. A tank truck including a chassis and a container thereon for storing a volatile liquid having dangerous vapors, a safety device for rending said vapors innocuous for discharge to the atmosphere, said safety device comprising a substantially vertically elongated body fixedly mounted on said truck and having therethrough an unobstructed passage open at both the top and bottom of said body and with a mixing chamber therein, the open lower end of said passage comprising an air inlet means for said mixing chamber, vapor inlet means at the lower end of said passage for said mixing chamber, a pump mounted upon said truck and having an inlet and exhaust, a vapor inlet conduit connecting said pump inlet with the upper portion of said tank for withdrawing vapor therefrom, a vapor delivery conduit connecting said pump outlet to said vapor inlet means and effecting a high velocity flow of vapor through said vapor inlet means, said vapor and air inlet means including concentric openings into said mixing chamber with said vapor inlet means opening surrounding said air inlet means opening, whereby said vapor and air flows through said mixing chamber are so proportional by the relative areas of said concentric openings as to dilute said vapors and produce an innocuous mixture of air and vapor

---

3,182,681
PRESSURE CONTROL VALVE AND REGULATOR
Elia A. Gallo, Littleton, Colo., assignor to The Martin Marietta Corporation, Baltimore, Md., a corporation of Maryland
Filed Feb. 23, 1962, Ser. No. 175,000
5 Claims. (Cl. 137—468)

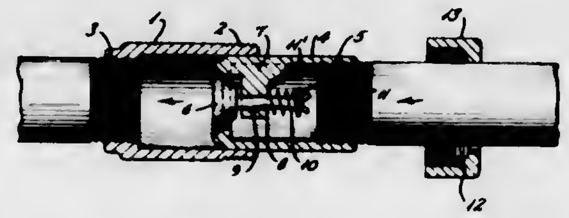


5. A fluid pressure control valve comprising; a hollow cylindrical body forming a valve chamber with an axial fluid supply inlet including a tubular valve seat disposed therein, a transverse outlet communicating with the valve chamber, a poppet valve assembly slidably disposed in the valve chamber in sealed relation thereto, said valve assembly having a valve head cooperating with said valve seat to control the pressure of fluid flowing from the inlet to the outlet and a hollow piston connected to said valve head and located on the same side of said valve seat as said valve head, said piston being dimensioned in relation to the valve chamber to form a clearance space between the end of the piston and the adjacent end of the valve chamber which is opposite the inlet, an inlet pressure conduit in the body including a bleed opening communicating between the inlet and the clearance space, said end of said piston having an effective area greater than that across the valve head, the inlet pressure in the clearance space normally urging the valve head toward the closed position against the valve seat; a pressure sensing unit housed in said valve piston to maintain a constant pressure condition at the outlet end of said regulator, said pressure sensing unit including a sensing chamber, and outlet pressure sensing means including flow control means responsive to outlet pressure to control the flow area through an opening in the end of said piston communicating between the sensing chamber and clearance space whereby to effect variations in pressure in the clearance space to oppose changes in outlet pressure from a selected constant pressure, said outlet pressure sensing means including an evacuated bellows and a spring in outer spaced concentric relation to said bellows, said spring and bellows being expansible and contractible in response to decreases and increases, respectively, in outlet pressure, a slide supporting one end of said spring and being movable under expansion and contracting of said spring and bellows to control the flow area through the opening, and calibrating means in the body and extending through said valve piston for engagement with said outlet pressure sensing means to regulate the initial dis-

position of said outlet pressure sensing means so as to provide for a selected constant pressure at the outlet, said calibrating means being defined by a slidable support element for the other end of said spring including an outer temperature compensating element affixed to the inner surface of the valve piston, manual adjusting means engageable with said slidable support element and projecting through said valve piston and body whereby to simultaneously effect tensioning of said spring in relation to the evacuated bellows and to correspondingly effect movement of the valve head in relation to the valve seat in order to establish equilibrium between the bellows and the valve for a selected constant pressure condition at the outlet, and said temperature compensating element being of a composition and disposition in relation to the composition and disposition of said spring to resist dimensional changes of said spring on account of changes in temperature of the fluid.

3,182,682
COMBINATION TELESCOPIC VALVE AND UNION

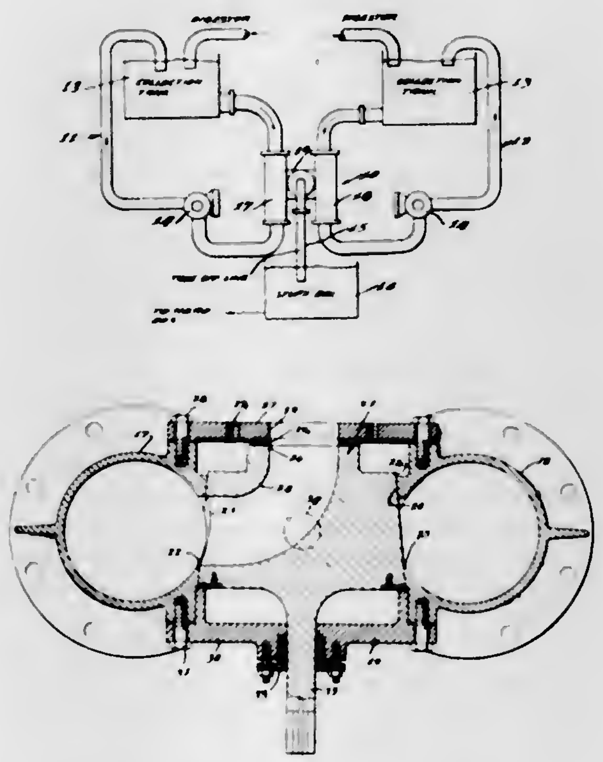
James Paul Gilliam, R.F.D. 1, Box 596, Deland, Fla.
Filed July 10, 1962, Ser. No. 208,796
1 Claim. (Cl. 137—515.5)



A combined check valve and union in combination with aligned pipes of substantially the same internal and external diameter in a manner to keep the pressure losses to a minimum comprising a cylindrical tubular valve body member having a smooth exterior and having means on the inner portion of one end mounting the valve body on one of the aligned pipes, a tubular cylindrical housing having a smooth interior of substantially the same diameter as the exterior diameter of the tubular valve body slideably mounted on the tubular valve body, external threads at one end of said cylindrical housing, means on the interior of the other end of the cylindrical housing mounting the cylindrical housing on the other aligned pipe, the smooth interior of the cylindrical housing extending from the one end of the cylindrical housing to the mounting means on the other end and being of a diameter appreciably greater than the external diameter of the aligned pipes, an inwardly extending annular portion on the other end of said tubular valve body providing a valve seat and providing an opening of approximately the inside diameter of the aligned pipes, flange means on the interior of said tubular valve body, said flange having an axial bore, a valve rod slideably mounted in the bore in said flange, a valve head on said valve rod engaging the valve seat, and spring means to urge said valve rod and said valve head to valve seating position, the external diameter of the valve head being appreciably smaller than the external diameter of the tubular valve body and appreciably smaller than the interior diameter of the tubular cylindrical housing providing a fluid passage between the valve head and the housing whereby when the valve head is off of its seat and in open position there is substantial open area around the valve head in the order of the passage through the aligned pipes to avoid friction and pressure losses of fluids flowing through said combined check valve and union, an internally threaded slip nut having an inwardly projecting flange of a size to be threadedly mounted on the one end of said tubular housing with the opening in the flange portion of a size to pass over the cylindrical tubular valve body member, and a gasket in said internally threaded slip nut engaging the said one end of the tubular housing whereby when the slip nut is tightly screwed onto the cylindrical housing a fluid tight joint will be maintained between the tubular valve body and tubular housing while permitting axial length adjustment to permit installation of the combined check valve and union in aligned pipes which are fixed relative to each other.

3,182,683
PAPER STOCK FLOW SYSTEM

George W. Sargent, Beloit, Wis., assignor to Beloit Iron Works, Beloit, Wis., a corporation of Wisconsin
Filed Oct. 2, 1961, Ser. No. 142,126
5 Claims. (Cl. 137—563)

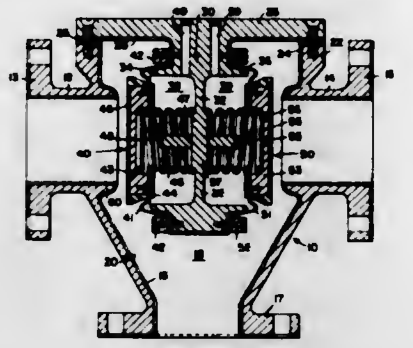


1. A paper stock flow system comprising,
a take off line for leading to a head box,
a first paper stock circulating supply line,
a second paper stock circulating supply line,
a selector valve connected between said lines having spaced first and second passages connected to said first and second lines,
an outlet passage leading from the valve to the take off line with said outlet passage and take off line leading upwardly above the valve,
first and second drain lines leading from the valve,
a rotatable valve plug having a passage communicating with the outlet passage in all operative positions and selectively communicating with one of said first and second supply lines and said first and second drain lines.
so that stock is supplied to the take off line from either supplv line or said take off line is drained into said first or second drain lines.

3,182,684
CONTROL VALVE

Gibson T. Hutchison, Abington, Pa., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Apr. 2, 1962, Ser. No. 184,131
5 Claims. (Cl. 137—606)

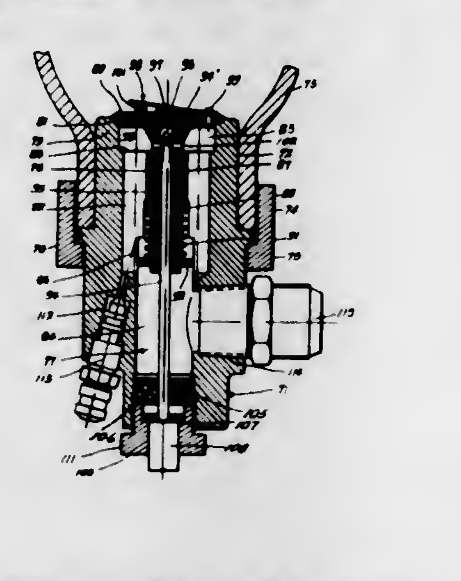
1. A control valve comprising a pipe fitting including a housing defining a valve chamber therein and a pair of flow passageways in communication with said valve chamber, a valve seat formed on said housing at the location where each of said passages communicates with said valve chamber, said housing having an opening formed therein, cover means positioned so as to close and seal said opening, means for removably securing said cover means in said closed and sealed position, a support means on said cover means extending into said valve chamber, a pair of pressure operated valve means carried by said support means within said valve chamber and mounted for movement relative to said valve seats for controlling



flow through said passages, each pressure operated valve means having means defining a control chamber for receiving a pressure operating fluid separate from the other valve means whereby said valve means are operable independently, said valve means being smaller than the size of said opening to permit said cover means, said support means and said valve means too may be removed from said housing as an integral unit.

3,182,685
CLOSURE VALVE FOR THE OUTLET PORT OF A PRESSURE VESSEL

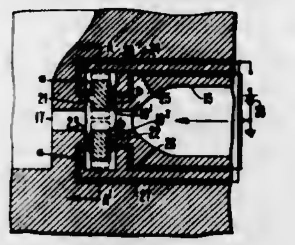
Jean Mercier, 1185 Park Ave., New York, N.Y.
Original application May 27, 1959, Ser. No. 816,114. Divided and this application Dec. 12, 1962, Ser. No. 244,053
Claims priority, application France June 3, 1958
18 Claims. (Cl. 138—30)



1. A pressure vessel comprising a rigid container with an inlet port for a first fluid and an outlet port for a second fluid and a deformable partition intervening between said ports, valve means controlling said outlet port, said valve means comprising a valve seat having an associated passageway, a flexible plate rigidly mounted with respect to said seat and movable to close said passageway, and resilient means comprising a negative spring reacting against said plate between the peripheral zone thereof and the mounted portion thereof to space the portion of the plate outwardly from its affixed portion on said seat, whereby the reaction of the peripheral zone of the plate against the partition is negligible, said peripheral zone being substantially free to yield and said partition reacting against a continuous surface to overcome said resilient means to move said plate to close said passageway.

3,182,686
TRANSDUCER

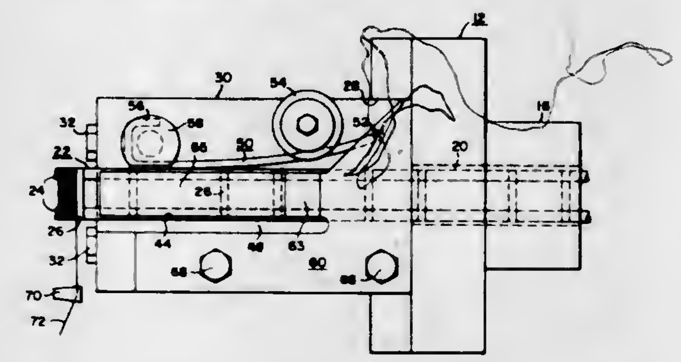
Saul N. Zilberfarb, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 28, 1962, Ser. No. 183,069
11 Claims. (Cl. 138—45)



4. A device for converting an electrical signal into a change in fluid flow which comprises: a conduit adapted to receive a stream of fluid and to conduct same therethrough; a plurality of electro-mechanical transducers made of material whose physical size changes in at least one dimension in response to an applied field; means mounting each said transducer within said conduit in coplanar relationship with at least one other transducer such that said one dimension is transverse to the axis of fluid flow whereby a change therein changes the effective conduit cross-sectional fluid flow area; and means responsive to an electrical signal for simultaneously applying a field to each said transducer whereby said flow area is changed.

3,182,687
HOLDING DEVICE

Donald A. Boylan, Erwin Township, Steuben County, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 21, 1962, Ser. No. 196,119
5 Claims. (Cl. 140—71.5)



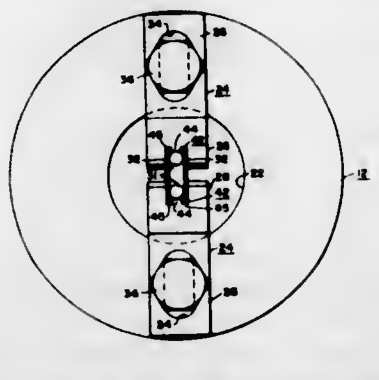
1. In a grid winding machine, a holding device for slidably retaining a frame grid strip having first and second side rods and a plurality of cross bars affixed to and maintaining said side rods in a spaced relationship comprising a support member having first and second fixed surfaces lying in planes substantially perpendicular to each other, first resilient means acting upon said first side rod to maintain said second side rod in slidable contact with said first fixed surface, and second resilient means acting simultaneously upon a plurality of said cross bars to maintain said grid strip in slidable contact with said second fixed surface.

3,182,688
FRAME GRID HOLDING APPARATUS

William H. Simmonds, Pulteney, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 21, 1962, Ser. No. 196,123
5 Claims. (Cl. 140—71.5)

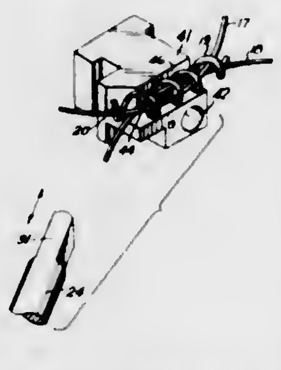
1. In a grid winding machine, a guide for slidably retaining a grid frame having spaced side rods and cross members extending between said side rods comprising a base member, a groove within said base members,

and a pair of jaw members supported within said groove and adjustable with respect to one another along the length of said groove, each of said jaw members having a surface extending substantially prependicular to the surface of said base member, a groove in each of said jaw surfaces, said latter grooves being of substantially U-shaped configuration and having an upstanding portion in the base thereof for slidably retaining said grid frame within said grooves in a manner to provide that the side walls of said grooves contact substantially only said frame grid cross members and said upstanding portion contacts substantially only said side rods.



3,182,689
SPRING UNIT LACING MACHINES

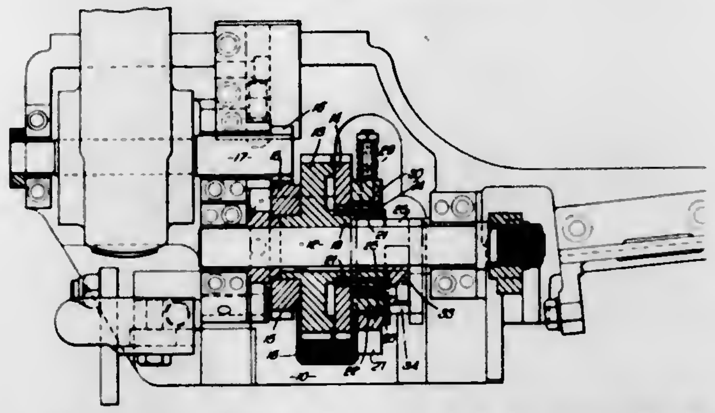
John Henry Hulme, Oldbury, James Frederick William Hemmings, West Bromwich, and Alfred Turley, Bushbury, Wolverhampton, England, assignors to Vono Limited, Tipton, England, a company of Great Britain
Filed June 22, 1961, Ser. No. 118,983
Claims priority, application Great Britain, June 25, 1960, 22,330/60
4 Claims. (Cl. 140—93)



1. A machine of the type specified wherein there is provided at each end of the row of jaw assemblies in the upper and lower frames, an attachment for bending the end of the wire helix over and around the end coil of the end spring in the row of springs next to leave the jaw assemblies, such attachment comprising, an anvil block having a horizontal platform upon which part of the end coil rests during the bending operation, a first vertical face rising from said platform in a plane which is parallel to the axis of the helix and a second vertical face rising from said platform in a plane which makes an acute angle with the axis of the helix whereby there is left a gap between said second vertical face and the portion of the end coil passing across said second vertical face when the end coil is resting upon said platform; and a bending tool which is mounted for reciprocation along a line substantially in the plane of said end coil and substantially normal to said second vertical face of the anvil block, said tool being actuated in timed relationship with the operation of the machine to engage the projecting end of the helix and press this end against the said second vertical face of the anvil block so as to cause it to bend over the said end coil.

3,182,690
STRAPPING TOOLS

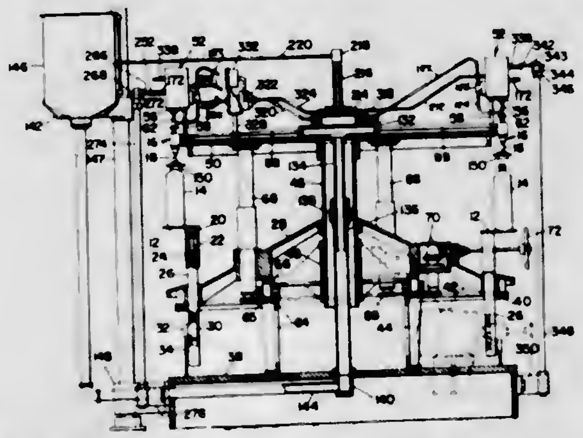
Frank S. Ransom, Birmingham, England, assignor to Fredk. A. Power & Sons Limited, Birmingham, Warwick, England, a British company
Filed Jan. 23, 1963, Ser. No. 253,312
Claims priority, application Great Britain, Feb. 17, 1962, 6,213/62
5 Claims. (Cl. 140—93.6)



1. A strapping tool for securing a strap round a package, comprising a twister pinion with an open ended radial slot for receiving overlapping parts of the strap, a toothed driving gear wheel in mesh with the pinion and having a blank portion from which teeth are absent, a toothed control gear wheel coupled to said twister pinion, and spring means operatively coupled to said control gear wheel to be stressed thereby when the twister pinion and the control gear wheel are driven in one sense by said driving gear wheel and to drive the control gear wheel and the twister pinion in the opposite sense when the drive to the twister pinion by the driving gear wheel is interrupted by the blank portion of the driving gear wheel.

3,182,691
CONTAINER FILLING METHOD AND MACHINE

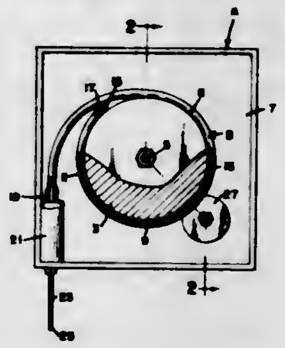
Robert W. Vergobbi, Quincy, Max Knobel, Boston, and William H. Trusselle, Braintree, Mass., assignors to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts
Filed Oct. 12, 1961, Ser. No. 144,623
29 Claims. (Cl. 141—5)



1. In a container filling machine, in combination, a filling head having a liquid supply inlet and a nozzle outlet, a liquid control valve in said filling head, means for conducing air under pressure into the container arranged to sense the height of the liquid when it reaches a predetermined level such as to cut off the flow of air into the container and to create a back pressure in the air conducting means, and control means responsive to said sensing means for operating said valve to discontinue the flow of liquid into the container, said air conducting means comprising a tube extending below said nozzle outlet during the filling operation and movable simultaneously with the operation of said valve to present the end of the tube above said liquid level.

3,182,692
METERING DEVICE

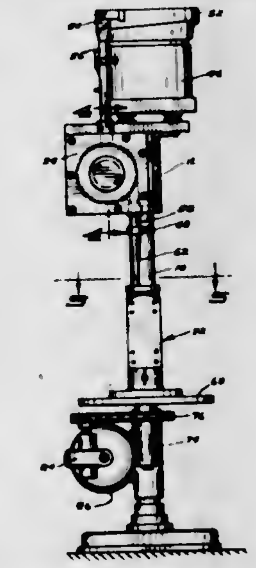
Donald L. Bittner, San Francisco, Calif.
(273 N. Bayshore Blvd., San Mateo, Calif.)
Filed July 11, 1960, Ser. No. 42,106
5 Claims. (Cl. 141—25)



1. In a metering device for metering precise quantities of fluid of the type having a fluid storage chamber, a buffer storage chamber mounted above the fluid storage chamber, and fluid communication means interconnecting said fluid storage chamber and said buffer storage chamber, the improvement comprising: a rotatably mounted tank; means dividing the upper portion of said tank into two sections; a heavy liquid carried within said tank extending above the bottom portion of said dividing means to divide said tank into two separate fluid tight sections; fluid communication means communicating a first one of said sections with said buffer storage chamber; means closing said buffer storage chamber to atmosphere, means to rotate said tank so as to increase the fluid displacement within the first of said sections and thereby create a partial vacuum within said buffer chamber to transfer fluid within the storage tank to said buffer storage chamber in proportion to the displacement created in the first of said sections, and valve means to release fluid communication between the buffer tank and the storage tank and open said buffer storage tank for metering fluid contained within said buffer tank to a dispensing area.

3,182,693
MACHINE FOR MAKING FILTER STRUCTURES

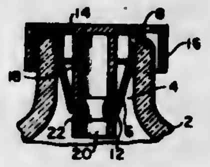
Bertil J. Sundberg, Minneapolis, Minn., assignor to G. H. Tennant Company, Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 13, 1962, Ser. No. 216,421
2 Claims. (Cl. 141—71)



1. A machine for making filter structures comprised of individual fibers of material compressed together in a mold to form a filter mat, said machine comprising a closed mold system including a source of fibers, a housing having a substantially cylindrical chamber, a toothed projection wheel mounted in said chamber, the outer periphery of said projection wheel being closely spaced from the inner surface of said housing chamber, said chamber being closed except for an inlet opening open to the source of fibers and an outlet opening extending substantially tangentially to the outer surface of the toothed wheel, enclosed feed means leading from said outlet opening to form a channel aligned with the tangential discharge opening, a mold having a tubular chamber with the longitudinal dimension thereof aligned with the feed means, said mold being air tight except for an opening leading to said enclosed feed means, and means to rotate said toothed wheel in a direction to engage fibers at the chamber inlet opening and project them from the discharge opening, said teeth on said wheel each having a rotationally leading radial face surface, said face surface being of small enough radial dimension so that substantially no airflow results as the whee. rotates, and means to rotate said mold about its longitudinal axis.

3,182,694
PILL DISPENSER

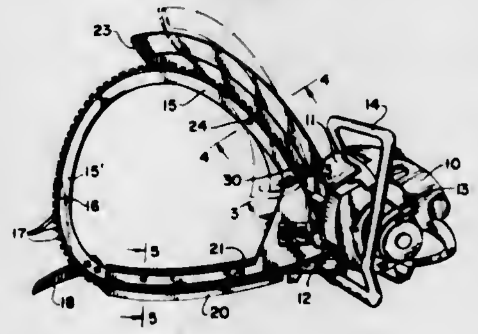
Anthony S. Raimo, 89 Mary Ann Lane, Wyckoff, N.J.
Filed Oct. 16, 1961, Ser. No. 145,143
1 Claim. (Cl. 141—321)



A receptacle for dispensing pills and having a delivery opening, a barrier fixed in said delivery opening having downwardly and inwardly converging resilient fingers, and a cap member fitting over the end of the receptacle and provided with a centrally and downwardly open tubular member when the cap member is in closed position, said cap member being indented to form an inwardly extending annular groove above its lower end, said annular groove providing a latching groove for receiving and latching the inner ends of said resilient fingers, said inwardly extending annular groove also providing a restriction in said member so that its lower end will only receive one or two pills.

3,182,695
SAFETY GUARD FOR CHAIN SAWS

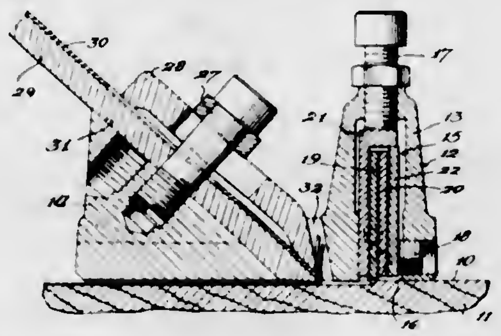
Matt A. Rigoni, Perry, Fla., assignor to Beaugard, Inc., Perry, Fla., a corporation of Florida
Filed Apr. 29, 1963, Ser. No. 276,333
4 Claims. (Cl. 143—32)



1. A bow type chain saw comprising a generally triangularly shaped frame having two side portions and an end portion, power means mounted on said frame at the apex of said side portions, a chain having cutting teeth movably mounted on said frame and driven by said power means, a fixed guard mounted on said frame along one of said side portions, a movable guard mounted on said frame along the other side portion, a pivot mounting said movable guard on said frame a substantial distance from said power means, said movable guard having an arcuate slot disposed radially of said pivot and

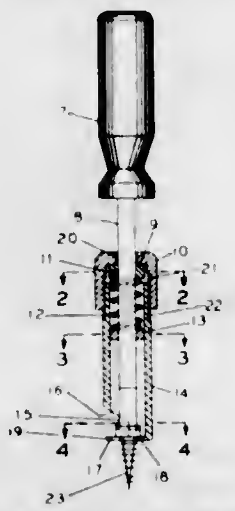
located adjacent to the end of the guard which is adjacent to said apex, a pin on said frame adjacent to said power means and positioned within said slot for limiting the movement of said movable guard, said fixed guard and said movable guards being generally J-shaped in cross-section whereby said chain can be removed from said frame without removing said guards.

3,182,696
METHOD OF MAKING EXCELSIOR
Warren E. Hubbard, Menominee, Mich., assignor to American Excelsior Corporation, a corporation of Delaware
Filed June 24, 1963, Ser. No. 289,905
1 Claim. (Cl. 144—320)



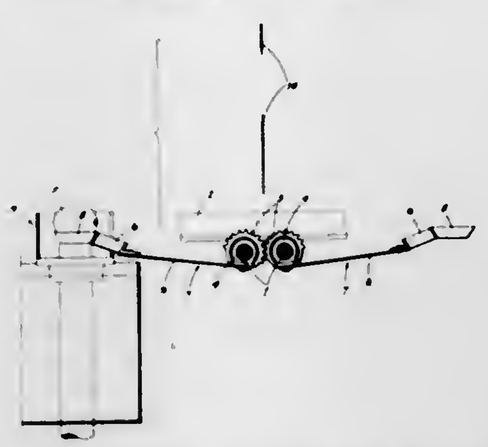
The method of cutting excelsior strands of wood from a block of wood having a surface parallel to the grain of the wood, comprising: scoring the wood at said surface in a plurality of closely spaced, substantially parallel linear indentations with the distance between adjacent indentations determining the width of wood strips; substantially simultaneously compressing said wood laterally between said indentations to set up stresses and case harden the wood adjacent said indentations; cutting said block at a depth to include said indentations to remove the strips from the block; and splitting each of said strips longitudinally into a plurality of said strands subsequent to said scoring and laterally distorting each pair of strands on opposite sides of a said indentation toward each other substantially simultaneously with said splitting substantially to avoid setting up additional stresses as a result of said splitting.

3,182,697
SCREW RETAINING DEVICE FOR SCREWDRIVER
Robert P. Bonewits, R.R. 2, Greenwood, Ind.
Filed Jan. 29, 1964, Ser. No. 341,013
1 Claim. (145—50)



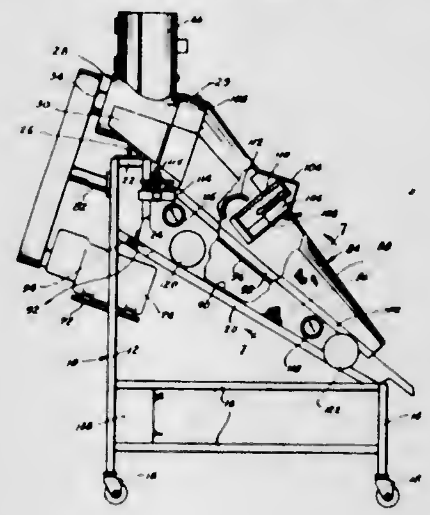
A screw clamping device adapted for mounting over the shank of a screwdriver comprising an abutment element secured to the screwdriver shank, a cylindrical member having a screw seating portion at one extremity and a rotatable element at the other mounted over said shank and abutment member, said rotatable element engaging the abutment member and serving to axially alter the position of said cylindrical member with respect to the screwdriver shank and means secured internally of said cylindrical member and abutting the screwdriver shank to provide a positive drive connection therebetween.

3,182,698
FRUIT POSITIONING CUP UNIT
Norman E. Gaddini, Rte. 1, Box 86, Winters, Calif.
Filed Dec. 24, 1963, Ser. No. 333,019
9 Claims. (Cl. 146—72)



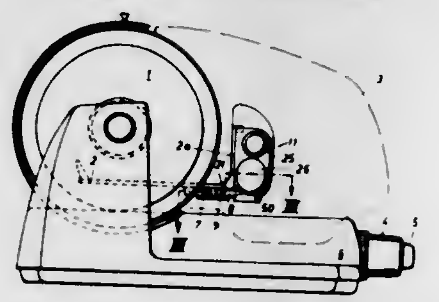
1. A fruit positioning cup unit for a fruit halving machine which includes a pair of opposed vertically reciprocable knives initially spaced apart; the unit comprising a pair of horizontal transversely spaced shafts disposed in parallel below and symmetrical to the knives, an arm secured to and projecting laterally outwardly from each shaft, the arms being opposed in alinement and initially in a lowered position, means connecting the shafts together for rotative oscillation in unison and in opposite directions whereby to simultaneously swing the arms between said lowered position and an upstanding raised position, and a cup on the outer end of each arm; one cup being adapted to receive a fruit thereon, the arms being of equal length and when in raised position disposing the cups in adjacent but spaced facing relation, and said fruit then being engaged on opposite sides by the cups and supported between the knives.

3,182,699
FROZEN FOOD SHAVING AND THAWING MACHINE
Georges M. Binon, 3593 Monroe Ave., Pittsford, N.Y.
Filed July 31, 1962, Ser. No. 213,697
7 Claims. (Cl. 146—91)



1. A frozen food shaving and thawing machine, comprising means for shaving particles from a body of frozen food, a housing having an entrance at one end arranged to receive said food particles from said means, a metallic conveyor plate mounted in said housing at a predetermined angle of approximately forty-five degrees to a horizontal plane with the upper end positioned to receive and support food particles delivered at said entrance and inclining downwardly therefrom, for movement of said food particles downwardly on the upper surface of said plate for discharge from said lower end at the opposite end of said housing, said housing having upper and lower separate heating compartments on opposite sides of said conveyor plate, a fluid heating medium in each compartment, independent means for heating the fluid in each compartment, means for controlling the temperature of the fluid in at least one of said compartments, and means for circulating the fluid in at least one of said compartments, whereby said conveyor plate and food particles thereon are heated to thaw the food particles on said plate while moving downwardly on said plate aided by the thawing of said particles for discharge of thawed food from said housing at the lower end of said plate.

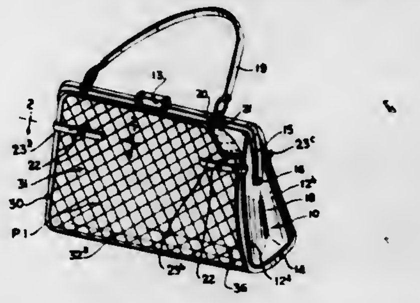
3,182,700
SLICING MACHINE INCLUDING KNIFE SHARPENING MEANS
Walter Engi, Zurich, Switzerland, assignor to Adolf Ditting
Filed Mar. 8, 1962, Ser. No. 178,387
Claims priority, application Switzerland, Mar. 13, 1961, 2,976/61
5 Claims. (Cl. 146—102)



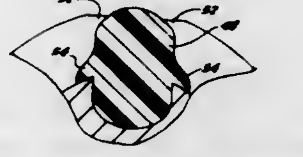
1. A slicing machine, comprising a cutting mechanism with a circular rotary knife having an axis of rotation, reciprocable table means for guiding the object to be sliced by said knife and movable in a direction substantially at right angles to the axis of rotation of said knife, sharpening means carried by said table means in a radial direction from said knife, said sharpening means comprising a first abrasive disc and a second abrasive disc for sharpening the knife, axle means rotatably supporting said first disc on an axis substantially parallel to the axis of said knife, axle means rotatably supporting said second disc on an axis inclined relative to the axis of said first disc and offset therefrom in the direction of the circumference of said knife, each disc being reciprocable along its respective axis, first and second means connected to said first and second discs respectively and exposed for engagement, a common biasing member engaging said first and second means biasing said discs in one direction, first spring means engaging said first disc and biasing it in a direction opposite to said one direction and weaker than said biasing member, and second spring means engaging said second disc and biasing it in said one direction, said discs as to the positions thereon nearest the knife being positioned one on one side of the plane of the edge of the knife and the other on the other side of said plane.

3,182,701
MULTIPLE FACE HANDBAG
Abraham Ginsburg, Teaneck, N.J.
(639 59th St., West New York, N.J.)
Filed July 15, 1963, Ser. No. 294,866
2 Claims. (Cl. 150—28)

1. In a lady's handbag having opposing outer sides and a bottom panel joined to bottom edges of said sides, in combination a pair of loops secured to each of the sides and extending outwardly thereof, each loop being disposed in a plane perpendicular to the bottom of the handbag, the loops of each pair being located near opposite upper corners of each outer side of the handbag, and a plurality of straps respectively located near the loops with one end secured to an end edge of an outer side and with a free end insertable through the adjacent loop, a first opaque flexible cover having outer panel portions conforming in size and shape to the outer sides of the handbag with a central panel portion conforming in size and shape to said bottom panel, said cover having holes near outer corners thereof engaged on the loops respectively, and a transparent flexible cover conforming in size and shape to the first cover and covering the first cover so that the first cover is visible therethrough, said transparent cover having holes near outer corners thereof registering with the holes in the first cover and engaged on said loops, the free ends of the straps being inserted in the loops and holding the two covers on the handbag, said first cover having different patterns on opposite side panel portions thereof so that the different patterns may be selectively exposed through the transparent cover when either patterned side panel portion faces outwardly of the outer sides of the handbag, said transparent cover being secured at one end thereof to one end of the first cover so that the transparent cover can be selectively disposed either outside of the first cover or between the first cover and outer sides and bottom panel of the handbag.



3,182,702
SELF-LOCKING FASTENER AND METHOD OF MAKING SAME
Tucker E. Nason, Portuguese Bend, and Robin J. Starriett, Encino, Calif., assignors to Long-Lok Corporation, Los Angeles, Calif., a corporation of California
Filed Sept. 13, 1962, Ser. No. 223,374
3 Claims. (Cl. 151—7)

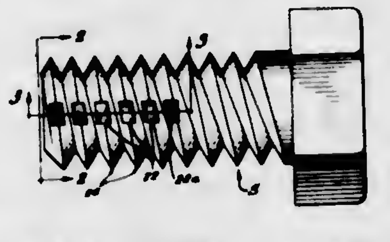


1. A fastening assembly for cooperation with a complementary threaded element comprising:
- a fastening member having a portion with a screw thread for engagement with the thread of said complementary element;
- a longitudinal groove in said portion cutting through the turns of the screw thread with cut portions of the turns of the screw thread terminating at the opposite sides of the groove;
- an elongated resiliently deformable plastic insert bottomed in said groove and extending outwardly to at least the pitch diameter of said screw thread both in the regions of the turns of the screw thread and in the regions of the valleys formed by the turns of the screw thread and protruding laterally from the groove at a plurality of points at each side of the groove in interlocking engagement with portions of the turns of the screw thread immediately adjacent the groove to anchor the insert against longitudinal movement at a first series of longitudinally spaced points and to make pressure contact with said thread

of the complementary element, crest portions only of said cut portions of the turns of the screw thread overhanging the groove and the outer surface of the insert from opposite sides of the groove and being deformed to press on the outer surface of the insert to retain the insert under permanent transverse compression against the bottom of the groove and to prevent buckling of the insert and to anchor the insert against longitudinal movement at a second series of longitudinally spaced points, the two series of points being staggered, the longitudinal portions of the insert between the successive crest portions of said cut portions constituting the major portion of the length of the insert and being free from restraint by overhanging material of the screw thread.

3,182,703
SELF-LOCKING SCREW-THREADED FASTENER

George F. Smyth, Los Angeles, Calif., assignor to Long-Lok Corporation, Los Angeles, Calif., a corporation of California
Filed Dec. 18, 1963, Ser. No. 331,992
8 Claims. (Cl. 151—7)

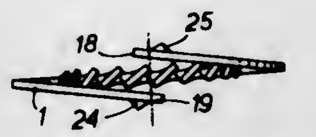


1. A fastening assembly for cooperation with a complementary threaded element, comprising:
a fastening member having a portion with a screw thread for engagement with the thread of the complementary element;
a series of substantially aligned notches in successive turns of said screw thread, the bottom of the notches being intermediate the minor and major diameters of the screw thread to truncate corresponding portions of the screw thread; and
an elongated insert body of deformable resilient plastic material seated in said series of notches and extending radially outward at least to the major diameter of the screw, the insert body straddling the truncated portions of the screw thread, the insert body completely filling the valleys of the screw thread in the longitudinal region of the notches and bulging into the valleys in both lateral directions from the longitudinal region, whereby the insert body is anchored at multiple points against bodily longitudinal movement and in the course of the screw engagement of the fastening member with the complementary element the advancing thread of the complementary element traps portions of the insert material in the notches and extrudes the rest of the insert material away from the trapped portions into adjacent portions of the helical space between the screw thread of the fastening member and the screw thread of the complementary element with consequent creation of internal pressure in the trapped portions and in the extruded portions of the insert material to resist unscrewing of the complementary element.

3,182,704
HELICAL LOCKING WASHERS

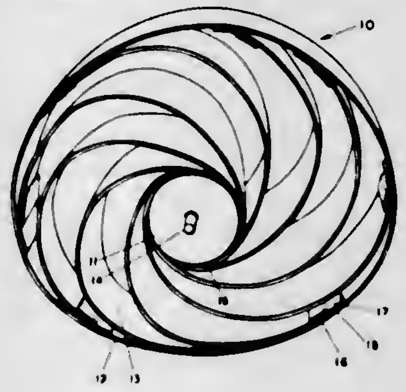
Ernst Jordan, Leinpfad 17, Hamburg 39, Germany
Filed May 31, 1961, Ser. No. 113,849
Claims priority, application Germany, July 1, 1960, J 18,380
3 Claims. (Cl. 151—36)

1. A locking washer comprising a helical body having partially overlapping end portions which terminate in straight non-radial edges, the extent of the overlap being such that a projection of the non-radial edges intersects between the inner and outer peripheries of the body thereby defining overlapping sections of said end portions, respectively, adjacent the outer periphery of said body and non-overlapping sections of said end portions, respectively, adjacent the inner periphery of said body, and two end teeth bent from the non-overlapping sections of said end portions respectively thereby defining non-radial bend lines, said teeth being inclined to the body and projecting outwardly in opposite directions away from each other, said teeth being the furthest axially extending portions of said body, said bend lines diverging inwardly from an apex intermediate said peripheries.



3,182,705
RESILIENT WHEEL

Edward G. Markow, Oakdale, N.Y., assignor to Grumman Aircraft Engineering Corporation, Bethpage, Long Island, N.Y., a corporation of New York
Filed Aug. 29, 1963, Ser. No. 305,409
7 Claims. (Cl. 152—12)



1. A resilient wheel comprising a hub, elastic rim means, and a plurality of arcuate elastic spokes connecting said rim means to said hub, said wheel having a spring constant of not less than 1 and not more than 100, said spring constant being defined as

$$\frac{r^4 K_s}{E_r I_r C}$$

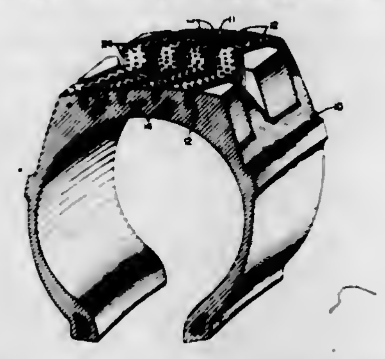
wherein r is the radius of the free and undistorted wheel, K_s is the sum of the spring constants of the individual spokes, E_r is the modulus of elasticity of the rim, I_r is the moment of inertia of the rim, and C is the circumference of the rim.

3,182,706
ANTI-SKID TIRE

Edward Cousins, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 4, 1963, Ser. No. 262,469
4 Claims. (Cl. 152—211)

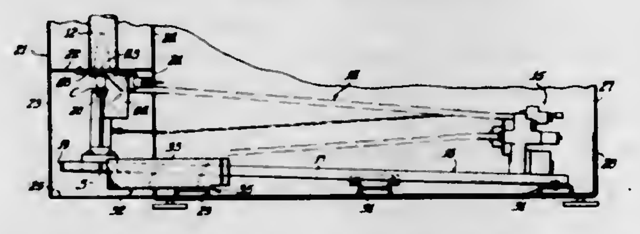
1. In a tire, a rubber tread portion integral therewith, having at least one anti-skid insert made of metal wire embedded in the tread portion, said insert having a width of substantially the same dimension as the thickness of the tread, said insert having at least one continuous base member extending longitudinally of the insert and a plurality of pairs of substantially parallel teeth spaced from each other and projecting from said base member and terminating at the tread surface, each pair of teeth formed of a length of wire, the central portion of said length of

wire being looped around and interlocked with said base member, whereby said teeth are maintained in interlocked relationship throughout the life thereof to prevent them from being thrown out of said tread.



3,182,707
BURNER-POSITIONING AND MOUNTING ASSEMBLY FOR FUEL BURNING APPLIANCES

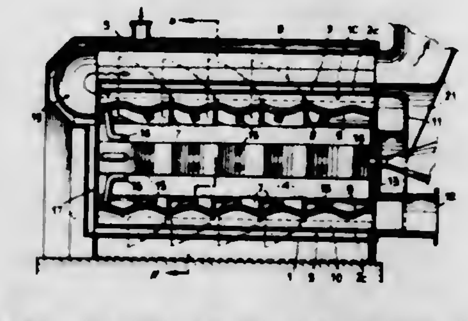
Frank E. Batson, Fort Smith, Ark., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 1, 1962, Ser. No. 199,297
4 Claims. (Cl. 158—2)



1. In a fuel burning appliance having a container provided with a vertical stationary flue, and a fuel burner device having a vertical mixing tube with an upper flame-projecting cap, the improvement residing in means for supporting said device in said container for generally horizontal movement; means for guiding said movement of said device to position said tube beneath and in vertical alignment with said flue; and means for elevating said device, during horizontal movement of said device, to position said cap so that the flame is substantially within the lower end of said flue, said elevating means including a member on said device and disposed in a horizontal plane above said tube thereof, and a support secured to said container adjacent said flue and inclined downwardly toward said device to engage and raise said member during said movement of said device.

3,182,708
LIQUID FUEL COMBUSTION CHAMBER WITH AIR NOZZLES IN WALLS AT DIVERSE ANGLES

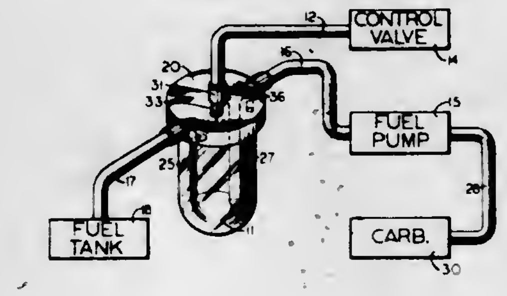
Gianmario Mozzi, Via L. Da Vinci 179, and Carlo Puccinelli, Via Rosmini 35, both of Viareggio, Lucca, Italy
Filed Nov. 21, 1962, Ser. No. 239,259
Claims priority, application Italy, Nov. 27, 1961, 21,970/61
6 Claims. (Cl. 158—4)



1. Apparatus for the combustion of fluid fuel comprising, in combination, a longitudinally elongated combustion chamber including substantially parallel front and rear walls and substantially parallel bottom, top and side walls, a mechanical fuel injector extending into said combustion chamber through said front wall for projecting atomized liquid fuel along the longitudinal axis of the combustion chamber, means forming air channels extending along the top, bottom and side walls of the combustion chamber, a plurality of tubular air nozzles projecting from said channels into said combustion chamber, the nozzles adjacent said front wall being inclined inwardly and rearwardly, with the nozzles nearest said front wall having a greater rearward inclination than those nozzles farther from the front wall, the nozzles at the center of the chamber being substantially perpendicular to the longitudinal axis thereof and the nozzles adjacent the rear wall being forwardly and inwardly inclined, with the nozzles nearest the rear wall having a greater forward inclination than those more remote therefrom, said nozzles adjacent said front wall being spaced from said injector initially to oxidize the fuel at a distance therefrom, additional nozzles immediately adjacent said rear wall extending substantially parallel to the longitudinal axis of the combustion chamber, and means for supplying air under pressure to said air channels.

3,182,709
CONTROLLED FUEL LIMITER

John T. Fisher, 6325 W. 85th Place, Los Angeles 45, Calif.
Filed Apr. 8, 1963, Ser. No. 271,132
7 Claims. (Cl. 158—36.3)



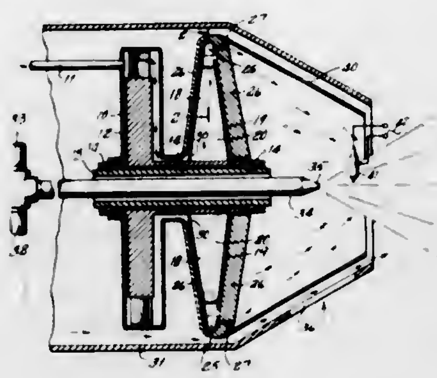
1. In an engine fuel system, said engine being supplied fuel from a fuel tank by the pumping action of a vacuum pump, means for selectively limiting the available fuel supply to the engine to a predetermined amount comprising
a substantially airtight container,
means for connecting said container to said fuel tank,
means for continually connecting the top of said container to said vacuum pump to provide for the scavenging of air from said container,
means for continually connecting the bottom of said container to said vacuum pump, and
valve means connected to said container for selectively permitting air to enter said container,
whereby when air is permitted to enter said container, said pump pumps only the fuel supply remaining in said container to said engine.

3,182,710
TURBINE DRIVEN SUPERSONIC INDUSTRIAL OIL BURNER

Wadsworth W. Mount, Mountain Ave., Warren Township, Somerset County, N.J.
Filed Jan. 7, 1963, Ser. No. 249,727
2 Claims. (Cl. 158—77)

1. A liquid fuel burner comprising a fuel nozzle, a rotor mounted coaxially of said fuel nozzle, a stationary annular plate having perforations about the periphery thereof and mounted coaxially of and adjacent to the rotor, means for rotating the rotor at high speed, means operably associated with the periphery of the rotor for

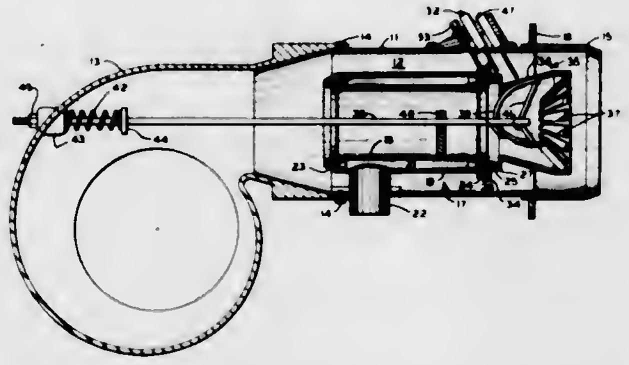
discharging gas under pressure at predetermined intervals through the perforations in the perforated member to provide an annular source of sound waves of super-



sonic frequency, means for directing and concentrating the sound waves toward the axis of the fuel nozzle of the liquid fuel burner whereby the liquid fuel is broken up into minute particles.

3,182,711
NOZZLE MIXING TYPE GAS BURNER

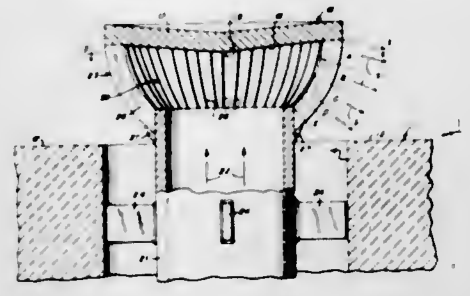
Wendell E. Robb, Tulsa, Okla., assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Mar. 26, 1962, Ser. No. 182,600
7 Claims. (Cl. 158—109)



1. Burner apparatus comprising, in combination: first wall means forming a passage having an inlet adapted to receive a stream of air and an outlet longitudinally spaced from the inlet; second wall means disposed interiorly of the first wall means and spaced therefrom and forming an annular chamber whose axis is substantaially parallel to the axis of the longitudinal passage and which is shaped as a pair of spaced apart U-shaped portions in axial cross-section with the bight of each U-shaped portion extending toward the inlet of the passage, and each U-shaped portion being substantially unobstructed to flow as it extends away from the bight toward the outlet of the passage; annular fuel supply means disposed within the passage exteriorly of the annular chamber and adjacent and substantially concentrically thereto and comprising first port means for delivering a first portion of a fuel supply to the passage exteriorly of the annular chamber in an annular pattern with a direction of flow toward the outlet of the passage, and further comprising second port means for delivering a second portion of the fuel supply in an annular pattern to the interior of the annular chamber; and third port means for admitting a portion of the air stream flowing through the passage to the interior of the annular chamber in an annular pattern to form a combustible mixture of air and fuel with the second portion of the fuel supply, the annular chamber being of such an extent that, when the combustible mixture is ignited, it will burn with stability therein and flame will extend therefrom to ignite and stabilize the subsequent combustible reaction between the first portion of the fuel supply and air from the remaining portion of the air stream.

3,182,712
GASEOUS FUEL BURNER FOR PRODUCING RADIANT HEAT

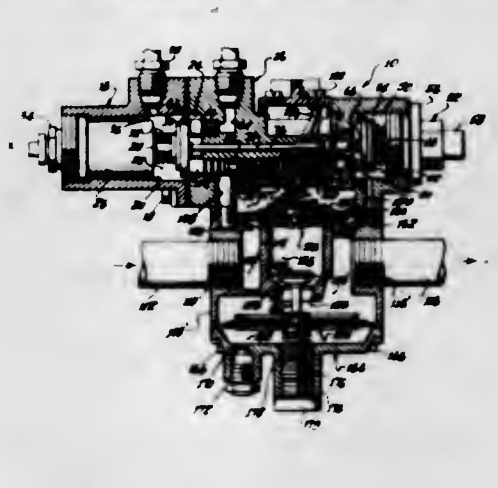
John Smith Zink and Robert D. Reed, Tulsa, Okla., assignors to John Zink Company, Tulsa, Okla., a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,439
3 Claims. (Cl. 158—116)



1. A burner assembly for gaseous fuel comprising, ceramic means having a flat face throughout and in a single plane confronting a space to be fired, said ceramic means having an opening therethrough, a conduit of smaller cross section than said opening arranged therein, an end wall arranged transversely of and spaced from the downstream end of said conduit, the perimeter of said end wall projecting beyond the perimeter of said conduit, an annular wall joining the perimeter of said end wall with the downstream end of said conduit providing a burner head with a chamber therewithin for receiving gaseous fuel under pressure from said conduit, said annular wall having a spherical shaped outer surface and having a plurality of elongated slots therein all extending in the direction of the axis of the burner head, said annular wall having a thickness of such magnitude with relation to the width of said slots as to prevent backflash, upstream ends of said slots being positioned adjacent the face of said ceramic means and downstream of said face, and the downstream ends of said slots terminating adjacent the upstream face of said end wall.

3,182,713
COMBINATION PRESSURE-TEMPERATURE CONTROL AND VALVE

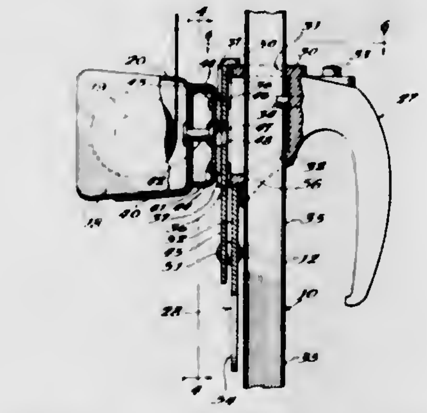
Walter S. Lee, P.O. Box 537, Corona, Calif.
Filed June 29, 1962, Ser. No. 206,382
18 Claims. (Cl. 158—129)



15. The combination of:
a valve housing having an inlet adapted to be connected to a source of gaseous fuel and an outlet adapted to be connected to a main burner;
a partition within the housing dividing it into an inlet chamber and an outlet chamber, the inlet chamber being in communication with the inlet and the outlet chamber being in communication with the outlet;
an opening in the partition providing a main valve seat;
a diaphragm assembly extending across the inlet chamber to provide an exhaust chamber on the side of said assembly removed from the inlet, the assembly including a diaphragm valve for engagement with the main valve seat;
a first passageway between the inlet chamber and the exhaust chamber with first valve means controlling the flow of gaseous fuel therethrough;
a second passageway between the exhaust chamber and atmosphere with second and third spaced-apart valve means controlling the flow of gaseous fuel therethrough;
yieldable means biasing the third valve means to the open position;
a third passageway for conection between a source of gaseous fuel and a pilot burner with fourth valve means for controlling flow therethrough;
yieldable means biasing the fourth valve means to the closed position;
means maintaining the second valve means in the closed position when the fourth valve means is in the closed position;
manually operable means for moving the third valve means from the open to the closed position while the pilot burner is being ignited;
means responsive to the movement of the third valve means for moving the fourth valve means from the closed to the open position after the third valve means has moved to the closed position;
means releasably maintaining the fourth valve means in the open position so long as the temperature at the pilot burner is above a predetermined amount; and
means for opening the second valve means and closing the first valve means when the fourth valve means is in the open position, responsive to predetermined physical conditions.

3,182,714
TENSIONER MECHANISM FOR A PORTABLE MOVIE SCREEN

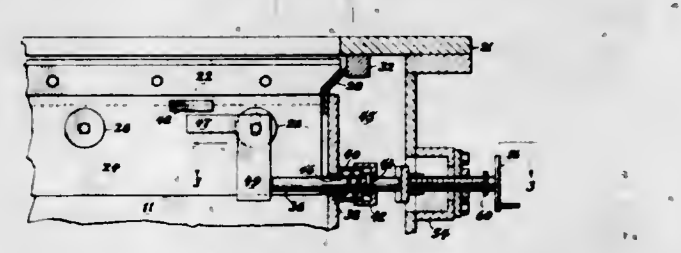
Edward J. Petrick, Park Ridge, Ill., assignor to Knox Manufacturing Company, a corporation of Illinois
Filed Apr. 24, 1963, Ser. No. 275,388
6 Claims. (Cl. 160—24)



6. A portable projection screen, comprising: an upright standard; an elongated hollow screen casing; a flexible screen provided with a pair of rod members one secured to each of the opposite end portions of said screen, one rod member being in the form of a spring wound reel journaled in the casing about which the screen is wound in retracted position, and the other rod member being adapted to be attached to the standard to expose the screen in viewing position; a support member attached to the standard and having a track on its forward face; a slide secured centrally of the casing and cooperating with said track to permit limited slidable movement with the casing when the screen is in viewing position; a rotatable cam member; and a pair of portions one on the slide and the other on the standard, one of the portions rotatably mounting the cam member whereby rotation of the cam member causes the cam member to engage the other of the portions to force the slide and the portion thereon to move away from the other rod member when the screen is in viewing position to stretch the screen taut between the rod members.

3,182,715
SEALING ARRANGEMENT FOR AIR HEATERS

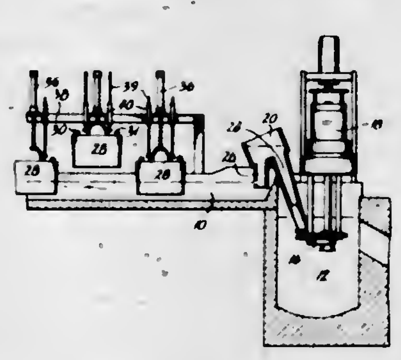
Walker H. Rayburn, Scio, N.Y., assignor, by mesne assignments, to Combustion Engineering, Inc., a stock corporation of Delaware
Filed Sept. 29, 1961, Ser. No. 141,714
5 Claims. (Cl. 165—9)



1. Heat exchange apparatus having a rotor adapted to rotate a mass of heat absorbent element alternately between a heating fluid and a fluid to be heated including a cylindrical rotor shell joined to a central rotor post by radial partitions to form sectorial compartments for said heat absorbent element, a rotor housing surrounding the rotor in spaced relation and having end plates at opposite ends thereof including apertures between imperforate portions that simultaneously direct a heating fluid and a fluid to be heated through spaced portions of the rotor, radial support arms positioned laterally adjacent the axially remote ends of each radial partition, said support arms having a dependent inner end secured to the rotor post and an independent outer end that terminates at a point adjacent the rotor shell, sealing means carried by said support arms adapted to bridge the space between the radial partitions and the imperforate portions of the end plates, and means actuated by rotation of the rotor about its axis intermittently applying an axial force against the ends of said radial arms to maintain them at all times independent and free from interference with the radial partitions.

3,182,716
APPARATUS FOR COOLING MOLTEN METALS

John Howard McNicol and Richard Henry Rowell, Port Pirie, South Australia, Australia, assignors to The Broken Hill Associated Smelters Proprietary Limited, Melbourne, Victoria, Australia, a company incorporated of Australia
Filed Feb. 25, 1963, Ser. No. 260,562
Claims priority, application Australia, Feb. 27, 1962, 14,821/62; Dec. 20, 1962, 25,726/62
4 Claims. (Cl. 165—12)



2. Apparatus for cooling molten metals, comprising an elongated open channel for molten metal, said channel having an inlet end and a discharge end; means for con-

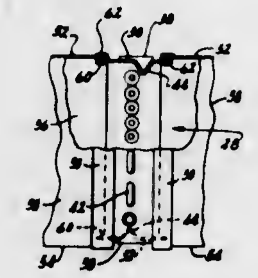
tinuously supplying molten metal to the inlet end of said channel; a plurality of removable immersion coolers arranged at spaced intervals along the channel so that molten metal normally passes around and in contact therewith; each of said coolers comprising a downwardly convergent hollow body of vertical plate-like form having means for circulating coolant therethrough; at least one substantially vertically disposed solid wing formed on and projecting from each cooler; means arranged above and supporting said immersion coolers; and means operable to raise and lower the coolers thereby to withdraw them from and return them to said channel.

3,182,717
DUCT-INSTALLABLE HEAT EXCHANGER

Robert E. Pierce, Farmington, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 25, 1961, Ser. No. 147,584

1 Claim. (Cl. 165—47)



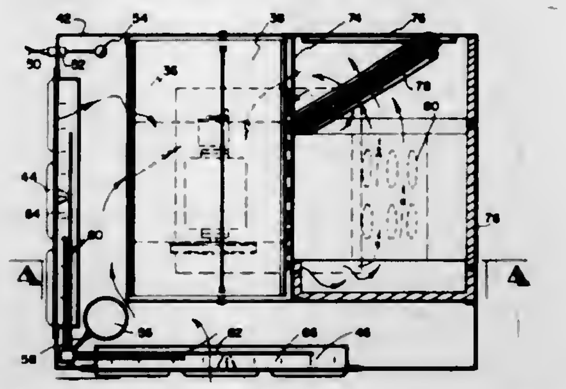
An air conditioning system comprising two horizontally aligned spaced rectangular ducts, each having a top wall, two side walls, a bottom wall and vertical flanges formed on duct side walls extending outwardly from the edges of said side walls and then parallel therewith in opposite directions; a rectangular heat exchanger interposed between the two ducts and including a sheet metal top panel, a sheet metal bottom panel, and two sheet metal side panels having their upper and lower edge portions affixed to respective ones of the top and bottom panels; said side panels being of lesser horizontal dimension than the top and bottom panels so that the free edge portions of the top and bottom panels extend horizontally beyond the limits of the side panels into overlapping relation with edge portions of the duct top and bottom walls; each of said side panels lying in the same vertical planes as the corresponding side walls of the duct sections; each of said side panels having vertical flanges extending outwardly from their free edges and then parallel to the panel surfaces so that the outwardly extending portions of the panel flanges abut against the outwardly extending portions of the duct flanges; four elongated S-shaped seal members fitted on the over-lapped edge portions of the heat exchanger top and bottom panels and the duct top and bottom walls; four C-shaped clamps slidably telescopically engaging the aforementioned abutting flanges to lock the heat exchanger to the ducts; a series of horizontal finned heat exchange tubes extending between and through the two side panels; fluid conduit means located outside said side panels and operatively connecting the heat exchange tubes together for conduction of heat exchange fluid therethrough; said top panel having a generally V-shaped rib formed integrally therewith and extending into close adjacency with the edges of the fins on the uppermost heat exchange tube to constitute an air baffle and a reinforcement for the top panel; and said bottom panel having a generally V-shaped rib formed integrally therewith and extending into close adjacency with the edges of the fins on the lowermost heat exchange tube to constitute a baffle and reinforcement for the bottom panel.

3,182,718
AIR CONDITIONING SYSTEM

William H. Goettl, 4627 N. Granite Reef Road, Scottsdale, Ariz.

Filed Aug. 26, 1963, Ser. No. 304,569

13 Claims. (Cl. 165—60)



1. In an air conditioning system the combination of: a blower impeller; a blower housing surrounding said impeller; an inlet and an outlet for said blower housing; a second housing surrounding said blower housing; said blower inlet communicating with the interior of said second housing; said blower outlet communicating externally of said second housing and said blower housing; first and second inlet openings in said second housing disposed to conduct air flow from the exterior thereof to the interior thereof; first and second flow control means disposed alternately to open and close said first and second inlet openings of said second housing; an evaporative cooler housing communicating with one of said inlets of said second housing; an evaporative cooler pad forming an air inlet for said evaporative cooler housing; means for supplying water to said pad; a third housing communicating with the other of said inlets of said second housing; and means in said third housing for heating air for delivery to said other of said inlets.

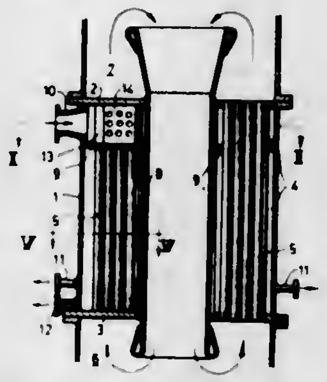
3,182,719
MULTITUBULAR HEAT EXCHANGER

Alfred Christ, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland

Filed Dec. 26, 1962, Ser. No. 247,043

Claims priority, application Switzerland, Jan. 10, 1962, 267/62

5 Claims. (Cl. 165—111)



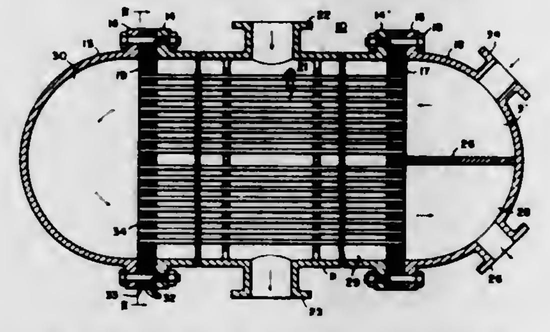
1. A multitubular heat exchanger for the transfer of heat from condensing steam to a heat absorbing medium comprising a shell; an upper and a lower end plate forming with said shell a chamber; a partition substantially parallel with and arranged between said end plates so as to divide said chamber into a relatively small upper space and a relatively large lower space; a bundle of spaced apart tubes extending in parallel relationship through said chamber from said upper to said lower end plate so that all of said tubes traverse said partition; the said partition having perforations dimensioned so that each tube passes through a corresponding perforation with clearance; at least one supply connection for the supply of the steam to said upper space, the steam, in order to enter into the lower space, being constrained to flow along longitudinal flow paths defined by the clearances between the tubes and the perforations through which they pass and thence longitudinally along the corresponding tube surface; flow connections for the circulation of a heat absorbing medium through said tubes; a discharge connection for the discharge of condensate from said lower space; and a venting pipe issuing from said lower space in the vicinity of the lower end plate.

3,182,720
HEAT EXCHANGE APPARATUS

Francis X. Brown, Broomall, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 27, 1961, Ser. No. 162,375

6 Claims. (Cl. 165—158)



1. A heat exchanger structure comprising,

a casing structure,

partition structure dividing said casing into first and second compartments,

said partition structure including a stack of more than two sheet metal plates of substantially similar shape disposed in face-to-face abutment with each other,

said plates being of individual thickness insufficient to individually withstand operational stresses, but of aggregate thickness to withstand said stresses,

each of said plates having a plurality of apertures extending therethrough in a substantially identical pattern,

the apertures in one of said plates being disposed in axial registry with the associated apertures in the other plates,

a bundle of elongated tubular members,

said tubular members having portions received in said apertures and disposed in fluid flow communication with said first compartment,

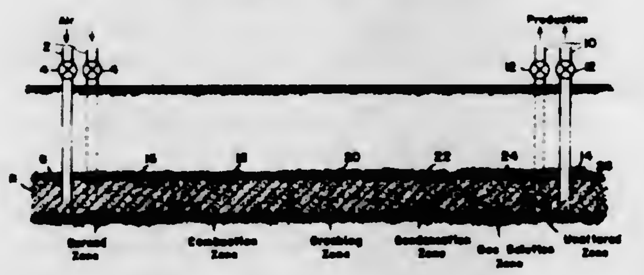
and means associated with said apertures providing a fluid tight seal between said first and second compartments.

3,182,721
METHOD OF PETROLEUM PRODUCTION BY FORWARD IN SITU COMBUSTION

William C. Hardy, Richardson, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Nov. 2, 1962, Ser. No. 235,028

3 Claims. (Cl. 166—11)



1. The method of production of hydrocarbon materials from a hydrocarbon-containing formation penetrated by at least two wells comprising:

injecting into one of said wells an oxygen-containing gas and supporting thereby combustion of carbonaceous material in said formation with progression of the combustion towards the other of said wells and removal of products from the latter, the foregoing procedure being carried out under elevated pressure conditions in the formation;

maintaining the foregoing procedure until a substantial resistance to flow through the formation appears between said wells;

then effecting lowering of the pressure in the formation while maintaining pressure conditions to continue flow of products through the second mentioned well, said lowering of pressure being maintained until said resistance to flow is substantially decreased by reason of vaporization of condensed liquids; and

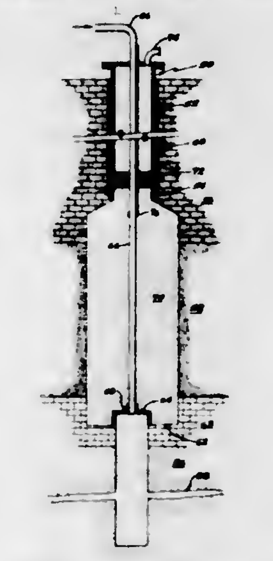
thereafter continuing the procedure first above mentioned under elevated pressure conditions in the formation.

3,182,722
PROCESS FOR COMPLETING WELLS IN UNCONSOLIDATED FORMATIONS BY REVERSE IN SITU COMBUSTION

Ronald L. Reed, Allison Park, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Dec. 19, 1961, Ser. No. 160,494

3 Claims. (Cl. 166—25)



3. A process for completing a well in an unconsolidated formation penetrated by the well comprising drilling the borehole of the well completely through the unconsolidated formation into a permeable formation below the unconsolidated formation, forming a sand pack of sand and a cokable oil in the borehole of the well throughout the interval of the unconsolidated formation, displacing air downwardly through the well into the upper end of the sand pack, igniting oil at the lower end of the sand pack whereby a reverse combustion zone passes upwardly through the sand pack, discharging products of combustion from the lower end of the sand pack into the permeable formation below the unconsolidated formation, and terminating the injection of air when the combustion zone reaches the upper end of the sand pack.

3,182,723
WELL TOOL FOR DEPOSITING MATERIAL IN A WELL

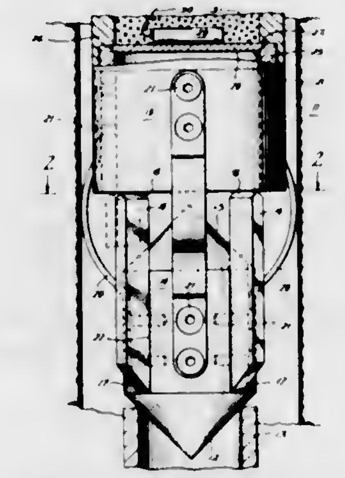
Warren K. Layne, Sr., 9762 Westview, Houston, Tex.

Filed Sept. 18, 1963, Ser. No. 309,664

7 Claims. (Cl. 166—51)

1. A well tool for depositing a material in the annulus around a tubular element positioned in a well, said tool comprising:

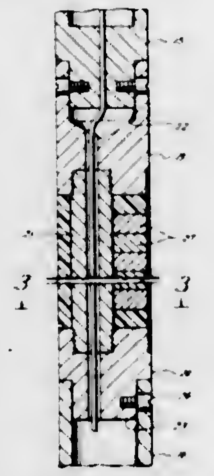
a cylindrical body member having
a downwardly pointing conical shaped lower end for seating in the upper end of said tubular element, and
an upwardly pointing conical shaped upper end for dispersing said material radially outward and into said annulus,



a plurality of rigid stop members secured to said body member and projecting upwardly therefrom and slidably engaging the lower end of a tubular container and maintaining a fixed minimum axial distance between said body member and said container,
said container being adapted to be raised and lowered in said well,
a plurality of centralizing guide springs connecting said body member and the lower portion of said container and resiliently supporting said body member,
said container having a frangible member positioned near the bottom thereof for supporting said material contained therein, and
explosive means positioned adjacent said frangible member for shattering said frangible member upon detonation of said explosive means.

3,182,724
ORIENTING APPARATUS AND ITS MANUFACTURE

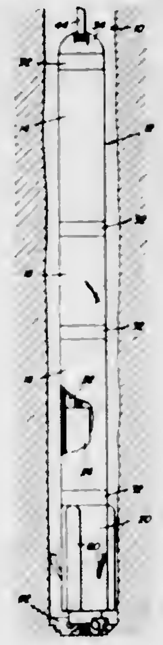
James B. Shore, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Original application Apr. 21, 1960, Ser. No. 23,825. Divided and this application Mar. 1, 1963, Ser. No. 262,010
10 Claims. (Cl. 166—55.1)



5. A cylindrical magnetic device for use in a cased well bore below the lower end of a string of small diameter tubing and sized for passage through a string of tubing comprising: an upper cylindrical head, a lower cylindrical head and an elongated supporting cylindrical rod member fixed to said heads, said heads having ends arranged for coupling in a tool assembly, a number of substantially crescent shaped magnets with a generally cylindrical outer surface disposed between said heads with the openings of said magnets being sized to the diameter of said rod member, and a bonding material in said device to secure said magnets in a fixed position, said magnets in said fixed position having short, curved pole pieces aligned lengthwise of said device to develop a force of magnetic attraction in a radial plane between said pole pieces, said outer surfaces of said magnets being within the cylindrical profile of said heads.

3,182,725
WELL SEALING, BRIDGING, PLUGGING AND TESTING ATTACHMENT DEVICE

Monte N. Moore, Flint, Mich., assignor to Carpac Investments Limited, Sarnia, Ontario, Canada
Filed Aug. 17, 1960, Ser. No. 50,175
7 Claims. (Cl. 166—65)

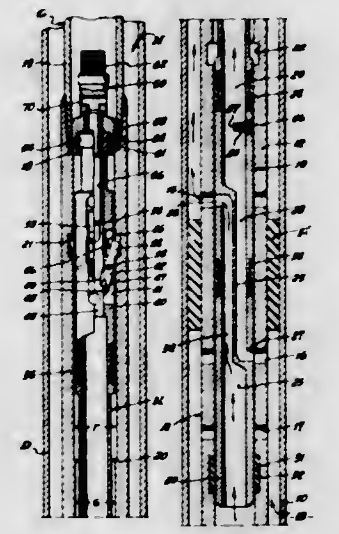


1. An expansible packer and sealing unit comprising a hollow sleeve-like elongated body adapted for insertion in and movement through a well bore, an inflatable and radially expansible and contractable packer element secured to and surrounding said body, said packer element having fluid tight connection to said body defining therewith an expansible chamber, a main passage extending longitudinally of said hollow body for the passage of pressure fluid therethrough, a lateral branch passage establishing communication between said main passage and said chamber, a control valve in said branch passage controlling flow therethrough, upper and lower control valves in said main passage disposed on opposite sides of the junction of said main and branch passages and means for selectively operating each of said control valves, said main and branch passages being disposed in the wall of said hollow body.

3,182,726
MULTIPLE ZONE SELECTIVE FLOW CONTROL APPARATUS

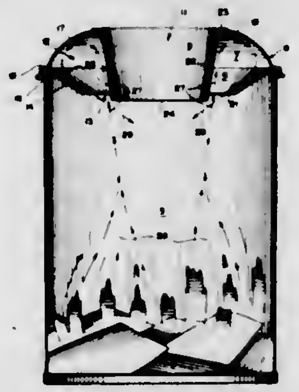
Dewey C. Stone, Jr., Dallas, Tex., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 26, 1962, Ser. No. 246,924
15 Claims. (Cl. 166—145)

10. In apparatus to be disposed in a well bore having upper and lower producing zones and in which one zone is to be produced through a tubular string disposed in the well bore and the other zone through the annulus around the tubular string: tubular body means adapted to form part of the tubular string; mandrel means movably mounted in said body means; said mandrel means and body means providing separate passages adapted to conduct fluids from the upper and lower zones to the interior of the tubular string above said body means and to the annulus around the tubular string above said body means; coengageable means on said body means and mandrel means for locating said mandrel means in a first position in said body means wherein said passages conduct fluid separately from the lower zone to said interior of the tubular string and from the upper zone to said annulus; and coengageable means on said body means and mandrel means longitudinally spaced from said other coengageable means for locating said mandrel means in a second position in said body means wherein said passages conduct fluid separately from the lower zone to said annulus and from the upper zone to said interior of the tubular string.



3,182,727
WASTE RECEPTACLE FIRE-PREVENTION CLOSURE

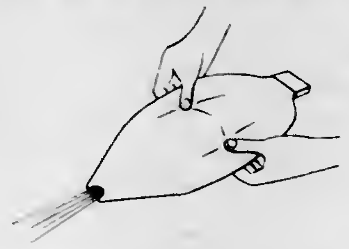
Carl T. Minton, Evansville, Ind., assignor to CAH Industries, Incorporated, a corporation of Illinois
Continuation of application Ser. No. 132,360, Aug. 18, 1961. This application May 29, 1963, Ser. No. 285,548
4 Claims. (Cl. 169—2)



1. A fire-prevention closure for waste receptacles comprising, a closure element having:
(*a*) one wall
diverging inwardly downwardly at an acute angle from its axis and of a length substantially less than the radius of the external perimeter thereof,
(*b*) a second wall
connected to and arched upwardly outwardly from said one wall and being of a length substantially equal to or slightly greater than said one wall and disposed at an acute angle to its axis and opposite the angle of said one wall, and
(*c*) a third wall
depending from the inner perimeter of said second wall and
tapering slightly inwardly, with the lower end thereof being located below the inner perimeter of said one wall,
whereby an annular chamber is formed around the third wall communicable with the receptacle through an annular opening disposed above the open end of the third wall.

3,182,728
CONTAINER FOR MIXING TWO FIRE EXTINGUISHING FLUIDS DURING DISCHARGE

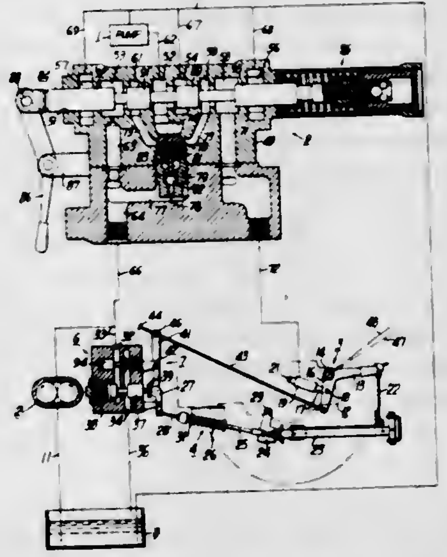
Charles L. Zabriskie, 166 E. 96th St., New York, N.Y.
Filed Apr. 25, 1962, Ser. No. 190,080
4 Claims. (Cl. 169—32)



1. A container comprising a pair of flexible outer sheets and at least one additional flexible inner sheet disposed therebetween, said outer and inner sheets being connected adjacent the periphery thereof in a sealed relationship to form a plurality of compartments extending substantially parallel to one another, said container having an opening extending through the periphery of said sheets and intersecting the interior of said compartments, said opening forming an orifice in each of said compartments, and means for clamping said outer and inner sheets into sealed relationship to one another adjacent to said opening whereby when said clamping means are released the opening is adapted to discharge the contents of said compartments in a single stream.

3,182,729
HYDRAULIC IMPLEMENT CONTROL FOR TRACTORS

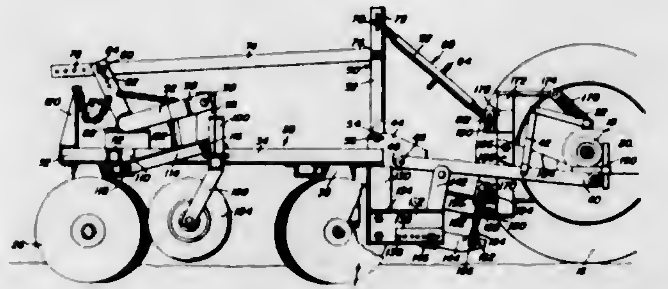
Robert Carlin and John R. Plate, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 5, 1962, Ser. No. 242,390
4 Claims. (Cl. 172—7)



1. In a hydraulic power lift system for tractors, an implement adapted to be connected to said tractor and controlled by said lift system, the combination of a first and second fluid pump having large and small output capacities, respectively; a fluid motor operatively connected to said lift system and having a driven element movable to position said implement in raised and lowered positions; a draft sensing device; a bypass valve for said second pump having a movable control element op-

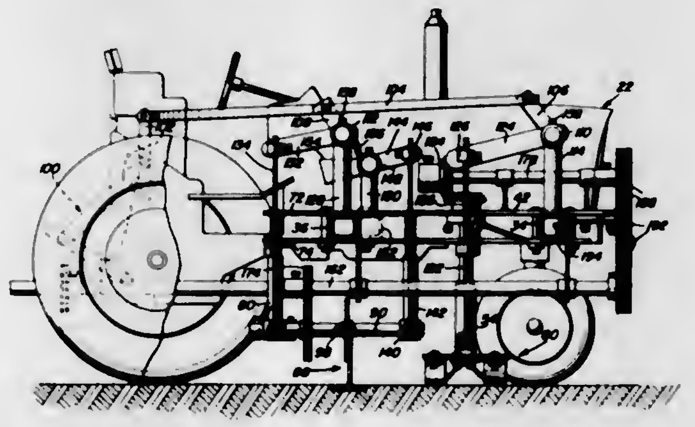
eratively connected with said draft sensing device so as to close and open said bypass valve in response to increase and decrease, respectively, of draft sensed by said draft sensing device; a manually operable control valve connected in fluid communicating relation with said first and second pumps and with said fluid motor, said control valve being selectively adjustable independently of said bypass valve to position said implement in hold, lift, lower and weight transfer positions and, upon adjustment to said weight transfer position being effective in response to closing and opening, respectively, of said bypass valve, to activate and deactivate said fluid motor independently of pressure fluid delivery thereto from said first pump; and motion transmitting means operatively connected with said driven element of said fluid motor and with said control element of said bypass valve so as to close and open said bypass valve in response to movement of said driven element of said fluid motor in implement raising and lowering directions, respectively, beyond a predetermined position of adjustment.

3,182,730
LOAD CONTROLLING HITCH ASSEMBLY FOR HYDRAULIC DEPTH-CONTROLLED, TRAILING IMPLEMENTS
Bynum E. Murphy, Minden, La., assignor to Anderson-Dunham, Inc., doing business as Dunham Manufacturing Company, Minden, La., a corporation of Louisiana
Filed Oct. 15, 1963, Ser. No. 316,307
7 Claims. (Cl. 172—7)



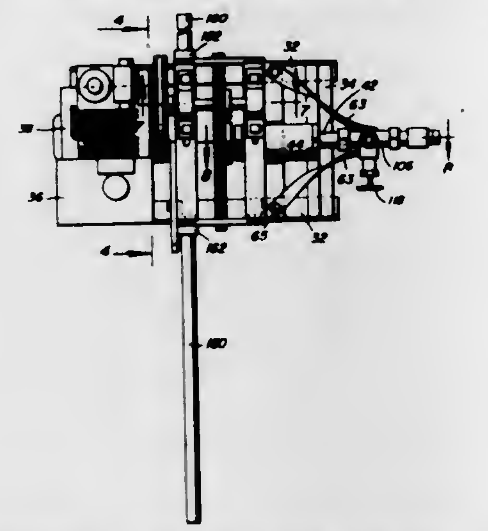
1. A hitch assembly for connecting an implement to a towing tractor of the type having a pair of lift links movable in a vertical plane by hydraulically powered lift arms, said assembly comprising an upstanding A-frame assembly adapted to be connected to the implement adjacent the forward end thereof for oscillation about a transverse axis, axle means extending transversely and adapted to be mounted adjacent the rear of the implement, an offset arm on the axle means, link means pivotally interconnecting the upper end of the A-frame assembly and offset arm, auxiliary wheels supported from said axle means in offset relation whereby oscillation of the A-frame assembly will cause elevational changes in the auxiliary wheels for raising and lowering the implement from the ground surface, a top link member connected to the upper end portion of the A-frame assembly and extending to and adapted to be connected to the tractor at a point spaced from the lift links rearwardly of the lift arms, said lift links adapted to be connected with the implement for elevating the forward end thereof whereby the top link will be tensioned and cause the A-frame assembly to pivot forwardly for swinging the auxiliary wheels downwardly to elevate the rear portion of the implement for enabling the implement to be transported with only a portion of the weight thereof supported by the tractor, said tensioned top link exerting an upward force on the tractor rearwardly of the lift arms for counteracting a portion of the downward force exerted on the tractor by the lift arms, a pull bar vertically disposed and adapted to be pivotally connected intermediate its ends to the tractor for pivotal movement in a vertical plane, the upper end of the pull bar being connected with a hydraulic depth control valve on the tractor, the lower end of said pull bar having a hitch pin thereon, a draft link assembly detachably connected to the hitch pin and adapted to be connected to the implement frame for imparting draft forces to the frame.

3,182,731
AUTOMATIC COTTON CHOPPER
George E. Earnheart, Foristell, Mo.
(Rte. 1, Fisk, Mo.)
Filed Oct. 10, 1963, Ser. No. 315,311
9 Claims. (Cl. 172—51)



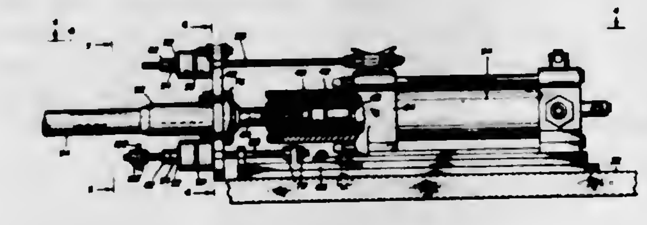
7. In a cotton cultivating attachment for a tractor, a frame mountable on the body of the tractor so as to project laterally therefrom, an elongated rod parallelling said frame and being rotatably supported thereon, scraper means, said scraper means comprising a pair of scraper units spaced from each other along the frame, each scraper unit including a vertical shaft, means rotatably mounting said shaft on the frame, a scraper head, means mounting said head on said shaft for rotation therewith and longitudinal adjustment relative to the longitudinal axis thereof, means for selectively rotating the elongated rod and maintaining the rod in a rotatably adjusted position, means interconnecting the elongated rod and each scraper head for effecting a vertical adjustment of the scraper head upon a rotation of the rod, cotton blocking means, means mounting said blocking means on said frame rearward of said scraper means, and means for effecting a vertical adjustment of the blocking means, said means mounting the blocking means on the frame consisting of a blocker shaft generally aligned centrally between the scraper units and rearward thereof, means rotatably receiving each end of the blocker shaft, each of these last mentioned means including a vertical guide tube projecting upwardly therefrom, and a pair of guide posts fixed to the frame and depending therefrom, each guide tube receiving a guide post and being vertically adjustable therealong, said means for effecting the vertical adjustment of the blocking means comprising a second elongated rod paralleling said first mentioned elongated rod and being rotatably mounted on the frame, lift rod means secured to the means receiving each end of the blocker shaft, a lever arm fixed at one end to the second elongated rod and pivotally secured at its other end to the lift rod means at one end of the blocker shaft whereby a rotation of the second elongated rod will effect a vertical movement of said one end of the blocker shaft, a third rod rotatably mounted on the frame parallel to the second elongated rod, a lever arm fixed to the third rod and pivotally secured at one end to the lift rod means at the other end of the blocker shaft whereby a rotation of the third rod will effect a vertical movement of the other end of the blocker shaft, and means engaged between the second elongated rod and the third rod for effecting a corresponding rotation of the third rod upon a rotation of the second elongated rod.

3,182,732
HORIZONTAL EARTH BORING MACHINE
J T Earnest, 14th Ave., Jasper, Ala.
Filed July 23, 1962, Ser. No. 211,571
11 Claims. (Cl. 173—57)



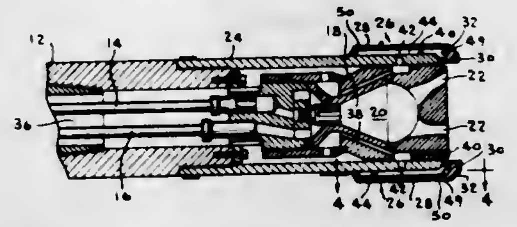
1. A manually portable power operated horizontal drilling apparatus comprising a supporting frame with support means attached thereto, a source of power mounted upon said frame and including a generally horizontal rotatable power shaft, a drill spindle, said power shaft and drill spindle having longitudinally spaced adjacent ends, means supporting and journaling said spindle upon said frame for rotation about an axis in side-by-side relation and generally parallel to that of said power shaft, a reduction gear assembly connecting said adjacent ends, said spindle having a passage extending longitudinally thereinto from said spindle adjacent end and terminating inwardly of the other spindle end, a water jacket comprising a hollow body surrounding said spindle in sealed engagement therewith and defining a water chamber thereabout, means establishing continuous communication between said passage and water chamber, means supplying water into said water chamber, a hollow drill string secured to and driven by said spindle and having communication with said spindle passage, a drill bit including jet orifices secured to the outer end of said drill string, said drill string having sufficient lateral flexibility to enable said drill bit and drill string to operate in a substantially horizontal position below ground when said power shaft is positioned substantially horizontally above ground and while said apparatus is being manually supported and moved along the general direction of said drill string, said water jacket being spaced from and lies between said spindle adjacent end and said spindle supporting and journaling means.

3,182,733
DRILLING MACHINE
Alfred G. Wigren, 1425 Madison, El Cajon, Calif.
Filed Feb. 5, 1962, Ser. No. 172,056
3 Claims. (Cl. 173—115)



1. A drilling mechanism comprising, in combination:
(A) A hammer having
  (*a*) a vertically movable piston;
(B) a vertically movable drill bit;
(C) means connected with the drill bit and lying in the path of downward movement of the piston;
(D) and means for arresting downward movement of said first mentioned means and said bit, comprising:
  (*b*) a downwardly facing shoulder on said first mentioned means;
  (*c*) an element having an upwardly facing shoulder confronting the first mentioned shoulder and engaged thereby;
  (*d*) and a support for said element, said support including:
    (1) elastic means, of the type offering invariable resistance to impact, for supporting the element having the upwardly facing shoulder; said elastic means and element being bodily movable as a unit, vertically relative to the hammer;
    (2) and means for adjusting the height of said unit relative to the lower end of the piston of the hammer and for retaining said unit in adjustive position.

3,182,734
FUSION PIERCING OR DRILLING MACHINE
Russell W. Scott, 1000 Detroit Ave., Iron Mountain, Mich.
Filed Jan. 11, 1963, Ser. No. 250,810
5 Claims. (Cl. 175—14)

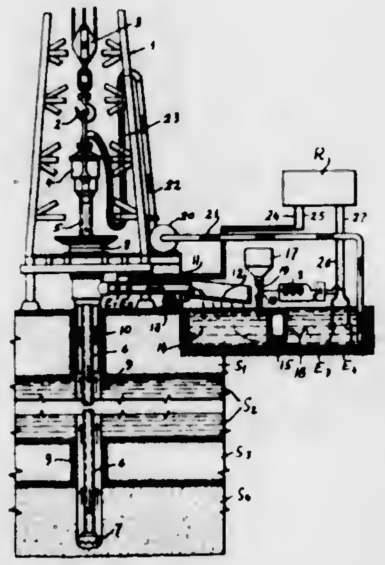


1. Fusion piercing apparatus comprising:
a kelly rotatably mounted in a support structure and containing first conduit means for conveying combustible material and second conduit means for conveying a liquid coolant;
a combustion head secured to said kelly and having a mixing chamber and axially outwardly facing orifices in communication with said first conduit means, and coolant passages in communication with said second conduit means and surrounding said mixing chamber, said coolant passages being in communication with axially extending ports for conveying a part of the liquid coolant to the atmosphere;
a plurality of reamers surrounding said combustion head, said combustion head being adapted to produce high temperature flames at said orifices which flames in combination with said reamers are adapted to penetrate hard ores; and
a coolant passage provided within each of said reamers having an inlet port in communication with at least one of said coolant passages of said combustion head and having an outlet port to the atmosphere to thereby convey a part of the liquid coolant directly to the atmosphere through the reamer.

3,182,735
METHOD AND MEANS FOR LOCATING SUBSOIL FORMATIONS DURING DRILLING
Gherardo Bartolini Salimbeni, 16 Via Ciro Menotti, Florence, Italy, and Italo Veneziani, 20 Via Castiglione, Bologna, Italy
Filed Apr. 12, 1963, Ser. No. 272,565
Claims priority, application Italy, Apr. 16, 1962, 7,933/62
17 Claims. (Cl. 175—50)

1. In the logging of subterranean formations penetrated in hole drilling operations by analyzing the oxidation-reduction potential of the drilling mud fluid continuously circulated through the drilled hole, the method

of determining variations of the redox potential induced in said mud by the contact of the mud with the drilled particles, comprising the steps of: continuously adjusting the redox potential of the mud to a predetermined redox value by adding a suitable reagent to said mud before circulating it through the hole; continuously measuring said adjusted redox potential of the mud; circulating the mud through the hole; continuously measuring the redox potential of the mud effluent from the hole, and comparing the said redox measurements made on the same mud portions.



3. In a hole drilling equipment of the type that includes a rotary drilling rig, conduit means for circulating drilling fluid through said drilling rig to the bottom of a bore hole, a mud return line for returning drilling fluid from the bore space surrounding said drilling rig to the earth's surface, a mud pit at the surface connected to said mud return line and acting as a tank, and pumping means for continuously circulating said drilling mud fluid from said pit down through said conduit means and up through the hole bore surrounding the drill rig and through said mud return line back into said pit, the improved logging device comprising a first redox-potential measuring reversible electrode extending into said mud return line for contact with the mud effluent flowing therethrough, a second redox potential-measuring reversible electrode extending into said mud pit for contact with the mud contained therein, a redox potential-measuring instrument, and electrically insulated wires electrically connecting said first and second reversible electrodes to said redox potential measuring instrument.

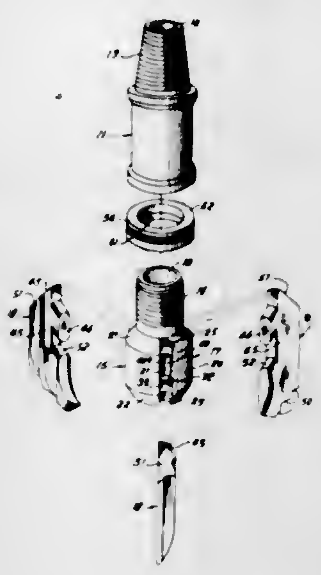
3,182,736
DRILLING BITS

Michael J. Pitifer, Lubbock, Tex., assignor of one-fourth each to Thomas H. Arnold and Lee R. Miller, Lubbock, Tex., and Ole K. Olsen, Garland, Tex.

Filed Nov. 28, 1962, Ser. No. 240,561

8 Claims. (Cl. 175—413)

1. A drill bit including: a drill body head member; said head member having a plurality of longitudinally extending grooves in its exterior surface, each groove having formed intermediate the ends thereof an elongate locking recess extending inwardly of the head member from the bottom of the groove and having an inwardly and downwardly inclined locking surface at its lower end; a detachable blade removably mounted in each of said grooves of said head member, each of said blades having an inwardly and downwardly projecting lug formed on the inner surface thereof disposed within the locking recess in the one of the grooves of the head member in which the blade is mounted with the lower surface of the lug engaging the locking surface at the lower end of the recess in said groove; and means carried by said head member and engaging said blades for locking and retaining said blades in position on said head member.

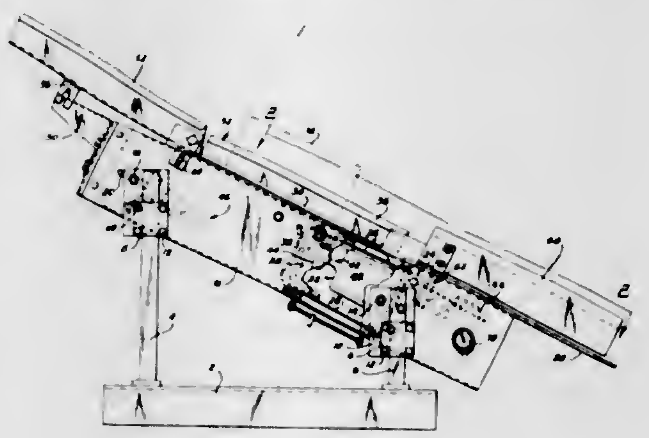


3,182,737
GRAVITY SLIDE CHECKWEIGHER

Claude E. Monsees, Durham, N.C., assignor to Sperry Rand Corporation, Wilmington, Del., a corporation of Delaware

Filed Nov. 13, 1963, Ser. No. 323,493

7 Claims. (Cl. 177—45)



1. A checkweigher comprising: a support; a weighing platform having a sloping and unobstructed article supporting surface arranged at such an angle to the horizontal that an article to be weighed will slide thereover and therefrom under the influence of gravity; cantilever spring means mounted on said support and supporting said platform for weighing movements in a direction perpendicular to said sloping surface; said spring means comprising at least one resiliently flexible arm extending substantially parallel to said sloping surface; and means responsive to relative movement between said platform and support for determining whether or not an article on said platform is of predetermined weight.

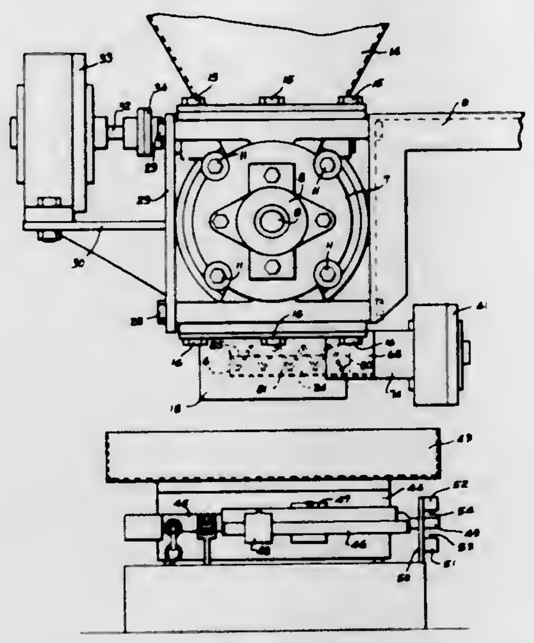
3,182,738
GRAVIMETRIC FEEDER

Wilbur H. Frazel, East Providence, R.I., assignor to The New York Air Brake Company, a corporation of New Jersey

Filed Sept. 10, 1962, Ser. No. 222,439

10 Claims. (Cl. 177—120)

1. In a material feeding means a receptacle and means for feeding a predetermined weight of material to said receptacle comprising an upper feeder discharging material therefrom into said receptacle, a lower feeder comprising a trough U-shaped in cross section open at one end thereof in the path of material discharged from said upper feeder constructed and arranged to receive a portion of the material discharged by said upper feeder, a feed screw operating in said trough and extending upwardly above the top edges thereof to discharge material therefrom through said open end into said receptacle, and means responsive to the weight of material fed to said receptable to operate both said upper and lower feeders for a main feed period and only said lower feeder for an adidtional feed period.



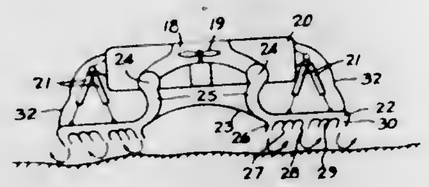
3,182,739
VEHICLES FOR TRAVELLING OVER LAND AND/OR WATER

Christopher Sydney Cockerell, East Cowes, Isle of Wight, England, assignor to Hovercraft Development Limited, London, England, a British company

Filed Sept. 1, 1959, Ser. No. 837,502

Claims priority, application Great Britain, Sept. 1, 1958, 27,978/58

19 Claims. (Cl. 180—7)



1. A vehicle of the type adapted for travelling or hovering over surfaces of land or water comprising a main body, means for producing a pressurized cushion of gas beneath said body capable of at least partially supporting the vehicle above the surface over which it is travelling or hovering, said cushion producing means having a part which is flexibly attached to said body so as to be capable of vertical movement relative thereto in response to variations in the height of said body relative to said surface, means for causing at least one curtain of moving fluid to issue from said part and flow towards said surface and at least partially contain said pressurised cushion of gas, and means for exerting on said flexibly attached part a restoring force tending to prevent vertical movement of said part relative to said main body.

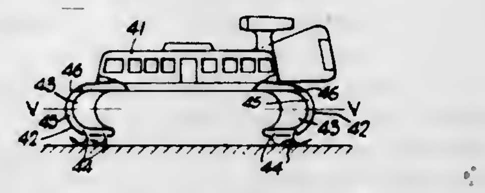
3,182,740
VEHICLES FOR TRAVELLING OVER LAND AND/OR WATER

Christopher Sydney Cockerell, Bassett, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company

Filed Dec. 10, 1963, Ser. No. 329,562

Claims priority, application Great Britain, Sept. 1, 1958, 27,978/58

19 Claims. (Cl. 180—7)



1. A vehicle for travelling over a surface and adapted to be supported above said surface at least in part by a cushion of pressurised fluid contained below the vehicle in a cushion space located between the underside of the vehicle and the surface over which it is travelling, comprising a flexible structure extending along the periphery of said cushion space and constituting an upper part of the peripheral boundary thereof, and means for causing a curtain of moving fluid to issue from the lower portion of said flexible structure and flow towards said surface to form a lower part of the peripheral boundary of said cushion space.

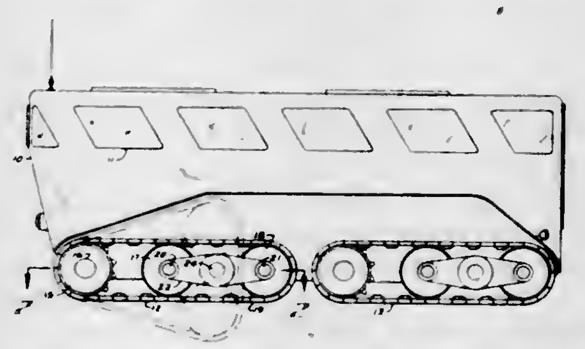
3,182,741
ON-ROAD, OFF-ROAD TRACK CARRYING VEHICLE

Charles D. Roach, Newport News, Va., assignor to the United States of America as represented by the Secretary of the Army

Filed Feb. 26, 1964, Ser. No. 347,624

6 Claims. (Cl. 180—9.5)

(Granted under Title 35, U.S. Code (1952), sec. 266)



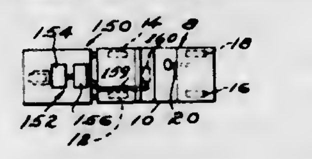
1. A vehicle track assembly for a track supported vehicle comprising a sprocket, a pair of rollers disposed rearwardly of said sprocket, a track extending around said sprocket and said rollers, and a mechanism effective to move said rollers between operating positions in one of which they are horizontally aligned and in the other of which they are vertically aligned.

3,182,742
ELECTRIC DRIVE MECHANISM AND METHOD OF OPERATING SAME

Douglas Dow, 1052 Seminole, Detroit, Mich.

Filed Aug. 9, 1961, Ser. No. 130,272

2 Claims. (Cl. 180—14)

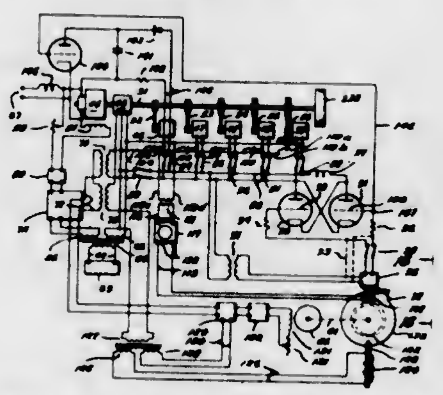


1. An electrically driven road vehicle assembly comprising, in combination: a road tractor vehicle having a road-engaging driving wheel, direct current motor means

mounted on the tractor vehicle and comprising the sole prime mover on the tractor vehicle and connected to said driving wheel to drive the same, a plurality of electrically rechargeable cells connected in series and carried by the tractor vehicle with said series having an outside positive terminal at one end and an outside negative terminal at the other end, electric circuits for electrically connecting said cells to the motor means to power and vary the voltage applied to the motor means, a trailer vehicle connected to the tractor vehicle, an engine-generator set mounted on the trailer vehicle for supplying a recharging current at a voltage higher than that of the serially connected cells, an electric circuit operably independent of said circuits for varying voltage applied to the motor means and connected to the electrical generator of said set and to the two outside terminals of said series of cells to electrically recharge the same, and said engine-generator set sized to electrically recharge said series of cells during motor operation at minimum power drain but of insufficient size to electrically recharge the series of cells at maximum power drain.

3,182,743
METHOD OF SEISMIC EXPLORATION

Burton McCollum, Houston, Tex.; P. R. Rowe and Bank of the Southwest National Association, Houston, Tex., executors of Burton McCollum, deceased
Filed Jan. 13, 1960, Ser. No. 2,255
4 Claims. (Cl. 181—.5)

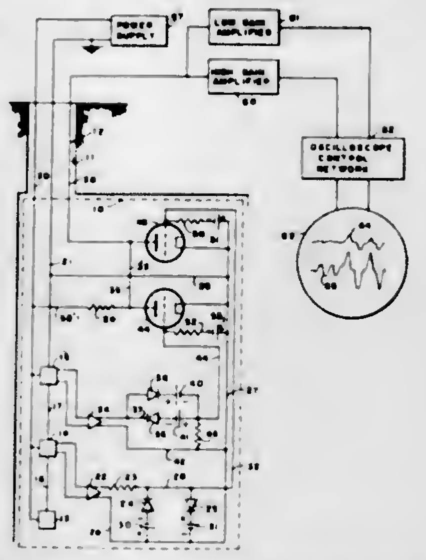


1. The method of seismic prospecting which comprises the steps of individually radiating in the earth a group of truncated wave trains each of controlled amplitude and number of cycles and of fixed frequency differing from the frequencies of all others of the group by values of an arithmetical series, detecting the radiated signals at one or more points on the earth spaced from the radiating location and recording the detected signals on a cyclically moving recorder in overlapping relationship and timed so that said trains as recorded will be substantially in phase with each other at a single wave crest of each so as to present a brief marker while substantially suppressing the remainder of the trains by mutual cancellation.

3,182,744
WELL LOGGING

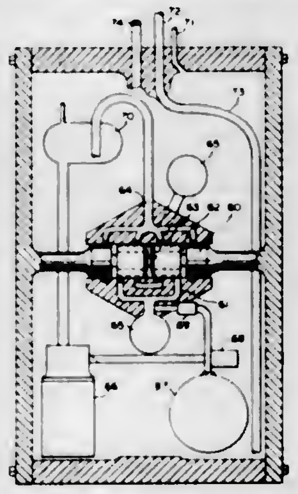
Charles B. Vogel, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Feb. 10, 1960, Ser. No. 7,930
6 Claims. (Cl. 181—.5)

2. An acoustical well logging system comprising: a subsurface apparatus having a pair of spaced receivers, a sound source positioned on one side of said receivers for producing acoustical impulses which travel past said receivers in succession; each of said receivers having a background noise level and in addition being capable of converting the received impulse into a related electrical signal; one of said receivers being coupled to a first amplifier having a fixed gain; a limiting circuit, said first amplifier being coupled to said limiting circuit to reduce the signal to a uniform maximum amplitude; the other receiver being coupled to a second amplifier having a fixed gain which exceeds the gain of said first amplifier; a slicing circuit, said second amplifier being coupled to said slicing circuit to remove the noise level of the signal; a circuit means coupled to said limiting circuit and said slicing circuit for combining the signals from said spaced receivers and transmitting them to the surface over a single electrical circuit.



3,182,745
FREE PISTON FLUID PRESSURE TRANSDUCER

Chester A. Clark, Waldorf, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed June 30, 1960, Ser. No. 40,119
8 Claims. (Cl. 181—.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

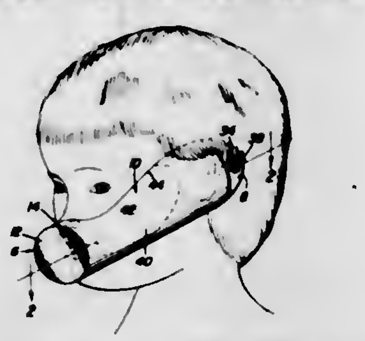


1. A transducer for converting the energy of a steady flow of a first fluid medium to sound energy in a second fluid medium comprising, a housing having at least one wall which serves as a diaphragm to couple sound to said second medium, said housing including an internal portion defining a first cylindrical chamber, conduit means coupled to said housing to conduct said first fluid medium into said cylindrical chamber, a first piston connected to said diaphragm and slidably mounted within said chamber to form a wall thereof, and slidable valve means located in said conduit responsive to fluid flow therein to periodically block said flow.

3,182,746
VOICE BOX FOR AURAL TRAINING

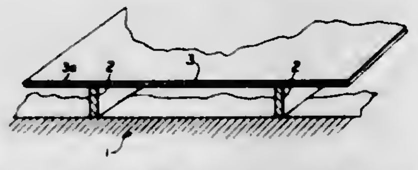
Frederic J. Schaefer II, Miami, Fla., assignor to William W. Fagan, Miami, Fla.
Filed Dec. 4, 1962, Ser. No. 242,147
2 Claims. (Cl. 181—20)

2. A readily applicable and removable appliance for use by a child and through the medium of which the skill of attentive listening can be practiced and learned comprising: a onepiece implement capable of being held in the user's hand much in the manner that a telephone handpiece is customarily used, said implement embodying a mouthpiece at its forward end, an earpiece at the rearward end, and means connecting the mouthpiece and earpiece, said means being open on an inwardly disposed side which is adapted to be conformably fitted against the user's cheek to assist in trapping, concentrating and transmitting significant voice sounds from the user's mouth to his ear, said earpiece comprising an ear-enclosing shield which is enlarged and shaped to adapt itself to conformingly fit over and encompass the user's ear, said shield having an exterior side surface provided with readily accessible and variable aperture means allowing the teacher to regulate and control the functioning of said aperture means, whereby the teacher can, with the aid of said aperture means, speak or otherwise converse with the user during the time the appliance is being used and without requiring it to be removed from the user's ear.



3,182,747
SOUND ABSORBING MICRO-POROUS WALL PANEL STRUCTURES

Hans Wilhelmi, Giessen, and Walter Neudert, Dorlar, Giessen, Germany, assignors to Fa. Holzwerke H. Wilhelmi, Dorlar, Giessen, Germany, a corporation of Germany
Filed Jan. 8, 1960, Ser. No. 1,355
Claims priority, application Germany, Apr. 9, 1954, H 19,930
4 Claims. (Cl. 181—33)



1. A self-supporting independent sound absorbing sheet having a thickness ranging from at least about 0.5 mm. up to about 5 mm. and possessing an open micro-porous structure and an air flow resistance per square centimeter of 25 to 1000 g. cm.$^{-2}$.s.$^{-1}$, said sheet being adapted to be mounted at a predetermined distance from a wall to operate as sound absorbing means.

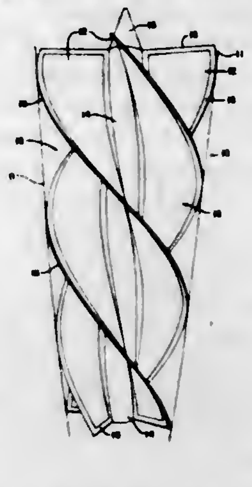
3,182,748
HELICAL VANE FOR SOUND ABSORBING DEVICE AND METHOD OF MAKING SAID VANE

Leslie S. Wirt, Phoenix, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 15, 1961, Ser. No. 131,643
9 Claims. (Cl. 181—67)

5. A vane, said vane being formed of sheet metal and having a ratio of a normalized length of a helical line on the vane at a constant radius to the normalized radius of the vane of between 25 and 8, and said vane conforming to the formula

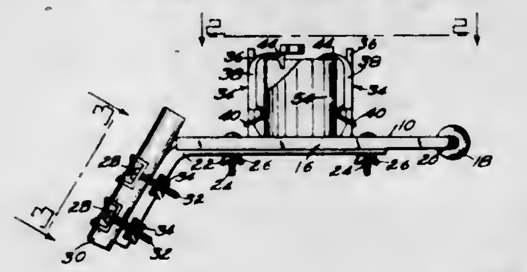
$$P=\frac{a\theta}{2\pi}\sqrt{\left(\frac{2\pi r}{a}\right)^2+1}$$

where P is the length of a helical line at constant radius r, a is the pitch of a helix of the desired shape, θ is the total included angle of the helix, and r is the radial polar coordinate of the helix whereby the edges of the vane are substantially free of elongation and compression.



3,182,749
LADDER PLATFORMS

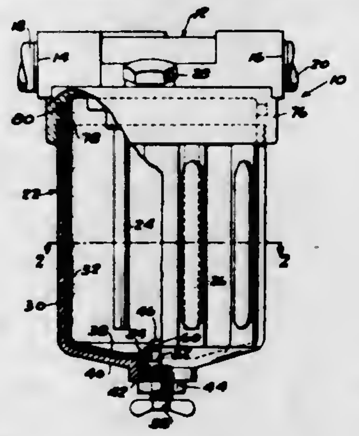
Ettore Girardello, 15077 Mendota, Detroit, Mich.
Filed Feb. 18, 1963, Ser. No. 259,086
2 Claims. (Cl. 182—120)



1. A platform support for ladders having two side rails, said platform support comprising a table having therein a series of spaced openings, a pair of laterally adjustable brackets mounted on the lower side of the table, said brackets each having a downwardly disposed end portion projecting beyond one side of the table, a clamp on the downwardly disposed end portion of each bracket for attachment to the side rails of the ladder, spaced rollers mounted along one side of the table, a telescopic clip detachably mounted in the spaced openings of the table.

3,182,750
CUP STRUCTURE FOR AIR LINE LUBRICATOR OR THE LIKE

Quin R. Gleason and Keith A. Boyd, Detroit, Mich., assignors to Master Pneumatic, Inc., Detroit, Mich., a corporation of Michigan
Filed Apr. 30, 1962, Ser. No. 191,014
2 Claims. (Cl. 184—55)



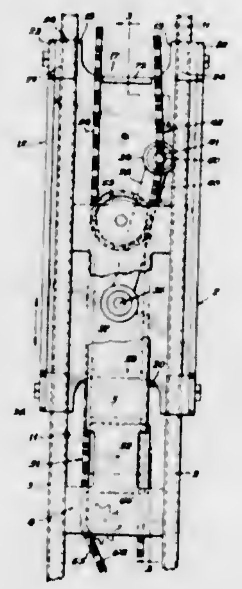
1. Cup structure for an air line accessory such as a lubricator comprising,

two cups, one nested within the other, the inner cup being formed of a relatively tough, flexible, fluid-impervious plastic material,
said material being so thin that of itself it is incapable of containing air under line pressure, and under the influence of said pressure expands against the outer cup,
said outer cup being formed of a relatively thin material and providing external support for said inner cup,
said cups together having strength adequate to contain air under line pressure in said inner cup,
said cups having aligned wall openings,
a petcock fitting secured within the wall opening of said outer cup,
said fitting having a passageway communicating with the interior of the inner cup and being closed by a petcock member,
means providing a seal disposed between portions of said fitting and portions of said inner cup for containing fluid under pressure in said inner cup,
said outer cup having means adapted to be detachably secured to the head of an air line accessory,
said inner cup having means adapted to be disposed in sealing relation to the head of an accessory to which said outer cup is adapted to be secured,
said outer cup having around its periphery alternately arranged ribs and elongate openings which extend in a direction axial of the cup, said openings being dimensioned so that said material of said inner cup is of itself capable of containing fluid under line pressure in the spans of said openings.

3,182,751

VERTICAL CONVEYOR AND GUIDED CARRIER CONNECTED BY A TENSION ARM

Frank J. Blume, 1551 W. Thomas, Chicago, Ill., and Alan F. Blume, 6908 N. Manheim, Des Plaines, Ill.
Filed Oct. 3, 1960, Ser. No. 60,056
7 Claims. (Cl. 187—17)

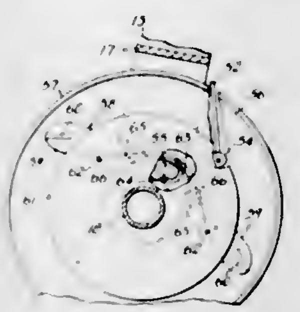


2. A vertical conveyor comprising support means, an endless chain rotatably supported at vertically spaced turns and having return and advance runs disposed in a vertical plane, a tension arm having an upper end pivotally supported from one of said runs of said chain, a carrier in guided engagement with the support means for vertical movement, and means pivotally connecting the lower end of said arm with the carrier at a point substantially medially between the lateral edges and the upper and lower ends thereof at a point between the runs of the chain and adjacent to its lower end on axes extending perpendicularly to the plane of said runs.

3,182,752

UNITARY DIRECTIONAL CONTROL FOR GALLOPING HOBBY HORSES

Charles K. Grieder, 3735 E. Costilla Place, Littleton, Colo.
Filed May 7, 1963, Ser. No. 278,629
3 Claims. (Cl. 188—26)

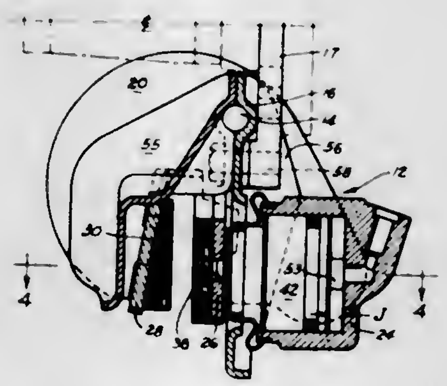


1. In vehicles of the character defined employing a body member having front and rear wheels and a manually actuated lever pivotally supported in connection with the body member adjacent the forward end of said body member, with means controlling several positions of said manually actuated lever, braking means for all of the wheels of said vehicles, said braking means comprising a brake disc fixed to shafts of each of the wheels, common brake shoes pivotally supported adjacent the discs of each of the wheels, each of said shoes having angularly disposed end portions supporting brake disc engaging elements, a pivot for each shoe, a spring keyed to and supported by the pivot of each shoe and operatively engaging end portions of each shoe for normally maintaining the shoes in neutral position with the elements of the shoes out of engagement with the associated brake disc of each shoe, means in operative engagement will all of the brake shoes and said manually actuated lever for rotating said pivots in actuating the shoes through said springs in movement of said elements into operative engagement with the brake discs, and said springs having end portions engaging said brake shoes in yieldable support of the elements of the brake shoes in engagement with said brake discs.

3,182,753

SWINGABLE CALIPER, SPOT TYPE DISC BRAKE

Pierre Gancel, Paris, France, assignor to Societe Anonyme D.B.A., Paris, France, a company of France
Filed Dec. 27, 1961, Ser. No. 162,376
Claims priority, application France, Jan. 6, 1961, 848,974
8 Claims. (Cl. 188—73)

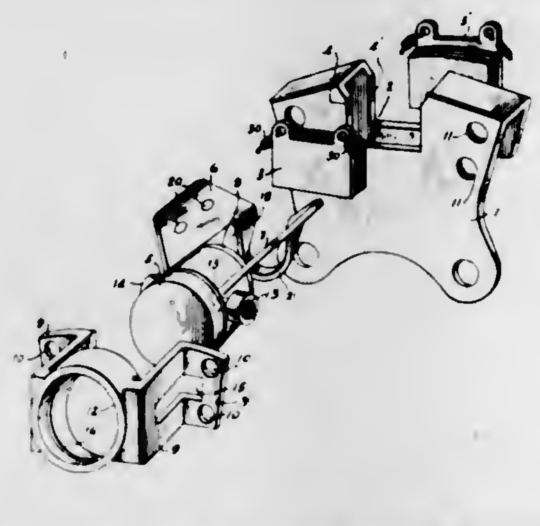


1. A disc brake comprising: a rotor having opposed friction surfaces thereon, a swingable housing comprising a pair of circumferentially spaced caliper members straddling said rotor, actuating means secured to said caliper members opposite one of said rotor friction surfaces, a first friction member slidable relative to said caliper members for engagement with said one friction surface, a second friction member located opposite the other of said friction surfaces and operatively connected to said housing for movement therewith into engagement with said other friction surface, a fixed support member extending between said caliper members, said support member having anchoring and guiding surfaces at circumferentially spaced ends thereof, each of said caliper members being opposite a respective one of said support member anchoring and guiding surfaces and having a surface slidably engaging its respective support member anchoring and guiding surface, means separate from said anchoring and guiding surfaces swingably connecting said caliper members to said fixed support member for swinging movement of said housing about an axis generally parallel to the plane of said friction surfaces, said swingable connection being constructed and arranged relative to said anchoring surfaces that one caliper will anchor on one of said circumferentially spaced anchoring surfaces of said support member during one direction of rotor rotation and the other caliper member will anchor on the other of said circumferentially spaced anchoring surfaces of said support member during rotor rotation in the opposite direction.

3,182,754

CALIPER TYPE DISC BRAKE

Heinz Günther Hahm and Fritz Ostwald, Frankfurt am Main, Germany, assignors to Alfred Teves Maschinen- und Armaturenfabrik K.G., Frankfurt am Main, Germany, a corporation of Germany
Filed May 16, 1963, Ser. No. 280,870
Claims priority, application Germany, May 25, 1962, T 22,199
8 Claims. (Cl. 188—73)

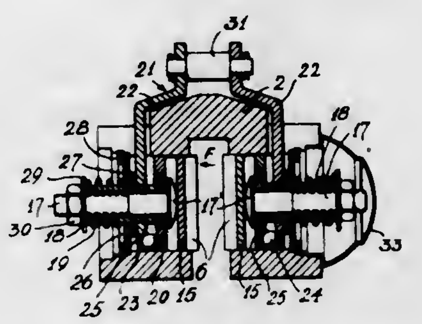


1. A disk brake comprising a brake disk journaled on an axis for rotation relative thereto. support means stationary with respect to said axis; actuating means movably mounted on said support means; said support means being provided with respective radially outwardly open guide channels and said actuating means being provided with an opening radially aligned with said channels; at least two brake shoes operatively engaged by said actuating means and displaceable thereby relatively to said support means into and out of engagement with opposite surfaces of said disk in a direction transverse thereto, said aligned opening of said support means and said actuating means permitting generally radial removal of said brake shoes therefrom, and guide means rigid with said support means for linearly directing said actuating means while preventing rotation thereof, said actuating means including a yoke engageable with one of said brake shoes for driving it against said disk and a fluid-operated cylinder rigid with said yoke, said guide means comprising a sleeve surrounding said cylinder and having an axis parallel to that of said disk, said sleeve being formed with at least one longitudinally extending slot perpendicular to said disk, said cylinder having at least one transversely projecting stud rigid therewith slidably received in said slot.

3,182,755

HYDRAULICALLY AND MECHANICALLY OPERATED DISC BRAKE FOR MOTOR VEHICLES

Tullio Campagnolo, Corso Padova 160, Vicenza, Italy
Filed Dec. 2, 1963, Ser. No. 327,366
Claims priority, application Italy, Dec. 7, 1962, 24,117/62
1 Claim. (Cl. 188—73)



A disc braking system for motor vehicles, comprising, a braking disc fixed to a rotating part of vehicle, a bridge member straddling said disc, said bridge member being formed with a first pair of opposed seats one on each side of said disc and with a second pair of opposed seats one on each side of said disc, said second pair of opposed seats being angularly spaced along the periphery of said disc with respect to said first pair of opposed seats, a first pair of friction pads supported by said bridge member one from each of said first pair of opposed seats, a second pair of friction pads supported by said bridge member one from each of said second pair of opposed seats, hydraulic means for moving said first pair of friction pads into braking position with respect to said disc, a forked lever having a pair of arms straddling said bridge member and terminating within the seats of said second pair, a thrust pin mounted within each seat of said second pair and movable to cause the friction pad of said second pair to move from non-braking position to braking position with respect to said disc, said forked lever arms being pivotably mounted about said pins and being provided with frontal cam surfaces disposed within the seats of said second pair of said bridge member, a cam plate mounted in each seat of said second pair of said bridge member and slidable along the axis of the thrust pin and carrying the respective thrust pin therewith, a set of balls cooperable with each of said cam surfaces and cam plates effective to urge the cam plate, and thereby the thrust pin and friction pad thereof, into braking position with respect to said disc when the forked lever is pivoted, spring means normally urging the friction pads of said second pair into non-braking position with respect to said disc, and shoulders formed on said bridge member for limiting the pivotable movement of said forked lever.

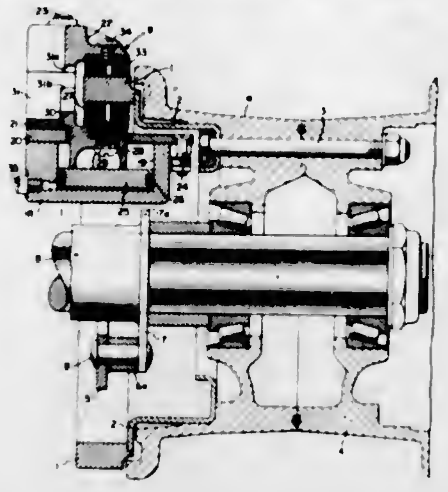
3,182,756

SELF-ENERGIZING HINGE TYPE RING DISC BRAKE

Jesse G. Hawley, Penn Yan, N.Y., and John W. Runner, Akron, and Albert W. Cook, Tallmadge, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Dec. 26, 1962, Ser. No. 246,972
11 Claims. (Cl. 188—76)

1. The combination in a brake of an axle, a wheel having side flanges rotatably mounted on the axle, a ring-disc, a cup-shaped member securing the ring disc to the wheel adjacent a side flange of the wheel, the member being secured to the base of the wheel and otherwise spaced from the wheel, a torque flange secured to the axle, a C-shaped brake unit straddling the ring-disc, a single pivot means pivotally securing the unit to the torque flange so the pivot means lies in substantially the central

plane of the ring disc, friction blocks in said unit adapted to engage in opposed relationship with the radially outer and the radially inner surfaces of the ring-disc, and means for moving the blocks into engagement.



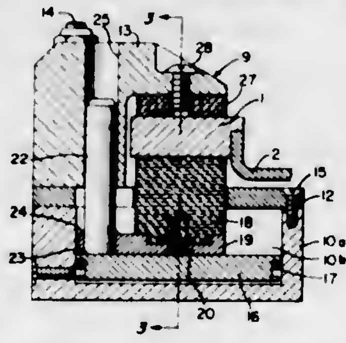
3,182,757

SELF-ENERGIZING RING DISC BRAKE

Charles E. Barrington, Stow, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Aug. 14, 1963, Ser. No. 302,033

9 Claims. (Cl. 188—76)



8. In a brake unit for a rotatable member mounting a ring disc the combination of

- a housing non-rotatably mounted for limited radial movement with respect to said rotatable member,
- a friction button removably received by said housing and adapted to engage the radially outer surface of said ring disc,
- a piston slidably received in said housing,
- a radially extending guide pin operatively affixed to said piston and slidably received by a hole in said housing in close fitting relation thereto,
- means to provide pressure beneath said piston to effect movement thereof,
- a sub-piston operatively affixed to the top of said piston,
- a second friction button removably received by said sub-piston and adapted to engage the radially inner surface of said ring disc when moved by a force from said piston.

3,182,758

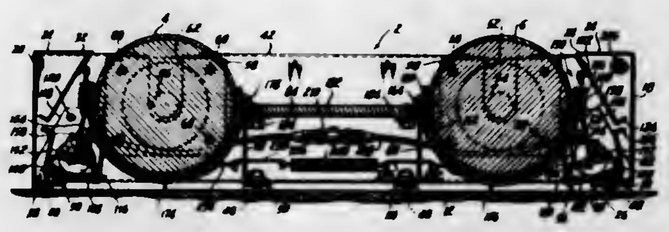
BRAKE FOR CHASSIS DYNAMOMETERS

Edwin L. Cline, Pasadena, Calif., assignor to Clayton Manufacturing Company, El Monte, Calif., a corporation of California

Filed Oct. 8, 1962, Ser. No. 229,110

21 Claims. (Cl. 188—77)

1. In combination, a frame; a cylindrical roll mounted upon said frame for rotation about its longitudinal axis; and brake means for holding said cylindrical roll against rotation about its longitudinal axis, comprising: at least one brake band loosely supported at one end by said frame and extending circumferentially about a substantial portion of the outer surface of said roll; an inflatable diaphragm mounted upon said frame; and a floating actuator element disposed between said diaphragm and the other end of said brake band arranged to move said other end generally tangentially of and toward said roll upon inflation of said diaphragm.



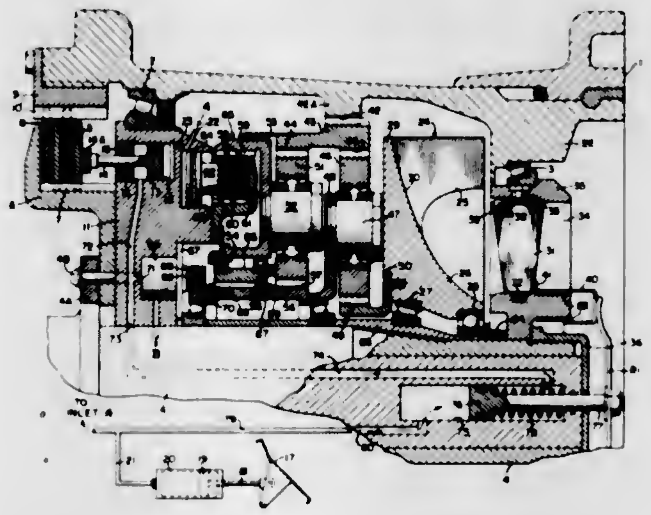
3,182,759

COMBINED TURBO- AND FRICTION-BRAKE WITH ADJUSTABLE SHROUDING MEANS AND CONTROL MEANS THEREFOR

Ladislav Kelemen, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed July 11, 1963, Ser. No. 294,413

8 Claims. (Cl. 188—86)



5. In a turbo-brake,
an axle,
a wheel,
means journalling said wheel on said axle,
an impeller journalled on said axle for rotation in the surrounding atmosphere,
gear means connecting said wheel to said impeller to drive it upon rotation of said wheel for air braking action,
a rotary hydraulic pump having an outlet with an output pressure proportionate to the speed of said pump,
means connecting said pump to said gear means to be driven thereby at a speed proportional to the speed of said wheel,
friction brake means operatively connected to said wheel,
a brake cylinder operatively connected to said friction brake means,
manually controlled hydraulic means operatively connecting to said friction brake means for actuation thereof, said hydraulic means connecting to said brake cylinder, and
means directly connecting said pump output pressure to said brake cylinder to oppose actuation of said friction brake means by said hydraulic means.

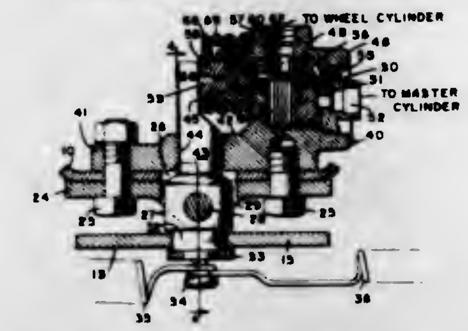
3,182,760

VEHICLE BRAKE DEVICE

William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed Aug. 23, 1962, Ser. No. 218,938

3 Claims. (Cl. 188—152)



1. In a brake device for a vehicle wheel having a backing plate and brake shoes and a wheel cylinder for expanding said shoes and provided with a source of hydraulic fluid, and a control device carried by the backing plate and comprising passage means between said source and said wheel cylinder and comprising a first chamber communicating with said source and a second chamber communicating with said wheel cylinder and provided with a port therebetween, an axially movable member in said first chamber provided with a valve movable to close said port, said valve being normally open to provide normal communication through said passage means, means responsive to a predetermined brake torque for closing said valve, such means comprising a rocking member connected with the brake shoes and engaging said axially movable member, said rocking member having a normal position when said brake shoes are released, and from which position it is movable by brake torque to close said valve, and a spring biasing said axially movable member to normal position to predetermine the brake torque at which said rocking member will close said valve, and means responsive to pressure in said source, if said valve is closed, for reducing the volume of said second chamber to displace fluid therefrom to said wheel cylinder at a rate lower than the normal rate of flow of fluid through said passage means.

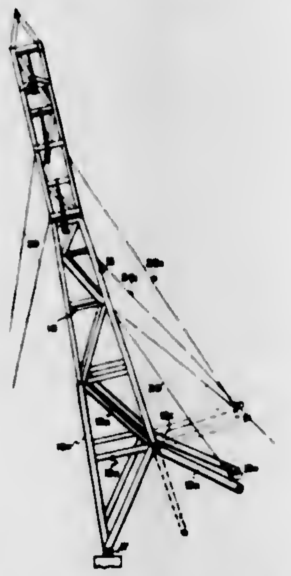
3,182,761

SKELETON STRUCTURE

Samuel F. Goodrum, Sharpsville, Pa.
(918 Park Ave., Syracuse, N.Y.)

Filed Mar. 8, 1962, Ser. No. 178,379

2 Claims. (Cl. 189—15)



1. A skeleton tower structure formed of interconnected elongated structural members and designed to be assembled in horizontal position on the ground and thereafter tilted upwardly to permanent vertical position, certain of said structural members forming corner posts of said tower structure and other of said structural members forming diagonal braces between said corner posts, the lower-most end portions of two of said corner posts lying in a common plane, the lower-most ends of said two of said corner posts being adapted to be pivotally connected to a supporting foundation, trusses built up on said portions and extending normal thereto and each comprised of a compression member extending from the apex thereof normal to an intermediate point on said portion as well as other compression members extending from the apex to the ends of said portion, said trusses extending the full width of the tower structure from said portions, and an elongated compression member connected at one end to the apices of said trusses and extending outwardly of said apices generally normal to said portions, the arrangement being such that when said tower structure is lying horizontally on the ground said trusses together with said last mentioned elongated compression member forms a moment arm to upend the tower structure by pivoting on said supporting foundation upon pulling horizontally on a cable which is connected to a top portion of the tower structure and entrained over the outer free end of said last-mentioned compression member.

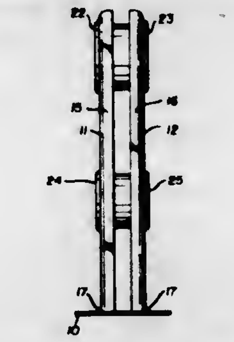
3,182,762

POST FOR A BRIDGE RAILING

Charles W. Syak, Girard, and Nick A. Di Margio, Youngstown, Ohio, assignors to Trumbull Development Corporation, Girard, Ohio, a corporation of Ohio

Filed Mar. 18, 1963, Ser. No. 265,720

4 Claims. (Cl. 189—23)



1. A post for a bridge railing comprising a base plate and a pair of oppositely disposed flanged metal stampings positioned upright thereon and secured thereto, each of said metal stampings comprising a flat body member having a right angular flange on three sides thereof, said metal stampings having oppositely disposed apertures therethrough and circular spacers disposed between and secured to said metal stampings and holding said metal stampings in fixed relation to one another, plastic sealing strips having longitudinal flange engaging formations on their opposite edges positioned between said flanged metal stampings.

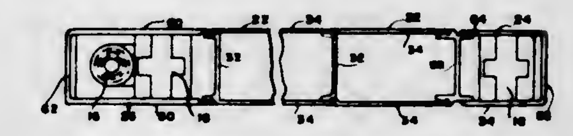
3,182,763

HIGH-STRESSED DOUBLE WALL PARTITIONS OR THE LIKE FOR FREIGHT CAR DIVIDERS

Kurt F. Glaser, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed May 4, 1961, Ser. No. 107,780

5 Claims. (Cl. 189—34)



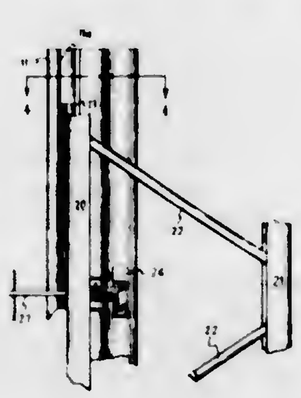
1. A substantially rectangular partition wall structure for use in vehicles or the like comprising a plurality of

elongated extruded sections U-shaped in cross-section and adapted to be assembled into interlocking engagement with each other to form a rigid unit, each of said U-shaped extruded sections including a web portion and a pair of flange-like legs integral therewith and extending outwardly from one surface of the web portion along each longitudinal edge thereof and defining a portion of spaced parallel walls, a locking ridge extending along the free edge of each leg, the locking ridge of one leg opposing the locking ridge of the other leg, a pair of spaced locking ribs extending outwardly of the web portion in a direction opposite to said legs, said pair of locking ribs being arranged inwardly respectively of junctions of the legs with the web portion, the construction and arrangement of the U-shaped extruded sections into the partition wall structure being such that the legs of one U-shaped channel section can be spread apart by complementary locking ribs on another U-shaped section and then snapped into locking position to firmly lock the extruded U-shaped sections together as a unit, a pair of U-shaped extruded sections for providing terminal longitudinal edges of the partition wall structure, one of said last-mentioned pair of U-shaped extruded terminal edge sections including a web portion and a pair of flange-like legs integral therewith and extending outwardly of one surface of the web portion along each longitudinal edge thereof, each flange-like leg having locking ridges for cooperating with locking ribs of one of said first-mentioned U-shaped extruded sections, the other of said pair of U-shaped terminal edge extruded sections having a web and a pair of flange-like legs integral therewith and extending outwardly from one surface of the web portion along each longitudinal edge thereof, and an H-shaped extruded section provided with a pair of locking ribs for cooperating with locking ridges on the legs of one of said first-mentioned extruded sections, said H-shaped section including a pair of opposed flanges for receiving the free edges of the legs of the other of said terminal edge extruded section whereby the same may be welded thereto.

3,182,764
PANEL FOR CURTAIN WALLS

William H. Yake, Connersville, Ind., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed May 5, 1961, Ser. No. 108,171
3 Claims. (Cl. 189—34)

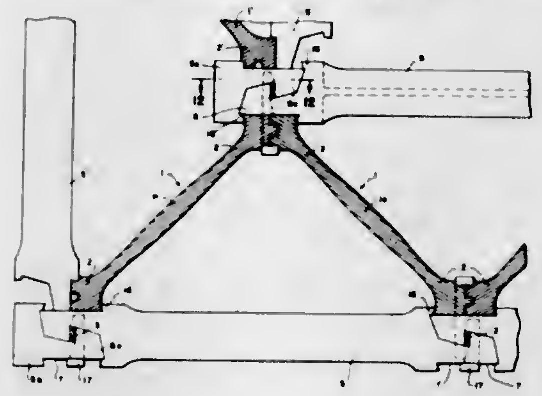


1. In combination with a grid-like framework provided with clamping elements for panel frames, a rectangular panel frame, said panel frame comprising a flat face portion bearing against said framework on all four sides and having a skirt portion depending from said flat face portion substantially at right angles thereto on all four sides, and extending into said framework, said skirt portion having abutments engaged by said clamping elements within said framework to hold said panel frame assembled to said framework.

3,182,765
CORRUGATED STRUCTURE

Herbert Kwiatkowski, Erzbergerstrasse 42, Stuttgart-Nord, Germany

Filed May 29, 1961, Ser. No. 113,402
13 Claims. (Cl. 189—34)

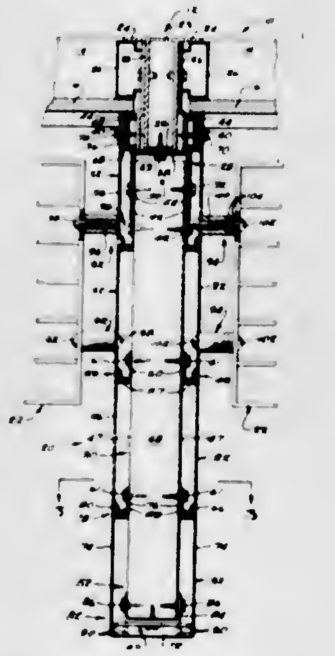


1. A corrugated structure comprising, in combination: a plurality of inclined plates having longitudinal edges and connected to each other at their longitudinal edges in zigzag configuration; and chord means incorporating a plurality of spaced apart pairs of chords arranged at right angles to said longitudinal edges and being positively and detachably connected thereto, the chords of each pair being arranged opposite each other on the opposite sides of the corrugated structure, each of said chords comprising a plurality of straps of a length equal to the distance between joined plate edges on the same side of the structure, each strap having at its ends finger-like claws which are interengaged with each other and with corresponding plates; said straps forming, in the region of their interengaged claws, recesses which receive the connected together longitudinal edges of said plates, said recesses and said connected together longitudinal edges having mating shapes such that said edges are at first received in said recesses with play but that, upon wedging, there will be formed the positive connection between said straps and said plates.

3,182,766
TRIM CAP STRUCTURE FOR A CURTAIN WALL MULLION

Russell A. Ferrell, Pittsburgh, Pa., assignor to H. H. Robertson Company

Filed Feb. 20, 1962, Ser. No. 174,590
6 Claims. (Cl. 189—34)



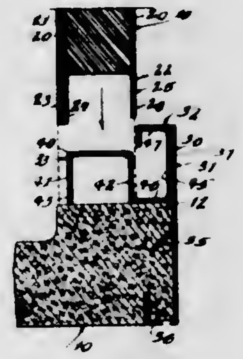
1. A vertical trim cap structure secured to the vertical frame elements of a curtain wall in aligned relation therewith, comprising:

- a support element secured along the vertical frame elements of said curtain wall and having a pair of spaced vertical outboard flanges;
- a corrugated structural element vertically aligned with the said support element and having horizontally disposed corrugations, said corrugated structural element having an inboard edge thereof secured between the said spaced flanges;
- a plurality of vertical facing sheets secured to and enclosing both sides of the said corrugated structural element; and
- a cap member secured to and enclosing the outboard edge of said corrugated structural element.

3,182,767
SHOWER CABINET CONSTRUCTION

Thomas J. Kuehl, Huntington, N.Y., assignor to Flat Metal Manufacturing Co. Inc., Plainview, Long Island, N.Y., a corporation of New York

Filed May 4, 1960, Ser. No. 26,823
2 Claims. (Cl. 189—36)



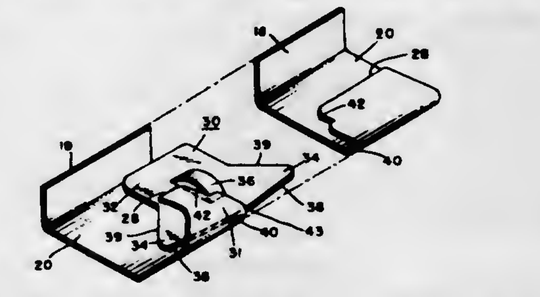
1. A waterproof joint for a shower cabinet having a floor member and a wall member, said joint comprising a molding located on the top of a marginal portion of said floor member and an interfitting, downwardly facing channel on the lower edge of said wall member, said molding having an outer portion connected to said floor member in a waterproof manner, an intermediate portion and an inner portion, said inner portion comprising a downwardly facing channel nesting snugly within said downwardly facing channel of said wall member and enclosing a space of substantial volume per unit length, said last channel having inner and outer legs, said inner leg having a free edge in generally parallel relation with said marginal portion top of said floor member, said outer leg constituting an inner wall of said intermediate portion, said intermediate portion also including an outer leg connected to said outer portion, a bottom leg interconnecting said outer leg of said inner portion and said outer leg of said intermediate portion and a top leg extending from said outer leg of said intermediate portion into engagement with said downwardly facing channel of said wall member.

3,182,768
LIGHTING FIXTURE

Carle E. Rackley, Westlake, Ohio, assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 18, 1960, Ser. No. 43,583
4 Claims. (Cl. 189—36)

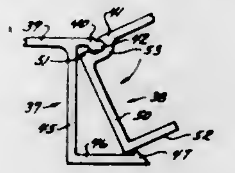
1. A plurality of adjacent troffers, each troffer having a housing with resilient flanges along the lateral edges thereof, each said flange having a bottom portion and a rolled top portion with the latter presenting the top edge thereof spring-biased against said bottom portion, at least one one-piece generally planar aligning member comprising a substantially rectangular body portion having tapering wedge-like projections at one end, each said aligning member having its projections frictionally engaged between said bottom and top portions of said flanges of adjacent housings so as to align abutting troffers in a straight line.



3,182,769
INTERLOCKING CONSTRUCTIONS AND PARTS THEREFOR OR THE LIKE

Ernst J. De Ridder, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed May 4, 1961, Ser. No. 107,839
5 Claims. (Cl. 189—36)

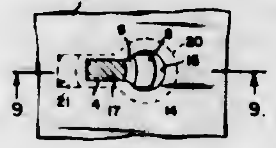


1. In combination, a pair of interlocked members each having an adjacent end and an outer panel disposed in the same plane as the panel of the other member, one of said members having a projection offset inwardly from its panel at the end thereof and having an inwardly extending leg spaced from said projection and defining a channel therewith, said projection having an arcuate surface provided with a center of curvature disposed inwardly of the plane of said one member, the other member having an offset leg extending inwardly from the end thereof and having a channel-defining portion receiving said projection on said one member, said channel-defining portion having an arcuate surface disposed in sliding contact with said first-named arcuate surface whereby said members are pivotally movable relative to each other when being interlocked together, said offset leg of said other member having an end portion received in said channel of said one member.

3,182,770
FASTENING DEVICE

Alexander M. Shemet, 3438 Empty Saddle Road, Rolling Hills Estates, Calif.

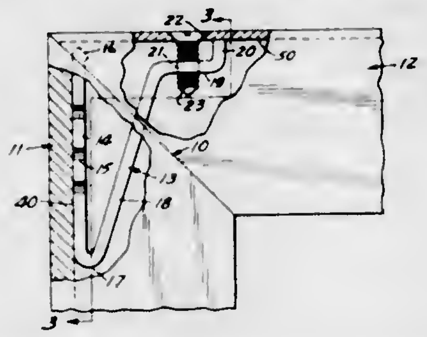
Continuation of application Ser. No. 35,585, June 13, 1960. This application Sept. 10, 1963, Ser. No. 308,032
4 Claims. (Cl. 189—36)



1. A fastening device comprising, in combination, a stud having a plurality of adjacent shoulder portions disposed along the axis thereof, a first plate having an aperture therein of which a first portion is circular and a second portion is rectangular, one of said shoulder portions having a pair of straight sides and a pair of curved sides contained in said aperture in said first plate, a second plate having an aperture therein of which a first portion is circular and a second portion is rectangular, a second of said shoulder portions having a pair of straight sides and a pair of curved sides contained in said aper-

ture in said second plate, means on the ends of said stud to prevent axial movement thereof through said apertures in said plates when said stud is in a first position with said shoulder portions in said circular portions of said apertures, at least one of said end means on said stud being axially movable through the aperture in one of said plates when said stud is moved in a plane normal to the axis of said apertures and into a second position where said shoulder portions are in said rectangular portions of said apertures.

3,182,771
CORNER JOINDER OF CHANNELLED FRAMES
Raymond C. Root, Columbus, Nebr., assignor to Loup Engineering Corporation, Columbus, Nebr., a corporation of Nebraska
Filed Dec. 16, 1963, Ser. No. 330,967
5 Claims. (Cl. 189—36)



1. A corner juncture comprising: a channelled vertical side rail having a bevelled end and a channelled top rail having a bevelled end, said bevelled ends being conterminously joined together rigidly by means of an angular connector wholly within the internal confines of said channelled rails said angular connector comprising: two distinct integral legs intersecting at an acute angle including:

(*a*) a first leg a major portion thereof held in secure frictional engagement between the internal side walls of the vertical rail, said first leg having a terminal portion extending into and secured in frictional engagement between the internal side walls of the top rail, and

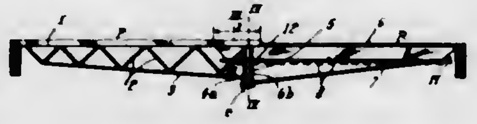
(*b*) a second leg having three sections in order:

(1) a major section immediately adjacent to said acute angle intersection and extending into the internal confines of said top rail,

(2) a perforate minor medial section substantially parallel to said top rail internal base, and

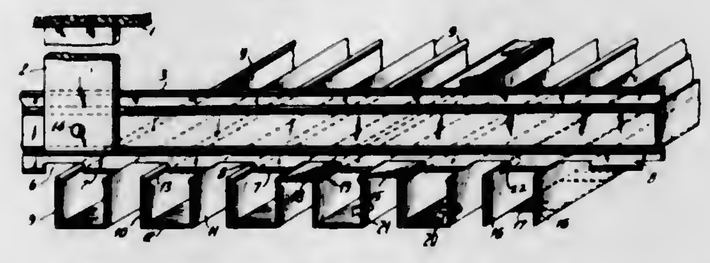
(3) a minor terminal section substantially perpendicular to said perforate minor medial section and being firmly held against said top rail internal base by tension means.

3,182,772
TELESCOPIC METAL GIRDERS
Louis Alziari, 25 Bd. Carabacel, Nice, France
Filed Jan. 18, 1961, Ser. No. 83,405
Claims priority, application France, Jan. 21, 1960,
Patent 1,245,439
1 Claim. (Cl. 189—37)



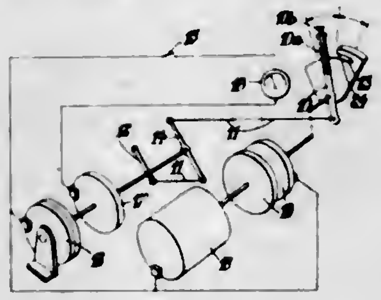
A telescopic girder for supporting timbering for reinforced concrete, comprising a first beam having a horizontal top chord and an inclined bottom chord so that the first beam has one end deeper than the other, upright king post means at said deeper end, a second beam telescoping at one end with said deeper end of said first beam, said second beam having a series of downwardly depending longitudinally spaced cleats disposed lengthwise thereof, said king post means having an aperture extending laterally therethrough, a locking wedge member removably disposed in said aperture and extending removably between an adjacent pair of said downwardly depending cleats thereby adjustably positioning said first and second beams in any of a plurality of longitudinally adjusted positions relative to each other, tie means interconnecting the lower end of said king post means below said wedge and the end of said second beam remote from said first beam, and means tensioning said tie means.

3,182,773
BEAM TYPE CONSTRUCTION
Mauno Erik Laaksonen, Jarvenpaa, Finland
Filed Dec. 30, 1960, Ser. No. 79,828
Claims priority, application Finland, Feb. 8, 1960,
199/60
4 Claims. (Cl. 189—82)



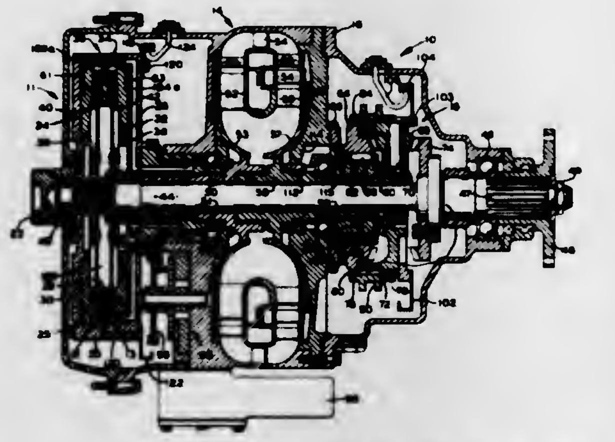
1. A suspended beam ceiling comprising a plurality of substantially parallel U-shaped beams, each of the edges of the sides of said U-shaped beams containing a projection thereon, a plurality of ceiling joists, a plurality of support members for supporting the joists, each of the joists including a generally vertically disposed flange having spaced-apart cut-away portions formed along the lower edge thereof to provide a plurality of spaced-apart lips along said edge separated by the cut-away portions, opposite ends of each lip being formed with indentations adapted to receive the projections to form a ceiling of parallel disposed beams supported by the ceiling joists with each beam being supported by engagement of the projections on the sides thereof in the indentations of said joist flanges, and each of the sides of said U-shaped beams exerting an elastic force tending to retain the projection thereon into the corresponding indentation in the lip on the flange of the ceiling joist.

3,182,774
CONTROL MECHANISM FOR A GAS TURBINE ENGINE
Kenneth Arnold Basford, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Mar. 6, 1961, Ser. No. 93,522
Claims priority, application Great Britain, Mar. 10, 1960,
8,568/60
6 Claims. (Cl. 192—.02)



5. A control mechanism comprising an adjustable fuel control member, a freely-pivoted manual lever, an extensive mechanical linkage, a lever member mounted on a shaft to permit rocking movement of said lever member on rotation of the shaft, said lever member being disposed adjacent said fuel control member, and said mechanical linkage connecting said lever member with said manual lever and said lever member with said fuel control member, so that manual operation of the manual lever causes rocking movement of said lever member and effects adjustment of the fuel control member, friction brake means normally engaging on said shaft to restain said lever member against said rocking movement, and thereby to restrain said fuel control member against an undesired adjustment due to thermal expansion and contraction of said mechanical linkage, said thermal expansion and contraction being accommodated by free pivoting of the manual lever, and said friction brake means being overrideable by manual operation of said manual lever, a source of electrical power, electrical means associated with said friction brake means to disengage said friction brake means from said shaft when electrically energized from said source, electrical driving means, a normally disengaged electrically actuable clutch which can be electrically energized from said source to drivingly connect said electrical driving means to the manual lever, and normally open electrical switch means connected to said source and arranged when closed to cause simultaneous energization from said source of said power means, engagement of said electrically actuable clutch, and disengagement of said friction brake means.

3,182,775
HYDROKINETIC CONVERTER WITH MULTIPLE CLUTCHES AND CONTROL MEANS TO SIMULTANEOUSLY OR SELECTIVELY ENGAGE THE SAME
Myron M. Schall, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Aug. 30, 1962, Ser. No. 220,364
8 Claims. (Cl. 192—3.2)



3. The combination with a transmission of the type having

(1) input and output elements,

(2) a first power path means including a hydrokinetic torque converter and a first fluid pressure operated clutch means,

(3) a second power path means including a second fluid pressure operated clutch means, said power path means being operative to alternately connect said elements,

(4) fluid pressure pump means for supplying fluid pressure to actuate said first and second clutch means,

(5) means for conducting fluid pressure from said pump means to said clutch means,

of a control system including

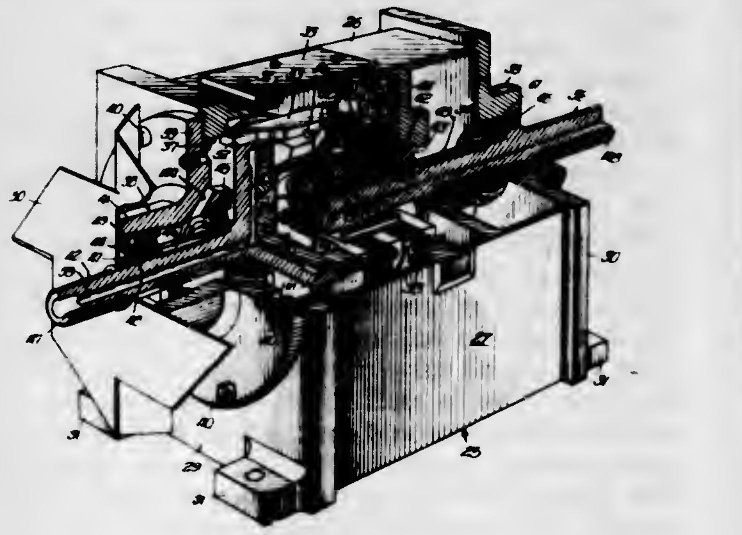
(*a*) a first and a second lag valve each having a first and an alternate position and being interposed in said conducting means,

(1) said first lag valve in its first position being operative to conduct fluid pressure to said first clutch means and remains in such first position until said second clutch means is engaged and being operative in its alternate position to vent said first clutch means and direct fluid pressure to said second clutch means,

(2) said second lag valve in its first position being operative to vent said second clutch means and direct fluid pressure to said first clutch means and in its alternate position to direct fluid pressure to said second clutch means and remains in such alternate position until said first clutch means is engaged,

(*b*) and a main control valve being interposed in said conducting means and being operative to position said lag valves in their first and alternate positions in response to at least the speed of one of said elements.

3,182,776
CLUTCH-BRAKE UNIT
Gordon M. Sommer, New Castle, Ind., assignor to Force Control, Inc., New Castle, Ind., a corporation of Indiana
Filed Apr. 30, 1962, Ser. No. 191,128
6 Claims. (Cl. 192—18)

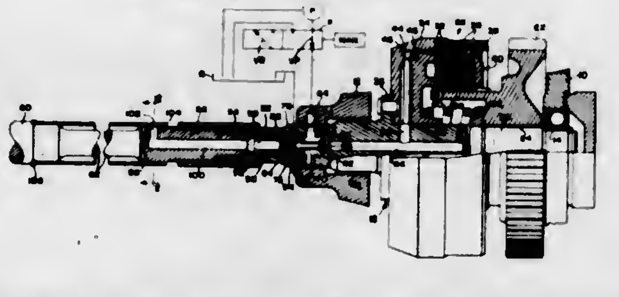


1. A clutch-brake unit comprising, in combination a housing, axially aligned input and output shafts mounted in said housing, a hydraulic cylinder and piston provided on the inner end of said input shaft for rotation therewith, said cylinder and piston being concentric with said input shaft and being non-rotatably connected with each other, a series of radially disposed clutch plates mounted on said cylinder for rotation therewith, a series of radially disposed brake plates spaced from said clutch plates in an axial direction and non-rotatably attached to said housing, a series of friction discs mounted on the inner end of said output shaft for rotation therewith and adapted for selective frictional engagement with said clutch and brake plates, a pair of axially spaced plate members carried on the inner end of said output shaft one on either end of said friction discs, means extending between said pair of plate members and operably engageable therewith in a manner such that said pair of plate members are movable together axially of said output shaft with movement thereof in one direction serving simultaneously to frictionally engage said clutch plates with certain of said friction discs and to release the remaining friction discs from frictional engagement with said brake plates and with movement thereof in the other direction serving simultaneously to release said clutch plates from said frictional engagement with said certain friction discs and to frictionally engage said remaining friction discs with said brake plates, and spring means normally urging said axially spaced plate members in said other direction to engage the brake and release the clutch, said plate members being movable in said one direction to engage the clutch and release the

brake on actuation of said hydraulic cylinder and piston with one of said plate members being positively engaged and shifted by said piston.

3,182,777
TORQUE-LIMITING DRIVE

Edgar P. Browning and Ross K. Brown, Cedar Falls, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Apr. 15, 1963, Ser. No. 273,025
5 Claims. (Cl. 192—56)

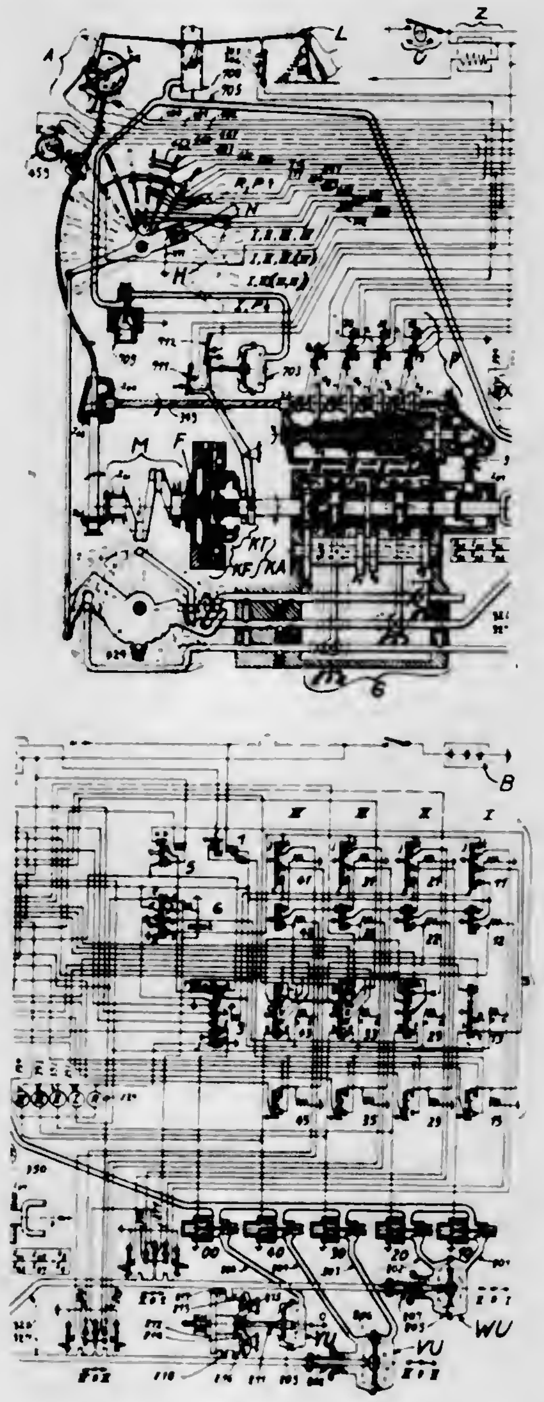


1. In combination: driving means; rotary driven means; clutch means fluid-pressurizible to engaged condition to interconnect and depressurizible to disconnect said two means; fluid pressure means including an inlet adapted for connection to a fluid pressure source, a supply line to the clutch means, an exhaust port and a first valve movable between a first position connecting the supply line exclusively to the inlet and a second position connecting the supply line to both the inlet and the exhaust port; torque-responsive means including a control line to reservoir and a second valve closing said control line at or below predetermined torque values and opening said control line at excess torque values; and valve regulating means including pressure-receivable portions acting on the first valve to hold said first valve in its first position when the second valve closes the control line and to cause said first valve to shift to its second position when the second valve opens said control line, said valve regulating means causing said first valve to remain in its second position under influence of inlet pressure even though said second valve returns to its closed position, and said valve regulating means including means for moving said first valve to its first position upon disconnection of said inlet from the fluid pressure source.

3,182,778
APPARATUS FOR AUTOMATIC CHANGING AND SHIFTING OF GEAR TRANSMISSION OF POWER UNITS, PARTICULARLY OF MOTOR VEHICLES

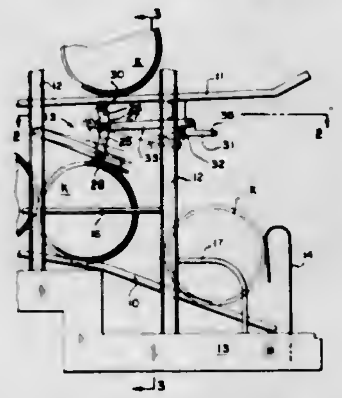
Helmut Dröschel, Russelsheim (Main), Germany
(Uhlandstr. 18, Beilstein, Wurttemberg, Germany)
Filed May 2, 1961, Ser. No. 139,021
Claims priority, application Germany, May 5, 1960,
D 33,270
7 Claims. (Cl. 192—.092)

5. In an arrangement for automatically controlling, particularly in an automatic transmission of a motor vehicle, a sliding-gear type transmission having a driven input shaft and a driven output shaft arranged in the power train of a prime mover, in combination, automatic electric control means for regulating the rotary speed of said driving input shaft, means controlled by said control means for causing the shifting of the gears of said transmission, speed ratio detector means including auxiliary transmission means operatively connected in parallel with the sliding-gear type transmission, said auxiliary transmission means comprising first shaft means driven by the driving input shaft at a speed proportional to that of the latter, and second shaft means driven by the driven output shaft at a speed equally proportional to that of the latter, a plurality of independently axially shiftable first gear means on said first shaft means and rotatable therewith, and a plurality of second gear means on said second shaft means and individually in frictional driving engagement therewith, said plurality of said first and second gear means being subdivided into meshing pairs of one of said first and one of said second gear means, the number of said pairs and the gear ratio of the different pairs being the same as the number of pairs of gears and their different gear ratios in said sliding-gear type transmission, said first gear means moving individually axially along said first shaft means between a middle position, an extreme position on one side and an extreme position on the other side of said middle position depending upon whether the rotary speed of said first shaft means is substantially equal to that of said second shaft means, higher and lower than the same, respectively, and including electrical circuit means controlled by said axially moving of said individual first gear means for furnishing at the beginning of any shift operation in said transmission from any one gear ratio to another desired gear ratio, if the rotary speed of said input shaft is too high for permitting engagement of the gears required for establishing said desired gear ratio, a first speed control signal to the automatic electric control means for causing the latter to decrease said rotary speed of said input shaft so as to establish said proper speed, while furnishing, if said speed of said input shaft is too low, a second speed control signal to said automatic electric control means for causing the latter to increase said rotary speed of said input shaft so as to establish the proper speed, and to furnish, when the rotary speed of said input shaft is substantially the proper one, a shift control signal to said automatic control means for causing the latter to effect the shifting of said transmission to said desired gear ratio.



3,182,779
DISPENSING APPARATUS FOR ROLLING CONTAINERS

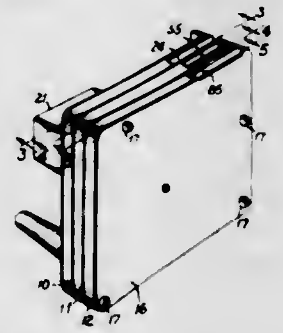
Hubert D. Dillaha, 1901 Oak View Drive, Oakland, Calif.
Filed June 10, 1963, Ser. No. 286,673
1 Claim. (Cl. 193—32)



A manually controlled and operated dispensing apparatus for heavy kegs, comprising: a pair of parallel rails inclined downwardly toward a delivery point; a braking device disposed between and above said rails including a braking shoe mounted upon a pivoted arm, said arm being pivoted upon a horizontal axis; a toggle joint comprised of a pair of links connected together at a knee joint, one link being pivotally connected to said shoe by a first horizontal pivot and the other link being pivoted to a vertical support by a second horizontal pivot above said braking shoe, said braking shoe having a braking surface facing said rails and inclined downwardly towards said delivery point whereby said braking surface and said rails therebeneath form a converging angle towards said delivery point when said knee joint is in line with said first and second horizontal pivots; a manually operable crank pivoted about a third horizontal pivot, a connecting rod pivotally connected at one end to said knee joint and at the other end to said crank, over-center stop means for stopping rotation of said crank when the pivotal connection of said connecting rod and said crank is slightly on one side of a plane defined by said knee joint and third pivot, said crank being freely rotatable about said third pivot when the pivotal connection of said connecting rod and said crank is on the other side of said plane defined by said knee joint and third pivot.

3,182,780
COIN-OPERATED PULSE GENERATOR

Merrill M. E. Jenkins, Sr., St. Louis, Mo., assignor to Coin Acceptors, Inc., St. Louis, Mo., a corporation of Missouri
Filed Nov. 5, 1962, Ser. No. 235,307
13 Claims. (Cl. 194—9)



3. In a pulse generator:

(*a*) a plurality of plates fastened together in close superimposed relation, each adjacent pair of plates constituting a section for a selected coin denomination and providing a coin chute therebetween,

(*b*) a switch having a switch arm, and

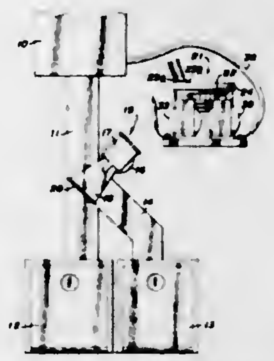
(*c*) switch-actuating means between an adjacent pair of plates including a rotatively mounted member adjacent the associated chute, said rotative member having means for seating and carrying a coin in its passage through said chute during which the coin turns said member, and

(*d*) actuating means interconnecting the switch arm with said rotative member to pulse said switch upon rotation of said member, and

(*e*) switch-actuating means between each other adjacent pair of plates including a rotatively mounted member adjacent the associated chute, the rotative member of each of the last said switch-actuating means carrying a coin in its passage through the chute during which the coin turns the rotative member, each of the last said switch-actuating means including its rotative member being independently operable relative to each other and to the first said switch-actuating means and its rotative member, and each being operable by a coin passing through its associated chute to move the same switch arm to pulse said common switch.

3,182,781
COIN COLLECTOR

Carlton L. Barnhart, 2928 W. Lancaster, Fort Worth, Tex.
Filed Nov. 1, 1963, Ser. No. 320,625
4 Claims. (Cl. 194—9)

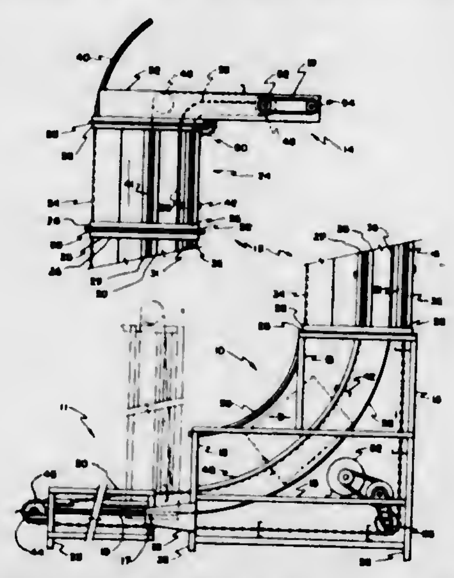


1. In an automatic coin collector, a coin receiving unit including a coin operated switch and comprising a part of a vending machine, a generally vertical coin receiving chute positioned to communicate with and receive coins passing through said coin receiving unit, said chute being divided beneath its upper end into at least two separate coin passageways, a coin receiving receptacle beneath and communicating with each said passageway, an electrically operated deflector mounted to block one of said passageways and direct coins to the other said passageway, a stepping relay including a rotating contact finger, stepping contacts positioned to be contacted by said finger, and an actuating coil coacting with said finger, a first circuit including the switch of said coin receiving unit connected with said actuating coil, and a second circuit connecting said finger and at least one of said stepping contacts with said deflector.

3,182,782
BALE CONVEYOR

Aaron P. Beiler, Blue Ball, and Daniel B. Stoltzfus, Kinzer, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed May 23, 1962, Ser. No. 196,991
1 Claim. (Cl. 198—7)

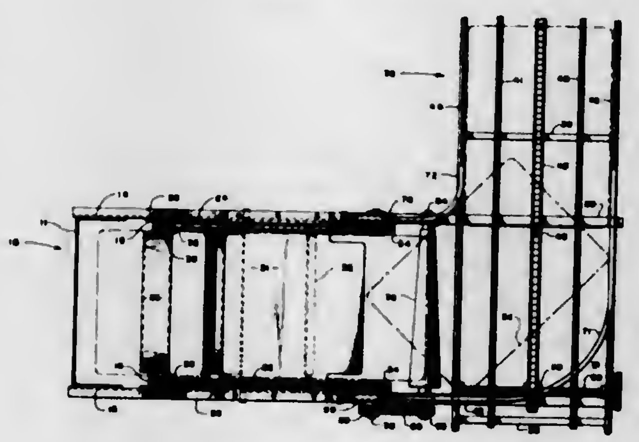
An elevator for conveying bales of hay or the like from a lower level to an upper level comprising the combination of a base frame, an elongated bale receiving platform, pivot means connecting one end of said receiving platform to said base frame at said lower level for vertical pivotal movement between a horizontal operative position and a vertical storage position, a first sprocket journalled on said receiving platform at the end thereof opposite said one end, a four sided vertical elevator shaft mounted on said base frame and having a vertically opening bottom end spaced above the horizontal operative plane of said receiving platform and a vertically opening top end disposed at said upper level, an elongated arcuate bale guiding member mounted on said base frame and extending between one of said four sides of the vertical elevator shaft and said one end of said receiving platform when the receiving platform is in operative position, an arcuate chain guide track mounted on said base frame and extending parallel to said arcuate bale guiding member, a vertical chain guide track mounted on said elevator shaft and extending upwardly from said arcuate chain guide track to said vertically opening top end of said elevator shaft, bale discharging means mounted on said elevator shaft at said open top end thereof and having a bale supporting platform projecting in a horizontal plane from said one side of said elevator shaft at said upper level, said bale supporting platform having a discharge end spaced horizontally from said one side of said elevator shaft, a bale deflecting member carried by said bale discharging means and extending upwardly above said vertically opening top end of said elevator shaft at the side thereof opposite said bale supporting platform for tipping vertically emerging bales onto said bale supporting platform, a second sprocket journalled on said bale discharging means between said bale deflecting member and said bale supporting platform and overlying said vertical chain guide track, a third sprocket journalled on said bale discharging means at said discharge end of said bale supporting platform, an endless chain entrained about said sprockets and along said chain guide tracks in a feed run extending generally horizontally over the full length of said bale receiving platform then along said arcuate chain guide track and said vertical chain guide track to said second sprocket then horizontally along said bale supporting platform to said third sprocket, said endless chain extending in a returned run from said third sprocket to said first sprocket, drive means on said base frame drivingly engaging said return run of said endless chain, a plurality of bale engaging members carried by said endless chain and disposed to engage bales deposited on said receiving platform and propel said bales along said feed run to the discharge end of said bale supporting platform, a bale discharge roller journalled on said discharging means in the plane of said bale supporting platform and spaced beyond the discharge end thereof, and means driving said discharge roller from said third sprocket to deliver bales from said discharge platform as said bale engaging members travel about said third sprocket and begin their return run.



3,182,783
CONVEYOR

Alvin G. Smoker, Parkesburg, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Jan. 3, 1963, Ser. No. 249,239
4 Claims. (Cl. 198—7)

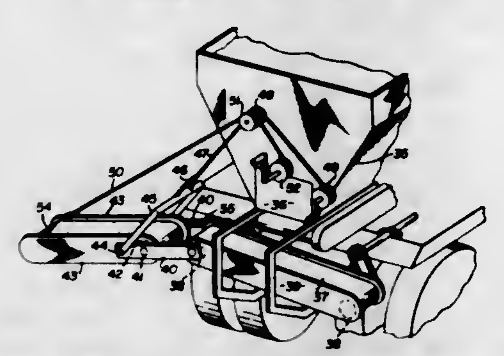


1. Bale conveying apparatus comprising a first frame, bale supporting means on said first frame for supporting a bale in a generally horizontal plane, and supporting means having a bale receiving end and a bale discharge end, conveyor means on said first frame operable to feed bales along said supporting means from said receiving end to said discharge end, a second generally horizontal elongated frame, means to support said second frame perpendicular to and adjacent said first frame with said second frame extending past the discharge end of said first frame bale supporting means, bale supporting means on said second frame disposed in a generally horizontal plane spaced below the horizontal plane of said first frame bale supporting means, parallel side guides on said second frame above the horizontal plane of said second frame bale supporting means and below the horizontal plane of said first frame bale supporting means, said side guides extending perpendicular to the direction of feed of said first frame conveyor means, one of said side guides being disposed adjacent the discharge end of said first frame bale supporting means and the other of said side guides being more remote from the discharge end of said first frame bale supporting means, conveyor means on said second frame operable to feed bales along said second frame bale supporting means and between said side guides in a direction perpendicular to the direction of feed of said first frame conveyor means, and mechanism to transfer bales from the discharge end of said first frame bale supporting means to said second frame bale supporting means and to turn said bales in the direction of feed of said second frame conveyor means, said transfer mechanism comprising a rotatable member journalled on said first frame for rotation about its own axis, said rotatable member being disposed between the discharge end of said first frame bale supporting means and the adjacent side guide of said second frame with the axis of said rotatable member extending parallel to the direction of feed of said second frame conveyor means, said rotatable member having a large end and a smaller end and being tapered from said large end to said smaller end in the direction of feed of said second frame conveyor means, means driving said rotatable member from said first frame conveyor means, and a generally horizontal arcuate guide rail spaced above the plane of said first frame bale supporting means and having one end removably carried by said first frame adjacent the larger end of said tapered rotatable member, the other end of said arcuate guide rail overlying the remote side guide of said second frame and extending generally parallel thereto and parallel to the direction of feed of said second frame conveyor means.

3,182,784
HINGED DOUBLE FLIGHT CONVEYER

Walter E. Coy, Box 416, Canfield-Columbiana Road, Canfield, Ohio

Filed Mar. 18, 1963, Ser. No. 265,702
4 Claims. (Cl. 198—99)

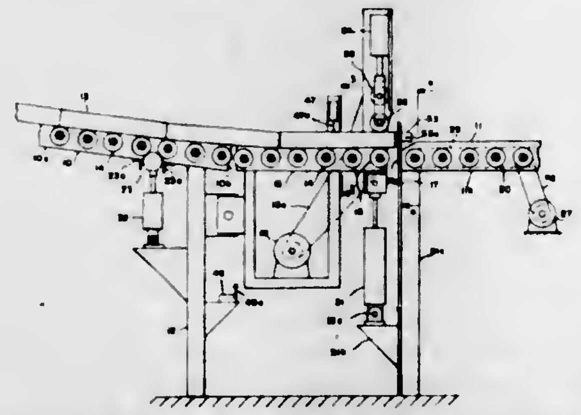


1. A dual flight conveyer system for handling powdered and granular materials and the like and comprising a first conveyer unit including spaced side frames, rollers positioned therebetween at the opposite ends thereof and a first conveyer belt trained thereover and a second conveyer unit comprising spaced side frames, rollers positioned therebetween at the opposite ends thereof and a second conveyer belt trained thereover and extension members pivotally secured to the adjacent ends of said conveyer units and mounting the same in movable spaced relation to one another and means for supporting said conveyer units and means for moving said secondary conveyer unit relative to said first conveyer unit, means for driving said first conveyer belt of said first conveyer unit and drive means interconnecting said first and second conveyer units for imparting said drive to said second conveyer belt on said second conveyer unit.

3,182,785
CONVEYER STORING AND SEPARATING DEVICE

Mills C. Tourtellotte, 1114 Inwood Drive, P.O. Box 746, Richmond, Tex.

Filed Jan. 21, 1963, Ser. No. 252,816
16 Claims. (Cl. 198—127)

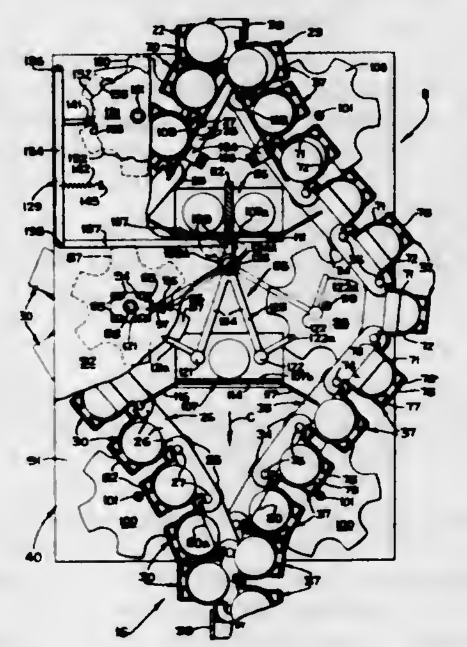


1. A conveyer storing and separating device comprising an elongated gravity-type conveyer sloping downward towards its discharge end and having free turning transverse rollers spaced apart along the length thereof, a tilting conveyer having a receiving end adjacent the discharge end of said gravity-type conveyer to receive articles therefrom and pivoted for movement about a horizontal axis near its receiving end, said tilting conveyer having transverse idler rollers near its receiving end and at least one power driven roller near its discharge end, power means for operating said power driven roller, power means for pivoting said tilting conveyer between a horizontal position and an inclined position in which it extends downward toward its own discharge end at substantially the same slope as said gravity-type conveyer, a third conveyer having its receiving end adjacent the discharge end of said tilting conveyer when the latter is horizontal to receive articles therefrom, a limit switch operable to energize the first-mentioned power means to operate said power driven roller in response to the movement of said tilting conveyer to horizontal position and a stop positioned to block the transfer of articles from said tilting conveyer to said third conveyer in the inclined position of said tilting conveyer but to clear such articles for transfer in the horizontal position of said tilting conveyer.

3,182,786
CONVEYING SYSTEM

James L. Reimers, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of California

Filed May 3, 1963, Ser. No. 277,808
18 Claims. (Cl. 198—131)

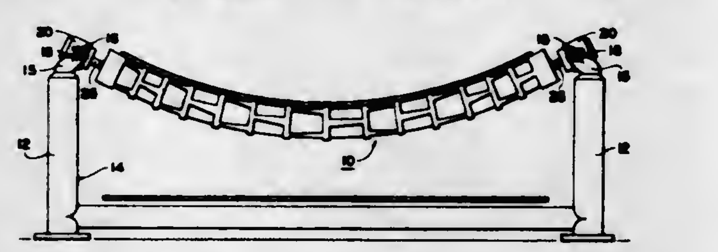


1. A conveying system comprising a first conveyor, a plurality of first carriers on said conveyor having openings therein for receiving and discharging articles, a second conveyor, a plurality of second carriers on said second conveyor having openings therein for receiving and discharging articles, means for driving said conveyors at the same speed and in the same direction, and guide means having a major portion and a minor portion for guiding said conveyors along predetermined paths, the major portion of said guide means being arranged to hold said conveyors together with the openings of said carriers on said first conveyor facing the openings of the carriers on said second conveyor, the minor portion of said guide means being arranged to cause said conveyors to bow outwardly from each other to permit feeding of articles into said carriers and discharge of articles out of said carriers.

3,182,787
CONVEYOR DEVICE

George G. Lorenz, New Philadelphia, Ohio, assignor to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 46,283, July 29, 1960. This application Oct. 15, 1963, Ser. No. 316,799
16 Claims. (Cl. 198—192)

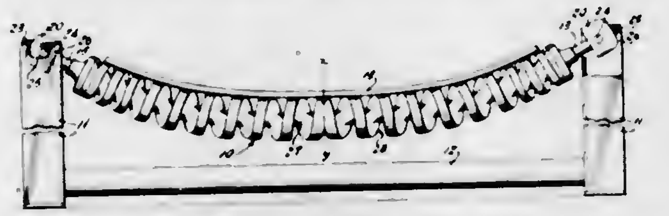


1. A troughing idler comprising: an elongated flexible member, a plurality of non-metallic resilient load supporting members secured to longitudinally spaced portions

of said flexible member, respectively, to extend radially outwardly of said flexible member, said supporting members having a plurality of circumferentially spaced integral elongated rib portions extending longitudinally between said supporting members, each of said rib portions extending radially outwardly of said flexible member with the radially inner portions thereof being secured to said flexible member, all of said supporting members and rib portions being secured to said flexible member to rotate therewith as a unit, each of said rib portions having a substantially greater length than width, and said rib portions having an extent radially outwardly from said flexible member greater than half but not greater than the radial extent of the supporting members from said flexible member with which said rib portions cooperate, respectively.

3,182,788
FLEXIBLE IDLER ASSEMBLY

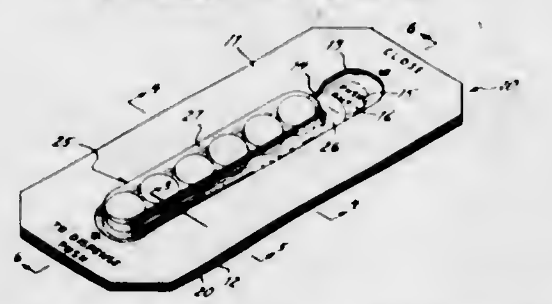
Vincent J. Donadio, Pompton Plains, and William F. Bankauf, East Paterson, N.J., and Clayton H. Skinner, Kenmore, N.Y., assignors to Hewitt-Robins Incorporated, Stamford, Conn.
Continuation of application Ser. No. 792,536, Feb. 11, 1959. This application May 15, 1964, Ser. No. 369,353
6 Claims. (Cl. 198—192)



1. A flexible idler for supporting an endless conveyor belt in a trough shape, which idler comprises a central flexible core and a roller means adapted to contact and support a conveyor belt at spaced points across the width of the belt, said roller means comprising a body of rubber-like flexible material mounted on the flexible core extending lengthwise of the core intermediate its ends, said body having an upstanding rib-like element formed thereon extending around and lengthwise of said body in the form of a helix having spaced convolutions concentric with said flexible core, said rib-like element defining a root portion of said body extending between adjacent convolutions of said rib-like element, said rib-like element having an outer belt contacting surface, said outer surface being spaced a substantial distance from the root portion through out the central portion of said body, said root portion being concentric with said flexible core and the periphery of the root portion progressively increasing in diameter throughout at least two convolutions of said rib-like element, at each end of said body.

3,182,789
DISPENSING PACKAGE

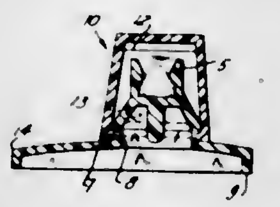
George C. Sparks, Erdenheim, Pa.
(11 Alumni Ave., Harleysville, Pa.)
Filed June 29, 1960, Ser. No. 39,692
2 Claims. (Cl. 206—42)



2. A dispensing package comprising a paperboard back sheet, a paperboard front sheet in facing relation with said back sheet, said front sheet having a central opening, an intermediate sheet sandwiched between said front and back sheets and having heat-activatable adhesive surfaces in respective adhesive securement with said front and back sheets, said intermediate sheet having an opening configured similar to but larger than the opening of said front sheet with the bounding edge of said intermediate-sheet opening being spaced outward from the bounding edge of said front-sheet opening, a plastic carrier sheet slidably received in said intermediate-sheet opening having edge portions slidably interposed between said front and back sheets underlying the bounding edges of said front-sheet opening, said carrier sheet being formed with at least one upset portion extending upwardly beyond said front sheet through the opening thereof for containing an article to be dispensed, said upset portion being slidably engageable with the bounding edges of said front-sheet opening, said back sheet being formed with an outlet opening in line with the sliding movement of said upset portion for receiving and passing said article, said intermediate- and front-sheet openings being of elongate configuration, said carrier sheet being shorter than said openings for longitudinal sliding movement therein, said outlet opening being located in registry with one end of said intermediate- and front-sheet openings for receiving said article upon sliding movement of said carrier sheet toward said one end, and a projection on the bounding edge of said front-sheet opening extending into said opening and engageable with the upset portion of said carrier sheet to yieldably hold the latter against sliding movement and prevent inadvertent passage of said article through said outlet opening.

3,182,790
THERMOMETER CASE

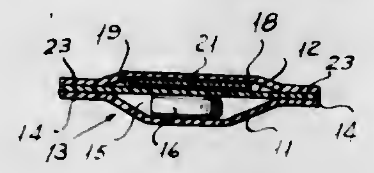
Frank Bieganousky, Pompton Lakes, Francis C. Faulseit, Clifton, and Thaddeus S. Senkowski, Cedar Grove, N.J., assignors to Becton, Dickinson and Company, East Rutherford, N.J., a corporation of New Jersey
Filed Nov. 1, 1963, Ser. No. 320,806
2 Claims. (Cl. 206—45.19)



1. An improved clinical thermometer and casing assembly comprising an elongated clinical thermometer made of a frangible material and a case for protecting and displaying the thermometer including a supporting base member made in one piece of a relatively flexible resilient opaque plastic material and a complementary cover made in one piece of a relatively more rigid transparent plastic material, and removably engageable with the base member to form an enclosed case, said base member having a transversely convex outer surface with an elongated display platform outwardly offset from the outer surface at an intermediate portion and integrally connected thereto by side and end edges disposed at a steep angle to the platform, and being formed with outwardly projecting guide and supporting flanges, tapered in width and disposed at angles slanting toward each other at opposite ends of the platform to engage and help guide and support the cover member, and said base member also having a plurality of resilent clips mounted on said platform in longitudinally spaced relationship, each clip having a base portion and a pair of clamping jaws spaced outwardly from the platform, said clips having a clamping zone between the jaws and being arranged with the clamping zones in longitudinal alignment with the clamping jaws positioned on opposite sides of the axis of alignment, said clips engaging and supporting said clinical thermometer in spaced relationship from the platform so that it can be readily grasped between the fingers for removal and insertion, and said cover member having a top portion and outwardly flared integral side and end walls engaging the guide and supporting flanges and side edges of the platform.

3,182,791
PACKAGE

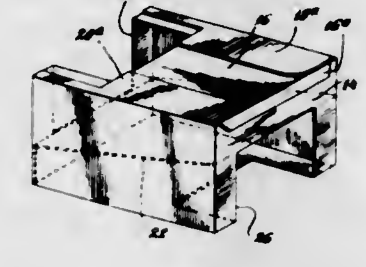
Myron Jenner, Bethel, Vt.
Filed Nov. 13, 1962, Ser. No. 237,001
5 Claims. (Cl. 206—56)



1. In a package for medicinal use, a plurality of identical envelopes detachably connected together in end-to-end relation to form an elongated strip, a medicinal material confined in each envelope, a strip guiding and retaining means overlying and extending longitudinally along said envelopes throughout the length thereof, and a single unitary strip of flexible material longitudinally and slidably adjustable in and along said guiding and retaining means, said strip consisting of a plurality of sections detachably connected in end-to-end relation, each said section having a dimension in the longitudinal direction of said strip, equal to the corresponding dimension of said envelopes, each said section bearing calendar indicia of a respective day of a month, said days being in sequence from one end of said strip to the other.

3,182,792
DISPENSER CARTON

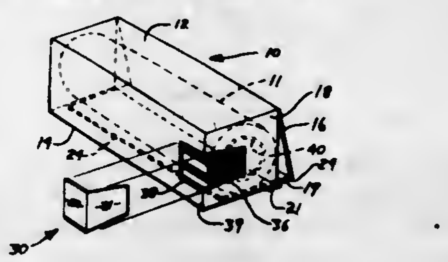
Douglas V. Viltrakis, 50 Watertown Road, Thomaston, Conn.
Filed Mar. 21, 1963, Ser. No. 266,974
7 Claims. (Cl. 206—57)



1. In a carton for containing and dispensing flexible sheets of material, said carton including a first end wall, a second end wall, and a plurality of side walls joining and spacing the first and second end walls, the improvement which comprises: a first of said side walls defining a first opening therein adjacent the intersection of said first side wall with said first end wall; said fiirst end wall defining a second opening adjoining said first opening; a second of said side walls parallel to said first side wall defining a third opening therein adjacent the intersection of said second side wall with said second end wall; said second end wall defining a fourth opening adjoining said third opening; and an angled shelf member contained within said carton and having a first end intersecting said first end wall along one edge of said second opening and a second end intersecting said second end wall along one edge of said fourth opening, said first and second ends intersecting said first and second end walls along lines parallel to one another and to both of said first and second side walls.

3,182,793
BOX FOR SHEET MATERIAL IN A ROLL

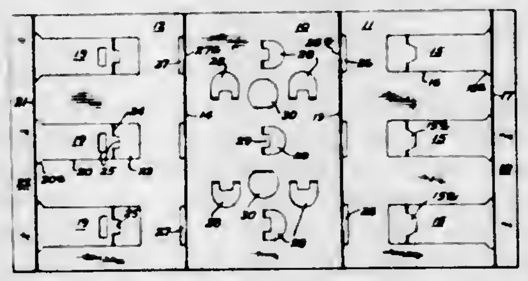
Walter V. Wright, 60 Ridgewood Drive, Leola, Pa.
Filed Oct. 22, 1963, Ser. No. 317,991
3 Claims. (Cl. 206—58)



1. A dispenser for sheet material in a roll such as wax paper, aluminum foil and the like where the roll has a hollow core portion at one end and is substantially longer axially than diametrically, comprising an elongated box in which the roll is positionable with the axis of the roll parallel to the longitudinal axis of the box and the box having a longitudinally extending outlet at least as long as the length of the roll to permit material withdrawal, said box having a body portion and a pair of end walls, one of said end walls at said one end of the roll having a first tear out which when removed forms an opening sufficient in length in a radial direction to provide finger access to said roll core, and said body portion having a second tear out which when removed forms an opening separate from said outlet and substantially adjacent to said one end wall opening, said tear out opening in said body portion providing access to the periphery of the material in the roll and having a length in an axial direction relative to the roll less than the roll length, said tear out openings being so located relative to each other that when said first tear out is removed a person may extend a forefinger through said end wall and into the roll core and when the second tear out is removed the thumb of the same hand may be extended through the body portion whereby the roll may be pinched between its core and periphery and manually rotated about its axis in one direction to dispense material and in an opposite direction to retract any excess.

3,182,794
CAN CARRIER

Norman H. Moore, Palo Alto, Calif., assignor to Fibreboard Paper Products Corporation, San Francisco, Calif., a corporation of Delaware
Filed Oct. 29, 1962, Ser. No. 233,771
8 Claims. (Cl. 206—65)



1. A paper board carrier comprising a top panel, two opposed side panels hingedly connected to said top panel and a plurality of opposed straps formed out of said side panels and hingedly connected thereto adjacent bottom portions thereof, said side panels thus having openings formed therein conforming to the configurations of said straps, each strap of one side panel secured to an opposed strap of the other side panel to thereby form a bottom portion of said carrier, a plurality of cylindrical cans arranged in said carrier with a side portion of each of said cans extending through an opening formed by said straps in said side panels and means for locking the upper and lower portions of said cans in said carrier, the openings formed by said straps each extending from the bottom por-

tion of said carrier and terminating short of said top panel, said means for locking comprising enlarged cut portions adjacent the bottom portion of said carrier conforming to the configurations of those portions of the cans which extend therethrough and tabs formed out of said panels hingedly connected to said top panel and arranged in locking engagement with upper portions of said cans.

3,182,795

CONTAINER FOR TOOTHPASTE CONTAINING STANNOUS FLUORIDE AND PROCESS FOR REDUCING CORROSION THEREOF

Michael J. Pryor, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Mar. 1, 1963, Ser. No. 262,262
11 Claims. (Cl. 206—84)

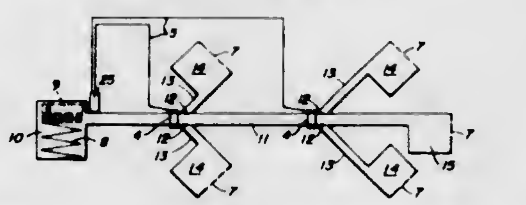
11. An improved aluminum containing toothpaste tube capable of substantial resistance to the corrosiveness of stannous fluoride containing toothpaste which comprises an aluminum base alloy containing at least 90 percent aluminum, between 0.08 and 0.35 percent tin, with the tin retained in solid solution to the maximum degree, and a maximum of 0.1 percent silicon and 1.0 percent iron.

3,182,796

APPARATUS FOR SEPARATING AND FEEDING SHEET-LIKE ARTICLES

Stanley F. Reed, McLean, Va., and George W. Cook, Yardley, Pa., assignors, by mesne assignments, to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware

Filed May 17, 1962, Ser. No. 195,439
7 Claims. (Cl. 209—73)



1. In a system for serially separating and transporting a plurality of sheet-like articles:

an article guide track having an elongated guide surface formed thereon that is operative to guide each of said articles along a predetermined path;

stack supporting means disposed adjacent an initial portion of said guide surface for supporting a stack of said sheet-like articles;

an accelerator block member mounted adjacent said stack supporting means and said initial portion of said guide track, said accelerator block member having an operative surface formed thereon which is coextensive with said guide surface formed on said article guide track and which is arranged and disposed with respect to said stack supporting means so as to be opposed and facing the exposed front side of the leading article of said stack, said stack supporting means and said accelerator block member being mutually arranged so that no component of the weight of said stack of articles bears against said operative surface of said accelerator block member;

said operative surface of the accelerator block member having a plurality of apertures formed therein so as to permit streams of air to flow therethrough and longitudinally along said operative surface in the article feed direction;

fluid conduit means for directing fluid flow through said apertures and in one longitudinal direction along said operative and guide surfaces and away from said stack supporting means, said directed fluid flow causing a pressure differential to exist across the opposite side faces of the leading sheet-like article so that said leading article is laterally attracted towards said operative surface and also causing the thus attracted leading article to be accelerated longitudinally along said operative and guide surfaces in said one longitudinal direction of fluid flow; and

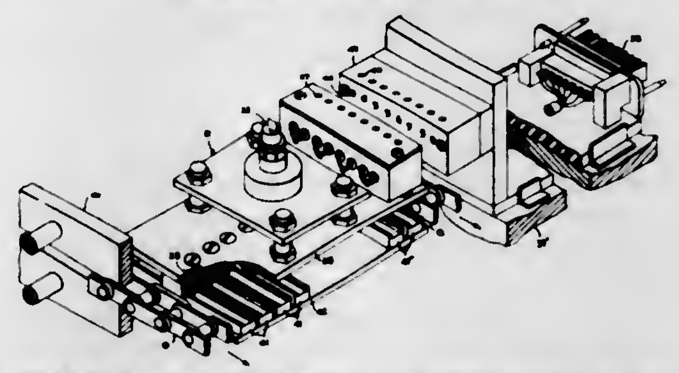
valve means for controlling the flow of fluid from a fluid source to said fluid conduit means.

3,182,797

MEMORY SYSTEM

Burtis E. Palmer, Allentown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 13, 1962, Ser. No. 237,071
3 Claims. (Cl. 209—74)



1. In a test apparatus having a plurality of test stations for testing articles to determine to which one of a plurality of groups the articles belong; a plurality of sorting stations, each of which corresponds to one of said groups and includes an eject mechanism; and an endless conveyor intermittently movable to feed the articles, which are disposed on individual supports, first into the test stations where the articles are tested, and then into the sorting stations where the articles are sorted in accordance with the results of the testing at the test stations, a test memory and retrieval system therefor, which comprises:

(*a*) a memory block mounted on each support and including a plurality of "On-Off" photoelectric memory devices corresponding respectively to the groups to which an article can belong, and arranged in a spaced linear array such that the devices lie in the path of travel of the conveyor,
    each memory device including a neon lamp and a photoelectric cell, and being in its "Off" state when the neon lamp thereof is unlit, and being in its "On" state when the neon lamp thereof is lit,
    the neon lamp and photoelectric cell of each device being electrically connected in series and physically situated within a memory block such that, if the device is in its "Off" state, light impinging on the photocell lowers the resistance thereof to thereby cause the neon lamp to light, the light from the neon lamp impinging upon the photocell to maintain its resistance at its lowered value and thereby maintain the lamp in its lit state;

(*b*) a "read-in" unit at each test station,
    each "read-in" unit including a plurality of light sources corresponding respectively to the groups to which an article can belong,
    said light sources being arranged similarly to the memory devices of a memory block so that when an article support is positioned at rest in a test station, each of the light sources associated therewith is aligned with a corresponding one of the memory devices of the memory block of said article support;

(*c*) means at each test station for supplying the results of the testing of an article thereat to the associated "read-in" unit to energize those light sources of the unit representing groups, the requirements of which an article has failed to meet,
    the energized light sources radiating light only to their corresponding memory devices to trigger these devices to their "On" state if said devices are not already in their "On" state by virtue of the testing at a previous test station; and

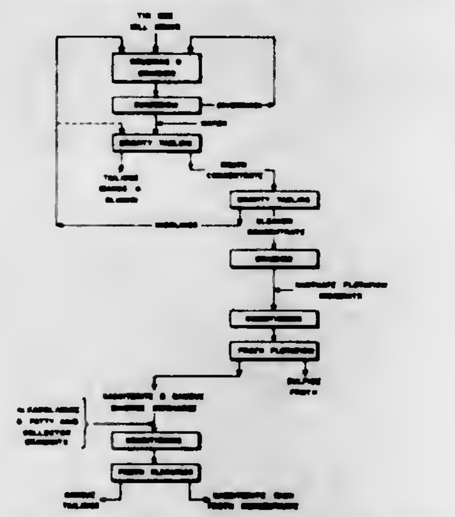
(*d*) a photoelectric "read-out" unit at each sorting station,
    each "read-out" unit being situated in its respective sorting station such that when an article support is located at rest thereat the "read-out" unit is aligned with the memory device corresponding to that sorting station to sense the state of said memory device and to actuate the sorting station eject mechanism to eject the article, if the sensed memory device is in its "Off" state.

3,182,798

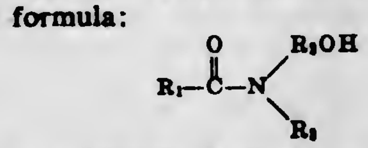
PROCESS OF RECOVERING CASSITERITE FROM ORES

James B. Duke, Metuchen, N.J., assignor to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

Filed Mar. 20, 1962, Ser. No. 181,093
3 Claims. (Cl. 209—166)



1. The process for recovering cassiterite from an aqueous ore pulp including cassiterite and silica and silicate gangue minerals which comprises subjecting said aqueous pulp to froth flotation in an acid circuit in the presence of lauric acid and a non-ionic water-dispersible alkanolamide as cooperative collector reagents thereby producing a froth product which is a concentrate of cassiterite and a tailing composed largely of gangue including said silica and silicate minerals, said alkanolamide having the following structural formula:



$$R_1-\overset{\displaystyle O}{\overset{\|}{C}}-N\begin{matrix}R_2OH\\ \\ R_3\end{matrix}$$

wherein: R_1 is selected from the group consisting of n-alkyl and n-alkenyl groups containing from 11 to 17 carbon atoms, R_2 is an alkylene group having from 2 to 3 carbon atoms, and R_3 is selected from the group consisting of hydrogen and alkanol groups having from 2 to 3 carbon atoms.

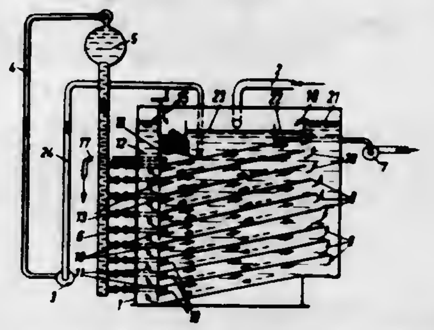
3,182,799

METHOD AND AN APPARATUS FOR PURIFYING THE UNCLARIFIED WASTE WATER IN THE PAPER AND PULP AND LIKE INDUSTRIES

Milos Krofta, 58 Yokun Ave., Lenox, Mass.

Filed Feb. 13, 1961, Ser. No. 89,055
Claims priority, application Germany, Feb. 15, 1960, K 39,905
4 Claims. (Cl. 210—83)

1. Method for purifying unclarified waste water in the paper, pulp and like industries, comprising introducing unclarified waste water mixed with gas into a container, conveying the waste water along a plurality of upwardly inclined narrow paths to one collecting station thereby dividing the waste water into a plurality of wide, shallow superimposed moving layers of waste and into a plurality of layers of clarified water, moving the plurality of layers of clarified water below said waste layers in a downwardly inclined path to another collecting point, said paths decreasing in length from the bottom upwards so that the solid particles do not interfere with one another at said one collecting station, conducting the waste particles to a third collecting station, providing a fourth collecting station in the upper part of the container, adjustably feeding said fourth collecting station from said other station with clarified water when the supply of unclarified waste water ceases, recirculating said clarified water from said fourth collecting station through the plurality of paths, and discharging the unclarified waste and the clarified water, respectively, from said container.

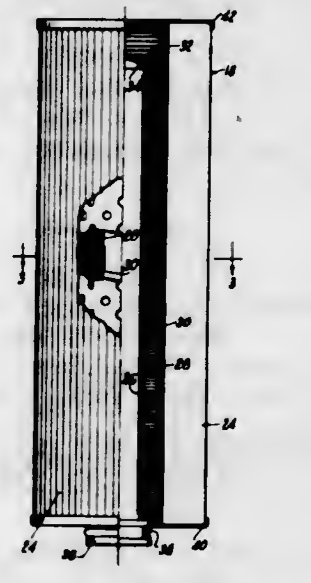


3,182,800

UNITARY CONTAMINATION SENSITIVE FUSE AND SEPARATOR ELEMENT ASSEMBLY

Walter Kasten and Raymond L. Landree, Madison Heights, Mich., assignors to The Bendix Corporation, Madison Heights, Mich., a corporation of Delaware

Filed Aug. 25, 1960, Ser. No. 51,864
5 Claims. (Cl. 210—96)

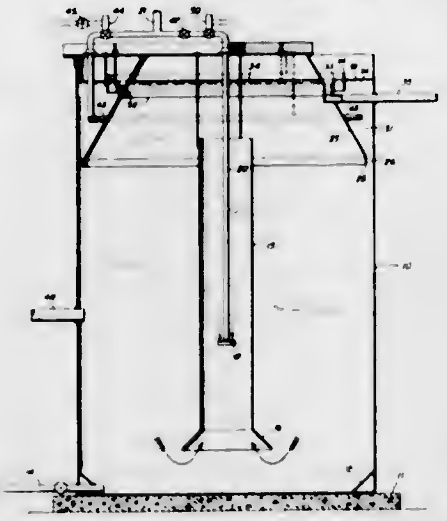


5. In a fuel filter water separator comprising a housing having first and second chambers located therein, an inlet port communicating with said first chamber and an outlet port communicating with said second chamber, a plurality of filter elements located between said first and second chambers for preventing the flow of solid and water contaminants therethrough, and a plurality of porous contamination sensitive shut-off fuses one of which is telescoped within each of said filter elements in series flow relationship for receiving and controlling the full flow of fuel from the filter element in which it is telescoped independently of the flow of fuel from the other of said filter elements, said fuses each being sufficiently sensitive to predetermined levels of both solid and water contaminants

to cause closure of the pores therein and prevent further flow therethrough when said predetermined levels of contaminants are discharged from the filtering element in which it is telescoped.

3,182,801
SEWAGE TREATMENT TANK WITH AERATION CHAMBER AND SETTLING CHAMBER

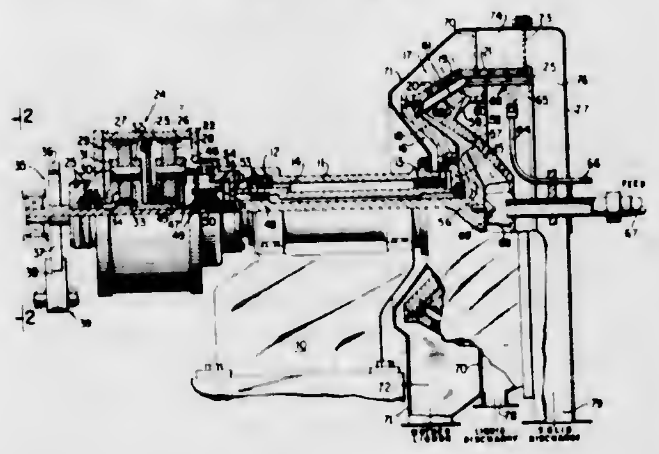
Charles Coleman Griffith, 450 Broad St.,
Falls Church, Va.
Filed May 22, 1962, Ser. No. 196,629
3 Claims. (Cl. 210—207)



1. A cylindrical sewage tank having therein a coaxial frustoconical partition dividing the interior of the tank into a major chamber below and a minor chamber above, said partition being spaced from the tank wall to provide a narrow annular intake passage from the major chamber to the minor chamber, the bottom of the partition forming a submerged weir, an effluent weir in the minor chamber coaxial with the partition, means for causing a constant upward flow of air axially in the major chamber to cause it to be an aeration chamber, a circular baffle in the minor chamber forming with the tank wall an annular quiescent pool located directly above the annular intake passage and spaced outwardly from the effluent weir, whereby all floating material entering the minor chamber will pass directly upward into said quiescent pool thus leaving the flow inwardly over the effluent weir free of floating material.

3,182,802
CENTRIFUGAL SEPARATOR HAVING A WASHING MEANS

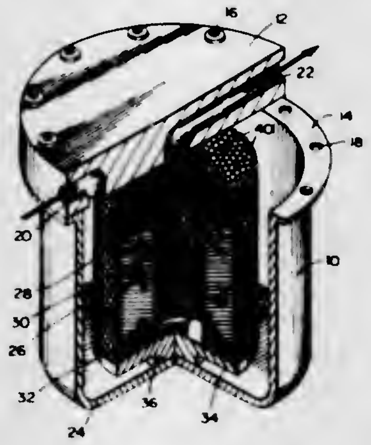
Frederic P. Gooch, North Miami Beach, Fla., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,731
2 Claims. (Cl. 210—212)



1. In a centrifugal separator for separating material, a basket having an open end, an imperforate end and an outer perforate side wall, said perforate side wall having conical and cylindrical portions, said conical portion adjoining said imperforate end and being flared outwardly therefrom, and said cylindrical portion adjoining the outer end of said flared portion, a spiral like scroll conveyor mounted concentrically within said basket and having conical and cylindrical portions, the respective cylindrical portions and the respective conical portions of said basket and conveyor being spaced from and substantially parallel to each other, the length of the cylindrical portion of said conveyor being less than that of the cylindrical portion of said perforate side wall providing an exposed portion of said perforate side wall, means for directing a jet of washing liquid material toward said exposed portion of said perforate side wall, and means for rotating said basket and scroll conveyor at different rates of rotation relative to each other, means for adjusting said conveyor axially relative to said basket whereby the distance therebetween may be regulated, and means for introducing material to be separated into the basket whereby the material is caused to be moved by said scroll outwardly along said conical portions and thence axially along said cylindrical portions by increasing centrifugal force to effect washing and discharge.

3,182,803
FILTERING DEVICE

James R. Chisholm, 17 Hillside Road, Boxford, Mass.
Filed May 27, 1963, Ser. No. 283,179
1 Claim. (Cl. 210—266)



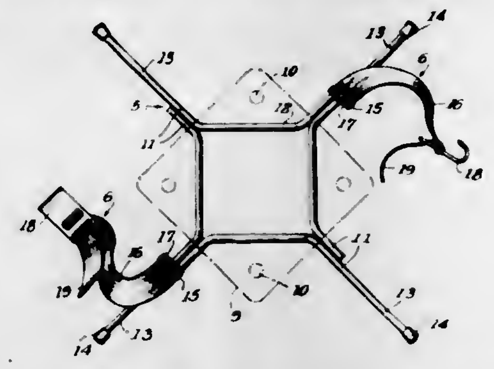
A filtering device comprising a housing member having a removable end wall enclosure member defining inlet and outlet passage means, a removable and reusable cartridge element centrally disposed within said housing member, said element comprising spaced concentrically disposed perforated wall members defining therebetween a filter media containing area and an axial passageway, a solid end wall enclosure member disposed at one end of said element, and a quantity of loose metallic spherical members of uniform dimension and shape disposed within said filter media containing area defining a tortuous path for filtration of any medium introduced into said housing member by said inlet passage, said spherical members having a roughened exterior surface of a metallic oxide.

3,182,804
BOWLING BAG HOLDER

William J. Chades, 3913 W. 184th St., Torrance, Calif.
Filed Apr. 22, 1963, Ser. No. 274,619
2 Claims. (Cl. 211—14)

1. A holder for a bowling bag having a rectangular bottom and a pair of carrying handles on opposite sides thereof, said holder comprising:

(*a*) four similar rods, each formed to have an intermediate portion with a longer portion bent and extending from one end of said intermediate portion at an obtuse angle thereto, and with a shorter portion bent and extending from the opposite end of said intermediate portion at an obtuse angle that is at right angles to the longer portion,



(*b*) said bent rods being connected by welds that join the longer bent portions of each rod to the shorter bent portions thereof, with the intermediate portions of said four rods arranged in the form of a square frame, and the longer bent portions extending outwardly from the four corners of the square in a coplanar relationship to said frame,

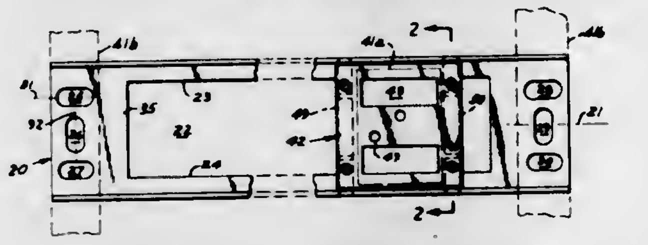
(*c*) the mentioned square frame constituting a support for a bowling bag with the handles thereof aligned with two of said outwardly extending portions,

(*d*) a transverse cleat welded to the top of each of said two extending portions, and

(*e*) a strap connected to each cleat and having a hook engageable with a handle of a bag on the square frame and aligned with said strap.

3,182,805
TELEPHONE OFFICE MOUNTING PLATE

Allen A. Foster, Jr., 477 W. Loma Alta, and John M. Velardo, 495 W. Loma Alta, both of Altadena, Calif.
Filed Apr. 11, 1962, Ser. No. 186,672
14 Claims. (Cl. 211—26)

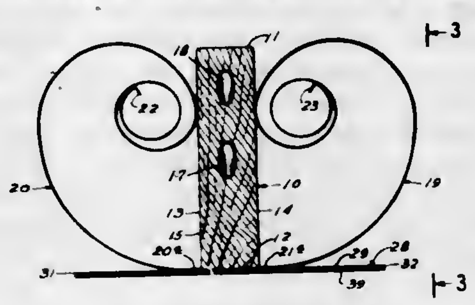


1. A telephone office mounting plate adapted to be mounted to fixed structure, comprising: an elongated base member having an axis, and an axial slot therethrough; a pair of parallel, spaced-apart slot edges bounding the slot; a support member wider than the slot whereby to overlap both slot edges on one side of the base member; a retainer member separate from the base member and adapted to be attached to the support member at a location between the slot edges, and to overlap one of said slot edges on the other side of the base member from the support member; fastener means for drawing the retainer member and the support member toward each other to clamp one of the slot edges between them, thereby attaching the support member to the base member, the support member thereby providing means for attaching circuit elements to the base member, and thus to the fixed structure.

3,182,806
BOOK RACK

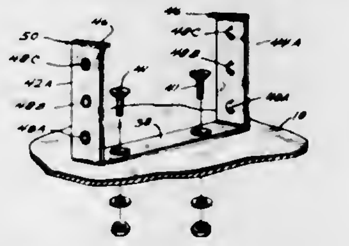
Reuben B. Lambert, Bristol, Conn., assignor to Lampel, Incorporated, New Hartford, Conn., a corporation of Connecticut
Filed Aug. 3, 1962, Ser. No. 214,574
3 Claims. (Cl. 211—43)

1. In a book rack, a central vertical block having an upstanding slot in its base, a pair of tempered metal resilient coiled spiral strips located on the sides of said block, and having upturned inner extremities located in abutment with each other and fitted into said slot, a horizontal base plate located under said block and said coiled strips, and screw means passing through said plate and said strips to secure said coiled strips to said block.



3,182,807
MOUNTING BRACKET FOR TRIMMER POTENTIOMETERS OR THE LIKE

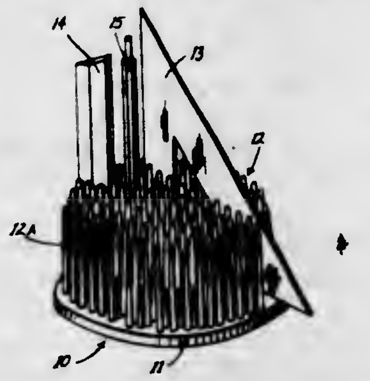
Raymond C. Root, Columbus, Nebr., assignor to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska
Filed July 11, 1963, Ser. No. 294,321
10 Claims. (Cl. 211—49)



1. In combination,
a housing member being substantially rectangular in shape and having side and end portions, and at least two diagonally opposite corner portions,
said corner portions being shaped on a biased plane to present a surface diagonally disposed to said side and end portions,
a mounting bracket, comprising,
a horizontal bar extending across said housing member from one corner portion to the other,
upstanding ends on said horizontal bar in frictional engagement with the diagonally disposed surfaces on said housing,
and means for securing said mounting bracket to a supporting deck.

3,182,808
ARTICLE HOLDER

Roland A. Benoit, Dayville, Conn. (192—10B 64th Ave., Flushing, N.Y.); Robert F. Gingras, Proulx St., Danielson, Conn.; and Richard H. Duprey, Box 145, Central Village, Conn.
Filed Dec. 20, 1962, Ser. No. 246,080
6 Claims. (Cl. 211—69)

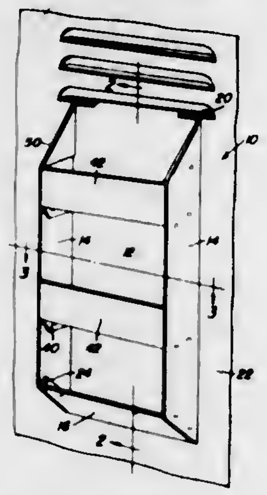


3. A conveyor for maintaining objects of various shapes and sizes in an orderly and accessible manner

comprising an endless belt having a base portion and a plurality of closely spaced flexible fingers projecting upwardly from said base portion; certain of said fingers being longer than others wherein the shorter fingers are spaced between pairs of adjacent longer fingers, said fingers being conically shaped, and said fingers being spaced to one another so that an object inserted between said fingers is frictionally retained by the fingers adjacent thereto whereby depending on the size and shape of the object, the latter may be frictionally retained between the extended ends of adjacent pairs of the long fingers or between a long and short finger.

3,182,809
LOCKER CADDY

Edward N. Getoor, 5604 North Belt, Spokane, Wash.
Filed Apr. 1, 1963, Ser. No. 269,317
5 Claims. (Cl. 211—88)



1. A locker caddy for mounting on a door of the type having at least one horizontally extending ventilating slot therethrough, said caddy having a vertically extending back plate, at least one shelf rigid with the back plate and projecting laterally from one face thereof, and a reversely bent lip integral with said back plate and extending laterally from the other face of said back plate for engagement through a ventilating slot of a door, said one shelf being integral with the back plate and consisting of a bottom plate extending upwardly and outwardly at an acute angle to the back plate, two integral side plates on said back plate projecting forwardly from said one face at the opposite side edges thereof, said one shelf extending between said side plates and being secured thereto, at least one additional shelf, said additional shelf including a bottom panel and integral downwardly depending back and side flaps, said back flap being rigidly secured to the back plate and each side flap being rigidly secured to the adjacent side plate.

3,182,810
HEAT TREATING APPARATUS AND METHOD OF ASSEMBLY THEREFOR

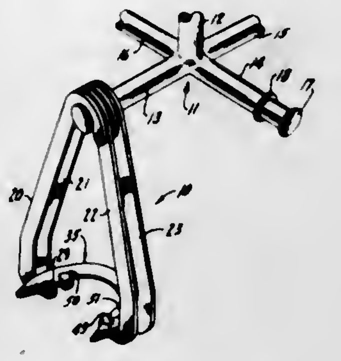
Francis M. Fahrenwald, Chicago, Ill., assignor to The Fahralloy Company, a corporation of Illinois
Filed June 29, 1962, Ser. No. 206,379
13 Claims. (Cl. 211—118)

1. A suspension assembly for supporting heavy objects which are to be exposed to elevated temperatures in a treatment zone, said suspension assembly including, in combination,

at least three suspending members, each suspending member having means, at its upper end, for connecting it to a base structure which enables each suspension member to be movable independently of one another and of the base structure due to dimensional changes resulting from differences in temperatures to which the suspension members are exposed,

a bodily rigid smoothly contoured spacer member and means for loosely connecting the spacer member to the suspending members,

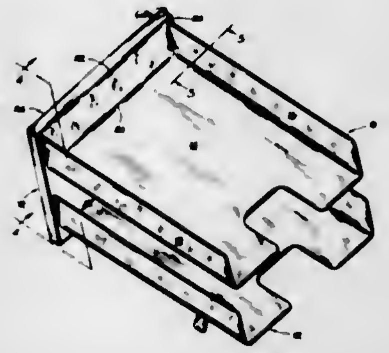
said spacer member maintaining the lower end portions of the suspending members at fixed distances from one another within the limits of the loose connections therebetween,



said spacer member and suspending members, when loosely connected to one another, providing at least a three point support in a common plane for a workpiece, the points of connection of the suspending members to the spacer member being substantially coextensive with the maximum width dimension of the spacer member to thereby provide maximum accessibility for receiving the heavy objects to be supported.

3,182,811
SHELF INTERLOCKING DEVICE

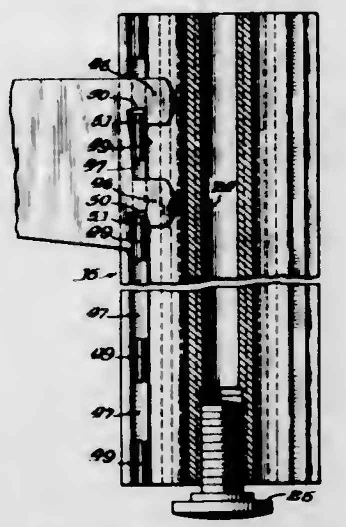
Allen R. Bartlett and June A. Bartlett, San Carlos, and Robert N. Bartlett, Belmont, Calif., assignors to Mosler Harbor Metal Products Corporation, Belmont, Calif.
Filed Jan. 21, 1963, Ser. No. 252,711
10 Claims. (Cl. 211—126)



1. In combination with a tray having a bottom panel and two side panels extending from opposite sides of said bottom panel and a thin generally flat plate having a front face and a rear face, a device for supporting said tray at one end thereof from said front face of said flat plate comprising a tab extending from said bottom panel and from each side panel at the tray end, portions of said plate defining slots for receiving said tabs, an insert member, means for mounting said insert member for slidable movement between a first and second position on the rear face of said plate, said insert member forming an aperture for cooperation with each said slot, each said aperture being adapted to be substantially coextensive with said slots when said insert member is in said first position and to reduce one dimension of said slot when said insert member is in said second position, and each said tab having an outer portion adapted for entry in a respective slot when said insert member is in said first position and an inner throat having a minimum dimension equal to the slot dimension when said insert member is in said second position.

3,182,812
COMBINATION SLOTTED STANDARDS

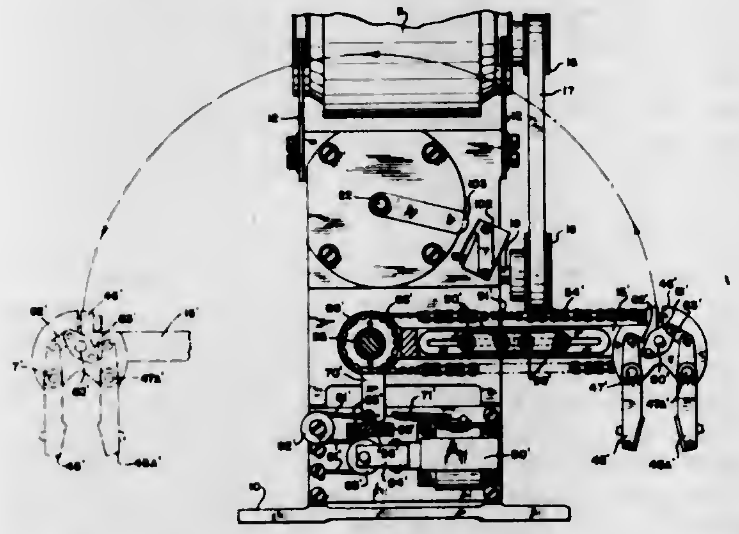
Jay G. Fenwick, Chicago, Ill., assignor to Morton Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 29, 1964, Ser. No. 341,072
5 Claims. (Cl. 211—148)



2. A support unit comprising a main post having a channel longitudinally thereof adjacent one of its edges and a bracket mounting strip in the said channel, the bracket mounting strip having a plurality of alined spaced openings therein and having web portions between each pair of openings, the said web portions having vertically extending channels in the faces thereof of variable cross-section width whereby brackets of varying thickness may be received in the said channels.

3,182,813
ARTICLE MANIPULATOR APPARATUS

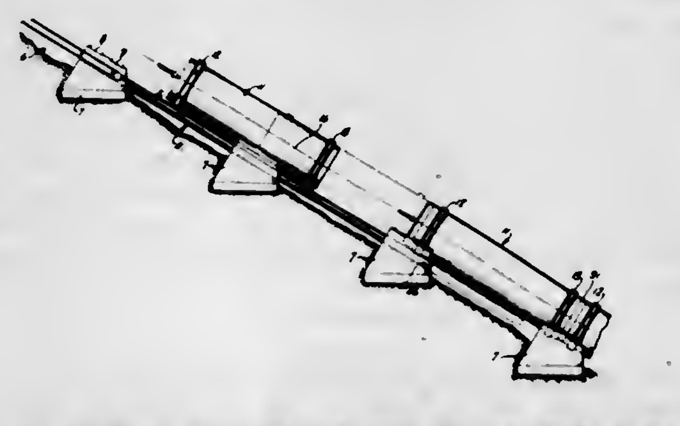
John D. Goodell, Silver Spring, and Joseph Nazali and Torsten N. Tengzater, Takoma Park, Md., assignors to U.S. Industries, Inc., New York, N.Y., a corporation of New York
Filed Aug. 13, 1962, Ser. No. 216,626
9 Claims. (Cl. 214—1)



1. Automatic article manipulator apparatus comprising a support base, a transfer arm pivotally supported adjacent one end thereof by a drive shaft on said base, said arm being disposed for movement in opposite directions of rotation through an arcuate path to forward and rearward end positions of travel, said arcuate path of travel being less than 360° of rotation, energizable means for rotating said drive shaft in harmonic motion so that the arm rotational velocity approaches zero at said forward and rearward positions of travel, article grasping jaws mounted on a rotatable plate supported by said arm at a point removed from said drive shaft, said jaws being adapted for actuation to pickup articles to be transferred in position, means coupled between said base and said plate for maintaining said grasping jaws at a predetermined fixed angle of orientation with respect to said base throughout the arm's arcuate path of travel, first pulley means pivotally mounted on said plate and adapted to close said jaws when driven in rotation, second pulley means pivotally mounted on said base, belt means coupling said first and second pulleys, and selectively operable means mounted on said base for rotating said second pulley through a predetermined angle of rotation at any point throughout the arcurate path of travel for said arm and independently of the movement of said drive shaft to actuate said grasping jaws.

3,182,814
PENSTOCK ERECTING MACHINE

Robert G. Albrecht, Fair Oaks, Calif., assignor to Wismer & Becker Contracting Engineers
Filed Sept. 24, 1962, Ser. No. 225,800
4 Claims. (Cl. 214—1)



1. A penstock erecting machine for use with a series of anchor blocks having rollers thereon comprising:

(*a*) an elongated base frame including a pair of spaced parallel side rails adapted to engage said rollers;

(*b*) an elongated pipe frame including a pair of parallel side bars spaced apart to be disposed between said side rails;

(*c*) a parallel link mechanism supporting said pipe frame for movement between a lower position between said side rails and an upper position above said side rails, said parallel link mechanism including a plurality of links detachably journaled at one end on said side rails and at the other end on said side bars;

(*d*) a plurality of pipe cradles mounted on said side bars, said pipe cradles each including a pair of laterally extending feet portion adapted to overlie and be supported by said side rails in detached condition of said links; and

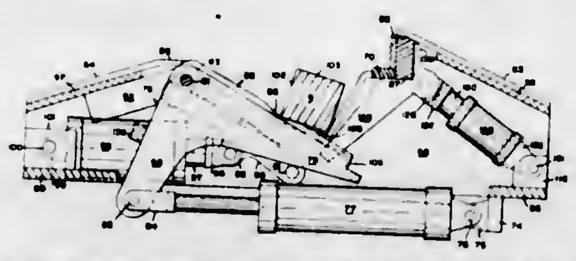
(*e*) means selectively engageable either with said base frame or with said pipe frame for selectively advancing said frames in a longitudinal direction, said advancing means being effective to advance both of said frames concurrently with the movement of said parallel link mechanism in connected condition of said links, and being effective to advance said pipe frame relative to said base frame in detached condition of said links.

3,182,815
CLAMPING STRUCTURE FOR GRINDING MACHINE

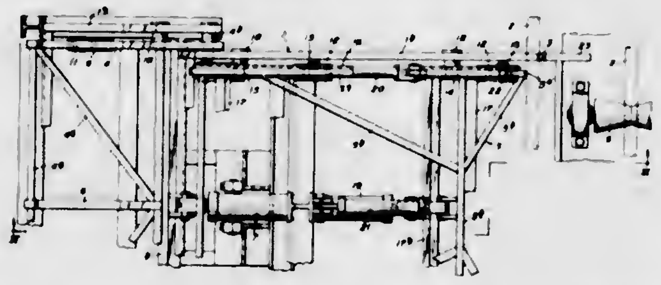
Paul Di Lella, Solvay, and Siegfried G. Wolf, Manlius, N.Y., assignors, by mesne assignments, to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Oct. 24, 1962, Ser. No. 232,800
5 Claims. (Cl. 214—1)

1. A work piece clamping and turning structure comprising a pair of side plates formed with V-shaped notches, a fixed support member fixedly mounted for sup-

porting a portion of the underside of said work piece above said notches, said fixed support member engaging the rearward edge of said work piece upon downward movement of the work piece into said notches to effect rolling of said work piece, a fixed clamp member adjacent said fixed support member, a movable support member, power means to effect movement of said movable support member between an upper supporting position and a lower turning position, a depression formed in said movable support member, said movable support member in its upper position supporting said work piece above said notches on said fixed and movable support members, a movable clamp member, power means to move said movable clamp member into clamping engagement with said work piece against said fixed clamp member, and turn assist means carried by said movable support member and operable in the lower turning position of said movable support member to yieldably urge the underside of said work piece into said depression on said support member to insure a complete turn of said work piece.

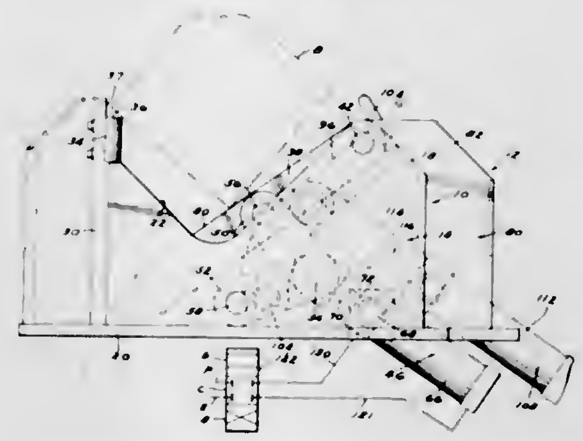


3,182,816
BAR UNSCRAMBLING MACHINE
Joseph Illo, Thornton Township, Cook County, Ill.
Filed Mar. 1, 1963, Ser. No. 262,155
7 Claims. (Cl. 214—1)



1. A machine for the unscrambling and transfer of bars and the like, capable of receiving a plurality of disarrayed and distorted bars and discharging them singly in predetermined positional alignment, said machine comprising a feeder table having members for supporting a plurality of bars crosswise of the machine, said table being generally inclined downwardly towards the discharge end of the machine, to permit gravitation of bars in that direction, and having a single parallel row of bar retaining stops short of the point of discharge, said stops being of suitable shape and size to retain a single bar, without excessive height for ready raising of bars thereover for discharge; a manipulative bed cooperatively arranged with respect to said feeder table, the upper surfaces of said bed being generally coextensive, lengthwise, with the bar supporting members of the feeder table and being similarly capable of crosswise support of bars and their gravitational advancement, said upper surfaces having a single parallel row of bar retaining stops thereon, said stops being of shape and size, and positioned with respect to the discharge end of the bed to leave a section of bar supporting surface extending therebeyond, so that by appropriate bed manipulation a single bar, resting against feeder table bar stops, may be selected and cradled between table and bed bar retaining stops while receiving upward support from said section of bed extending beyond its stops; and means for manipulation of said bed comprising means for selectively varying its position in relation to said feeder table as regards raising, lowering, and degree of inclination, together with independent means for selective to and fro manipulative movement, whereby bars resting upon said feeder table may be manipulated towards and over its stops for discharge.

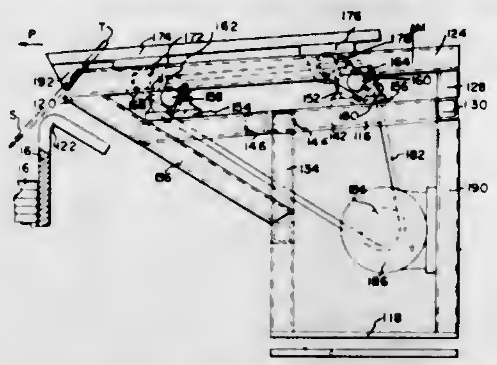
3,182,817
MECHANISM FOR ROTATING SLABS AND BILLETS
Donald E. Figley, Owosso, Mich., assignor to Mid-West Abrasive Company, Owosso, Mich., a corporation of Delaware
Filed Apr. 9, 1963, Ser. No. 271,731
5 Claims. (Cl. 214—1)



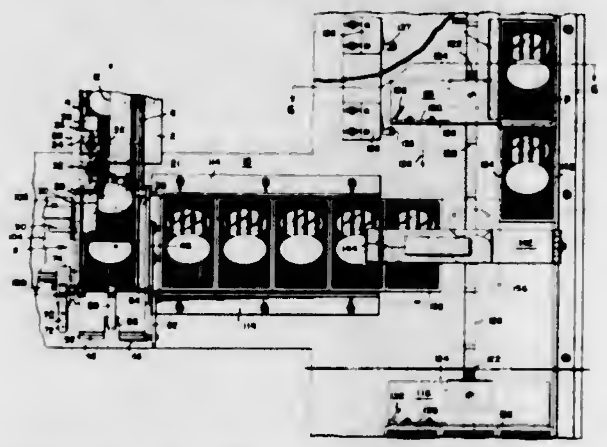
1. A combination work supporting and turning mechanism comprising frame structure, an elongated member for supporting a polygonal work piece pivoted at its forward end on said frame structure for vertical swinging, power means for vertically swinging said elongated member upwardly to a substantially horizontal work supporting position and downwardly from said work-supporting position, a fixed abutment on said frame structure adjacent the swinging end of said elongated member and projecting above the top surface of said elongated member when the latter is in its work-supporting position to provide a stop for the work piece, means operative when said elongated member is in work-supporting position for moving the work piece on the top surface of said elongated member rearwardly against said stop, a trip member mounted on said frame structure in fixed position at one side of the swinging end of said elongated member when the latter is in its work-supporting position, said trip member projecting forwardly of said stop, the top surface of said elongated member in the work-supporting position thereof being at least at the level of the top surface of said trip member so that said top surface of said trip member does not project above the top surface of said elongated member, whereby the top surface of said elongated member provides a full support for the entire width of the work piece when said elongated member is in work-supporting position, said trip member being disposed beneath the rear edge of the work piece when the work piece is positioned against said stop on the top surface of said elongated member in the work-supporting position of the latter, to serve as a fulcrum for the work piece and cause the same to rotate when said elongated member is swung downwardly.

3,182,818
PALLET MAGAZINE LOADING DEVICE FOR CONCRETE BLOCK PRODUCING MACHINES
Eugene E. Crile, 1619 W. Marlette, William R. Thomas, 1109 W. Vista Ave., and Charles W. Warmkessel, 6242 N. 17th Ave., all of Phoenix, Ariz.
Filed July 11, 1961, Ser. No. 123,178
1 Claim. (Cl. 214—6)

In a pallet magazine loading device for concrete block machines, the combination of: a magazine having upstanding sides disposed to contain a stack of pallets; and power operated means disposed to move back and forth, toward said magazine to force pallets thereinto said magazine disposed below said power operated means; said means comprising a pallet carriage disposed to receive pallets thereon; a frame; bell crank means having a substantially horizontal axis and pivoted on said frame; and said bell crank means pivotally supporting said carriage thereon; a shaft connected to said bell crank means for pivotally actuating said carriage about said horizontal axes; whereby said pallet carriage is intermittently elevated, moved toward said magazine and then lowered as said shaft is rotated said power operated means disposed to rotate said shaft; and a surface portion at one end of said carriage adjacent said magazine; said surface disposed to engage edges of pallets positively to force them into said magazine.

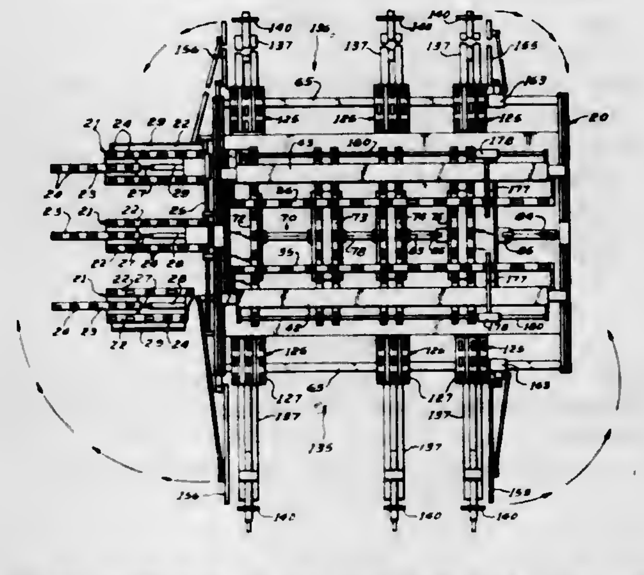


3,182,819
GROUP ASSEMBLING APPARATUS
William H. Groom, Camp Hill, Pa., assignor to Bayuk Cigars Incorporated, Philadelphia, Pa., a corporation of Maryland
Filed Aug. 30, 1961, Ser. No. 135,057
5 Claims. (Cl. 214—6)



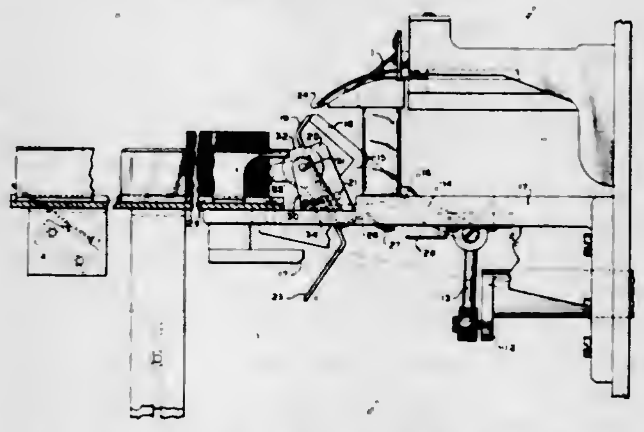
2. Apparatus for assembling groups of flat packs or the like comprising a hopper having an open top and defined by vertical sides and a bottom surface, means for delivering said packs flatly to said open top, whereby said packs drop into the hopper, a ram reciprocable across said bottom surface through an opening in a side of said hopper, said opening also having a side opening opposite the first-mentioned opening and adapted for the passage of said packs therethrough, a supporting surface extending along the line of reciprocation of said ram and forming a continuation of said bottom surface of the hopper at the side thereof having the second-mentioned opening, means effecting successive reciprocations of said ram, thereby to displace packs stated from the bottom of said hopper, thereby also to advance said packs along said supporting surface in a row aligned with the reciprocatory movement of said ram, conveying means moving transversely across said row and supporting surface, said conveying means including at least one pusher plate, the end portion of said pusher closer to said hopper being adapted to remove a plurality of stacked packs from said row, and means for depositing further packs in the path of movement of the end portion of said pusher plate farther from said hopper, whereby groups are assembled comprising packs stacked in said hopper and packs supplied from the last-mentioned means.

3,182,820
SHEET STEEL CONVEYOR AND STACKING DEVICE
John J. Gardner, Mantua, Ohio, assignor to Morgan Automation, Inc.
Filed Nov. 5, 1962, Ser. No. 235,317
18 Claims. (Cl. 214—6)



1. In an apparatus of the type described, the combination comprising a frame, conveyor means connected to said frame, said conveyor means establishing a path of travel and being operable selectively to cause movement of a workpiece from said apparatus in an opposite direction along said path of travel, support means connected to said frame above said conveyor means for temporarily holding a workpiece in a support position, said support means including means for selectively releasing the workpiece in opposite directions from said support position, and means for actuating said support means to release the workpiece in the direction of movement on said conveyor means.

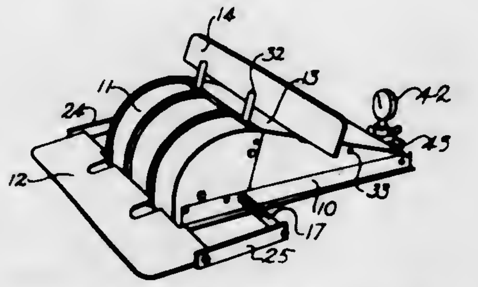
3,182,821
TAG STACKING DEVICE
Charles A. Parker, East Orange, N.J., assignor to Kimball Systems, Inc., a corporation of New York
Filed June 5, 1962, Ser. No. 200,221
6 Claims. (Cl. 214—7)



1. In an apparatus of the class described having
intermittent feed means for ejecting sheets in successive single order manner; the combination therewith of sheet stacking devices comprising
a sheet displacing means including a member pivoted for reciprocable operations and comprising a first clutch jaw,

a member pivotally supported upon the first said member and including an opposed jaw for cooperation with said first clutch jaw,
means biasing said clutch jaws to closed condition for holding a sheet therein,
means for imparting reciprocatory operations to said first pivoted member, whereby a sheet is carried by said clutch jaws in an arcuate path from a given plane and deposited in a plane perpendicular thereto for forming a stack pile substantially parallel to said first plane;
means for advancing said stock pile away from said clutch jaws as a sheet is added thereto, said means comprising
a pair of rollers spaced laterally one to each side of the clutch jaws, and
wherein the peripheral diameter of said rollers project beyond the arcuate path of said clutch jaws, and
wherein during said displacement a sheet engages said rollers to bow the sheet ends forwardly of the clutch jaws and to pressure the stack pile away from said clutch jaws.

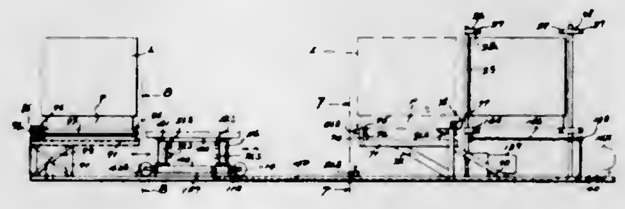
3,182,822
STACKERS
Walter W. Frost, Decatur, Ga., assignor to Sunbrand Supply Company, Inc., Chamblee, Ga., a corporation of Georgia
Filed Nov. 5, 1962, Ser. No. 235,416
1 Claim. (Cl. 214—7)



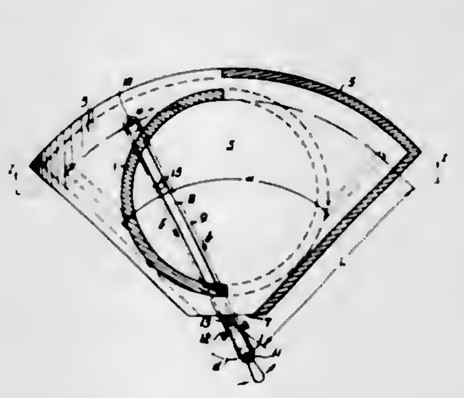
In a device of the character described, a supporting frame, a curved front cover mounted thereon, a receiving deck positioned to the top-rear of said cover, a receiving plate slidably mounted on said deck, a stacker plate in close proximity to the curved front cover, a main pivot rod mounted transversely of said frame, a plurality of supporting arms connecting the stacker plate with the pivot rod, an air cylinder mounted in said frame, a propelling rod operating in the air cylinder, a cross bar mounted on one end of said rod, a ratchet carried by said bar and communicating with a ratchet gear mounted on the main pivot rod whereby upon actuation of the air cylinder the pivot rod is caused to rotate and move the stacker plate upwardly through an arc, and in close proximity to the cover, a plurality of normally extending fingers between the front plate and the receiving deck, which fingers are momentarily retracted by a finger-like element mounted on the main pivot rod through connecting linkage at approximately the time that the stacker plate is adjacent to said fingers during the latter portion of the stacker plate's upper-arcuate movement, and spring means for returning the plate and its assembly to original position upon venting of the air in the cylinder.

3,182,823
TRANSFER EQUIPMENT
Anthony R. Chasar, Cleveland, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 15, 1962, Ser. No. 217,100
13 Claims. (Cl. 214—16.4)

1. In a storage means and a remotely situated conveyor for delivering loads to be stored at said storage means, a transfer apparatus comprising means providing a transfer station at the conveyor; means providing a pick-up and delivery station at said storage means; track means connecting said stations; a transfer cart movable in a controlled path between said stations along said track means; said stations having openings therein whereby said cart is movable into said stations; said cart having lift means movable vertically in such manner as to lift a load from or deposit a load at either of said stations; a stop mounted at said conveyor station and movable from an extended position in the path of a load carried by the conveyor to a retracted position out of the path of the load; power means connected to said cart for causing movement thereof along said track means; control means causing said lift means to raise, said cart to move to said pick-up and delivery station, and said lift means to lower at said pick-up and delivery station in use thereof; said cart being normally positioned at said transfer station and said control means including a control element responsive to a load positioned against said stop automatically effecting the raising of said lift means to lift a load from said conveyor and the subsequent movement of said cart to a parked position outside said transfer station.

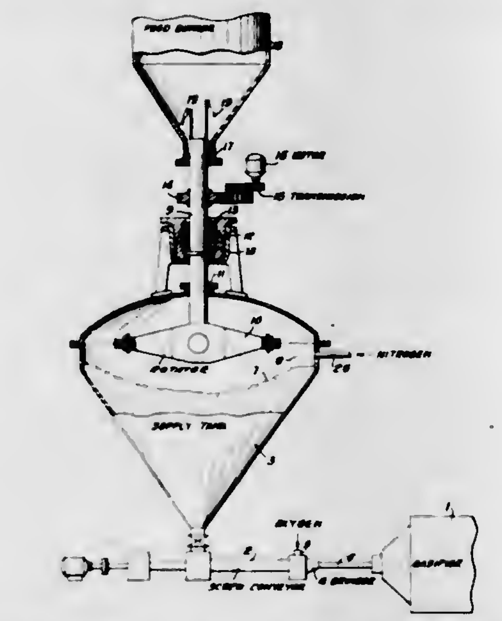


3,182,824
SILO, USED FOR THE PRESERVATION OF GREEN FODDER
Josef Schleich, Ansbach, Middle Franconia, Germany, assignor to Louis Schierholz, Bremen-Kattenturm, Germany
Filed Mar. 29, 1962, Ser. No. 188,001
4 Claims. (Cl. 214—17)



1. A combination comprising a storage silo and a means for unloading a silo,
said silo comprising a substantially vertical wall for enclosing and storing a silage column,
said vertical wall comprising a recess at a base thereof, with said recess defining an opening of cross sectional area greater than the cross sectional area of said column,
said means for unloading a silo comprising a conveyor arm extending into said opening below said silage column and mounted on a pivot point located for lateral swinging beneath both said silage column and portions of said wall of said conveyor arm about a substantially vertical axis outside said column.

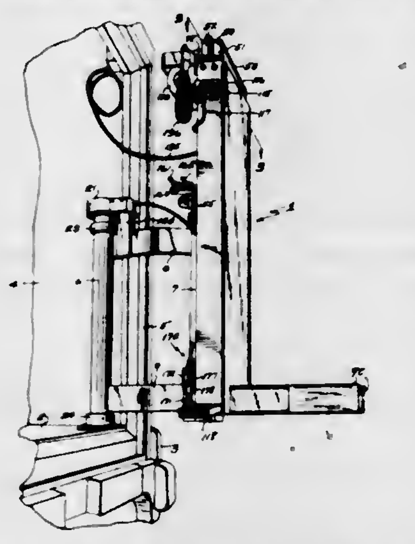
3,182,825
APPARATUS FOR TRANSFER OF A POWDERED OR GRANULAR MATERIAL FROM A SPACE UNDER LOW PRESSURE INTO A SPACE UNDER HIGH PRESSURE
Bruno Zellerhoff, Essen-Werden, Germany, assignor, by mesne assignments, to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,328
3 Claims. (Cl. 214—17)



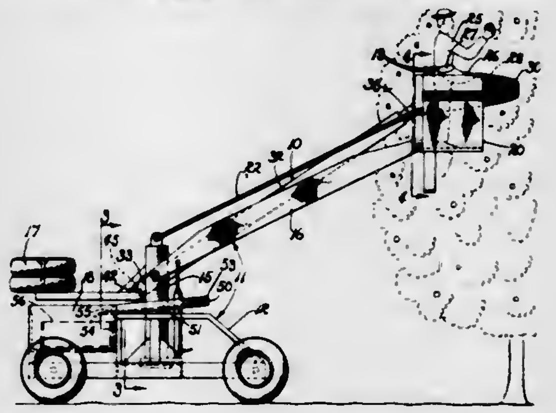
1. Apparatus for injecting particulate matter into a pressurized atmosphere comprising:
(*a*) a container capable of withstanding superatmospheric pressure;
(*b*) a rotator extending through said container and disposed therein;
(*c*) means to rotate said rotator;
(*d*) said rotator being a tubular member projecting within said container and terminating therein as a hollow vessel, and having a plurality of outwardly extending peripheral valve seats, a weighted valve head for each set, a bowed retaining member extending outwardly of each valve, and a compression spring between each said bowed member and said valve head operable in response to centrifugal force to open the port as said rotator rotates about its axis; and
(*e*) means for introducing particulate material into said tubular member at substantially atmospheric pressure whereby said material is centrifugally ejected via said valves into the superatmospheric interior of said container as said rotator rotates and the compression spring of said valves close said valves to prevent flow material when rotation stops.

3,182,826
TRUCK MOUNTED LOAD LIFTING APPARATUS
Theodore R. Mutto, Shaker Heights, Ohio, assignor to Nestaway Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 28, 1962, Ser. No. 183,082
6 Claims. (Cl. 214—75)

3. A load lifting apparatus comprising a fixed frame and a vertically movable frame on said fixed frame; said movable frame reciprocable between a position substantially level with said fixed frame and a position below the level of said fixed frame; power means mounted upon said fixed frame for moving said movable frame; a mount comprising a main pivot member and a parallel, laterally spaced auxiliary pivot member connected by cantilever support means; said fixed frame mounted to said auxiliary pivot member; said main pivot member having a downwardly directed shaft; said mount swingable about said shaft; a well member adapted to be mounted in the floor of a trucklike vehicle adjacent the loading and unloading opening thereof; said shaft slidably disposed and rotatively retained within said well in use of the apparatus whereby said frames are swingable outwardly beyond the truck floor about said main pivot member to allow movement of said movable frame downwardly to a ground level; means on said movable frame for engaging and supporting a load; said apparatus being particularly adapted for mounting adjacent a vertical wall of a trucklike vehicle by having said cantilever support means laterally offset in one direction of swinging movement in such manner as to allow greater swinging movement of said frames in that one direction; said lateral offset so directed as to dispose said auxiliary pivot member laterally beyond the wall of the vehicle when said frames are swung outwardly beyond the truck floor.



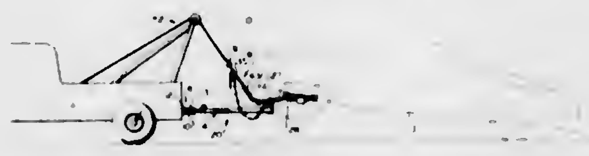
3,182,827
OBJECT CONVEYING CHUTE
James Dahle Frost, P.O. Box 775, Porterville, Calif.
Filed Jan. 10, 1964, Ser. No. 336,997
2 Claims. (Cl. 214—83.1)



2. In a mobile orchard scaffold having an elongated boom mounted on a vehicle for elevational movement about a substantially horizontal axis and for rotational movement about a substantially upright axis, said rotational movement having a compass of 360°, said boom providing an outer end pivotally mounting a worker support platform having control means maintaining the platform in continuous horizontal attitude during said elevational movement of the boom; the combination of an elongated conveying chute mounted on the boom for movement therewith having an open upper arcuate fruit receiving trough portion mounted on the platform above the boom, a covered intermediate rectilinear portion declining therefrom for gravitational descent of fruit therethrough, and a lower discharge portion having an end wall below the boom adjacent to the vehicle so as to insure said gravitational descent of fruit in substantially all elevational positions of the boom, said discharge portion hav-

ing a downwardly opening fruit outlet adjacent to said end wall; cushion means mounted on said end wall within the chute, said trough, intermediate and discharge portions of the chute providing substantially continuous side walls transversely spaced a sufficient distance to insure free passage of a plurality of fruit therebetween with the fruit directed downwardly toward said end wall against said cushion means gently to deflect the fruit downwardly through said outlet from the chute; means pivotally telescopically connecting said upper trough portion to said intermediate portion of the chute to accommodate pivotal movement between the platform and the boom; an annular fruit gathering tray mounted on the vehicle in declining circumscribing relation about the axis of rotation of the boom below the lower discharge portion of the chute in continuous registry with said fruit outlet from the chute during said elevational and rotational positioning of the boom and having a spillway opening therefrom for discharging fruit; powered means for elevating the boom mounted on the vehicle within the compass of the tray; and container means removably mounted on the vehicle in position to receive fruit discharged from said spillway of the tray.

3,182,828
TOWING APPARATUS
Arwin E. Ormsby, 8435 Baldwin St., Oakland, Calif.
Filed Mar. 31, 1959, Ser. No. 803,135
2 Claims. (Cl. 214—86)



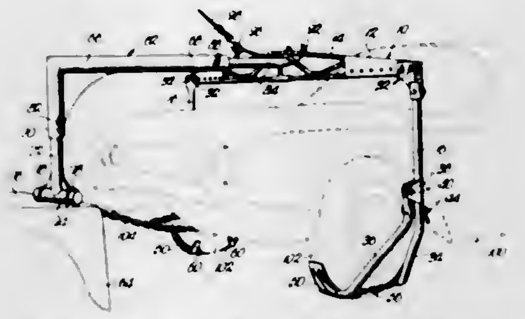
1. A towing sling comprising: an elongated, rigid spreader bar adapted to be positioned under and behind the bumper of a vehicle to be towed and having means for attaching it to the frame of such vehicle in such position, a stiff tow bar connected to said spreader bar and extending therefrom for pivotal connection to a towing vehicle for holding such towed vehicle spaced from such towing vehicle, an elongated, rigid header bar having means for connection to lifting means carried by such towing vehicle, spaced pairs of elongated, flexible, parallel, spaced suspension members connected to said spreader bar and said header bar and adapted to extend in front of the bumper of such towed vehicle for normally supporting such towed vehicle, tubular elements of cushion material encasing a major portion of the length of each of said suspension members, and cushion pads extending over a lesser portion of the upwardly directed surfaces of each said pair of suspension members and slidably mounted on said tubular elements of each said pair for positioning between the latter and the bumper of such towed vehicle.

3,182,829
VEHICULAR LIFTING YOKE ASSEMBLY
George L. Wagner, 421 S. Walnut, Maryville, Mo.
Filed Nov. 27, 1961, Ser. No. 154,999
1 Claim. (Cl. 214—86)

An assembly for attachment to a tow truck for lifting and towing a vehicle comprising:

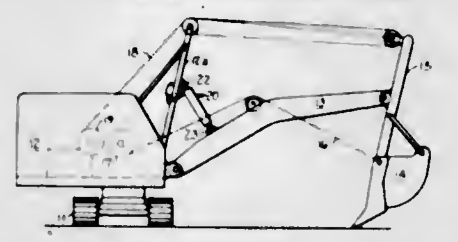
a substantially U-shaped frame having a generally horizontal, rigid bight section adapted for overlying the vehicle transversely thereof as the latter is towed;

a pair of spaced arms depending from opposite extremities of said bight section, each arm being provided adjacent the lowermost extremity thereof with a pair of arm sections and means pivotally mounting one arm section for movement relative to the other arm section, each arm section being provided at the lower end thereof with a shoe, the shoes of said arm sections being spaced apart to present a saddle extending substantially transversely of the plane of the frame and disposed for receiving and supporting a corresponding wheel of the vehicle when the frame is raised, said one arm section being movable in opposed directions through a distance sufficient to permit the shoe thereof to shift toward and away from the shoe of the other arm section to thereby permit adjustment of the shoes with respect to the peripheral surface of the wheel supported thereby; and



a boom structure adapted to be secured to said tow truck in disposition projecting rearwardly therefrom, said frame having a generally vertical member intermediate the ends of said frame and said boom structure being provided with an elongated, substantially fork-shaped hook section having a pair of parallel, normally rearwardly extending elements releasably engageable with said bight section of the frame on opposite sides of said member in embracing relationship thereto, said elements being spaced apart a distance only slightly greater than the effective transverse dimension of said member to preclude swinging of the frame about a generally horizontal axis extending longitudinally of the hook section without interfering with pivoting movement between the frame and hook about axes extending longitudinally of the bight section of the frame and longitudinally of the member.

3,182,830
CONTROL FOR BOOM LOCKING APPARATUS
John G. Zimmerman, Evansville, Ind., and Richard D. Clark, Oak Creek, Wis., assignors to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed July 26, 1962, Ser. No. 212,606
7 Claims. (Cl. 214—138)



1. For an excavating machine having a machinery platform; a pivoted boom extending out from said platform; a dipper stick pivoted at the outer end of the boom; a back-acting dipper on said dipper stick; a hoist drum on said machinery platform with a hoist cable extending to said dipper stick; a hoist control lever associated with said hoist drum; a digging drum with a digging cable extending to said dipper; and a digging control lever associated with said digging drum, the combination of:

a boom lock of variable length having a hydraulic cylinder and piston with one end fixed and the other end attached to said boom;

a normally open valve;

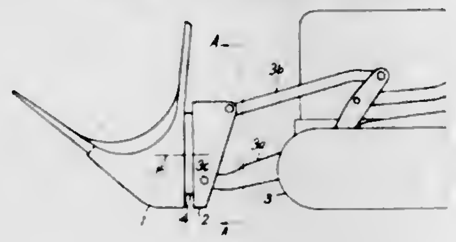
a fluid reservoir connected through said normally open valve to said cylinder;

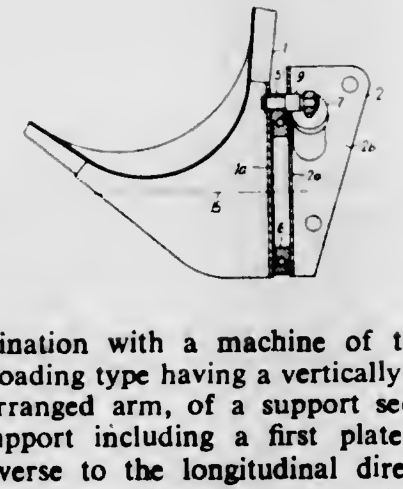
means for closing said valve;

a first control element operated by said digging control lever during initial movement of the lever for operating said means to close said valve; and

a second control element operated by said hoist control lever during initial movement of the lever for operating said means to open said valve regardless of operation of said first control element.

3,182,831
ARRANGEMENT IN LOADING AND DIGGING MACHINES
Hermann Gustav Adolf Bergmann, Bandhagen, Sweden, assignor to Tage Nils Wilhelm Leijon, Stocksund, Sweden
Filed Nov. 30, 1961, Ser. No. 155,977
Claims priority, application Sweden, Oct. 7, 1961, 9,986/61
1 Claim. (Cl. 214—140)

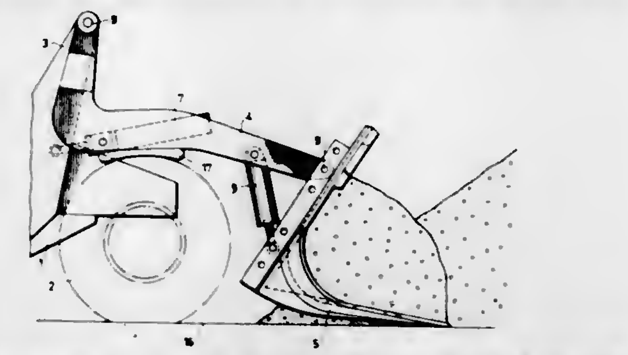




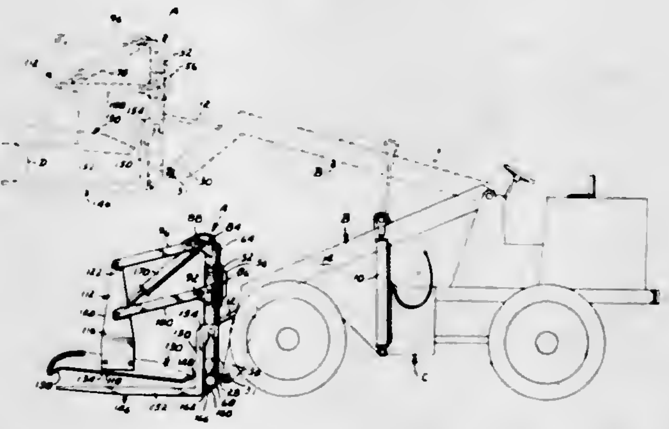
The combination with a machine of the front end digging and loading type having a vertically movable longitudinally arranged arm, of a support secured to said arm, said support including a first plate member arranged transverse to the longitudinal direction of said machine, an implement including a second plate member located at the rear of said implement, and means interconnecting said first and second plate members for rotation of said implement on said support about an axis normal to the faces of said plate members, said interconnecting means including a deep groove ball bearing having inner and outer races centered with respect to said axis of rotation and ball bearings therebetween for absorbing both radial and axial forces acting upon said support and implement, said races being secured respectively to said first and second plate members, the distance between said plate members exceeding the width of each race only by a minimal amount necessary for rotational clearance as between the non-secured end of each race and the plate member which it confronts, and said races together with said ball bearings constituting the sole rotational supporting structure as between said support and implement.

3,182,832
LOADER EQUIPPED WITH SHOVEL
Sven Albert Oskar Bodin, Vardklockegatan 12, Visby, Sweden
Filed Feb. 20, 1963, Ser. No. 259,934
Claims priority, application Sweden, Feb. 21, 1962, 1,898/62
2 Claims. (Cl. 214—140)

1. In a loading vehicle including a frame and ground engaging wheels supporting the frame; a loading assembly comprising arms pivotally connected to and extending laterally from the frame and having outer free ends, a shovel carried by the arms, said shovel being pivotally maintained on the free ends of the arms, means connected between the arms and shovel for actuating the shovel and support block members fixed to the undersides of the arms and adapted to rest on top of the wheels in the lowered position of the arms so that, as the shovel is being filled, the arms are supported on the wheels.



3,182,833
SIDE SWING CARRIAGE FOR LOADERS AND THE LIKE
Le Grand H. Lull, 5501 Woodlawn Blvd., Minneapolis, Minn.
Filed Nov. 8, 1961, Ser. No. 151,004
8 Claims. (Cl. 214—147)



8. In a loader for handling logs, poles, piping and similar heavy elongated loads, including a mobile frame, a forwardly extending boom carried by said frame, laterally fixed support structure carried at the front end of said boom, the combination comprising:

a hollow vertical pivot members forming one side of said support member,

a pivot shaft carried within and extending above and below said pivot member,

a load engaging frame pivotally mounted on the upper and lower extensions of said pivot shaft for side swinging movements with respect to said frame,

hydraulic cylinder means for swinging said load engaging frame from a forward position to a side position,

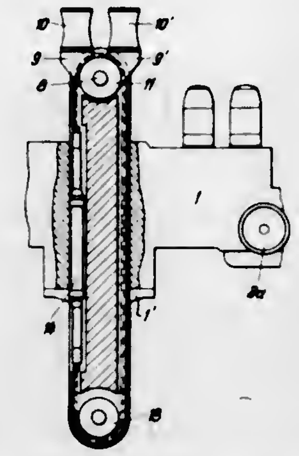
a pair of forwardly extending lift arms, and

a pair of hold down clamps pivotally mounted on said load engaging frame above said lift arms for clamping movement generally parallel to said lift arms.

3,182,834
APPARATUS FOR CHANGING THE POSITION OF BAR STOCK MOVING OVER A ROLL TABLE
Kurt Klotzbach, Dusseldorf-Rath, Germany, assignor to Maschinenfabrik Sack G.m.b.H., Dusseldorf-Rath, Germany
Filed July 12, 1962, Ser. No. 209,371
Claims priority, application Germany, July 21, 1961, M 49,767
9 Claims. (Cl. 214—338)

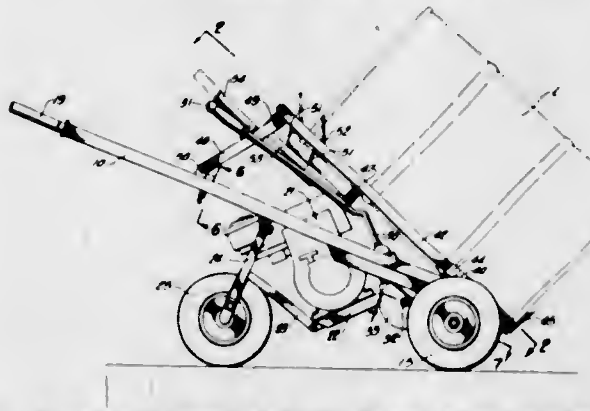
1. In an apparatus for changing the position of bar stock moving over a roll table, a pair of tong arms each

having a roller at one end freely rotatable about an axis extending substantially in the longitudinal direction of the respective arm, and a flexible tension member operatively connected to each of said arms for independently pivoting



said arms with respect to each other through an angle of 180° about a pivot axis common to both arms, said pivot axis being perpendicular to the axes of said rollers and equidistant therefrom so that the bar stock can be guided between said rollers as it moves over the roll table.

3,182,835
POWERED BARREL TRUCK
Jack W. Meyer and Irel H. Meyer, both of 3550 Cajon Blvd., San Bernardino, Calif.
Filed May 13, 1963, Ser. No. 279,850
2 Claims. (Cl. 214—383)

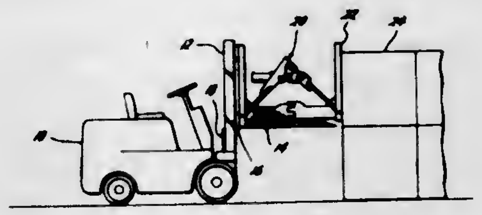


1. In a hand truck, a body frame supported at one end on ground wheels and having handles at the other end thereof, said body frame providing guides adjacent the ground wheels, a loading frame slidable between limits in the guides, said loading frame having loading feet on the forward end thereof, links pivotally connected to the rear end of the loading frame and to the body frame, and latch means slidably mounted between limits on the loading frame engageable with the upper end of a load supported on the loading feet, said latch means having a cam associated therewith for opening the latch means with respect to the loading feet, and a handle connected to the latch means, said handle being located between the frames.

3,182,836
PUSH-OFF ATTACHMENT FOR LIFT TRUCKS
Stuart W. Sinclair, Houston, Tex., assignor to Anderson, Clayton & Co., Houston, Tex., a corporation of Delaware
Filed Jan. 6, 1964, Ser. No. 335,884
4 Claims. (Cl. 214—514)

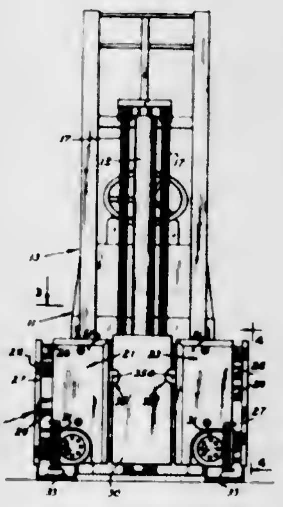
1. The combination with a fork lift truck having a vertically movable bracket of a push-off attachment including:

a vertical frame attached to the bracket,
a first C-shaped yoke,
a second C-shaped yoke,
the yokes pivotally connected back to back,
a vertical pusher plate,
the ends of the first yoke horizontally pivotally connected to the frame,
the ends of the second yoke horizontally pivotally connected to the pusher plate,
a first equalizer,
a second equalizer,
the equalizers pivotally joined,



the first equalizer vertically pivotally connected to the frame,
the second equalizer vertically pivotally connected to the pusher plate,
a hydraulic motor including a cylinder and a piston,
the cylinder pivotally connected to one of the yokes,
the piston pivotally connected to the other of the yokes, and
fluid supply means connected to the hydraulic motor,
whereby the pusher plate may be traversed horizontally while maintained in parallel vertical alignment with the frame.

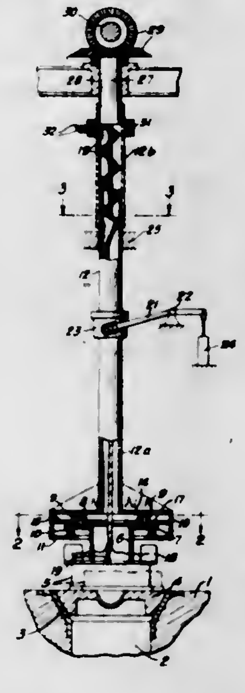
3,182,837
SWIVELING ARM FOR LOAD CLAMP
Stanley E. Farmer, 215 SW. Cathy St., Gresham, Oreg.; Harry F. Weinert, Provincial Road, Fairfield, New South Wales, Australia; and Edward J. Todoroff, 10350 SW. Crestwood Court, Beaverton, Oreg.
Continuation of application Ser. No. 718,540, Mar. 3, 1958. This application Nov. 22, 1963, Ser. No. 326,327
8 Claims. (Cl. 214—653)



7. In an attachment for a lift truck having a pair of supports mounted for movement toward and away from one another,

motor means mechanically connected to said supports for effecting such movement,
a pair of load-engaging arms mounted on said supports for pivoting movement relative to said supports about axes which extend parallel to one another and longitudinally of the truck,
a mechanical linkage on each support operatively connected to the arm on such support,
said linkages being normally separated from one another but being engageable with one another as said supports are moved close to one another to cause pivoting movement of said arms about said axes.

3,182,838
CHARGING-HOLE-COVER LIFTING-DEVICE FOR COKE OVEN BATTERIES
Günter Brandenbusch, Essen-Steele, Germany, assignor, by mesne assignments, to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 12, 1963, Ser. No. 301,245
4 Claims. (Cl. 214—658)

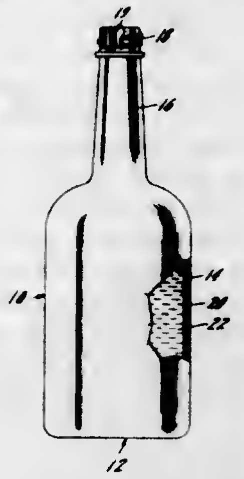


1. Apparatus for handling coke oven charging hole covers comprising:

(*a*) a support member which is rotatable about an axis;
(*b*) spaced apart first and second planar members fixed transversely across said support member with said second planar member having therein an axial aperture comprised of a plurality of lobate-centering openings arranged concentrically around and communicating with a central opening;
(*c*) a plurality of bearings mounted on said first planar member;
(*d*) a magnet for lifting and handling said cover;
(*e*) a third planar member fixed to said magnet and disposed intermediate said first and second planar members and movably supported on said bearings; and
(*f*) a plurality of guide roller members mounted on said third planar member, each roller member operating in its respective lobate centering opening, said lobate centering openings having a cross section area greater than the cross sectional area of said roller members, whereby when said cover is rotated about its axis said roller members engage the wall of their respective lobate centering opening and move in a generally circular path and said cover is centered with respect to said charging hole.

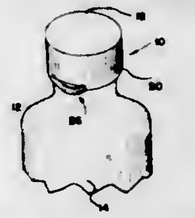
3,182,839
GLASS CONTAINER
Lehman Edward Hoag, Cary, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 29, 1963, Ser. No. 269,065
3 Claims. (Cl. 215—1)

1. A container to receive and store a sodium oxide sensitive product composed of glass containing a minimum of about 10% by weight of combined sodium oxide and having adhered to and covering substantially the entire inside surface thereof a film of an inorganic oxide of a metal selected from the group consisting of titanium and zirconium as the essential barrier coating between the glass of said container and said product, whereby said



product is unaffetced by the relatively high sodium oxide content of said glass.

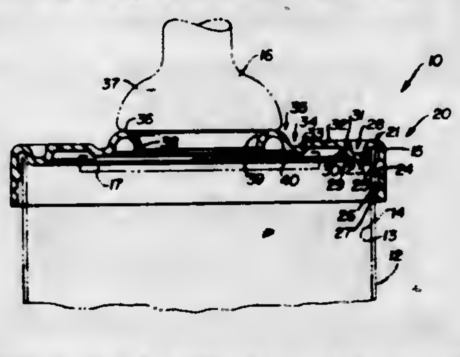
3,182,840
SAFETY BOTTLE CLOSURE
Dean A. Polzin, Warren, Mich. (12055 Elm St., Birch Run, Mich.)
Filed Nov. 5, 1963, Ser. No. 321,483
5 Claims. (Cl. 215—9)



1. Container closure means, comprising:

a container having a substantially cylindrical portion open at one extremity thereof, said portion having a recess along its outer surface;
a cap adapted to be mounted in sealing engagement over said open end of said cylindrical portion on said container;
and rigid flexible retaining means integral with said cap adapted to engage said recess and thereby prevent rotation of said cap in a first direction required for removal of the cap and permit rotation in the opposite direction, said retaining means flexing with respect to said recess in response to external pressure applied to said retaining means on said cap so as to permit rotational motion of said cap in said first direction.

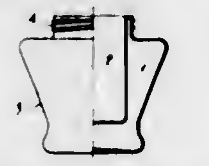
3,182,841
SNAP-ON LID FOR BABY FOOD CONTAINERS
Harold J. Searer, Akron, Ohio, assignor to Pet Milk Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,398
5 Claims. (Cl. 215—11)



1. In combination a snap-on lid and nipple for baby food containers, said lid comprising a disc-shaped lid body provided with a centrally located aperture, said

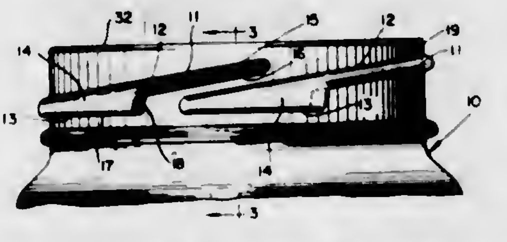
aperture receiving a nipple having an annular groove and a bottom flange, a curved hoop-like flange surrounding said aperture and a first recessed portion joined to the hook-like flange, said recessed portion having an inner surface spaced axially from the hoop-like flange, said curved hoop-like portion contacting the upper portion of the nipple groove and said recessed portion contacting the flange portion of the nipple to uniformly distend and slightly stretch the nipple to provide a fluid tight seal between the lid and nipple, said lid having an intermediate flat portion extending radially outwardly from the first recess and a second recess joined to the outer peripheral edge of the intermediate flat portion, and a cylindrical second flange positioned coaxially and radially outwardly of the second recess and located at the radially outer extremities of said lid body, said second flange being formed of joined radially inner and radially outer skirts, said inner skirt adjoining the inner surface of the container lip and said outer skirt having a radially inner face carrying an inwardly directed circumferential locking bead.

3,182,842
CONTAINER
Rudolf Hug, Liestal, Switzerland, assignor to Proplasto A.G., Liestal, Switzerland, a corporation of Switzerland
Filed Feb. 11, 1963, Ser. No. 257,598
Claims priority, application Switzerland, Feb. 9, 1962, 1,640/62
8 Claims. (Cl. 215—13)



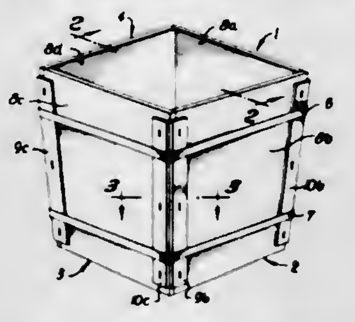
1. A double-walled container made from thermoplastic synthetic resin, comprising an interior portion adapted to receive the contents and an exterior portion shaped differently from the interior portion, in which the interior and exterior portions are formed from a single, thin-walled, self-closed hollow body, said exterior portion having a peripheral wall which has an axis, a bottom wall and an upper neck of diameter no greater than the diameter of said peripheral wall, said inner portion comprising a peripheral wall and a bottom wall respectively spacedly and unsupportedly opposing the outer portion peripheral wall and bottom wall, said inner portion peripheral wall extending into said neck and spaced therefrom, said container also comprising a flat annular top rim transverse to said axis, the outer edge of said rim connected to the upper edge of said neck, the inner edge of said rim connected to the top edge of said inner portion peripheral wall.

3,182,843
CLOSURE FOR CONTAINERS
Allen B. Foye, West Bridgewater, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed Jan. 2, 1964, Ser. No. 335,292
1 Claim. (Cl. 215—44)



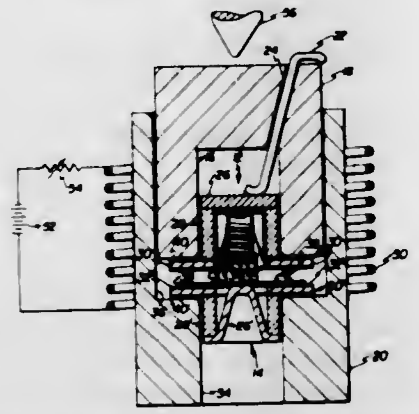
The combination of a container and a cooperating skirted closure wherein the container is provided with a mouth portion having interrupted, overlapping closure-retaining leads projecting from the exterior finish wall of the said container, each of said leads having a tail portion and a head portion, the head of each lead lying beneath the tail of the succeeding lead, the upper margin of said portions being continuous and inclined downwardly from tail to head, the lower margin of the head portion lying in a substantially horizontal plane, the said head portion having a substantially vertical margin rising from its said lower margin to join the said tail portion and forming an abutment, the cooperating closure having a distortable and compressible sealing ring and a plurality of inwardly directed indentations, each indentation having a vertical dimension slightly less than that of the spacing between any two of the said overlapping leads, whereby excessive turn-down of the closure is prevented by contact of the end of the indentations with the abutments and cutting through the sealing ring as the rim of said container is forced into the sealing ring by reason of excessive head pressure is prevented by contact of the lower margin of the said indentations with the upper margin of the said lower positioned leads.

3,182,844
TRANSPLANTING BOX
Carl W. Dittrick, Burbank, Calif., assignor to John P. Dittrick, Downey, Calif.
Filed Mar. 28, 1963, Ser. No. 268,759
2 Claims. (Cl. 217—12)



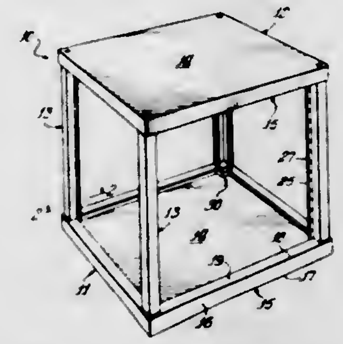
1. A collapsible container for plants including: four substantially identical adjoining four-sided structures each opposing another and each being narrower at the bottom than at the top; a pair of horizontal cleats secured respectively to opposed structures on the inside surfaces thereof and substantially paralleling the bottom edges of the respective structures; an inner base resting on said horizontal cleats, each of said structures comprising a wall member having a substantially vertically extending cleating element and a substantially vertically extending cleating member attached to the outer surface of the wall member for cooperation with the other components of the container in holding the structure rigidly together, said cleating member extending along substantially the entire length of one side edge of said wall member, and said cleating element extending along substantially the entire length of the opposite side edge of said wall member in substantially edge-flush relationship thereto; said cleating member laterally overlapping the said one side edge by an amount corresponding substantially to the thickness of the wall member to form a right-angle laterally accessible recess extending substantially along the entire length of said one side edge and receiving and fitting substantially the entire length of the adjacent edge of the wall member of the adjoining structure; said cleating elements forming with the cleating members of the adjoining structures outwardly opening right-angle recesses extending substantially along the entire length of the edges of said structures; first and second preformed endless bands having different circumferential measurements and surrounding the upper and lower portions respectively of said structures; said bands each being pressed upwardly around said structures and wedged upon said structures by virtue of the tapering contour produced by said structures, the corners of said bands being accessible and spaced from said structures at said outwardly opening right-angle recesses for application of a tool to the said corners of said bands.

3,182,845
HOUSING FOR AN ELECTRONIC DEVICE
Robert D. Culbertson, San Jose, Russell C. McRae, Santa Clara, and Harvey C. Warner, Colma, Calif., assignors to Eitel-McCullough, Inc., San Bruno, Calif., a corporation of California
Filed Aug. 17, 1959, Ser. No. 834,219
8 Claims. (Cl. 220—2.3)



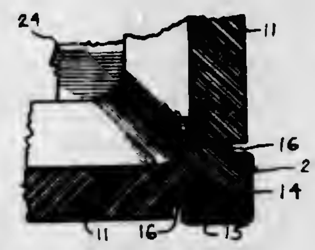
8. A housing for an electronic device comprising a first envelope section and a second envelope section sealed together by a pressure weld seal, said pressure weld seal comprising a first hard metal sealing flange forming part of said first section and a second hard metal sealing flange forming part of said second section, a soft ductile metal plating on said first and second flanges, and a soft ductile sealing gasket between said sealing flanges bonded to said platings and forming an hermetic seal between said sealing flanges, and said sealing gasket and said metal plating being the same metal.

3,182,846
CABINET STRUCTURE
Edward P. La Kaff, Mount Prospect, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 11, 1961, Ser. No. 102,274
7 Claims. (Cl. 220—4)



1. An easy-assemble cabinet construction, comprising the combination: a first elongated frame member having a transverse section provided with at least one exterior side which is rectilinear in configuration, said first frame member having means defining a frusto-conical surface extending outwardly from one end of said first frame member and having the axis thereof generally parallel to the elongate extent of said first frame member, said frusto-conical surface having a diameter equal to or less than any width of said transverse section, a second frame member carrying means defining a frusto-conical surface effective to snugly receive and mate with the frusto-conical surface of said first frame member, said second frame member also having an opening defined by walls complementary in configuration to the transverse section of said first frame member, said frusto-conical surfaces and said walls of said second frame member being aligned and spaced apart so that said frusto-conical surfaces of both frame members may be mated to accurately centralize said frame members with respect to each other while permitting said walls to mate with the exterior side of said first frame member locking said frame members against twisting relative to each other; and fastening means directly interconnecting each of said frame members effective to maintain said mated surfaces in engagement.

3,182,847
WASTEBASKET
John W. Fuller, 80 Skyline Drive, Morristown, N.J.
Filed Mar. 13, 1963, Ser. No. 264,820
1 Claim. (Cl. 220—4)

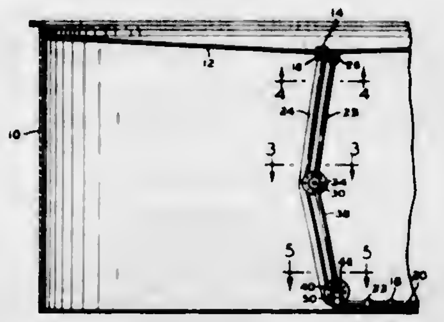


A wastebasket comprising
(*a*) generally rectangular side-panels having mitered vertical edges,
(*b*) opposing cooperative enlargements and sockets on the opposite vertical edges of the side panels, the enlargements extending generally parallel to the face of the panel bearing its cooperative socket, the enlargements and sockets positioned to maintain the top and bottom edges of the panels in vertical registration and the vertical edges abutting panels in horizontal registration when the said cooperative enlargements and sockets are tightly engaged to each other,
(*c*) generally vertical channels on the outer-faces of the side-panels in parallelism and adjacent to the vertical edges,
(*d*) retainers having sides relatively rigidly disposed at generally right angles to each other, and flanges on the edge of each side relatively, rigidly, inwardly disposed at generally right angles to the side on which it is formed, the said flanges being slidably engaged with pairs of channels whereby the side panels are secured together in edge-to-edge relation with the enlargements and sockets engaged with each other,
(*e*) detents at the top of each retainer to limit the slidable engagement of the end of the retainers to the end of the channels by engagement of the detent with the edge of the panel adjacent to the channel,
(*f*) a widened channel area at the top of each channel,
(g) a latitudinal rib on the inner faces of each side-panel adjacent to the bottom thereof;
(*h*) an enlargement on the inner faces of each side-panel above the rib,
(*i*) a bottom-panel dimensioned to seat within the side-panels with its edges between the ribs and the enlargements on the inner face of the side panels.

3,182,848
MOVABLE ROOF DRAINAGE SYSTEM
Charles E. Johnson, Buffalo, N.Y., assignor to Hewitt-Robins Incorporated, Stamford, Conn.
Filed June 1, 1962, Ser. No. 199,499
4 Claims. (Cl. 220—26)

1. For use as a tank roof drainage connection in a storage tank having a movable roof, a pair of arms, means pivotally connecting said arms, a pulley connected to the latter means and pivotal on an axis parallel to that about which said arms are pivotal, means for pivotally connecting one of said arms to a movable roof, means

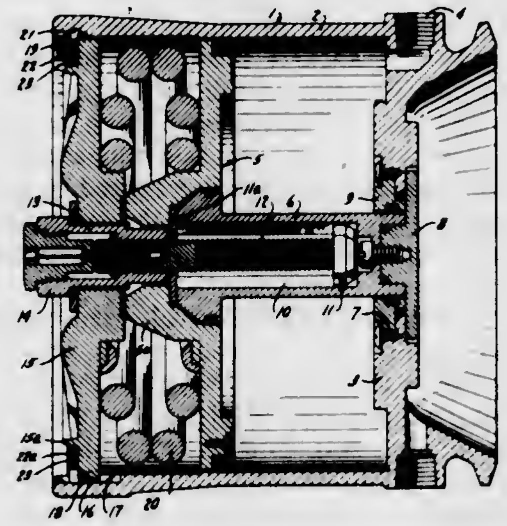
for pivotally connecting the other of said arms to a fixed structure, a hose extending along said arms and over said pulley, means for connecting said hose to a roof drainage opening adjacent the connection of said one of said arms to a roof, means for connecting said hose to a drainage connection adjacent the means for pivotally connecting the other of said arms to a fixed structure.



3,182,849
CYLINDER CLOSURE STRUCTURE

Charles Horowitz, Chicago, Harold L. Dobrikin, Highland Park, and Victor Mastis, Chicago, Ill., assignors, by mesne assignments, to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois

Filed Sept. 13, 1961, Ser. No. 137,861
2 Claims. (Cl. 220—46)

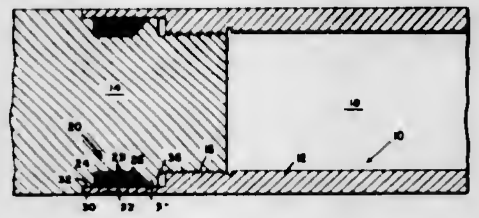


1. In combination, an open-ended cylinder and a closure structure therefor comprising a circular plate, said plate having a diameter less than the inner diameter of said cylinder, a seal between the peripheral edge of said plate and the inner wall of said cylinder, a groove in the inner wall of said cylinder adjacent the open end thereof and between said seal and the outer open end of said cylinder, a circular extension on said plate having a diameter less than the diameter of said cylinder and said plate, a pair of retaining ring elements, each of said ring elements being substantially semi-circular in planar section, each of said ring elements having a width greater than the radial distance between said extension and the peripheral edge of said plate, each of said ring elements having a peripheral portion seated in said groove and an inner surface in contact with said seal and with the outer surface of said plate between said extension and the inner wall of said cylinder, a second pair of substantially semi-circular retaining ring elements, said second pair of retaining elements being substantially identical to said first pair of retaining elements and having peripheral portions seated in said groove, the opposed ends of said second retaining elements being circumferentially spaced from the opposed ends of said first retaining ring elements.

3,182,850
CLOSURE MEANS FOR WITHSTANDING HIGH PRESSURES

John D. Bennett, Richardson, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Jan. 28, 1963, Ser. No. 254,135
4 Claims. (Cl. 220—46)

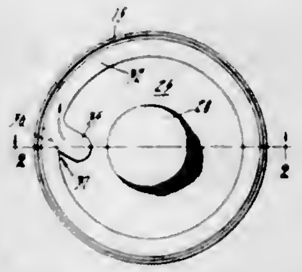


1. In combination, a casing member, a closure member cooperating therewith to form a chamber, a groove in one of said members, an O ring packing and a deformable metallic ring in mutually abutting and contacting relationship in said groove, the other of said members having a deformable portion extending across said rings so as to be deflected toward said groove and thereby compress said rings upon the application of high pressure against said deformable portion, said rings being confined within said groove in abutting contact so that as said deformable portion is deflected toward said groove to compress said rings, said rings transmit distorting movement from one to the other to effect a tight seal between said deformable portion and said groove containing member.

3,182,851
CONTAINER

William Edward Taylor, Fairfield, Conn., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 28, 1962, Ser. No. 247,983
11 Claims. (Cl. 220—53)



1. A hermetically sealed container comprising a tubular body, a ring secured to an end of said body, said ring comprising an annular wall and a recessed annular seat, a closure disposed in said seat and having a substantially horizonztal annular wall which is substantially flush with the adjoining inner edge portion of said annular ring wall and disposed radially inwardly thereof, and a peelable annular sealing member bridging and adhesively bonded to adjoining portions of said annular ring wall and said annular closure wall to provide a hermetic, tamperproof seal for said container.

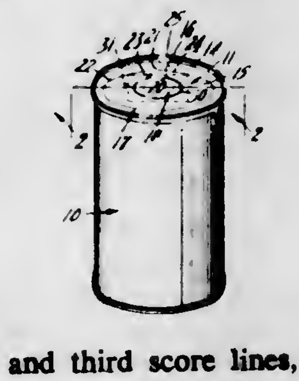
3,182,852
CONTAINER WITH PULL TAB

Harlen Edgar Wilkinson, Crystal Lake, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 27, 1962, Ser. No. 182,751
9 Claims. (Cl. 220—54)

1. A metal hermetic end closure for a container having a body, said end closure comprising a central panel of a thin readily tearable material, a peripheral portion integral with said panel and sealingly engaged to an end of said body, a first score line extending around at least a part of the periphery of said panel adjacent said peripheral portion, a second score line merging with said first score

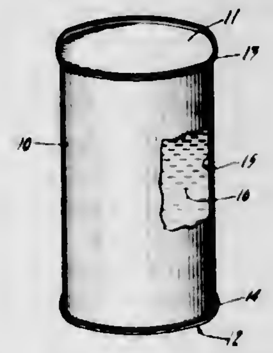
line and extending inwardly of said panel, a third score line spaced from said first and second score lines and jointly therewith defining a continuous tear strip having an end disposed inwardly of said panel and extending around at least a part of the periphery of said panel, a cut-through portion in said panel defining a manually engageable tab integrally joined to the inwardly disposed end of said tear strip, said tab being sufficiently large to be firmly gripped by the fingers of a user whereby said tab may be pulled to separate said tear strip from said panel along said second and third score lines and then along said first and third score lines, seal patch means secured to a surface of said panel and extending completely over said cut-through portion to seal the same, said seal patch means being releasably secured to at least a portion of said tab thereby preventing inadvertent displacement of said tab but permitting said tab to be manually disengaged therefrom, and a fourth score line forming a continuation of said third score line and extending towards without intersecting said first score line whereby as said tab is further pulled to separate said tear strip from said central panel along said first and fourth score lines the central panel is lifted upwardly.



3,182,853
FERROUS METAL CORROSION INHIBITOR

Allen Ray Willey, Mundelein, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Jan. 3, 1962, Ser. No. 164,088
6 Claims. (Cl. 220—64)



1. A composition for inhibiting corrosion of a ferrous metal comprising the combination of a corrosion inhibitor for ferrous metal and a polymer selected from the group consisting of poly-N-vinyl-2-pyrrolidone, poly-N-vinyl-5-methyl-2-oxazolidinone, a copolymer of N-vinyl-5-methyl-2-oxazolidinone and vinyl acetate, and mixtures thereof.

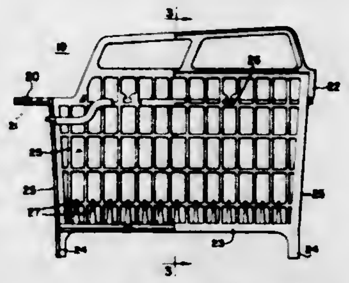
3,182,854
SILVERWARE BASKET FOR DISHWASHER

Harry Geller, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Aug. 23, 1962, Ser. No. 218,926
5 Claims. (Cl. 220—83)

1. A silverware basket for use in dishwashers comprising:

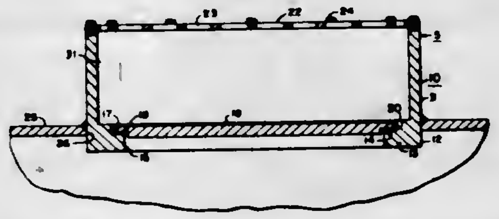
(*a*) a substantially flat open framework base;
(*b*) side walls extending up from said base and defining therewith a space for silverware;
(*c*) and a plurality of short projections secured to and extending upwardly from said base, said projections being closely spaced from each other so as to prevent nesting and sliding of silverware.



3,182,855
BLOW-OUT DOOR FOR OVERPRESSURE PROTECTION

Alvin L. Stock, Drexel Hill, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 18, 1962, Ser. No. 231,474
6 Claims. (Cl. 220—89)



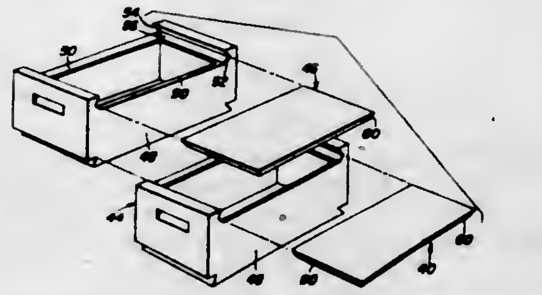
1. A blow-out door structure for protecting a shell structure against damage due to internal overpressure, comprising

a body structure having an enlarged opening defined by a flange portion,
said flange portion having a substantially continuous first peripheral face portion,
a door member having a second peripheral face portion disposed in face-to-face relation with said first face portion,
a layer of adhesive material disposed between said first and second face portions and coextensive peripherally therewith,
said layer of material bonding said door member to said body structure and providing a fluid-tight seal therebetween at total internal pressures below a predetermined value, but being yieldable at substantially said predetermined value to break said seal and release said door, and
means for holding said door captive in said body structure.

3,182,856
STACKING BOX CONSTRUCTION

Joseph Goltz, Pittsburgh, Pa., assignor of twenty-five percent to I. C. Bloom and George I. Bloom, both of Washington, Pa., jointly

Filed Nov. 20, 1962, Ser. No. 238,892
4 Claims. (Cl. 220—97)



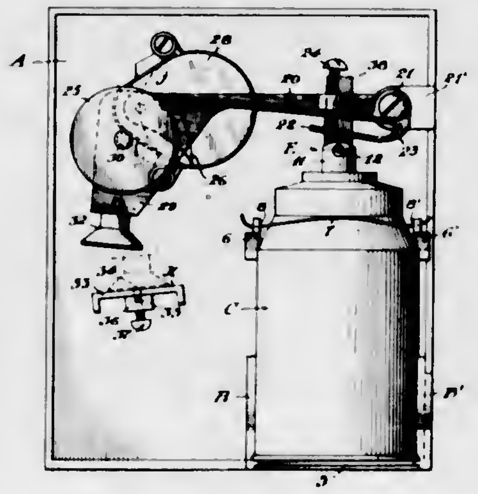
1. A stacking box construction comprising an open top container including upstanding opposite side and end walls

interconnected at their lower marginal edge portions by means of a bottom wall, the upper marginal edge portions of at least some of said upstanding walls and the lower surfaces of at least some of said walls defining complementary and interlockingly engageable projections and recesses releasably engageable with each other for retaining a stack of interconnected ones of said containers against movement through a generally horizontally disposed plane in opposite directions relative to the adjacent ones of said containers in said stack, a removable top wall, at least some of said recesses also defining an area in which said top wall is removably receivable, said recesses defining an upwardly opening dovetailed groove extending between one pair of said upstanding walls, said recesses also defining a downwardly opening dovetailed groove communicated at its uppermost end with the first mentioned groove, said projections depending downwardly from the lower surface of said bottom wall and defining a dovetailed projection snugly and slidably receivable in said first mentioned groove, said removable top wall being dovetailed in cross section and being slidably receivable in the last mentioned groove.

3,182,857
PERIODICALLY ACTUATED AEROSOL DISPENSER

Garth L. Bischoff, 3140 Bermuda Drive, Costa Mesa, Calif., and Douglas I. Hoiberg, 619 S. Woods, Fullerton, Calif.

Filed Aug. 9, 1963, Ser. No. 301,049
12 Claims. (Cl. 222—70)



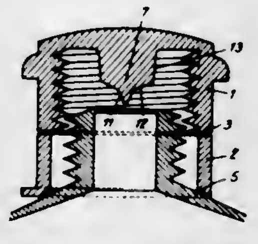
12. In an apparatus for periodically dispensing aerosol from a sealed container having an upper end equipped with a spray nozzle and having a discharge passage leading from the interior of said container to said nozzle, a valve in said passage for controlling the delivery of aerosol therethrough, a spring normally holding said valve in its closed position, and a headed stem on said valve; the combination comprising a weight loaded arm overlying said headed stem normally disposed in an initial partly elevated position under the urge of said spring, and cam means for periodically lifting and releasing said arm to cause said arm to drop and impact said headed stem and thereby momentarily open said valve at regular intervals.

3,182,858
PERFORATING STOPPER FOR COLLAPSIBLE TUBES

Jean Beaudoin, Annecy, Haute-Savoie, France (7 Ave. des Champs Elysees, Paris 8, France)

Filed July 30, 1963, Ser. No. 298,754
Claims priority, application France, July 30, 1962, 906,256, Patent 1,341,541
8 Claims. (Cl. 222—83)

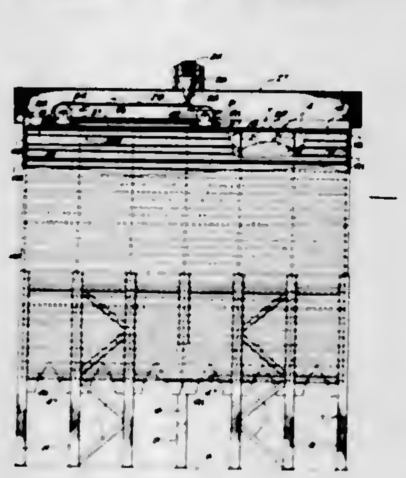
1. A stopper for containers, the stopper comprising an internally screw-threaded cap and a spacer ring, and connecting lug means integral with the cap and the ring on one side only of the cap and the ring and frangibly interconnecting the lug and the ring, the lug and the ring being normally spaced from each other on their side opposite said lug means, whereby the cap can be screwed down on said container until the spacer ring contacts a stationary portion of the container, whereupon said lug means will cant the cap relative to the spacer ring thereby to lock the cap on the container with a wedging action.



3,182,859
HOT MIX HANDLING PLANT

James Stanley Harris and Arthur J. Johnson, Sacramento, Calif., assignors to A. Teichert & Son, Inc., a corporation of California

Filed Mar. 22, 1963, Ser. No. 267,205
4 Claims. (Cl. 222—132)



1. A hot mix handling plant comprising a framework having a lower portion straddling a driveway, a bin on said framework and overlying said driveway, gates mounted at the bottom of said bin and adapted to be moved to control discharge from said bin to a vehicle disposed in said driveway, means for moving said gates simultaneously, means for supplying hot mix to the upper portion of said bin, heat transfer coils surrounding said bin in thermally conducting relationship therewith, means for circulating heat transfer fluid through said coils, heat transfer jackets on said gates, means including flexible members for circulating heat transfer fluid through said jackets, and means for controlling both of said circulating means in accordance with temperature of hot mix in said bin.

3,182,860
DISPENSING DEVICE

John Gallo, Sr., 64 Broad St., Boston, Mass.

Filed Feb. 26, 1963, Ser. No. 260,970
7 Claims. (Cl. 222—136)

1. A dispensing device for producing an extrusion having a core formed of one paste-like material and a peripheral shell formed of another paste-like material comprising,

an inner member having a longitudinal bore defined therein including an inlet end and an outlet end,

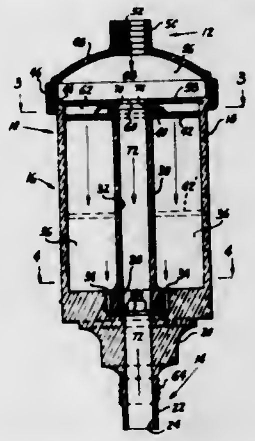
said bore receiving the core forming material at said inlet end,

an outer member having a longitudinal bore therein, there being a shell forming material receiving chamber defined between said inner member and said outer member,

piston means in said chamber slidably received over said inner member,

an inlet adapter element removably secured to said outer member defining a core forming material receiving cavity in communication with said inlet end of said inner member,

inlet means carried by said adapter element for securing said device to a receptacle providing a source of supply for said core forming material,



said core forming material receiving cavity being also in communication with said piston means whereby when core forming material is received in said inlet means a portion of such material passes through said inner member to form the core and the remainder portion of such material provides pressure for said piston means for extruding said shell forming material,

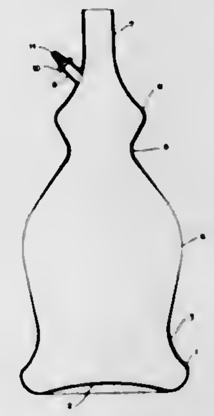
and a nozzle means having a longitudinal bore including an inlet end and an outlet end,

said nozzle means inlet end being in communication with said cavity and said chamber, said extrusion being produced at said outlet end of said nozzle means.

3,182,861
BOTTLE MADE OF A PLASTIC MATERIAL

Paul Nataf, 54 Rue de Sablonville, Neuilly-sur-Seine, France

Filed Nov. 30, 1961, Ser. No. 155,903
Claims priority, application France, Dec. 9, 1960, 846,486
2 Claims. (Cl. 222—212)

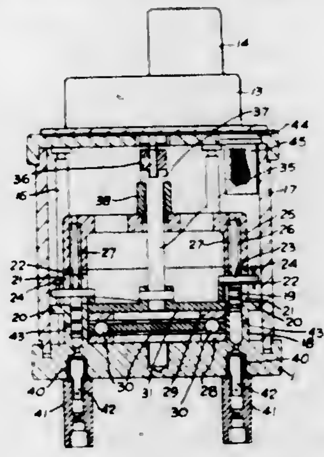


1. A bottle comprising a body of a flexible plastic material, a spout extending from the upper portion of said body, and a tube laterally extending from the lower portion of said spout and defining a pouring device, the portion of the bottle below the lateral extension flaring outwardly and downwardly and then curving inwardly and downwardly forming a constriction in the bottle just above the body thereof, said tube having a conical solid extension on the outer end thereof and a bead at the bottom of said solid extension whereby said solid extension can be cut off below the bead and inserted into the open end of the tube to define a plug.

3,182,862
LUBRICATING APPARATUS

Cyril R. Deakin, Oadby, England, assignor of one-half to Hosiery Equipment Limited, Leicester, England, a British company

Filed Nov. 18, 1963, Ser. No. 324,402
12 Claims. (Cl. 222—255)

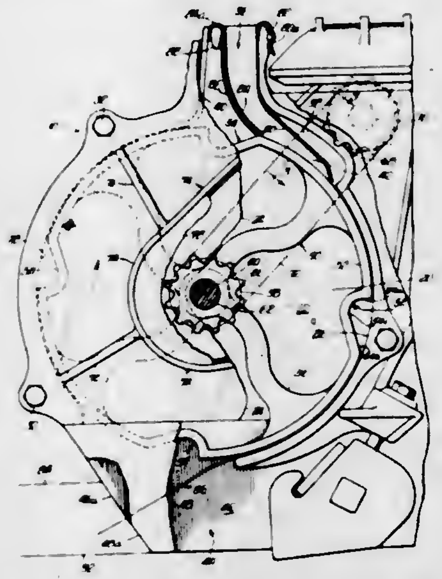


1. Lubricating apparatus comprising a plurality of plunger type pump units the plunger of each unit having a suction stroke and an operative discharge stroke associated with a common supply of lubricant and associated respectively with separate feeder outlets, a plurality of resilient members each mounted for urging the plunger of one of said pump units in the direction of its operative stroke, a driven cam means positioned for operating said plungers in succession in their return strokes against said resilient members for delivering measured quantities of lubricant to their respective feeder outlets at different times and means for varying the quantity of lubricant delivered by each pump unit at each operative stroke thereof.

3,182,863
SEED PLANTER

Roy G. Brandt and Zdenek Fabian, South Bend, Ind., assignors to Oliver Corporation, Chicago, Ill., a corporation of Delaware

Filed Mar. 29, 1963, Ser. No. 268,921
2 Claims. (Cl. 222—328)

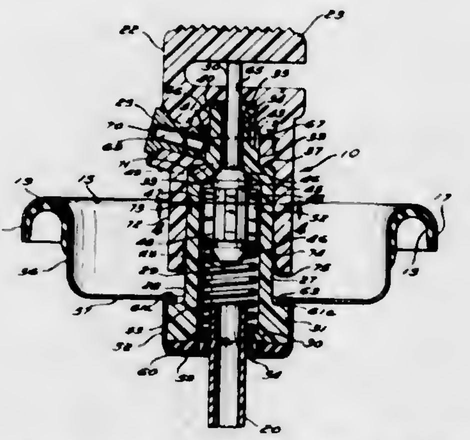


1. In a seed planter of the type including a housing having a chamber defined in part by side walls and by a generally vertically elongated end wall which is arcuately shaped in a direction along the height thereof, said housing including a vertically extending inlet passageway opening into said chamber and including a wall joining the upper end of said end wall, said housing including an outlet passageway opening into said chamber adjacent the lower end of said end wall, a seed dispensing wheel mounted in said chamber between said side

walls for rotation about a horizontal axis transverse to the side walls with a portion of the periphery of the wheel being closely spaced from said end wall along substantially the entire height of the latter, which wheel has at least one pocket in the periphery thereof, said pocket including a generally radially extending trailing wall portion joining with an inclined leading wall portion to define the base of the pocket, gear means for rotating said wheel in a direction for advancing said pocket along said end wall from said inlet passageway to said outlet passageway, the improvement which comprises, chute means in said inlet passageway cooperating with the periphery of said wheel for collecting seed adjacent the periphery of the same and depositing seed in said pocket as the latter is advanced beneath the chute means, said chute means including a resilient wiper arm having an upper portion which is secured to said wall of the inlet passageway, said wiper arm being bent intermediate the ends thereof and having its lower end biased against the periphery of said wheel, said arm having its lower portion extending generally in the direction of movement of said pocket as the latter descends from said inlet passageway along said end wall thereby to collect seed between the periphery of the wheel and the underside of the lower portion of the wiper arm, said wall of the inlet passageway having the portion thereof adjacent said housing end wall spaced from the periphery of said wheel thereby defining a space receiving the lower portion of the wiper arm, said wiper arm having its lower end adapted to enter said pocket by first passing over the inclined wall portion of the same thereby to force the seed beneath the lower portion of the wiper arm into the base of the pocket.

3,182,864
VALVES FOR SPRAY CANS

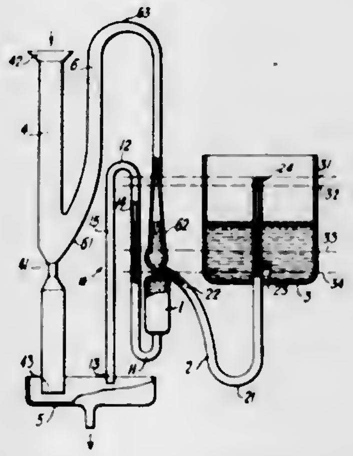
John G. Ellis, Chagrin Falls, Vernon C. Groth, Mentor, and Albert John Hall, Northfield, Ohio; said Ellis and said Groth assignors to Sprayon Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 22, 1961, Ser. No. 157,296
(Filed under Rule 47(a) and 35 U.S.C. 116)
9 Claims. (Cl. 222—394)



9. A valve assembly for aerosol spray cans comprising a supporting cup in the form of a light-gauge metal stamping adapted to constitute a closure for an aerosol spray can, a valve body secured to said supporting cup, said valve body having a passage therein, said supporting cup having a bottom having an upstruck generally conical portion extending upwardly at an angle substantially less than 90° and having a perforation therein extending under said valve body, and a dip tube composed of deformable material and having a substantially cylindrical end portion projecting through and beyond said perforation and into communication with said passage, the edge of said perforation forming an indentation in the outer surface of the dip tube for retaining the dip tube in position.

3,182,865
REFILLING ARRANGEMENT FOR AN AUTOMATIC BURETTE

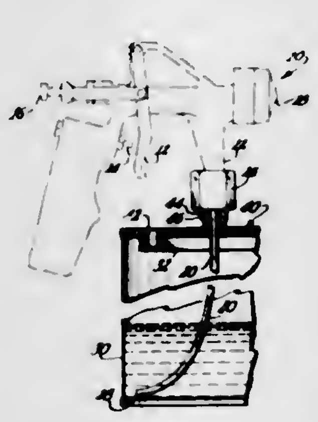
Arnošt Anscherlík, Prague, Czechoslovakia, assignor to Výzkumný ústav energetický, Prague, Czechoslovakia
Filed Dec. 4, 1963, Ser. No. 328,033
Claims priority, application Czechoslovakia, Mar. 19, 1963, 1,540/63
7 Claims. (Cl. 222—416)



1. An automatic burette comprising, in combination:
(*a*) bulb means for holding a liquid, said bulb means having an upper portion and a lower portion;
(*b*) siphon means communicating with said lower portion, said siphon means having a bight portion above said lower portion of the bulb means, and being primable for emptying said bulb means when the liquid level in said siphon means is raised to said bight portion;
(*c*) feed pipe means communicating with said upper portion, and defining a junction therewith;
(*d*) a storage vessel adapted to hold a supply of liquid to a level higher than the level of said junction, said feed pipe having an overflow orifice at a level higher than said junction and lower than said bight portion;
(*e*) a bleeder connection between said storage vessel and said bulb means, the flow section of said bleeder connection being substantially smaller than the flow section of said feed pipe means through said orifice thereof; and
(*f*) means for applying gas pressure to a liquid in said top portion.

3,182,866
SPRAY GUN TRANSITION PIECE

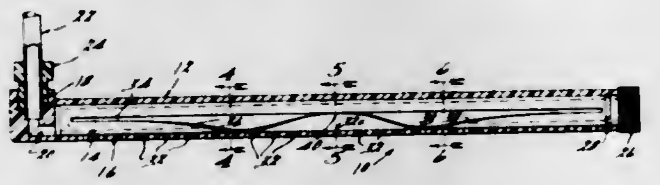
Robert Rowe, 140—60 Beech Ave., Flushing, N.Y.
Filed Aug. 20, 1963, Ser. No. 303,373
2 Claims. (Cl. 222—464)



1. A transition piece for securing a handheld, trigger operated spray gun, having a downwardly depending suction tube and a captured nut concentric thereabout to a neckless paint can having an annular, cover retaining groove and a peripheral bead at its upper end comprising:
(*a*) a thin, sheet metal closure member adapted to be seated directly on the paint can annular groove, said closure member being provided with a relatively small central aperture as compared with the annular cover retaining groove of the paint can, the central aperture being adapted to receive the spray gun suction tube in the assembled condition;
(*b*) retaining means positioned proximate the periphery of said closure member, said retaining means adapted to secure said closure member to said paint can; and
(*c*) a hollow, externally threaded, vertically standing stud integral with said closure member and coaxially disposed about the central aperture of said closure member said stud being positioned below the top surface of the paint can body, said stud being adapted for threadable engagement with the spray gun nut when said closure member is secured to the paint can by said retaining means, whereby the spray gun suction tube is positioned at the lowermost juncture of the paint can base member and side wall.

3,182,867
DISPENSING MECHANISM

John M. Barosko, Kenosha, and John C. Krug, Racine, Wis., assignors to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware
Filed Nov. 18, 1963, Ser. No. 324,306
8 Claims. (Cl. 222—486)

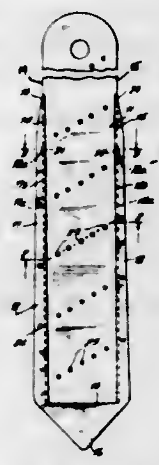


1. In a liquid dispensing mechanism,
a first hollow cylindrical tube,
a second hollow cylindrical tube coextensive within said first tube,
means for communicating liquid into said first tube,
one of said tubes being provided with a longitudinal row of discharge orifices, and
the other of said tubes having a single outlet passage formed therein adapted to communicate liquid to said discharge orifices,
said outlet passage being symmetrical about its longitudinal midpoint and being at least partially defined by a spiral side which extends in a general longitudinal direction from said midpoint.

3,182,868
STRETCHING DEVICE FOR NECKTIES AND THE LIKE

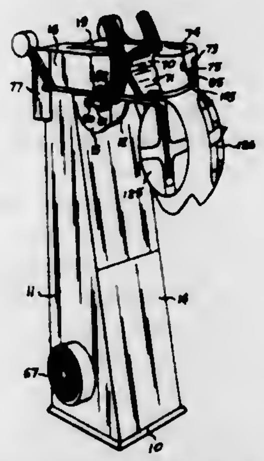
Elizabeth Proth, 4385 Apartado del Este, Caracas, Venezuela
Filed Nov. 6, 1963, Ser. No. 321,963
3 Claims. (Cl. 223—65)

1. A stretching and smoothing device for application to a plurality of shapes of neckties and like articles comprising a base part of substantially flexible and water-repellent material and defined by opposite substantially straight lateral outer edges which extend parallel to each other and by a lowermost substantially straight end edge, a U-shaped part having two arms defined by inner and outer opposite lateral edges, said outer lateral edges of said arms tapering with respect to the inner lateral edges of said arms and to said outer edges of said base part, and interengageable means respectively provided at said outer edges of said base part and at said inner lateral edges of said arms, for interconnecting the U-shaped part with said base part in assembled condition of the device, said arms converging at one of their ends and extending beyond the lowermost end edge of said base part in said assembled condition.



3,182,869
TROUSER TOPPING APPARATUS AND BUCK AND BAG ASSEMBLY FOR USE THEREIN

Frank H. Richterkessing, Louisville, Ky., assignor to W. M. Cissell Manufacturing Company, Louisville, Ky., a corporation of Kentucky
Filed May 31, 1962, Ser. No. 199,032
9 Claims. (Cl. 223—73)

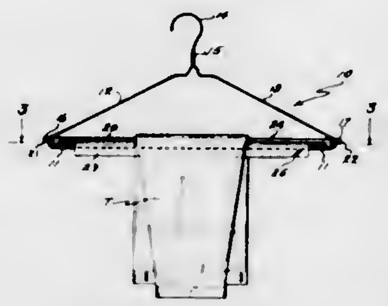


1. In a trouser topping apparatus having an air duct and a one-piece, bifurcated buck extending downwardly from said duct and having a convex outer surface, concave inner surface and a crotch portion,
the combination including an envelope of fluid-pervious material having an inner layer in contact with said convex surface and an outer layer, a hem joining said outer layer to said inner layer,
a perforated resilient pad interposed between said layers and a first drawstring passing through said hem portion and attachable to a stationary part of said apparatus on the concave side of said buck and above the crotch portion thereof for holding said envelope and pad in position upon said buck;
a distendable bag including a seat portion, a front portion, a waist portion, a pair of truncated leg portions with a crotch area therebetween, a cover portion having an open mouth for receiving air under pressure from said duct, and a ridge portion extending centrally through the seat portion of the bag from the crotch area to the center rear area of the waist portion and adapted to shape the dividing seam region of a pair of trousers positioned upon said buck and bag;
said bag having its front portion attached to said outer layer of said envelope, a second drawstring attached to said bag adjacent the mouth portion thereof and

anchorable to a stationary part of said apparatus for holding said cover portion in place during expansion and contraction of said bag,

and movable means attached to said bag adjacent the junction of said cover and seat portions thereof for expanding and contracting said bag within the waistband of the trousers positioned thereon.

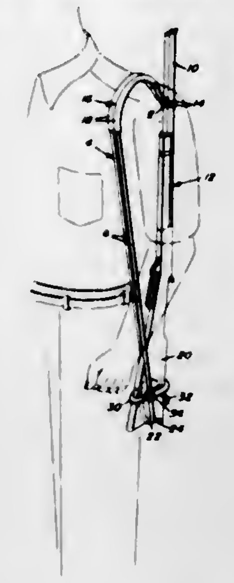
3,182,870
GARMENT HANGERS
Raymond R. Ward, 6548 Edgerton Road,
North Royalton, Ohio
Filed Feb. 27, 1962, Ser. No. 175,931
2 Claims. (Cl. 223—91)



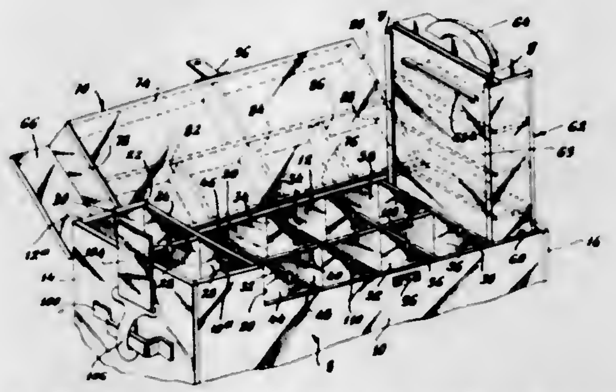
1. In combination with a conventional wire garment hanger having a horizontal cross member and upwardly turned end portions, an elongated garment supporting bar having a longitudinal dimension smaller than the distance between said end portions, longitudinally directed extensions carried at the ends of said bar and extending therebeyond sufficiently to overlap said end portions, said extensions being stepped laterally inwardly of at least one longitudinal side surface of said bar whereby a portion of said bar fits between said end portions above said cross member with said extensions overlapping said end portions on one side of said hanger and retaining said bar against lateral movement between said end portions toward the other side of said hanger, said step affording longitudinally facing surface portions at the ends of said bar which are aligned with said end portions and prevent substantial longitudinal movement of said bar, a lip projecting from said supporting bar throughout substantially the length of said bar and projecting downwardly in front of said cross member on said other side of said hanger, said bar adapted to receive a garment draped flatwise thereover with both folds of the garment depending in front of said cross member, said lip depending in front of said cross member between the folds, and the weight of said garment pulling said bar downwardly against said cross member and seating said extensions against said end portions.

3,182,871
RIFLE SLING
Clair K. Gossler, 388 Greenfield, Eugene, Oreg.
Filed Aug. 9, 1963, Ser. No. 300,963
9 Claims. (Cl. 224—1)

1. A shoulder sling for a firearm including an upright barrel and a stock projecting downwardly below the lower end of said barrel, said sling including an upstanding elongated flexible member adapted at its upper end for securement to said barrel and defining, at least at the lower end portion thereof, a pair of flexible legs, the lower end of one of said legs terminating in a laterally directed end portion curving around to form a generally horizontally disposed loop, said loop, adjacent said one leg, including a first guide means slidably engaging the free terminal end portion of said laterally directed end portion, said loop at a point generally diametrically opposite said one leg, also including second guide means slidably engaging said other leg, said other leg depending below said second guide means and including an end portion defining a partial loop curving inwardly beneath said horizontal loop and upwardly toward and secured to the latter adjacent said first leg.



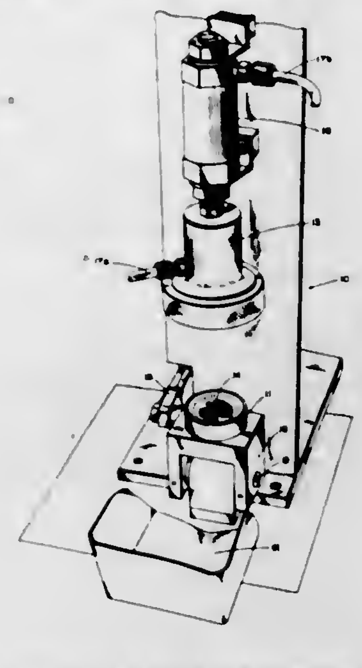
3,182,872
TACKLE BOXES
Victor N. Brosseau, Fullmar Lane, Norwalk, Conn.
Filed May 7, 1963, Ser. No. 278,635
3 Claims. (Cl. 224—5)



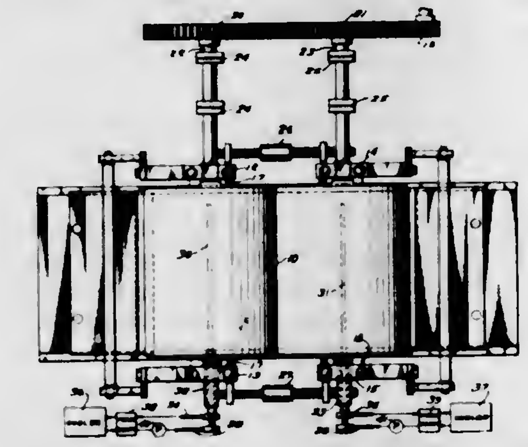
1. A tackle box comprising, a main body portion divided into a number of vertically extending compartments, at least one of the compartments being longer, and extending above, the rest of the compartments, a tray adapted to extend over, and to rest on the tops of, the shorter compartments, and means for hingedly connecting the tray to the said main body portion, a cover adapted to extend over the tray and also over the longer compartment or compartments, means hingedly connecting the cover to the tray, and a plurality of lock means for interconnecting the tray selectively to the main body portion, and to the cover.

3,182,873
METHOD FOR DICING SEMICONDUCTOR MATERIAL
Bernard F. Kalvelage and Albert W. Coe, both of Phoenix, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 11, 1961, Ser. No. 137,094
2 Claims. (Cl. 225—2)

1. A method of breaking a thin, flat, circular member which is hard and brittle into a plurality of four-sided units defined by scribed lines in one surface of said member, said method including placing said member on a concave, generally spherical surface of a holder so that only the circular edge of said member contacts said surface leaving the remainder of said member free to be deflected toward said surface, placing and retaining a flexible diaphragm adjacent the side of said member which faces away from said holder surface, and forcing said diaphragm against said member with gas pressure to break said member into pieces defined by scribed lines therein and press such pieces against said holder surface until all of said four-sided units are formed by breakage at said scribed lines.



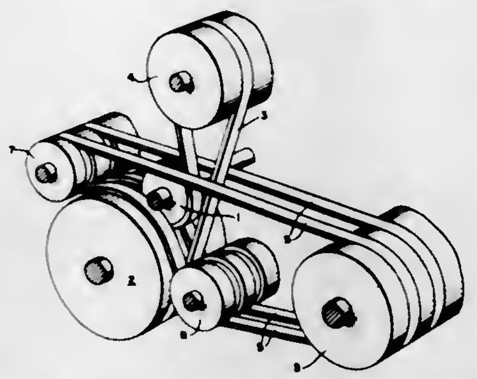
3,182,874
METHOD AND MECHANISM FOR WEB SPLITTING
Joseph D. Parker and Terry Leonard Dobratz, Beloit, Wis., David R. Gustafson, Rockton, Ill., and Walter Chin Mih, South Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Nov. 27, 1963, Ser. No. 326,450
14 Claims. (Cl. 225—3)



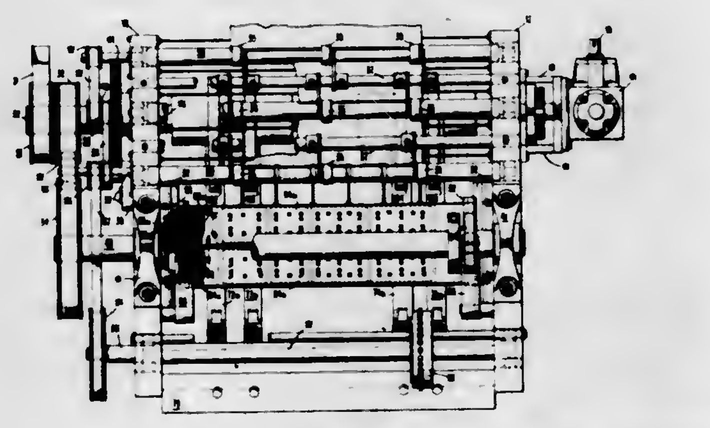
14. The method of separating layers of a sheet comprising,
- the steps of wetting the sheet and obtaining substantially uniform moisture content throughout,
- passing the sheet through a nip formed between a pair of smooth rolls rotated at the same surface speed and urged together to form a pressure nip with the rolls being cooled below the freezing point of the moisture,
- and separating the separated layers of the sheet on the outgoing side of the nip between the rolls.

3,182,875
MACHINE FOR TEARING PAPER
John Stuart Fleming, Niagara Falls, N.Y., assignor to Floxite Company, Inc., Niagara Falls, N.Y., a corporation of New York
Filed Apr. 24, 1962, Ser. No. 189,861
3 Claims. (Cl. 225—99)

1. A machine for tearing a paper work sheet into parallel strips, comprising: upper and lower parallel longitudinally approximated cylinders slightly spaced apart from each other, a vertically directed endless belt passing around and over the lower cylinder, and thence around and under the upper cylinder, duplicate parallel horizontally directed endless belts passing around and over the lower cylinder one at each side of said vertically directed belt and of said upper cylinder, along parallel paths, said horizontally directed belts having their inner edges slightly spaced apart and approximated to the edges of said vertically directed belt in the plane passing through the axes of said cylinders, said belts crossing each other immediately below said plane, the passage of said vertically directed belt around and under the upper cylinder and of said horizontally directed belts around and over the lower cylinder being along arcuate diverging paths.



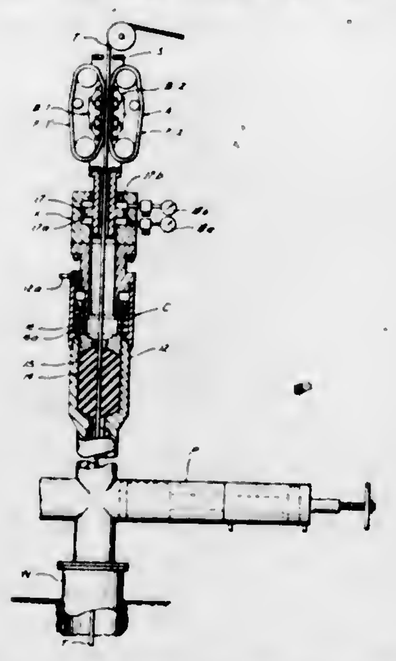
3,182,876
BURSTING DEVICE FOR MULTILAYER WEBS
John Sedor, Endwell, and Charles F. Strup, Jr., Endicott, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1963, Ser. No. 332,400
9 Claims. (Cl. 225—101)



1. In a device for bursting a continuously moving multilayer web of perforately divided sheets, the combination comprising:
- first and second sets of opposed clamping jaws, each said set being of a width at least equal to the width of said web;
- means for continuously feeding said web between the jaws of both said sets;
- means for positioning said sets of jaws on opposite sides of a perforate division in said web;
- means for moving said sets of jaws, so positioned, at the speed of said web;
- means for imparting an additional, sudden movement to said first set of jaws;
- means for closing said jaws to clamp said web just prior to the occurrence of said sudden movement, substantially uniformly distributed clamping pressure being thus applied by said jaws across the fuel width of said web, and for opening said jaws subsequent to the occurrence of said sudden movement, said sudden movement effecting a simultaneous tearing of each layer of said moving web along said division.

3,182,877
APPARATUS FOR FEEDING TUBING OR OTHER OBJECTS

Damon T. Slator and Hollis A. Baugh, Houston, Tex., assignors to Bowen Tools, Inc., Houston, Tex., a corporation of Texas
Filed Jan. 7, 1963, Ser. No. 249,854
7 Claims. (Cl. 226—172)

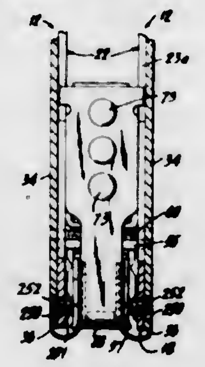


7. A feeding apparatus for feeding tubing, cables and the like, comprising:

- (*a*) a pair of endless feeding assemblies each of which has a reach opposite to the reach on the other feeding assembly for feeding tubing, cable or the like therebetween and a back-up mechanism for each reach,
- (*b*) support means for each of said feeding assemblies,
- (*c*) pivotal mounting means mounting each of said support means for the movement of the support means and the endless assembly therewith laterally with respect to each other for decreasing or increasing the width of the space between said reaches, and
- (*d*) means for maintaining the opposite reaches on said endless feeding assemblies parallel to each other at all times as they are moved laterally towards and away from each other.

3,182,878
TACKERS AND THE LIKE STAPLING MACHINES

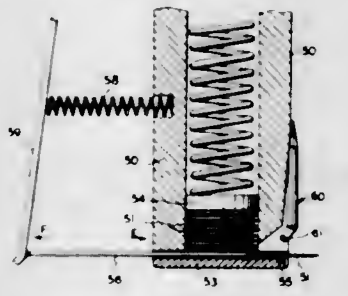
Morris Abrams, Great Neck, N.Y., assignor to Arrow Fastener Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed July 1, 1963, Ser. No. 291,952
3 Claims. (Cl. 227—83)



1. A staple machine for staples having a crown from which legs extend, said machine comprising a housing, a staple magazine in said housing, a front wall at the front end of said housing and magazine, and anvil movably mounted in said magazine, said anvil having at its front end, outwardly and downwardly beveled camming surfaces, and said magazine having at its front end, outwardly beveled portions spaced from and forming passages with said camming surfaces, to cause the legs of a driven staple to be bent outwardly during the driving operation as said legs pass through said passages, and said anvil having at its front end, a camming surface to be engaged by the crown of the driven staple, at the end of the driving operation, to move back said anvil, to allow said crown to by-pass said anvil, and spring means mounted in said magazine in position to be loaded upon movement of said anvil by the crown of the driven staple, for urging said anvil to move back to the position from which it was moved, and adjustable means on the housing to press said portions of the magazine to vary said passages.

3,182,879
STAPLING DEVICE

Arthur Dritz, 171 Beach at 125th St., Rockaway Park, N.Y.
Filed Apr. 6, 1962, Ser. No. 186,827
2 Claims. (Cl. 227—119)



1. A pin driving device for driving substantially straight pins through one or more layers of material, comprising in combination:

- (*a*) a magazine for holding a plurality of pins in side-by-side relationship,
- (*b*) said magazine having an outlet end and an outlet opening in said outlet end through which pins are adapted to be ejected in a sequential manner,
- (*c*) means for forcing the pins within said magazine toward the said outlet end of said magazine,
- (*d*) said magazine having an inlet opening in said magazine that is axially aligned with said outlet opening,
- (*e*) a plunger means that is positioned adjacent the inlet opening in said outlet end of the magazine,
- (*f*) said plunger means being movable into the inlet opening in said magazine along a line that substantially coincides with the axis of said inlet and outlet openings so as to eject the lowermost pin from the magazine,
- (*g*) an elongated hollow pin guard and protector positioned adjacent the outlet end of said magazine in axial alignment with the outlet opening in said magazine, said pin guard and protector being adapted to surround and protect pins during the course of their ejection from said outlet opening by said plunger means,
- (*h*) said plunger means being long enough to drive the forward end of said lowermost pin completely through said outlet opening and through said hollow guard and protector.

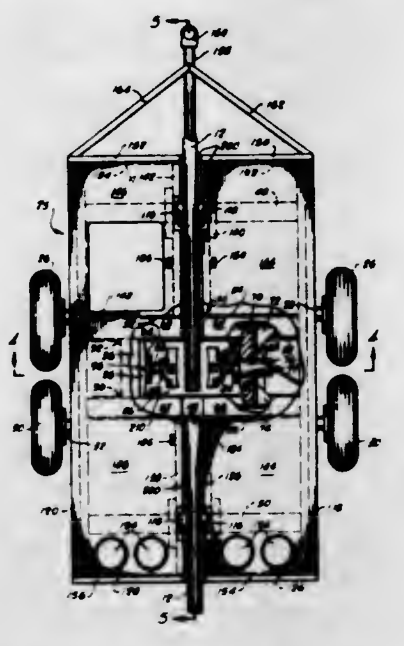
3,182,880
MANIPULATING APPARATUS FOR PRESS FITTING AND WELDING A SPLIT SLEEVE AROUND DRILL PIPE

Russell C. Heldenbrand, Box 178, New Iberia, La.
Filed Feb. 5, 1962, Ser. No. 170,999
16 Claims. (Cl. 228—6)

1. Manipulating apparatus for press fitting and welding two preheated, semicircular sleeve halves around a joint of drill pipe to form an integral protective sleeve, the manipulating apparatus comprising:

support means for supporting a joint of pipe;

a pair of dies each having a concave well for holding a sleeve half, the dies being disposed on opposite sides of a joint of pipe disposed on the support means;

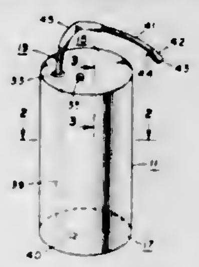


means for moving the dies one toward the other for pressing sleeve halves disposed in the concave wells against opposite sides of the joint of pipe with the edges of the sleeve halves in adjacent relationship; and

means for welding the adjacent edges of the sleeve halves together with a weld seam extending longitudinally of the joint of pipe.

3,182,881
LIQUID CONTAINERS

Oscar L. Morphis, 4101 Hildring Drive E., Fort Worth, Tex.
Filed May 15, 1963, Ser. No. 280,566
8 Claims. (Cl. 229—3.1)



1. In a fluid container, wall and end structure comprising: first and second superposed sheets of thin pliable plastics material; a corrugated sheet of thin pliable plastics material disposed between said first and second sheets and bonded to each said sheet at spaced apart areas of contact, forming interstices between said first and second sheets; and a gaseous fluid under pressure in said interstices.

3,182,882
SKIVED BRIM CUP AND BLANK THEREFOR

John Paull Aellen, Jr., Bethlehem, and Richard Hartman Fuge, Easton, Pa., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed June 18, 1963, Ser. No. 288,702
9 Claims. (Cl. 229—4.5)

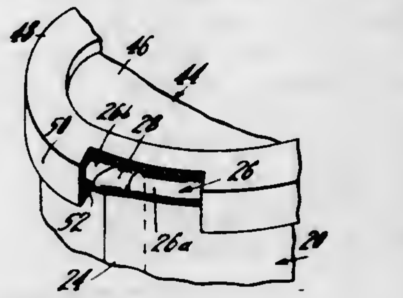
1. A cup-type container comprising:

a tubular body having a side wall formed with a longitudinally extending lap side seam therein;

an end member attached to one end of said body completely enclosing the same and acting as a base;

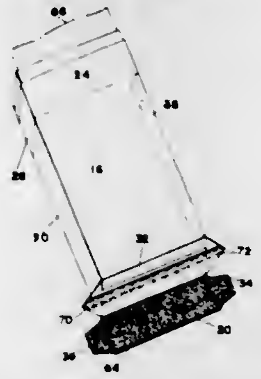
the other end of said body being curled outwardly into a brim which surrounds said other end and includes one end of said side seam; and

a skived area extending angularly across at least a portion of the side seam portion of said brim for gradually merging the underlapped end of said side seam into the overlapped end thereof without any abrupt step therebetween and thus producing a substantially smooth surface on said skived portion of said brim.



3,182,883
LINED CARTON

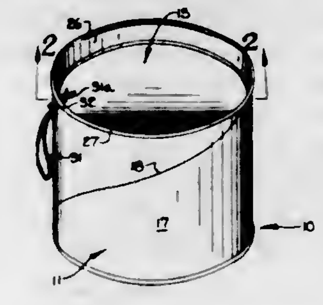
Kendall D. Doble, Jr., Hingham, Mass., assignor to Pneumatic Scale Corporation, Limited, Quincy, Mass., a corporation of Massachusetts
Filed Aug. 27, 1962, Ser. No. 219,632
4 Claims. (Cl. 229—14)



1. A lined carton comprising a carton blank having a lining sheet adhesively secured thereto and adapted to be folded as a unit to produce a rectangular carton having side and end wall panels, open at the top and having a bottom closure, said bottom closure comprising a lining closure having laterally extending portions folded upwardly against the end wall panels of the carton, and a carton bottom closure including a bottom closing side flap also having laterally extended portions folded upwardly over the upwardly folded lining portion and secured to the end wall panels to provide a smooth uninterrupted surface on the bottom of the carton free of underlying end flaps and extended lining portions.

3,182,884
REFRIGERATING PACKAGE

Jack T. Waldron, Covina, Calif., assignor to Sonoco Products Company, Hartsville, Darlington, S.C., a corporation of South Carolina
Filed Oct. 11, 1962, Ser. No. 230,797
3 Claims. (Cl. 229—14)



1. A refrigerating package for a plurality of cylindrical articles comprising, in combination, a spirally wound,

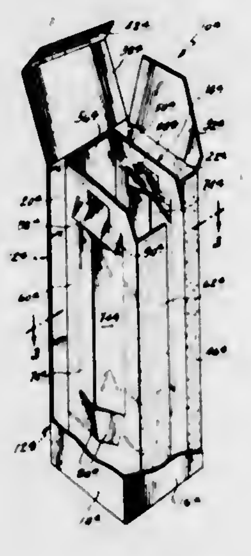
multi-ply, cylindrical tubular body member having an open end for receiving articles to be refrigerated, said body member having an inner wall composed of substantially water-proof material, a bottom wall on the other end of said body member, a cylindrical tubular spacer of fibrous material centrally positioned within said body member in freely removable relationship therewith for retaining said articles in a circular row between said spacer and said body member inner wall whereby said spacer can be removed to leave a central cavity for refrigerating material such as ice, and a removable closure for closing said body member open end.

3,182,885
CONTAINERS FOR FRAGILE ARTICLES

Patrick Maio, Wood-Ridge, N.J., assignor to Continental Folding Paper Box Co., Inc., Ridgefield, N.J., a corporation of New York

Filed Nov. 15, 1962, Ser. No. 237,841

3 Claims. (Cl. 229—14)



3. A one-piece cardboard blank for forming a shockproof container for a fragile article; said blank comprising a box defining first section including four foldably connected, substantially rectangular side wall forming portions in side-by-side relationship, end closure forming flaps extending foldably from the ends of certain of said side wall forming portions, and an elongated narrow portion extending along one side of said box defining section and foldably joined to the adjacent side wall forming portion of the latter; and a second section for defining a cushioning structure extending foldably from said elongated narrow portion of the box defining first section and including two foldable, rectangular wall defining portions, a connecting portion interposed between said two wall defining portions and foldably joined to the latter and a flap defining portion at the side of said second section remote from said first section; each of said two wall defining portions having a central, longitudinally extending cut and transverse cuts at the ends of the longitudinal cut to define two opposed, elongated flaps adapted to be struck from the related wall defining portion; and each of said two wall defining portions further having short cuts extending longitudinally from the ends of at least one of said transverse cuts and a generally U-shaped cut between said short cuts and extending in the direction toward said one transverse cut to define a tab adapted to be struck from the related wall defining portion for movement angularly with, but in the opposite direction from the part of the wall defining portion located between said short cuts.

ERRATUM

For Class 229—31 see:
Patent No. 3,182,913

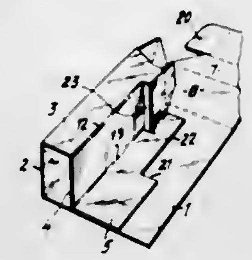
3,182,886
CARDBOARD BOX

Karl Rune Persson, Halmstad, Sweden, assignor to AB Ahlen & Akerlund Forpackning, Halmstad, Sweden, a corporation of Sweden

Filed Feb. 11, 1963, Ser. No. 257,635

Claims priority, application Sweden, Feb. 14, 1962, 1,628/62

2 Claims. (Cl. 229—34)



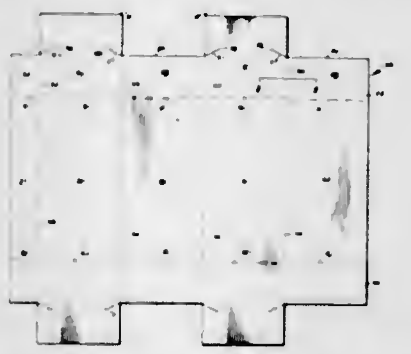
1. A carton box made from a single blank having fold lines to form a rectangular bottom and four sides, two opposite sides having upstanding parallel inner and outer longitudinal walls spaced from each other and interconnected by a top wall, said inner end walls being at their ends extended with locking flaps projecting into openings formed by slits in the adjacent inner longitudinal wall, said slits extending between the lower and the upper fold lines of each longitudinal wall and dividing the same into an intermediate portion and two end portions, the upper and the lower fold lines of said end portions being offset inwardly relative to the corresponding fold lines of said intermediate portion to form said opening between the inner end edge of said end portion and the adjacent end edge of said intermediate portion.

3,182,887
CONTAINER

Louis P. Larson, Glendale, Mo., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed July 29, 1963, Ser. No. 298,085

9 Claims. (Cl. 229—37)



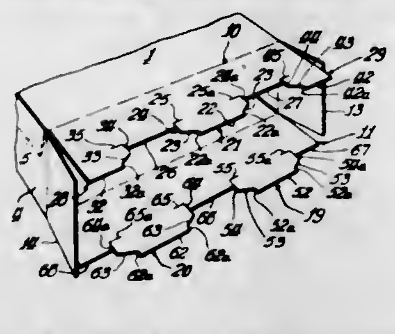
1. A sift proof container formed from a foldable fibreboard blank and having tubularly arranged wall panels and closure flaps on at least one end of the container, the flaps including an innermost pair in opposed relation and an outermost pair in opposed relation with each such flap connected by a flap fold to one end of a respective wall panel, said flaps having side edges defined by lines of severance in the outer surface and in foldably connected relation on the interior surface thereof throughout their adjacent extent prior to infolding to closing relation, the flaps comprising the innermost pair having free end edges in abutting relation at the container midwidth, sealing webs separated from the interior surface of the outermost flaps by tearing of the fibreboard and having a free edge initiated at the free end edge of the adjacent innermost flap, said sealing webs connecting the side edges of the innermost flaps throughout their extent to adjacent portions of a respective one of the outermost flaps to provide a seal extending entirely across the container at the innermost flap side edges, the sealing webs each being folded on itself with end portion free edges at least intersecting at the container midwidth to completely close the end of the container and prevent sifting of the contents through said closure.

3,182,888
CARTON WITH MULTIPLE LOCKING TABS

Francis A. Chidsey, Jr., Devon, Pa., and Richard J. Muth, Kent, Wash., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Feb. 5, 1964, Ser. No. 342,755

2 Claims. (Cl. 229—39)



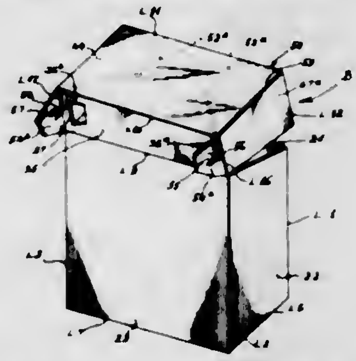
1. A carton of resilient paperboard comprising:
(*a*) side walls and edge walls,
(*b*) opposed, infolding closure flaps hinged on the side walls,
(*c*) said flaps having rigid, outwardly projecting locking elements,
(*d*) two of the locking elements on one flap being symmetrically spaced with respect to a single locking element on the other flap so that such single locking element may be interfitted between said first two spaced locking elements,
(*e*) said locking elements being symmetrically and identically formed,
(*f*) each locking element having an elongated outer edge portion projecting parallel to the flap hinge line,
(*g*) each locking element having diagonal edges projecting outwardly and rearwardly toward the flap hinge line from such outer edge portion,
(*h*) rearwardly projecting edges extending from the ends of the diagonal edges and disposed at right angles to the outer edge portion,
(*i*) inwardly projecting edges extending from the ends of the rearwardly projecting edges, such inwardly projecting edges being parallel to the elongated outer edge portion of the locking element and terminating approximately in line with the respective outer ends of the elongated outer edge portion of the locking element,
(*j*) the inwardly projecting edges of the opposite cooperating locking elements being engageable with each other along an interlock line located medially between the carton side walls.

3,182,889
FOLDING BOX

Alois M. Michalka, Rte. 6A, Portland, Conn.

Filed Aug. 15, 1963, Ser. No. 302,305

12 Claims. (Cl. 229—44)



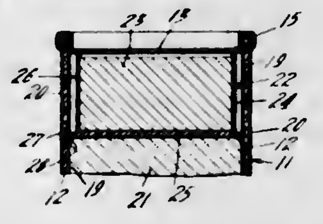
1. In a folding box having a rectangular body formed by four vertical walls joined by vertical folds and a closed bottom formed by interlocking flaps joined to bottom ends of the vertical walls, a hinged cover comprising a horizontal rectangular top panel, a rear panel depending from the rear edge of the top panel and perpendicular thereto, said rear panel being hinged at its lower edge to an upper edge of one of the walls of said body, a front panel depending from the front edge of the top panel perpendicular thereto and parallel to the rear panel, a pair of side panels attached to opposite ends of the front panel and extending rearwardly parallel to each other and perpendicular to the top panel, a pair of flaps extending laterally inward from upper edges of the side panels and underlaying the top panel, tabs extending laterally inwardiy of rear ends of the side panels and juxtaposed to opposite ends of the rear panel, and means at said rear panel engaging said tabs and anchoring the same so that the rear, side and front panels remain in rectangular array perpendicular to the top panel.

3,182,890
COMPARTMENT CONTAINER

William Binford Elam, Oakland, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 12, 1962, Ser. No. 244,101

6 Claims. (Cl. 229—51)



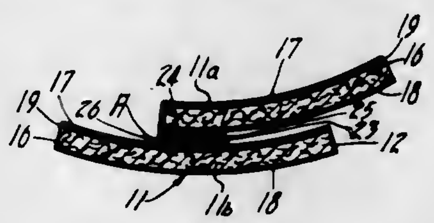
1. A compartmented container, comprising a tubular container body, an end closure member secured to one end of said container body, a resilient plastic cup having a tubular side wall, an open end and a closed end, said cup being located within said container body adjacent one end thereof with the open end of said cup disposed in engagement with said end closure member for providing a separate compartment within said container body, and a flexible flared annular flange formed integral with said cup and extending outwardly from the side wall of said cup adjacent its closed end and away from the open end of said cup and engageable against the interior wall surface of said container body for providing a seal between said cup and said container body.

3,182,891
CAN WITH QUICK-OPENING LAP SEAM

Oscar Frederick Ecklund, Barrington, Ill., and Arnold Robert Rein, Menasha, Wis., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 10, 1963, Ser. No. 329,442

7 Claims. (Cl. 229—51)



1. An improved quick-opening seam construction for a container having a tubular body with a moisture-proof inner liner adhered to the interior of said body, the opposed marginal edges of said body being overlapped to provide an inner lap and outer lap forming said seam, the improvement comprising:

an extension of said liner reversely folded over the edge of said inner lap to protectively cover said edge and provide a sealing hem of predetermined width;

- a first adhesive stripe securing said hem to the outer surface of said inner lap, said stripe being offset away from the free edge of said hem; and
- a second adhesive stripe securing said outer lap to a predetermined width of said hem and terminating closer to said hem free edge than said first adhesive stripe.

3,182,892

ENVELOPE AND OPENING MEANS THEREFOR

John R. Paulson, Lachute, Quebec, Canada, assignor to Paulson Machine Company Limited, Lachute, Quebec, Canada

Filed June 24, 1963, Ser. No. 290,889

2 Claims. (Cl. 229—86)

1. An envelope comprising a single imperforate sheet of material of uniform strength and texture, and folded along lines defining a rectangular front panel and generally triangular, overlapping, bottom, side, and top flaps, the overlapping areas of said side and bottom flaps being adhesively secured together, and a single narrow tear strip of linear polyethylene adhesively attached to the inner surface of said top flap in spaced parallel relation with, and contiguous to, the fold line between said top flap and said front panel, said strip being coextensive with said fold line and having its ends flush with the respective free edges of said top flap intersected thereby, said strip having a width not substantially exceeding one-eighth inch, a thickness not substantially exceeding one and one-half mils, and a break tensile strength of 40,000 to 45,000 p.s.i., there being a notch in one said edge of said top flap at a point therein closely adjacent one end of the fold line thereof and the corresponding end of said strip, said notch having a depth not substantially exceeding one-eighth inch and converging edges each of at least one-quarter inch in length, said notch defining a pull tab section, the inside surface of said top flap along the edges thereof being adhesively coated for securement to said side and bottom flaps, the inside surface of said tab section being free of adhesive.

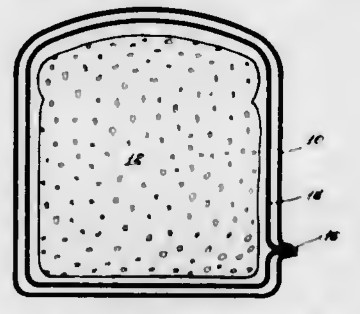
3,182,893

PLASTIC FILM BREAD BAND

Terrance L. Bremkamp, Prospect Heights, Ill., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Aug. 8, 1962, Ser. No. 215,732

4 Claims. (Cl. 229—87)



1. A packaging arrangement especially adapted for wrapping bread and the like on standard wrapping machines, comprising an outer plastic film wrapper and an inner plastic film band, a heat seal between said outer wrapper and said inner band along at least one longitudinal line to form a tubular element whereby the inner band is secured to said outer wrapper, and at least one end fold and seal at one extremity of said formed tubular element to provide an end closure.

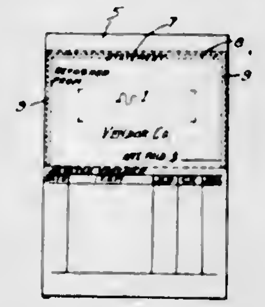
3,182,894

COMBINED BUSINESS FORM AND ENVELOPE

Donald J. Doyle and James W. Kehoe, Shelby, Ohio, assignors to Shelby Business Forms, Inc.

Filed June 20, 1963, Ser. No. 289,197

3 Claims. (Cl. 229—92.7)



1. A combined business form and enveolpe comprising: upper and lower sheets having primary and secondary portions, said upper sheet having perforations between its primary and secondary portions to permit removal of said secondary portion, longitudinal and transverse lines of adhesive connecting the primary portions of both sheets to form a rectangular pocket having an open side, the secondary portion of said lower sheet including a flap foldable over the open side of said pocket, and adhesive on said flap to attach it to the primary portion of said upper sheet and thereby seal the pocket.

3,182,895

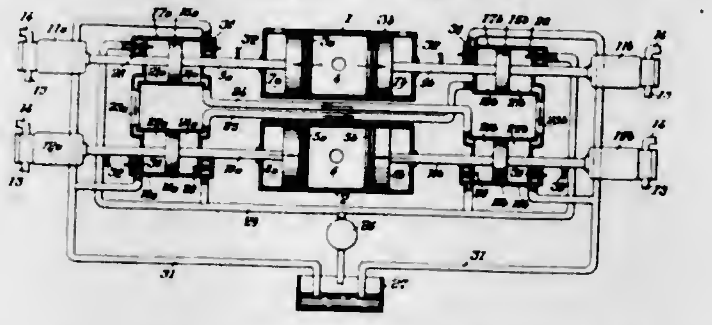
SYNCHRONIZING DEVICES FOR TWIN-CYLINDER HEAT ENGINES HAVING TWO OPPOSED PISTONS IN EACH CYLINDER

Paul Panhard, Paris, France, assignor to Societe Anonyme des Anciens Etablissements Panhard & Levassor, Paris, France, a society of France

Filed Dec. 23, 1963, Ser. No. 332,976

Claims priority, application France, Dec. 21, 1962, 919,566

4 Claims. (Cl. 230—56)



1. In a twin cylinder heat engine having a first cylinder and a second cylinder and two opposed driving pistons in each of said cylinders with the two driving pistons of one cylinder adapted to move simultaneously toward each other while the two driving pistons of the other cylinder are moving simultaneously away from each other and vice versa, a device for synchronizing the motions of said pistons which comprises, in combination, a pair of synchronizing cylinders disposed in line with each of the heat engine cylinders, on opposite sides thereof, a synchronizing piston in each of said synchronizing cylinders, means for rigidly connecting each of said synchronizing pistons with a corresponding heat engine piston, respectively, so as to divide each synchronizing cylinder into two chambers, a first one and a second one, transfer conduit means forming a constantly open communication between one chamber of each synchronizing cylinder located on one side of one of said heat engine cylinders and one chamber of the synchronizing cylinder located on the other side of the other of said heat engine cylinders, and transfer conduit means forming a constantly open communication between the other chamber of each synchronizing cylinder located on one side of one of said heat engine cylinders and one chamber of the synchronizing cylinder located on the same side of the other of said heat engine cylinders, said chambers and said transfer conduits being filled with a virtually incompressible liquid.

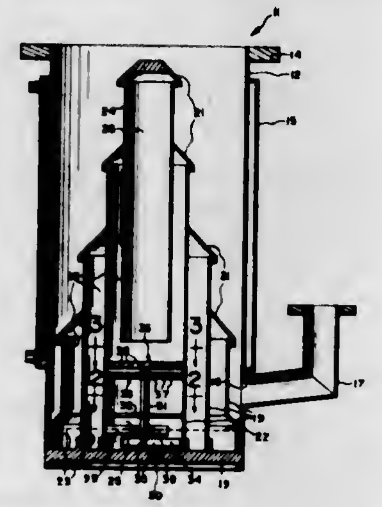
3,182,896

DIFFUSION VACUUM PUMP APPARATUS

Werner G. Bächler, Cologne, Germany, assignor to Leybold Holding A.G., Zug, Switzerland

Filed Nov. 29, 1962, Ser. No. 240,902

15 Claims. (Cl. 230—101)



1. A vacuum diffusion pump apparatus comprising a sealed outer wall having an opening adapted for connection to a chamber to be evacuated and an exhaust aperture, a boiler section enclosed by the lower portion of said sealed outer wall and adapted to contain a pool of pumping fluid, heater means for applying heat to said boiler section so as to heat and cause evaporation of the pumping fluid contained therein, a vapor direction means supported by said outer wall and extending into said boiler section, said vapor direction means including a nozzle assembly adapted to direct evaporating pumping fluid against the inner surface of said outer wall, and movable means so positioned within said boiler section as to be substantially covered by the pumping fluid pool and to cause agitation thereof.

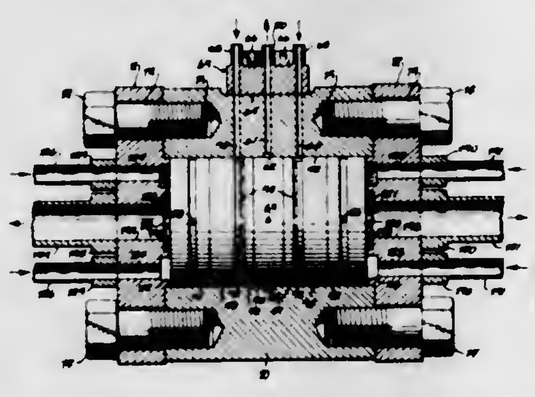
3,182,897

TURBINE DRIVEN CENTRIFUGAL COMPRESSOR UNIT

William E. Trumpler, Olean, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Apr. 12, 1963, Ser. No. 272,660

9 Claims. (Cl. 230—116)



1. In a hermetically sealed turbine driven centrifugal compressor unit, the combination comprising a housing, a shaft, fluid type bearings supported by said housing and journalling said shaft inwardly of each end thereof so as to leave overhung shaft end portions, an impeller arranged within said housing intermediate said bearings and fast to said shaft, symmetrical blading on opposite axially facing sides of said impeller, a pair of similar turbine wheels arranged within said housing and severally nonrotatively mounted on said overhung shaft end portions and facing in opposite axial directions, fluid inlet passage means of said turbines through which pressurized fluid is supplied, fluid inlet passage means for said impeller through which fluid under a higher pressure is supplied, and means conducting fluid leaking internally from said impeller inlet passage means toward said turbine inlet passage means through said bearings to fluid float said shaft.

3,182,898

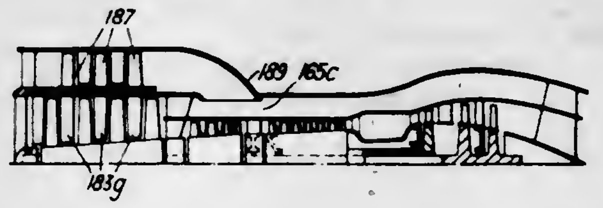
AXIAL FLOW COMPRESSOR OR FAN AND GAS TURBINE ENGINE PROVIDED THEREWITH

Colin Taylor Hewson, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain

Filed May 23, 1963, Ser. No. 282,788

Claims priority, application Great Britain, May 31, 1962, 21,106

10 Claims. (Cl. 230—116)



1. A gas turbine by-pass engine comprising a first shaft, a second shaft mounted within said first shaft, a high pressure compressor and a high pressure turbine each having at least one row of rotor blades drivingly engaged with said first shaft, a low pressure compressor and a low pressure turbine each having at least one row of rotor blades engaged with said second shaft, a by-pass duct which communicates with the downstream end of the low pressure compressor so as to receive part of the air compressed thereby, a rotatable casing forming part of the low pressure compressor, at least one row of rotatable guide blades which are carried by the rotatable casing and which are driven by air passing through the low pressure compressor, and a driven part which requires substantial toque to dive it and which is drivingly connected to the rotatable casing.

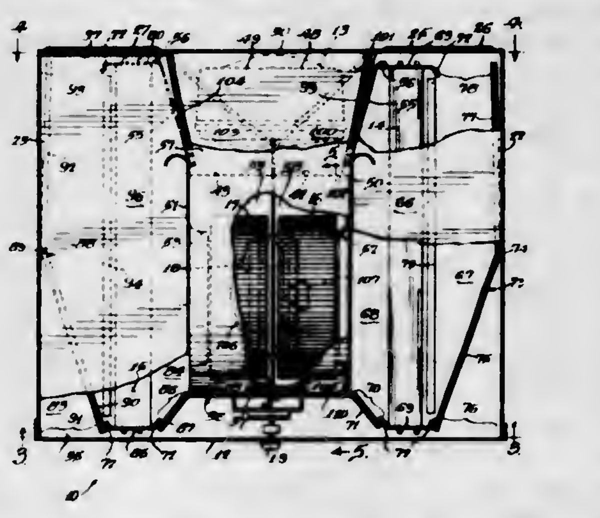
3,182,899

WALL MOUNTED DUAL FAN STRUCTURE

William A. Hames, Jr., Luther J. Jungemann, and George W. Sisk, Jr., Evansville, Ind., assignors to Whirlpool Corporation, a corporation of Delaware

Original application June 1, 1960, Ser. No. 33,290. Divided and this application Nov. 20, 1962, Ser. No. 238,849

4 Claims. (Cl. 230—117)



1. In an air conditioning apparatus, air moving apparatus, comprising: a wall having a dished portion defining

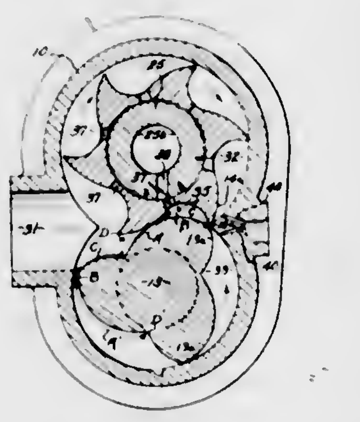
a concavity on one side of the wall and a convexity on the other side of the wall; first air moving means arranged annularly about an axis and disposed adjacent said one side of the wall; second air moving means arranged annularly about said axis in axially spaced relationship to said first air moving means and disposed adjacent said other side of the wall; and a prime mover for driving said first and second air moving means about said axis, said prime mover having a stator coaxial with said air moving means and fixed to said dished portion of the wall in said concavity, an outer casing rotatable concentrically about the stator, and a shaft having one end fixed to said casing, a midportion coaxially rotatable in said stator, and an opposite end projecting through said dished portion of said wall, said first air moving means being secured to said casing, and said second air moving means being secured to opposite end of said shaft.

3,182,900
TWIN ROTOR COMPRESSOR WITH MATING EXTERNAL TEETH

John R. Thorson, Columbus, Ohio, assignor, by mesne assignments, to Davey Compressor Company, Kent, Ohio, a corporation of Ohio

Filed Nov. 23, 1962, Ser. No. 239,450

11 Claims. (Cl. 230—141)



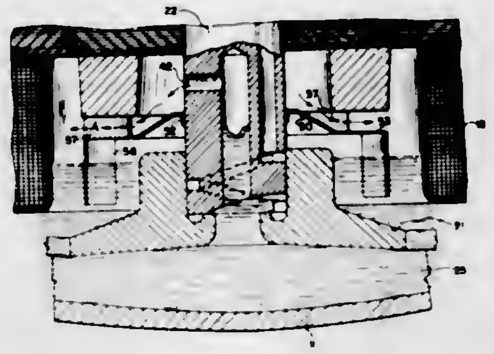
1. In a rotary compressor, a casing having body walls and end walls, a pair of rotors rotatably mounted in said casing on parallel axes and closely fitting said end walls and having intermeshing axially straight tooth profiles cooperating with each other and with the casing walls to form preliminary compression pockets and final compression working chambers varying during rotor rotation between positions of maximum and minimum volume to compress a fluid between them, there being inlet and outlet port means associated with said casing, each of said preliminary compression pockets communicating with said inlet port means prior to compressive action, each of said working chambers in its position of minimum volume having means communicating with said outlet port means, said rotors having compressive engagement with said casing walls and with each other to form said preliminary compression pockets in which compression takes place during rotor rotation, said rotors having coacting tooth profiles first mutually engaging in at least line contact for intermeshing action near the outer peripheries of said rotors at a zone where said rotors leave a common zone of casing contact between them, said rotor intermeshing tooth profiles simultaneously engaging in at least line contact at a second zone circumferentially spaced from said first named zone, said line contacts being parallel to said rotor axes, and said line contacts between each coacting pair of intermeshing teeth moving progressively toward the root circle of one of said rotors completing said compression of trapped fluid to said minimum volume position of said working chamber.

3,182,901
COMPRESSOR

Benjamin E. Solomon, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 12, 1963, Ser. No. 323,001

2 Claims. (Cl. 230—206)



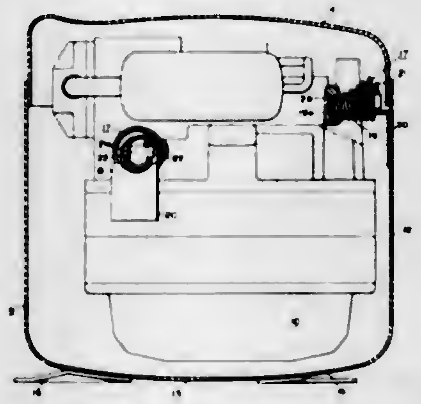
1. In a lubrication system for the bearings of a refrigerant motor-compressor unit hermetically sealed in a shell with a body of liquid lubricant:
a vertically-disposed shaft adapted to be mounted in said bearings for rotation relative thereto with its lower terminal portion submerged in the body of lubricant said shaft having
a vertical lubricant-conducting passage therein parallel to, but spaced from, the axis of rotation of said shaft, and having
lateral passages for conducting lubricant from said vertical passage to said bearings, said shaft also having in its submergible lower terminal portion
a lateral passage for conducting lubricant to the lower end of said vertical lubricant-conducting passage under centrifugal pressure, and said shaft having
a passage coaxial with its axis of rotation opening through the lower end of the shaft for communication with the body of lubricant; said coaxial passage extending upwardly in said shaft to a region thereof which will be above the surface of said body of lubricant, and having
a lateral branch passage to the space within the shell for discharge of refrigerant gas separate from lubricant entering the coaxial passage and means for reducing the pressure in that portion of said space within the shell which is at the outlet of said lateral branch passage.

3,182,902
REFRIGERATION APPARATUS

Victor G. Foris, Los Angeles, Calif., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 6, 1963, Ser. No. 256,685

5 Claims. (Cl. 230—235)



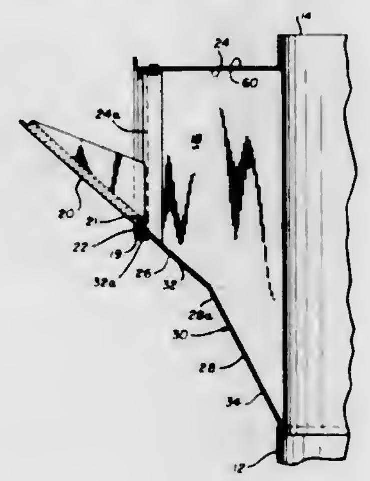
1. A hermetically sealed compressor comprising a cylindrical, fluid tight casing having
a vertical tubular wall,
a vertical shaft motor-compressor unit disposed therein,
and means for supporting said unit in said casing,
said means including a helical spring disposed between said tubular wall and said unit,
said spring having its axis located radially with respect to said tubular wall and having one end substantially fixed against rotation at said unit,
and a bracket for supporting the opposite end of said spring, said bracket being attached to the interior of said tubular wall, and having a vertical facing pocket adapted to receive a coil of said spring in interference fit, whereby said spring is substantially fixed against rotation, said spring and said bracket thereby serving to resiliently support said unit in the vertical direction in said casing.

3,182,903
INTAKE THROAT AND HOPPER DOOR ASSEMBLY FOR VERTICALLY EXTENDING CHUTES

Andrew Marton, Akron, Ohio, assignor to Wilkinson Chutes, Inc., Akron, Ohio, a corporation of Ohio

Filed Feb. 4, 1963, Ser. No. 255,799

7 Claims. (Cl. 232—43.1)



2. In combination,
a chute section adapted to be vertically positioned in use,
said chute section having a longitudinal opening in a side thereof defined by a pair of parallel vertically extending side walls extending from the chute with edges offset laterally from said vertical chute and being inwardly and downwardly directed,
a hopper door,
frame means for said hopper door operatively secured to said side walls adjacent the upper margins thereof, said hopper door being journalled on said frame means,
said side walls being at the lower end of said chute section, and
a front plate suitably secured to said edges of said side walls and inclined at its lower end at least at an angle of about 70° to the horizontal, said front plate having an upper portion directly below said frame means connected thereto and being at a smaller angle to the horizontal than said lower end thereof.

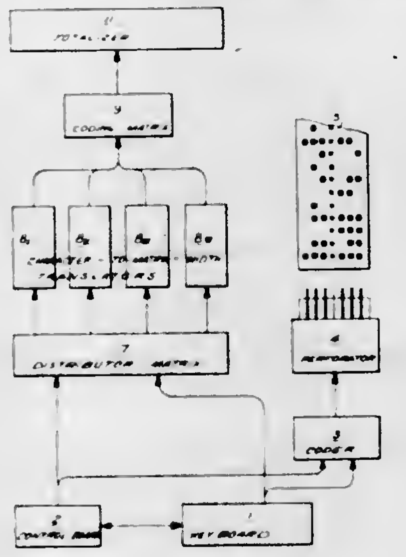
3,182,904
CONTROL ARRANGEMENT FOR TYPESETTING MACHINES

Leon Starck, Frankfurt am Main, Fechenheim, Germany, assignor to Linotype G.m.b.H., Frankfurt am Main, Germany

Filed Dec. 27, 1962, Ser. No. 250,977

Claims priority, application Germany, Dec. 27, 1961, L 40,796

19 Claims. (Cl. 234—5)



1. In a typesetting machine adapted to set type from more than one font and including a perforator arrangement and a totalizer for counting and adding the widths of matrices used in the typesetting operation, in combination, a plurality of electrical control means including key-operable actuator switch means assembled as a key-board arrangement for selectively applying first pulses representing respectively different characters to the perforator arrangement; a plurality of character-to-matrix-width translator means arranged between said electric control means and the totalizer, each of said translator means being assigned to a different font and serving to translate any one of said first pulses representing a particular character into a second pulse representing the matrix-width associated with said particular character in the font to which the particular translator means is assigned, and for transmitting such second pulse to the totalizer; a plurality of font selector means including key-operable font selector switch means respectively assigned to different fonts for rendering selectively, when actuated, only that selected one of said translator means operative which is assigned to the same selected font to which the respectively actuated means is assigned, and for simultaneously applying to the perforator arrangement a third pulse representing the selected font, said key-operable font selector switch means being arranged within said key-board arrangement in the vicinity of said key-operable actuator switch means and comprising a plurality of pre-selector switch means for pre-selecting out of said plurality of translator means assigned to different fonts by actuation of two of said pre-selector switch means only two fonts for alternative use and for preparatorily semi-activating the respectively corresponding two translator means, and one main font selector switch means operatively connected with said pre-selector switch means for alternatively fully activating upon a first actuation thereof one of said pre-selected two translator means through one of said pre-selector switch means and, upon a second actuation thereof, fully activating the other one of said pre-selected translator means through the other one of said pre-selector switch means, every actuation of said main selector switch means causing simultaneously application of said third pulse representing a change between said selected fonts to the perforator; and circuit means interconnecting said control translator and selector means.

3,182,905
PUNCH MACHINE PROGRAMMED DIRECTLY BY ELECTROMAGNETS

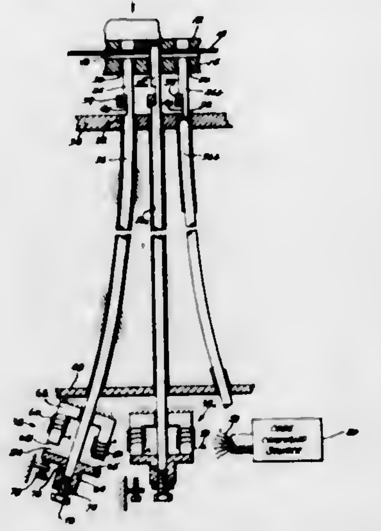
Jacob Rabinow, Bethesda, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Oct. 7, 1963, Ser. No. 314,267

14 Claims. (Cl. 234—108)

1. In a punch machine to form a record, a punch and die set, means to provide relative movement therebetween for a punch operation on the record, punch-programming electromagnets associated with the respective punches of

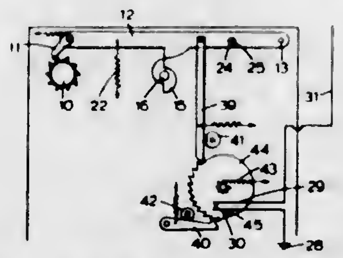
said set, each electromagnet having a variable air gap wherein the attractive force thereacross is maximum when the gap is at a minimum, and means to energize selected electromagnets and complete the program-actuation at which the gaps of the associated electromagnets are



minimum prior to a said punch operation so that at the time of said operation the selected punches are magnetically retained with maximum electromagnetic force owing to the closed condition of the gaps of the electromagnets associated with said selected punches.

3,182,906
TAXIMETERS

Francis Raymond Heritier, Acton, London, England, assignor to Geecen Limited, London, England, a British company
Filed Mar. 25, 1963, Ser. No. 267,509
Claims priority, application Great Britain, Apr. 3, 1962, 12,780/62
7 Claims. (Cl. 235—130)



1. A taximeter having a rotary cam member, means for driving the rotary cam member alternately in accordance with distance of travel and time, a fare indicator operating means, a reciprocating lever for operating the fare indicator operating means with a succession of advance movements according to the rotation of the rotary cam member, ratio change means for changing ratio of the numbers of advance movements applied to the fare indicator operating means per revolution of the rotary cam member, from one predetermined ratio for first tariff to a different predetermined rate of second tariff and control means driven in accordance with distance and time for causing said ratio change means to change said ratio after a predetermined amount of distance and time.

3,182,907
BUSINESS MACHINE RACK STOPPING MECHANISM

David D. Donohoo, Jr., Centerville, and Edgar H. Sonnanstine, Jr., West Carrollton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Dec. 24, 1962, Ser. No. 246,804
10 Claims. (Cl. 235—61)

3. In an accounting machine, an input device for positionally representing numerical values introduced into the accounting machine in the form of a combinational code, the combination including

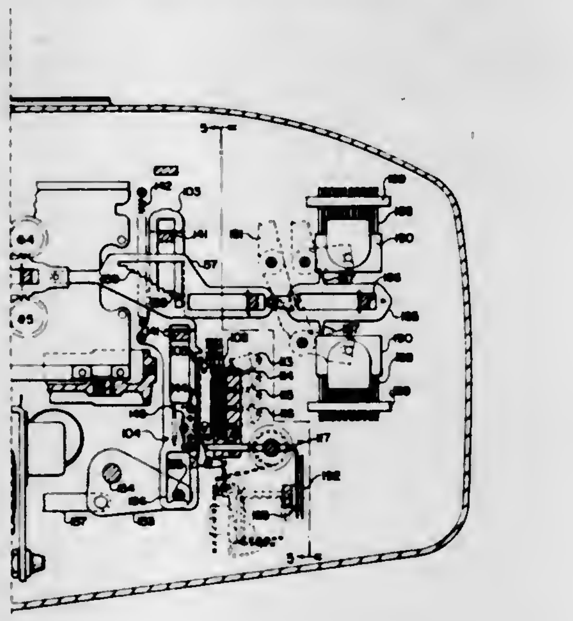
(*a*) a plurality of sets of movable slides, the slides of each set being mounted in a parallel side-by-side relation, with each slide bearing a series of code-identifying notches in one edge portion thereof;

(*b*) a fixed slide parallel to the movable slides of each set and having notches representing numerical values in an edge portion thereof alignable with the code-identifying notches of said movable slides;

(*c*) means biasing the movable slides of each set in one direction;

(*d*) first holding means engaging and holding a corresponding movable slide of each set in a first position;

(*e*) second holding means engaging and holding each set of movable slides in a first position;



(*f*) a plurality of electromagnetic means consecutively energized in accordance with a part of a combinational code to represent a numerical value;

(*g*) a plurality of actuating arms each mounted on an elongated member controlled by one of said electromagnetic means and engaging in an operative manner one of said first holding means, each of said actuating arms being operated upon the energization of its associated electromagnetic means to disengage the first holding means from the movable slides;

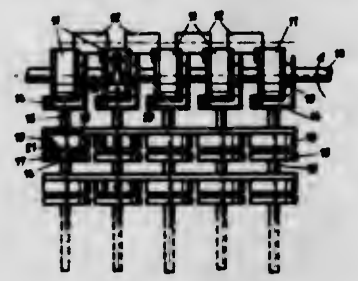
(*h*) control means having a plurality of actuating members, one for each set of movable slides, said members being sequentially positioned upon operation of said control means to disable the second holding means of each set of movable slides;

(*i*) and means for operating said control means whereby each set of movable slides is sequentially released for movement to a biased position to cause certain of the notches in the movable slides to register with one of the notches in the fixed slide to represent the numerical value determined by the energization of the electromagnetic means.

3,182,908
CONTROL DEVICE

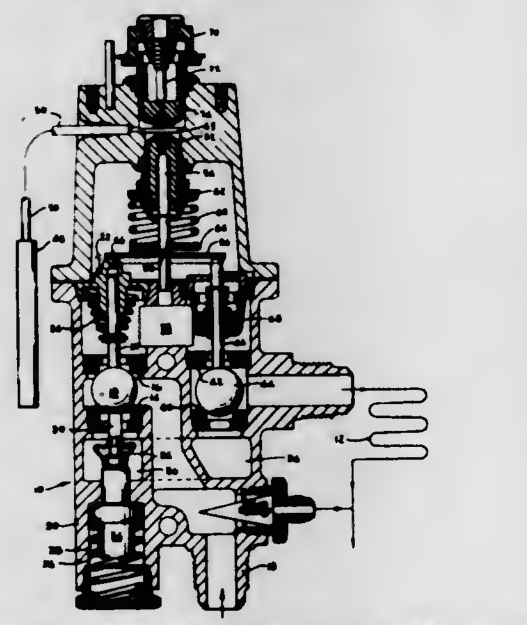
Werner Wahli, Bern-Buempliz, and Hans-Jakob Rey, Bern, Switzerland, assignors to W. Wahli AG, Bern-Buempliz, Switzerland, a corporation of Switzerland
Filed Nov. 27, 1962, Ser. No. 240,386
Claims priority, application Switzerland, Nov. 30, 1961, 13,933/61
14 Claims. (Cl. 235—132)

1. A control device having a rotary counter with a pre-selector comprising in combination with each numeral roller of said counter a permanent magnet and at least one member of an electric circuit having a saturable core and only a single coil for said core, said core being adapted to be saturated by said magnet, for the purpose of magneto-static co-operation, whereby on the one hand the permanent magnet is positively connected in rotation to the relative counter numeral roller for the counting operation and is arranged at a distance from its axis of rotation, and on the other hand the desired numeral is pre-selected by allocating said member to this numeral by placing the same in a selected angular position.



3,182,909
AIR CONDITIONER VALVE

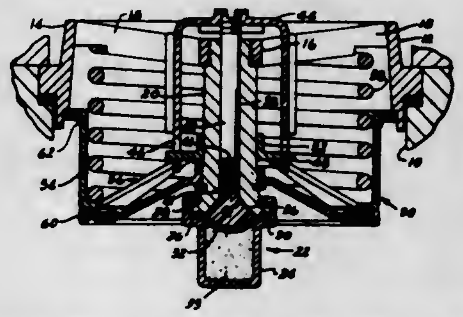
Thomas E. Noakes, Detroit, and Abdul S. Bahrani, Drayton Plains, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 1, 1962, Ser. No. 213,985
3 Claims. (Cl. 236—1)



1. In an air conditioning valve adapted to handle either heating or cooling fluids and having a hot fluid seat, a cold fluid seat aligned with said hot seat, a valve element floatably positioned for selective cooperation with alternate ones of said seats, a room temperature responsive power means for operating said valve element, and a season changeover means operated by the temperature condition of the fluid flowing through the valve for alternately supplying cold fluid to the cold seat or hot fluid to the hot seat: the improvement comprising a drive connection between the room temperature responsive power means and the valve element; said drive connection comprising a lever having a single fulcrum located at a first point thereon and having an operating connection with the valve element at a second point thereon, and a stem operated by the room temperature responsive power means and operatively engaging the lever at a third point thereon so that each incremental movement of the room temperature responsive power means results in a magnified movement of the valve element; the operative engagement between the stem and lever being effected through an abutment and compression spring; said abutment being carried on the stem and tending to move away from the lever when said stem is moving in the direction of the hot seat, and the compression spring operatively biasing the lever to maintain same in engagement with the abutment until the stem has moved a sufficient distance to cause closure of the valve element against the hot seat, after which the lever can have an overtravel movement without affecting the valve element.

3,182,910
THERMOSTATIC VALVE

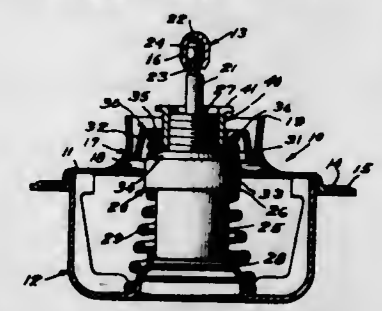
Charles E. Karppinen, Royal Oak, and Frank G. Rising, Detroit, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 12, 1963, Ser. No. 308,548
2 Claims. (Cl. 236—34)



2. A thermosatically-operated valve comprising a fixed seat and a movable valve element arranged to control the flow of liquid therepast, thermostatically-operated power means responsive to liquid temperature change for moving the valve element toward or away from the seat; said power means comprising a cup and a sleeve extending axially therefrom; an elastomeric diaphragm clamped between the cup and sleeve at the cup-sleeve interface; thermal expansion material sealed within the cup by the diaphragm; said sleeve having a tapering cavity extending from the end thereof which mates with the diaphragm, and a guide bore extending from the smaller end of the tapering cavity; a piston slidably disposed within the guide bore; a flowable force-transmitting material occupying the cavity and a portion of the guide bore; and sealing means interposed between the force-transmitting material and piston; said sealing means comprising a radially compressed elastomeric plug, a first anti-extrusion disc between the plug and piston, and a second anti-extrusion disc between the plug and force-transmitting material.

3,182,911
DUAL THERMOSTATIC VALVE

Harold Burton Drapeau, Oak Park, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Oct. 17, 1963, Ser. No. 316,965
2 Claims. (Cl. 236—34)



1. A waterline thermostat comprising:

a transverse wall piece having a throat formed therein defining a flow port and having a bracket connected thereto and extending across said flow port on one side of said wall piece,

a stirrup connected to said wall piece and extending across and spaced from said flow port on the other side of said wall piece from said bracket,

a temperature responsive power unit having a casing and having a power member guided within said casing and extensible therefrom upon increases in the ambient temperature above a predetermined critical point,

means mounting said power member on said stirrup and guiding said sensing portion within said bracket,

means biasing said sensing portion toward said stirrup,

a collar mounted on said casing and having an outturned flange,

a valve seat formed on said casing in spaced relation from said flange and facing in the direction of said flange,

an annular valve member guided for movement on said casing between said valve seat and said flange and having a seating surface formed on its outer periphery and engageable with said throat to control fluid flow therethrough,

a second seating surface formed on the inner periphery of said valve member and engageable with said valve seat,

wherein an annular flow passage is formed between said power unit and said valve member,

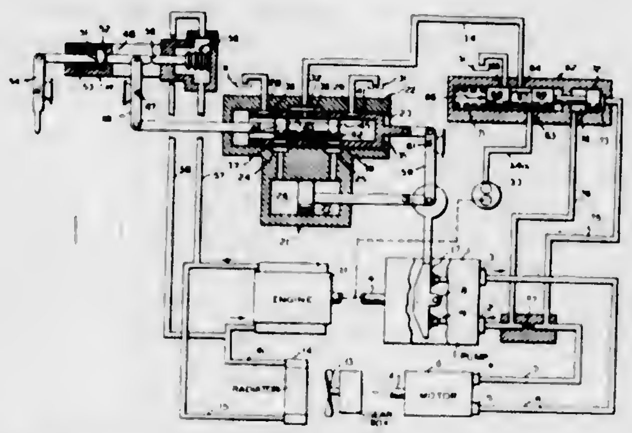
means biasing said valve member in the direction of said stirrup, and

means on said casing for varying the spaced relation between said flange and said valve seat.

3,182,912
HYDROSTATIC TRANSMISSION CONTROL SYSTEM

Charles O. Weisenbach, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey

Filed May 2, 1963, Ser. No. 277,550
6 Claims. (Cl. 236—35)



1. In combination

(*a*) a hydrostatic transmission including a motor and a variable displacement pump, connected in a closed circuit, both the pump and the motor being of the rotary cylinder barrel, longitudinally reciprocating piston type;

(*b*) a fan connected with the motor;

(*c*) a variable speed prime mover connected with the pump;

(*d*) first means responsive to changes in a condition for varying the displacement of the pump to thereby increase and decrease fan speed; and

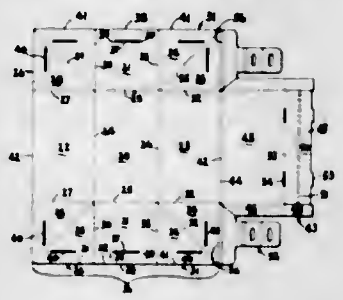
(*e*) override means responsive to fan speed for overriding the first means and limiting the displacement of the pump to a predetermined maximum value.

3,182,913
CARTON

James A. Brian, San Antonio, Tex., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

Filed Mar. 4, 1963, Ser. No. 262,541
6 Claims. (Cl. 229—31)

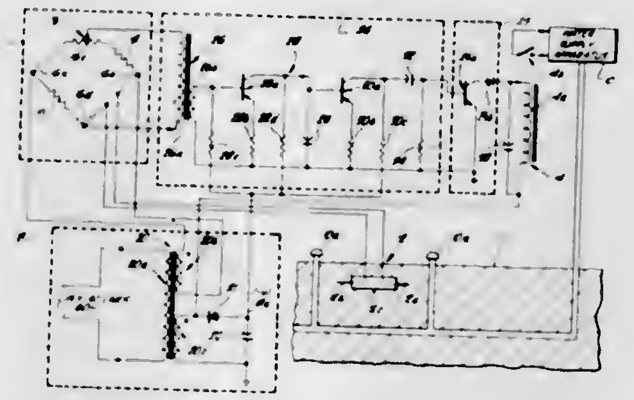
1. A self-locking carton formed from a unitary foldable blank, the carton having a bottom panel with side and end wall panels hingedly connected to the edges thereof and disposed in upright relation, the side and end walls connected by corner scores to bellows fold sections, said sections disposed in substantially parallel relation to the end wall panels, the end wall panels and bellows fold sections each having top edges in horizontally aligned relation, locking slots in each end wall panel and in the bellows fold sections in aligned relation, an integral locking member at each end of the carton foldably connected to one of the top edges, said locking members being scored to determine a series of foldably connected panels with a first panel disposed on the top edges, a second panel in flatwise relation to the respective end wall panel and bellows fold sections, and a third panel projected through the locking slots, the end wall panels and bellows fold sections being secured in fixed relation by the wrapping engagement of the locking members with the respective top margins of the end wall panels and bellows fold sections.



3,182,914
AUTOMATIC WATERING DEVICE

Richard D. Hosler, 7449 Norwood Place, San Gabriel, Calif.

Filed Aug. 19, 1963, Ser. No. 302,886
4 Claims. (Cl. 239—63)

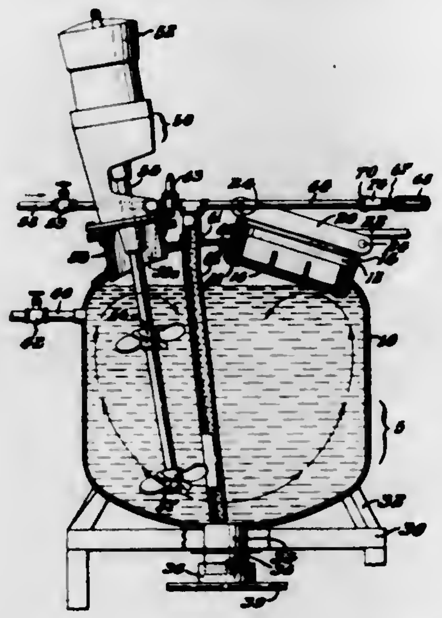


1. In an automatic watering system: a pair of metallic moisture sensing probes adapted for sensing the moisture content of soil, the resistance between the probes being indicative of the moisture content of the soil, a resistive bridge circuit having one leg connected to said probes and first and second pairs of terminals, control means for said water system adapted to be responsive to the coincidence of two signals in predetermined phase relationship for activating the watering system, means for applying an alternating current signal of predetermined frequency to said control means and to said first pair of terminals, means adapted to apply a second signal to said control means having a phase relationship to the alternating current signal determined by the phase of the input signal thereto, a transformer adapted for coupling the signals formed at said second pair of terminals to the last mentioned means causing such means to apply a signal to said control means in said predetermined phase relationship with the alternating current signal and thereby cause the control means to activate the watering system when the moisture in the soil in between the probes is dry causing a predetermined value of resistance between the probes.

3,182,915
HIGH PRESSURE REFRACTORY GUN

Alva S. Arwine, Phoenixville, Pa., assignor, by mesne assignments, to Refractory & Insulation Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 26, 1963, Ser. No. 261,072
2 Claims. (Cl. 239—142)

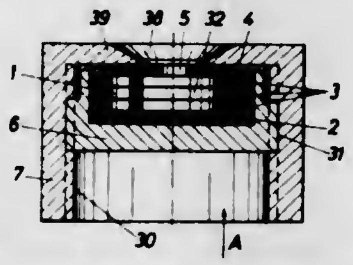


1. A high pressure refractory gun comprising, in combination, a mixing tank for holding a suspension of finely divided metallic ore refractory particles; a tank discharge tube extending angularly downwardly and inwardly toward, and having its open lower end substantially at, the bottom center of the tank, said tube having its upper end spaced away from the vertical center axis of said tank; a propeller shaft extending angularly downwardly and inwardly toward, and having its lower end near to, the lower end of said tank discharge tube; a propeller mounted at said lower end of said shaft; a spray-directing nozzle remote from said tank; a conduit of substantial length connecting to said spray-directing nozzle; junction means connecting a source of compressed air to the top of said tank, connected to said discharge tube and also to said conduit, for maintaining air under pressure on the surface of the suspension within the tank thereby to tend to force such suspension through said tank discharge tube and out through said conduit.

3,182,916
ATOMIZING NOZZLE

Ferdinand Schulz, 5 Arsenal, Vienna, Austria

Filed June 27, 1963, Ser. No. 291,039
Claims priority, application Austria, June 29, 1962, A 5,213
9 Claims. (Cl. 239—468)

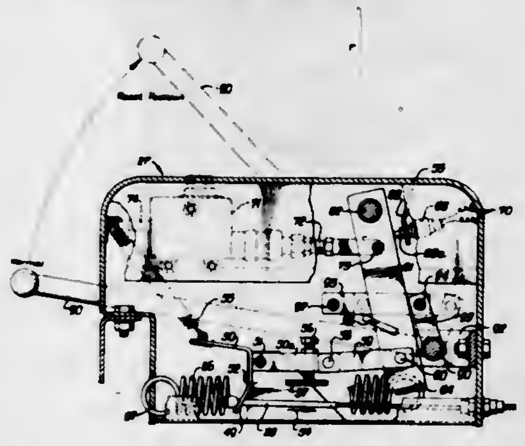


1. A swirl generator for an atomizing nozzle comprising a plurality of thin superimposed plates each having opposite parallel surfaces and an edge formed as a curve to define part of a swirl chamber, the peripheral contours of said plates being congruent, means including supporting end members clamping said plates together with their parallel surfaces touching to form a stack and with said curved edges aligned to form a single swirl chamber, means for preventing relative angular dislocation of the plates in the stack with respect to each other, openings in said supporting end members for the flow of the liquid to be atomized to said swirl chamber and for the outflow of atomized liquid from the swirl chamber, and at least one liquid inlet extending over the full height of said stack and communicating laterally with said swirl chamber formed by the curved edges of said plates.

3,182,917
BRUSH CHIPPER SAFETY CONTROL

Simon Tamny, Los Angeles, and Donn B. Furlong, Claremont, Calif., assignors to Wayne Manufacturing Company, Pomona, Calif., a corporation of California

Filed Mar. 25, 1963, Ser. No. 267,653
9 Claims. (Cl. 241—36)



1. In combination with a wood chipping machine comprising a chipping rotor, an engine for driving the rotor, said engine having an electrical coil circuit, and a chute positioned for manual feeding therethrough of brush or the like to the rotor, safety control mechanism comprising

(A) cutout means in said coil circuit operable to de-energize the engine,

(B) a brake system operable to arrest rotation of said rotor,

(C) spring means,

(D) means for manually stressing said spring means,

(E) means for releasably retaining said spring means in stressed condition,

(F) means for manually actuating said retaining means to release the spring means from stressed condition, and

(G) means for transmitting the energy of the spring release to said cutout means to de-energize the engine and to said brake system to stop the engine and rotor.

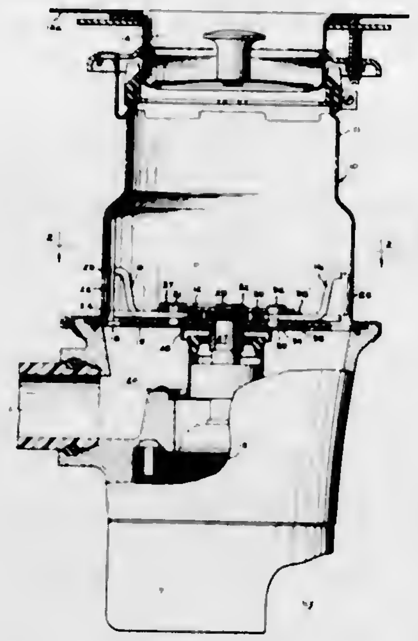
3,182,918
IMPELLER MEANS FOR FOOD WASTE DISPOSER

William M. Shive, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Dec. 4, 1962, Ser. No. 242,201
5 Claims. (Cl. 241—46)

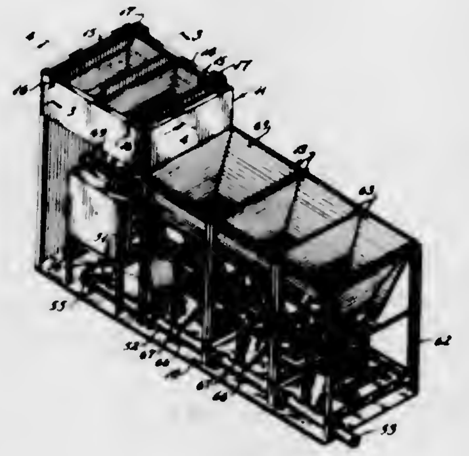
2. In a food waste disposal apparatus having a stationary hopper enclosing a comminuting chamber, a rotatable comminuting assembly including a circular flywheel and a waste impeller means mounted on the top surface of said flywheel, the flywheel having a vertical axis of rotation and forming a bottom wall of said comminuting chamber, a drainage chamber disposed beneath said flywheel for receiving water and comminuted waste material from said hopper; the invention comprising a waste impeller means in the form of a pair of oppositely disposed swinging impellers formed of rod-like material where each impeller is formed with a pair of arms that are connected together by a bight portion, pivot means fastened to the flywheel and cooperating with the bight portion so that the impeller may swing thereabout, said bight portion extending at least partially around said pivot

means, said pair of arms extending from said bight portion in the same general direction, the distal end of one arm being raised above the distal end of the other arm to present both a high and a low silhouette.



3,182,919
DISK TYPE FEED BLENDER AND COMMINUTER

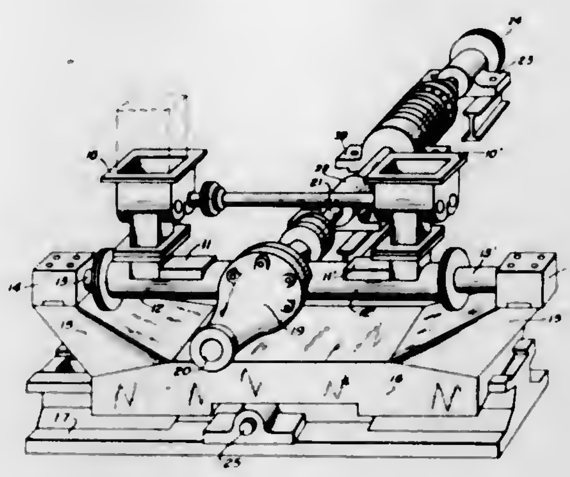
Petrus J. Geerlings, 2426 W. 4th St., Waterloo, Iowa
Filed Oct. 25, 1963, Ser. No. 319,032
7 Claims. (Cl. 241—101)



1. A disk type blender for integrating a plurality of feeds in exact proportions according to a predetermined formula comprising a housing, at least one grain unit and at least one granular material unit located within said housing, each of said units having hopper means for containing material to be blended, volume control means including a feed box for receiving material from said hopper, said feed box having a tapered discharge opening in one side, an adjustable gate regulating the flow of material through said discharge opening, means exteriorly of said housing for controlling the position of said gate relative to said discharge opening, a disk for receiving material from said feed box, scraper means carried by said feed box and extending transversely of said disk and in engagement with the upper surface thereof for discharging material therefrom, a mixing chamber located below said disks and adapted to receive material from each of said units, and an auger in said mixing chamber for blending and transferring said materials.

3,182,920
APPARATUS FOR REPULVERIZING A COMPRESSED PLUG

Joseph Daniels, Essen, Germany, assignor, by mesne assignments, to Koppers Company Inc., Pittsburgh, Pa., a corporation of Delaware
Filed May 22, 1963, Ser. No. 282,374
3 Claims. (Cl. 241—282)



1. An apparatus for transferring finely divided solid material from a space under atmospheric pressure to a space under superatmospheric pressure comprising:

(*a*) a triturating member mounted on a shaft journaled for rotation about a first axis;

(*b*) an annular member disposed around and fixed relative to said triturating member, said triturating member and said annular member having therein countercooperating grooves forming cutting edges dispersed on the respective adjacent surfaces of said triturating member and said annular member;

(*c*) a pair of axially aligned cylinders communicating with said annular member and disposed so that the common axes of said cylinders perpendicularly intersects said first axis;

(*d*) pistons reciprocably disposed in said cylinders;

(*e*) means to rotate said triturating member;

(*f*) means to introduce finely divided material into said cylinders for action thereon by said pistons;

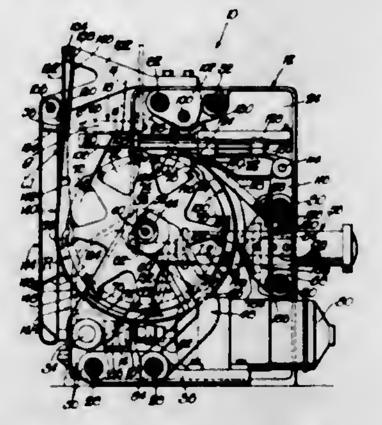
(*g*) means operatively linking said pistons for alternately reciprocating said pistons toward said rotating triturating member whereby said material is alternately compressed in said cylinders, is moved toward said cutting edges and threeby triturated; and

(*h*) means to conduct said triturated material away from said annular space.

3,182,921
CONTINUOUS REEL-WINDING APPARATUS

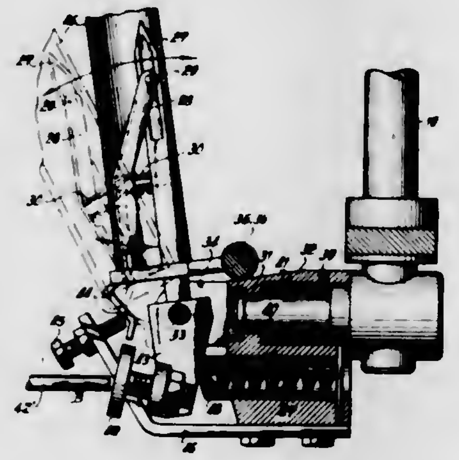
Alden W. Nelson, West Mystic, Conn., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Aug. 1, 1963, Ser. No. 299,268
9 Claims. (Cl. 242—25)

1. In stock-winding apparatus, the combination with means for removably supporting axially aligned rotary reels, separate drives for the supported reels, a guide operative to lead stock onto either reel and cross it over to the other reel, and a knife in the path of crossover stock between and taken around by the driven reels for severing the stock, of a shield extending around the supported reels nad having a gap through which the stock extends on its wind onto either reel and crossover to the other reel, said shield being continuous around the reels except at said gap to serve as an uninterrupted slide track to and from said gap for any spinning stock end, with a first length of said shield immediately following said gap in the drive direction of the reels gradually approaching the supported reels and being of adequate length to intercept within its lengthwise extent any loose stock end whipping through said gap.



3,182,922
AUTOMATIC WINDING DEVICE, PARTICULARLY AN AUTOMATIC CROSS-WINDING DEVICE WITH MOVING WINDING LOCATIONS AND A STATIONARY KNOT-JOINTING- AND SPOOL-CHANGING-APPARATUS

Karl August Müllers, Grossheide 55, Monchen-Gladbach, Rhineland, Germany
Filed Dec. 4, 1962, Ser. No. 242,267
4 Claims. (Cl. 242—35.5)



1. An automatic winding device, particularly a cross-winding device, comprising

a socket,

a rotor mounted on said socket and defining along its periphery a plurality of winding locations,

an immovably disposed knot-jointing unit disposed adjacent said rotor and including a thread knot-jointing device, as well as an intermittently rotating magazine receiving a plurality of reserve cops,

a plurality of holder members disposed at the periphery of said rotor to provide one of said holder members for each of said winding locations,

a cop carried by each of said holder members,

each of said holder members including and rotatable about a bearing pin,

a pivot disposed crosswise to the longitudinal axis of said bearing pin,

a spindle swingably mounted on said pivot,

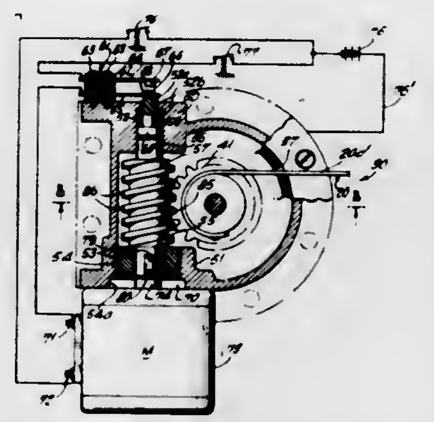
means for supporting and clamping means for retaining said cop in a predetermined position on said spindle,

means including a drive rod and a stripper lever adapted to be operated by said knot-jointing unit for swinging out said spindle and moving said cop supporting means relative to said spindle in order to throw off said cop from said spindle by turning said stripper lever, and

means adapted to be operated by said knot-jointing unit for swinging said spindle about said pivot into an inclined cop receiving position simultaneously releasing said clamping means for retaining said cop.

3,182,923
SEAT BELT REEL MECHANISM

Bela Botar, 51—36 65th Place, Woodside 77, N.Y.
Filed May 15, 1963, Ser. No. 280,561
1 Claim. (Cl. 242—55)



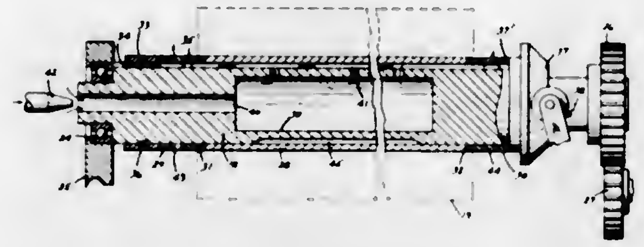
Seat belt mechanism comprising a reel shaft having an axis, a reel and a worm wheel mounted on said reel shaft so as to be rotatable in unison, a reversible electric motor having an output motor shaft having a motor shaft axis, means mounting said motor shaft with its axis transverse to and offset from the reel shaft axis, a worm shaft having a worm shaft axis, means mounting said worm shaft to be rotatable about its axis and axially slidable, said motor and worm shaft being opposingly and axially aligned and having cooperating spline means drivingly coupling said motor shaft to said worm shaft while permitting said axial sliding movement of said worm shaft, a worm fixedly mounted on said worm shaft and drivingly meshing with said worm wheel, means biasing said worm shaft in axial direction toward said motor shaft, a seat belt having one end wound on said reel, unreeling tension on said seat belt being operative by interaction of said worm wheel and said worm to move said worm shaft in the other axial direction thereof, said electric motor having a ground and a first input terminal corresponding to reeling action and second input terminal corresponding to unreeling action, a source of power having one side grounded, a normally open first switch connecting the other side of said power source to said first terminal, and a normally open second switch and normally open third switch in series connecting said other side of said voltage source to said second terminal, and means coupling said worm shaft and said third switch for closing said third switch by movement of said worm shaft in said one axial direction, said third switch comprising opposing contacts in line with the axis of said worm shaft, and spring means coupling said contacts and normally maintaining them spaced, one of said contacts positioned to be engaged by said worm shaft when moved in said one axial direction and thereby moved into operative engagement with the other contact.

3,182,924
WEB WINDING APPARATUS AND METHOD

Allen P. Jones and Bennett L. Jones, Sr., Fredericksburg, and Joseph A. Zitz, Stafford, Va., assignors, by mesne assignments, to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,212
6 Claims. (Cl. 242—68.1)

2. Web winding apparatus comprising a shaft, means for rotating said shaft at a substantially constant speed, a

core loosely mounted on said shaft, friction drive means connecting said shaft to said core, means for feeding a web to said core at a substantially constant linear speed, said friction drive permitting said core to slip about said shaft as the web builds up on the core whereby the web is wound at substantially constant linear speed onto the core, a longitudinal groove in the surface of said shaft, said groove extending beyond the ends of said core, and means for directing air under pressure through said groove to prevent overheating of the core due to the slippage of the core about said shaft.

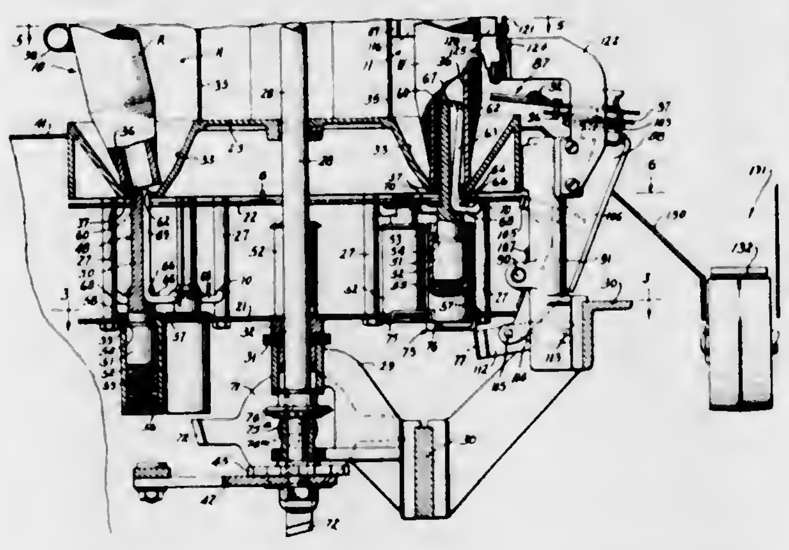


3,182,925
BOBBIN HANDLING MECHANISM FOR WINDERS

Richard D. Livingston, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois

Filed May 22, 1963, Ser. No. 282,425

27 Claims. (Cl. 242—130)



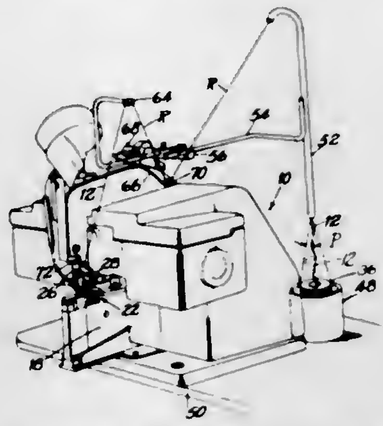
1. In a winder, the combination of, a magazine rotatable about an upright axis and having angularly spaced pockets each having an apertured bottom and opening outwardly to receive and support a bobbin standing on end in the pocket with its tubular core in registry with the hole in said bottom, means for indexing said magazine step by step to present the successive bobbins to and dwell the same in a winding position during unwinding of the thread therefrom, a plurality of skewers, one for each of said pockets mounted on said magazine for endwise movement from a lower inactive position upwardly through said bottom hole to telescope within the bobbin core over a substantial length thereof, each skewer having a finger thereon movable outwardly from a normal collapsed position, means operating during advance of one of said bobbins toward said winding position in the indexing of said magazine to raise the skewer of such bobbin and telescope the same within the bobbin core, and means operable during such raising of the skewer beyond a predetermined position within said core to move said finger outwardly against the internal wall of said core.

3,182,926
STRAND GUIDING DEVICES

Herman A. Imhof, Hamilton, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Nov. 28, 1962, Ser. No. 240,702

3 Claims. (Cl. 242—157)



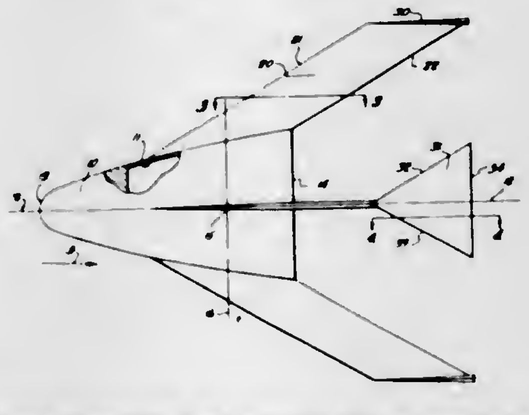
1. An article stringing machine for passing a flexible twisted strand such as a string from a fixedly supported wound supply package to an article including an element which disturbs the normal twist of the strand by adding twist to the length of strand between the supply package and the twist-disturbing element in combination with a tubular guide member mounted generally in alinement with the winding axis of the package and through which the strand passes while undulations in the strand cause the strand frictionally to engage the internal walls of the guide member, an eye spaced from the guide member, through which eye the strand also passes in advance of the machine, and yielding means between the guide member and the eye for maintaining the strand under continuous light tension to prevent the formation of obstructions in the additively twisted length of strand during periods when the strand is at rest because the machine does not require strand.

3,182,927
STABILIZED TEST HEAD

Taras Kiceniuk and Allan J. Acosta, Altadena, Calif., assignors to Edcliff Instruments, Monrovia, Calif., a corporation of California

Filed Oct. 12, 1960, Ser. No. 62,193

1 Claim. (Cl. 244—1)



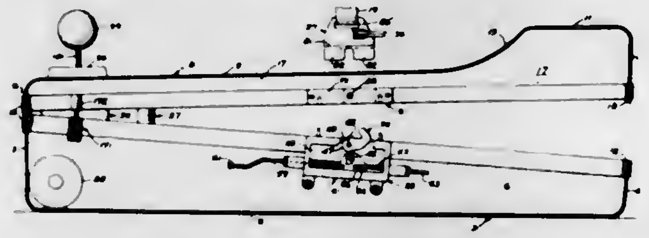
A test head for missiles and the like comprising a housing having a leading end and a trailing end with a reference axis extending between its leading and trailing ends, said housing to be pivotally mounted on a vehicle to be flight tested for pivotal movement of the housing about mutually perpendicular transverse axes which each intersect the reference axis at the same point and at right angles thereto, a plurality of elongated vanes fixed to the housing and extending outwardly therefrom, said vanes being spaced symmetrically about the reference axis of the housing and having a major portion spaced from the transverse axes in the direction of the reference axis, and a unitary wing on each vane with its chord plane extending transversely to the vane and spaced from the reference axis, each wing being spaced from the transverse axes in the direction of the reference axis, and each vane having a sharp leading edge which is sweptback and exterior surfaces which diverge outwardly continuously between the leading and trailing edges of the vane, said exterior surfaces of each vane being defined by a circular arc of the same radius on each side of the chord plane of the vane and lying in a plane perpendicular to the leading edge of the vane which arcs intersect at the leading edge of the vane and at the trailing edge of the vane are tangent to a parabola which circumscribes the arcs and which lies in the same plane as the arcs and has its vertex at the leading edge of the vane.

3,182,928
ACTUATING DEVICES FOR AERIAL SURVIVAL KITS

John A. Gaylord, San Rafael, Calif., assignor to H. Koch & Sons, Corte Madera, Calif., a corporation of California

Original application June 6, 1960, Ser. No. 34,104
Divided and this application Nov. 5, 1962, Ser. No. 235,916

5 Claims. (Cl. 244—1)



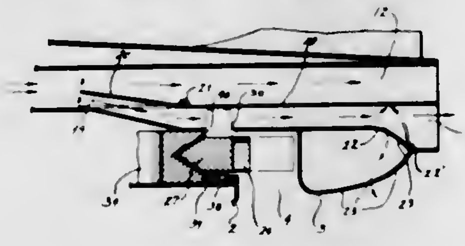
1. In an aerial survival kit, a rigid casing, a lid on the casing, sealing strips along the meeting edges of said casing and lid, and coacting locking means to interlock said case and lid including a hook frame secured to the case, a keeper frame secured to the lid in registry with the hook frame, a hook pivoted in the hook frame and swingable into the keeper frame, an element in the keeper frame engageable by the hook for locking said frames together, a traveling cam guided in said hook frame, a finger extended from said pivoted hook engaging said cam so as to be swung and held thereby, manipulating means on said case, and means to connect said cam to said manipulating means for moving said cam relatively to said finger so as to move said finger and turn said hook.

3,182,929
VERTICAL TAKE-OFF AND LANDING AIRCRAFT

Robert A. Lemberger, 2418 Amesbury, St. Louis 36, Mo.

Filed July 15, 1963, Ser. No. 294,814

3 Claims. (Cl. 244—12)



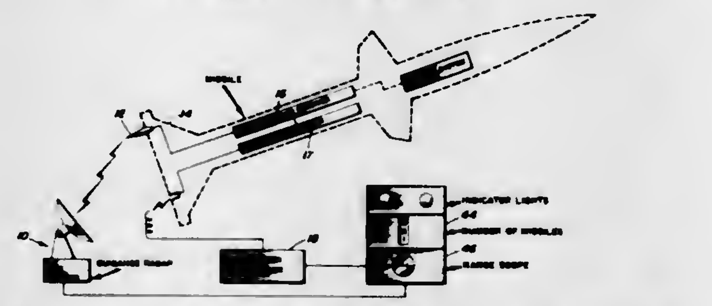
1. An aircraft comprising a fuselage, a power source provided in said fuselage, said fuselage having first and second gas exhaust ducts extending longitudinally of the fuselage and being disposed horizontally therein, said first duct being connected at its inner end to said power source and being in immediate overlying relationship with respect to said second duct, said second duct opening into said first duct at a point spaced from said power source, said first and second ducts being axially parallel and having outer, vertically aligned discharge ends, a closure plate presented across said opening for controlling gas flow between said first and second ducts, said closure plate being pivotally mounted for swingable movement between a first limit wherein it fully occludes said opening for preventing gas flow through said second duct and a second limit wherein it fully occludes said first duct for preventing gas flow therethrough, adjusting means for maintaining said closure plate in any selected position between said first and second limits for allowing of simultaneous gas flow through said first and second gas ducts for flight attitude control purposes, said second duct having a downwardly directed opening adjacent its discharge end, a baffle plate hingedly provided within said second duct between said downwardly directed opening and said discharge end for movement between a first position wherein it closes said discharge end for directing gas flow downwardly through said opening and a second position wherein it closes said opening to allow gas flow through said discharge end, an annular rotor mounted on said fuselage for rotative movement about a vertical axis, a plurality of first blades carried on said rotor and extending radially therefrom, a plurality of second blades carried on said rotor and extending upwardly therefrom in axial normal relationship to said first blades, said first blades being presented beneath said second duct, there being an aperture in said second duct in the portion thereof confronting said first blades, said second blades extending upwardly through said aperture in said second duct for projection thereinto for presentation within the path of exhaust gas directed thereinto by positionment of said closure plate whereby the impingement of said gas upon said second blades will effect relative movement of said rotor, said aperture being located between said closure plate and said baffle plate.

3,182,930
MISSILE IN FLIGHT INDICATOR

Joseph P. Randolph, Jr., Silver Spring, Henry B. Riblet, Kensington, and John W. Hamblen, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Oct. 10, 1956, Ser. No. 615,209

8 Claims. (Cl. 244—14)



8. A missile in flight indicator including, in combination with a radar transmitting a beam including coded pulse groups, a missile in the beam and having means for receiving and retransmitting the coded pulse groups, means remote from the missile for receiving and decoding the retransmitted pulse groups, and means connected to said last-mentioned means and synchronized with the radar for providing a visual indication of the range of the missile in the beam and the distance from the missile to a target in the beam.

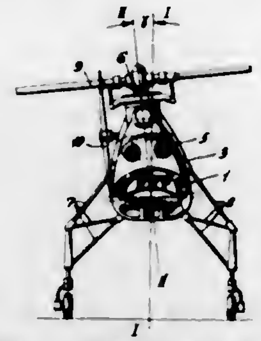
3,182,931
SINGLE-ROTOR HELICOPTER HAVING THE ROTOR AXIS CANTED TO THE VERTICAL

Mikhail Leontjevich Mil, Leningradskoje Chaussee 17, Apt. 63, and Alexandr Samoilovich Braverman, Sokolnichesky Val 6, Korpus 2, Apt. 47, both of Moscow, U.S.S.R.

Filed Dec. 30, 1963, Ser. No. 334,124

1 Claim. (Cl. 244—17.17)

A single-rotor helicopter comprising a cockpit, a fuselage associated with the cockpit, a power unit symmetrically mounted within the fuselage, a main rotor, a tail rotor, and a landing gear assemblage on which the fuselage is mounted whereby the fuselage, power unit and main rotor are inclined relative to a vertical line in



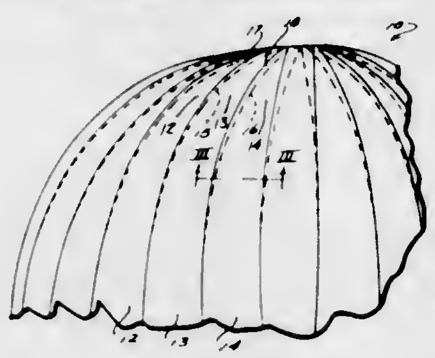
a direction opposite to the thrust developed by the tail rotor, said landing gear assemblage including asymmetrical left hand and right hand struts with said cockpit being positioned vertically when the fuselage is inclined to the plane of cockpit symmetry.

3,182,932
SIMULATED VARIABLE THICKNESS BALLOON

James A. Winker, Sioux Falls, S. Dak., assignor to Raven Industries, Inc., Sioux Falls, S. Dak., a corporation of South Dakota

Filed Aug. 30, 1963, Ser. No. 305,789

6 Claims. (Cl. 244—31)



1. A balloon structure comprising,

a balloon envelope having upper and lower ends and having a wall of light-weight flexible gas barrier material,

seams extending vertically for at least a portion of the envelope length joining gore portions of the balloon envelope,

and load-carrying vertical strips on at least one end secured to the balloon wall,

said strips gradually increasing in width toward the balloon end.

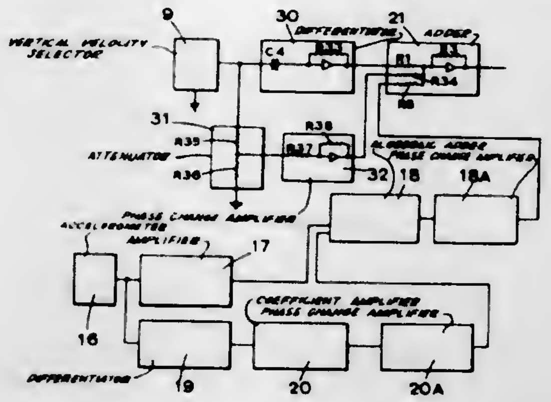
3,182,933
AIRCRAFT CONTROL SYSTEMS

Alfred John Smith and Eric Metcalf, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company

Original application Aug. 25, 1956, Ser. No. 606,908, now Patent No. 3,030,053, dated Apr. 17, 1962. Divided and this application July 26, 1961, Ser. No. 127,041

9 Claims. (Cl. 244—77)

1. An automatic control system for an aircraft of the type having means to exert a vertical lift thrust exceeding the weight of the aircraft independently of aerodynamic lift due to forward flight which comprises means operable to select the vertical acceleration which it is desired that the aircraft shall have and adapted to produce an electric signal which is a measure of the desired acceleration, means responsive to the vertical acceleration of the aircraft and adapted to produce an electric signal which is a measure of the quantity sensed, adder means adapted to receive the signals from the selector means and from the means responsive to the quantity sensed and adapted to produce an output electric signal which is a measure of the difference between the two signals, means to amplify said output signal, actuator means operated by the amplified signal, and vertical-thrust-varying means connected to the actuator means to be operated thereby to vary the vertical lift thrust of the



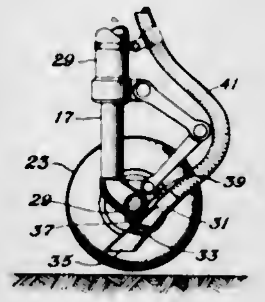
thrust exerting means acting on the aircraft, the arrangement being such that signals due to an increase in the selected upward vertical acceleration result in an increase of the vertical thrust, and that signals due to an increase in the actual upward vertical acceleration sensed result in a decrease of the vertical thrust.

3,182,934
AIRCRAFT LANDING GEAR WHEEL SAFETY DEVICE

George R. Clark, 7724 Gaston Ave., Fort Worth, Tex.

Filed Oct. 4, 1963, Ser. No. 313,857

3 Claims. (Cl. 244—103)



1. In aircraft having landing gear including wheels and tires, a system for use in preventing tire hydroskiing during landing and take-off from a runway surface, such system comprising:

(*a*) a source of compressed air;

(*b*) conduit means having discharge means mounted adjacent a said landing wheel and disposed to direct flow of said compressed air downwards and toward the region just above said runway surface and immediately ahead of said landing wheel tire;

(*c*) means connecting said compressed air source and said conduit means; and

(*d*) means for regulating and controlling the flow of compressed air in said conduit means.

3,182,935
VEHICLE ARRESTING GEAR SYSTEM

William J. G. Wischhoefer, 1202 Musket Court, Fairfax County, Va.

Filed July 30, 1964, Ser. No. 386,461

12 Claims. (Cl. 244—110)

(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A system for arresting the motion of a moving vehicle comprising:

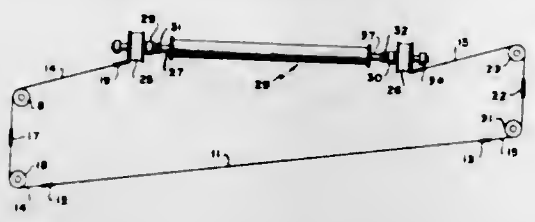
a hydraulic energy absorbing means having a rotatable shaft

a cylindrical tube surrounding a portion of said shaft;

a helical thread formed on the portion of said shaft surrounded by said tube;

a piston slidable within and keyed against rotation relative to said tube, said piston surrounding said shaft and having mating threads engaging with the threads on said shaft;

means engageable by a moving vehicle;



means connected between said vehicle engageable means and said shaft for rotating said shaft when decelerating a vehicle;

means connected to said hydraulic energy absorbing means for storing a portion of the energy of the moving vehicle; and

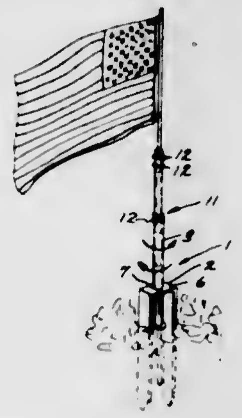
means connected to said shaft and to the energy storage means for restoring the system to its initial operating condition when the vehicle has been arrested.

3,182,936
FLAG POLE HOLDER

Abe Murdock, 4835 Calvert St., Washington, D.C.

Filed July 13, 1962, Ser. No. 209,591

9 Claims. (Cl. 248—44)



1. A flag pole supporting device comprising in combination a generally U-shaped member comprising a horizontal element having a first aperture therein and at least two vertical depending elements having pointed lower ends adapted to be driven into the ground so as to be in rigid engagement therewith, a tubular flag pole receiving member adapted to be rotatably received by said first aperture, a pad member having a second aperture therein, said aperture communicating with the bore of said tubular member when said tubular member is vertically and rotatably supported by said pad member and a rod member adapted to be received by said tubular member and said second aperture while inserted into the ground so as to be in rigid engagement therewith.

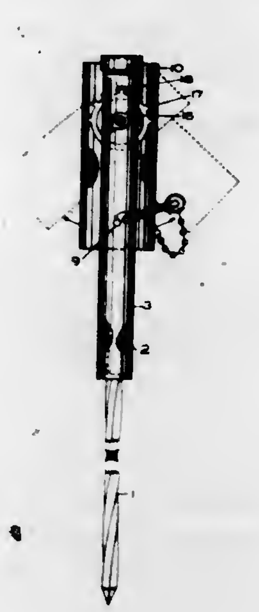
3,182,937
FISHING ROD HOLDER

Richard T. Manning, Box 242, Pincher Creek, Alberta, Canada

Filed July 1, 1964, Ser. No. 379,619

5 Claims. (Cl. 248—45)

1. A holder for fishing rods including a rod holding tube, a stand pipe, a bolt attaching the rod holding tube to the stand pipe with said tube and pipe free to move in parallel planes, and a disc on the bolt fixed to said tube interposed between the tube and stand pipe, said disc having a series of outwardly projecting lugs and the



stand pipe having an opening in which one or other of the lugs may be engaged.

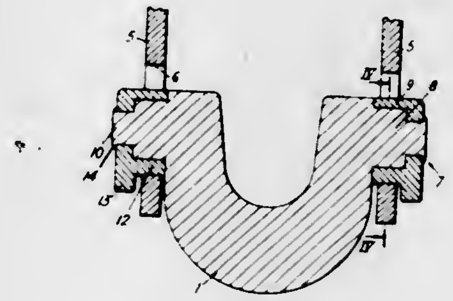
3,182,938
SUSPENSION CLAMPS FOR OVERHEAD ELECTRIC CONDUCTORS

William Gibbon, Childwall, Liverpool, England, assignor to British Insulated Callender's Cables Limited, London, England, a British company

Filed June 25, 1963, Ser. No. 290,442

Claims priority, application Great Britain, July 5, 1962, 25,816/62

6 Claims. (Cl. 248—63)



1. For a suspension clamp for an overhead electric conductor comprising a trough-shaped clamp body for reception of the conductor and means for suspending said body from a support, a trough-shaped body comprising:

(*a*) a part of a non-ferrous metal for reception of the conductor, and

(*b*) trunnions projecting laterally from opposite sides of said part for engaging said suspending means, each of said trunnions comprising:

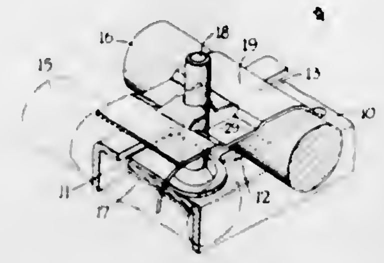
  (i) a core integral with and of the same non-ferrous metal as said part, and

  (ii) a bushing of wear-resisting metal having a base portion which has a wall thickness substantially greater than that of the remainder of the bushing and which is formed with an externally rounded periphery, said bushing tightly embracing the core in such a way that the base portion of the bushing lies below a horizontal plane containing the core axis, and

  (iii) means for preventing rotation of the bushing relative to its core.

3,182,939
FASTENER

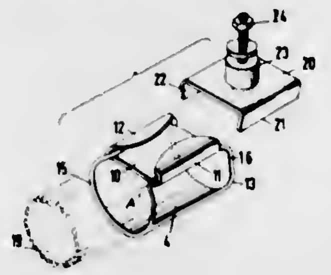
Clifford Alexander Seckerson, Iver Heath, England, assignor to Societe A. Raymond, Grenoble, France, a corporation of France
Filed May 6, 1963, Ser. No. 278,214
Claims priority, application Great Britain, May 9, 1962, 17,884/62
1 Claim. (Cl. 248—73)



A fastener for holding a member to a support, comprising a rod, a resilient base plate integral with and affixed to the rod and a resilient clamp movable over the rod, said clamp comprising a base portion having a median portion and a pair of end portions joined by said median portion, said median portion having a pair of teeth formed from material thereof, said teeth bent upward from said median portion and having longitudinal flanged edges and the remaining portion of said median portion being depressed to form a rectangular trough, said flanged ends of said teeth facing one another and said teeth formed to permit the rod to pass through a hole formed by the flanged ends of said teeth whereby when the clamp is moved toward the base plate the rod may be passed through said hole.

3,182,940
BINDING OR MOUNTING CLIPS

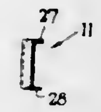
Edgar F. Emery, Prestbury, England, and Frank Down Emery, deceased, late of Cheadle Hulme, England, by Robert Chester Haworth, Manchester, Marjorie A. Fawkes, Davenport, and Edgar F. Emery, personal representatives, Prestbury, England, assignors to Insuloid Manufacturing Co. Limited, a company of Great Britain, Northern Ireland and Isle of Man
Filed Aug. 23, 1962, Ser. No. 219,347
2 Claims. (Cl. 248—74)



1. A binding clip for holding a bundle of elongated articles together comprising a substantially rectangular strip of stiff material of substantial width, the ends of said strip being rolled to provide a pair of hooks, said hooks being substantially parallel to said articles, an elastic ring of elongated substantially rectangular form, a transverse rectangular web across the central area of said ring, the end portions of said ring being rectangular loops of approximately equal size, the area of said web being approximately equal to the area of the openings in said loops, the width of said loops being sufficient so that the ends of said loops fit over said hooks, the ends of said strip being rolled inwardly so that the open ends of said hooks face each other, and a channel-shaped saddle having depending lateral flanges fits over said hooks, the width of said saddle being equal to the width of said strip, whereby said flanges grip the sides of said strip.

3,182,941
FASTENERS

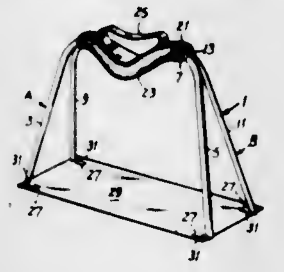
Clifford Alexander Seckerson, Iver Heath, England, assignor to United-Carr Incorporated, a corporation of Delaware
Filed Feb. 13, 1963, Ser. No. 258,311
Claims priority, application Great Britain, Feb. 16, 1962, 6,153/62
6 Claims. (Cl. 248—74)



1. An assembly of a member held to a support with the aid of a fastener, the support having two spaced apart slots, the fastener being channel-shaped and having two limbs joined by a web, a foot at the free end of each limb and a neck of reduced width adjacent the foot, a leading edge at the free end of each foot and a prong in each side edge of the foot adjacent the neck, the prongs in each limb being twisted in one angular sense with respect to the plane of the neck and the leading edge being twisted in the opposite sense with regard to the plane of the neck, the said member being embraced by the fastener and the limbs being engaged through the slots in the support whereby the neck of each limb extends transversely of a slot and the prongs in each limb engage behind the support to prevent withdrawal of the fastener and said member therefrom.

3,182,942
NURSING BOTTLE HOLDER

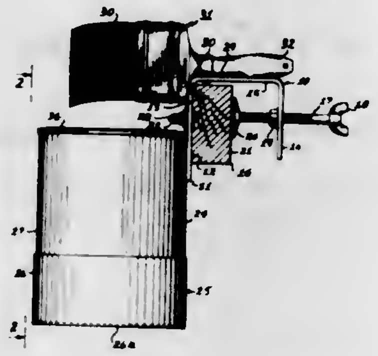
Marjorie A. Flanigan, 5938 Vivian Place, St. Louis, Mo.
Filed Sept. 17, 1962, Ser. No. 224,016
4 Claims. (Cl. 248—107)



1. A nursing bottle holder comprising a pair of support members, each support member comprising a pair of relatively flexible legs and a crosspiece extending between the upper ends of said legs, each pair of legs being spaced to straddle the body of an infant, each of said crosspieces having a saddle portion between said legs, means securing the crosspiece of one support member and the crosspiece of the other support member together at each end of said saddle portions, means for releasably securing a nursing bottle on said saddle portions, a base having a plurality of notches in each end thereof for releasably securing the legs of each support member in a fixed position with one leg of each support member being secured in a notch on one end of said base and the other leg of each support member being secured in a notch at the other end of said base, one leg of each support member being normally spaced apart from the other leg of the support member a predetermined distance lengthwise of the base and the respective legs of one support member and the corresponding legs of the other support member being normally closely adjacent each other at the ends of said base, the distance between the notches on one end of said base and the corresponding notches on the other end of said base being greater than said predetermined distance, whereby the legs of each support member may be moved away from each other and the respective legs of one support member may be moved away from the corresponding legs of the other support member to be releasably secured in said notches.

3,182,943
PAINT CAN AND BRUSH HOLDER

James E. Crossman, 1552 W. Van Buren, Phoenix, Ariz.
Filed Aug. 16, 1963, Ser. No. 302,569
1 Claim. (Cl. 248—210)

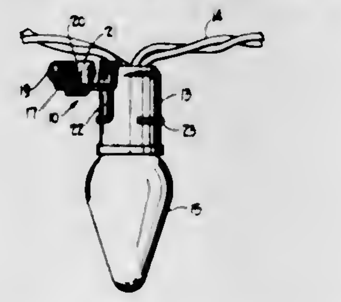


A paint can and brush holder comprising in combination:

(*a*) a clamp member consisting of,
(*b*) a clamp plate having a vertical abutment surface adapted to engage a surface of a scaffolding,
(*c*) a bent-over horizontal portion formed integral with the top edge of said clamp plate,
(*d*) a downwardly extending clamping screw plate formed integral with the rear edge of said horizontal portion,
(*e*) a clamping screw threadedly mounted in said clamping screw plate adapted to engage the scaffolding to hold said clamp plate abutment surface against the scaffolding,
(*f*) a clamp bolt fixed in said clamp plate,
(*g*) a downwardly extending can support arm having a horizontally disposed elongated slot pivotally and radially slidably mounted on said clamp bolt,
(*h*) a wing nut on said clamp bolt adapted to adjustably lock said can support arm to said clamp member clamp plate,
(*i*) a can carrying member fixed to the lower end of said can support arm including,
(*j*) a bottom and
(*k*) an annular ring surrounding the lower end of the paint can.

3,182,944
ORNAMENTAL LAMP HOLDER

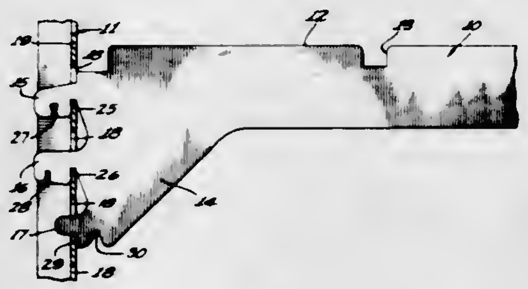
Sam Laviano, 10799 Sharon Road, Parma 30, Ohio
Filed June 19, 1962, Ser. No. 203,637
1 Claim. (Cl. 248—226)



In an assembly for mounting an electric lamp socket on the edge of a house drip board, or the like; a substantially U-shaped sheet metal strip, adapted to fit around the edge of the aforesaid drip board; a unitary, resilient, half-round wire, split ring having an upstanding terminal arm, normal to its circular plane, mounted on one leg of the U-shaped strip in a dependent position and adapted to receive and snugly encircle an electric lamp socket in a dependent position; and a threaded screw mounted through the other leg of the U-shaped strap, operable to move toward the first leg and against the aforesaid drip board positioned therebetween.

3,182,945
MULTI-ANGLE BRACKET

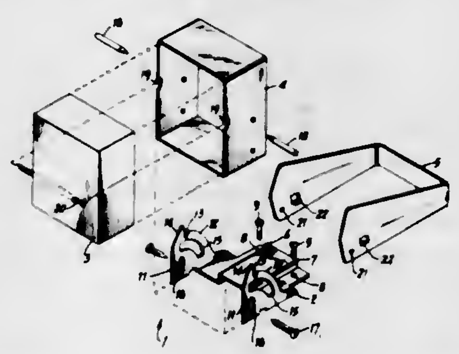
Gerald H. Sedo, West Covina, Calif., assignor to M & D Store Fixtures, Inc., a corporation of California
Filed Aug. 29, 1963, Ser. No. 305,290
5 Claims. (Cl. 248—242)



1. In a multi-angle bracket provided for attachment at different angles on a channel shaped sheet metal post having a vertical column of uniformly spaced slots formed therein, the combination of: a bracket arm adapted to support a shelf, said arm having a butt-end which is disposed adjacent said post when said bracket is mounted on the latter; upper and lower lugs extending rearwardly from said butt-end, said lugs being so dimensioned and so spaced vertically as to pass horizontally respectively entirely into a vertically spaced pair of said slots when said bracket is held horizontally and moved longitudinally butt-end first towards said slots, there being a first pair of notches individually located in the respective lower edges of said lugs which notches individually receive lower edges of different respective ones of said slots when said bracket is translated downwardly with said bracket in a right angular relation with said post, and a second pair of notches individually located in the respective lower edges of said lugs which are adapted to individually receive lower edges of said respective slots when said bracket is translated downwardly with said bracket in a different angular relation with said post.

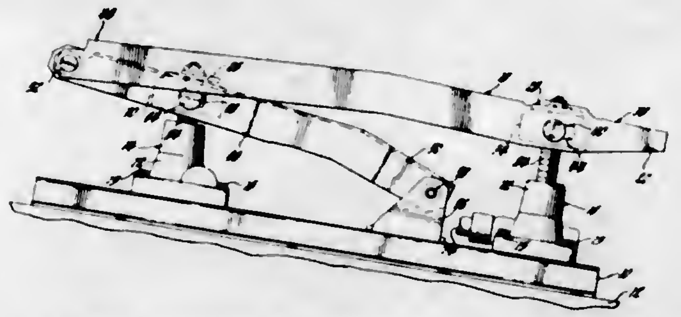
3,182,946
SWING-AWAY CAN OPENER

Nicholas Dudko, 44 Calumet Ave., Hastings on Hudson, N.Y.
Filed Jan. 23, 1963, Ser. No. 253,474
5 Claims. (Cl. 248—291)



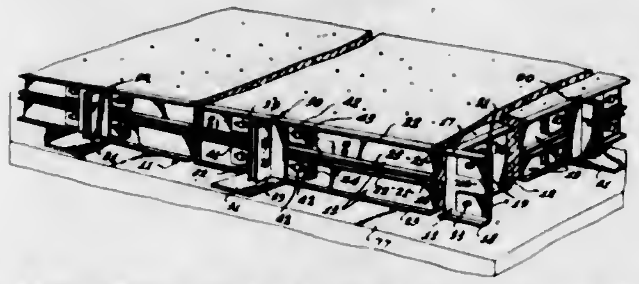
1. A movable mounting device comprising a base, spaced apart side members substantially vertical to said base, at least one of said side members including a curved channel, means adapted to support selected apparatus mounted on said side members and adapted to pivot from a substantially vertical position to a substantially horizontal position, and U-shaped locking means attached to said side members adapted to lock said support means in its horizontal position.

3,182,947
SEAT ADJUSTER
Akira Tanaka, Southfield, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 29, 1963, Ser. No. 254,774
5 Claims. (Cl. 248—421)



1. A seat adjuster having an upper support member, a lower support member, a pair of spaced extensible links actuatable to move one of said members generally vertically relative to the other member, one of said extensible links having one end rigidly secured to one of said members and having a connection at its other end to the other member, said connection accommodating generally horizontal lost motion in the plane defined by said pair of extensible links and pivotal movement between said one extensible link and said other member, a rigid link pivotally interconnecting said members and extending in a generally horizontal direction generally parallel to said plane, said other extensible link having connections at its respective ends to said rigid link and one of said members, one of said last named connections accommodating both pivotal and sliding movement of said other extensible link and rigid link in said plane, and the other of said last named connections fixing said rigid link and said last named member against movement in said plane.

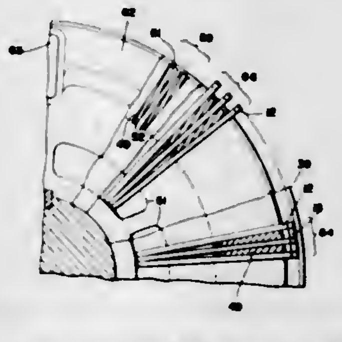
3,182,948
FORM FOR CONCRETE SLABS
Earnest Ralph Lawrence, 5684 Peggy Lane, Arlington, Calif.
Filed Aug. 2, 1962, Ser. No. 214,412
14 Claims. (Cl. 249—18)



1. A form for casting a concrete slab in horizontal position comprising: a plurality of form sections; and means connecting said sections together in substantially end-to-end relation to define a vertically enclosed volume of small height relative to its horizontal dimension corresponding to the slab to be cast therein, said form sections including corner end sections having substantially continuous vertical walls and intermediate sections having interrupted vertical walls providing horizontal slots in substantially the mid horizontal plane of the form for receiving and supporting the ends of slab reinforcing rods extending in the plane of the slab between sections at opposite sides of the form.

5. A form for casting a concrete slab in horizontal position comprising: a plurality of form sections; and means connecting said sections together in substantially end-to-end relation to define a vertically enclosed volume corresponding to the slab to be cast therein, said connecting means comprising horizontal base plates, supports extending vertically from said base plates, and attachment means extending transversely of said vertical supports and having means adjacent their opposite ends for attachment to the adjacent ends of said sections, said vertical supports each comprising a pair of vertically extending angles having oppositely extending, inwardly facing legs on which said attachment means are mounted and adjacent, outwardly extending legs spaced apart to provide a slot therebetween for the reception of an attachment tongue.

3,182,949
FINGERLESS DUCT SPACER FOR SQUIRREL CAGE ROTOR
Sterling S. Schacht, Twinsburg, Ohio, assignor to The Reliance Electric & Engineering Company, a corporation of Ohio
Filed Jan. 29, 1962, Ser. No. 169,502
6 Claims. (Cl. 249—60)



1. A temporary and removable spacer for forming a radial ventilating duct between adjacent laminations in a laminated squirrel cage rotor to be provided with conductor bars cast in aligned slots in annular laminations of predetermined outer diameter.

said spacer comprising, in combination, a first plurality of removable finger dies disposed between said adjacent laminations,

a second plurality of removable inserts disposed between said adjacent laminations in engagement with a small area of said adjacent laminations outboard of the slots,

said finger dies and said inserts alternating around the outer periphery of the laminations, .

the two opposite sides of said inserts adapted to engage the sides of adjacent finger dies,

means including the inboard end of said inserts and said two sides of said finger dies adapted to form mold means restricting the flow of casting material forming the conductor bars,

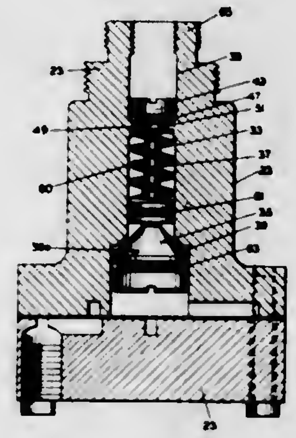
and said inserts being readily removable after casting said squirrel cage because of the small area of contact with said laminations and hence aiding ready removal of said finger dies by minimization of friction with adjacent side surfaces.

3,182,950
VALVE FOR AN ATOMIZING SPRAY NOZZLE
Franz T. Stone, 351 Northview Drive, Columbus, Ohio
Filed July 25, 1961, Ser. No. 126,696
12 Claims. (Cl. 251—63)

7. A spray nozzle valve comprising:

a main body having a bore, said bore having a constriction forming a valve seat and dividing the bore into an outlet end and an inlet end, the outlet end comprising a spraying chamber which is provided with a continuously open outlet opening and the inlet end having a concentric portion comprising a liquid supply chamber, and a concentric enlargement comprising a control chamber;

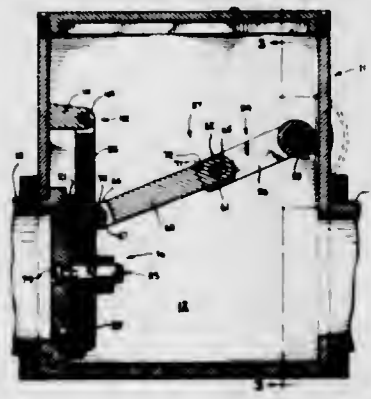
a valve element in said bore having an intermediate stem of relatively small diameter, having a poppet valve head which is larger in diameter than said stem on one end, and having a double diameter piston head at its opposite end with a small diameter head which is larger than the diameter of said valve head and which fits snugly in liquid supply chamber portion of said bore and a large diameter head which fits in said control chamber, the poppet valve head being, when the valve is open, wholly in said spraying chamber and, when the valve is closed resting on the valve seat to seal the constriction against the passage of liquid therethrough, the small diameter piston head being positioned at all times in the liquid supply chamber, and the intermediate stem being wholly in said supply chamber when the valve is closed;



means for supply liquid under pressure to said liquid supply chamber in the bore in the main body between said poppet valve head and said piston head which liquid acts on the inner face of said piston head to draw said poppet valve head more firmly on the valve seat on said constriction; and

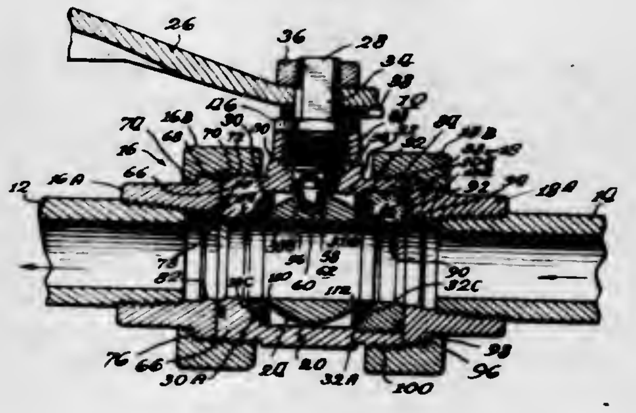
means for intermittently supplying gaseous fluid under pressure to said control chamber to the outside face of said large diameter head to counteract the pressure of the liquid in said bore in order to move said valve head from the valve seat, and for removing the pressure of said fluid from said control chamber when it is desired to close said valve.

3,182,951
PIVOTED VALVE
Kenneth L. Spencer, 2403 N. LaSalle St., Indianapolis, Ind.
Filed Jan. 18, 1962, Ser. No. 166,991
1 Claim. (Cl. 251—85)



A valve arrangement for liquid eliminating systems comprising a pair of conduits having straight coaxial spaced end portions, a valve housing connecting said end portions, one of said conduits defining a valve seat at its opening into said valve housing, said housing having a hollow interior a portion of which is above and out of registry with said conduits, a frustoconically shaped valve head, a spider having four radially extending arms, two of which extend vertically and oppositely and two of which extend horizontally and oppositely, each of said head and spider having concentric coaxial openings therethrough, a connecting element slidably received within said openings and having limiting surfaces limiting said spider and head against movement away from one another, a spring received between each of the four arms of said spider and said valve head, said spider being pivotally mounted about a horizontal axis upon said housing for swinging said spider and valve head up into said portion to a first position wherein said spider and head are out of the path of said conduits, said spider being swingable downwardly to a second position wherein said valve head is seated in said valve seat, a resilient annular seal secured to said valve head and completely surrounding said valve head in the radial direction, said seal cooperating with said valve seat to provide a sealing relation even with objects therebetween, a toggle mechanism including a pair of elongated elements a first of which is pivoted at one end to said spider and a second of which is pivoted at one end to said valve housing in said portion, one of said elements having a slot therein extending longitudinally thereof, a pin secured to the other of said elements and slidably received in said slot and connecting said elements, said toggle mechanism locking said spider in said first position against pressure within said one conduit and being received in said portion when said spider is in said second position, none of the adjacent ones of said springs being on the same horizontal level, the spring associated with one of said vertically extending arms being between and above the springs associated with said horizontally extending arms when said spider is in said second position, and means for swinging said second element to move said spider between said positions.

3,182,952
BALL VALVES
Robert P. Montesi, Chicago, Ill., assignor to Clayton Mark & Company, Evanston, Ill., a corporation of Delaware
Filed Oct. 30, 1961, Ser. No. 148,644
3 Claims. (Cl. 251—148)



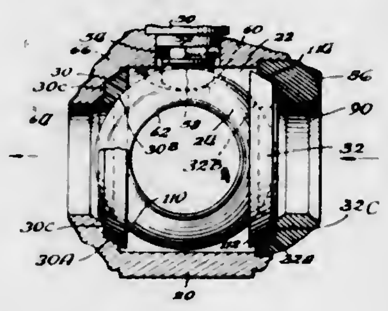
3. A ball valve including a body with a chamber, a rotatable ball valve in said chamber, said body having externally threaded end portions with radially extending planar end surfaces, one of the planar end surfaces on the body comprising an integral portion of the body and the other comprising an annular surface of an axially movable spacer having an axially extending peripheral portion encircled by a portion of the body, union ends having radially extending planar end surfaces abutted against the planar end surfaces of the body and spacer, respectively, sealing means interposed between the abutting end surfaces of said union ends and body and spacer, said spacer having and annular groove at the junction of its planar and peripheral portions, and said sealing means comprising a gasket located in said groove and having

radial and axial dimenisons greater than those of the groove so as to be compressed both radially and lengthwise of the body by the associated union end, and union nuts threaded onto the external threads of the body for detachably securing said union ends to the body.

3,182,953
BALANCED BALL VALVE

Robert P. Montesi, Chicago, Ill., assignor to Clayton Mark & Company, Evanston, Ill., a corporation of Delaware

Filed Oct. 30, 1961, Ser. No. 148,645
3 Claims. (Cl. 251—175)

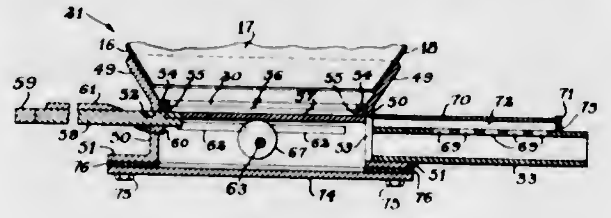


2. A valve, including in combination, a body having flow passage, a rotatable ball valve element having a flow passage aligned with that in the body in open position and rotatable about an axis and movable downstream of the body in flow stopping position, a seal for at least the upstream side of said ball comprising a first surface engageable with the ball and surrounding the aligned flow passages in open position, said seal having a second and peripheral surface that is tapered in a direction diverging outwardly and toward the axis of rotation of the ball valve element, and said body having a complementary tapered surface adjacent the tapered surface of the seal, the said tapered surfaces on the seal and body being in contact when the ball is in open flow permitting position and separating when the ball is moved downstream by pressure against it in flow stopping position, whereby the separated surfaces provide an annular passage around the seal to equalize pressures at opposite sides of the seal.

3,182,954
GATE VALVE DEVICES FOR HOPPER CARS

Jack W. Borger, Calumet City, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed June 30, 1961, Ser. No. 121,000
12 Claims. (Cl. 251—203)

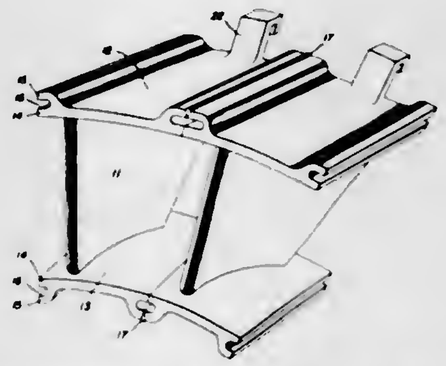


5. In a hopper, the provision of gating means defining the discharge end of said hopper, said gating means comprising a housing defining a discharge opening, a gate member mounted in said housing for movement across said discharge opening to open and close the same, operating means for said gate member, said housing along one side thereof below said gate member being in communication with external laterally projecting duct-like discharge means, and a gate member storage means forming a part of said duct-like means in axial alignment with said gate member and externally of said housing to receive said gate member therein during discharge through said discharge opening.

3,182,955
CONSTRUCTION OF TURBOMACHINERY BLADE ELEMENTS

John A. C. Hyde, Lincoln, England, assignor to Ruston & Hornsby Limited, Lincoln, England, a corporation of Great Britain

Filed Oct. 12, 1961, Ser. No. 144,740
Claims priority, application Great Britain, Oct. 29, 1960, 37,254/60
3 Claims. (Cl. 253—39.1)

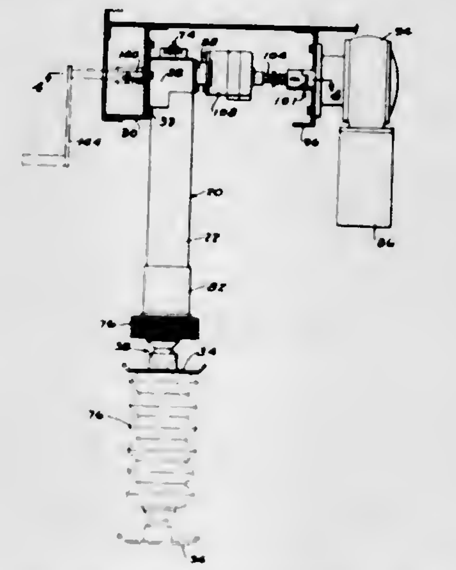


1. A turbo machinery stator blade stage comprising: a plurality of blade segments each including at least one generally radial blade and a plate which generally a segment of an annulus on at least one end of said blade and said plate having a pair of axially opposed edges; and means for connecting said blade segments to form a stator blade stage, said means including inner and outer, radially spaced lugs on the axial edges of said plate, said outer lug being crank-shaped in cross-section and having a portion offset radially from said plate, the contiguous inner lugs of adjacent segments abutting each other and the contiguous outer lugs of adjacent segments being welded to each other.

3,182,956
LANDING GEAR STRUCTURE FOR SEMI-TRAILERS AND THE LIKE

Thomas B. Dalton, Muskegon, Mich., assignor to Westran Corporation, Muskegon, Mich., a corporation of Michigan

Filed May 17, 1962, Ser. No. 195,778
10 Claims. (Cl. 254—86)



1. Powered landing gear structure for semi-trailers or the like comprising,

a leg having sections which are mutually extensible and shortenable,

means providing an anti-friction operating device connected with said leg sections for relatively extending and shortening them,

motor means, a drive shaft for the leg-operating device, and a unidirectional power-transmitting mechanism operably interposed between said motor means and drive shaft,

a transmission operable to transmit power from said drive shaft to said leg-operating device,

said transmission including shafting, a first clutch by which said shafting is releasably clutched to said drive shaft and a two-directional overrunning clutch operably interposed between said shafting and leg-operating device,

said overrunning clutch being operative to facilitate operation of said device by said shafting but to restrain operation of said device independently of said shafting,

an axially shiftable manually operable shaft having a driving connection into said transmission in two axial positions thereof,

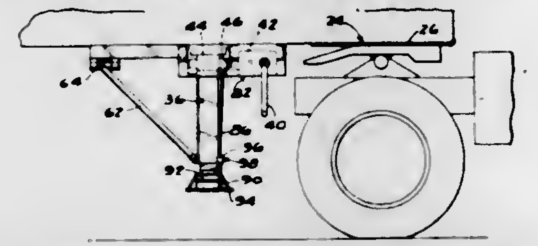
said first clutch being engageable and disengageable responsive to shifting of said manually operable shaft between said positions whereby selectively to actuate said leg operating device manually and by said motor means,

said unidirectional power-transmitting mechanism, when said first clutch is in engaged condition, being operative to restrain said manually operable shaft against rotation.

3,182,957
LANDING GEAR FOR SEMI-TRAILER VEHICLES AND THE LIKE

Thomas B. Dalton, Muskegon, Mich., assignor to Westran Corporation, Muskegon, Mich., a corporation of Michigan

Filed May 28, 1962, Ser. No. 198,020
6 Claims. (Cl. 254—86)



1. In a landing gear for semi-trailer vehicles and the like having a leg with a pivotal mount for swinging between a downward load-bearing position and a folded-upward position, the leg having upper and lower leg sections which telescope relatively to shortened and extended condition and means operable to telescope said leg sections, said landing gear having a leg-swinging strut which extends at an angle to the direction of telescoping movement of said leg sections and in partially shortened condition of said leg has a pivotal connection with an anchor adjacent said leg and a connection with said lower leg section,

improved structure wherein said pivotal connection has an axis which is displaced both horizontally from and below the axis of said pivotal mount for said leg,

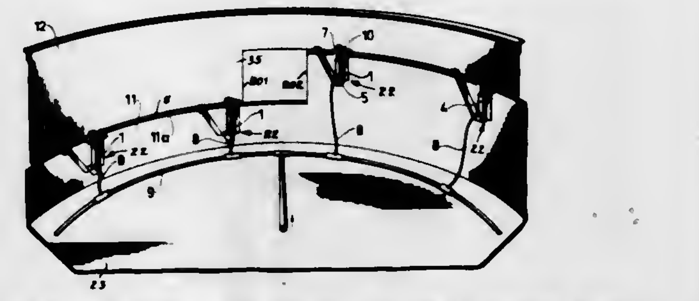
the vertical distance between said axes being greater than the horizontal distance therebetween, thereby creating a variable lever arm, the magnitude of which is generally in direct proportion to the angular distance of said leg from said downward position thereof, so that, as the force necessary to swing said leg upwardly increases, the upward force exerted on said leg also increases.

3,182,958
APPARATUS FOR ERECTING A VERTICALLY EXTENDING CYLINDRICAL CASING

Rodolfo Carmelo Peterzon-Arbella, Goteborg, Sweden, assignor to Rodoverken Svenungson & Co., Goteborg, Sweden, a corporation of Sweden

Filed Nov. 7, 1961, Ser. No. 150,703
6 Claims. (Cl. 254—89)

1. An apparatus for use in the erection of a vertically extending cylindrical casing, to turn an upper casing part relatively to a lower casing part divided from said upper part by a slot in the form of one turn of a helix, and comprising a lever, an abutment for supporting said upper part upon said lower part and located between said parts, means for suspending said lever from said abutment,

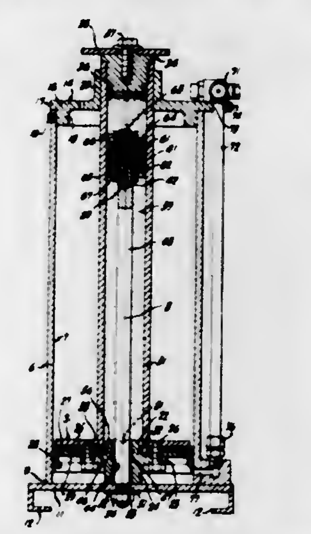


said lever being pivotally mounted on said means about an axis substantially radial to the axis of said casing, stops for limiting pivotal movement of said lever between two positions on the same side of the vertical, and means for extending said lever into engagement with the bottom edge of said upper casing part.

3,182,959
CONTROLLED PNEUMATIC JACK

George T. Hemmeter, 10791 Magdalena Ave., Los Altos, Calif.

Filed Apr. 29, 1963, Ser. No. 276,290
5 Claims. (Cl. 254—93)



1. A controlled pneumatic jack comprising a jack cylinder, a base head closing one end of said cylinder, an air piston hub having a central bore therein, a first flange on said air piston hub surrounding said bore, a tube, a second flange on said tube adjacent one end thereof, means engaging said first flange and said second flange for securing said tube against said first flange and around said air piston hub, an oil piston engaging the inner wall of said tube, a piston rod passing through said oil piston and through said central bore, means for detachably fastening said oil piston on said piston rod, means for detachably fastening said piston rod to said base head, and means forming a passage of determined flow area in said piston rod from one side of the other of said oil piston.

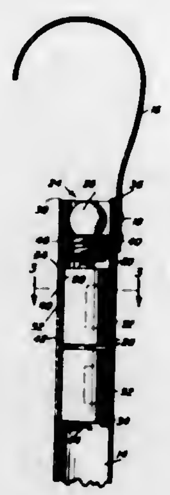
3,182,960
ELECTRICIAN'S WIRE FISH POLE

Alton A. French, 817 W. Norwood Courts, San Antonio, Tex.

Filed June 1, 1962, Ser. No. 199,478
5 Claims. (254—134.7)

1. A sectional wire fish pole comprising a straight head section, a straight body section, said head section being provided with a forwardly extending grasping means and an illuminating means, and means releasably securing said body section and head section together, said forwardly extending grasping means comprising an enlarged

flexible and resilient hook capable of being temporarily deformed for insertion through relatively small openings

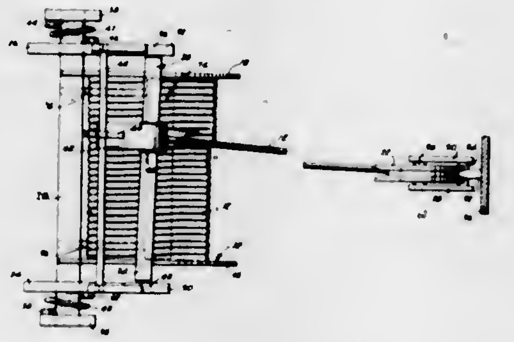


and subsequently automatically returning to its original shape.

3,182,961
COMBINED FLEET ANGLE COMPENSATOR AND BRAKING APPARATUS

Franklin L. Le Bus, Sr., Longview, Tex., assignor to Le Bus Royalty Company, Longview, Tex., a partnership

Filed Apr. 7, 1961, Ser. No. 101,443
9 Claims. (Cl. 254—175)



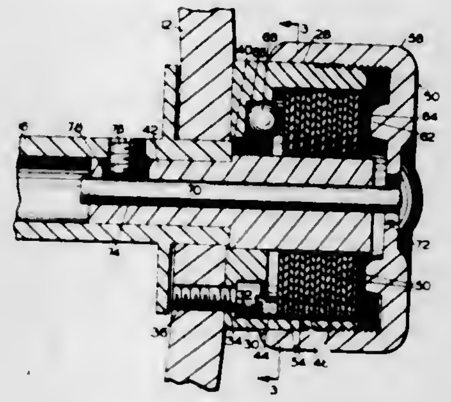
1. In combination with a drum having a cable wound thereon, a fleet angle compensator apparatus disposed in juxtaposition to the drum for receiving the cable, a braking mechanism connected with the fleet angle compensator apparatus, said fleet angle compensator apparatus responsive to tension in and pressure on the cable for maintaining the path of the cable substantially perpendicular to the longitudinal axis of the drum, said braking mechanism responsive to the tension in the cable for alternately engaging and disengaging the cable wound on the drum.

3,182,962
WINCH BRAKE

Robert H. Gray, Portland, Oreg., assignor, by mesne assignments, to Preferred Growth Capital, Inc., a corporation of Oregon

Filed June 8, 1962, Ser. No. 201,195
1 Claim. (Cl. 254—186)

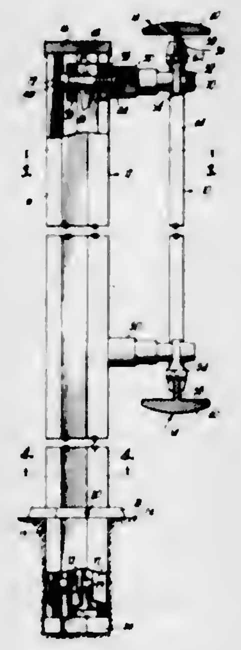
A winch structure in combination with an attachable brake comprising a housing having end walls with outer surfaces, a winding shaft journaled in said housing having one end projecting through one of said end walls of the housing, shaft winding means on said projecting end, ratchet and pawl means on said winding shaft and housing arranged to provide ratchet winding of said shaft, the other end of said winding shaft projecting through the other of said housing end walls and terminating substantially flush with the outer surface of said latter end wall, said latter end of the winding shaft being hollow, a brake driver shaft attachably secured in the hollow end of said winding shaft and projecting outwardly through said other end wall of the housing, said brake driver shaft being rotatable with said winding shaft, a brake housing attachably secured to said winch housing and confining a projecting portion of said winding shaft, an inner wall in said brake housing, first brake disc means splined on the projecting portion of said brake driver shaft, second disc brake means splined to said brake housing in face to face relation with said first disc brake means, and a brake actuating cap threadedly mounted on said brake housing for adjustable movement toward and away from the inner wall of the brake housing, said brake actuating cap having an end wall portion arranged for engageably compressing said first and second disc brake means together to apply braking forces on said brake driver shaft for controlled unwinding of the winding shaft.



3,182,963
SPLIT POST RAILING ASSEMBLY

Wenzel W. Thom, Wichita, Kans., assignor of one-half to Cecil D. Jones, Wichita, Kans.

Filed Feb. 12, 1962, Ser. No. 172,422
5 Claims. (Cl. 256—65)



1. A railing assembly for a structural unit comprising:

a post adapted to be mounted in an upright position on said structural unit and including a pair of spaced apart, elongated post members defining a longitudinally extending opening therebetween;

means releasably interconnecting said post members and movable longitudinally of the latter in said opening to any one of a number of fixed locations with respect thereto;

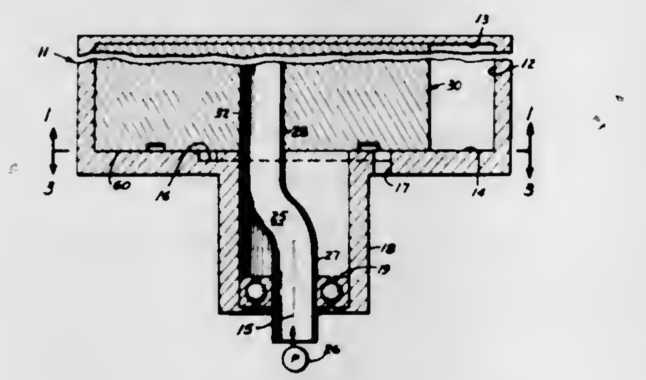
a railing member; and

means releasably coupling said railing member to said interconnecting means independently of the post member interconnecting action thereof.

3,182,964
VIBRATOR

George L. Malan, 560 E. Rowland, Apt. G3, Covina, Calif.

Filed Feb. 19, 1963, Ser. No. 259,503
10 Claims. (Cl. 259—1)



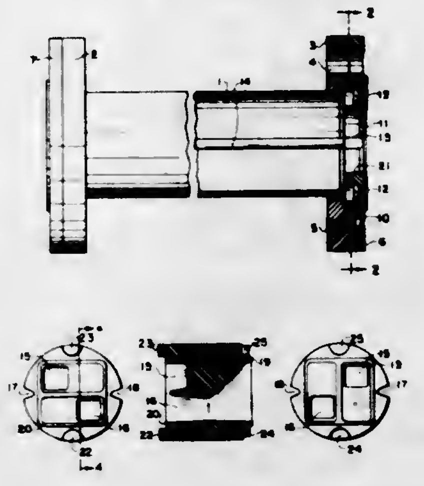
7. An eccentric rotary vibrator comprising: a housing; an internal cylindrical race in said housing; a pair of end restraints in said housing, said race and restraints at least in part defining an internal cavity therein, said cavity having an axis; a rotor inside said cavity having an axis, and lesser lateral dimensions than the race, an exterior peripheral surface, at least a portion thereof being a peripheral cylindrical bearing surface adapted to bear against the race in rolling contact therewith, said rotor having an axial distributor passage opening at one end thereof, a plurality of substantially radially extending plunger passages opening onto said peripheral surface, a plunger supply passage interconnecting each of said plunger passages to the distributor passage, a supply opening for each of said plunger passages, said supply openings being angularly spaced apart around said distributor passage, each plunger passage being in fluid communication with a respective supply opening, said supply openings being symmetrically disposed around the rotor axis; a distributor comprising an offset element journaled to the housing and in the distributor passage, said distributor having pressure port means and exhaust port means therein adapted alternatively and sequentially to overlap the supply openings; a pressure passage and an exhaust passage in the distributor, communicating respectively with the pressure and exhaust port means in the distributor; and a plunger in each of said plunger passages adapted to be extended to contact the housing, and to be retracted thereby to roll the rotor in the race by virtue of alternate connections of plunger passages to the pressure and exhaust port means of the distributor through the respective supply openings.

3,182,965
MIXER

Robert Sluijters, Arnhem, Netherlands, assignor, by mesne assignments, to American Enka Corporation, Enka, N.C., a corporation of Delaware

Filed Oct. 6, 1960, Ser. No. 60,917
Claims priority, application Netherlands, Oct. 13, 1959, 244,295
16 Claims. (Cl. 259—4)

1. In a liquid mixer without movable parts including a pipe having a supply opening and a discharge opening and at least two mixing elements, in abutting relationship, provided with end surfaces between said openings, each of said mixing elements having at least two channels there-

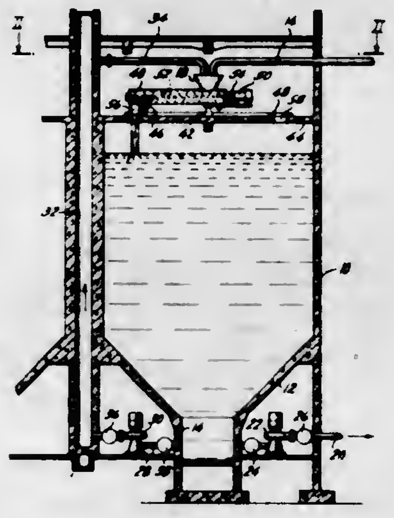


through, the improvement which comprises forming said mixing elements from an elastomeric material.

3,182,966
METHOD AND MEANS FOR EQUALIZING QUALITY FLUCTUATIONS IN MANUFACTURE OF FIBRE MASS

Åke Simon Carlsson, Burea, Sweden

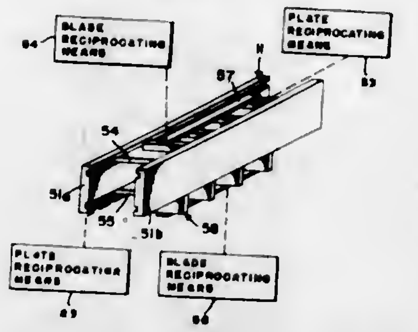
Filed Apr. 3, 1961, Ser. No. 100,409
Claims priority, application Sweden, Apr. 6, 1960, 3,423/60
10 Claims. (Cl. 259—4)



1. In a method for storing and mixing a paper pulp slurry in a storage chest preparatory to utilization of said pulp slurry in the manufacture of paper and paper board, which method is adopted to render more uniform the contents of said storage chest and minimize non-uniformities of pulp slurries introduced thereinto, the steps which comprise introducing said pulp slurry into said chest adjacent the top thereof above the surface of pulp slurry already in said chest and as a stream moving over said surface of slurry for enhancing admixture of newly introduced slurry with slurry already in said chest, withdrawing from adjacent the bottom of said chest portions of pulp slurry therein for admixing re-circulation with other portions of pulp slurry in said chest, admixing and combining said withdrawn portions of said pulp slurry with at least a portion of said slurry being initially introduced into said chest and as a part of said moving stream of slurry introduced at the top of said chest, and separately withdrawing from said chest portions of said admixed slurry for said paper and paper board manufacture.

3,182,967
APPARATUS AND PROCESS FOR HANDLING VISCOUS MATERIALS

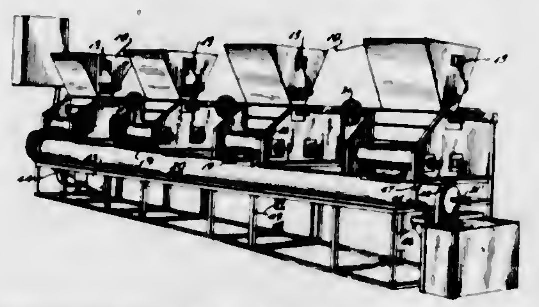
Donald C. Krahe, 3320 Curtiss, San Mateo, Calif.
Filed June 22, 1961, Ser. No. 118,792
14 Claims. (Cl. 259—4)


BLADE RECIPROCATING MEANS
PLATE RECIPROCATING MEANS
PLATE RECIPROCATING MEANS
BLADE RECIPROCATING MEANS
87
54
55
51b
58

1. Apparatus for processing viscous and granular materials comprising, in combination, a body member defining a container having a longitudinal axis, at least one plate slidably mounted on said container for reciprocating movement along the longitudinal axis of said container and forming an outer sliding wall thereof, said plate having at least one slot formed therethrough, a blade assembly having at least one blade to mate with said slot, said blade assembly being movable to move the blade in and out of said container, said blade shaped to compartmentalize said body member when inserted fully therein and to be scraped clean by the surfaces of the plate defining said slot as it is withdrawn from the body member, and means movable relative to said plate to scrape the interior side of said plate as it is reciprocated.

3,182,968
BELT TYPE FEED BLENDER

Petrus J. Geerlings, 2426 W. 4th St., Waterloo, Iowa
Filed Oct. 18, 1963, Ser. No. 317,193
3 Claims. (Cl. 259—9)



1. In combination a series of hoppers disposed in side by side relation and including means indicating the level of the contents in said hoppers, agitating means in said hoppers, said hoppers each having an opening in the bottom, wall structure defining a feed chamber beneath said hoppers, means for controlling the flow through said opening, means for controlling the size of said feed chamber, a mixing chamber for the ingredients of the several hoppers, a belt conveyor beneath each feed chamber for transmitting feed into said mixing chamber, and a screw conveyor in said mixing chamber for mixing and conveying feed to a point of discharge.

3,182,969
BLENDING APPARATUS

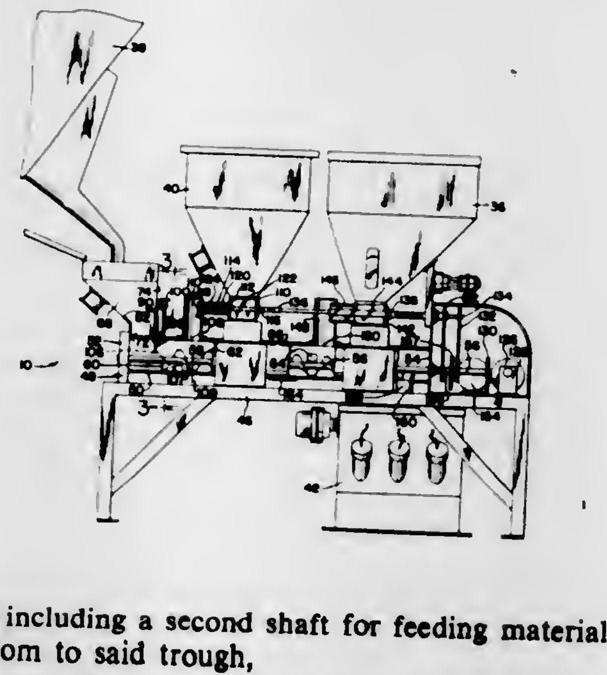
William L. Rupp, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Ann Arbor, Mich., a corporation of Michigan
Filed Oct. 31, 1961, Ser. No. 148,937
7 Claims. (Cl. 259—25)

5. In a system for supplying raw material to a molding machine for forming colored plastic objects,

(*a*) a screw conveyor comprising a substantially horizontal trough, a substantially horizontal first shaft mounted for rotation in said trough, and a first thread secured to said shaft and comprised of a plurality of end to end flights one endmost one of which is adjacent to and disposed in a spaced relation with one end of said trough,

(*b*) a hopper for virgin plastic material mounted above and communicating with said trough adjacent said one end thereof so that material from said hopper flows into said trough and across said one flight so that on each revolution of said threads a predetermined quantity of said material is moved axially of said shaft by said one flight, a gate slidably mounted on said hopper and projected into said trough in a direction transversely of said one flight for determining the location on said flight of said material to thereby control the amount of said material moved axially of said thread on each revolution thereof,

(*c*) hopper means for color concentrate material, means including a second shaft for feeding material therefrom to said trough,



(*d*) a hopper for reground colored plastic material, means for feeding material from said hopper to said trough at a position spaced from said one end thereof,

(*e*) container means communicating with said trough adjacent the opposite end thereof for receiving material discharged from said trough,

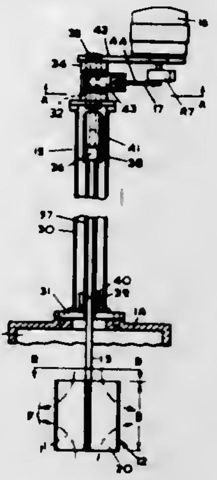
(*f*) conduit means connected to said container means and adapted to supply material therefrom to said molding machine,

(*g*) and common drive means for said shafts for maintaining a constant ratio of the rates of rotation thereof so that predetermined proportionate amounts of said virgin and color concentrate material are mixed by said first thread in said trough and are mixed with said reground material for delivery to said molding machine.

3,182,970
STIRRERS OR MIXERS

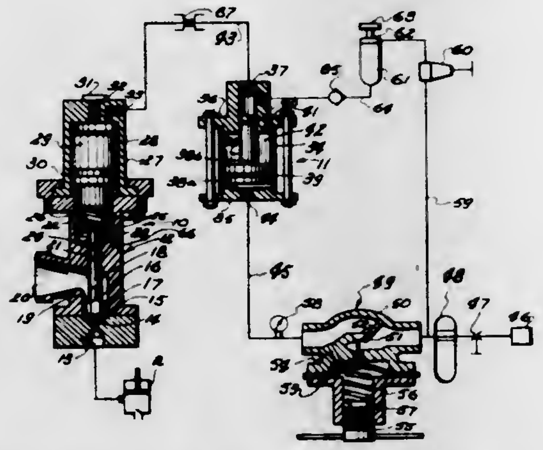
Alexander Ivanoff, Greenwich, Conn., assignor to Hayward Tyler & Company Limited
Filed Nov. 3, 1961, Ser. No. 150,046
10 Claims. (Cl. 259—95)

1. A liquid-mixing device comprising a vessel adapted to contain a liquid to be mixed in the vessel, a rotary shaft flexible in torsion, mounting means supporting said shaft in a position extending into the vessel, an impeller secured to one end of the shaft for immersion of the impeller into liquid contained in said vessel, said impeller including a plurality of vanes radially extending from the axis of the shaft, and oscillating rotary drive means coupled to a part of said shaft spaced apart from said impeller for oscillating said part through an angle of rotation and at a frequency substantially equal to the resonant frequency of oscillation of the system comprising the impeller, the shaft and liquid lying between said vanes.



3,182,971
HOMOGENIZING VALVE CONTROL

Alden H. Wakeman, Lake Mills, and Dan C. Roahen, Fort Atkinson, Wis., assignors, by mesne assignments, to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Oct. 21, 1963, Ser. No. 317,570
5 Claims. (Cl. 259—98)

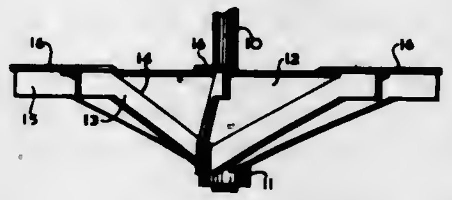


1. A homogenizing valve including a valve seat, a valve member to be urged toward said seat to effect homogenization of a product forced past said valve seat, hydraulic control means connected to said valve member for urging said valve member toward said seat, and pneumatic control means governing said hydraulic control means, for exerting a substantially uniform predetermined force on said valve member towards said seat as such product is forced past said valve seat, and wherein said control means include a cylinder having one end adapted to provide hydraulic pressure to said valve member, to urge the latter toward such valve seat, a piston mounted for reciprocation within said cylinder, and a pressurized fluid inlet disposed at the opposite end of said cylinder; the area of the piston surface adjacent said fluid inlet being substantially greater than the area of the piston surface adjacent said cylinder one end.

3,182,972
APPARATUS FOR THE AERATION OF LIQUIDS

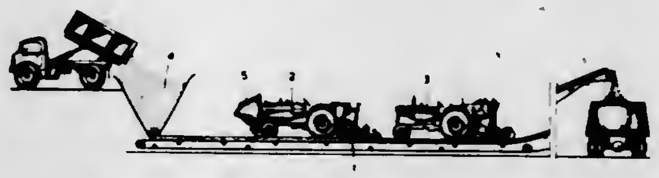
Charles Righton Alsop, Heald Green, Cheadle, and Robert Morrison Semple, Cheadle Hulme, England, assignors to Simon-Carves Limited, Cheadle Heath, England, a British company
Filed Dec. 12, 1961, Ser. No. 158,672
4 Claims. (Cl. 259—107)

1. Apparatus for the aeration of liquids which comprises a tank containing a body of liquid therein having a level, an agitator located in said tank for the aeration of said liquid, said agitator comprising a shell having a boss and a shell wall of substantially inverted conical curvature converging downwardly to said boss, arms having flat faces secured tangentially in circumferential succession to said boss and extending from said boss to the liquid level at an angle to the horizontal in circumferentially spaced positions about said shell with their upper edges secured to the under surface of said shell and at a slight angle to a radius extending from the axis of said shell to the arm, each said arm having an arm extending from its upper end horizontally outwardly from said shell with a horizontal upper edge at approximately said liquid level and with a lower edge extending horizontally below said liquid level, each horizontally extending arm having a deflector extending extending from its upper edge substantially horizontally in the direction of rotation of said shell, each deflector being horizontally spaced from the next deflector.



3,182,973
PROCESS FOR THE STABILIZATION OF SOIL MIXTURES

Freerk Anne van der Sluis, Arnhem, Netherlands, assignor to Nederlandsche Heide-Maatschappij, Arnhem, Netherlands, a corporation of the Netherlands
Filed Feb. 15, 1963, Ser. No. 258,699
Claims priority, application Netherlands, Feb. 19, 1962, 274,961
2 Claims. (Cl. 259—148)



1. A process for stabilizing soil, comprising the steps of feeding the soil onto a substantially horizontal endless conveyer which is mounted upon relatively stationary support means, regulating the amount of feed to obtain a layer of soil of predetermined thickness upon the endless conveyor, positioning tractor means having comminuting means and binder supply means above said endless conveyer in position to operate upon the layer of soil, comminuting the layer of soil, introducing binder into the layer of soil upon the endless conveyer, and discharging treated soil from the conveyer for transportation to a point of subsequent use.

3,182,974
CARBURETOR

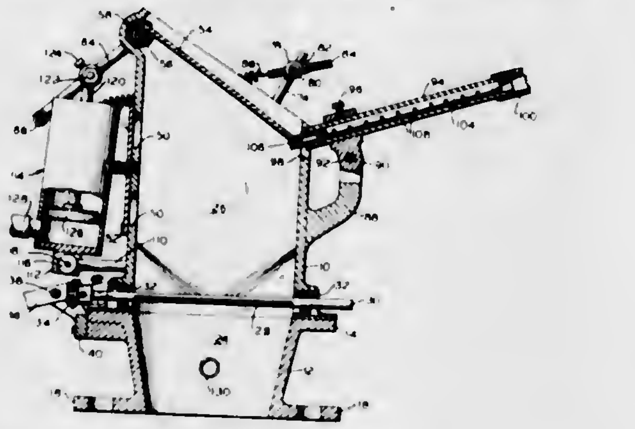
Raymond Roger Hill, Napa, Calif.
(11 White Cottage Road, Angwin, Calif.)
Filed Sept. 5, 1963, Ser. No. 306,960
22 Claims. (Cl. 261—20)

17. In a carburetor comprising a carburetor body defining at least in part a vacuum chamber adapted to communicate with the intake manifold of an internal combustion engine and a fuel mixing chamber having wall portions thereof and adjustable valve means for providing variable communication between said vacuum chamber and said mixing chamber, the improved means for introducing fuel and air into said mixing chamber which comprises:

(A) a valve door forming a first wall portion of said mixing chamber with said door having an edge adjacent to a second wall portion of said mixing chamber and defining with said second wall portion an entrance opening into said mixing chamber, means mounting said valve door for movement from a closed position toward an open position to move said door edge away from said second wall portion in response to increased vacuum in said mixing chamber,

(B) spring means biasing said door toward a closed position,

(C) a fuel supply means mounted on said body adjacent to said mixing chamber and adapted to be connected to a source of fuel under pressure, and

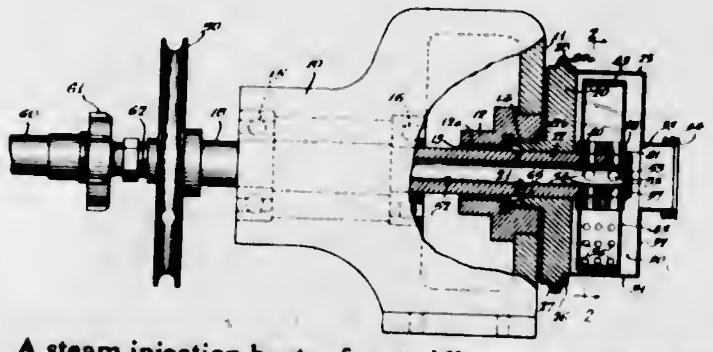


(D) a metering tube in said opening between said door edge and said second wall portion with said tube slidably received in said supply means and means connecting said tube with said door for movement with said door edge away from said second wall portion,

(E) said metering tube having an axial bore therethrough communicating with said source and a pair of laterally directed passageway means communicating with said bore, with said pair of passageway means positioned on opposite sides of said tube and with each passageway means of said pair having a fluid discharge area thereof distributed along the length of said tube partially within said fuel supply means and partially outside said fuel supply means between said door edge and said second wall portion when the door is partially open.

3,182,975
STEAM INJECTION HEATER

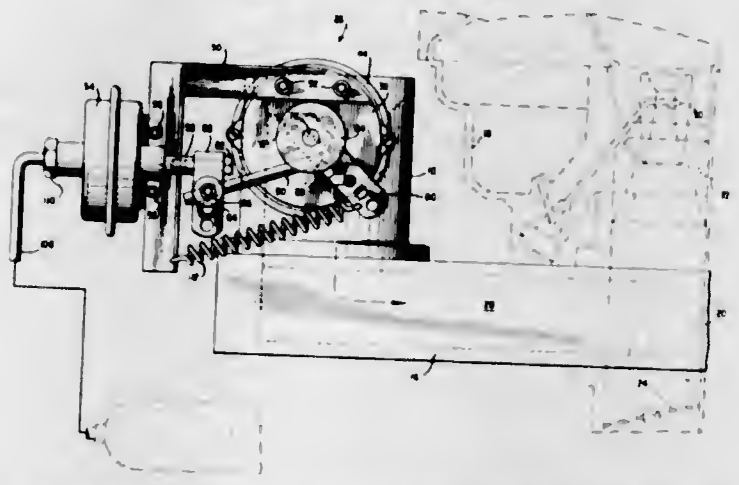
Aubrey P. Stewart, Jr., Corning, Iowa, assignor to Nodaway Valley Foods Inc., a corporation of Iowa
Filed May 4, 1961, Ser. No. 107,824
1 Claim. (Cl. 261—34)



A steam injection heater for rapidly and uniformly heating milk comprising, a casing having a cylindrical chamber therein, means for introducing milk into and withdrawing milk from said chamber including an inlet to the chamber positioned on the axis thereof and an outlet from the chamber positioned on the circumference thereof and extending tangentially therefrom, a hollow shaft rotatably mounted in the casing and extending into the chamber, an impeller mounted on the shaft within the chamber, said impeller having a plurality of blades having a substantially flat rear face extending generally axially of the chamber, said blades being movable in a circular path with rotation of the shaft with said path including the major portion of the chamber, a plurality of steam outlets on the rear face of each blade, passages in the blades establishing communication between said steam outlets and the hollow of the shaft, means for introducing steam under pressure into said hollow during rotation of the shaft whereby the steam will be introduced into milk in the chamber at areas of low pressure adjacent the rear faces of the blades and in the path of the advancing front face of the next succeeding blade to rapidly distribute the heat of the steam through a quantity of milk uniformly to heat the same.

3,182,976
CARBURETOR

Robert C. La Force, 854 7th St., Beaver, Pa.
Filed Oct. 11, 1962, Ser. No. 229,912
3 Claims. (Cl. 261—63)



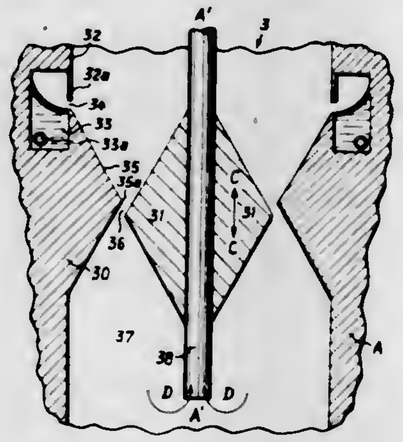
1. A carburetor for an internal combustion engine including an intake manifold and a throttle valve comprising a main air flow passage from the carburetor through the throttle valve to the intake manifold, a combustible mixture generating means positioned in said main air passage on the opposite side of the throttle valve from said intake manifold, a secondary air flow passage connected to the main air flow passage between the mixture generating means and said throttle valve, a flap valve carried by an offset spindle in said secondary air flow passage, said spindle having a portion projecting exteriorly of the passage, said flap valve being responsive to the pressure variations created in the main air passage in the area of the connection between the main and secondary air passages to move in an opening direction during engine operation, biasing means carried by the carburetor and connected with the projecting portion of the valve spindle to oppose the opening of said valve means, and intake manifold pressure responsive means comprising a spring loaded diaphragm interconnected by a linkage and crank arm connected to the biasing means to vary the action of said biasing means in accord with engine power demand.

3,182,977
APPARATUS FOR MIXING AND PURIFYING FLUID MEDIUMS

Enrico Erni, Muhlacker, Gerlafingen, Switzerland, assignor to Gesellschaft der Ludw. von Roll'schen Eisenwerke AG, Gerlafingen, Switzerland, a corporation of Switzerland
Filed Sept. 26, 1960, Ser. No. 58,277
Claims priority, application Switzerland, Sept. 29, 1959, 78,815; Nov. 13, 1959, 80,581; May 18, 1960, 5,695/60
5 Claims. (Cl. 261—112)

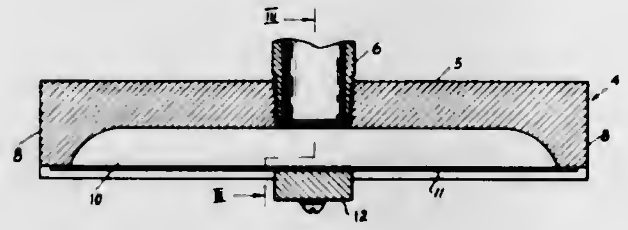
1. In a mixing and purification apparatus for fluid mediums, the improvement of; a hollow housing member

having a longitudinal axis and internally provided with a flow passageway for fluid mediums, said housing member being provided with an inwardly directed nozzle body member having a flat surface portion and concentrically arranged with respect to said longitudinal axis, a movable nozzle member having a flat surface portion disposed concentric to and in spaced relation with said inwardly directed nozzle body member to define an adjustable nozzle opening, means cooperable with said movable nozzle member to displace the latter to vary the size of said nozzle opening, supply means communicating with said flat surface portions for depositing thereon a liquid medium in film-like manner, said liquid medium cascading and free-falling from said flat surface portions into said nozzle opening for contact and mixing with a gaseous medium moving in a state of unsteady flow to effectuate atomization of said cascading liquid medium.



3,182,978
SEWAGE TREATING APPARATUS AND AIR DIFFUSER FOR USE THEREON

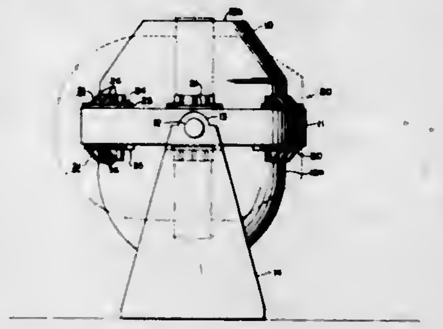
Bertram B. Reilly, Pittsburgh, Pa., assignor to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 2, 1961, Ser. No. 128,889
1 Claim. (Cl. 261—124)



A diffuser for admitting air to a liquid in which it is submerged comprising an elongated box-like hollow body having side and end walls and one closed face and one face which is open, the side walls each having a ledge therealong, the end walls terminating in a plane flush with the level of the ledges, a thin flat strip of resilient metal covering the open face of the body with its edges resting on the ledges and its ends overlapping and seating on the end walls of the body, a retainer intermediate the ends of the body clamping the central area of the strip only against the ledges while the ends are free to flex away from the ledges and thereby vary the area of the air escape passage from the body as the degree of flexing of the strip changes and means providing an air inlet connection through which air under pressure may be supplied to the interior of the body.

3,182,979
FURNACE SUPPORT STRUCTURE

Richard P. Krause, Butler, Pa., assignor to Pennsylvania Engineering Corporation, New Castle, Pa., a corporation of Pennsylvania
Filed Feb. 26, 1963, Ser. No. 260,997
8 Claims. (Cl. 263—33)



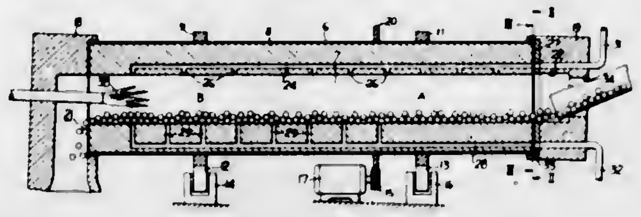
1. In an open-mouth furnace vessel for refining metal when it is in a vertical upright position, wherein the vessel is rotatable about a horizontal axis on a pair of stands, and wherein the vessel is subjected to changes in dimension due to the weight of metal therein and due to high temperatures to which it is subjected, a combination that is defined as follows when the vessel is in its vertical upright position: an outer wall about the vessel, an annular support ring in a radially-outwardly spaced and substantially horizontal position about the periphery of said outer wall of the vessel and about the horizontal axis thereof, a group of peripherally spaced-apart bracket means for mounting said outer wall of the vessel on said support ring, said support ring having oppositely-positioned horizontally-projecting trunnions rotatably-mounted on the stands for turning the vessel about its horizontal axis from its vertical upright position to downwardly-tilted and inverted positions; each bracket means of said group comprising, an upper bracket rigidly-secured to said outer wall of the vessel and projecting radially-forwardly therefrom into radial-slidable engagement with said support ring and having means for containing relative peripheral movement of said upper bracket with respect to said support ring and for maintaining said upper bracket in radial-slidable engagement with said support ring against relative longitudinal movement of said outer wall of the vessel with respect to said support ring, a lower bracket rigidly-secured to said outer wall of the vessel and projecting radially-forwardly from said outer wall of the vessel into a cooperating radial-slidable and normally downwardly-spaced clearance-defining relation with said support ring and having means for containing relative peripheral movement of said lower bracket with respect to said support ring and for permitting relative longitudinal movement of said outer wall with respect to said support ring whereby said lower bracket may move into engagement with said support ring, and said lower bracket of each of said bracket means being in an opposed-aligned relation with said upper bracket of the same bracket means longitudinally of the outer wall of the vessel.

3,182,980
ROTARY KILN

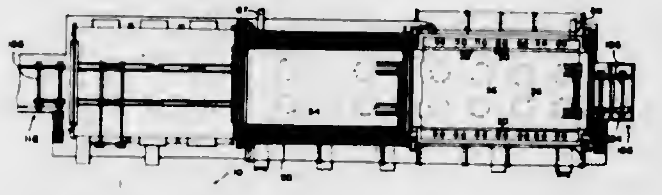
Wayne J. Helfrich, Madison, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 22, 1963, Ser. No. 274,612
5 Claims. (Cl. 263—33)

1. In a rotary ore reducing kiln having walls defining an elongated cylindrical chamber with stationary end pieces and adapted to contain a charge to be reduced contained therein, the combination comprising: means defining a plurality of longitudinally extending fluid confining passageways circumferentially spaced about the periphery of said chamber; means defining a plurality of circumferentially and longitudinally spaced openings into said chamber in fluid communication with said passageways,

said openings adapted to alternatly pass above and beneath said charge as said kiln rotates; an oxidizing gas inlet means; a fuel inlet means; and means selectively connecting said fuel inlet means to those passageways with the connected openings beneath said charge and said oxidizing gas inlet means to those passageways with the connected openings above said charge.

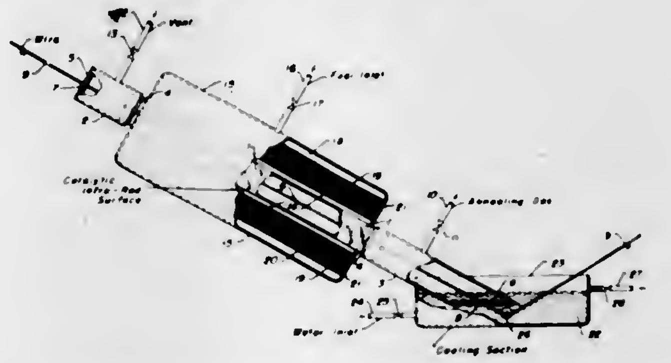


3,182,981
ALUMINUM ANNEALING FURNACE
Arthur Walker, Livonia, Mich., assignor to Holcroft & Company, Detroit, Mich., a corporation of Michigan
Filed Feb. 26, 1962, Ser. No. 175,777
5 Claims. (Cl. 263—36)



1. A heat-treating apparatus of the indirect type for non-ferrous metals comprising an elongated horizontal passageway having a top wall, a bottom wall and a pair of side walls, said passageway having a heating zone and a cooling zone and forming a gas-tight enclosure between an entrance end and an exit end thereof, transversely movable doors at the ends of said passageway, a conveyor for moving the work successively through said heating and cooling zones, means connected to one of said zones for delivering an inert non-oxidizing, non-carburizing protective gas thereto, an intermediate door in said passageway between said heating and cooling zones, a pair of elongated radiation baffles made from metal at opposite sides of said passageway spaced from and parallel to said side walls to define a pair of heating chambers with said walls, said baffles extending the entire length of the passageway in said heating zone and forming therebetween a work-heating tunnel, the top and bottom edges of said baffles being spaced from and closely adjacent to said top wall and said bottom wall respectively to provide entrance openings and exit openings respectively for said heating chambers, a transversely extending partition near the upper edges of said baffles and spaced from said top wall to define a fan chamber therebetween, said partition extending the entire length of the passageway in said heating zone, a plurality of fans in said fan chamber supported by said top wall with entrance openings therefor in said partition, the ends of said fan chamber being connected to the entrance openings of said heating chambers, said exit openings of said heating chambers being connected to said tunnel adjacent said bottom wall, a plurality of longitudinally spaced vertically extending elongated radiant heater tubes within each of said heating chambers, the upper ends of said tubes being carried by said top wall, said baffles being effective to radiate the heat from said tubes into said work heating tunnel, said fans being effective to forcibly circulate the gas in said heating zone through said fan chamber and said heating chambers to pick up heat from said radiant tubes and then through the exit openings of said heating chambers to said tunnel in a plurality of paths intersecting the path of movement of the work in said tunnel, a pair of elongated inner walls in said cooling zone at opposite sides of said passageway spaced from and parallel to said side walls to define a pair of cooling chambers with said walls, said inner walls extending the entire length of the passageway in said cooling zones and forming therebetween a work-cooling tunnel, the top and bottom edges of said inner walls being spaced from and closely adjacent to said top wall and said bottom wall respectively to provide entrance openings and exit openings respectively for said cooling chambers, a transversely extending partition in said cooling zone near the upper edges of said inner walls and spaced from said top wall to define a second fan chamber therebetween, said last mentioned partition extending the entire length of the passageway in said cooling zones, a plurality of fans in said second fan chamber supported by said top wall with entrance openings therefor in said last mentioned partition, the ends of said second fan chamber being connected to the entrance openings of said cooling chambers, said exit openings of said cooling chambers being connected to said tunnel in said cooling zone adjacent said bottom wall, a plurality of water cooled coils within each of said cooling chambers, said last mentioned fans being effective to forcibly circulate the gas in said cooling zone through said second fan chamber and said cooling chambers across said coils to remove heat from the gas and then through the exit openings of said cooling chambers to said tunnel in a plurality of paths intersecting the path of movements of the work in said tunnel.

3,182,982
INFRA-RED WIRE ANNEALING APPARATUS
Donald E. Ruff, Detroit, Mich., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Aug. 15, 1962, Ser. No. 217,077
5 Claims. (Cl. 266—3)

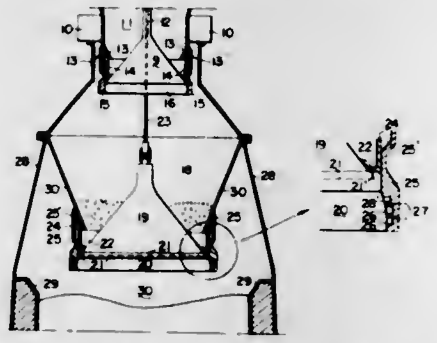


1. An infra-red annealing apparatus comprising in combination a confined tubular infra-red heat transmitting chamber having opposing inlet and outlet ends adapted to accommodate the passage of a material to be heat treated, an infra-red heat source comprising a catalytically activated metallic member substantially encompassing said chamber, gas seal means at each end of said chamber, a gas inlet means at one end of said chamber and a gas outlet at the other end thereof providing an annealing gas atmosphere therein.

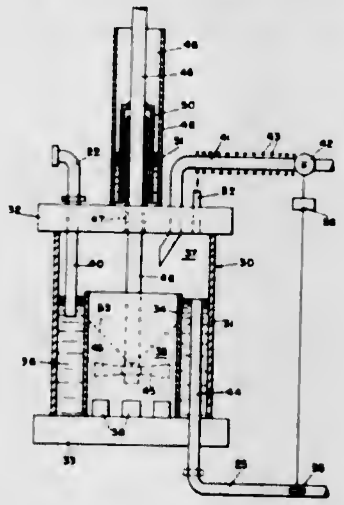
3,182,983
AIR-TIGHT SEALING DEVICE FOR THE TOP OF A BLAST FURNACE
Keiji Tsujihata, Yawata, and Yasuhiro Sawada, Kokura, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan
Filed Apr. 12, 1962, Ser. No. 187,464
Claims priority, application Japan, Apr. 18, 1961, 36/13,692
7 Claims. (Cl. 266—27)

7. An air-tight sealing device for the top of a blast furnace having a charging cone with a hood adapted to be

mounted on the wall of the furnace body, the hood projecting inwardly into the furnace body, and the charging cone having a cone member, said sealing device comprising an air tight outer contact ring member adapted to be fixed on the lower end of the hood, said outer contact ring member having a sealing surface on the lower end of the inside surface thereof, an inner contact ring adapted to be mounted on the outer surface of the lower part of said cone member, said outer ring member sealing surface and the inner ring being engageable in air-tight sealing engagement when the cone member is pulled up, said outer contact ring member having an annular recess in the inside surface thereof between the sealing surface and said hood, a protective cylinder having an outwardly bent upper end positioned within said outer sealing ring and having the outwardly bent upper end freely slidable in the recess in the axial direction of said outer ring member, said protective cylinder moving downwardly over the sealing surface of said outer ring when said cone member is lowered, and an ore retaining shelf adapted to be mounted on said cone member immediately above said inner contact ring for diverting ore material sliding down said cone member outwardly away from said inner contact ring.



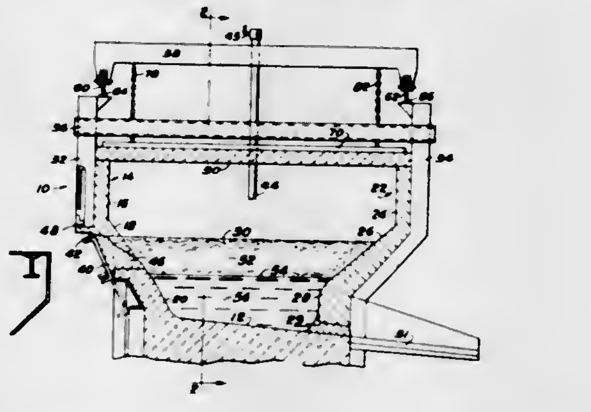
3,182,984
AMALGAM MIXING VESSEL FOR PRIMARY BATTERY SYSTEM
Nathan Gilbert, Fair Lawn, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 23, 1962, Ser. No. 190,203
1 Claim. (Cl. 266—34)



In a primary battery system wherein amalgam of standard alkali metal concentration is admitted to a fuel cell for producing electrical energy and amalgam of reduced alkali metal concentration is removed from the cell and sent to regeneration apparatus for receiving additional alkali metal to bring the reduced amalgam up to standard concentration, the improvement in regeneration apparatus which comprises,

(*a*) a closed outer vessel having upper and lower end walls interconnected by a cylindrical side wall,
(*b*) an inner cylinder disposed in spaced concentric relation with the cylindrical side wall of the vessel providing an outer annular chamber,
(*c*) said cylinder having its lower end disposed on the lower end wall of the vessel and its upper end spaced from the upper end wall of the vessel,
(*d*) a supply conduit for the amalgam of reduced concentration having an open end vertically aligned with the annular chamber for feeding directly thereinto and a removal conduit for standard amalgam having an open end communicating with the annular chamber,
(*e*) said open end of the supply conduit being spaced circumferentially from the open end of the removal conduit in order to prevent passage of the amalgam of reduced concentration directly to the removal conduit,
(*f*) said open end of the removal conduit being positioned below and adjacent the upper end of the inner cylinder to maintain a body of amalgam in the annular chamber, and to prevent passage of amalgam into the cylinder,
(*g*) a group of apertures circumferentially of the cylinder at its lower end providing communication between the cylinder and the annular chamber,
(*h*) a conduit extending through the upper end of the vessel for admitting molten alkali metal to the cylinder through its upper end and
(*i*) a rotatable agitator extending into the cylinder and disposed above the group of apertures for directing the alkali metal through the apertures into the body of amalgam in the outer chamber for admixture therewith to form the standard amalgam, whereby the locations of the amalgam supply conduit, the removal conduit and the alkali metal supply conduit, and the action of the agitator cooperate to prevent passage of amalgam into the inner cylinder.

3,182,985
APPARATUS FOR MAKING STEEL
Richard F. Obenchain, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Nov. 13, 1962, Ser. No. 237,147
10 Claims. (Cl. 266—34)

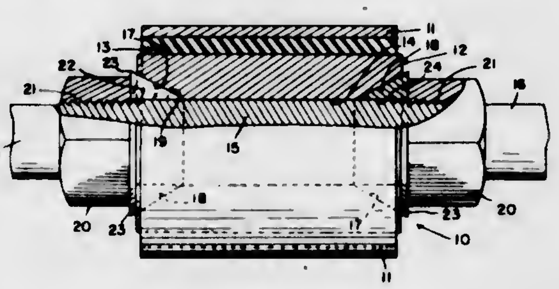


2. A metal refining furnace comprising a chamber adapted to contain a bath of molten metal with a slag layer, said slag layer and metal bath at the place of contact forming a slag-metal interface, the front wall and back wall of said chamber inclining upwardly and outwardly to above the top of said slag layer, said walls sloping outwardly from said slag metal interface to above the top of said slag layer at a predetermined angle, and said wall having a steeper slope below said slag metal interface.

3,182,986
RESILIENT BUSHING STRUCTURE
Arthur C. Brockman, 10101 Ford Road, Dearborn, Mich.
Filed Sept. 4, 1963, Ser. No. 306,467
4 Claims. (Cl. 267—1)

1. A bushing for connecting a pair of parts capable of imposing severe tilting or twisting stress on the bushing

in a plane including the bushing axis, comprising a rigid annular, circumferentially continuous member adapted to be connected to one of said parts, a shaft coaxially received in the bore of said member and adapted to be connected to the other part, said bore having a generally conical counterbore merging radially and axially inwardly to the bore at an end thereof, and means at opposite ends of said member to hold said member in locked relation to said shaft, including a radially split washer surrounding said shaft and formed generally conical on its outer surface for accurate mating engagement with the surface



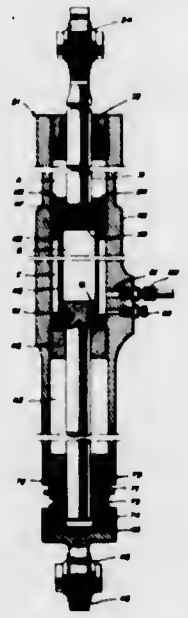
at an angle of the order of 30° to its axis of said counterbore, and means on said shaft axially outwardly of said washer to exert axial force on the latter, thus to axially force and circumferentially constrict the washer into tight radial gripping and locking engagement with said shaft and rigid member bore in the zone of said counterbore of the latter, said member and shaft being of steel and the washer being of aluminum to afford a coefficient of friction at the gripping and locking engagement surfaces which substantially exceeds the coefficient of friction at other non-bearing type metal-to-metal surfaces.

3,182,987
VIBRATION AND NOISE CONTROL IN LIQUID SPRINGS

Wilson T. Price, Santa Clara, and Charles R. Brown, Sunnyvale, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Sept. 13, 1961, Ser. No. 138,534

3 Claims. (Cl. 267—64)



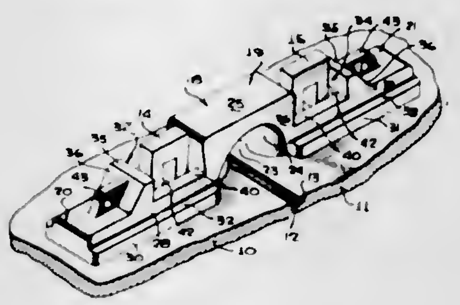
1. A liquid spring comprising, an outer cylinder having a bore, a pair of seals affixed in said bore and forming an enclosed chamber for containing a fluid, a piston slideably retained within said bore, said piston having a counterbore therein, a piston rod having a plunger head slideably received in the counterbore of the piston for limited movement relative thereto and having the rod portion thereof extending through one of said seals, first attaching means for connection to a load to be spring-action controlled secured to the other end of said piston rod, a second rod attached to the other end of said piston and configured to have a greater cross-sectional area than that of said piston rod, said second rod extending through the other of said seals, said piston having an orifice therethrough for establishing fluid communication between the portion of the chamber surrounding the piston rod and the portion of the chamber surrounding said second rod, second attaching means affixed to said outer cylinder remote from the first attaching means in order that application of a tensile load to the spring through said attaching means functions to draw said piston rod out of said chamber and said second rod into said chamber, thereby decreasing the volume by virtue of the differential in displacements thereof and effecting an increase in the pressure therein thereby applying a restoring force to said piston.

3,182,988
WELDING FIXTURE

Walter N. Woodall, Newport News, Va., assignor to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia

Filed June 7, 1962, Ser. No. 200,724

2 Claims. (Cl. 269—37)



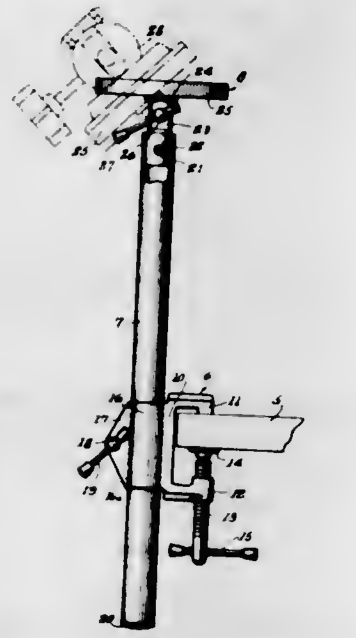
1. Welding apparatus for welding the edges of two members together and comprising an elongated welding fixture having oppositely disposed spaced side portions and a central upstanding bridge portion connecting the inner ends of said side portions to one another, said side portions defining spaced inner support surfaces lying substantially in a plane adapted to engage members to be welded together, said central bridge portion extending from the outer surface of said side portions and projecting away from said support surfaces beyond the outer surfaces of said side portions in a direction perpendicular to said support surfaces, said central bridge portion defining on its underside an arcuate opening forming a passageway completely therethrough and facing in a downward direction so that a welding operation can be carried out between edges of members to be welded beneath the fixture on both sides of the fixture, said passageway being formed by a generally convex surface having sides converging toward said opening, each of said side portions having an upstanding projection thereon spaced from said central bridge portion to define a pair of recesses formed at either side of said bridge portion, each recess being defined between an inner wall formed on one of said projections and a facing opposed inner wall formed on said central bridge portion, the opposite inner walls of each recess being tapered so that the bottom portion of each recess is wider than the portion of the recess adjacent the top portion of the associated projection, each of said side portions having an opening formed therethrough and in communication with the bottom of one of said recesses for receiving apertured holding lugs on members to be welded together, and first wedge means adapted to be extended through said apertured holding lugs for urging the support surfaces of said side portions into engagement with the surfaces of members to be welded together.

3,182,989
WORK HOLDER

Otto F. Colbert, Whittier, Calif.
(10107 Adella Ave., South Gate, Calif.)

Filed Jan. 7, 1963, Ser. No. 249,724

3 Claims. (Cl. 269—81)



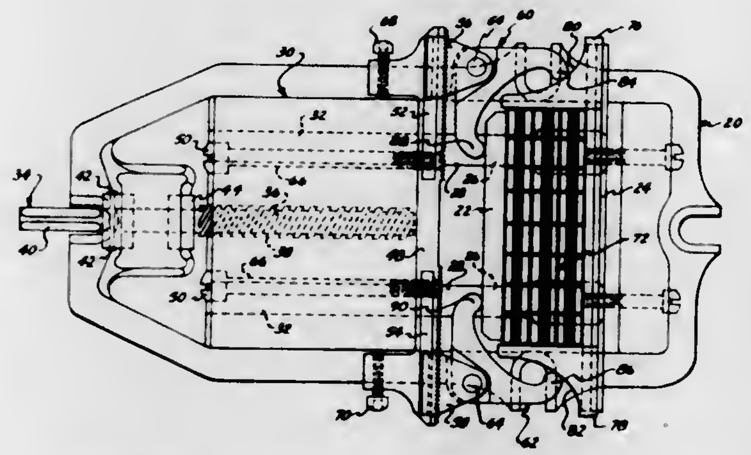
1. A work support comprising
(*a*) a clamp for connection to a bench top and provided with a tubular body and means for constricting the bore of said tubular body,
(*b*) a tubular standard longitudinally and rotationally adjustable in said bore and locked in position by the bore-constricting means of the clamp body,
(*c*) a fixed stud in one end of the standard,
(*d*) a work-mounting plate,
(*e*) a hinged connection between said stud and plate, and
(*f*) means to lock said connection to hold the plate in fixed adjusted position on the standard.

3,182,990
VISE JAW CONSTRUCTION

Jack E. Van Blaricum, 1035 S. Waverly, Columbus, Ohio

Filed Sept. 18, 1961, Ser. No. 138,811

8 Claims. (Cl. 269—153)



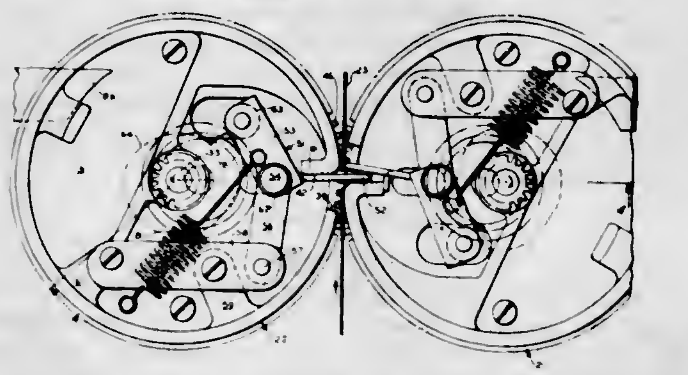
8. A vise comprising, in combination, base means; first and second longitudinally spaced jaw means on said base means, certain of said longitudinally spaced jaw means being movable relative to said base means; first and second laterally spaced jaw means mounted on one of said longitudinally spaced jaw means, certain of said laterally spaced jaw means being slideably mounted for rectilinear movement; an actuating means mounted on said base means for applying progressively increasing clamping force to said longitudinally spaced jaw means and to said laterally spaced jaw means; slide means mounted for longitudinal movement on said base means; a slide member mounted for lateral movement on said slide means; a lever pivotally mounted on said slide member and including a first portion engaging one of said longitudinally spaced jaw means and a second portion engaging one of said laterally spaced jaw means.

3,182,991
WEB FANFOLDING MECHANISM

Anthony F. Rodrigues, Los Gatos, Calif., assignor to Cycle Equipment Company

Filed July 2, 1962, Ser. No. 206,942

7 Claims. (Cl. 270—73)



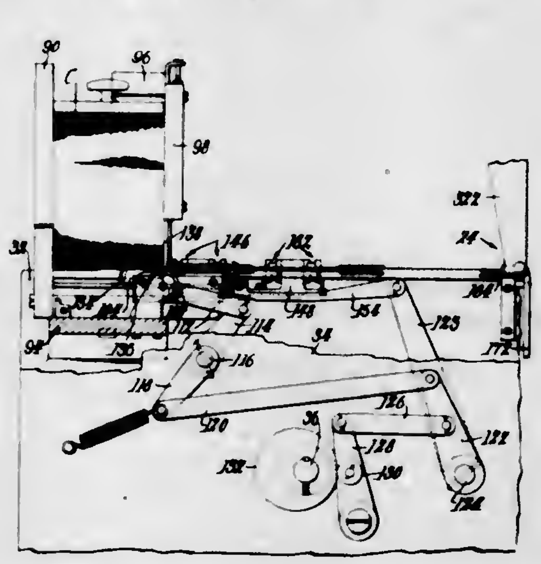
1. In a fanfolding machine for tape such as perforated paper tape, a frame, a pair of folding means mounted for movement on said frame, including a folding blade in each folding means and a folding surface cooperatively related to said folding blade, means for operating said folding means in cyclic fashion, control means for the blade of each fanfolding means for opening and closing said blade with respect to the associated folding surface during one cycle of its operation as a folding blade, and other control means for said blade to cause said blade to project in the next succeeding cycle to tuck the tape with respect to the blade and the associated surface of the other folding means, whereby corresponding blades of said pair of folding means operate alternately with respect to each other as tucking blades and folding blades.

3,182,992
APPARATUS FOR HANDLING RECORD CARDS

Karl J. Braun, Springdale, Conn., assignor to Kimball Systems, Inc., a corporation of New York

Filed June 21, 1960, Ser. No. 37,680

5 Claims. (Cl. 271—3)



1. In apparatus for processing records having a feed magazine, a record processing unit and a receiving magazine, means for separating a single record from a stack in the magazine and for moving the record to a predetermined position where the record is oriented by its edges, a first set of grippers each including a pair of opposed jaws and reciprocating between said position and the

processing unit, means for opening the jaws of said first set of grippers upon movement toward said predetermined position and for closing jaws on said oriented record during movement toward said processing unit for feeding a record in oriented condition to said processing unit, a second set of grippers each including a pair of opposed jaws and mounted for unitary corresponding movements with said first set of grippers for feeding a record from the processing unit while the first set of grippers is feeding another record to the processing unit, and a stacking mechanism including a pair of arms rotatably mounted intermediate their ends, a first pair of clips at one end of said arms located to receive a record fed by said second pair of grippers, a second pair of clips at the opposite end of said arms, means for rotating said arms to move said first pair of clips from record receiving position and said second pair of clips to record receiving position, and means operable during rotation of said arms to remove a record from a pair of said clips and deposit it in said receiving magazine.

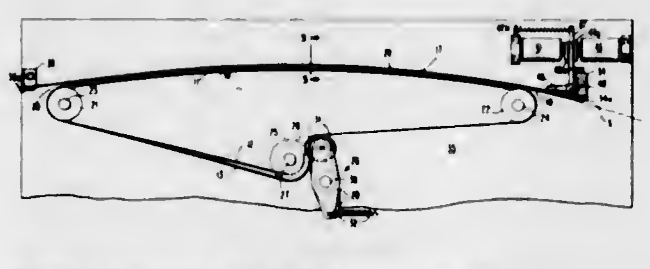
3,182,993

SHEET HANDLING APPARATUS

Donald W. Haney, Vestal, and John E. Hawxhurst, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 27, 1962, Ser. No. 182,804

10 Claims. (Cl. 271—47)



1. Sheet handling apparatus comprising
a belt and a band providing a longitudinally extending guideway through which at least one sheet is advanceable,
one means having two discrete positions, one for tightening the band against the belt and the other for loosening the band from the belt,
means for moving the belt to cause each sheet to be advanced thereby while said band is tightened, and
control means responsive to a first and a second of two discrete control conditions to actuate said one means to its said one position and other position, respectively, whereby the belt will be rendered substantially ineffective to drive such sheet while the one means is in its said other position.

3,182,994

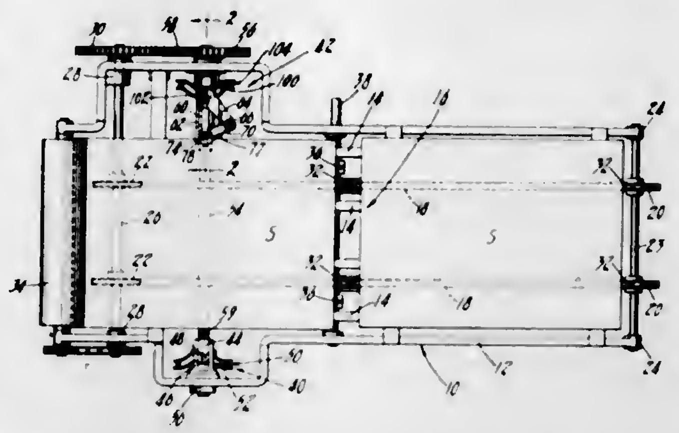
GAUGING MECHANISM

Carl Alexander Huth, Closter, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 26, 1962, Ser. No. 175,731

7 Claims. (Cl. 271—49)

1. A yieldable gauging mechanism for moving an article to be gauged into engagement with a non-yieldable gauging element to effect a gauging operation, comprising a yieldable gauging element, means for actuating said yieldable gauging element, and pneumatic cushioning means operatively interposed between said yieldable gauging element and said actuating means, said cushioning means comprising a cylinder having a closed end and being connected to said yieldable gauging element, a piston disposed within said cylinder and being connected to said actuating means, and means for supplying air at a predetermined pressure to said cylinder between said closed end thereof and the adjacent end of said piston, the internal diameter of said cylinder being greater than the external diameter of said piston so that pressurized air entering said cylinder at said closed end thereof escapes between said cylinder and said piston to the opposite end of said cylinder.



3,182,995

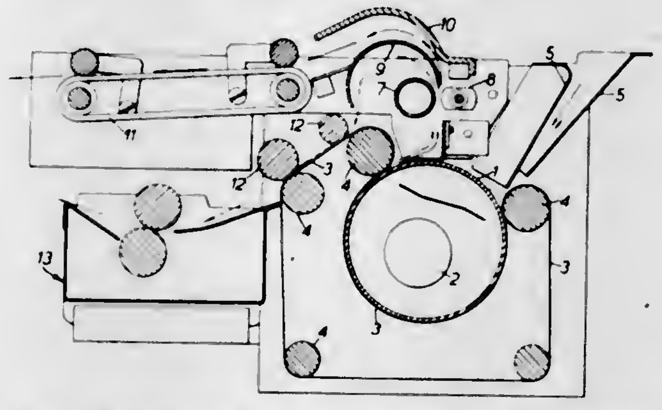
MEANS FOR SEPARATING SUPERIMPOSED SHEETS

Maurice R. Franklin, Wick, Littlehampton, England, assignor to Burcat Developments Limited, Rustington, England, a British company

Filed Mar. 26, 1963, Ser. No. 268,085

Claims priority, application Great Britain, Mar. 26, 1962, 11,415/62

2 Claims. (Cl. 271—64)



1. In an apparatus of the kind in which pairs of closely superimposed sheets of flexible non-magnetic material are first fed along a common path and the sheets of each pair are then separated and fed along two different paths, a sheet-separating device comprising a deflector blade stationarily mounted at the beginning of said two separate paths, a magnet means stationarily mounted at the end of the common path adjacent to said deflector blade and extending across the width of said common path, and a magnetizable element at the leading edge of one sheet of each pair, said magnetizable element coacting with said magnet means for effecting an initial separation of the sheets of each pair to ensure entry of the deflector blade between the two sheets of each pair thereby causing the sheets to pass on opposite sides of the deflector blade and along said separate paths.

3,182,996

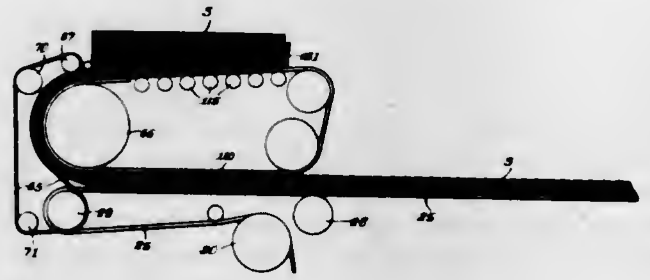
METHOD OF AND APPARATUS FOR STACKING SHEETS

Wilbur J. Hoffswell, West Chicago, Ill., assignor to R. R. Donnelley & Sons Company, a corporation of Delaware

Filed June 7, 1963, Ser. No. 288,853

30 Claims. (Cl. 271—68)

1. A method of stacking paper sheets, comprising: arranging the sheets in a shingled stream with the leading edge of each sheet beneath the immediately preceding sheet and the trailing edge portion of each sheet extending behind the trailing edge of said preceding sheet; advancing said shingled stream in a predetermined path; successively arresting the advancing sheets in said shingled stream when their leading edges reach a predetermined point in said path and the sheets are generally horizontally disposed, so that each sheet slides beneath the generally horizontally disposed sheets ahead of it after the advance of the last preceding sheet is arrested, thereby forming an upright stack in which the sheets are generally horizontal and the leading edges of the sheets are substantially aligned in a plane that is generally perpendicular to the plane of the sheets in the stack; and applying a feeding force from above to the projecting trailing edge portion of each sheet at the rear edge of the stack when the advance of the immediately preceding sheet is arrested, said feeding force cooperating with the force that is advancing the stream so as to drive each sheet positively under the stack and toward said vertical plane.



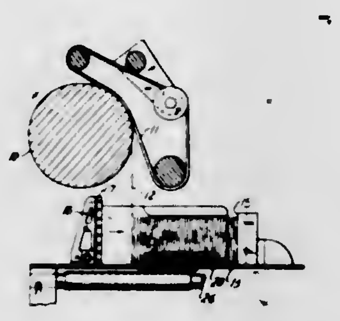
3,182,997

PRINTING MACHINE PACKER BOX DELIVERY

Albert Victor Paul, 2808 Collingwood Ave., Toledo, Ohio

Filed Oct. 26, 1961, Ser. No. 147,854

3 Claims. (Cl. 271—71)



1. A packer box delivery comprising a horizontal packer box, delivery means for successively dropping products on edge into the box, a horizontally moveable pusher for moving products along the box, a pair of horizontal opposed knife edges mounted in the box in position for engagement by and slitting the edges of a product as the same is pushed by the pusher, whereby the products are held down by the said knife edges and confined to a path of movement parallel to said knife edges, the pusher having a perforated face, convexly curved in a horizontal plane, for engaging the products and pushing the central part thereof ahead of the edges engaged by said knife edges, a plurality of stops, means mounting the stops for movement between an upper position engaging and holding the products and a lower position clear of the path of movement of products, the pusher having notches accommodating the knife edges and stops to permit movement of the pusher past the stops, and means for operating the pusher and stops in timed relation to the delivery means.

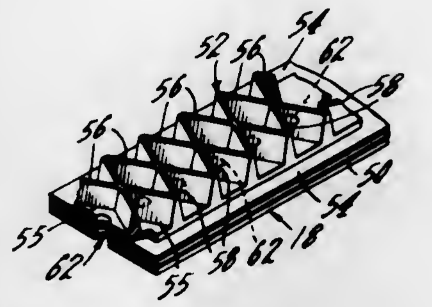
3,182,998

CONVEYOR

Howard B. Peterson, San Francisco, Calif., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 21, 1962, Ser. No. 246,453

6 Claims. (Cl. 271—74)



1. An overhead conveyor unit, comprising a longitudinally extending plate, a track formed on the underside of said plate, a vacuum groove formed at the top of said track, and an endless belt having its lower flight mounted on said track, said belt comprising a fabric backing web disposed within said track and a rubber facing secured on one side to said backing web, said facing having formed on the opposite side thereof a plurality of downwardly extending suction cups each of which is formed with a port which extends through said fabric backing and is disposed in alignment with said vacuum groove.

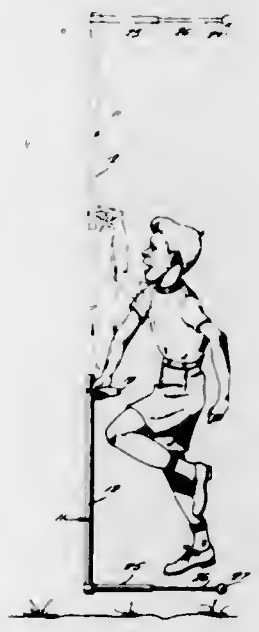
3,182,999

YIELDABLE SKIPPING DEVICE

Harold J. Updaw, 386 Clay Road, Rochester 23, N.Y.

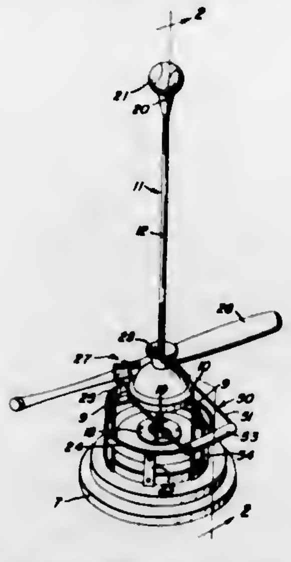
Filed Sept. 18, 1962, Ser. No. 224,414

3 Claims. (Cl. 272—74)



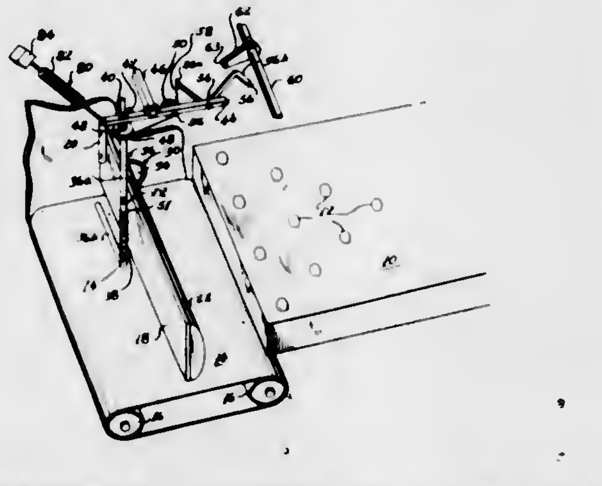
1. An exercising and amusement device simulating a skip rope comprising an elongated radius arm, a handle connected to one end portion of said arm, a horizontal bar assembly adjacent the opposite end portion of said radius arm, means rotatably connecting said horizontal bar assembly to said opposite end portion, and spring means holding said horizontal bar assembly in frictional engagement with said radius arm and in perpendicular relation thereto, said spring means being yieldable to at times allow the horizontal bar assembly to rotate relative to said radius arm.

3,183,000
BASEBALL HOLDER
James A. Dix, 280 State St., Clairton, Pa.
Filed Oct. 12, 1962, Ser. No. 230,226
5 Claims. (Cl. 273—26)



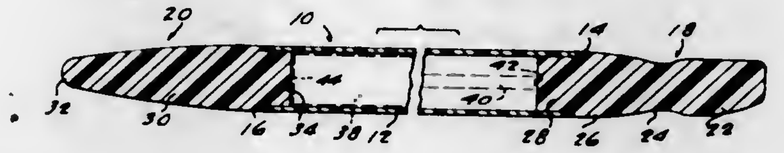
1. A baseball practice device comprising a base, means defining an upwardly opening receptacle supported on the upper portion of said base, a top member spaced above and in vertical alignment with the receptacle, an upstanding resilient post having its lower end supported from said base and projecting upwardly from the upper surface of said top member, a ball-receiving cup on the upper end of said post, the spacing between the upper end of said receptacle and said top member defining an opening adapted to horizontally removably receive a plurality of baseballs therein, the lower end of said post being secured to said base, said top member having an opening therein through which said post projects, said receptacle being of a size and shape in horizontal plan adapted to receive a plurality of baseballs spaced about the lower end of said post.

3,183,001
BOWLING BALL RELEASE
Alfred Giovanelli, 8214 23rd Ave., Kenosha, Wis.
Filed Apr. 10, 1962, Ser. No. 186,432
11 Claims. (Cl. 273—43)



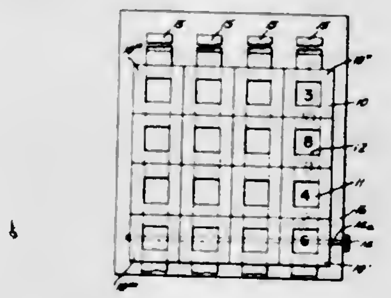
1. In combination, a continuously moving conveyor means, stop means disposed adjacent to the path of said conveyor means in spaced relationship therewith for engaging a bowling ball, exit means for such bowling ball disposed adjacent one edge of said conveyor means, closure means for said exit means pivotally movable away from said conveyor means into an open position allowing passage of a bowling ball into said exit means, means pivotally mounted over said exit means adapted to move across said exit means and engage a bowling ball disposed adjacent said exit means and give an impetus thereto away from said exit means when said closure means is in at least a partly open position.

3,183,002
SKIMMING AERIAL PROJECTILE TOY
Harold J. Updaw, 386 Clay Road, Rochester 23, N.Y.
Filed Jan. 11, 1963, Ser. No. 250,803
3 Claims. (Cl. 273—106)



1. A skimming toy comprising an elongated body having rear and forward ends, an axially elongated head fixed on the forward end of the body, said head being at least as wide as the body, said head having a flat undersurface which is angled upwardly and forwardly relative to the underside of the body, a tail closing the rear end of the body, said tail being a tapering solid body and having a rounded blunt rear end and having a forward end terminating in a cylindrical plug fitting into the rear end of the body, and a weight removably contained in said body and bearing against said plug and said head.

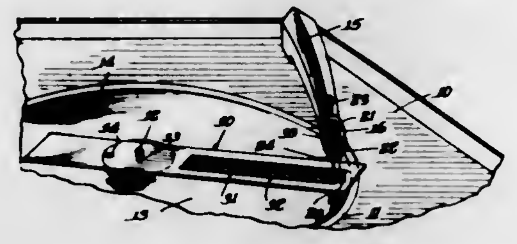
3,183,003
BOARD GAME APPARATUS
Gilbert Cates, 2550 Independence Ave.,
Riverdale 63, N.Y.
Filed Sept. 12, 1961, Ser. No. 138,232
3 Claims. (Cl. 273—130)



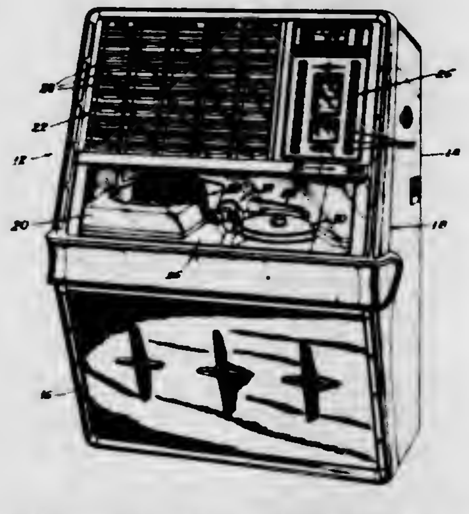
2. A board game apparatus comprising a square board provided with sixteen squares arranged in four rows of four each, each square having an open portion at its center, four tracks, one vertically located beneath each of the four rows of four squares, a plurality of numbered squares arranged in strip form and which fit in said tracks, a drive means for simultaneously moving four strips of numbered squares vertically in their tracks in either direction so that numbers will appear at the open portion of each square, two differently colored transparent bullseyes swingably attached to each square, control means for swinging said bullseyes whereby through use of the control means a colored bullseye may be swung into place between the numbered square and the open portion of the board square, and a bottom backing layer.

3,183,004
RECORD PLAYER INDICATOR
William Otto Miessner, 522 Eastern Ave.,
Connersville, Ind.
Filed May 31, 1962, Ser. No. 198,848
7 Claims. (Cl. 274—1)

2. An indicator for a record player having a rotatable turntable provided with a spindle, a record disc on the turntable provided with a spiral record groove and rotatable about the spindle, and a tone arm provided adjacent its free end with a stylus adapted to be received in the spiral record groove in the record disc, comprising, a fixture removably secured to the free end of the tone arm and having an upwardly extending handle portion, a horizontal portion spaced just above the record disc, and an upwardly extending pointer portion, and a cooperating indicator strip supported above the disc by the horizontal portion of the fixture and having a hole for receiving the spindle and an elongated slot receiving the pointer portion of the fixture for positioning the indicator strip with respect to the record disc, said indicator strip having indicia along the elongated slot therein and cooperating with the pointer portion of the fixture for indicating the position of the stylus with respect to the spiral record groove, said handle portion of the fixture providing means for manipulating the tone arm.

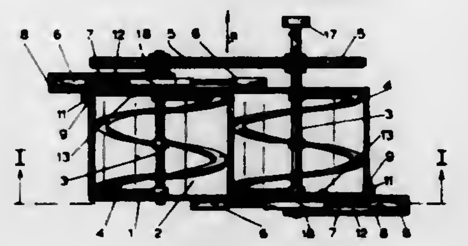


3,183,005
AUTOMATIC PHONOGRAPH
David C. Rockola, Chicago, Ill., assignor to Rock-Ola Manufacturing Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 10, 1961, Ser. No. 94,739
13 Claims. (Cl. 274—10)



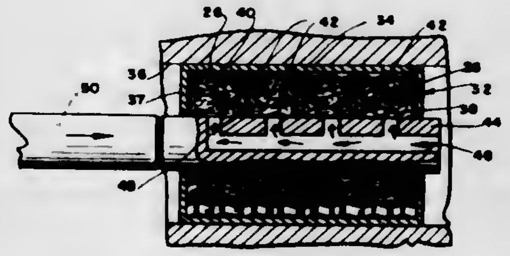
1. In an automatic phonograph, a magazine having a plurality of record receiving pockets and movable for positioning the pockets selectively at an indexing position, a turntable, mechanism for transferring a record between a pocket at said indexing position and the turntable, and selector mechanism including a selector assembly having a plurality of selector elements including one for each of said pockets, said selector assembly including a disc member and said selector elements being pivoted in said disc member with their ends projecting through opposite sides thereof, a write-in carriage operable through a cycle for setting said selector elements, manually actuatable means for controlling said carriage through a cycle, a read-out carriage mounted for movement with the magazine and operable for sensing those of said selector elements set by the write-in carriage, and means operable in response to sensing of a set selector element by the read-out carriage for stopping the magazine at a position corresponding to the respective selector element and transferring the record in the pocket then in said indexing position to the turntable, said write-in and read-out carriages having operating members disposed transverse to said selector elements and engageable therewith in such directions and operative upon actuation thereof for respectively setting and cancelling the selector elements.

3,183,006
APPARATUS FOR SPREADING OR SOWING GRANULAR OR PULVERIZED MATERIALS
Willem den Herder, Nieuw Vennep, Netherlands, assignor to Landbouwwerktuigen-en Machinefabriek H. Vissers N.V., Nieuw Vennep, Netherlands
Filed May 14, 1963, Ser. No. 280,204
5 Claims. (Cl. 275—8)



1. An apparatus for spreading or sowing granular or pulverized materials, comprising a hopper supported by a traveling frame having a longitudinal axis in the direction of travel, a pair of blade wheels for discharging material received from said hopper, said wheels each being embraced by a sector shaped casing having a discharge outlet at the bottom, one of said blade wheels with its casing being mounted on the front wall of said hopper and to one side of said longitudinal axis and the other blade wheel with its casing being mounted at the rear wall of the hopper and to the other side of said longitudinal axis, outlet openings in said hopper communicating with said casings, said blade wheels being mounted on longitudinally extending shafts whose axes are laterally spaced to such an extent that the axis of the shaft of one blade wheel lies outside the circle described by the ends of the blades of the other blade wheel but the lateral spacing between said shafts being smaller than the diameter of said circle, and means for rotating said blade wheels in opposite directions so that the right blade wheel as viewed in the travelling direction rotates in a clockwise direction and the material to be spread is thrown to the left through its discharge outlet while the other blade wheel rotates counterclockwise and spreads the material to the right.

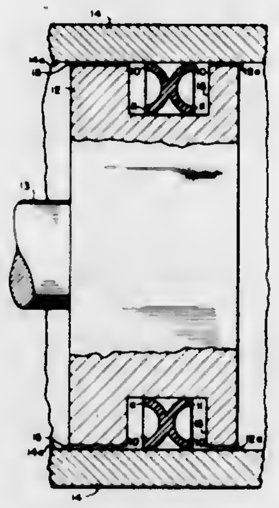
3,183,007
SEAL EMPLOYING OIL-IMPREGNATED WICKING MATERIAL AND METHOD OF MAKING
David Tann, Detroit, Mich., assignor to Tann Corporation, Detroit, Mich., a corporation of Michigan
Filed May 15, 1961, Ser. No. 110,030
5 Claims. (Cl. 277—1)



3. The method of forming a seal against the surface of a shaft, which includes the steps of, positioning a housing about said shaft in a manner to define an enclosed annular lubricant reservoir about the shaft, said shaft having passageway means therein communicating with said reservoir and communicating with a surface of the shaft outside of the housing, injecting an oil-impregnated wicking material through said passageway means into said reservoir, and displacing said shaft with an operating shaft having the same diameter whereby the oil-impreg-

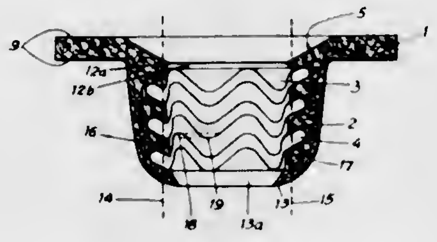
nated wicking material will seal against the surface of said operating shaft.

3,183,008
X-SEAL
James M. Yost, Sewickley Heights, Pa., assignor to Allegheny Plastics, Inc., Coraopolis, Pa.
Filed Mar. 4, 1963, Ser. No. 263,677
3 Claims. (Cl. 277—207)



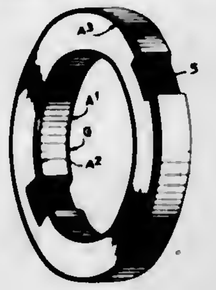
3. A seal as described in claim 2 and having holes extending through said annular portion, said holes being spaced from each other around said annular portion and resilient material extending through said holes and integral with said rings of resilient material.

3,183,009
GROOVED PACKING CUP
Heinrich Kunel, 25 Goethestrasse, Rehau, Bavaria, Germany
Continuation of application Ser. No. 796,907, Mar. 3, 1959. This application Sept. 19, 1963, Ser. No. 310,076
1 Claim. (Cl. 277—208)



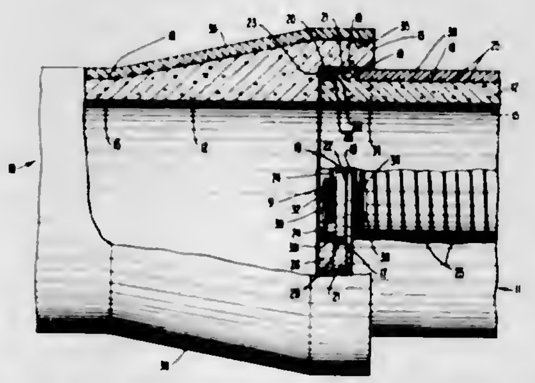
A packing surrounding a rotatable shaft and forming a seal therefor, said packing being integral and of elastic material, and comprising a packing body, a flange integral with said packing body at one end thereof, a central bore through said packing body and flange, an upper sealing lip at the entrance to said bore in said flange, a lower sealing lip provided at the opposite entrance to said bore, said upper and lower sealing lips having inner diameters smaller than the diameter of said shaft, and a plurality of parallel axially spaced grooves in the inner wall of said bore receiving lubricant therein, said groove forming channels, each having substantially parallel side walls and bottom walls, each of the walls of the channels extending outwardly toward the lower sealing lip and forming like oblique angles with the axis of the central bore, and the edges of said walls extending in parallel undulating form about the surface of said shaft, thereby subjecting said shaft upon rotation thereof to constantly alternating juxtaposition with a lubricant filled groove portion and in engagement with a wall portion of said bore intermediate said groove.

3,183,010
REINFORCEMENT FOR SEALING ELEMENT AND SEALING ELEMENT INCORPORATING SAID REINFORCEMENT
Georges Eugène Bram, Pont-a-Mousson, France, assignor to Centre de Recherches de Pont-a-Mousson, Pont-a-Mousson, France, a French body corporate
Filed Feb. 19, 1962, Ser. No. 174,003
Claims priority, application France, Feb. 23, 1961, 853,680, Patent 1,289,608; Dec. 19, 1961, 882,479, Patent 1,289,608
13 Claims. (Cl. 277—235)



1. In an annular composite sealing element comprising a body of an elastomer reinforcement which is embedded in the body and comprises a ring structure having a circular neutral axis and consisting of a metal wire coiled in circular coils about said axis so that the ring structure has a succession of oblique coils, the coils sloping toward said axis in such manner that the ring structure has an elliptic meridian cross-sectional shape the major axis of which shape intersects the centre axis of the ring structure and that any two adjacent coils are offset from each other and partially spaced from each other in two opposite first regions of the coils and thereby permit an advantageous anchoring of the reinforcement in said body and cross each other and partially contact each other in two second regions of the coils and thereby prevent crep of said body in said second regions, said reinforcement further comprising a spacer ring embedded in said body and extending through the coils, whereby regions of the latter are supported and maintain their shape.

3,183,011
PRESTRESSED CONCRETE PIPE STRUCTURES
Daniel E. Olivier, Bedminster, N.J., assignor to International Pipe and Ceramics Corporation, a corporation of Delaware
Filed May 22, 1961, Ser. No. 97,534
4 Claims. (Cl. 277—237)

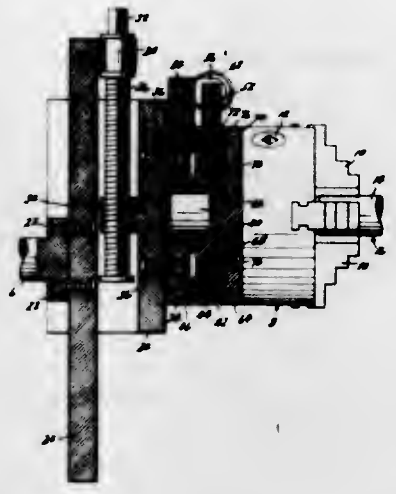


1. A joint for prestressed concrete pipe sections comprising, in combination, a prestresed one-piece moulded concrete conduit of a first pipe section and a socket member of a second pipe section, said socket member having a substantially inner peripheral cylindrical sealing surface, said conduit including a barrel portion and a spigot portion, said spigot portion constituted of the parent concrete of said conduit inserted within and overlapped by said socket member, said spigot portion having an annular flange formed as an integral part of the parent concrete of said conduit, said flange extending radially outwardly from exterior surfaces of the parent concrete of said spigot portion at either side of the flange, so that the flange is set back axially from the end face of the conduit at the free end of said spigot portion and located a substantial axial distance inwardly from the outside edge of said cylindrical sealing surface of said socket member, the axial width of said flange being substantially less than the axial length of said cylindrical sealing surface, a gasket consisting of an O-ring of an elastomeric material confined exteriorly of said flange in an annular groove in said first pipe section, said gasket pressed radially inwardly against said flange by said sealing surface of said socket member, a pre-stressed wrapping of tensioned wire having at least one revolution around the one of said parent concrete exterior surfaces of said spigot portion to the side of said flange intermediate said flange and the free end of the spigot portion, said wrapping prestressing the concrete of said spigot portion in the vicinity of said flange and of the end face of the spigot portion in circumferential compression, a coating of hardenable material disposed over the one of said parent concrete exterior surfaces of said spigot portion to the side of said flange intermediate said flange and the free end of said spigot portion, said coating covering said tensioned wire wrapping and having a laterally disposed end wall contacting a side of said flange facing towards the free end of said spigot portion, a prestressed helical winding of tensioned wire around said conduit, said wire winding encircling the other of said parent concrete exterior surfaces of said spigot portion and extending from a terminus of said wire winding adjacent said flange to the end of said conduit remote from the spigot end, said wrapping and said winding prestressing said concrete conduit in circumferential compression, a second coating of hardenable material disposed over the exterior of said conduit from the barrel side of said flange to the end of said conduit remote from the spigot end, said second-mentioned coating covering said wire winding and having a laterally disposed end wall contacting the side of said flange adjacent said terminus of said wire winding, at least one of said end walls of said coatings also forming a side wall of said annular groove in said first pipe section for contacting with a side of said gasket to restrain said gasket against axial movement in respect to said flange, the outer diameters of the coatings at said end walls and along said spigot portion within said socket member being such as to provide clearance between the outside surfaces of the coatings and said cylindrical sealing surface on said socket member.

3,183,012
CHUCK MOUNTING
Roy L. Watson, Shawnee Mission, Kans., assignor to Peterson Machine Tool, Inc., Merriam, Kans., a corporation of Missouri
Filed May 14, 1963, Ser. No. 280,376
5 Claims. (Cl. 279—6)

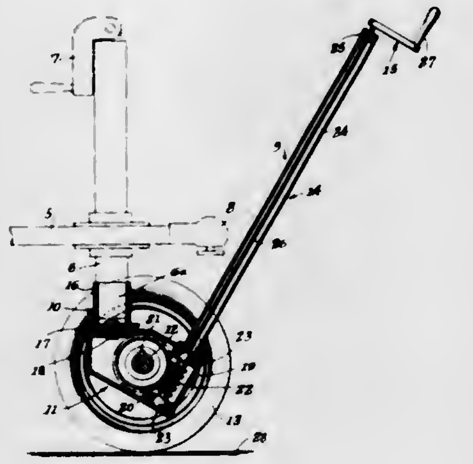
1. In combination with a machine spindle and a work-gripping chuck having a fixed work-gripping axis, mounting means attaching said chuck to said spindle, said mounting means comprising:

- (*a*) a carrier base affixed to said spindle and rotatable therewith,
- (*b*) a carrier mounted on said carrier base for movement thereon radially of the axis of said spindle,
- (*c*) means for moving said carrier adjustably on said carrier base,
- (*d*) a chuck base affixed to said carrier,
- (*e*) a friction disc mounted on said chuck base for limited rotation about an axis parallel to said spindle,
- (*f*) adjustable means for rotating said friction disc relative to said chuck base,
- (*g*) a turntable carried by said friction disc for free rotation, said chuck being affixed to said turntable with the work-gripping axis thereof coaxial with the axis of rotation of said turntable and said friction disc,



- (*h*) brake means interposed between said turntable and said friction disc and operable when engaged to lock said turntable and friction disc against relative rotation, and
- (*i*) manually operable means for selectively engaging and disengaging said brake means.

3,183,013
TRAILER SPOTTER
Andrew Paul Brown, 8637 Cypress Ave., South Gate, Calif.
Filed Sept. 9, 1963, Ser. No. 307,621
3 Claims. (Cl. 280—3)

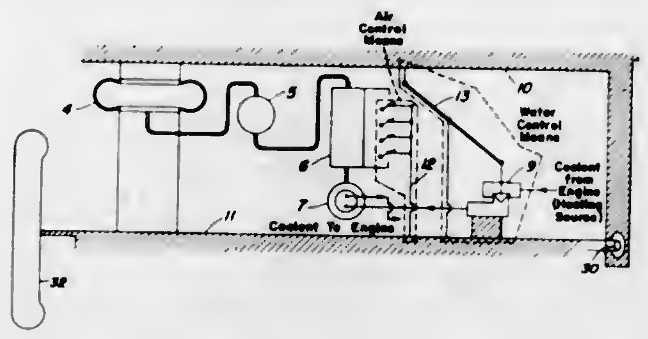


1. A trailer spotter for connection to the tongue of a two-wheel trailer comprising:

- (*a*) geared unit having a worm and worm wheel drive with a transverse output shaft affixed to the worm wheel,
- (*b*) swivel means for connecting said unit to the trailer tongue and swivelly rotational around a vertical axis,
- (*c*) wheel means affixed to and rotational upon rotation of the output shaft,
- (*d*) an elongated tubular extension on said unit,
- (*e*) a shaft affixed to the worm and extending longitudinally in said tubular extension, and
- (*f*) a hand crank on the upper end of the latter shaft for rotating the worm to drive the worm wheel and the wheel means affixed therewith.

3,183,014
PNEUMATIC SUSPENSION SYSTEM

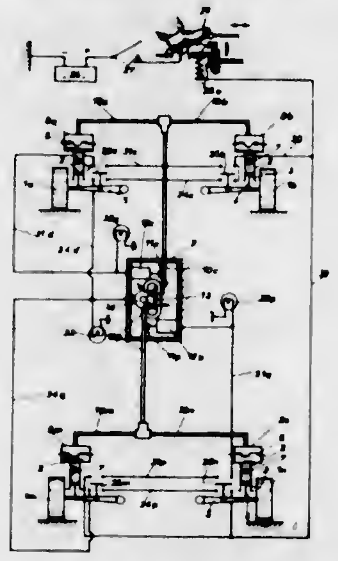
Cornelis Doomernik, Dusseldorf, Germany, assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 23, 1962, Ser. No. 189,505
6 Claims. (Cl. 280—6)



1. A vehicle suspension system comprising a bellows, a controllably heated evaporator supplied with a liquid agent coupled in open connection with the gas suspension bellows through a variable heat transfer rate condenser.

3,183,015
LEVEL CORRECTING SYSTEMS FOR VEHICLES HAVING OLEOPNEUMATIC OR LIKE SUSPENSION SYSTEMS

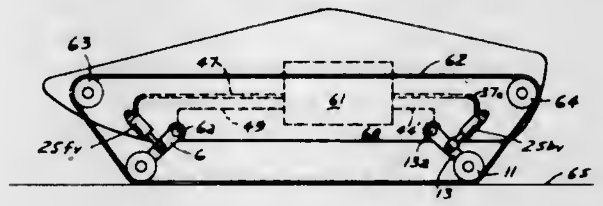
Fernand Stanislas Allinquant, 53 Ave. le Notre, Sceaux, France
Filed Nov. 29, 1963, Ser. No. 326,951
Claims priority, application France, Dec. 5, 1962, 917,636
10 Claims. (Cl. 280—6.1)



1. In combination with a vehicle having a body, an accelerator pedal, an electrical generator and wheels each supporting said body by means of a pneumatic suspension element, an improved level correcting device comprising a reservoir filled with gas, an electric motorpump in said reservoir for simultaneously transferring when energized gas from two suspension elements corresponding to a same end of the vehicle into the reservoir at an overpressure, an electrovalve at least in said reservoir for simultaneously transferring when energized gas from the reservoir into said two suspension elements, electric wheel switches mounted between said body and each wheel respectively for detecting the relative location thereof, two wheel switches corresponding to a same end of the vehicle and furthermore a main switch controlled by the accelerator pedal being connected in series between said electrical generator and said motorpump and electrovalve respectively, for alternately energizing said motorpump and said electrovalve but only when the main switch is closed and the two wheel switches furthermore have similar closure positions.

3,183,016
SUSPENSION DEVICE FOR THE CHASSIS OF A VEHICLE

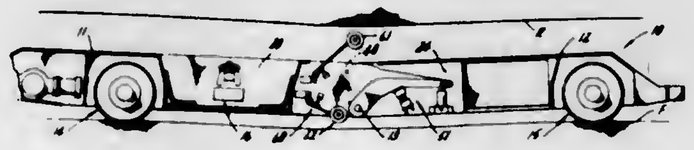
Axel Gerhard Värne Gustafsson, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden
Filed Sept. 9, 1964, Ser. No. 395,148
3 Claims. (Cl. 280—6.1)



1. A suspension device for a vehicle having two front wheels and two rear wheels, said device comprising in combination, a generally plane chassis, four levers pivotally mounted on said chassis and each rotatably supporting one of said wheels, an electro-hydraulic motor coupled to each of said levers for varying the angular position of the respective lever in reference to the general plane of the chassis, a first, a second and a third electro-hydraulic control means for controlling the flow of pressure fluid to said motors, a first pressure fluid conduit means interconnecting the motors of the two rear wheels with each other, second pressure fluid conduit means connecting the motor for the right front wheel to the first control means, third pressure fluid conduit means connecting the motor for the left front wheel to the second control means, fourth pressure fluid conduit means connecting the first and second control means with each other and the third control means, and control circuit means interconnecting the motors and the control means, each of said motors in response to a change in the angular position of the respective lever generating control signals fed to said control means by said circuit means, said control means in response to said signals varying the flow of pressure fluid to said motors so that said levers occupy angular positions at which the general plane of the chassis is substantially level in reference to a support surface for the chassis.

3,183,017
SHUTTLE CAR

Richard C. Lundquist, Palos Heights, Ill., assignor to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed May 1, 1962, Ser. No. 191,631
8 Claims. (Cl. 280—34)



1. A haulage vehicle, said haulage vehicle including, in combination

a body having end portions, said body being jointed intermediate its ends about a substantially transverse axis to thereby enable it to buckle to conform to irregularities in adjacent surfaces,

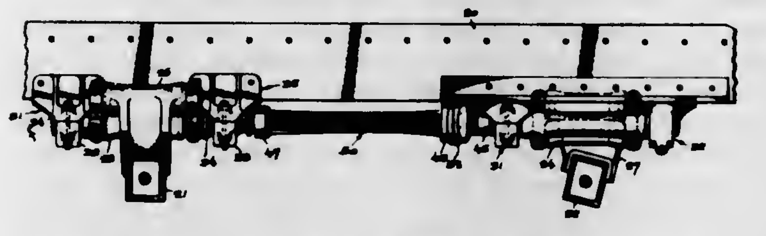
a set of supporting wheels mounted adjacent each end portion of the body, each set of supporting wheels being located a substantial distance from the buckling axis,

and buckling means effective to buckle the jointed body in response to the presence of an overlying or underlying surface closer than a predetermined distance from the body,

said buckling means including a sensing system effective, in response to the presence of an irregularity in an adjacent surface, to physically sense the irregularity and thereafter initiate buckling of the body.

3,183,018
VEHICLE SPRING SUSPENSION EMPLOYING TORSION SPRING MECHANISM

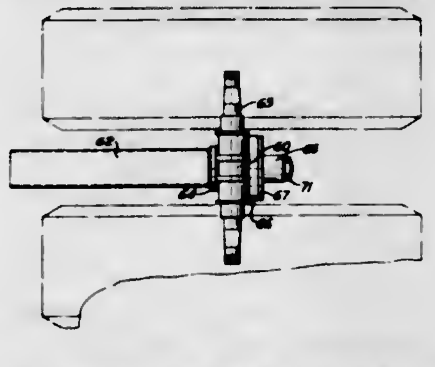
John G. Holmstrom, Seattle, Wash., assignor to Pacific Car and Foundry Company, Seattle, Wash., a corporation of Washington
Filed Oct. 23, 1962, Ser. No. 232,421
14 Claims. (Cl. 280—104.5)



1. The structure applied to each side of a vehicle for springing the vehicle frame from an axle, employing as the springing agent a bundle of flat spring leaves characterized in that at least one end of the bundle is non-circular in cross-section, and comprising, in combination with the frame, the spring bundle, and the axle: a pair of longitudinally spaced axially aligned bearings fixed to the frame, a crank working in the space between said bearings and having its hub prolonged axially from both ends to extend into and receive a journal from the bearings, one of said axial prolongations having its outer end projecting beyond the end limit of the related bearing, a terminal fitting securely connected to the outer end of said projecting end and presenting an outwardly-opening socket in its exposed face formed as the mating complement of said non-circular end of said spring bundle and receiving said non-circular end therein, the spring bundle extending endwise to the journal axis of the crank outwardly from the terminal fitting, a connection from the axle to the arm of the crank acting to impart wrist motions to the crank in response to vertical motion of the axle, and locating means engaging the other end of the spring bundle acting (1) to position the bundle so that its longitudinal axis approximately coincides with the journal axis of the crank and (2) imposing restraint upon the engaged end so that the spring bundle partakes of a torsional wind-up as said socketed end is turned.

3,183,019
TRAILER RUNNING GEAR

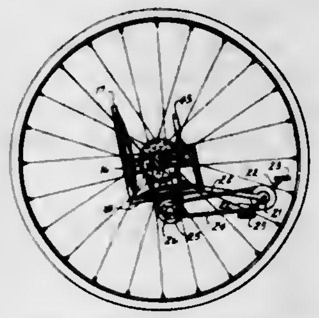
Homer J. Woolslayer, Cecil Jenkins, and Charles D. Iddings, Tulsa, Okla., assignors to Lee C. Moore Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Feb. 5, 1962, Ser. No. 170,984, now Patent No. 3,162,464, dated Dec. 22, 1964. Divided and this application Oct. 2, 1964, Ser. No. 404,999
2 Claims. (Cl. 280—124)



1. A trailer running gear comprising a stiff tube adapted to extend lengthwise of an overlying trailer frame and to be connected to it, an axle housing encircling an end of the tube and rotatably mounted thereon, an axle secured to the housing and extending across the tube, the opposite ends of the axle being formed to receive wheels, a torsion bar disposed in said tube and projecting from said end, means rigidly connecting said axle housing with said projecting end of the bar, a cylindrical torsion member in the tube encircling said bar, means securing one end of said member to the end of the tube adjacent said axle housing and means securing the opposite end of said cylindrical torsion member to the bar.

3,183,020
OCCUPANT CONTROLLED ACROBATIC AMUSEMENT AND EXERCISE DEVICE

Albert J. Hawver, 3403 W. New Orleans, Tampa, Fla.
Filed Dec. 9, 1963, Ser. No. 328,878
3 Claims. (Cl. 280—208)



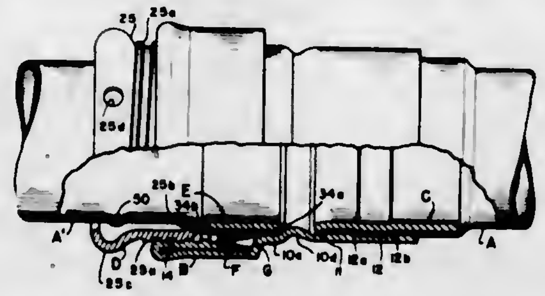
1. A two wheeled exercise and amusement device comprising, in combination, a pair of spaced parallel wheels, a pair of spaced coaxial stud shafts, the inner ends of said stud shafts being perpendicularly secured one each to a pair of spaced parallel cross bars extending longitudinally of the device, said wheels being journalled one each on said stud shafts for rotation about a common axis coincident with the axes of said stud shafts, an occupant seat member fixed between said cross bars and having a seat bottom portion in substantially spaced parallel relation with respect to said common axis and a seat back portion in substantially right angular relation to said seat bottom portion and in substantially spaced relation wtih respect to said axis, said common axis extending through the bight formed by said seat bottom portion and said seat back portion, manually controlled means for independently braking said wheels with respect to their respective stud shafts by an occupant seated in said seat member, occupant actuatable pedal mechanism for rotatively motivating said wheels, said wheels motivating mechanism comprising a power transmitting clutch for each wheel and manually controlled means for actuating said clutches for independently and selectively supplying motivating power to said wheels, said pedal mechanism comprising a pulley and foot pedals for turning said pulley, said pulley being journalled at a position forward of said seat member for receiving the seat member occupant's legs in forwardly-extending relation with respect thereto, whereby the center of gravity of the occupant will be sufficiently close to said common axis and whereby said seat member will provide the necessary support to permit orbital rotation of the occupant.

3,183,021
QUICK ASSEMBLY COUPLING AND PROCEDURE FOR MAKING

Clyde E. Rickard, Pittsburgh, Pa., assignor to McDowell Manufacturing Company, Millvale, Pa., a corporation of Pennsylvania
Filed July 24, 1961, Ser. No. 126,079
2 Claims. (Cl. 285—5)

1. A high-fluid-pressure-withstanding coupling end construction for a first relatively thin wall metal pipe member of substantially uniform diameter along its

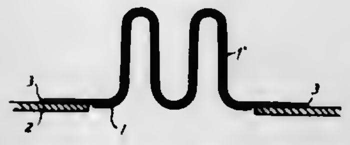
length which is to be coupled with a nose end portion of a second pipe member of substantially the same diameter which comprises, a cylindrical radially-outwardly-expanded forward open-end portion on the first pipe member connected by an annular re-entrant shoulder to an adjacent back unexpanded portion thereof, a hollow open end coupling body of substantially greater wall thickness than the first pipe member having a forward radially-outwardly-expanded cylindrical open mouth portion carrying a doubled-under forward open end wall provided with internal threads therealong; said cylindrical open mouth portion being connected by a re-entrant shoulder, a cylindrical portion, and an annular radially-inwardly-projecting shoulder to an unexpanded cylindrical back mounting end portion of the coupling body; the inner side of said doubled-under forward open end wall extending along the inside of said cylindrical open mouth portion and terminating in an abutment edge that is spaced from said reentrant shoulder to provide a gasket-receiving recess therebetween; said back mounting end portion having a pair of annular banding grooves in a longitudinally spaced-apart relation in its inner periphery, the expanded-out forward open end portion of the first pipe member being positioned along and within the inner periphery of the mounting end portion of said coupling body, a reinforcing metal sleeve of substantially greater wall thickness than the first pipe member within and along the inner periphery of the expanded-out forward open end portion of the first pipe member in substantial alignment with the mounting end portion of said coupling body, and said reinforcing sleeve and the expanded-out forward open end portion of the first pipe member having outwardly-offset annular banding wall portions that interfit with each other in alignment with the banding grooves of the back mounting end portion, the annular banding wall portion of said first pipe member having shear locking edges engaging within the edges of the banding grooves of the back mounting end portion, said reinforcing sleeve having its back edge end in engagement with the re-entrant shoulder of the first pipe member and its forward edge end in flanging engagement with the forward end of the expanded-out forward open end portion of the first pipe member, and said annular radially-inwardly-projecting shoulder projecting radially-inwardly adjacent the forward end of the first pipe member to define a limit stop for the insertion of the nose portion of the second pipe member within the said cylindrical open mouth portion.



3,183,022
EXPANSION JOINTS

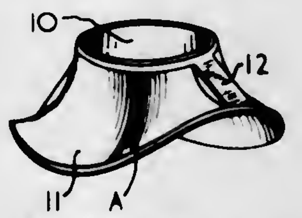
Andre Sayag, St. Mande, France, assignor, by mesne assignments, to Zallea Brothers, Inc., Wilmington, Del., a corporation of Delaware
Filed June 8, 1961, Ser. No. 115,796
Claims priority, application France, June 15, 1960, 830,076
2 Claims. (Cl. 285—93)

1. In an expansion joint for connection into a piping system for transmitting therethrough toxic and other fluents dangerous upon release to atmosphere, in combination, a pair of spaced apart rigid end fittings, a laminated construction of bellows element of generally cylindrical form having inner and outer plies of thin guage sheet material complementally shaped and internested to provide said element with a central corrugated section terminating at its opposite ends in axially alined cylindrical end extensions respectively connected to said end fittings to thereby form a continuous internal flow passage through the joint from one end to the other, which flow passage is isolated from the ambient atmosphere external of the joint when the same is connected into a piping system, said end fittings being each of a wall thickness at least as great as the sum of the thickness of said laminae and being respectively telescoped onto said cylindrical extensions the inner and outer plies of said central corrugated section of the bellows element being disposed with their contiguous surfaces in internested unsecured contact with one another throughout the full longitudinal and circumferential extent of said section, the terminal ends of the inner and outer plies of said cylindrical end extensions of said bellows element welded together to provide a peripheral seal between said laminae and reinforcing means for said end extensions and to define a marginally sealed fluid penetrable interfacial area between the plies extending from one peripheral seal to the other, said sealed interfacial area formed between the contacting surfaces of the plies being normally sealed off from the aforesaid internal flow passage through the joint and thus impervious to the entry into and flow through said area of any fluent except upon a break in or rupture of the inner ply of the laminated bellows element, aperture means formed in the outer ply of said laminae in a position over at least one of said telescoped end fittings, said aperture means including a member secured to said end fitting outwardly of and in overlying relation to said aperture and in reinforcing contact with said outer ply, conduit means in said aperture means coaxial with said aperture extending externally from the outer ply of one of said cylindrical extensions of the bellows element and communicating with said fluid penetrable interfacial area at a point located between the peripheral seal of said one cylindrical extension and the proximate end of said corrugated central section of the bellows element, and a sensing device coupled to said conduit for detecting the passage of the piped fluid through the inner ply of said corrugated section into said fluid penetrable interfacial area to thereby indicate the existence of such unsafe condition of the joint as would require its repair or replacement.



3,183,023
T PIPE FITTING

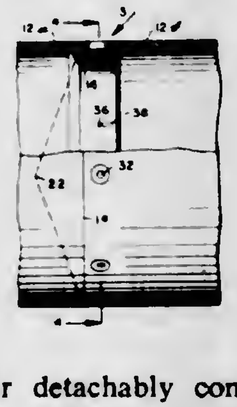
Garnet Edmund Morrison, 293 Glen Forest Road, Toronto, Ontario, Canada
Filed Aug. 6, 1962, Ser. No. 214,957
1 Claim. (Cl. 285—156)



A saddle-type T pipe fitting for a pipeline having a transverse and longitudinal axis, said fitting having a body comprising an outlet section of cylindrical form with a bore therethrough defining an inner peripheral wall and an inlet section in the form of a flared throat section depending from said outlet section, said flared throat section defining an arcuate plane having an orthographic projection in the form of an ellipse having a major and minor axis, said fitting adapted for attachment to a pipeline such that said major axis is parallel to said longitudinal axis of the pipeline, said outlet section and flared throat section having a substantially constant wall thickness except for the area of junction of the two sections, wherein a first plane lying normal to said major axis and parallel to said minor axis of said projection and a second plane lying normal to said minor axis and parallel to said major axis of said projection define respectively a first and second fitting cross-section, the length of the inner peripheral wall of the outlet section as measured in said second plane being less than the length of the inner peripheral wall as measured in said first plane and in the ratio of 1:3 thereby imparting a much greater flare to said fitting in the direction of the longitudinal axis of the pipeline than in the transverse axis, the wall thickness of each said cross-section being greatest in the area of the junction of the flared throat section and the cylindrical outlet section, the wall thickness at said junction in said second plane being greater than the wall thickness at said junction in said first plane, said constant wall thickness and the wall thicknesses at said junction in said second and first planes being in the approximate proportions of $\frac{5}{16}$, $\frac{1}{2}$, $\frac{3}{8}$ respectively, namely in the ratio of 5:8:6.

3,183,024
RADIAL WEDGE JOINT

Jack A. Myers, Ridgecrest, and Langthorne P. Sykes, Manhattan Beach, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 13, 1962, Ser. No. 179,500
2 Claims. (Cl. 285—330)
(Granted under Title 35, U.S. Code (1952), sec. 266)

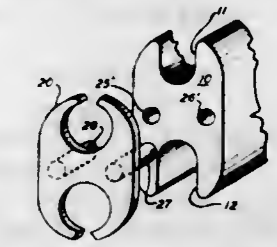


1. Apparatus for detachably connecting together in axial alignment first and second cylindrical tubes of the same outer diameters, comprising in combination;

- (*a*) a projection disposed on an end of the first tube having a cylindrical outer surface of substantially the same diameter as the inside diameter of the second tube and adapted to telescope into an end of said second tube,
- (*b*) a conical surface adjacent said projection extending between the inner end of said cylindrical outer surface and the outside surface of said first tube, the apex of the conical surface being disposed on the axis of the first tube inwardly of the end of the first tube,
- (*c*) said second tube having a conical end surface extending between its inner and outer surfaces adapted to mate in abutting relation with the first named conical surface,
- (*d*) a plurality of angularly spaced rotatable screw members threadedly engaging said projection and having conical outer ends,
- (*e*) a plurality of mating conical apertures extending through said second tube and into which said conical ends are adapted to extend when said screw members are moved radially outward,
- (*f*) the axes of said recesses and conical ends being slightly spaced so that after said conical ends are in partial engagement with said conical apertures and are tightened therein, said tubular members are drawn axially together with the conical end of the second tube in abutting relation to said first named conical surface.

3,183,025
CONNECTOR WITH TEMPORARY CABLE HOLDING MEANS

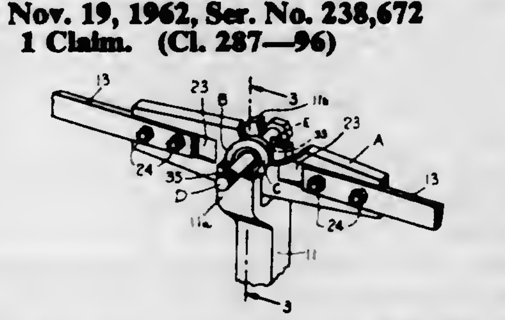
Leslie S. Lynch, Jr., Union, Edward L. Eldridge, Warren Township, Somerset County, and Joseph A. Schiller, Somerset, N.J., assignors to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed May 16, 1963, Ser. No. 280,913
5 Claims. (Cl. 287—78)



1. A compression connector comprising an elongated body member including end walls and side walls, means defining first and second longitudinally disposed but laterally offset substantially U-shaped recesses within said body for selective reception of wires to be connected thereby, at least one end plate including means defining first and second recesses corresponding to said first and second recesses in said body for reception and temporary retention of at least one of said wires therein, and at least one aperture disposed substantially parallel to said longitudinal recess to receive securing means on said plate to retain said plate in aligned relation with one of said end walls of said body effecting registry of said first and second plate recesses with said first and second connector recesses respectively, said means defining each of said recesses in said plate including finger portions terminating with their respective free ends disposed in closely spaced relation adjacent the mouth of said first and second recess portions in said body member substantially closing the recesses in said plate and restricting the recesses in said body whereby said wires may be disposed in said recesses of said end plate and said body and retained therein by said fingers.

3,183,026
RING FRAME TRAVERSE DEVICE

George M. Williamson, 101 Westview Ave., Greenville, S.C.
Filed Nov. 19, 1962, Ser. No. 238,672
1 Claim. (Cl. 287—96)

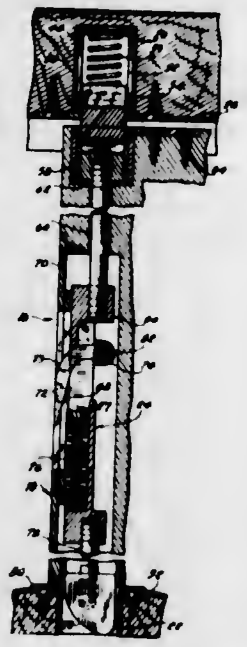


For use in a ring frame having an upright arm carried by a horizontal rocker shaft longitudinally disposed with respect to the ring frame for transmitting motion from a shifter rod to a lifter rod for imparting a traversing motion to the ring rail, the improvement including, a horizontal longitudinally disposed link adapted to be interposed in the shifter rod in alignment therewith, means for rigidly connecting the link adjacent each end thereof to the shifter rod, a housing in the intermediate portion of the link including an inwardly extending integral rim on one side thereof and an inwardly extending removable ring on the other side thereof, a sealed bearing unit carried within the housing and maintained therein by the rim and the ring, a bifurcated element having spaced aligned upstanding portions carried integral with the upper portion of the arm, a stub shaft having a pressed fit within the bearing passing through the upstanding portions at right angles thereto, an integral laterally projecting element formed on the stub shaft adjacent one end thereof, a seat within one of the upstanding portions of the arm receiving the projecting element fixing the stub shaft against rotation with respect to the upright arm, the other end of said stub shaft being mounted in the other upstanding portion of the arm, and means removably confining the stub shaft within the upstanding portions of the arm, including a threaded portion on said stub shaft on the end thereof remote from said pin and a nut threaded thereon.

3,183,027
AUTOMATIC LATCHING LEVER EXTENSION BOLT

Daniel A. Powers, Detroit, Mich., assignor to Precision Hardware Inc., Detroit, Mich., a corporation of Michigan

Filed Jan. 29, 1962, Ser. No. 169,221
9 Claims. (Cl. 292—40)



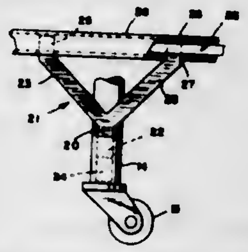
1. An automatic latching bolt for use with doors which include a frame having a head and sill and also include an inactive door leaf, comprising actuating means including a face plate having an opening therethrough secured to the inactive door leaf, a bracket fixedly secured to the face plate having an opening therethrough aligned with the opening in the face plate, an actuating lever pivoted to the bracket and extending through the aligned openings in the face plate and bracket, a body member slidably engaged with said bracket and including a portion engaged with said lever for movement relative to the bracket in response to pivoting of the lever and in opposition to gravity and rod means secured to said body member, and lock and strike mechanism gravity urged into closed relation operable between said actuating means and frame for opening on pivoting of said lever in one direction.

3,183,028
BUMPER FOR BABY WALKERS

Willie Williams, 13 Anne St., South River, N.J.

Filed Aug. 30, 1962, Ser. No. 220,485
10 Claims. (Cl. 293—62)

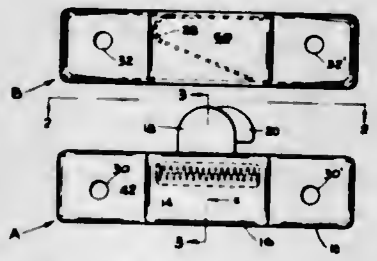
1. In a baby walker adapted to be self-propelled on a floor and having circumferentially spaced legs supporting the same, the lowermost portions of the legs being vertical and provided with casters, the improvement consisting of the provision of a generally upwardly and radially outwardly extending bracket secured to the lowermost portion of each of said legs, the brackets extending upward to a common horizontal level, said level being positioned at a height substantially above the level of the uppermost portions of the casters, a resilient substantially circular bumper mounted on the brackets, and means partly on the bumper and partly on the brackets for releasably securing the bumper to the brackets.



3,183,029
CATCHES

Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York

Filed Sept. 23, 1963, Ser. No. 310,698
8 Claims. (Cl. 292—302)



1. In a catch, a catch member for separable connection to a hasp member, said catch member comprising a catch body having a top wall and opposite, longitudinally extending side walls projecting downwardly from the top wall, an extension projecting from a side of the top wall to provide a dowel, a catch plate positioned on the underside of said top wall intermediate said side walls for longitudinal movement with respect to the catch body, said catch plate having an extension projecting from a side thereof adjacent and underlying said catch body extension, said catch plate extension lying in a plane parallel to the plane of the catch body extension, said catch body extension and catch plate extension having the same general outline with their free ends formed to provide camming means for cooperation with a hasp member, the catch plate extension being provided with a notch for separably connecting the catch member to a hasp member, a puller positioned on said top wall for longitudinal movement with respect to said catch body, means extending through said top wall fixedly connecting the puller to the catch plate, resilient means cooperable with the catch body and the puller normally urging the catch plate to a position wherein the catch plate extension is laterally offset from the catch body extension, said resilient means allowing the extent of lateral offset of the catch plate extension with respect to the catch body extension to be reduced.

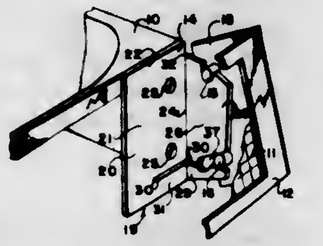
3,183,030
FASTENING CLIP

Ernest Schlueter, 74 Edwards Road, Troy, N.Y.

Filed May 24, 1963, Ser. No. 282,983
5 Claims. (Cl. 292—303)

2. A fastener device for a refrigerator grill wherein the grill has keeper means including first and second

parallel round studs fast with respect to the grill and projecting in the same direction, said device comprising a base of slightly resilient metal provided with a flange projecting at right angles therefrom, said flange having a U-shaped recess in a marginal portion thereof for one of the studs to be disposed and turn in, said flange having an open-ended slot flaring as a notch to receive the second stud as the keeper means turns upon the first, said slot extending continuously from the flange into said base to divide off a portion thereof as a torsion spring, and detent means fast on the flange at the notch for projecting into the path of the second stud to cause spreading of the slot in the flange against the force of the torsion spring.



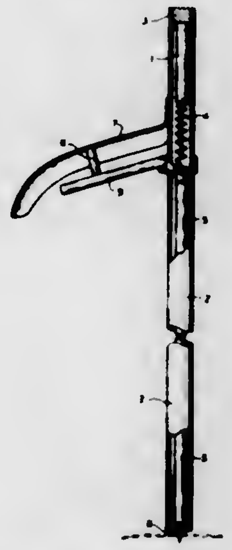
ERRATUM

For Class 293—62 see:
Patent No. 3,183,028

3,183,031
PAPER AND RUBBISH PICK-UP

George Callen Haberstick, Teaneck Township, Bergen County, N.J. (1182 Teaneck Road, West Englewood, N.J.)

Filed Sept. 23, 1963, Ser. No. 310,814
1 Claim. (Cl. 294—19)

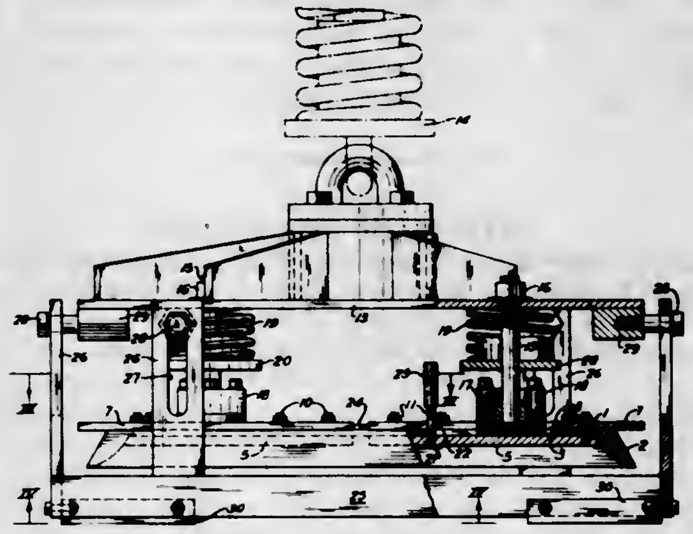


A device for picking up and depositing in a receptacle various articles of waste without soiling the hands, comprising in combination a metal tubing having an upper and a lower end, an element secured to and closing said upper end and depending downwardly into said tubing, an extensile coil spring having its upper end secured to the lower end of said element, an impaling rod reciprocably slidable in said metal tubing, the upper end of said impaling rod being secured to the lower end of said coil spring, the lower end of said impaling rod being pointed, said rod being manually projected from and spring retracted into said tubing, the lower end of said tubing having a plug which has a bore of slightly greater diameter than that of the impaling rod, said plug serving as a guide for the impaling rod and also serving to strip any refuse from said rod as it is retracted into the tubing, a handle rigidly secured to said tubing and extending angularly outwardly therefrom, and a bellcrank lever pivoted adjacent the wall of said tubing with one end extending through said wall and pivotally secured to the top of said impaling rod, the other end of said bellcrank extending away from said tubing directly under and in alignment with said rigid handle for manual manipulation relative to said handle for projecting the impaling rod.

3,183,032
VACUUM LIFTING DEVICE

Richard M. Warfel, Pittsburgh, Pa., assignor to Bunbury Equipment Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 1, 1963, Ser. No. 313,066
9 Claims. (Cl. 294—65)

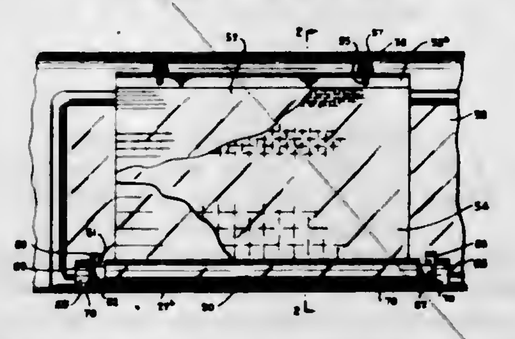


1. A vacuum lifting device comprising a horizontal flexible pad provided with a surrounding depending lip, said pad being provided with a plurality of vertical openings, a separate metal bottom plate engaging the bottom of the pad around each opening, the plates having outer edges adjacent the upper portions of said lip, the plates being spaced a short distance apart to provide narrow gaps between their inner edges, a metal top plate seated on said pad above each bottom plate and provided with an opening registering with the underlying pad opening, the top plates being separated by narrow gaps directly above said first-mentioned gaps, fasteners extending through the top plates and pad around each opening and into the bottom plates for clamping the pad between the top and bottom plates, suspension means extending through each pad opening and connected to the top of the underlying bottom plate, and a vertically movable common support above the top plates for all of said suspension means, said suspension means being formed to permit tilting of any bottom plate relative to the other bottom plates.

3,183,033
ANTI-GLARE SHIELD FOR MOTOR VEHICLE WINDSHIELDS

Nathan Stulbach, 284 Eastern Parkway, Brooklyn 25, N.Y.

Filed Aug. 13, 1962, Ser. No. 216,586
3 Claims. (Cl. 296—97)

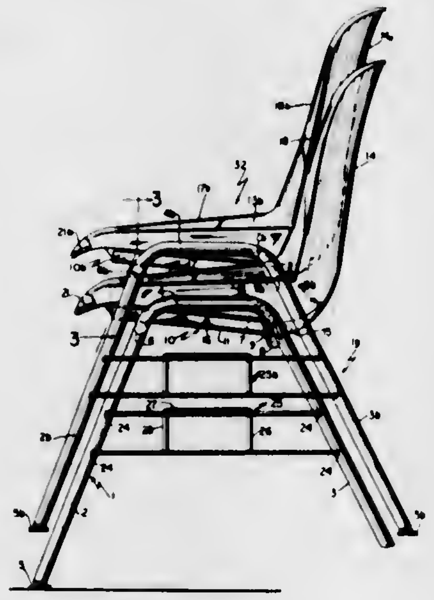


1. An anti-glare shield assembly for a vehicle having an upright windshield and a horizontal dashboard adjacent to the windshield, said assembly comprising a cylindrical

casing having two semi-cylindrical sections,. means detachably securing the sections together, roller means rotatably disposed in said casing, said casing having a longitudinal slot therein, flexible transparent plastic shields wound on said roller means, and passing out of the casing through said slot for covering said windshield, means securing the outer ends of the shields to the vehicle adjacent the windshield, the width of the shields being substantially the length of the casing, and spring means biasing said roller means against unwinding, said shields being differently pigmented with the pigments of the shields increasing in intensity from outer free ends thereof downwardly toward the casing, and bracket means at opposite ends of the casing for securing the same to the vicinity of the dashboard, said bracket means including a pair of magnets, angle brackets secured to the magnets, and U shaped bracket members secured to opposite ends of the casing and adjustably secured to the angle brackets.

3,183,034
ARTICLE OF FURNITURE

Allen L. Midyette, Jr., Monson, Mass., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 8, 1963, Ser. No. 314,773
1 Claim. (Cl. 297—239)

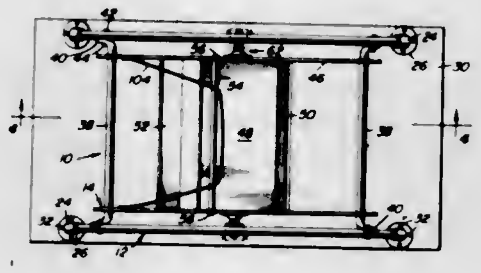


A chair comprising two inverted U-shaped frame members with the legs of each member diverging downwardly and with the base portion being substantially horizontal, a front cross member rigidly joining said frame members adjacent the upper ends of the front legs, a rear cross member rigidly joining said frame members adjacent the upper ends of the rear legs, upwardly open channel members mounted on and extending between said front and said rear cross members adjacent said frame members, a molded chair seat and back having fore and aft ribs spaced laterally to extend into the grooves of said channel members, and means securing said ribs to said channel members.

3,183,035
CHILD'S ROCKER SWING

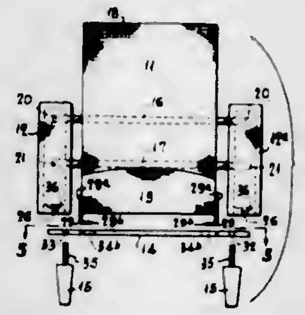
Harry A. Ross, 2044 Locke Ave., Waterloo, Iowa
Filed Dec. 5, 1962, Ser. No. 242,544
3 Claims. (Cl. 297—281)

1. A child's knock-down rocker swing comprising, in combination, a pair of vertically extending A-frames in spaced apart parallel relationship, the apex of each A-frame having a bearing aperture extending transversely therethrough, a reinforcing lug secured to the bottom of each said apex, the bottom ends of the legs of said A-frames having feed thereon adapted to rest on a floor surface, a cross bar detachably securing each leg of each said A-frame to the parallel leg of the other A-frame adjacent their lower foot ends, a rocker means comprising a pair of spaced apart vertically extending parallel rigid sheet members, seat, back, and foot support means extending between said parallel rigid sheet members, each having cleats detachably secured to said rigid sheet members, said cleats securing said rigid sheet members in spaced apart relationship a less distance than the distance between said A-frames, said rocker means fitting between said A-frames, pivot rods detachably secured to said rigid sheet members, each pivot rod extending through said bearing aperture in the adjacent A-frame apex and suspending said rocker means between them, and a tension spring tightly coiled on each pivot rod between the rigid sheet member and the A-frame apex, said coiled springs limiting the rocking arc of said rocker means on said pivot rods, each coil spring having one end removably extending into an anchor aperture extending transversely through the adjacent apex reinforcing lug and having its other end removably extending transversely into an anchor aperture in the adjacent rigid sheet member, said springs thus being normally inaccessible to a child occupant in said rocker means.



3,183,036
UPHOLSTERED FURNITURE

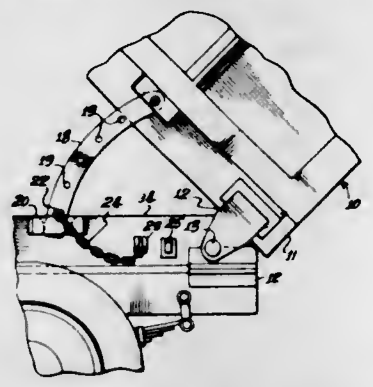
Frederick K. Hill, Redwood City, Calif.
(1071 Alderbrook Lane, San Jose, Calif.)
Filed July 3, 1962, Ser. No. 207,285
4 Claims. (Cl. 297—440)



1. In a knockdown article of furniture having a plurality of supporting leg members, a horizontally disposed seat platform member, a pair of vertically disposed side arm members, and a relatively flat vertically disposed back member, the combination of horizontally releasable means for supporting said back member edgewise by and between said arm members, said means including at least one horizontally disposed rod extending through and having its opposite ends projecting beyond the opposite edges of said back member, the proximate faces of said side members having alined apertures therein for receiving said projecting rod ends; and vertically releasable means carried by said leg members and penetrating said platform member for locking said projecting rod ends of the back member in the alined apertures of said side members.

3,183,037
SAFETY SUPPORTING DEVICE FOR DUMP TRUCK BODIES

Robert B. Reichert, 1808 S. Joyce St., Arlington, Va.
Filed Mar. 8, 1963, Ser. No. 264,001
2 Claims. (Cl. 298—38)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A safety supporting device for dump trucks having a tiltable dump body pivoted at the rear end of the truck comprising:

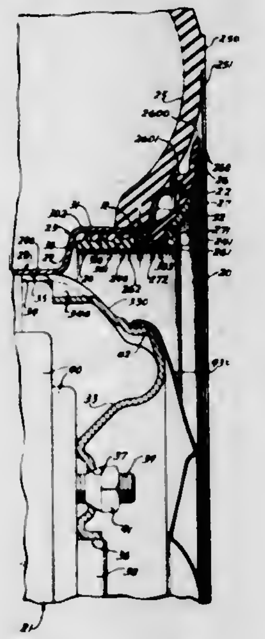
an arcuate supporting arm pivotally mounted on each side of said dump body, said arcuate arm being provided with a plurality of apertures;

a supporting arm bracket receptacle fixedly mounted on each side of said truck and adapted to receive said supporting arm for passage therethrough; and

a supporting pin chain-mounted on each side of said truck adjacent to each of said supporting arm bracket receptacles, said supporting pin adapted to be inserted into one of said supporting arm apertures visible above said bracket receptacle whereby said supporting arm is prevented from further downward movement through said receptacle.

3,183,038
WHEEL AND TIRE TRIM CONSTRUCTION

Charles B. Aske, Jr., Birmingham, Mich., assignor, by direct and mesne assignments, to Gar Wood Industries, Inc., a corporation of Michigan
Filed Nov. 14, 1963, Ser. No. 323,761
6 Claims. (Cl. 301—37)



1. A wheel and tire assembly for vehicle wheels including a rim having a tire bead seat forming an axially outwardly disposed tire bead seat annulus, a tire bead seat flange, and a tire mounted on said rim, said wheel and tire trim assembly covering said tire bead seat and the exposed portion of said rim outwardly therefrom and trimming said tire mounted on said rim comprising

an annular wheel trim element including an axially disposed annular sleeve portion somewhat smaller in diameter than the said tire bead seat annulus of the said vehicle wheel, and an axially outer radially disposed bull nose portion,

an annular color stripe element including an arcuate side wall portion, an annular bead portion, and an axially disposed anchorage flange portion extending axially inwardly from said bead portion,

an annular tire trim element including an arcuate radially disposed side wall portion, an annular bead portion, and an axially disposed anchorage flange portion extending axially inwardly from said bead portion,

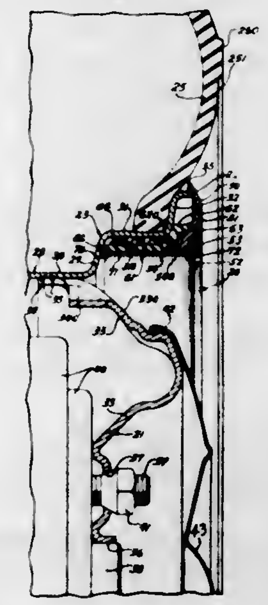
and an annular anchorage element including an annular axially disposed base portion, a plurality of circumferential generally triangular axially spaced radially extending flexible anchorage teeth on said base portion, and an annular axially disposed anchorage flange portion extending axially outwardly from said base portion,

said color stripe element, said tire trim element and said anchorage element being assembled in axial juxtaposition on said wheel trim element in that order with said color stripe element adjacent said bull nose portion of said tire trim element and with said anchorage flange portions of said color stripe, tire trim and anchorage elements disposed in overlapping relationship,

the outside diameter of said anchorage teeth and the outside diameter of the overlapping anchorage flange portions of the color stripe, tire trim and anchorage elements when assembled on said annular wheel trim element being somewhat greater than the diameter of the tire bead seat annulus of said vehicle wheel whereupon the telescoping of the axially disposed portion of said wheel and tire trim assembly within the tire bead seat annulus of said vehicle wheel firmly but removably anchors the said vehicle wheel and tire trim assembly as a unitary whole on said vehicle wheel employing a combined toothed and compressive gripping action.

3,183,039
VEHICLE WHEEL AND TIRE TRIM

Charles B. Aske, Jr., Birmingham, Mich., assignor, by mesne assignments, to Gar Wood Industries, Inc., a corporation of Michigan
Filed Mar. 5, 1964, Ser. No. 349,687
3 Claims. (Cl. 301—37)



1. A wheel and tire assembly for vehicle wheels including a rim having a tire bead seat forming an axially outwardly disposed tire bead seat annulus, a tire bead seat flange terminating into an annular axially disposed wheel rim lip, and a tire mounted on said rim, said wheel

and tire trim assembly covering said tire bead seat and the exposed portion of said rim outwardly therefrom and trimming said tire mounted on said rim comprising

an annular wheel trim element including an axially disposed annular sleeve portion somewhat smaller in diameter than the said tire bead seat annulus of the said vehicle wheel, and an axially outer radially disposed bull nose portion,

an annular tire trim element including an arcuate side wall portion and an annular double bulbous generally axially disposed base portion including an outer axially disposed annular bulbous anchorage rib and an inner radially disposed annular bulbous anchorage rib with an annular reentrant anchorage groove formed in said base portion adjacent said inner anchorage rib,

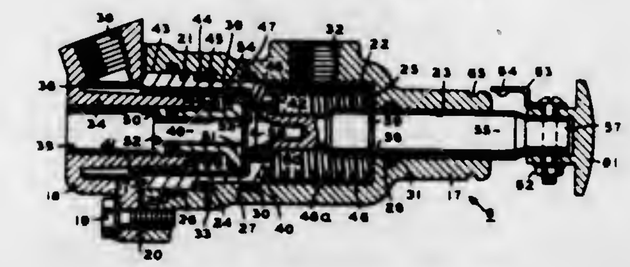
an annular anchorage element including an annular axially inwardly disposed base portion, a plurality of circumferential generally triangular axially spaced radially extending flexible anchorage teeth on said base portion, and an annular combined spacer and anchorage flange portion extending axially and radially outwardly from said base portion, said combined spacer and anchorage flange portion including an annular bulbous anchorage rib and an adjacent annular anchorage groove located to nest into and receive respectively the said annular anchorage groove and the inner radially disposed bulbous anchorage rib of the double bulbous base portion of said wheel trim element,

said tire trim element and said anchorage element being assembled in interlocked juxtaposition on said wheel trim element in that order with said tire trim element disposed adjacent said bull nose portion of said wheel trim element and with the bull nose portion of said wheel trim element in contact with the outer axially disposed annular bulbous anchorage rib of the annular double bulbous base of said tire trim element,

the outside diameter of said anchorage teeth of the annular axially disposed base portion of the annular anchorage element being somewhat greater than the diameter of the tire bead seat annulus of said vehicle wheel whereupon the telescoping of the axially disposed portion of said wheel and tire trim assembly to refusal within the tire bead seat annulus of said vehicle wheel with the annular spacer and anchorage flange portion of the said anchorage element in abutment against the juncture of the tire bead seat and tire bead seat flange of the vehicle wheel firmly but removably anchors the said vehicle wheel and tire trim assembly as a unitary whole in the desired position on said vehicle wheel.

3,183,040
RETARDER VALVE AND SYSTEM
Robert L. Gold, Pine Lawn, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

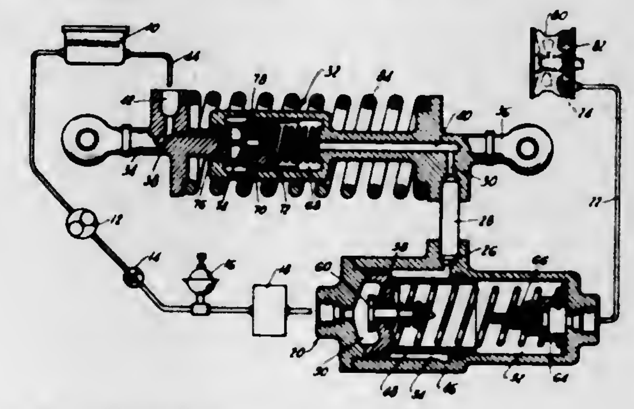
Filed Nov. 7, 1962, Ser. No. 236,112
5 Claims. (Cl. 303—6)



1. A control valve comprising inlet and outlet fluid pressure chambers, first and second valve means normally urged into sealing engagement to interrupt communication between said inlet and outlet chambers, an exhaust passage in said first valve means normally venting said outlet chamber to atmosphere, a valve seat for said first valve means in said outlet chamber, said first and second valve means being concertly movable in response to fluid pressure in said inlet chamber above a predetermined amount to sealably engage said first valve with said valve seat and close said exhaust passage, and said second valve means being further movable in response to fluid pressure in said inlet chamber to disengage said first valve means and establish metered pressure fluid communication between said inlet and outlet chambers, and resilient means having a substantially constant force to prevent concert movement of said first and second valve means until the fluid pressure in said inlet chamber attains a predetermined amount.

3,183,041
COMBINED BRAKE ADJUSTER AND TORQUE LIMITER
Garold Eugene Grossnickle, Robert A. Elliott, and John R. Williamson, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed July 1, 1963, Ser. No. 291,730
3 Claims. (Cl. 303—49)



2. A fluid brake system comprising:

a brake actuating means;

a pressure responsive brake means in fluid communication with said brake actuating means;

a brake adjuster interposed between said brake actuating means and said pressure responsive brake means in said fluid communicating means, said brake adjuster having a housing having a piston therein adapted to first pressurize a column of fluid for actuating said brake means in response to said brake actuator and second to replenish the column of fluid to allow for wear of said brake means;

a port in said housing registering with an annular chamber in said brake adjuster formed between said housing and said piston about said piston;

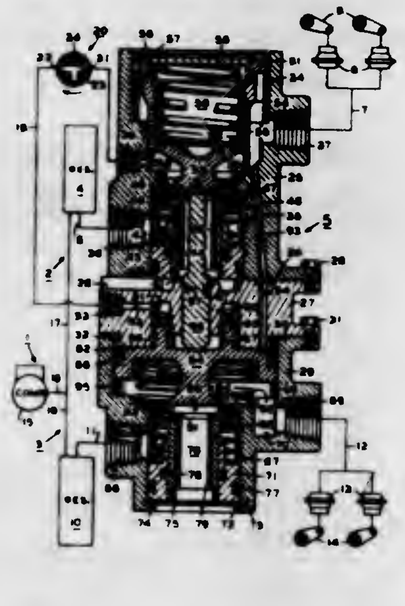
a torque sensing device interposed with said port and a reservoir, said device including a fluid control means monitoring the fluid communication therethrough so as to prevent said communication when said brake means has created a torque in excess of a predetermined amount to thereby create excessive pressure in said annular chamber resisting movement of said piston to apply said brake means; and

a yieldable means for preventing the termination of communication between said port and said reservoir.

3,183,042
RATIO SELECTOR VALVE
Richard C. Bueler, Glendale, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Filed Feb. 4, 1963, Ser. No. 256,048
16 Claims. (Cl. 303—52)

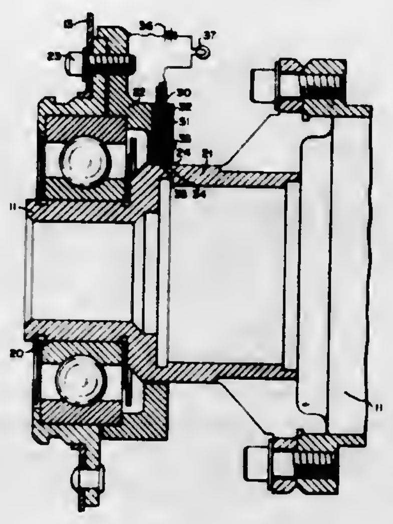
1. A control valve for use in a dual brake system comprising a housing, a pair of application means movable in said housing, means within said housing including said application means defining a pair of pressure fluid flow passages adapted for respective connection between the fluid pressure sources and the fluid pressure responsive motors of said dual brake system, one of said application means being movable in response to an applied force to effect the application of fluid pressure through one of said flow passages, the other of said application means also defining with said housing a pair of expansible fluid pressure chambers in opposed relation with the other of said flow passages, passage means connecting one of said chambers in pressure fluid communication with the applied fluid pressure in said one flow passage, said other application means being movable in response to fluid pressure in said one chamber to effect the application of fluid pressure through the other of said flow passages in a predetermined ratio with that applied in said one flow passage, and other means for selectively connecting the other of said chambers in pressure fluid communication with the fluid pressure applied in said one flow passage, said other application means being responsive to the fluid pressure in said chambers upon the connection of said other chamber with the fluid pressure applied in said one flow passage to effect the application of fluid pressure through said other flow passage in a ratio proportionally changed from the predetermined ratio.



3,183,043
FAIL-SAFE BEARING STRUCTURE
Larry D. Creeger, Jackson Township, Allen County, and William S. Neff, Fort Shawnee, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

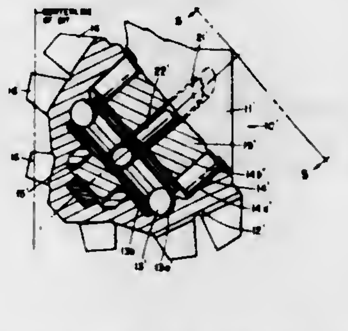
Filed Oct. 18, 1962, Ser. No. 231,478
3 Claims. (Cl. 308—1)

1. A fail-safe bearing structure for rotating machinery comprising, a stator, a rotor shaft having first and second rotor bearing surfaces, a first stator bearing between said stator and said first bearing surface, a second stator bearing carried by said stator to normally not engage said second rotor bearing surface and adapted to engage said second rotor bearing surface to thereby journal said rotor upon failure of said first bearing, temperature responsive indicating means carried by said second stator bearing and responsive to temperature rise of said second stator bearing upon engagement with said second rotor bearing surface to indicate failure of said first stator bearing, said second stator bearing being comprised of electrically conductive material, said temperature responsive indicating means being comprised of an electric conductor adapted to be connected in series with electric signal means to one terminal of a source of electric current, means to mount said conductor in normally electric insulating relation on said second stator bearing, means adapted to electrically connect said second stator bearing to the other terminal of the source of electric current, and temperature responsive means to change said mounting means to irreversibly electrically connect said conductor to said second stator bearing upon rise in temperature of the second stator bearing above a predetermined amount.



3,183,044
DRILL BIT
Robert G. Peter, 2532 Swift St., Houston, Tex.; Juanita G. Peter, executrix of said Robert G. Peter, deceased

Filed Nov. 5, 1962, Ser. No. 235,190
18 Claims. (Cl. 308—8.2)



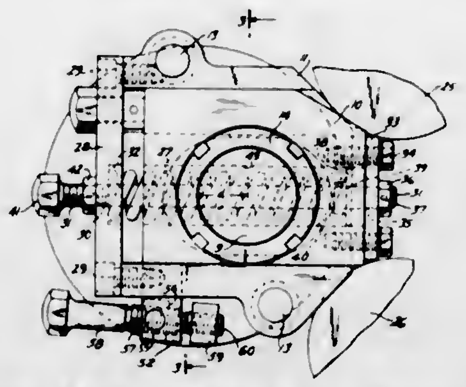
1. A drill bit comprising: at least one support including a journal portion; a cutter mounted on said journal portion and having a bore including a ball raceway and a roller raceway; said journal portion including a ball raceway and a roller raceway respectively complementary to said ball and roller raceways of said cutter and providing principal load bearing arcuate surfaces disposed to support the principal loads encountered by said drill bit while drilling; roller bearings in said complementary roller raceways rotatably mounting said cutter on said journal portion; ball bearings in said complementary ball raceways longitudinally interlocking said cutter on said journal portion; a ball retainer diagonally extending within said journal portion and directly above said load bearing arcuate surfaces and including a surface in ball bearing conducting relation to the ball raceway of said journal portion; and means, disposed in said journal portion in coextensive relation to said ball retainer and in unshielded relation to stress waves transmitted toward said ball retainer from said principal load bearing arcuate surfaces, for transmitting stress waves impinging thereon in directions within said journal such that stress wave concentration in journal portions immediately underlying said principal load bearing arcuate surfaces is minimized, to thereby enhance the apparent endurance thereof.

3,183,045

ROLLER SOCKET MOUNTING

Andrew R. Hegeman, Yonkers, N.Y., assignor to R. Hoe & Co., Inc., New York, N.Y., a corporation of New York

Filed Feb. 11, 1963, Ser. No. 257,710
3 Claims. (Cl. 308—15)



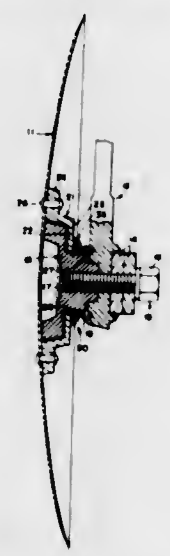
1. A roller socket mounting for printing machines comprising a slide, guide means for supporting the slide on a machine frame and guiding it for movement in a predetermined direction, a roller socket, a stub shaft on the roller socket rotatably carried in a bore in the slide and having its axis spaced from the roller socket axis in the said predetermined direction, means for pivotally adjusting the roller socket with relation to the slide about the said stub shaft axis for positioning the roller socket axis transversely of the said predetermined direction, an adjustable spring for urging the slide in the predetermined direction, and means for locking the slide and roller socket to the guide means against sliding and pivotal movement, the said locking means comprising relatively movable wedge members between the slide and guide means and actuating means for the wedge members for engaging and disengaging the same to lock and unlock the mounting.

3,183,046

BEARING SEAL

William A. Hyland, Horicon, Wis., assignor to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Oct. 17, 1961, Ser. No. 145,699
1 Claim. (Cl. 308—19)



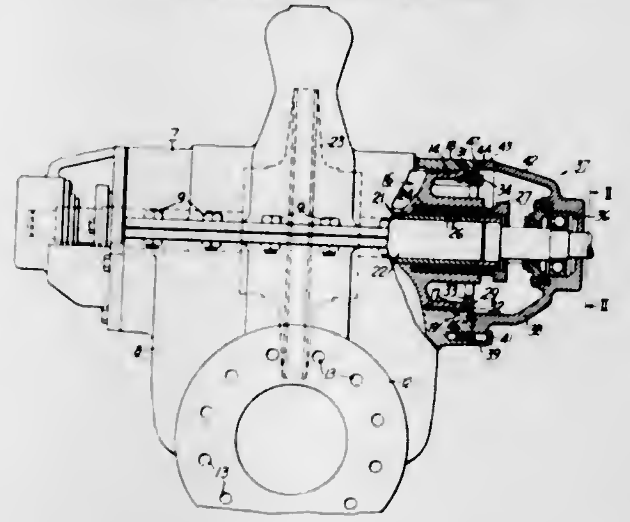
A disk furrow opener bearing seal assembly comprising: a disk furrow opener, vertically extending supporting means, a relatively stationary bearing carried by said supporting means and having a generally axially extending cylindrical hub and a generally radially outwardly extending bearing section, a bearing cap fixed to said disk and embracing said radially outwardly extending bearing section and including a substantially planar outer face substantially parallel to said bearing section and encircling said cylindrical hub, an apertured rubber-like member having a flat planar disk-like configuration in its unstressed state, said member being at least partially elastically stressed about said cylindrical hub and having the radially inner edge about the aperture grippingly engaging the cylindrical outer surface of said hub, one of the radially outer side portions of the member being substantially normal to the cylindrical hub and abutting the outer planar side of said bearing cap, a rigid ring convexo-concave in section, the convex side of the ring lying in nested relation against the other side of said rubber-like member, and spring means disposed about said cylindrical hub and bearing at one end against said supporting means and at the other end against the concave surface of said rigid ring in an axial direction to urge said outer side portion of the rubber-like member against said planar side and to urge the inner edge portion of said rubber-like member against the cylindrical outer surface of the hub.

3,183,047

BEARING SUPPORT FOR SPLIT CASING PUMP

Guy H. Ribble, Jr., Brookfield, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Oct. 25, 1962, Ser. No. 233,072
7 Claims. (Cl. 308—22)



2. In a pump the combination comprising: a pump casing having aligned end bores, said casing constructed of two sections releasably connected along a longitudinal joint; a pair of cylindrical end closures carried in and closing said end bores, said end closures having aligned shaft bores; a rotatable shaft extending through said aligned shaft bores; a radially inwardly facing shoulder in the end of one of said casing sections; a bearing housing having a first arm releasably and rigidly connected to the other of said casing sections and a second arm spaced from said first arm having a flange thereon with a radially outwardly facing surface contacting said radially inwardly facing shoulder, said surface and said shoulder being free of positive retaining means; and a bearing contained within said housing and rotatably supporting said shaft.

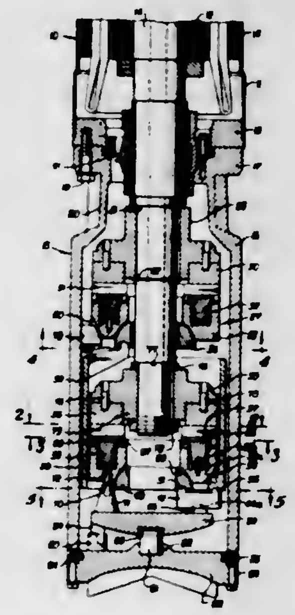
3,183,048

MULTIPLE THRUST BEARING STRUCTURE

Peter S. Komor, Los Angeles, Calif., assignor to Emerson Electric Co., a corporation of Missouri

Filed Feb. 18, 1963, Ser. No. 259,294
1 Claim. (Cl. 308—160)

In a multiple bearing for a submersible structure having a vertical shaft: a casing; a first bearing structure having a plurality of tiltable shoes spaced about the axis of said shaft, said first bearing structure having a retainer for nonrotatably supporting said shoes; a second bearing structure having a plurality of tiltable shoes spaced about the axis of said shaft, said second bearing structure having a retainer for nonrotatably supporting said shoes; the first bearing structure being located above the second bearing structure; a pair of thrust members carried by the shaft for transmitting a portion of the shaft thrust to the shoes of the respective bearing structures; each of said bearing structures having a supporting ring having a convex surface in the form of a spherical zone fitting the corresponding retainer for sustaining the thrust of the corresponding bearing structure; a base below the bearing structures; a plurality of rocker arms equiangularly spaced about the base; said rocker arms being mounted on the base for tilting movement in planes substantially radial to the shaft axis, and having inner ends and outer ends; the inner ends engaging the supporting ring of the second bearing structure; a sleeve-like link surrounding the second bearing structure and having one end engaging the outer ends of the rocker arms and the other end engaging the supporting ring of the first bearing structure; a projection carried by the casing above the link and engaging the retainer of the first bearing structure at a place spaced radially outwardly of the supporting ring of the said first bearing structure for limiting angular movement of said retainer; and a projection carried by the base and extending upwardly between the rocker arms and engaging the retainer of the second bearing structure at a place spaced radially outwardly of the supporting ring of the said second bearing structure for limiting angular movement of the said ring.



3,183,049

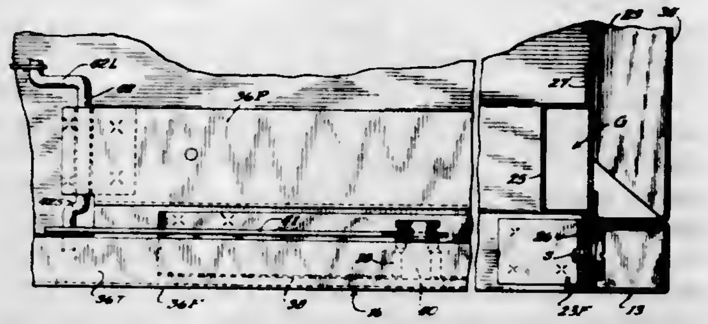
DESK PEDESTAL CONSTRUCTION

John P. Ericson, St. Charles, and Bruce O. Buhrmaster, North Aurora, Ill., assignors to All-Steel Equipment Inc., a corporation of Illinois

Original application June 20, 1963, Ser. No. 289,177. Divided and this application June 2, 1964, Ser. No. 380,737

3 Claims. (Cl. 312—221)

3. A lock arrangement for controlling a shiftable latch bar positioned within a pedestal having an open front face and equipped with a horizontally slidable drawer that is movable through said face and that is engageable, when in closed position, by said latch bar to restrain such movement, said arrangement including a filler panel section having a horizontal top wall, a front wall merging with the horizontal wall, the latter having a rearward extension providing a mounting plate for attachment internally to said pedestal to dispose said filler panel section across the top of said pedestal face with said front wall lying substantially below the upper plane of the pedestal, said front wall having a wall opening, a lock tumbler mounted in said filler panel section, and facing through said wall opening, a mechanism movably mounted to said filler panel unit and engageable with said latch bar upon insertion of said filler panel section into said pedestal, and means connected between said tumbler and said mechanism and responsive to actuation of said tumbler to produce latch bar shifting motion of said mechanism.

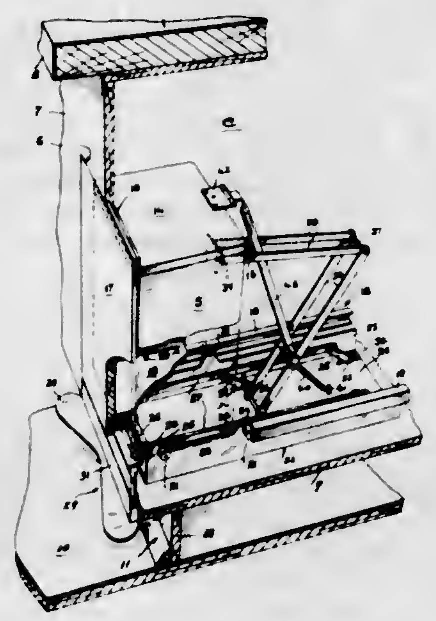


3,183,050

GARBAGE DISPOSAL UNITS

Archie C. Hudson, 53 Hunt Ave., Richmond Hill, Ontario, Canada

Filed Sept. 26, 1963, Ser. No. 311,702
11 Claims. (Cl. 312—270)

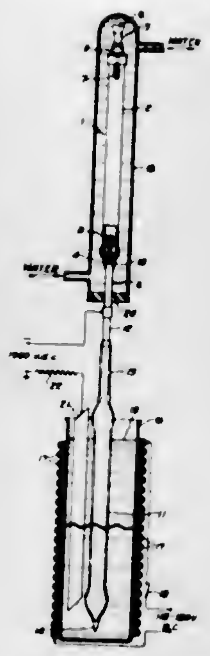


1. A garbage disposal unit adapted for concealed installation in a kitchen cabinet or the like having a framed opening, said unit comprising a carriage having at least one longitudinally extending runner, a container fixedly mounted on said carriage for projection through said framed opening, a slide device disposed within said cabinet and suspending said runner for reciprocal movement along with said container, an actuating mechanism for effecting at least a forward stroke of reciprocal movement, said actuating mechanism including a horizontal bar, supporting means sustaining said horizontal bar for depressional movement with a parallel motion, a treadle connected to said horizontal bar for effecting said depressional movement thereof, a lever having a fulcrumed lower end connected to said supporting means and adapted to be swung forwardly by depressional movement of said horizontal bar, said lever having an upper end connected to said container for imparting a projecting movement thereto as it is swung forwardly.

3,183,051
ALKALI METAL VAPOR LAMP MANUFACTURE

Kurt Schmidt, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed Mar. 1, 1963, Ser. No. 262,107
3 Claims. (Cl. 316—3)

1. The method of introducing a charge of alkali metal into a sealed electric device impervious thereto which comprises attaching a glass appendix to said device through a conductive joining tube capable of serving as an electrode, the glass of said appendix containing said alkali metal as a constituent, introducing a filling of ionizable gas into the combination of device and appendix and sealing off the combination, immersing the appendix into a molten bath of a salt of said alkali metal maintained at a temperature where the glass is conductive by reason of alkali ion mobility, applying a direct current potential in negative polarity to said conductive joining tube and in position polarity to an electrode immersed into said salt bath, said potential being sufficiently high to maintain a discharge in said glass appendix between said conductive joining tube and the walls of said appendix whereby alkali metal ions are electrolyzed directly through the walls of said appendix, transferring the alkali metal from the appendix into the device by applying heat to the appendix and cooling the device, and thereafter severing and sealing the connection between said device and the glass appendix to tip-off the device.



CHEMICAL

3,183,052
PROCESS FOR THE CONTINUOUS PRODUCTION OF BROWN WATER-INSOLUBLE AZO-DYESTUFFS ON FABRICS OF VEGETABLE FIBERS

Ernest Paul Sommer, Summit, N.J., and Friedrich C. Schneider and Heinz E. Schneider, Charlotte, N.C., assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruening, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed June 15, 1962, Ser. No. 202,683
Claims priority, application Germany, Oct. 18, 1961,
F 35,161
4 Claims. (Cl. 8—46)

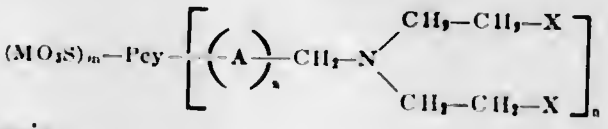
1. Process for the continuous production of brown, water-insoluble azo-dyestuffs on fabrics of vegetable fibers which comprises treating the fabric at a speed of goods of 40 to 90 meters per minute, at a temperature between 65° and 95° C., with an alkaline solution of 1-(3'-hydroxy-diphenylene oxide-2'-carboylamino)-2-ethoxybenzene and drying it at a temperature between 130° and 180° C., then developing the dyestuff in the fabric at a temperature between 15° and 25° C. and at a pH between 4 and 6.5 with a diazonium compound of a primary aromatic amine, passing the fabric through air for 20 to 30 seconds, then treating it at a temperature between 20° and 60° C. with an aqueous solution of 0.5 to 2% strength of an alkali selected from the group consisting of alkali-metal carbonates and alkali-metal bicarbonates, and subjecting it to rinsing, soaping with a detergent for 30 to 60 seconds at a temperature between 70° and 90° C. and drying.

3,183,053
DYEING PROCESS

David I. Randall, New Vernon, and Wilhelm Schmidt-Nickels, Little York, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 19, 1961, Ser. No. 160,641
5 Claims. (Cl. 8—54.2)

1. In a process for coloring fibers containing a reactive hydrogen atom, the step of treating the fibers:

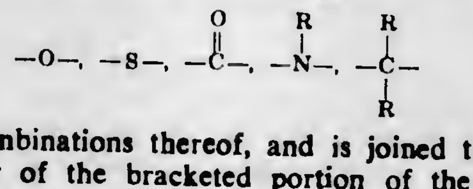
(1) under acid binding conditions, with
(2) an aqueous dispersion of a
(3) a compound of the formula



$$(MO_3S)_m-Pcy-\left[\left(-A-\right)_a-CH_2-N\begin{matrix}CH_2-CH_2-X\\CH_2-CH_2-X\end{matrix}\right]_n$$

wherein

(*a*) the bracketed portion of the formula is directly joined to the Pcy moiety,
(*b*) X is the anion of phosphoric acid,
(*c*) Pcy represents a phthalocyanine molecule,
(*d*) A represents a divalent aliphatic bridging link selected from the group consisting of



$$-O-,\ -S-,\ -\overset{O}{\overset{\|}{C}}-,\ -\overset{R}{\overset{|}{N}}-,\ -\underset{R}{\overset{R}{C}}-$$

and combinations thereof, and is joined to the remainder of the bracketed portion of the formula through a terminal carbon atom,
(*e*) M is selected from the group consisting of H, alkali, ammonium, and amine cations,
(*f*) *m* has a value of 0 to 3,
(*g*) *a* has a value of 0 to 1, and
(*h*) *n* has a value of at least 1.

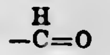
3,183,054
ALDEHYDE CONDENSATION PRODUCTS AND THEIR USE IN TREATING FIBROUS MATERIALS

Rudolph F. Fischer, Oakland, and Curtis W. Smith, Berkeley, Calif., assignors to Shell Oil Company, a corporation of Delaware
No Drawing. Filed July 24, 1959, Ser. No. 829,211
12 Claims. (Cl. 8—94.33)

1. A process for treating fibrous materials to improve their properties which comprises contacting the fibrous material with an aqueous solution of (1) a previously neutralized reaction product of (*a*) an aldehyde having attached to a carbon atom involving the alpha to beta carbon atom relative to the

$$\overset{H}{-C}=O$$

group a member of the group consisting of a —OH, —SH and —NH_2 radical and a carbon-to-carbon unsaturated linkage, and (*b*) a dissimilar aldehyde containing



$$\overset{H}{-C}=O$$

as the only reactive group, prepared under acidic conditions, and (2) an acid acting catalyst, and heating to effect cure, with the proviso that when the aldehyde defined in (*a*) is an unsaturated aldehyde in the presence of water, the aldehyde defined in (*a*) and the aldehyde defined in (*b*) are combined in a mol ratio varying from 8:1 to 1:8.

3,183,055
PROCESS OF HARDENING CELLULOSE PAPER BOARD WITH CERTAIN ALUMS AND POLYHYDROXYL LOWER ALKANOLS AND PRODUCTS PRODUCED THEREFROM

Leonard Mackles, 635 E. 14th St., New York, N.Y.
No Drawing. Filed May 15, 1961, Ser. No. 116,227
6 Claims. (Cl. 8—116)

1. A process of preparing a hard coating on a cellulose paper board comprising preparing a molten mixture of about nine parts by weight of alum selected from the group consisting of ammonium alum and potassium alum with about one-half to about three parts by weight of solvent, low molecular weight, liquid, non-substituted, polyhydroxyl lower alkanols, maintaining said molten mixture at a temperature between 170° F. to 210° F., immersing said paper board in said bath for about ten to about forty seconds time interval and thereafter removing and air drying said coated paper board to obtain a smooth alum coating bonded to said cellulose paper board.

3,183,056
PROCESS FOR GRAFT COPOLYMERIZING BATH LIQUID AND VAPOR MONOMERS ONTO CELLULOSE SUBSTRATES

Robert H. Pfeiffer, Wattwil, St. Gall, Switzerland, assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
No Drawing. Filed Nov. 28, 1961, Ser. No. 155,492
7 Claims. (Cl. 8—116.2)

1. A graft polymerization process in which a fibrous web of cellulose containing absorbed therein an aqueous solution of a graft polymerization peroxygen initiator is immersed in a body of liquid ethylenically, unsaturated, addition-polymerizable monomeric material having a boiling point above about 120° C. and is soon thereafter contacted with an atmosphere of the vapor of another ethylenically unsaturated, addition-polymerizable monomeric material at atmospheric pressure, the temperature of the vapor being between about 50° C. and about 100° C. for a time sufficient to produce a graft copolymer.

3,183,057
PRODUCTS AND PROCEDURES FOR EFFECTING TREATMENT WITH CHLORINOUS GAS

Henry C. Marks, Glen Ridge, and Robert R. Joiner, Belleville, N.J., and George U. Glasgow, Bronx, N.Y., assignors to Wallace & Tiernan Inc., a corporation of Delaware
No Drawing. Filed Nov. 3, 1958, Ser. No. 771,174
13 Claims. (Cl. 21—58)

1. A product to be disposed in an enclosed space for generating therein a chlorinous gas selected from the group consisting of chlorine, nitrogen trichloride, monochloramine and dichloramine over an extended period consisting essentially of a dry solid N-chloro compound, dry, solid material for reaction therewith in the presence of moisture released in the enclosed space, to produce the chlorinous gas, said material comprising a substance selected from the class of acidic and alkaline reagents, and moisture permeable envelope means for retaining said compound and material in close mutual association and in position for access of moisture to effectuate said reaction when the product is disposed in the enclosed space.

3,183,058
PROCESS FOR LEACHING URANIUM-BEARING ORES

Philip W. Peter, Box 626, Edgemont, S. Dak.
No Drawing. Filed June 30, 1961, Ser. No. 120,947
10 Claims. (Cl. 23—14.5)

1. A process for leaching a uranium-bearing carbonaceous ore which on wetting becomes coated with an oily film impervious to uranium leaching agents, comprising wetting said ore to produce said oily film thereon, destroying said oily film by subjection thereof to reduction in the presence of said wetted ore, and subjecting the ore thereby exposed to the action of a uranium leaching agent.

3,183,059
PLUTONIUM ADSORPTION AND DESORPTION

Andrew E. Reisenauer and Lloyd L. Ames, Jr., Richland, Wash., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 11, 1962, Ser. No. 202,046
3 Claims. (Cl. 23—14.5)

3. A cyclic method of semicontinuously removing plutonium values from a plutonium-containing solution, comprising passing the solution through a column packed with Florida apatite of from about 0.25 mm. to 1.00 mm. particle size until the concentration of the effluent from the column reaches the upper limit of acceptable plutonium concentration, passing a solution containing carbonate ions through the column for a time sufficient to form a thin surface layer of calcium carbonate on the surface of the apatite particles and to elute the plutonium values from the column, passing through the column a solution containing phosphate ions sufficiently to reconvert the thin layer of calcium carbonate to calcium phosphate, thereby completing a single cycle, and then repeating such cycles a sufficient number of times to extract substantially all the plutonium values from the plutonium-containing solution.

3,183,060
PROCESS FOR THE PREPARATION OF DICYAN

Wilhelm Gruber, Darmstadt, Germany, assignor to Rohm & Haas G.m.b.H., Darmstadt, Germany
No Drawing. Filed Oct. 10, 1961, Ser. No. 144,055
Claims priority, application Germany, Oct. 29, 1960,
R 28,994
3 Claims. (Cl. 23—151)

1. In a process of oxidizing hydrogen cyanide with oxygen at 400 to 800° C. by contact with a silver catalyst in a reaction zone to prepare dicyan, the improvement which comprises feeding to the reaction zone an amount of oxygen between about 10 and 90 percent of the stoichiometric amount theoretically required according to the equation:

$$2HCN+\tfrac{1}{2}O_2\rightarrow(CN)_2+H_2O$$

3,183,061
XENON TETRAFLUORIDE AND PROCESS OF MAKING SAME

Howard H. Claassen, Wheaton, Henry Selig, Chicago, and John G. Malm, Naperville, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Sept. 11, 1962, Ser. No. 222,975
4 Claims. (Cl. 23—205)

2. A process of preparing xenon tetrafluoride, comprising mixing xenon gas with an amount of fluorine gas

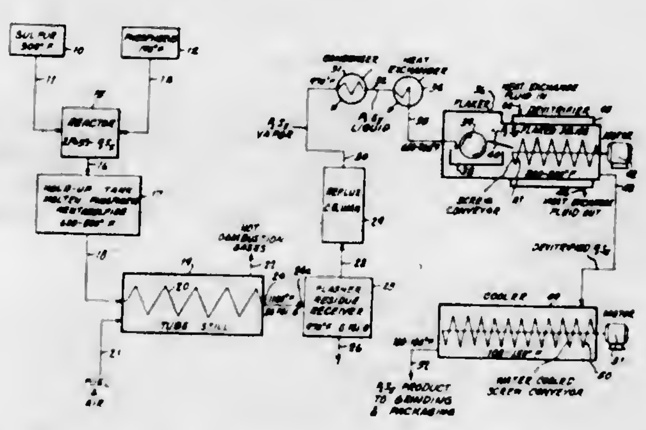
in excess of that stoichiometrically required, heating the mixture to a temperature between 350 and 450° C. for approximately 20 minutes, whereby all xenon reacts with fluorine to form xenon tetrafluoride, cooling the reaction mixture rapidly to room temperature by immersion in a water bath and removing the excess fluorine gas by evacuation while immersed in Dry Ice.

3,183,062
METHOD OF PRODUCING PHOSPHORUS PENTASULFIDE

James A. Taylor, Rahway, N.J., assignor, by mesne assignments, to American Agricultural Chemical Company, a corporation of Delaware

Filed Nov. 13, 1961, Ser. No. 151,667

5 Claims. (Cl. 23—206)



4. A method of producing phosphorus pentasulfide which comprises introducing separate streams of sulfur and phosphorus into a reaction zone to effect reaction between phosphorus and sulfur therein to yield a molten mass of phosphorus pentasulfide having extraneous materials contained as impurities therein, introducing the resulting molten phosphorus pentasulfide into a heating zone maintained at an elevated pressure to retain substantially all of the molten phosphorus pentasulfide introduced thereinto in the liquid phase and heating the phosphorus pentasulfide introduced thereinto to an elevated temperature above about 1000° F. and thereupon introducing the resulting heated molten phosphorous pentasulfide into a flashing zone maintained at substantially atmospheric pressure under conditions in the absence of the addition of extraneous heat to effect vaporization of substantially all of the phosphorus pentasulfide preferentially of said contained impurities in said resulting molten phosphorus pentasulfide introduced thereinto and recovering the resulting vaporized phosphorus pentasulfide from said flashing zone free of said contained impurities.

3,183,063
AUTOCLAVE FOR GROWING QUARTZ CRYSTALS

James K. Gilson, Groton, Charles W. Higgins, Methuen, Wayne O. Huff, Merrimac, and Louis V. Stonebraker, Newbury, Mass., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 31, 1961, Ser. No. 113,868

2 Claims. (Cl. 23—273)

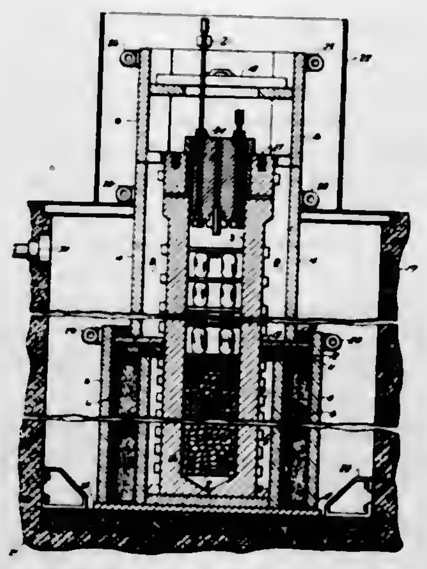
1. An apparatus for growing quartz crystals including an autoclave having an upper crystal growing zone and a lower nutrient zone, means for maintaining the two zones under isothermal conditions with a steep temperature gradient between the zones, and means for holding quartz crystal seeds, comprising:

inner and outer circular walls of insulation surrounding and spaced away from the lower zone of the autoclave;

loosely arranged material of high insulation value positioned between the walls;

an insulating circular wall surrounding and spaced a predetermined distance from the upper zone of the autoclave;

a heating element surrounding and fixed to the autoclave at each crystal growing zone;



means separating the insulation and the heating elements of the two zones including an annular metal plate, loosely arranged high insulation value material on said plate, and an annular plate of insulating material above the loosely arranged insulating material supporting the lower end of the insulating wall of the upper zone, the upper end of the outer wall of the lower zone overlapping the lower end of the insulating wall of the upper zone and being spaced therefrom; and

loosely arranged insulation on the annular insulating plate in the space between the overlapped wall ends.

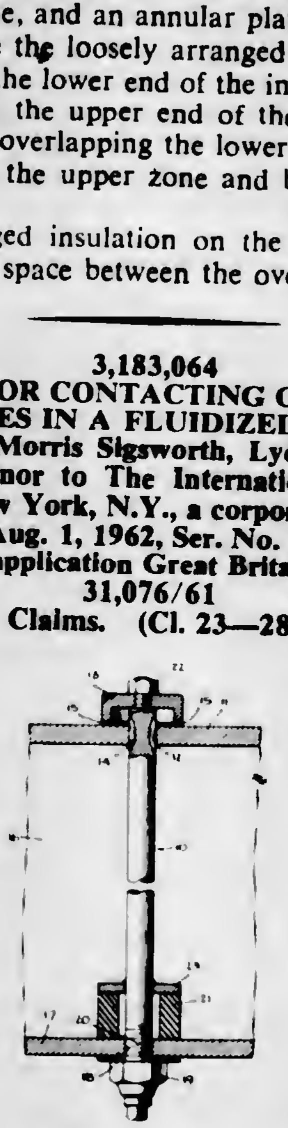
3,183,064
APPARATUS FOR CONTACTING OF SOLIDS WITH GASES IN A FLUIDIZED BED

Arthur Charles Morris Sigsworth, Lyde, near Hereford, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 1, 1962, Ser. No. 214,117

Claims priority, application Great Britain, Aug. 29, 1961, 31,076/61

5 Claims. (Cl. 23—284)



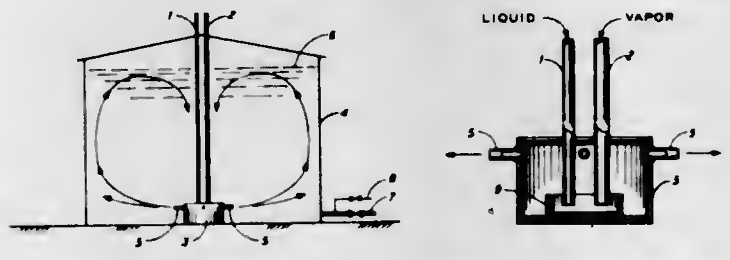
1. An improved fluidized bed gas inlet nozzle comprising a fluidized bed support; an aperture in said fluidized bed support; a stem of circular cross section having an upper and lower end, the upper end fitting slidably and being firmly supported in said aperture and extending upwardly through said aperture and into the chamber above said support and the lower end fitting into the bottom wall of a gas chamber below said support; an inverted, removable, dish-type head attached to the upper end of said stem and located inside the chamber above said support, the lower surface of said head being ground to be matable with the ground, upper surface of the fluidized bed support; at least one recessed portion in said stem with a length along the stem greater than the thickness of said support and located in the portion of the stem fitting slidably in and extending through the aperture in said support, said recessed portion being so constructed to provide an area for gas flow around the stem and through the aperture in said support at any adjusted setting of the nozzle greater than the area for gas flow between the head of said nozzle and the fluidized bed support; gas sealing means on the lower end of the stem between the stem and said bottom wall; and adjusting means attached to the lower end of the stem bearing on the bottom wall and allowing adjustment of the position of the stem so as to vary the area for gas flow between the lower surface of said head and said fluidized bed support.

3,183,065
MIXING AND REACTION APPARATUS

Richard R. De Bolt, Pinole, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

Filed Mar. 1, 1961, Ser. No. 92,699

1 Claim. (Cl. 23—285)



A reactor for effecting contact between at least one gaseous reactant and at least one liquid reactant, which comprises:

(1) a liquid product container having wall portions and a bottom portion;

(2) a substantially smaller, substantially enclosed, mixing chamber for mixing said reactants, located within said product container at the bottom thereof, at approximately the center of said bottom portion;

(3) an open top container disposed in the bottom of said mixing chamber;

(4) two inlet conduits for said reactants, extending into said mixing chamber and said open top container to a location adjacent the bottom of said open top container;

(5) a plurality of outlet conduits of continuous dimension located adjacent the top of said mixing chamber and in communication between said mixing chamber and said container for passing fluid reaction products from said chamber into said container,

- (*a*) said outlet conduits being so restricted in cross sectional area and so disposed as to direct reaction products in jets from said chamber into said container and thereby to cause substantial circulatory currents within accumulated fluid reaction products in said container; and

(6) outlet means located in said product container through which products can be removed.

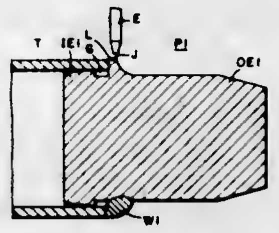
3,183,066
ARTICLE PRODUCED BY METALS JOINING AND METHOD FOR PRODUCING SUCH ARTICLES

Gerald G. Lessmann, Pittsburgh, and Raymond L. Phebus, Narberth, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 8, 1962, Ser. No. 178,472

2 Claims. (Cl. 29—193)

1. The method of joining a plug to a thin-walled tube by arc welding with a non-consumable electrode, the heat conduction capability of said tube being substantially lower than that of said plug by reason of the difference in thickness between said tube and plug, said plug having an axial extension from a region of which a land extends radially, the said method comprising forming a groove in said extension near the junction of said extension and land, engaging said plug and said tube with said land abutting and overhanging said tube and said extension axially inwardly of said tube, setting said electrode with its tip in a position to produce and maintain an arc between said tip and a region of said land remote from the joint between said plug and tube, producing an arc between said electrode and said junction, said arc being produced in the region of said land displaced from said tube so that said arc impinges on said land but not on any part of said tube, and moving said electrode and junction one relative to the other completely peripherally around said junction while maintaining said arc burning to fuse said land and the portion of the tube adjacent to said land to produce a welded joint, the build up of weld metal at said joint being reduced by the flow of weld metal into said groove during the welding.



3,183,067
METAL HAVING TWO COATS OF SULFUR-CONTAINING NICKEL AND METHOD OF MAKING SAME

Arthur H. Du Rose, Euclid, and Robert L. Stern, Cleveland Heights, Ohio, assignors to The Harshaw Chemical Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 6, 1961, Ser. No. 157,556

13 Claims. (Cl. 29—194)

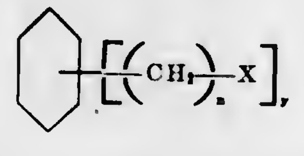
3. In a method of making a duplex nickel coated corrosion resistant body comprising a lower layer of nickel and an upper layer of nickel adjacently bonded thereto wherein said upper layer of nickel is more anodic than said lower layer of nickel because of the presence of relatively more sulfur in said upper layer of nickel than in said lower layer of nickel, said method comprising electrodepositing upon a metal body said lower layer of nickel from an aqueous acid bath maintained at a pH between 2 and 4 containing a nickel-supplying compound and a sulfur-supplying compound at a current density in the range of from about 40 amperes per square foot to about 150 amperes per square foot and at a temperature in the range of from about 100° F. to about 165° F., and wherein the potential of said deposit is determined in an electrolyte comprising an aqueous solution of 3 grams of sodium chloride and .02 gram of $Cu(NO_3)_2.3H_2O$ per 100 mls. of water adjusted to a pH of 3.0 and at room temperature; and depositing said upper layer of nickel upon said lower layer of nickel from a similar bath containing a brightener compound wherein said deposit has a potential as measured of at least 60 millivolts more anodic than said lower layer of nickel.

10. A corrosion resistant article comprising a basis metal of the type which is subject to atmospheric corrosion coated with two superimposed coats of sulfur containing nickel, said nickel coatings containing different amounts of sulfur such that the top nickel layer is not less than 60 mv. more electronegative than the underlying nickel layer, said electronegativity being determined from potential measurements taken in a solution of 3 g. of NaCl and .02 g. of $Cu(NO_3)_2.3H_2O$ per 100 mls. of water at a pH of 3.0 at room temperature.

3,183,068
LUMINOUSLY BURNING FUEL GELS

John Alexander Monick, Teaneck, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 17, 1962, Ser. No. 195,435
15 Claims. (Cl. 44—7)

1. A combustible fuel gel composition which burns with a readily visible flame comprising a major proportion of an alcohol fuel gel which by itself burns with a substantially non-visible flame and a minor proportion, sufficient to make said gel burn with a visible flame, of a compound selected from the group consisting of benzaldehyde, benzoic acid, compounds of the formula,



wherein X is selected from the group consisting of hydrogen, —CHO and —COOH, *n* is a number from 1 to 15, *y* is a number from 1 to 3 and the total number of carbon atoms in the aliphatic portion of the molecular is 1 to 15, and compounds of the formula,

$$A\left[\left(CH_2\right)_m X\right]_z$$

wherein A is selected from the group consisting of naphthalene, anthracene and phenanthrene nuclei, X is selected from the group consisting of hydrogen, —CHO and —COOH, *m* is a number from 0 to 15, *z* is a number from 1 to 3 and the total number of carbon atoms in the aliphatic portion of the molecule is 1 to 15.

3,183,069
CHEMICAL COMPOUNDS AND THEIR USE AS RUST AND CORROSION INHIBITORS

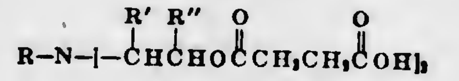
John H. Udelhofen, Calumet City, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Apr. 28, 1961, Ser. No. 106,197
3 Claims. (Cl. 44—71)

1. A gasoline composition which comprises a major amount of a normally liquid hydrocarbon fuel boiling in the gasoline distillation range and a minor amount, sufficient to inhibit corrosion, of N-tallow diglycolamic acid.

3,183,070
RUST INHIBITED OIL CONTAINING ALIPHATICAMINOALKYLSUCCINATES

John H. Udelhofen, Calumet City, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Original application Apr. 28, 1961, Ser. No. 106,196, now Patent No. 3,123,634, dated Mar. 3, 1964. Divided and this application Jan. 25, 1963, Ser. No. 270,253
6 Claims. (Cl. 44—71)

1. A normally liquid hydrocarbon composition comprising a major amount of normally liquid hydrocarbon containing a minor amount, sufficient to inhibit corrosion, of a compound having the structural formula:

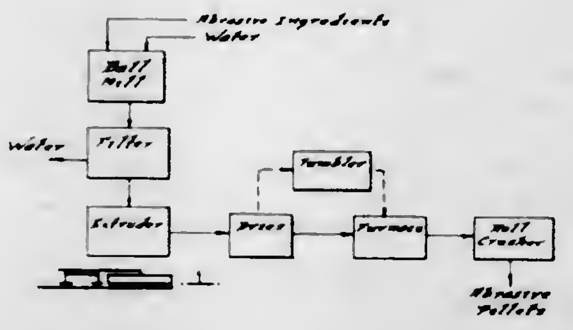


$$R{-}N{-}[{-}\overset{R'}{\overset{|}{C}}H\overset{R''}{\overset{|}{C}}HO\overset{O}{\overset{\|}{C}}CH_2CH_2\overset{O}{\overset{\|}{C}}OH]_2$$

wherein R is an open-chain aliphatic hydrocarbon group having 8 to 22 carbon atoms and R′ and R″ are selected from the class consisting of hydrogen, methyl and ethyl.

3,183,071
ABRASIVE ARTICLE

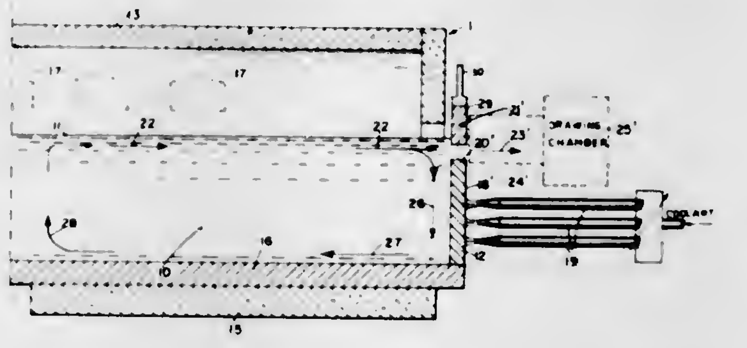
Charles V. Rue, Seneca County, and Eugene A. Fisher and Frederick E. Heischman, Hancock County, Ohio; said Rue assignor to Wakefield Corporation, Detroit, Mich., a corporation of Michigan; said Fisher and Heischman assignors to The Electric Auto-Lite Company, Toledo, Ohio, a corporation of Ohio
Filed June 19, 1961, Ser. No. 118,158
15 Claims. (Cl. 51—298)



10. An abrasive grinding wheel of the resin bond type which is fabricated from abrasive pellets bonded to each other by a thermosetting resinous bonding material into a strong self-sustaining wheel suitable for snagging steel, said abrasive pellets constituting from about 40% to about 64% by volume of said wheel, said abrasive pellets consisting essentially of from about 50% to about 95% crystalline alumina having an average crystal size of less than about 5 microns and from about 5% to about 50% of a bonding agent consisting of a silicate glass, said pellets comprising a dense mass consisting of a discontinuous phase comprising said crystalline alumina tenaciously bonded together by a continuous phase consisting of said silicate glass, each of said abrasive pellets having a preshaped regular geometrical configuration and a size in their major dimension substantially greater than in their minor dimension, said size in their minor dimension ranging from about 0.030 inch to about 0.130 inch.

3,183,072
PROCESS AND APPARATUS FOR MAKING SHEET GLASS

Bernard Long, Paris, France, assignor to G.B.D. societe anonyme Holding, Luxembourg, Luxembourg, a corporation of Luxembourg
Filed Jan. 6, 1961, Ser. No. 81,049
Claims priority, application France, Jan. 26, 1960, 816,869 and Apr. 28, 1960, 825,640, Patent 1,255,483
3 Claims. (Cl. 65—333)



1. In an apparatus for making sheet glass, in combination, a furnace provided with a tank having a terminal wall and a bottom, said tank being adapted to contain a vitreous melt and defining an inner high-temperature zone at a refining portion of said furnace and an outer low-temperature zone at said terminal wall, thereby producing an unimpeded convection current of glass having a first branch traversing an upper portion of said melt from said high-temperature zone to said low-temperature zone, a second branch descending along said wall to said bottom, a third branch traversing a lower portion of said melt along said bottom between said low-temperature zone and said high-temperature zone, and a fourth branch ascending from said bottom at said refining portion of said furnace, said terminal wall being formed with an outlet defined by a horizontal sill disposed at such limited depth below the level of said melt as to permit at least part of the glass constituting said first branch of said convection current to flow from said tank while blocking a return flow to said tank; refractory means forming a horizontal channel aligned with said outlet and extending perpendicularly outwardly from said wall for conducting said part of said glass, said channel having a floor of substantially lower thermal conductivity than said wall, and cooling means below said floor for lowering the temperature of said wall by directing a stream of cooling fluid thereagainst, thereby increasing the velocity of glass flowing from said furnace through said outlet.

3,183,073
LIQUID FERTILIZER

John Miles Preston, Gilman, Ill.
(207 E. Lawrence, Effingham, Ill.)
No Drawing. Filed Jan. 26, 1962, Ser. No. 169,126
4 Claims. (Cl. 71—1)

1. A method for preparing a liquid fertilizer which comprises adding to phosphoric acid from 0.5% to 7% by weight of a sugar taken from the group consisting of sucrose, maltose, lactose, and glucose, heating the mixture to a concentration in excess of 75% P_2O_5, mixing the concentrated acid with an alkaline hydroxide, the cation of which is taken from the group consisting of K^+ and NH_4^+ and maintaining the mixture at a temperature below 180° F. to from a stabilized liquid fertilizer reaction product.

3,183,074
CONTROL OF UNDESIRABLE PLANT GROWTH

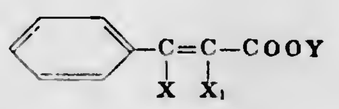
Bryant L. Walworth, Pennington, and Albert W. Lutz and Kathryn Wood, Princeton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed May 31, 1962, Ser. No. 198,773
1 Claim. (Cl. 71—2.5)

A method for the control of undesirable plant growth which comprises: applying to an area to be protected from such growth, 1-(2,4-dichlorophenoxy)-2,3-epoxypropane in an amount sufficient to effect herbicidal action.

3,183,075
CONTROL OF UNDESIRABLE PLANT GROWTH

Bryant L. Walworth, Pennington, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Dec. 3, 1962, Ser. No. 241,570
6 Claims. (Cl. 71—2.6)

1. A method for the control of undesirable plant growth which comprises: applying to an area to be protected from such growth an α,β-dihalocinnamic acid compound of the formula:

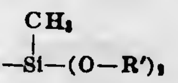


wherein X and X_1 stand for a halogen atom selected from the group consisting of chlorine and bromine, and Y is a substituent selected from the group consisting of hydrogen, ammonium, an alkali metal and —H·NH·lower alkyl, in an amount sufficient to effect herbicidal action.

3,183,076
METHOD FOR MODIFYING THE GROWTH CHARACTERISTICS OF PLANTS

John K. Leasure, Midland, and Dorsey R. Mussell, Clare, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 5, 1962, Ser. No. 171,278
7 Claims. (Cl. 71—2.7)

1. A method which comprises exposing plants and plant parts to the action of a growth-altering amount of a silane compound having the formula

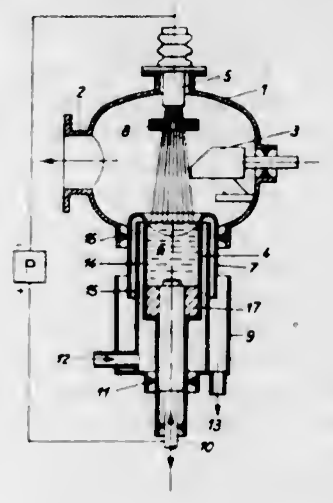


$$R{-}\overset{CH_3}{\overset{|}{Si}}{-}(O{-}R')_2$$

wherein R represents a member of the group consisting of methyl, chloromethyl, ethyl and α-chloroethyl and R′ represents a member of the group consisting of hydrogen, lower alkyl and chloro-lower alkyl.

3,183,077
PROCESS FOR VACUUM DEGASSING

Thaddäus Kraus, Vaduz, Liechtenstein, assignor, by mesne assignments, to Bendix-Balzers Vacuum, Inc., Wilmington, Del., a corporation of Delaware
Filed Jan. 30, 1962, Ser. No. 169,967
5 Claims. (Cl. 75—10)



1. A method for the degassing of melts comprising:
the step of directing a beam of electrically charged particles upon at least part of the free surface of a melt,
the step of pulsing said beam at a frequency not exceeding one cycle per second whereby the surface of said melt is alternately heated and cooled thereby producing thermal convection in the melt so as to successively bring the whole melt to the free surface thereof, and
the steps of reducing the pressure immediately above the free surface of said melt and pumping away substantially all gases evolving from said melt.

3,183,078
VACUUM PROCESS FOR PRODUCING A STEEL FOR NONAGEING ENAMELING IRON SHEETS

Tadashi Ohtake, Tobata, and Kameo Matsukura, Yawata, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Sept. 24, 1962, Ser. No. 225,843
Claims priority, application Japan, Sept. 29, 1961, 36/34,893
1 Claim. (Cl. 75—49)

A process of producing an enameling steel having a carbon content less than 0.02% by weight and in which the carbon, nitrogen and sulfur contained in the steel are in the form of titanium compounds, comprising the steps of making steel consisting essentially of less than 0.04% by weight C, less than 0.3% by wt. Mn and the remainder Fe in a metal refining furnace, tapping molten steel from said metal refining furnace, vacuum degasifying said molten steel to produce a steel to produce a steel containing less than 0.02% by wt. C, less than 0.05% by wt. Mn, 0.020% by wt. S and 0.0020 to 0.0070% by wt. N_2 and the remainder Fe, and adding 0.005 to 0.030% by wt. Al and 0.05 to 0.20% by wt. Ti to the thus vacuum-degasified steel to produce nitrides of the added metals.

3,183,079
URANIUM-NIOBIUM-ALUMINUM TERNARY ALLOY

Gilbert S. Layne and James O. Huml, Midland, Mich., and Richard D. Smith, Cheshire, Conn., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 26, 1963, Ser. No. 290,645
2 Claims. (Cl. 75—122.5)

1. A ternary metal alloy comprising on a weight basis about 24 weight percent uranium, about 18.8 weight percent niobium and about 57.2 weight percent aluminum.

3,183,080
STAINLESS STEELS AND PRODUCTS THEREOF

Norman R. Harpster, Canonsburg, Pa., assignor to Universal-Cyclops Steel Corporation, Bridgeville, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 21, 1961, Ser. No. 154,046
4 Claims. (Cl. 75—125)

2. A corrosion resistant straight chrome ferritic stainless steel consisting essentially, by weight, of 14 to 19 percent of chromium, 0.15 percent maximum of carbon, a maximum of 1 percent of manganese, a maximum of 1 percent of silicon, a maximum of 0.04 percent of phosphorus, a maximum of 0.03 percent of sulfur, about 0.40 to 1.10 percent of molybdenum, about 0.1 to 0.7 percent of columbium, about 0.40 to 1.10 percent of copper and the remainder iron and incidental impurities and alloying constituents, said molybdenum, columbium, and copper totaling a minimum of 1.25 percent, which steel is free from roping upon being formed.

3,183,081
ALLOY STEEL AND METHOD

William C. Clarke, Jr., Baltimore, and George N. Goller, Towson, Md., assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

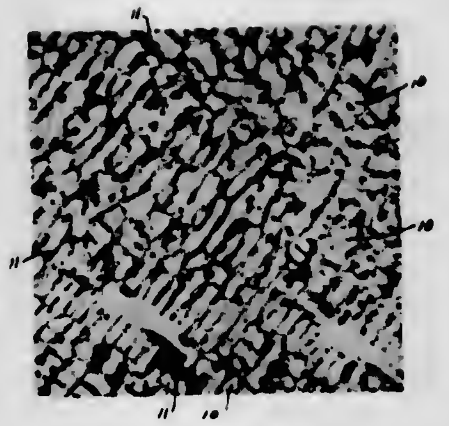
No Drawing. Continuation of application Ser. No. 468,528, Nov. 12, 1954. This application June 17, 1964, Ser. No. 375,927
9 Claims. (Cl. 75—128)

1. Austenitic stainless steel, precipitation-hardenable by heat-treatment to achieve high yield strength, said steel comprising 12% to 19% chromium, 4% to 20% manganese, 4% to 10% nickel, .15% to .35% phosphorus, .10% to about .2% carbon, nitrogen .10% to .40%, sulphur up to .15%, boron up to .005%, and remainder substantially all iron.

3,183,082
CAST ALLOY

Joseph R. Konecni, Wickliffe, Ohio, assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio

Filed Jan. 22, 1962, Ser. No. 167,883
12 Claims. (Cl. 75—134)



1. An alloy composition having improved resistance to burning by oxidation products of leaded gasolines consisting essentially of:

Carbon	0.50 to 2.50% by weight
Manganese	5.00% maximum
Silicon	2.00% maximum
Chromium	15.00 to 30.00%
Nickel	20.00 to 35.00%
Iron	5.00% maximum
Molybdenum	1.00 to 10.00%
Tungsten	1.00 to 10.00%
Cobalt	Substantially the balance

the ratio of cobalt to nickel being at least 0.8 to 1 but not more than 2 to 1.

3,183,083
MAGNESIUM-BASE ALLOY

George S. Foerster, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 24, 1961, Ser. No. 91,327
7 Claims. (Cl. 75—168)

1. A magnesium-base alloy which comprises by weight: from 9 to about 15 percent zinc, from about 0.1 to about 1.0 percent zirconium, from about 1 to about 8 percent rare earth metal, the balance being substantially magnesium.

3,183,084
HIGH TEMPERATURE AUSTENITIC ALLOY

Gerald B. Heydt, Reading, and Clyde Raymond Whitney, Wyomissing, Pa., assignors to The Carpenter Steel Company, Reading, Pa., a corporation of New Jersey

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,009
8 Claims. (Cl. 75—171)

1. An age hardening austenitic nickel base alloy which in its hardened condition has good strength and ductility at temperatures up to about 1600° F. and which within the tolerances of good melting practices consists essentially of:

	Percent
Carbon	Up to .10
Manganese	Up to 2
Silicon	Up to 1
Chromium	12 to 20
Nickel	35 to 55
Molybdenum	3 to 7
Cobalt	1.5 to 7
Vanadium	Up to 1
Titanium	2.75 to 3.75
Aluminum	.75 to 2
Boron	.003 to .025

the balance consisting essentially of iron and in which the aluminum serves to stabilize the gamma prime phase formed by age hardening against transformation to an eta phase at elevated temperature and under stress, and in which the amount of cobalt provides substantially minimum misfit between the lattice parameters of the matrix

of the alloy and of the gamma prime phase when the aged alloy is exposed to stress at high temperature over a long time.

3,183,085
TANTALUM BASE ALLOYS

Leonard L. France, Mount Lebanon, Allen I. Lewis, deceased, late of Forest Hills, by Bernard J. Ambrose, administrator, Monroeville, Robert L. Ammon, Pleasant Hills, and Lee S. Richardson, Monroeville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

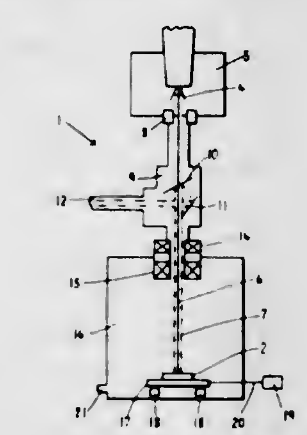
No Drawing. Filed Sept. 15, 1961, Ser. No. 138,530
10 Claims. (Cl. 75—174)

1. A readily workable member comprising a tantalum base alloy consisting of by weight 1 to 8% tungsten, 1 to 4% zirconium and the balance tantalum with small amounts of incidental impurities, the member being characterized by relatively high strength at elevated temperatures and relatively good ductility at room and even lower temperatures.

3,183,086
METHOD OF MAKING POROUS BODY WITH IMPERVIOUSLY SEALED SURFACE

Ronald A. Kurtz and Anthony D. Kurtz, Englewood, N.J. and William H. Herz, Yonkers, N.Y., assignors to Kulite Tungsten Co., Ridgefield, N.J., a partnership

Filed May 3, 1963, Ser. No. 277,763
6 Claims. (Cl. 75—222)



1. The method of making a fluid permeable refractory article of precise reproducible flow characteristics and uniform fused skin depth comprising molding powdered material particles into a desired body shape by compacting said particles, sintering said body, and thereafter applying an electron beam to the surface of the body leaving free a portion of said surface for the passage of fluid through said refractory article thereby fusing the surface particles together forming an impervious surface thereon.

3,183,087
COLOR REVERSAL DEVELOPMENT PROCESS UTILIZING A PRELIMINARY DEVELOPMENT BATH FREE OF BROMIDE IONS

Karl Lohmer and Bernhard Morcher, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 19, 1962, Ser. No. 180,823
Claims priority, application Germany, Mar. 27, 1961, A 37,063
4 Claims. (Cl. 96—22)

1. In a reversal process for the production of a multicolor photographic image which comprises
  (*a*) exposing a light-sensitive multicolor photographic material to an object to be reproduced,
  (*b*) developing the exposed material in an aqueous alkaline developer composition containing a black-and-white developer and bromide ion to produce a silver image therein,
  (*c*) uniformly exposing the thus developed photographic material to diffused actinic light,
  (*d*) developing the uniformly exposed photographic material in a color-forming developer composition containing a primary aromatic amine developer to produce a colored image therein, and
  (*e*) bleaching and fixing the color-developed photographic material,

the improvement which comprises subjecting the imagewise exposed photographic material (*a*) prior to development (*b*) to preliminary treatment in an aqueous developer composition that is free from bromide ions, has a pH below about 7.0, and contains between 1 and 10 grams per liter of a developer of the group consisting of black-and-white developers of the 1-phenyl-3-pyrazolidone, hydroquinone, p-aminophenol, diaminophenol, 4-amino-5-pyrazoline and 3-amino-Δ^2-pyrazoline types.

3,183,088
PROCESS FOR FORMING IMAGES

Heman Dowd Hunt, Eatontown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 12, 1961, Ser. No. 137,534
11 Claims. (Cl. 96—27)

1. A process which comprises
  (*a*) exposing to image-forming radiation containing radiation in at least one of the regions of normal sensitivity of a silver halide photographic emulsion and of extended sensitivity conferred by the presence of an optical sensitizing dye, a washed, light-sensitive colloid-silver halide emulsion layer having light-developable, direct-writing characteristics and an average grain size of 0.1 to 10 microns containing
    (1) 0.5 to 120 mole percent of a water soluble stannous salt,
    (2) a sensitizing amount of an optical sensitizing dye taken from the group consisting of cyanine, pesudocyanine, carbocyanine and merocyanine dyes capable of extending the sensitivity of a silver bromide emulsion from the normal blue region to at least one of the green, red and infrared regions of the spectrum, and having added thereto
    (3) at least one water-soluble halide taken from the group consisting of lithium, sodium, potassium, calcium, magnesium and ammonium chloride, bromide and iodide in an amount sufficient to provide an excess of halide ions over that necessary initially to precipitate all of the silver as silver halide,
  (*b*) latensifying the element resulting from the image exposure of step (*a*) by irradiating said element for about 1 to about 60 seconds with light radiation in the region of greatest response in the region of extra sensitivity conferred to the silver halide emulsion by said dye, and
  (*c*) photodeveloping the latensified element by exposing it to actinic radiation containing wavelengths from 3000 to 5000 A. having an intensity less than the exposing radiation (*a*) for a period of at least one second.

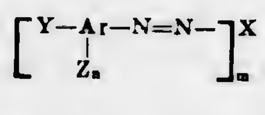
3,183,089
PHOTOGRAPHIC PRODUCTS, COMPOSITIONS AND PROCESSES EMPLOYING AZO DYE DEVELOPERS

Myron S. Simon, Newton Center, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed May 21, 1962, Ser. No. 196,523
39 Claims. (Cl. 96—29)

21. In a process of forming a photographic image in color, the steps which comprise developing an exposed

silver halide emulsion with an aqueous alkaline solution containing an azo dye developer of the formula:



$$\left[Y-\underset{Z_n}{\underset{|}{\mathrm{Ar}}}-N{=}N-\right]_m X$$

wherein Y is selected from the group consisting of p-dihydroxyphenyl, o-dihydroxyphenyl radicals and alkyl and halogen nuclear substituted p-dihydroxyphenyl and o-dihydroxyphenyl radicals; Ar is a divalent aryl nucleus directly attached to said phenyl ring of Y and selected from the group consisting of benzene and naphthalene nuclei, said —N=N— group being directly attached to a ring carbon of said aryl nucleus; each Z is selected from the group consisting of halogen, alkoxy and alkyl radicals; *n* is from 0 to 2, inclusive; *m* is from 1 to 2, inclusive; and X is the radical of an azo dye coupler linked to said —N=N— group and completing said azo dye developer, said Y providing the only silver halide developing radicals in said azo dye developer to provide in said emulsion an imagewise distribution of unoxidized dye developer in undeveloped areas of said emulsion, and transferring at least part of said imagewise distribution of unoxidized dye developer by imbibition from said emulsion to an image-receiving layer in superposed relationship with said emulsion to impart a transfer image in color to said image-receiving layer.

3,183,090

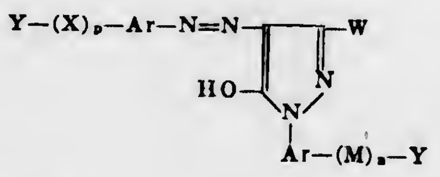
PHOTOGRAPHIC PRODUCTS, PROCESSES, AND COMPOSITIONS EMPLOYING AZO DYE DEVELOPERS

Arthur D. Jarrett, Watertown, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

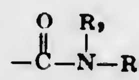
No Drawing. Filed July 11, 1962, Ser. No. 209,230

15 Claims. (Cl. 96—29)

1. A process of forming a photographic image in color, comprising developing an exposed silver halide emulsion in the presence of an aqueous alkaline solution comprising a dye developer of the formula:



wherein W is a



$$-\overset{\overset{O}{\|}}{C}-\overset{\overset{R_2}{|}}{N}-R_3$$

group wherein R_2 and R_3 are each selected from the group consisting of hydrogen and alkyl radicals and R_2 and R_3 taken together may be a divalent aliphatic radical, each Ar is an arylene group selected from the group consisting of phenylene and naphthylene groups, M and X each are alkylene radicals, *n* and *p* each is an integer from 0 to 1, inclusive, each Y is selected from the group consisting of ortho- and para-dihydroxyphenyl radicals, to thereby provide a predetermined imagewise distribution of unoxidized dye developer, and transferring at least a part of said imagewise dye developer by imbition to an image-receiving layer in superposed relationship with said silver halide emulsion to impart a dye image to said image-receiving layer.

3,183,091

VESICULAR PHOTOGRAPHIC FILM MATERIAL AND PROCESS FOR UTILIZATION OF SAME

Alfred H. Sporer and Charles E. Allman, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 29, 1960, Ser. No. 79,179

8 Claims. (Cl. 96—48)

4. A method of forming a vesicular image of refractive centers in a film of material, said material consisting essentially of a polymeric chlorinated hydrogen containing vehicle and a gas forming compound in an amount not greater than 5%, by weight of said polymeric vehicle, and selected from the group consisting of alkali metal and alkaline earth metal carbonates, bicarbonates, oxalates, and tartrates, said method comprising:

selectively exposing said material to short-wave light to cause, in said exposed areas, a release of hydrogen chloride from said polymeric vehicle; and

developing said exposed area by heating said material to a temperature in a range from about 80° C. to about 200° C. and effective only to enhance a reaction between said gas forming compound and said hydrogen chloride of said polymeric vehicle, thereby producing only in the exposed areas carbon dioxide gas which causes the formation of visible bubbles in the exposed areas to serve as said refractive centers.

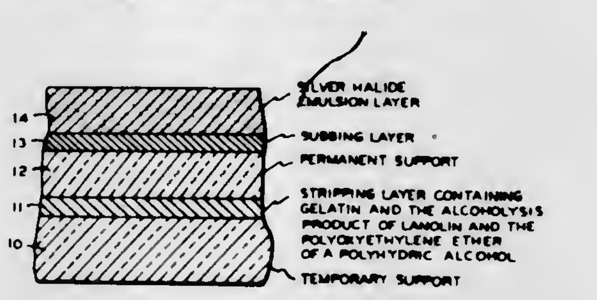
3,183,092

PHOTOGRAPHIC STRIPPING FILM

E Scudder Mackey and Raymond J. Walford, both of Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 23, 1961, Ser. No. 133,379

9 Claims. (Cl. 96—83)


SILVER HALIDE EMULSION LAYER
SUBBING LAYER
PERMANENT SUPPORT
STRIPPING LAYER CONTAINING GELATIN AND THE ALCOHOLYSIS PRODUCT OF LANOLIN AND THE POLYOXYETHYLENE ETHER OF A POLYHYDRIC ALCOHOL
TEMPORARY SUPPORT
14
13
12
11
10

1. A photographic stripping film comprising in the following order and in contiguous contact a transparent temporary support, a stripping layer, a permanent support carrying a light-sensitive silver halide emulsion layer, said stripping layer comprising gelatin as a colloidal carrier and having uniformly dispersed therein a lanolin product which comprises the alcoholysis product of lanolin and of a polyoxyethylene ether of a polyhydric alcohol, the amount of alcoholysis product ranging from 1 to 30% per weight of dry gelatin.

3,183,093

LIGHT SENSITIVE DIAZOTYPE MATERIAL CONTAINING DIBENZYL ALKYLAMINE COUPLING AGENTS

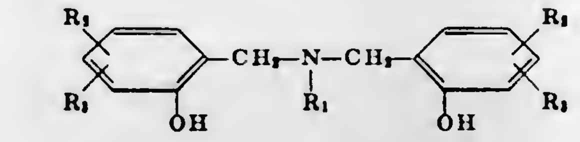
Heinz Schlesinger, Wiesbaden, and Walter Müller, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Keuffel & Esser Co., Hoboken, N.J.

No Drawing. Filed Mar. 28, 1963, Ser. No. 268,587

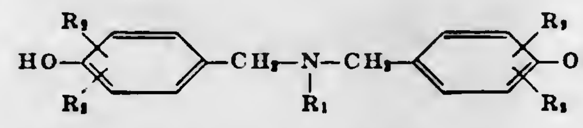
Claims priority, application Germany, Dec. 9, 1959, K 39,385

12 Claims. (Cl. 96—91)

1. A light sensitive diazotype material comprising a light transmitting base carrying a coating which comprises a light sensitive diazonium compound and at least one diazo coupler selected from the group consisting of an N,N-bis-(dialkyl-hydroxybenzyl)-alkylamine of the group represented by the general formulae



and



and salts thereof, in which formulae

R_1 stands for a member of the group consisting of alkyl, hydroxyalkyl-alkoxyalkyl, and alkylaminoalkyl, each having at most a total of four alkyl carbon atoms, and cyclohexyl, and

R_2 and R_3 each represents an alkyl group having at most 4 carbon atoms said coupler and said diazonium compound being capable of forming a dyestuff having excellent covering power.

3,183,094

METHOD OF SPEED INCREASING PHOTOPOLYMERIZABLE COMPOSITIONS

Edward Cerwonka and Andre K. Schwerin, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 10, 1960, Ser. No. 48,569

7 Claims. (Cl. 96—92)

1. A process of producing a polymeric photographic image which comprises irradiating, under a pattern, to light rays ranging from U.V. to white light, a coating of a colloidal carrier containing an ethylenically unsaturated monomer having the terminal grouping $CH_2{=}C<$ activated by direct attachment to a negative group, a photopolymerization speed-increasing reducing agent which is readily oxidized by peroxides to liberate hydroxyl radicals and which is selected from the class consisting of sulfurous acid, sodium sulfite, sodium bisulfite, sodium hydrosulfite, sodium thiosulfate, hydrazine and hydroxylamine, and a radiation-sensitive ferric salt designed to produce ferrous ions image-wise by such irradiation and treating the irradiated coating with an aqueous solution of a peroxide to provide for the conjoint presence image-wise in said coating of the monomer, ferrous ions, peroxide and speed-increasing reducing agent and causing image-wise photopolymerization of the monomer through the agency of the ferrous ions and peroxide while augmenting the rate of photopolymerization by the formation of hydroxyl radicals through the agency of the peroxide and said speed-increasing reducing agent.

3,183,095

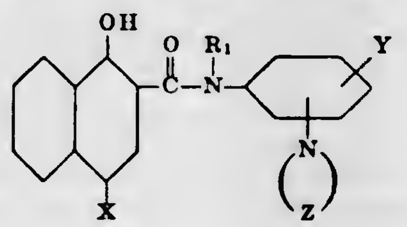
COLOR COUPLERS CONTAINING A TERTIARY AMINO GROUP

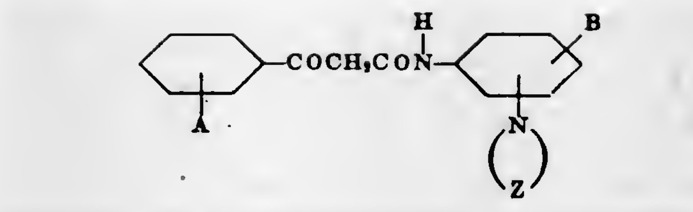
Gunther H. Klinger, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

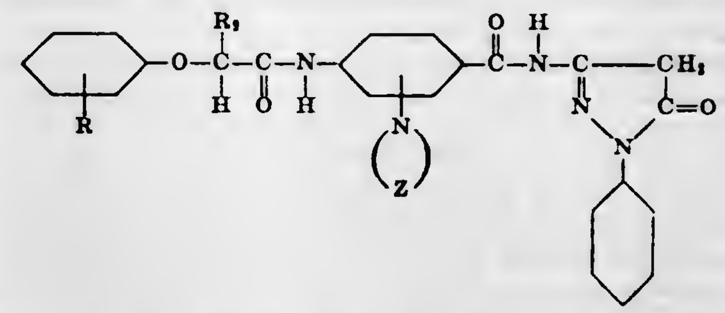
No Drawing. Filed July 1, 1960, Ser. No. 40,160

11 Claims. (Cl. 96—100)

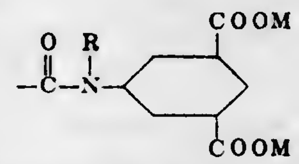
1. A photographic silver halide emulsion containing a color coupling compound selected from the class represented by the following general formulae:



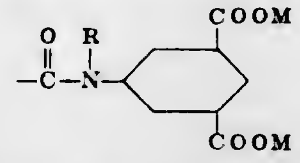




wherein R is selected from the class consisting of an alkyl group of at least 10 carbon atoms; R_1 is selected from the class consisting of hydrogen and an alkyl group of at least 10 carbon atoms; X is selected from the class consisting of hydrogen, a sulfo group and the ammonium and alkali metal salts thereof; Z represents the non-metallic atoms necessary to complete a heterocyclic ring selected from the class consisting of morpholine and piperidine; R_2 represents a lower alkyl group; A is selected from the class consisting of hydrogen and an alkylamido group of at least 10 carbon atoms; B is selected from the class consisting of a —COOM group wherein M is selected from the class consisting of ammonium and alkali metal salts, an alkylamido group of at least 10 carbon atoms and the grouping



wherein R and M have the aforesaid values; and Y is selected from the class consisting of hydrogen, an alkylamido group of at least 10 carbon atoms and the grouping



wherein R and M have the aforesaid values, wherein at least one of said substituents R, R_1, Y, A and B contain an alkyl chain of at least 10 carbon atoms.

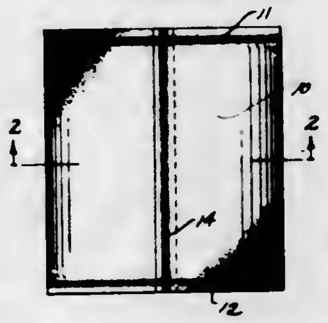
3,183,096

COFFEE PACKET AND SYNTHETIC FILTER PAPER UTILIZED THEREIN

Earle F. Hiscock, Chatham, Mass., assignor to Kip, Inc., Chatham, Mass., a corporation of Delaware

Filed June 6, 1962, Ser. No. 201,727

7 Claims. (Cl. 99—77.1)



1. A taste free coffee packet for the brewing of coffee comprising a porous synthetic fiber paper flexible sack of single filament polymeric fibers selected from a group con-

sisting of nylons, polyesters, and acrylics bonded together by a taste free non-toxic dispersed polymer having a melting point in excess of the boiling point of water and substantially lower than the melting point of the polymeric fibers which it bonds, the paper of the packet having the packet edges heat sealed at a temperature above the melting point of the dispersed binding polymer and below the melting point of the polymeric fibers whereby the strength and flexibility of the fibers remain unchanged during the heat sealing operation, said paper having a thickness in the range of between about 0.0014 and about 0.0025 of an inch; a Mullen burst strength while wet of at least about 11 pounds per square inch after being boiled for five minutes; a flow rate in excess of 5 cubic centimeters per square inch per second at 1 inch water pressure and an average pore size between about 0.003 and about 0.008 of an inch, and comminuted coffee in said packet.

3,183,097
PROCESS FOR TENDERIZING MEAT

Bela Federics, 477 Notre Dame Ave., Sudbury, Ontario, Canada

No Drawing. Filed Sept. 27, 1962, Ser. No. 226,746

9 Claims. (Cl. 99—107)

1. A process for tenderizing meat which comprises distributing evenly throughout the meat a powdered material selected from the class consisting of pancreatic glands in the proportion of from about 0.06 to about 0.75 ounce per 100 pounds of meat, mesenteric lymph glands in the proportion of from about 0.03 to about 0.38 ounce per 100 pounds of meat and effective mixtures of pancreatic glands and mesenteric lymph glands, and heating the meat to an internal temperature greater than about 110° C., the meat being heated for a time sufficient to cook the meat.

3,183,098
DRY MIX FOR FROZEN DESSERTS

Fredric J. Baur, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,844

2 Claims. (Cl. 99—136)

1. A dry mix suitable for the convenient preparation of a frozen dessert, which is an oil-in-water emulsion, by mixing and whipping steps at ordinary room temperature prior to freezing and without agitation during freezing, said mix consisting essentially of from about 20% to about 26% fat having a Wiley melting point of about 90° F. to about 103° F., from about 38% to about 44% sweetening agent, from about 32% to about 36% non-fat milk solids, from about 2% to about 6% of a chemical leavening system, and from about 0.3% to about 0.7% of a stabilizer selected from the group consisting of alginates and derivatives thereof, Irish moss, guar gum, locust bean gum, cellulose gums and water-soluble salts thereof, and mixtures thereof, said mix being substantially free of oil-soluble emulsifiers.

3,183,099
PREPARATION OF FLAVOR COMPOSITIONS

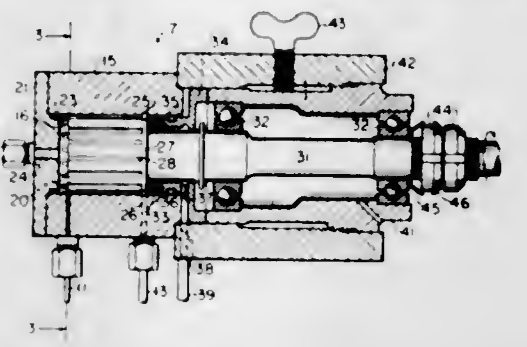
Thomas H. Schultz, Lafayette, and William C. Rockwell, El Cerrito, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Nov. 9, 1962, Ser. No. 236,747

1 Claim. (Cl. 99—140)

(Granted under Title 35, U.S. Code (1952), sec. 266)

A process for preparing a solid flavoring composition which comprises feeding a hot molten sugar base axially into a treatment zone, subjecting the sugar base therein to centrifugal action to cause it to flow outwardly and radially, concomitantly introducing a stream of liquid flavoring agent into said zone in a radial path directed toward the center of the zone, chopping said stream immediately upon its entry into said zone into minute droplets, subjecting the flavoring agent and sugar base to intimate mixing and repeated application of shearing to form a uniform emulsion of flavoring agent in the sugar base, removing said emulsion from the treatment zone and cooling and solidifying it.

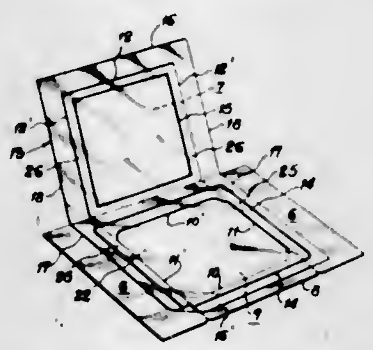


3,183,100
DISPLAY FOOD PACKAGE

John H. Bonini, Atlanta, Ga., assignor to Union Bag-Camp Paper Corporation, New York, N.Y., a corporation of Virginia

Filed Mar. 28, 1962, Ser. No. 183,215

1 Claim. (Cl. 99—171)



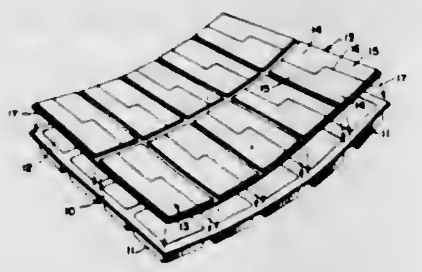
A display container enclosing and protecting the edge areas of a sliced and stacked, relatively soft food commodity, formed from a blank formed from a relatively rigid, foldable backing sheet cut and scored to provide a top panel having one free edge, inwardly folding side panels modified to lock with each other, and an end panel, the top panel having a cut-out area extending transversely to the side panel fold lines, the end panel being of suitable length and width so as to cover the said cut-out area when folded over the top panel, the blank having a sealable, transparent, relatively flexible liner sheet covering the backing sheet, the liner having sufficient length so as to extend longitudinally from the free edge end of the top panel to point beyond the end panel, and having sufficient width so as to extend transversely from the center of the top panel to points beyond the fold lines of the side panels, that portion of the liner sheet covering the cut-out area of the backing sheet being dished so as to cause it to be offset through and beyond the plane of the backing sheet a predetermined distance, the liner sheet being adhesively attached to the backing sheet along bonding lines including a first line extending completely about and set back a predetermined distance from the edges of the cut-out area and a second line extending along and set back a predetermined distance from the edges and fold line of the end panel, whereby the food commodity is placed within the dished portion of the liner, covered by the folding over of the end panel and that portion of the liner sheet attached thereto, sealed under vacuum from the atmosphere about its edges by the bonding of the liner material to itself along a bond line extending generally parallel to but spaced apart from the edges of the end panel, and the side panels may be folded over the end flap and secured to each other in overlapping relation.

3,183,101
PATTY PACKAGE IN COMBINATION WITH SERVING MEANS

Leo Peters, 750 Plymouth Road SE., Grand Rapids, Mich.

Filed July 31, 1962, Ser. No. 213,753

5 Claims. (Cl. 99—171)



5. In combination with a sheet support having mold pockets, plastic material forming patties in said pockets, a flexible sheet liner over each pocket in engagement with the patty therein, plate-like liners over said sheet liners with one plate-like linear and sheet liner for each pocket, each of said plate-like liners covering at least two of said patties and being divided longitudinally to form an enlarged relatively rigid base portion engaging each patty and an outwardly-extending handle portion, and means for anchoring the base portion to said sheet liner.

3,183,102
BLANCHING AND CANNING PROCESS FOR GREEN VEGETABLES

George J. Malecki, 418 N. State St., Chicago 10, Ill.

No Drawing. Filed June 19, 1961, Ser. No. 117,298

5 Claims. (Cl. 99—186)

1. The process of canning green vegetables comprising blanching the vegetables in a blanching medium containing calcium glutamate in an amount such that the pH of the medium is in the range 9.0–11.0 and thereafter canning the vegetables in a medium of such composition that the pH after canning is in excess of 7.2 and less than 8.0.

3,183,103
FORMING ONION POWDER BY SPRAY DRYING

Peter P. Noznick, Robert H. Bundus, and Anthony J. Luksas, Chicago, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 22, 1963, Ser. No. 274,865

11 Claims. (Cl. 99—204)

1. The process of treating raw onions which comprises washing the same, rinsing with water, grinding and forming a puree comprising pulp and juice, adding about 30 to 40% dextrin to such puree to form a dextrin containing puree, heating the mixture to about 150 to 155° F. for 3 to 4 minutes, cooling and spray drying.

3,183,104
HIGH TENSILE STRENGTH, LOW DENSITY GLASS COMPOSITIONS

George L. Thomas, Parma, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 26, 1962, Ser. No. 233,470

7 Claims. (Cl. 106—50)

1. A low density aluminum borosilicate glass fiber having a composition consisting of in percent by weight:

SiO_2	40–55
B_2O_3	10–20
Li_2O	0.1–1
MgO	5–20
Al_2O_3	19–29
BeO	0–8

having an uncompacted fiber density of less than 2.33 g./cc. and a fiber tensile strength of from 576,000 to 730,000 p.s.i., and wherein the ratio of Al_2O_3/MgO is between 1:1 and 5:1.

3,183,105
CEMENT ADDITIVE COMPOSED OF A MIXTURE OF METHYL ACETATE AND METHYL ALCOHOL

Frank G. Serafin, Somerville, and Vance H. Dodson, Jr., Needham, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Oct. 18, 1963, Ser. No. 317,159

4 Claims. (Cl. 106—90)

1. A dry Portland cement containing about 0.005% to 0.05% by weight of an additive consisting of a mixture of 78% to 82% by weight of methyl acetate and 22% to 18% by weight of methyl alcohol.

3,183,106
METHOD OF MAKING CEMENT

Otto Peder Frankert, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware

Filed July 10, 1962, Ser. No. 208,765

Claims priority, application Great Britain, July 24, 1961, 26,744/61

8 Claims. (Cl. 106—103)

1. A method of making cement comprising the steps of grinding a mixture of cement clinker and at least one hydraulic binder, the binder initially containing an amount of moisture which would cause setting of the binder in the presence of the clinker, and, during such grinding, drying the binder before it sets by subjecting the binder to the section of a drying gas at a temperature of 500°–700° C.

3,183,107
GLASS SPHERE FILLED PLASTERING COMPOSITIONS

Harvey E. Alford, Amherst, and Franklin Veatch, Lyndhurst, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 7, 1962, Ser. No. 171,600

8 Claims. (Cl. 106—110)

1. A plastering composition requiring a relatively small amout of water to bring it to a working viscosity comprising calcium sulfate hemihydrate and, as a filler, from 1 to about 9% by weight of hollow, discrete spheres of synthetic, fused, water-insoluble alkali metal silicate-based glass, said hollow spheres having solid walls of the same density throughout, and clear, smooth surfaces, diameters of from 5 to 5000 microns and wall thicknesses of from 0.5 to 10% of their diameters, a mass of said spheres having a gas density of 0.1 to 0.75 gram per cubic centimeter.

3,183,108
PLASTIC TYPE MODELING COMPOUND

William C. Rhodenbaugh and Tien Liu, Cincinnati, Ohio, assignors to Rainbow Crafts, Inc., Cincinnati, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 799,085, Mar. 13, 1959. This application Aug. 6, 1962, Ser. No. 214,851

2 Claims. (Cl. 106—153)

1. A smooth and velvety composition of matter which is soft, pliable, non-sticky, non-toxic, substantially lump-

free, re-workable, and re-moldable, consisting essentially of a mixture by weight of 15 to 45 percent grain flour selected from the group consisting of wheat flour and rye flour, 30 to 55 percent water, 1 to 10 percent of a water-soluble salt selected from the group consisting of sodium chloride and sodium hypochlorite, 1 to 10 percent calcium chloride and 0.5 to 5 percent kerosene.

3,183,109
THIXOTROPIC COMPOSITIONS

Wolfram Neumann and Erich Zankl, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 14, 1960, Ser. No. 15,001
Claims priority, application Germany, Mar. 14, 1959,
F 27,958
3 Claims. (Cl. 106—252)

1. A coating composition which comprises a member selected from the group consisting of a drying and a non-drying oil and from about 0.1% to about 30% by weight of a thixotropic additive prepared by a process which comprises reacting a member selected from the group consisting of a fatty acid and a hydrocarbon polycarboxylic acid with a member selected from the group consisting of an organic monoisocyanate and a symmetrical organic polyisocyanate at least one of said reactants having a carbon to carbon chain of at least 10 carbon atoms.

3,183,110
NOVEL COATING COMPOSITION

Mary E. Aler and Robert M. Todd, Cincinnati, Ohio, assignors to The Drackett Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 25, 1962, Ser. No. 233,139
4 Claims. (Cl. 106—287)

1. An improved oven protectant formulation consisting essentially of from about 2 to 7.5% dimethylpolysiloxane having a viscosity of from about 20,000 to 50,000 centistokes, about 0.5 to 4.5% hydrocarbon solvent having a boiling point range of from about 119° C. to 207° C., and the remainder of the formulation being a halogenated alkane gas.

3,183,111
BARIUM TITANIUM BORATE, PIGMENTS CONTAINING THE SAME, AND PROCESSES FOR THEIR PRODUCTION

Stanley J. Buckman, Raleigh, and John D. Pera, Memphis, Tenn., assignors to Buckman Laboratories, Inc., Memphis, Tenn., a corporation of Tennessee

No Drawing. Filed Jan. 23, 1961, Ser. No. 83,903
The portion of the term of the patent subsequent to
Apr. 15, 1980, has been disclaimed
6 Claims. (Cl. 106—299)

1. A composition of matter consisting essentially of the compound barium titanium borate having the empirical Berzelian formula $BaO \cdot TiO_2 \cdot B_2O_3$.

2. Solid particles consisting essentially of fused barium titanium borate, having the empirical Berzelian formula $BaO \cdot TiO_2 \cdot B_2O_3$, and barium metaborate, wherein the barium metaborate content varies from 0 to 42.5 weight percent of said solid particles.

3. A process for the production of a homogeneous solid containing barium titanium borate which comprises heating at a temperature between approximately 700° and approximately 1300° C. for a period between approximately 1300° C. for a period between approximately 10 minutes and approximately 24 hours a commingled mixture of the group consisting of (1) mixtures of titanium dioxide and a substance of the group consisting of barium metaborate and mixtures of barium and boron compounds that are convertible by such heating to barium metaborate and (2) mixtures of barium titanate and boron compounds that are convertible by such heating to boron trioxide, in such amounts that the titanium dioxide content of the resulting product does not exceed approximately 26.4 percent by weight.

3,183,112
ISOCYANATES AND METHOD OF PREPARING SAME

Alois Gemassmer, Cologne-Stammheim, Germany, assignor of one-half to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany, and one-half to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

Filed Dec. 4, 1956, Ser. No. 626,253
Claims priority, application Germany, Dec. 6, 1955,
F 18,992
9 Claims. (Cl. 106—316)

1. In the preparation of the reaction product of an organic diisocyanate selected from the group consisting of aromatic, cyclo-aliphatic and acyclic aliphatic diisocyanates and an alcohol having from one to four hydroxyl groups by a process which comprises mixing the diisocyanate with the alcohol in a ratio providing an excess of diisocyanate over that theoretically required for a different molecule of diisocyanate to react with each hydroxyl group of the alcohol and thereafter effecting chemical reaction therebetween whereby the two reactants become joined together through a urethane linkage, the improved method of removing unreacted diisocyanate from the reaction mixture after reaction has ceased which comprises flowing the said reaction mixture as a thin film and heating the film at a temperature above the boiling point of the unreacted diisocyanate but below about 250° C. while agitating the film of reaction mixture to avoid any quiescence, thereby avoiding any substantial amount of reaction between unreacted —NCO groups of the product and said urethane linkages.

7. A a new composition of matter, the reaction product of an organic diisocyanate selected from the group consisting of aromatic, cyclo-aliphatic and acyclic aliphatic diisocyanates with an alcohol having from 1 to 4 hydroxyl groups, said product having the general formula

$$(OCNR_1NHCOO)_nR_2$$

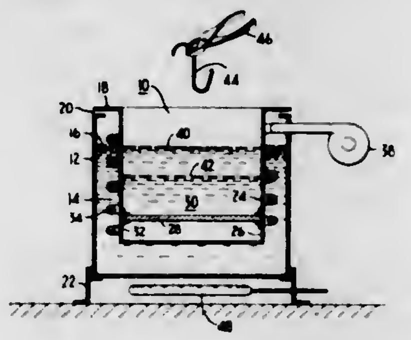
wherein R_1 represents the nucleus of the organic diisocyanate, R_2 represents the nucleus of the alcohol and n is from one to four, said reaction product containing at least about 80 percent of the number of unreacted —NCO groups theoretically possible when a different mol of organic diisocyanate reacts with each hydroxyl group of the alcohol to form a reaction product having the said formula and containing one urethane linkage and one unreacted —NCO group for each hydroxyl group which was present on the alcohol, and, in admixture with said reaction product, the product formed when an —NCO group reacts with at least one of the hydrogen atoms shown in the above formula, the amount of product formed by said reaction with the hydrogen atom being limited to not more than the amount that would be formed by reaction of 15 percent of the theoretically possible —NCO groups of the above formula with said hydrogen atom, said admixture containing less than about 2 percent unreacted organic diisocyanate.

3,183,113
FLUIDIZED BED COATING PROCESS AND APPARATUS

Erwin Gemmer, Frankfurt am Main, Germany, assignor to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a company of Germany

Filed Feb. 20, 1962, Ser. No. 174,605
10 Claims. (Cl. 117—21)

1. An apparatus for coating articles comprising a container having an open top through which articles to be coated may be inserted and immersed into a fluidized bed of finely divided particles of coating material confined therein, a gas pervious ceramic plate mounted horizontally in the container to partition the container into an upper chamber for containing the bed of coating material and a lower chamber, a jacket surrounding the sides and bottom of said container for containing a liquid heat transfer medium having a boiling point below the melting point of the coating material, a helical gas supply tube positioned around the container within the jacket and connected to said lower chamber, connections for supplying gas under pressure through the tube and said lower chamber and said plate to fluidize the bed, and a heating unit mounted adjacent to the jacket for transmitting heat through the liquid transfer medium to the fluidized bed and to the gas.

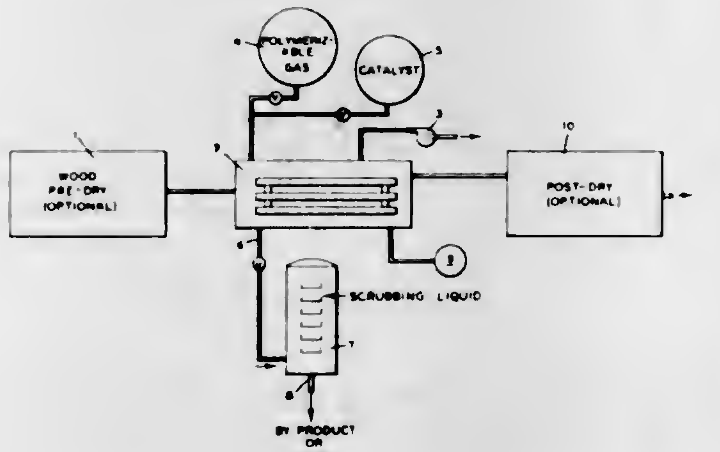


3. A method of coating articles comprising the steps of introducing a gas into a bed of finely divided free-flowing powdered coating material to fluidize the bed, supplying external heat above ambient temperature to the fluidized bed thereby to heat said bed to a predetermined temperature above ambient temperature and approaching but not exceeding the sintering point of the coating material, heating an article to be coated to a temperature above the sintering point of the coating material, and immersing the heated article in the heated fluidized bed.

3,183,114
TREATMENT OF WOOD WITH ETHYLENE OXIDE GAS OR PROPYLENE OXIDE GAS

Chien Liu and Charles W. McMillin, Stamford, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Apr. 24, 1961, Ser. No. 104,902
8 Claims. (Cl. 117—62.2)



1. The method for enhancing the characteristics of wood which comprises treating said wood under pressure with a vaporous polymerizable compound selected from the group consisting of ethylene oxide and propylene oxide, to form polymerization products in situ in the wood.

3,183,115
PROCESS FOR PREPARING BONDED RECONSTITUTED MICA

Richard J. Ketterer, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

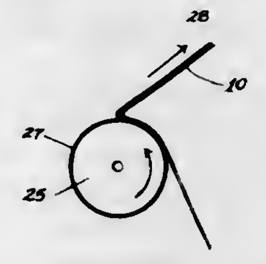
Filed June 30, 1961, Ser. No. 120,989
5 Claims. (Cl. 117—65.2)

1. The process of bonding reconstituted mica mat which comprises impregnating said mat with a solution of 5 to 30 percent by weight ammonium silicate in water, heating said mat to drive off ammonia and pressing at a pressure of from 25 to 2,000 p.s.i. at a temperature of from about 75° C. to 200° C. to form a unitary structure.

3,183,116
METHOD OF MAKING PERFORATED ADHESIVE TAPES

Charles H. Schaar, Chicago, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Original application Mar. 14, 1960, Ser. No. 14,644, now Patent No. 3,073,303, dated Jan. 15, 1963. Divided and this application Oct. 16, 1962, Ser. No. 230,831
10 Claims. (Cl. 117—98)



1. A method of forming a coating of a pressure-sensitive adhesive on a tape backing having openings therein without obstructing said openings with an adhesive membrane bridging said openings, comprising the steps of:

(*a*) coating a supporting surface with a layer of a pressure-sensitive adhesive, the cohesive strength of which is temporarily reduced to the extent that the adhesive layer can be easily split;

(*b*) applying said tape backing on the surface of said adhesive layer under pressure insufficient to press said backing into said layer, but sufficient to maintain the backing in adhesive contact with the surface of said adhesive layer; and

(*c*) separating said backing from the cohesively weak adhesive layer at an angle thereto to transfer a thin coating split from the adhesive layer to the portions of the backing in contact with the adhesive.

3,183,117
COATING COMPOSITION AND COATING METAL THEREWITH

Henry Yuska, Kew Gardens, N.Y., John E. Lynch, Emerson, N.J., and Herbert Barry, Rego Park, N.Y., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

Filed Apr. 8, 1960, Ser. No. 20,808
4 Claims. (Cl. 117—132)

1. An organosol coating composition consisting essentially of

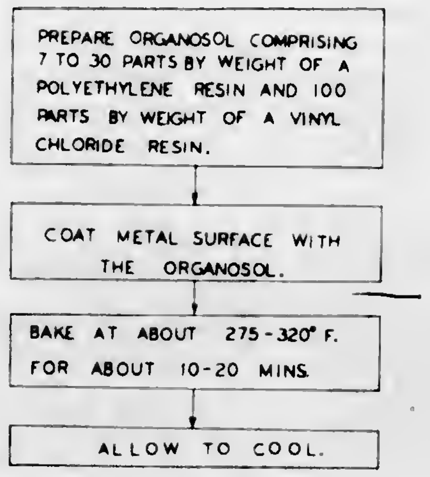
(*a*) a volatile organic dispersion medium, consisting of about 14 to 30% by weight of the total composition,

(*b*) a major proportion of a vinyl chloride resin dispersed in said dispersion medium,

(*c*) a plasticizer for the vinyl chloride resin, the amount of plasticizer being about ½ the amount of said resin,

(*d*) 4–9% of the final organosol weight of an ethoxyline resin produced by the reaction of Bisphenol A and epicholorohyrdin, (*e*) 4–9% of the final organsol weight of an alkylated melamine-formaldehyde resin, and

(*f*) about 7 to 30 parts by weight of a polyethylene resin for every 100 parts by weight of the vinyl chloride resin.


PREPARE ORGANOSOL COMPRISING 7 TO 30 PARTS BY WEIGHT OF A POLYETHYLENE RESIN AND 100 PARTS BY WEIGHT OF A VINYL CHLORIDE RESIN.
COAT METAL SURFACE WITH THE ORGANOSOL.
BAKE AT ABOUT 275-320° F. FOR ABOUT 10-20 MINS.
ALLOW TO COOL.

2. A method of decorating a metal surface consisting essentially of

(*a*) applying to said surface the organosol coating composition described in claim 1,

(*b*) baking the coating at from about 350° F. to about 375° F. for about 10–20 minutes and

(*c*) allowing the coating to cool.

3,183,118
REACTION PRODUCTS OF NICKEL, COPPER AND MERCURY SALTS AND PROCESS FOR RENDERING COTTON FABRIC ROT RESISTANT THEREWITH

Charles J. Conner, New Orleans, La., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Jan. 22, 1963, Ser. No. 253,232
39 Claims. (Cl. 117—138.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

27. A process for rendering a cotton fabric rot resistant comprising padding the cotton fabric to a wet pick-up of about 75% with an aqueous solution containing water soluble copper zirconyl boro-acetate dissolved therein in an amount corresponding to about 2.49% zirconium and about 1.30% copper to achieve an add-on of at least 1.86% zirconium by weight and at least 0.97% copper by weight, and heating the padded fabric at a temperature of about 110° C. to 160° C. for a period of about from 1 to 10 minutes, the shorter time intervals being employed with the higher temperatures, to insolubilize the water soluble copper zirconyl boro-acetate.

28. A process for rendering a cotton fabric rot resistant comprising padding the cotton fabric to a wet pick-up of about 75% with an aqueous solution of a member selected from the group consisting of water soluble phenyl mercuric zirconyl boro-acetate, phenyl mercuric acetato-zirconic acid, phenyl mercuric zirconyl lactato-acetate, phenyl mercuric zirconyl benzoate-acetate, phenyl mercuric zirconyl propionate-acetate, phenyl mercuric zirconyl nitro-acetate, phenyl mercuric zirconyl phthalate-acetate, bis(phenyl mercuric acetato-zirconyl)ammonium-8-hydroxyquinolinolate, and bis(phenyl mercuric ammonium zirconyl acetate)maleate dissolved therein in an amount sufficient to achieve an add-on of at least 0.3% by weight of mercury, and heating the padded fabric at a temperature of about 110° C. to 160° C. for a period of about from 1 to 10 minutes, the shorter time intervals being employed with the higher temperatures, to insolubilize the water soluble member.

3,183,119
METHOD OF POLISHING LEATHER

Ronald L. Broadhead, Danville, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Aug. 14, 1962, Ser. No. 216,713
8 Claims. (Cl. 117—142)

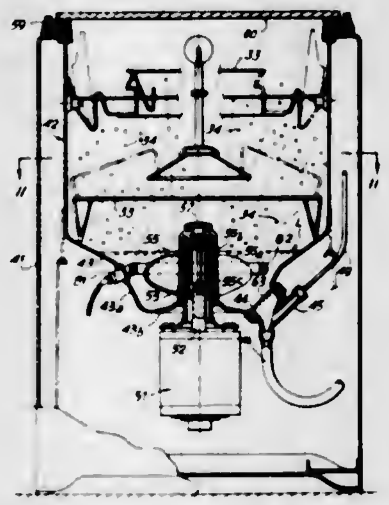
1. A method of polishing leather, which method comprises applying to the surface of the leather to be polished a coating of a hereinafter defined polish composition and allowing said coating to dry at ambient temperature whereby a dry-bright coating is obtained on said leather surface, said polish composition consisting essentially of (1) a major amount of waxy resin, (2) a liquid organic solvent therefor, and (3) a pigment, said resin consisting of the condensation reaction product of (A) a monoester of (i) an acidic member selected from the class consisting of benzene tricarboxylic acids and anhydrides thereof and (ii) an alkanol containing from at least 18 to about 30 carbon atoms, said monoester having a mole ratio of said acidic member to said alkanol of from about 1:0.9 to about 1:1.1, said (i) and said (ii) being reacted at a temperature below about 120° C., and (B) an alkanediol containing from 2 to 6 carbon atoms, in a mole ratio of acidic member present in the charge to A to said alkanediol of from about 1.1:1 to about 1.3:1, at a temperature between about 125° C. and 225° C., with continuous withdrawal of water of reaction until condensation is essentially complete, to obtain a waxy resin product having an Acid Number of not more than about 30.

ERRATUM

For Class 127—50 see:
Patent No. 3,182,665

3,183,120
METHOD OF WASHING DISHES AND THE LIKE

Orlando Mori, Florence, Italy, assignor of one-half to Soc. Toscana Industria Cucine Elettrodomestici (S.T.I.C.E.) S.p.Az., Florence, Italy, a corporation of Italy
Filed Sept. 5, 1962, Ser. No. 221,540
Claims priority, application Italy, Sept. 9, 1961, Patent 655,768; Feb. 10, 1962, 3,085/62
2 Claims. (Cl. 134—7)

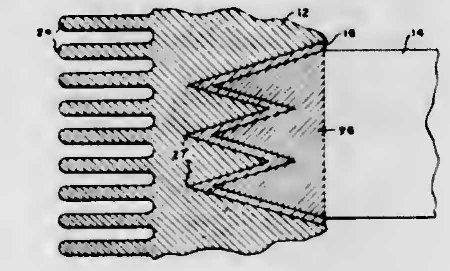


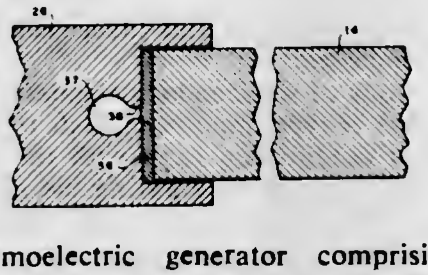
1. The method of washing dishes which comprises the steps of: positioning the dishes to be washed above the level of a washing liquid; positioning a plurality of buoyant solid bodies in said liquid; propelling said liquid and said bodies to cause a mixture thereof to be propelled upwardly and outwardly over said dishes with said bodies each travelling through a trajectory which includes a plurality of bounces; subsequently propelling said mixture of said liquid and said bodies downwardly for exhausting the spent washing liquid, said downward propelling step causing agitation and cleansing action

of said bodies by the said liquid, said downward propelling step being performed while retaining said bodies against exhausting movement with said liquid.

3,183,121
THERMOELECTRIC GENERATOR WITH HEAT TRANSFER AND THERMAL EXPANSION ADAPTOR

Kurt G. F. Moeller, Harness Creek Road, R.F.D. 3, Annapolis, Md.
Filed June 2, 1961, Ser. No. 114,570
11 Claims. (Cl. 136—4)
(Granted under Title 35, U.S. Code (1952), sec. 266)



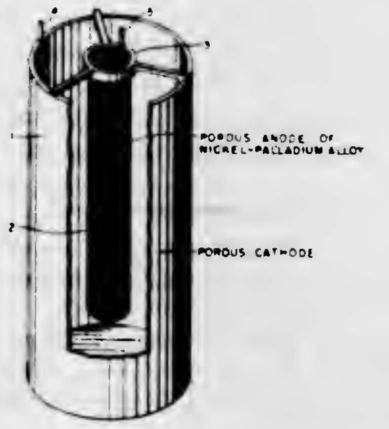


1. A thermoelectric generator comprising heating means, cooling means, a thermoelectric element interposed between said heating means and said cooling means, said thermoelectric element having an end surface of predetermined area facing said heating means and an opposed end surface of predetermined area facing said cooling means, and means essentially for heat transfer interposed between said heating means and said thermoelectric element and said thermoelectric element and said cooling means, said heat transferring means comprising an adapter element having a high thermal conductivity and an electrical insulation having a high thermal conductivity, said adapter element having a main body and a first surface area of substantially the same size and configuration as said predetermined surface area of said thermoelectric element and in intimate contact therewith, and a second surface area being substantially greater than said first surface area and including portions which project from the main body of said adapter element toward said heating means and toward said cooling means and in intimate contact with said insulation in order to maximize the heat transfer between said heating means and said thermoelectric element and said thermoelectric element and said cooling means; and wherein said heating means and said cooling means include projecting portions positioned in complementary relationship to said projecting portions of said adapter element and in intimate contact with said insulation and spaced from said projecting portions of said adapter element by said insulation.

11. A thermoelectric generator for operation in a predetermined temperature range comprising heating means, cooling means, a thermoelectric element interposed between said heating means and said cooling means, electrical insulation isolating said thermoelectric element from said heating means and from said cooling means, and expansion absorbent means interposed between said thermoelectric element and said insulation at at least one end of said thermoelectric element, said expansion absorbing means including a first member having an aperture therein, a layer of metallic material interposed adjacent said aperture for establishing contact between said insulation and said thermoelectric element, said metallic material having a melting point below the operating temperature range of said generator whereby expansion in said generator is absorbed by forcing said metallic material in its molten state into said aperture.

3,183,122
FUEL CELL

Joseph C. White, Hyattsville, Md., and Sigmund Schuldiner, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 9, 1959, Ser. No. 851,924
4 Claims. (Cl. 136—86)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A fuel cell comprising in combination a hollow porous cathode and a hollow porous anode, said hollow porous anode being formed essentially of nickel-palladium alloy containing from about 0.1 to 2% by weight palladium.

3,183,123
FUEL CELL ELECTRODE

Daniel T. Haworth, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
No Drawing. Filed Mar. 19, 1962, Ser. No. 180,852
4 Claims. (Cl. 136—86)

2. A fuel cell having a housing; an anode and a cathode electrode mounted in said housing in spaced relation to each other; an electrolyte disposed between said electrodes; a fuel dissolved in said electrolyte, means for supplying an oxidant to the cathode; and said cathode comprising a porous support formed of a conductive material selected from the group consisting of carbon and nickel and having a catalytic coating of boride selected from the group consisting of the borides of nickel and cobalt.

3,183,124
METHOD OF MAKING A FUEL CELL ELECTRODE

Raymond J. Jasinski, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
No Drawing. Filed Mar. 19, 1962, Ser. No. 180,850
1 Claim. (Cl. 136—122)

The method of preparing a hydrophobic electrode for fuel cells comprising the steps of immersing a porous electrically conductive electrode base selected from the group consisting of carbon and nickel into an aqueous solution containing a dissolved salt selected from the group consisting of chlorides, bromides, acetates, and nitrates of a metal selected from the group consisting of cobalt and nickel; removing said base from said solution; immersing said base into a solution of a borohydride of a metal selected from the group consisting of sodium and potassium; removing said electrode base from the said solution; rinsing said base with water; heating said base in a non-oxidizing atmosphere to a temperature of from about 150° C. to about 250° C. until said boride adheres to said base; cooling said base; and utilizing said hydrophobic electrode as a current generating electrode in a fuel cell.

3,183,125
PROTECTIVE TREATMENT FOR Mg AND Mg-BASED ALLOYS

Carl Kenneth Bjork, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

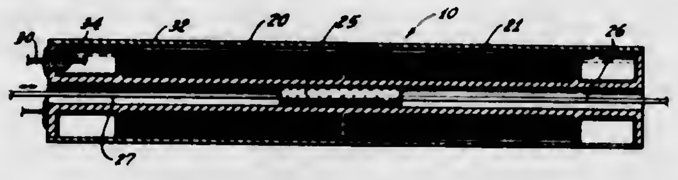
No Drawing. Filed Mar. 2, 1961, Ser. No. 92,760
4 Claims. (Cl. 148—6.2)

1. In a method for providing a corrosion resistant coating on particulate magnesium metal which includes contacting said metal with a hot alkali metal dichromate solution, the improvement which comprises: washing the resulting chromated particulate magnesium metal with a dilute dispersion containing at least 0.05 percent by weight of a hydrophobic, water-dispersable, oxygen-containing surface active agent, said agent having at least one uninterrupted carbon to carbon chain, said chain containing from 8 to 26 carbon atoms, and said agent containing at least one carbon oxygen polar group linkage, said linkage having sufficient polarity to provide an affinity for the chromated surface of said chromated magnesium.

3,183,126
METHOD OF MAKING MAGNETIC TRANSDUCERS

Gerald R. Curtis, Duarte, James C. Kyle, Glendora, and Glen Robinson, Pasadena, Calif., assignors, by mesne assignments, to Physical Sciences Corporation, a corporation of California

Filed Apr. 19, 1960, Ser. No. 23,267
7 Claims. (Cl. 148—12)



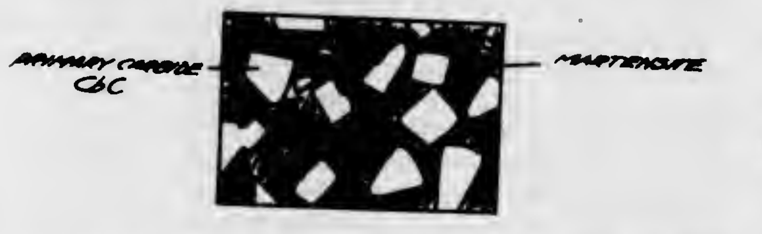
1. A method of making a magnetic core having substantially constant magnetic characteristics over an extended temperature range, including the steps of, repeatedly thermoshocking a piece of ferromagnetic chromium-iron alloy of the AISI 400 series between an elevated temperature of at least 1000° F. for at least one hour and a reduced temperature less than —200° F. for at least five (5) minutes to remove crystalline stresses in the alloy, then machining the piece of material to the required size of the core, and then thermoshocking the machined piece between an elevated temperature of at least 1000° F. for at least one hour and a reduced temperature less than —200° F. for at least five (5) minutes to remove stresses due to the machining.

3,183,127
HEAT TREATABLE TOOL STEEL OF HIGH CARBIDE CONTENT

Eric Gregory, Bernardsville, N.J., and Martin Epner, Yonkers, N.Y., assignors, by mesne assignments, to Chromalloy Corporation, New York, N.Y., a corporation of New York

Original application Apr. 27, 1959, Ser. No. 809,217. Divided and this application Apr. 30, 1963, Ser. No. 276,895

5 Claims. (Cl. 148—31)

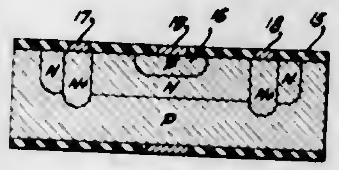


1. A hardened, wear resistant, high carbon tool steel consisting essentially of about 15% to 90% by weight of primary carbide based on at least one carbide selected from the group consisting of VC, CbC and TaC distributed substantially uniformly through a ferrous matrix consisting essentially of the balance, said ferrous matrix containing iron as the major alloying constituent and containing combined carbon and consisting essentially of a microstructure selected from the group consisting of martensite and bainite.

3,183,128
METHOD OF MAKING FIELD-EFFECT TRANSISTORS

Otto Leistiko, Jr., Redwood City, and Chih-Tang Sah, Oakland, Calif., assignors to Fairchild Camera and Instrument Corporation, Long Island, N.Y., a corporation of Delaware

Filed June 11, 1962, Ser. No. 201,599
5 Claims. (Cl. 148—186)



1. Method of making a field-effect semiconductor device which comprises:

forming a body of semiconductor material having both P-type and N-type impurities, each type having different net outdiffusion rates with the concentration of impurities of the type having the greater net outdiffusion rate being substantially greater than the concentration of the other type;

outdiffusing a sufficient portion of the impurities to form a region of semiconductor material at the surface of said body having a net concentration of impurities of the type having the slower outdiffusion rate, while leaving the remainder of said body with a net concentration of the faster type;

masking a central portion of the surface of said surface region and diffusing impurities of the faster outdiffusing conductivity type around said mask to a depth sufficient to make contact with said remainder of said body beneath said surface region, thereby isolating a channel within said surface region of the conductivity type of the slower outdiffusing impurities;

diffusing additional impurities of the slower outdiffusing conductivity type into at least two spaced-apart areas of said channel;

diffusing into said surface region a sufficient amount of impurities of the faster outdiffusing conductivity type to bury the surface of said channel except at said spaced-apart areas; and

placing three electrodes in ohmic contact with said body two of which are in contact with said spaced-apart areas of said channel and the other is in contact with an area of the body of opposite conductivity type from said channel.

3,183,129
METHOD OF FORMING A SEMICONDUCTOR

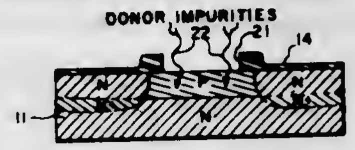
Gareth A. Tripp, Palo Alto, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

Filed July 15, 1963, Ser. No. 294,830
12 Claims. (Cl. 148—186)

1. An improved method of forming a transistor comprising the steps of:

(*a*) masking a portion of one surface of an N-type silicon wafer with silicon oxide to define the lateral extent of the P-type base region to be formed thereunder and to leave an exposed portion of the surface for the diffusion of a donor impurity;

(*b*) diffusing a donor impurity which is masked by silicon oxide into the wafer from said surface to establish a reciprocal region in said wafer of a predetermined depth having additional donor impurities surrounding the masked portions of said wafer;



(*c*) controllably diffusing a gallium into the wafer to establish a P-type zone in said wafer beneath said mask of depth less than said predetermined depth, the amount of such gallium diffused being insufficient to change the conductivity type of said reciprocal region from N-type to P-type, whereby a PN junction is formed between said P-type base region and said wafer, said junction extending to the wafer surface between said base zone and said reciprocal region;

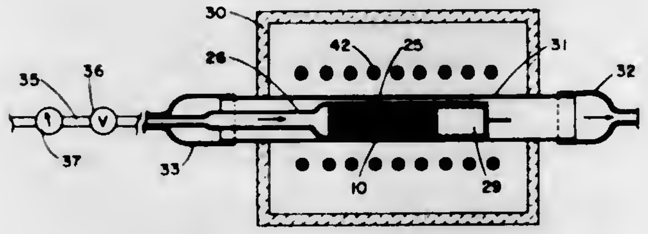
(*d*) masking the remainder of the surface of said wafer except a portion of the surface of said base region with silicon oxide, leaving an aperture in said mask over the base region for the diffusion of an emitter region; and

(*e*) diffusing N-type impurities masked by silicon oxide into said aperture to form an emitter region of N-type conductivity, said emitter region forming a PN junction with said base region extending to said surface.

3,183,130
DIFFUSION PROCESS AND APPARATUS

James E. Reynolds, Phoenix, and Kenneth D. Holloway, Scottsdale, Ariz., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Jan. 22, 1962, Ser. No. 167,815
6 Claims. (Cl. 148—188)



1. A process for diffusing a first impurity into one side of each of a plurality of wafers and for diffusing a different second impurity into the opposite side of each of said wafers, with each of said wafers having a first thin layer of material containing said first impurity placed on one of said sides and having a second thin layer containing said second impurity placed on the other of said sides prior to the diffusion step, said process comprising:

(*a*) arranging said coated wafers in a stack extending longitudinally of a diffusion tube on the inside thereof so that each pair of adjacent wafers in said stack has the coatings containing the same impurity material in contact with each other,

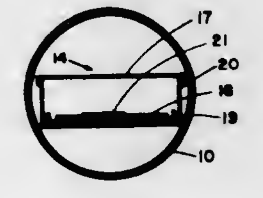
(*b*) supporting said wafers in said tube at the edge portions thereof while leaving a restricted space about the circumference of said wafers in said tube for gas to flow through said tube past the edges of said wafers,

(*c*) and subjecting said wafers to heat in said tube while passing flushing gas through said restricted space about said wafers so that said impurities diffuse into said wafers and said flushing gas sweeps away any impurity vapors emanating from the edges of said wafers to minimize cross contamination of said wafers.

3,183,131
SEMICONDUCTOR DIFFUSION METHOD

Tommie R. Huffman, Tempe, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Aug. 23, 1961, Ser. No. 133,369
4 Claims. (Cl. 148—189)



1. A method of diffusing impurities into semiconductor wafers by pre-deposition and redistribution and characterized by uniform diffusion conditions and results across each wafer and from wafer to wafer, said method including the steps of coating an impurity oxide material on a flat surface of a backing member, heating said backing member to glaze said coating thereon, placing a plurality of semiconductor wafers in a closure structure which includes said backing member such that said wafers all lie flat in the same plane separated the same distance from and parallel to the impurity material on said backing member, placing said closure structure in a heated region of a diffusion system maintained at a temperature to cause vaporization of impurity material from said backing member and diffusion of impurity material into said wafers until a maximum concentration of the impurity for said temperature exists in a surface region of each wafer, and subsequently heating said wafers to redistribute the impurities in said wafers by diffusion.

3,183,132
METHOD OF DELAYING THE IGNITION OF WHITE PHOSPHORUS INCENDIARY COMPOSITIONS

Seymour M. Kaye, Dover, N.J., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Apr. 23, 1963, Ser. No. 275,167
6 Claims. (Cl. 149—29)
(Granted under Title 35, U.S. Code (1952), sec. 266)

4. A method of delaying the ignition of combustible solid material with white phosphorus incendiary, comprising applying to said combustible material a solution of about 5 to 10 parts by weight of white phosphorus in about 35 to 60 parts by weight of carbon disulfide and about 10 to 30 parts by weight of kerosene; whereby spontaneous ignition of said white phosphorus is delayed until said carbon disulfide has evaporated from said solution.

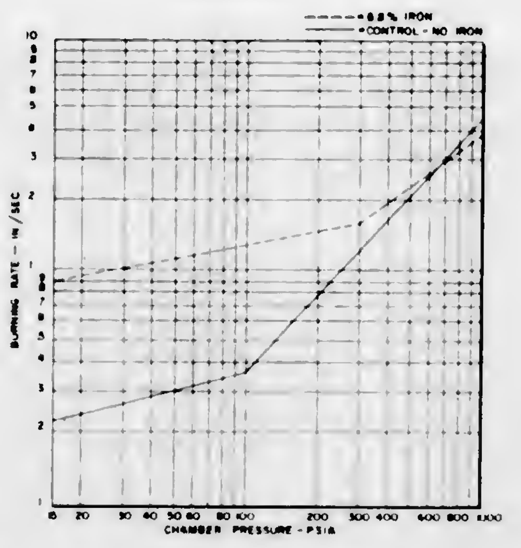
3,183,133
SOLID PROPELLANT COMPOSITIONS CONTAINING IRON CATALYST

Albert E. Lemke, Glendora, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

Filed Oct. 21, 1960, Ser. No. 64,220
10 Claims. (Cl. 149—40)

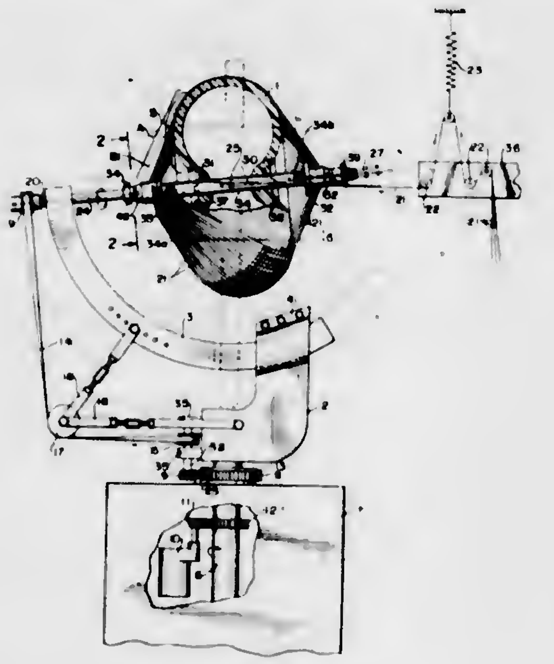
1. In a pyrotechnic composition consisting essentially of an intimate mixture of readily oxidizable metal selected from the group consisting of beryllium, aluminum, and magnesium and an inorganic oxidizing material selected from the group consisting of the alkali and alkaline earth metal chlorates, perchlorates, chromates, dichromates, and mixtures thereof; the improvement which comprises

the intimate dispersion of finely divided iron therein as a burning rate acceleration additive, said finely divided iron being present in an amount of from about 1 percent to about 30 percent of the total pyrotechnic composition.



3,183,134
TIRE BUILDING APPARATUS AND METHOD

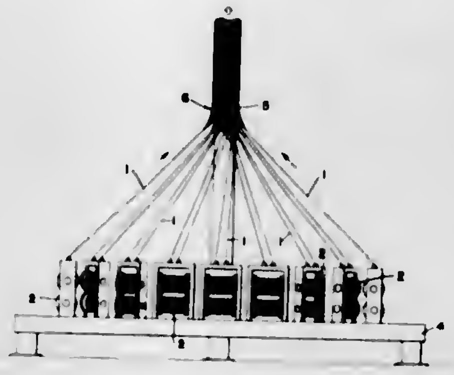
Vincent C. Frisby, Great River, N.Y., assignor to Fairchild Hiller Corporation, a corporation of Maryland
Filed Apr. 3, 1962, Ser. No. 184,762
22 Claims. (Cl. 156—117)



11. The method of constructing a continuous cord tire comprising the steps of: mounting a rigid mold on a spindle, the said mold having the desired shape of the inside of the tire to be maintained during the curing process including inwardly sloping surfaces; positioning a pair of rigid hubs having axle openings therethrough on said spindle, one on each side of said mold and spaced therefrom at the beginning of construction of the tire; applying sheet rubber over the outer surface of said mold; attaching a cord to one of said hubs; rotating said spindle and said mold and simultaneously winding said cord continuously about said mold and onto both said hubs in a winding plane passing through the centroid of said mold and tangent to opposite sides of said hubs to build up layers of cord on said hubs; moving the said hubs progressively inwardly along said spindle toward said mold during said winding; securing the end of said cord to one of said hubs after winding is completed; applying sheet rubber over said cord windings to form with said first applied sheet rubber an assembly of cord and rubber; curing said assembly with heat and pressure; and removing said mold from said assembly so that the said hubs remain secured to said assembly.

3,183,135
METHOD FOR THE MANUFACTURE OF TIRES

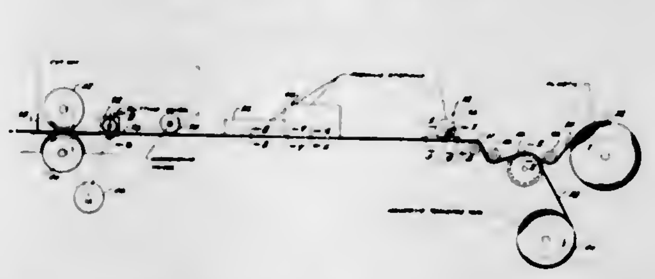
Leonard G. Berquist, Niles, Mich., assignor to National-Standard Company, Niles, Mich., a corporation of Michigan
Filed Nov. 19, 1962, Ser. No. 239,106
3 Claims. (Cl. 156—126)



1. The method of manufacturing a tire comprising the steps of, braiding a plurality of strands to form a continuous cylinder having a uniform cross section, applying an insulating coating to the strands of said cylinder, severing said coated cylinder into predetermined widths, incorporating at least one of said severed cylinder widths without substantial change of said uniform cross section as a part of an uncured tire with the axis thereof coinciding with the axis of rotation of the tire, and thereafter shaping and vulcanizing the uncured tire.

3,183,136
METHOD OF MAKING PLASTIC CARD HOLDER MEANS

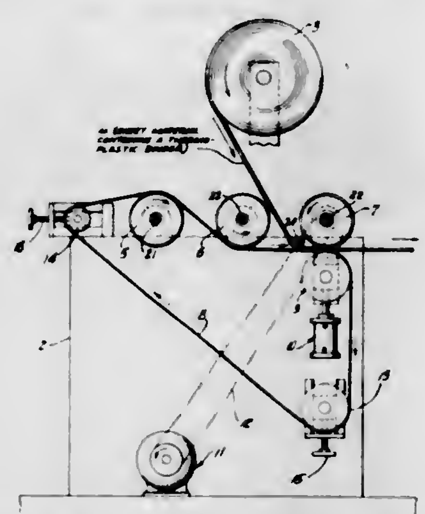
John Tyler Purdy, Whittier, Calif., assignor to Modern Toy, Inc., Studio City, Calif., a corporation of California
Filed June 14, 1961, Ser. No. 117,115
8 Claims. (Cl. 156—202)



1. A method of making card holder means from an elongated strip of resilient and stiff, thermoplastic material including the steps of: applying composite transfer tape comprising pressure-sensitive adhesive material with protective backing thereon to one surface of a central portion of said strip; thereafter heating marginal holding portions of said strip; bending outer sections of said heated, marginal holding portions upwardly and inwardly at acute angles to the central portion; thereafter bending inner sections of said heated, marginal holding portions upwardly and inwardly at acute angles to the central portion at locations adjacent the outer edges of said adhesive material, the terminal edges of said outer sections engaging the upper surface of said central portion during said last-mentioned bending; opening the angles between the associated outer and inner sections during said last-mentioned bending; and finally slitting in said central portion at least partially through approximately at its mid point along its length.

3,183,137
METHODS AND APPARATUS FOR TREATING SHEET MATERIALS

Carlyle Harmon, Scotch Plains, and Hector W. Griswold, Princeton, N.J., assignors, by mesne assignments, to Johnson & Johnson, New Brunswick, N.J., a corporation of New Jersey
Filed Dec. 5, 1960, Ser. No. 73,723
4 Claims. (Cl. 156—309)



1. A method of bonding sheet material with a thermoplastic binder which comprises:

feeding sheet material containing a thermoplastic binder to a heated surface;

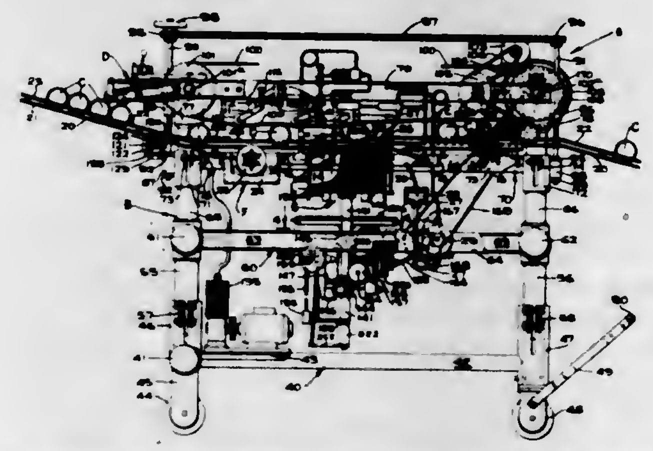
conveying said heated surface with the sheet material thereon a spaced distance whereby said sheet material is heated;

passing the exposed surface of said sheet material substantially tangential to a heated rotatable surface to contact said sheet material with said rotatable surface substantially only at a line of tangency between the plane of the sheet material and the surface of said rotatable surface; and

applying pressure to said sheet material at said line of tangency whereby said thermoplastic binder is softened and adheres to said sheet material.

3,183,138
LABELING MACHINE

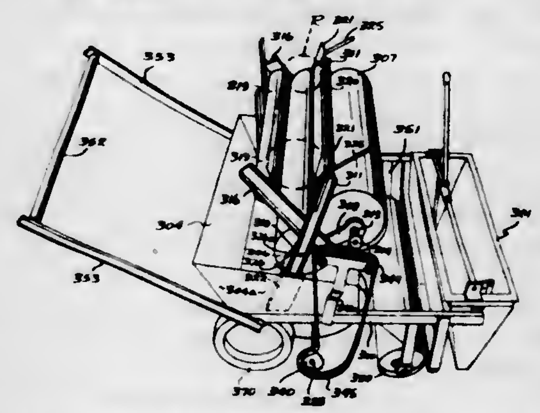
John J. Mattingly, 213 Front St., Rising Sun, Ind., and Ralph J. Mattingly, deceased, late of Rising Sun, Ind., by Richard R. Mattingly, executor, P.O. Box 325, Aurora, Ind.
Filed June 22, 1959, Ser. No. 821,775
5 Claims. (Cl. 156—364)



1. A label supporting mechanism comprising a horizontal platform adapted to support a vertical stack of horizontal labels, said platform being of one piece in construction and having a plurality of slots formed along opposite edges thereof, a label support frame arranged to surround said platform, means for supporting and for guiding said label support frame for vertical movement, means connected to said supporting and guiding means for imparting vertical movement to said label support frame to position said label support frame in horizontal alignment with said platform, said label support frame including horizontally movable label-engaging members with inwardly directed tongues adapted to be received by said slots, said movable label-engaging members being mounted adjacent said opposite edges of said platform for sliding movement in a horizontal plane with respect to said support frame, and means connected to said movable members for imparting sliding movement thereto for at times sliding said movable members toward one another to insert said tongues into said slots for engaging and supporting said stack of labels and at other times sliding said movable members away from one another while said label supporting frame and said platform are maintained in horizontal alignment to remove said tongues from said slots to withdraw said movable members from engagement with said stack of labels.

3,183,139
VAPOR BARRIER AND ADHESIVE APPLICATORS

Frank W. Curtis, Chagrin Falls, Ohio, assignor to Lexsuco, Inc., Solon, Ohio, a corporation of Ohio
Filed July 18, 1960, Ser. No. 43,614
1 Claim. (Cl. 156—575)



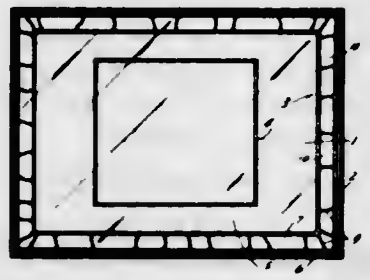
Surfacing apparatus for applying sheet material to a roof structure and the like comprising a framework, means for supporting a roll of sheet material on said framework, a reservoir supported on said framework for holding a predetermined quantity of adhesive therein, an adhesive applicator roll assembly for applying adhesive to said sheet material including an adhesive pick-up roll, a sheet material coating roll, means for rotatably mounting said rolls whereby the surfaces of the same are in substantial engagement, channel means in said reservoir, means on said roll assembly slidably accommodated in said channel means effective to releasably mount said assembly on said framework and to locate said pick-up roll in contact with the adhesive in said reservoir. said sheet material being in contact with said coating roll and directed from the latter to said roof structure, a shaft carried on said framework, a pair of wheels mounted on said shaft supporting said framework above said roof structure and operable to move the same therealong, a drive sprocket carried on said shaft, sprocket means on said rolls of said assembly, link chain means interconnecting said drive sprocket and said sprocket means and responsive to the rotation of said shaft to rotatably actuate said rolls of said assembly.

3,183,140
SIMULATED DIVIDED TRANSPARENT SHEET AND METHOD OF MAKING THE SAME

Ralph W. Gibson, Jr., Milwaukee, Wis., assignor to Jos. Schlitz Brewing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 7, 1960, Ser. No. 74,284
4 Claims. (Cl. 161—5)

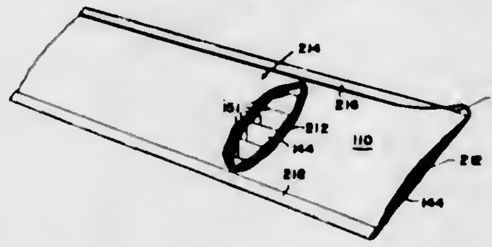
1. A transparent one-piece glass element of a continuous similar composition for transmitting light there-

through and having a planar front and back, said element having intersecting grooves on the back of the element dividing the element into a plurality of sections, said grooves having a generally shallow U-shaped cross section with edge fissures extending laterally inwardly from the edges of the grooves, and an opaque lead colored material coating the groove including the edge fissures to prevent transmission of light through the groove while transmitting the light through the adjacent portions, said grooves simulating lead strips whereby the adjacent sections appear as separate sub-elements and realistically simulate a stained glass separation.



3. In a method of forming a simulated stained glass unit of an interior single composition, said unit comprising a plurality of simulated separate glass pieces held together by simulated lead separation strips, comprising the steps of covering one side of the sheet with a protective cover of acid resistant material, exposing only those areas corresponding to the lead separation strips, applying acid over the covered side and thereby acid etching grooves on the one side of the glass sheet in accordance with the lead separation strips to be simulated, said acid etching creating a groove having a generally U-shaped cross section having laterally extending edge fissures, applying an opaque lead-colored medium within the grooves including the edge fissures and thereby simulating a lead strip.

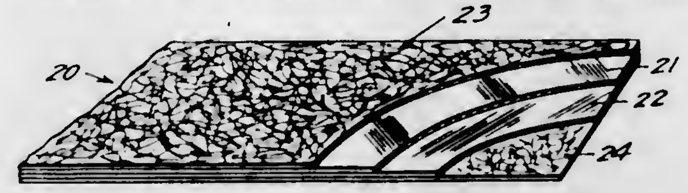
3,183,141
SHREDDED PULP AND METHOD FOR MAKING SHREDDED PULP BATS
Dermot F. Holden and Roland R. Nydegger, Metuchen, N.J., assignors to Fibre Formations, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 17, 1960, Ser. No. 15,662
5 Claims. (Cl. 161—43)



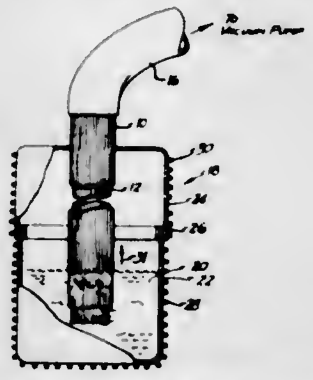
1. A bat comprising a facing ply, a backing ply and shredded pulp contained between said plies, fibers of said shredded pulp being embedded in at least one ply to stabilize the bat, one of said plies being wider than the other ply and having its edges folded over the edges of the other ply and adhered thereto.

3,183,142
REINFORCED RESINOUS STRUCTURAL MATERIAL
Hubert J. Tierney, Dellwood, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 9, 1962, Ser. No. 188,297
9 Claims. (Cl. 161—58)

1. Thin, strong, conformable, splice-free, filament-reinforced resinous tape about ⅜–3 inches in width and at least 100 feet in length comprising at least two coterminous layers, each of which consists of flexible, high-strength, non-woven, aligned, essentially contiguous glass filaments which are uniformly distributed within the layer and are saturated and unified by a deformable uncured thermosetting resin composition which when cured has a modulus in tension of at least 50,000 p.s.i., each of said layers having a thickness of 4 to 20 mils, said filaments extending obliquely and oppositely and essentially at only two angles, each of said angles being 30 to 60 degrees to the longitudinal direction of the tape, the filaments of one of said layers extending at one of said angles and the filaments of another of said layers extending at the other of said angles, said filaments comprising 40 to 80% by weight of each of said layers, and where the filaments comprise more than 65% by weight of said layers said resinous tape has a stress-absorbing thermosetting resin layer having a uniform thickness of 1 to 20 mils interposed between adjacent layers of resin-saturated aligned filaments, said resinous tape being readily stretchable by hand pulling to an elongation of at least about 30 percent of its original length.



3,183,143
STRUCTURAL SHAPES OF REINFORCED SULFUR AND METHOD OF PRODUCING SAME
Ransom S. Harris, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed May 15, 1961, Ser. No. 110,231
16 Claims. (Cl. 161—176

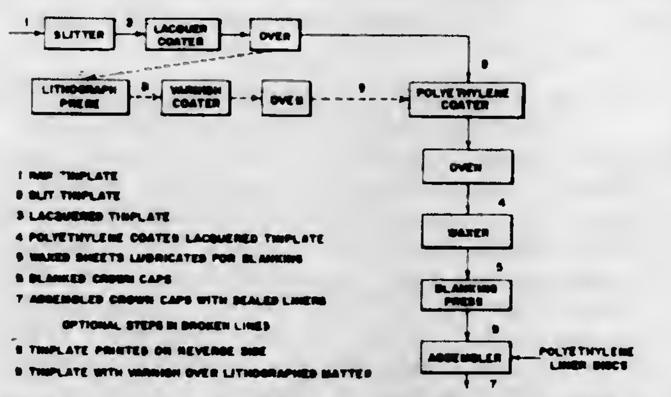


1. A rigid, composite body having a high modulus of fracture, and comprising amorphous sulfur and lengths of continuous glass strands wherein the sulfur is stabilized in its allotropic form and thereby hindered from reversion to its crystalline state by the glass strands.

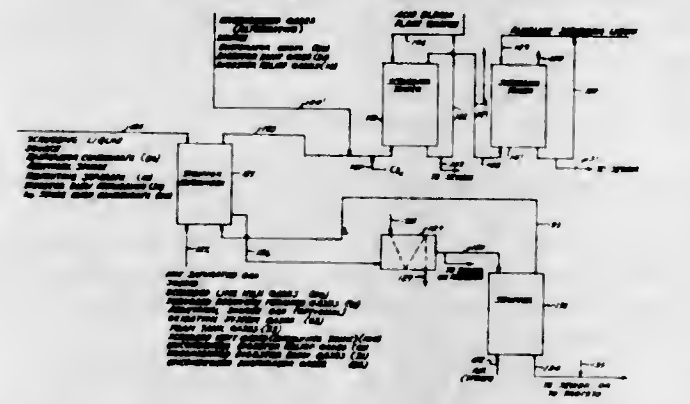
8. In a method of producing rigid shapes of reinforced, amorphous sulfur having a high modulus of fracture, the steps of admixing particles of elemental sulfur with chopped glass strand in a ratio of about 5% by weight of glass to about 95% by weight of sulfur, heating the admixture to melt the sulfur and wet the fibers in bonding relation, cooling the bonded mass, and forming a shape from said cooled and bonded mass, whereby the sulfur is stabilized in its allotropic form and thereby hindered from reversion to its crystalline state.

3,183,144
METHOD OF MAKING POLYETHYLENE SEALS
Enzo P. Caviglia, Crawfordsville, Ind., assignor to The Hoosier Crown Corporation, Crawfordsville, Ind.
Filed May 3, 1961, Ser. No. 107,372
11 Claims. (Cl. 161—252)

8. A laminate comprising a metal body having a coating a sanitary lacquer on surface portions thereof, a coating of polyethylene over said lacquer coating, said polyethylene coating being heat-treated at about 350° F. to about 420° F. for from about 3 minutes to about half an hour, longer times in this range being used with lower temperatures in the range specified, and a polyethylene body heat-sealed to said heat-treated polyethylene coating.


SLITTER
LACQUER COATER
OVEN
LITHOGRAPH PRESS
VARNISH COATER
OVEN
POLYETHYLENE COATER
OVEN
WAXER
BLANKING PRESS
ASSEMBLER
POLYETHYLENE LINER DISCS
1 RAW TINPLATE
2 SLIT TINPLATE
3 LACQUERED TINPLATE
4 POLYETHYLENE COATED LACQUERED TINPLATE
5 WAXED SHEETS LUBRICATED FOR BLANKING
6 BLANKED CROWN CAPS
7 ASSEMBLED CROWN CAPS WITH SEALED LINERS
OPTIONAL STEPS IN BROKEN LINES
8 TINPLATE PRINTED ON REVERSE SIDE
9 TINPLATE WITH VARNISH OVER LITHOGRAPHED MATTER

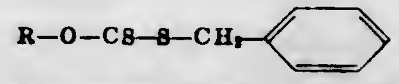
3,183,145
ODOR CONTROL AND HEAT RECOVERY IN WOOD PULPING PROCESS
Theron T. Collins, Jr., 804 Cedar St., Manistee, Mich.
Filed June 22, 1962, Ser. No. 204,541
10 Claims. (Cl. 162—47)



10. In the sulphate process, the method of treating hot sulphur dioxide containing water vapor laden gases and evaporator condensate containing normally gaseous odoriferous sulphur compounds, comprising passing said hot gases and said condensate into intimate contact to condense water vapor from said gases, to strip the normally gaseous odoriferous sulphur compounds therefrom and to transform a portion thereof to innocuous substances, chlorinating the residual odoriferous sulphur compounds retained in the gases evolved from the condensing and stripping step, cooling the condensed water vapor and stripped condensate, passing air through the cooled liquid from the last step to strip residual odoriferous gases therefrom, and passing the stripped residual odoriferous gases to said condensing and stripping step.

3,183,146
METHOD OF PROTECTING PLANTS AGAINST ARACHNIDS WITH XANTHATES
Bernardus Gerhardus van Den Bos and Jacques Meltzer, Van Houtenlaan, Weesp, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 5, 1963, Ser. No. 256,262
Claims priority, application Netherlands, Feb. 7, 1962, 274,513
5 Claims. (Cl. 167—30)

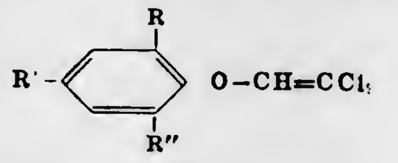
1. A method of protecting living plants against arachnids comprising treating said plants with a benzyl xanthate of the formula:



wherein R is a member selected from the group consisting of alkyl of 1–12 carbon atoms and alkoxylalkylene of 1 to 12 carbon atoms.

3,183,147
PROCESS FOR CONTROLLING NEMATODES WITH PHENYL-DICHLOROVINYL ETHERS
Bernhard Homeyer, Opladen, and Jürgen Johannis, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed May 27, 1964, Ser. No. 370,686
Claims priority, application Germany, June 26, 1963, F 40,077
7 Claims. (Cl. 167—30)

1. A method for controlling nematodes which comprises to apply to said nematodes an effective amount of a dichlorovinyl-phenyl ether of the formula

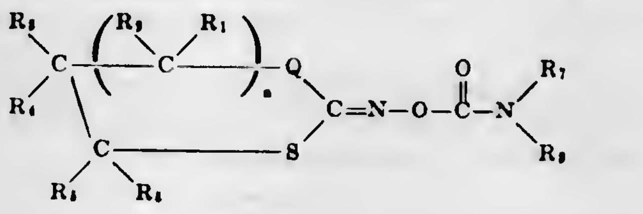


(I)

wherein R, R′ and R″ stand for a member selected from the group consisting of hydrogen, lower alkyl and halogen.

3,183,148
COMBATING NEMATODES WITH CARBAMATE HETERO-SULFUR COMPOUNDS
Donald S. Cannon, Blawenburg, and Roger Williams Addor, Pennington, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Sept. 20, 1962, Ser. No. 225,137
6 Claims. (Cl. 167—33)

1. A method for controlling nematodes which comprises: applying thereto a carbamate compound having the formula:



wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7 and R_8 are radicals selected from the class consisting of hydrogen and lower alkyl, *n* is an integer from 0 to 1, and Q is an atom selected from the group consisting of oxygen and sulfur.

3,183,149
PROCESS FOR MAKING CELLULOSIC TEXTILES ROT RESISTANT WITH ZIRCONIUM SALTS AND PHENOLS
Elwood J. Gonzales, Kenner, and Clark M. Welch and John D. Guthrie, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Sept. 20, 1962, Ser. No. 225,166
22 Claims. (Cl. 167—38.7)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for imparting increased rot-resistance, breaking strength, and water repellency to a cellulosic textile material which comprises treating the cellulosic textile material with reagents consisting of from 0.5–15% by weight of a phenol, from 1–25% by weight of a zirconium salt of a volatile acid the dissociation constant of which is not greater than 5×10^{-3} and the boiling point of which is not higher than 160° C., the

balance of the cellulosic textile treating reagent being a liquid which is chemically inert with respect to cellulose and chemically inert with respect to the said reagents and drying the treated cellulosic textile material at a temperature of from 70–170° C.

3,183,150

NOVEL 15-DEHYDRO-HALO-METHYL-PROGESTERONES

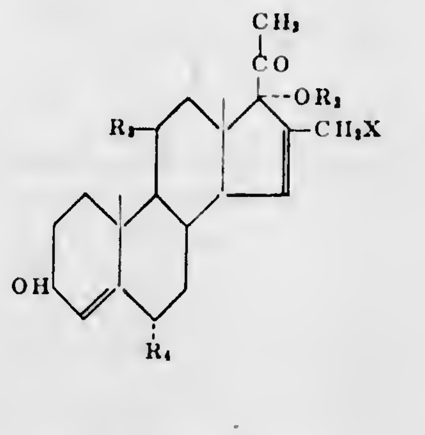
Fritz von Werder, Klaus Brückner, Karl-Heinz Bork, and Harald Metz, Darmstadt, Germany, assignors to E. Merck Aktiengesellschaft, Darmstadt, Germany

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,666

Claims priority, application Germany, Sept. 16, 1961, M 50,326; Sept. 28, 1961, M 50,415, M 50,416, M 50,417

6 Claims. (Cl. 167—53)

1. A compound selected from the group consisting of



and the Δ^6-derivatives thereof, wherein

R_2 is a member of the group consisting of hydrogen and the acid moiety of an aliphatic carboxylic acid containing up to 8 carbon atoms;

R_3 is a member of the group consisting of OH and H;

R_4 is a member of the group consisting of hydrogen, methyl and chlorine, with the provision that when R_3 represents OH, R_4 is hydrogen; and

X is a member of the group consisting of chlorine and fluorine.

2. A pharmaceutical composition containing from 0.1 to 70 mg. of a compound as claimed in claim 1 together with a pharmaceutically acceptable carrier.

3,183,151

TREATMENT OF HYPOCHOLERESIS WITH 1-CYCLOHEXYL-2-METHYL-1-PROPANOL

Joseph Nordmann, Paris, France, assignor, by mesne assignments, to Etablissements Kuhlmann, Paris, France, a corporation of France

No Drawing. Filed Jan. 5, 1962, Ser. No. 164,597

Claims priority, application France, Jan. 6, 1961, 848,992

The portion of the term of the patent subsequent to Jan. 29, 1980, has been disclaimed

2 Claims. (Cl. 167—55)

1. Process for the treatment of hypocholeresis which comprises orally administering to a human being 1-cyclohexyl-2-methyl-1-propanol.

3,183,152

TREATED POLYVINYL ALCOHOL FOR CONTACT LENS SOLUTION

Ivan J. Szekely and Harry W. Hind, Sunnyvale, Calif., assignors to Barnes-Hind Pharmaceuticals, Inc., a corporation of California

No Drawing. Filed May 21, 1963, Ser. No. 282,103

12 Claims. (Cl. 167—59)

1. A wetting solution suitable for use with contact lenses comprising an aqueous solution of polyvinyl alcohol, said polyvinyl alcohol being present in an amount of from 0.1 to 6% by weight and having been modified by the removal of substantially all volatile materials therefrom boiling below about 100° C.

3,183,153

BLASTICIDIN-S ADDITION PRODUCTS AND THEIR MANUFACTURING PROCESS

Yusuke Sumiki, Hamao Umezawa, Kazuo Fukunaga, Hiroshi Yonehara and Hideo Kubo, Tokyo, Shigeo Fujita, Kanagawa-ku, Yokohama-shi, Kanagawa-ken, Shiro Shirato and Kotaro Takaga, Tokyo, Masaji Kato, Ashigara-kami-gun, Kanagawa-ken, and Shinichiro Esumi and Tadao Ono, Tokyo, Japan, assignors to Zaidan-Hojin Nihon Kosei Busshitsu Gakujyutsu Kyogikai and Kaken Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed June 5, 1961, Ser. No. 114,895

Claims priority, application Japan, June 9, 1960, 35/27,097, 35/27,098, 35/27,099

2 Claims. (Cl. 167—65)

1. The process for preparing Blasticidin-S addition salts comprising contacting a Blasticidin-S containing broth with a methacrylic acid cation-exchange resin preadjusted at pH 5–7, to absorb Blasticidin-S on said resin, eluting said resin with 0.1 to 1.0 N dilute acid, then adding to the resulting eluate a surface-active agent containing an anion radical selected from the group consisting of sulfonate and sulfate to produce a difficulty water-soluble addition salt of said Blasticidin-S, and recovering the addition salt product.

3,183,154

ANTIBIOTIC PACTACIN AND METHOD OF PRODUCTION

Alexander D. Argoudelis, Clarence De Boer, Thomas E. Eble, and Ross R. Herr, all of Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed Oct. 2, 1961, Ser. No. 142,192

11 Claims. (Cl. 167—65)

1. A composition of matter assaying at least 20 mcg./mg. of pactacin, a compound which

(*a*) is effective in inhibiting the growth of gram-positive and gram-negative bacteria, and

(*b*) is effective in inhibiting the growth of KB cells in tissue culture;

and in its essentially pure crystalline form

(*c*) is an amphoteric substance with a basic function of pKa' 6.25–7.25 and an acidic function of pKa' 9.0–9.60;

(*d*) is highly soluble in lower-alkanols, lower-alkyl esters of lower alkanoic acids, and chlorinated lower-alkanes,

(*e*) has a calculated empirical formula $C_{28}H_{40}N_4O_8$;

(*f*) has a molecular weight of about 558;

(*g*) has a characteristic ultra-violet absorption maxima as follows

EtOH:
239.5 mμ, *a*=51.22
264 (sh.) mμ, *a*=14.81
313 mμ, *a*=4.88
356 mμ, *a*=3.25
0.01 ethanolic H_2SO_4:
238 mμ, *a*=50.45
262 (sh.) mμ, *a*=14.65
314 mμ, *a*=4.75
352 mμ, *a*=3.51
0.01 ethanolic KOH:
238.5 mμ, *a*=56.38
264 mμ, *a*=16.01
322 mμ, *a*=6.05

and

(*h*) has a characteristic infrared absorption spectrum as shown in FIGURE 1 of the accompanying drawing.

3,183,155

ANTIBIOTIC DESIDEUS AND METHOD OF PRODUCTION

Gerald W. Camiener, George B. Whitfield, Jr., and Paul F. Wiley, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed Apr. 10, 1962, Ser. No. 186,427

9 Claims. (Cl. 167—65)

1. A composition of matter assaying at least 25 mcg./mg. of desideus, a compound which

(*a*) is effective in hibiting the growth of gram positive bacteria, and

(*b*) is effective in inhibiting the growth of KB cells in tissue culture;

and in its essentially pure crystalline form

(*c*) is a neutral substance;

(*d*) is soluble in halogenated hydrocarbons, aliphatic alcohols, water-immiscible polar organic solvents, alkanones, and water-miscible organic solvents;

(*e*) has the following elemental analysis:

Calculated for $C_{40}H_{64}O_{12}$: C, 65.21; H, 8.70; O, 26.09

Found: C, 65.42; H, 8.64; O, 25.85

(*f*) has a molecular weight as the perchlorate of 844;

(*g*) has no significant ultravoilet absorption in the 220–320 mμ range;

(*h*) has a characteristic infrared absorption spectrum as shown in FIGURE 2 of the accompanying drawing;

(*i*) has a melting point range of 51–63° C.;

(*j*) has a characteristic papergram as shown in FIGURE 1 of the accompanying drawing;

(*k*) has a characteristic X-ray diffraction pattern expressed in Angstrom units as follows:

9.40	4.29
7.43	3.93
6.70	3.45
6.06	3.28
5.40	2.79
4.72	

and

(*l*) has a characteristic NMR spectrum as shown in FIGURE 3 of the accompanying drawing.

3,183,156

ANTIBIOTIC CANARIUS AND METHOD OF PRODUCTION

James Joseph Vavra and Malcolm E. Bergy, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed May 25, 1962, Ser. No. 197,637

7 Claims. (Cl. 167—65)

1. A composition of matter assaying at least 1.5 mcg./mg. of canarius, a compound which

(*a*) is effective in inhibiting the growth of vaccinia, Newcastle disease, influenza A, and Coe viruses, and

(*b*) is effective in inhibiting the growth of various yeasts;

and in its essentially pure crystalline form

(*c*) is soluble in water, dimethyl sulfoxide, and glacial acetic acid; and insoluble in butanol, higher alcohols, acetone and ethers;

(*d*) has the following average elemental analysis:

C=38.40%, H=4.94%, N=24.05%, O=31.85%

(*e*) has a molecular weight of 394;

(*f*) has a characteristic ultraviolet absorption maxima as follows:

water max. at 264.5 mμ, *a*=49.79
0.01 N H_2SO_4 max. at 272 mμ, *a*=50.34
0.01 N NaOH max. at 271.5 mμ, *a*=45.36

and as shown in FIGURES 2 and 3 of the drawing;

(*g*) has an optical rotation $[\alpha]_D^{25}$ +55.4 (c.=0.09% in water);

(*h*) has a characteristic infrared absorption spectrum as shown in FIGURE 1 of the accompanying drawing, and

(*i*) has a characteristic NMR spectrum as shown in FIGURE 4 of the accompanying drawing.

3,183,157

ANTIBIOTIC NOGALAMYCIN AND METHOD OF PRODUCING

Bijoy K. Bhuyan, Kalamazoo, Ronald B. Kelly, Cooper Township, Kalamazoo County, and Robert M. Smith, Portage Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

Filed Feb. 1, 1963, Ser. No. 255,536

7 Claims. (Cl. 167—65)

1. A composition of matter assaying at least 1.4 mcg./mg. of nogalamycin, a compound which

(*a*) is effective in inhibiting the growth of various gram positive and gram negative bacteria;

and in its essentially pure crystalline form

(*b*) is soluble in methylene chloride, acetone, chloroform and ethyl acetate; and insoluble in water, methanol, and ethanol;

(*c*) has the following elemental analysis:

C=58.35; H, 6.49; N, 1.97; O, 32.83

(*d*) has a molecular weight of 721.8;

(*e*) has a characteristic ultraviolet absorption spectrum as follows:

Neutral and acidic EtOH
236 mμ, a=65.76
259 mμ, a=31.27
290 mμ, a=11.89
Alkaline EtOH
240 mμ, a=58.96
288 (sh), mμ, a=10.45
322 mμ, a=6.03

and as shown in FIG. 2 of the drawing;

(*f*) has an optical rotation $[\alpha]_D^{25}$+425° (c.=0.11 in $CHCl_3$); and

(*g*) has a characteristic infrared absorption spectrum as shown in FIG. 1 of the accompanying drawing.

3,183,158

STEROIDS POSSESSING ANTI-PHLOGISTIC ACTIVITIES

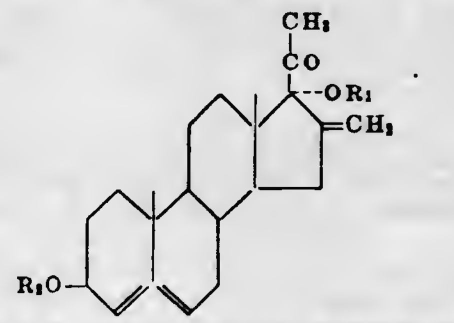
Klaus Brückner, Darmstadt-Eberstadt, Germany, assignor to E. Merck Aktiengesellschaft, Darmstadt, Germany

No Drawing. Filed May 2, 1963, Ser. No. 277,461

Claims priority, application Germany, Dec. 24, 1962, M 55,245

8 Claims. (Cl. 167—65)

1. A pharmaceutical preparation in viscous to semi-solid form for topical administration, comprising an intimate mixture of an active compound of the formula



wherein R_1 and R_2 each designates alkanoyl of up to 6 carbon atoms, together with a pharmaceutically acceptable carrier, said active compound being present in a concentration of about 0.1 to 5% by weight of the total pharmaceutical preparation.

3,183,159
STABILIZED PARTIAL THROMBOPLASTIN REAGENT

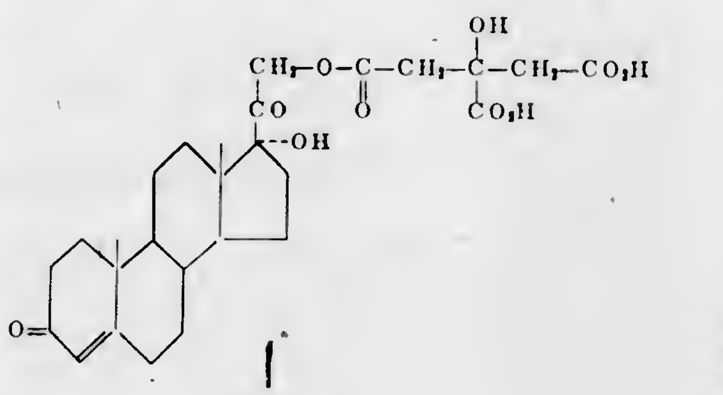
Heron O. Singher, Plainfield, and Ralph Wellerson, Jr., Bound Brook, N.J., assignors to Ortho Pharmaceutical Corporation, a corporation of New Jersey
No Drawing. Filed Mar. 20, 1962, Ser. No. 181,202
6 Claims. (Cl. 167—74)

1. A reagent for the partial thromboplastin time test comprising ether soluble cephalin derived from brain tissue stabilized by the presence of from about 0.001% to about 0.01% sodium ethylmercurithiolsalicylate.

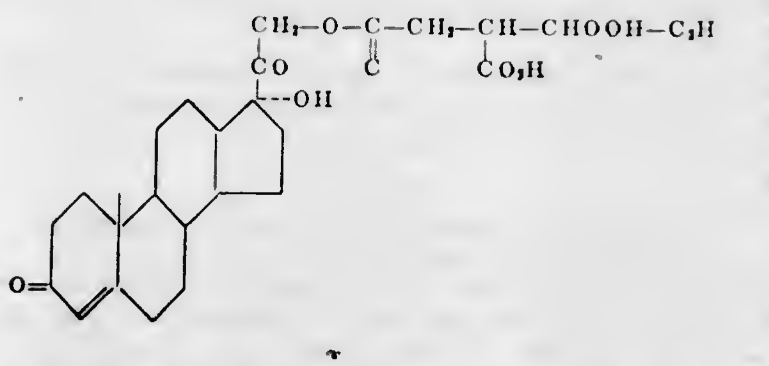
3,183,160
STEROID MEDICATION FOR METABOLIC DISORDERS

Jean de Larebeyrette, 27 Rue Saint-Georges, Paris, France
No Drawing. Filed June 21, 1963, Ser. No. 289,744
Claims priority, application France, June 22, 1962, 901,719
1 Claim. (Cl. 167—77)

A pharmaceutical composition comprising a member selected from the group consisting of a compound of the formula



and of a compound of the formula



and mixtures thereof in an amount ranging from 0.5 to 5 mg. and a pharmaceutical carrier.

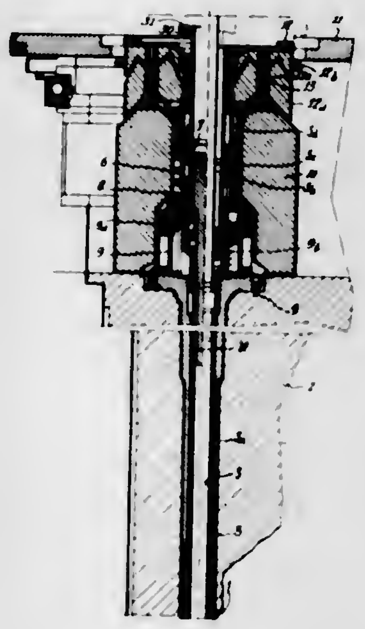
3,183,161
AQUEOUS RESUSPENSION VACCINE PRODUCT OF ALUMINUM PHOSPHATE-ADSORBED POLIOMYELITIS VIRUS ANTIGEN, AND PRODUCTION PROCESS

William McLean, Jr., Grosse Pointe, and Frederick W. Trader, Jr., Detroit, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed May 2, 1955, Ser. No. 505,548
16 Claims. (Cl. 167—78)

1. A poliomyelitis vaccine product comprising an aqueous suspension of at least one type of killed but antigenic poliomyelitis virus adsorbed on aluminum phosphate, the aqueous phase of said suspension being substantially free from proteins derived from poliomyelitis virus and tissue cultures employed in the propagation thereof.

3,183,162
SEALING SYSTEM FOR THE HANDLING HOOD OF A NUCLEAR REACTOR

Paul Chemin, Paris, and Jean Lephilibert, Montelimar, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Oct. 22, 1962, Ser. No. 231,903
Claims priority, application France, Oct. 25, 1961, 876,954
10 Claims. (Cl. 176—30)

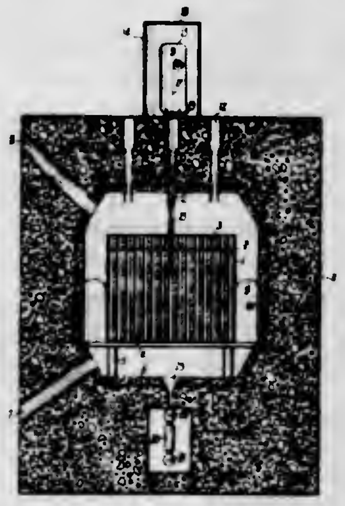


1. A sealing system between the handling hood of a nuclear reactor and a loading channel which passes through the reactor cover, comprising: a sealing ring disposed around the top orifice of said loading channel; resilient means normally supporting said ring spaced above said orifice; sealing means connecting said ring and said loading channel; a handling hood having a passage to be connected to said channel disposed above said sealing ring and said channel; and means mounting said hood for vertical movement between a first position spaced above said sealing ring and a second position seated on said ring and in sealing engagement therewith, said hood, when in said second position, moving said ring toward said orifice against the action of said resilient means.

3,183,163
DEVICES FOR HANDLING FUEL ELEMENTS IN A NUCLEAR REACTOR

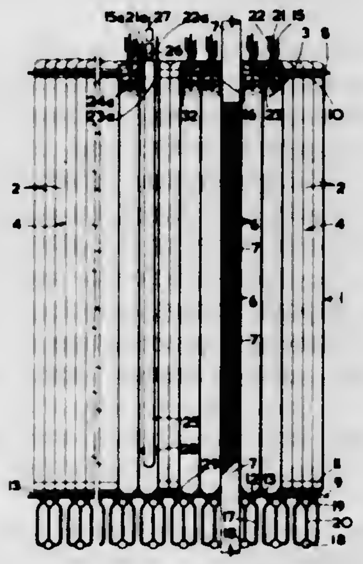
André Gumuchian and Alain Virnot, Paris, France, assignors to Society Indatom and Compagnie des Ateliers et Forges de la Loire, Paris, France
Filed Mar. 22, 1963, Ser. No. 267,127
Claims priority, application France, Mar. 23, 1962, 892,125; Aug. 23, 1962, 907,671, 907,624; Feb. 5, 1963, 923,815; Feb. 8, 1963, 924,256
10 Claims. (Cl. 176—30)

1. Apparatus for handling the fuel elements of a nuclear reactor having a solid moderator core with vertical channels formed in the moderator core to receive fuel elements and having a protective caisson surrounding the core with vertical access tubes passing through the upper part of the caisson, there being fewer access tubes than channels, comprising flexible means passing through a selected one of the access tubes, control apparatus for said flexible means located outside of the caisson, mobile guiding mechanism for the fuel elements, a frame mounted on said flexible means, articulation means connecting said mobile guiding mechanism and said frame, a seat in the core opposite the access tubes, means on said frame cooperating with said seat, said mobile member being retained on said frame by said flexible means when said flexible means supports said mobile member and said frame, means adjustable before entry of said frame in the access tube for determining the opening of said mobile member with respect to said frame when said frame engages said seat and said flexible means are released, the length of said frame being such that said frame remains partially within the access tube when said frame engages said seat and cooperating means between said frame and the access tube determining the orientation of said frame about the axis of the access tube.



3,183,164
LIQUID MODERATED NUCLEAR REACTORS

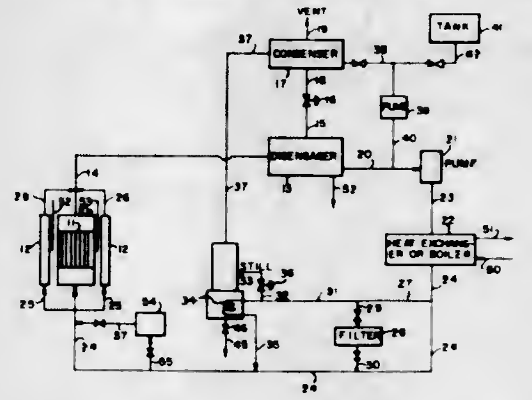
James Carrie Guild, North Ashton, near Wigan, and Leslie Joseph Castle, Wantage, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Nov. 23, 1960, Ser. No. 71,186
Claims priority, application Great Britain, Nov. 26, 1959, 40,174/59
5 Claims. (Cl. 176—37)



1. A nuclear reactor comprising: a nest of close-spaced tubes disposed upright in parallel array and arranged in first and second groups, the first group comprising a relatively large number of tubes and the second group comprising a relatively small number of tubes, the tubes of the second group being distributed over the nest and separated from each other by tubes of the first group, nuclear fuel in the tubes of the second group only, a mass of liquid moderator in each of the tubes of the first group, and means causing a flow of reactor coolant to pass through each of the tubes of the second group and in heat exchange with said nuclear fuel.

3,183,165
STABILIZATION OF ORGANIC FLUIDS AGAINST RADIATION DECOMPOSITION AND SYSTEMS EMPLOYING SAME

Mark E. Gutzke and William H. Yanko, Dayton, Ohio, assignors to Monsanto Company, a corporation of Delaware
Filed Oct. 10, 1960, Ser. No. 61,774
16 Claims. (Cl. 176—38)



1. In a process employing radiation selected from the class consisting of alpha, beta, X-rays, gamma-rays, neutrons and mixtures thereof and a fluid subjected to radiation at high temperatures, the improvement wherein said fluid comprises a mixture of polycyclic hydrocarbons, said mixture having an amount of not more than about 30% of the theoretical number of hydrogen atoms required for complete saturation of said mixture at least sufficient to reduce radiolytic damage as compared to the corresponding unhydrogenated polycyclic aromatic hydrocarbons.

3,183,166
LOW TEMPERATURE GRAPHITE RADIATION DAMAGE REMOVAL

Donald G. Schweitzer and Robert M. Singer, East Islip, and David H. Gurinsky, Center Moriches, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 23, 1962, Ser. No. 219,088
3 Claims. (Cl. 176—38)

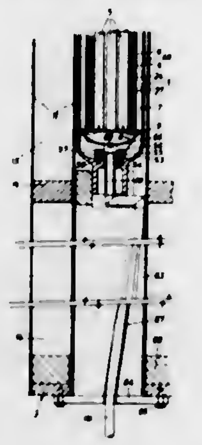
1. The method of annealing graphite in an air cooled nuclear reactor in which irradiation has produced stored energy and positive length change in the graphite, comprising heating said graphite in air to 150° C. for producing negative length change and stored energy release in said graphite, irradiating said graphite for producing a positive length change of only .00030 inch in said graphite, and heating said graphite in air to 150° C. for providing further stored energy release and removal of the positive length change in said graphite caused by the preceding irradiation, said graphite being maintained at a maximum temperature below 250° C. whereby said graphite is prevented from being greatly oxidized and the release of large destructive amounts of stored energy is prevented.

3,183,167
STEAM COOLED NUCLEAR REACTOR

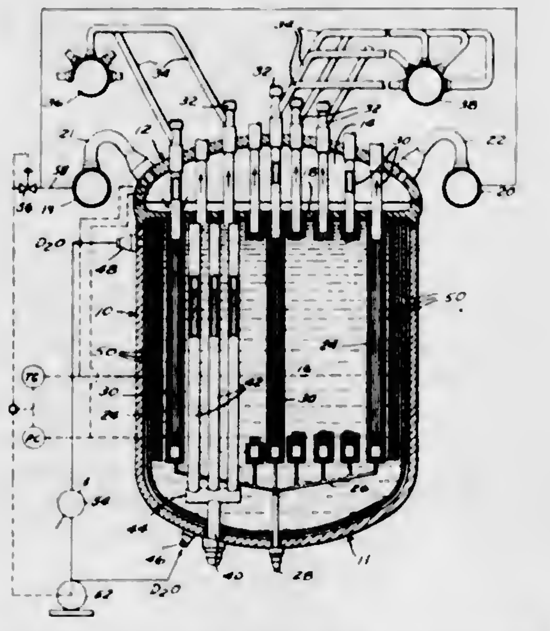
Norman Bradley, Culcheth, Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Nov. 18, 1960, Ser. No. 70,251
Claims priority, application Great Britain, Nov. 26, 1959, 40,172/59
3 Claims. (Cl. 176—59)

1. In a steam cooled nuclear reactor having a moderator structure defining a lattice of vertically extending blind-end channels with their blind ends lowermost; the combination comprising flow barrier tubes respectively disposed lengthwise in the channels and terminating short of said blind ends, said barrier tubes defining outer inflow paths and inner outflow paths for the steam coolant,

nuclear fuel elements in said inner outflow paths, a baffle member disposed beneath each of said barrier tubes and traversing the greater part of the span of the channels to define condensate collecting chambers with the lower ends of the channels, the periphery of each of said baffle members being clear at least in part from the inner walls of the respective one of said channels for the passage of steam condensate from above the said baffle members to said chambers and said baffle members shaped to constrain steam coolant flowing down through the said outer inflow paths to flow in counter-direction up through the said inner outflow paths, and means in respect of each of said channels for removing steam condensate collected in the respective one of said chambers.



3,183,168
NUCLEAR REACTOR
Alan Bell, Cookham, Berks, England, assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Jan. 31, 1962, Ser. No. 170,017
1 Claim. (Cl. 176—59)



A heterogeneous nuclear power reactor comprising
a pressure vessel,
a horizontal tube sheet disposed across said vessel at the upper end thereof dividing the vessel into an upper plenum chamber and a lower main chamber, the lower main chamber containing a body of moderator,
a plurality of spaced apart coaxial tube pairs suspended in said vessel and in said body of moderator, the tubes of said tube pairs being spaced from each other to define an annulus surrounding the inner tube thereof, the outer tube of said tube pairs being carried on and depending from the horizontal tube sheet and extending into the main chamber in fluid communication therewith, the inner tube of said tube pairs passing through said plenum chamber through the upper end of the pressure vessel and being suspended from the pressure vessel,
means for admitting a cooling fluid into said plenum chamber whereby the cooling fluid flows through the annuli of the tube pairs, the inner tubes of said pairs containing fuel elements and being open at the lower end thereof and in fluid communication with the annuli to receive the cooling fluid,
and means for maintaining the moderator at a pressure and temperature substantially equal to that of the cooling fluid entering the plenum chamber.

3,183,169
PREPARATION OF SALICYLIC ACID
André R. Brillaud, West Chester, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed July 22, 1963, Ser. No. 296,447
4 Claims. (Cl. 195—28)

1. A process for preparing salicylic acid which comprises subjecting naphthalene to the microorganism *Corynebacterium renale* ATCC 15,075 in an aqueous nutrient medium under aerobic conditions.

3,183,170
METHOD OF L-AMINO ACID MANUFACTURE
Atsuo Kitai, Tokyo, Iwao Kitamura, Kitaku, Yokohama, and Noboru Miyachi and Asaichiro Ozaki, Tokyo, Japan, assignors to Sanraku Ocean Kabushiki Kaisha
No Drawing. Filed Aug. 20, 1962, Ser. No. 218,129
Claims priority, application Japan, Oct. 3, 1961, 36/35,342
9 Claims. (Cl. 195—30)

1. A method of manufacturing L-amino acid, which comprises reacting L-glutamic acid and a keto acid that is transformed into the amino acid in the presence of:
(*a*) L-glutamic dehydrogenase,
(*b*) hydrogenase, selected from at least one member of the group consisting of cells of microbes which are strongly active as hydrogenase and refined preparations and extracts thereof,
(*c*) transaminase, selected from at least one member of the group consisting of microbes which are strongly active as transaminase, animal heart, kidney, liver and muscle, vegetable tissue and preparations obtained from said transaminase substances,
(*d*) a dye which acts as a hydrogen acceptor selected from at least one member of the group consisting of methyl viologen, benzyl viologen, and Janus green,
(*e*) electron transport system, selected from at least one member of the group consisting of cytochromes, flavin enzymes, dehydrogenase and the cofactors thereof,
(*f*) hydrogen gas in concentration sufficient to cause the equilibrium to shift in favor of the formation of said L-amino acid, and
(*g*) a compound acting as a nitrogen source, which is selected from the group consisting of organic ammonium salts, inorganic ammonium salts, ammonium hydroxide, ammonia gas and urea.

3,183,171
PROCESS FOR CONTROLLING THE GROWTH RATE OF FUNGI
Heinz R. Schreiner, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 24, 1962, Ser. No. 212,149
7 Claims. (Cl. 195—81)

1. A process for controlling the growth rate of a fungus which comprises contacting a growing fungus with a gaseous atmosphere comprising (1) oxygen at a mole fraction greater than the minimum necessary to support growth of said fungus, (2) water vapor at a mole fraction greater than the minimum necessary to support growth of said fungus, (3) at least one inert gas selected from the class consisting of helium, neon, argon, krypton and xenon at a total inert gas mole fraction of between about 0.3 and about 0.95, and (4) the balance consisting essentially of gases which do not exert any significant influence on the growth rate of said fungus selected from the group consisting of nitrogen, carbon dioxide, hydrogen and carbon monoxide.

3,183,172
OBTAINING PSILOCYBIN AND PSILOCIN FROM FUNGAL MATERIAL
Roger Heim, Paris, France, Albert Hofmann, Bottmingen, Basel-Land, Artur Brack, Riehen, near Basel, and Hans Kobel, Basel, Switzerland, and Roger Cailleux, Pavillons-sous-Bois, France, assignors to Sandoz Ltd., Basel, Switzerland, a Swiss firm
No Drawing. Filed Feb. 16, 1959, Ser. No. 793,234
Claims priority, application Switzerland, Feb. 21, 1958, 56,143; July 30, 1958, 62,393
21 Claims. (Cl. 195—80)

1. A process for obtaining the psychotropically active compounds psilocybin and psilocin, which comprises extracting the active principles from fungal material of one of the species *Psilocybe mexicana* Heim, *Stropharia cubensis* Earle, *Psilocybe semperviva* Heim and Cailleux, *Psilocybe caerulescens* Murrill var. *mazatecorum* Heim, *Psilocybe zapotecorum* Heim, *Psilocybe aztecorum* heim and *Psilocybe caerulescens* Murrill var. *nigripes* Heim, by means of the extractant action on said material of a water-miscible organic solvent for such active principles said solvent being selected from the group consisting of water, lower aliphatic alcohol, and a mixture of water and lower aliphatic alcohol, severally isolating the active principles from the resulting extract, and treating the so-obtained material with a silver ions-yielding halogen-acceptor and thus freeing the material of halogen, whereby the compounds psilocybin and psilocin and obtained; the compound psilocybin having the empirical formula

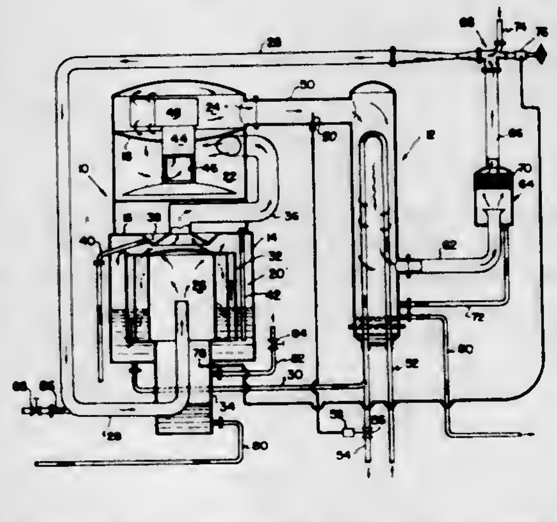
$$C_{12}H_{17}O_4N_2P$$

being recrystallizable from water as fine white needles and from methanol as colorless hexagonal crystals containing crystallization-methanol and melting at 195–200° C. with decomposition, being optically inactive, amphoteric and soluble in dilute aqueous mineral acids and in dilute aqueous alkalis, and being characterized in methanolic solution by a UV-spectrum shown maxima at 222, 267 and 290 mμ; and the compound psilocin having the empirical formula $C_{12}H_{16}NO_2$, melting at 173–176° C. with decomposition, and being characterized by a clear blue Keller color reaction and in methanolic solution by a UV-spectrum showing maxima at 222, 260, 267, 283 and 293 mμ.

3,183,173
TEST COMPOSITION FOR DETECTING HYDROGEN PEROXIDE
Paul William Oakes, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed June 10, 1963, Ser. No. 286,460
9 Claims. (Cl. 195—103.5)

2. A color forming test composition for detecting a substrate for an enzyme consisting of an enzyme which catalyzes the oxidation of a substrate to produce hydrogen peroxide upon oxidation thereof, an iodide salt selected from the group consisting of potassium iodide, sodium iodide and ammonium iodide, a molybdenum salt selected from the group consisting of potassium molybdate, sodium molybdate and ammonium molybdate, and a polymeric substance selected from the group consisting of polyvinyl alcohol and polyvinyl pyrrolidone and a buffer which is effective to maintain the pH within a range in which said enzyme is active, said polymeric substance being the only color indicator present.

3,183,174
SEA WATER DISTILLATION METHOD AND APPARATUS TO PROVIDE A SUPERPURE DISTILLATE
William R. Williamson, Wethersfield, Conn., assignor, by mesne assignments, to American Machine & Foundry Company, Inc., New York, N.Y., a corporation of New Jersey
Filed May 6, 1958, Ser. No. 733,287
4 Claims. (Cl. 202—75)

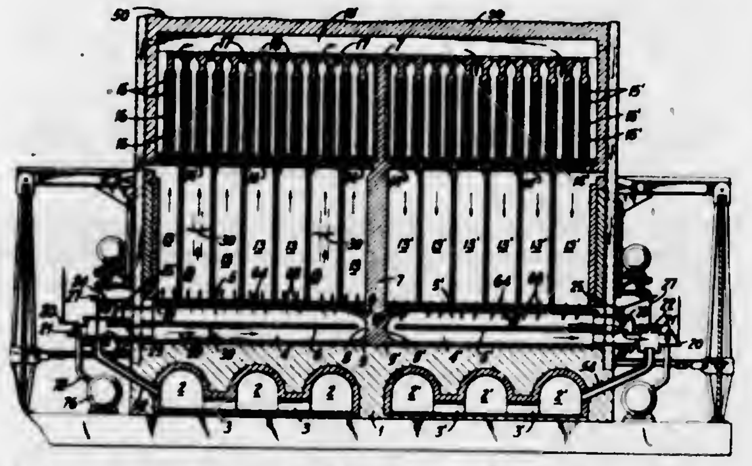


1. A method of producing a potatable distillate and a superpure distillate for boiler make-up feed from sea water, characterized by the steps of introducing steam in indirect heat transfer relationship to said sea water to produce vapor therefrom, introducing lower pressure steam into the steam in heat transfer relationship to the sea water, whereby to increase the pressure of said steam, separating entrained sea water from the said vapor, partially condensing the vapor to provide said potable distillate, inducing flow of the vapor remaining after partial condensation thereof into said steam in indirect heat transfer relationship to said impure water, separating moisture from the vapor before introduction into the steam, condensing said steam to provide said superpure distillate, and controlling the flow of said remaining vapor responsive to the pressure of the steam in heat transfer relationship to the sea water.

3,183,175
REGENERATIVE COKE OVEN CONSTRUCTION AND MEANS FOR CONTROLLING THE FUEL DISTRIBUTION THEREIN
Fritz Breitbach and Kurt Lorenz, Recklinghausen, Germany, assignors to Firma Carl Still, a German firm
Filed Apr. 14, 1961, Ser. No. 103,696
Claims priority, application Germany, Apr. 16, 1960, St 16,369
13 Claims. (Cl. 202—144)

1. A regenerative coke oven including wall means defining a plurality of adjacent vertically elongated regenerator cells connected to flues at their upper ends, a sole channel disposed beneath all of the cells, and a substantially horizontal wall dividing the sole channel for horizontal flow from one direction to the end thereof and then for reverse horizontal flow on the opposite side of said wall in the opposite direction, a combination sliding grate disposed between said sole channel and said cells including a base portion having a plurality of spaced openings for gas flow and being spaced from the interior wall of said oven at one end to define an end flow path around said base portion at this end, and a

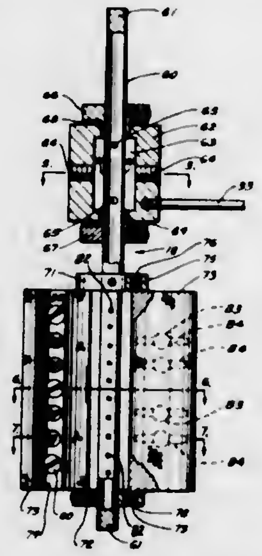
sliding closure portion disposed above the base portion and relatively slidable in respect thereto to vary the size of said openings for gas flow from said sole channel to said regenerator cells.



3,183,176
APPARATUS FOR ELECTROLYTICALLY TREATING THE INTERIOR OF A BORE

Benno A. Schwartz, Jr., Cleveland, Ohio, assignor, by mesne assignments, to The Steel Improvement and Forge Company, Cleveland, Ohio, a corporation of Ohio

Filed July 28, 1960, Ser. No. 45,921
5 Claims. (Cl. 204—212)



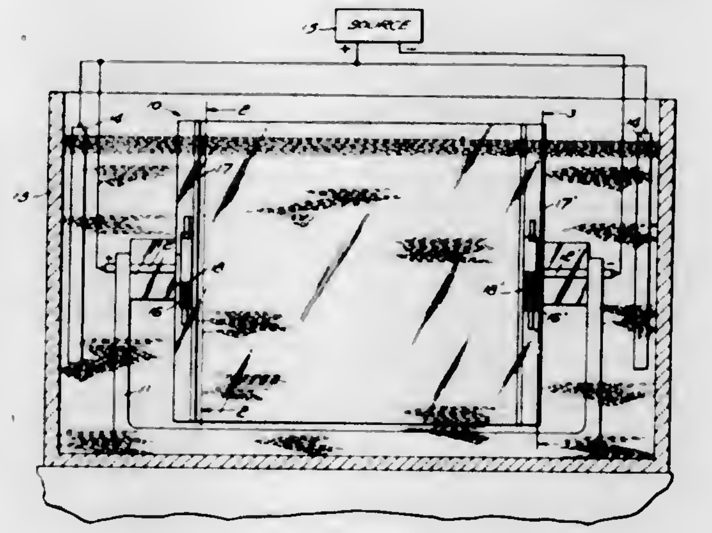
1. Apparatus for electrolytically treating the interior of a bore in a workpiece comprising a tool having a central spindle composed of conductive material and adapted to be rotated, a vane composed of conductive material and constituting an electrode mounted on said spindle on a pivot parallel to and spaced from the axis of said spindle, a covering of porous dielectric material overlying said vane and adapted to engage the interior surface of said bore, means for causing electrolyte to flow through said porous covering into contact with the interior surface of said bore, and means for rotating said electrode tool with respect to a workpiece.

3,183,177
ELECTROPLATING BARREL WITH CURRENT REVERSAL MEANS

Joseph J. De Sante, Coaldale, Pa., and Lewis K. Schultz, Wappingers Falls, N.Y., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 12, 1962, Ser. No. 166,466
9 Claims. (Cl. 204—213)

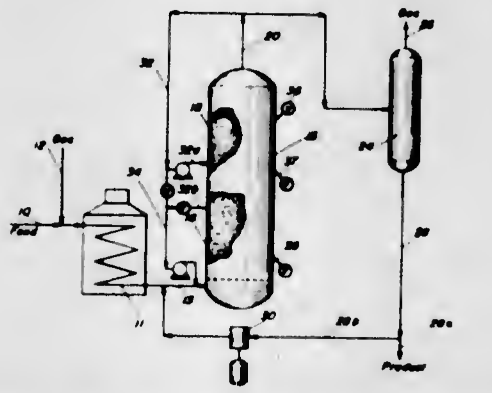
1. A plating barrel which comprises a pair of opposing end face members, a receptacle located within each face member, a conductive fluidic material disposed within each receptacle, means for applying a potential of one polarity to the fluidic material in one receptacle, means for applying a potential of the opposite polarity to the fluidic material in the other receptacle, and a plurality of rods each connected between the two receptacles, the end portions of each rod being arranged such that during rotation of the barrel for a part of its cycle one end portion passes through the fluidic material of one potential while the other end portion passes free of the fluidic material of the other potential, and during rotation of the barrel for another part of its cycle, said one end portion passes free of the fluidic material of said one potential while said other end portion passes through said fluidic material of the other potential thereby causing a plating of the articles and stripping of plate material from the rods respectively during the respective cycle rotations of the barrel.



3,183,178
TWO STAGE HYDROGENATING PROCESS EMPLOYING TWO DIFFERENT PARTICLE SIZES

Ronald Wolk, Trenton, N.J., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed June 6, 1961, Ser. No. 115,154
5 Claims. (Cl. 208—58)

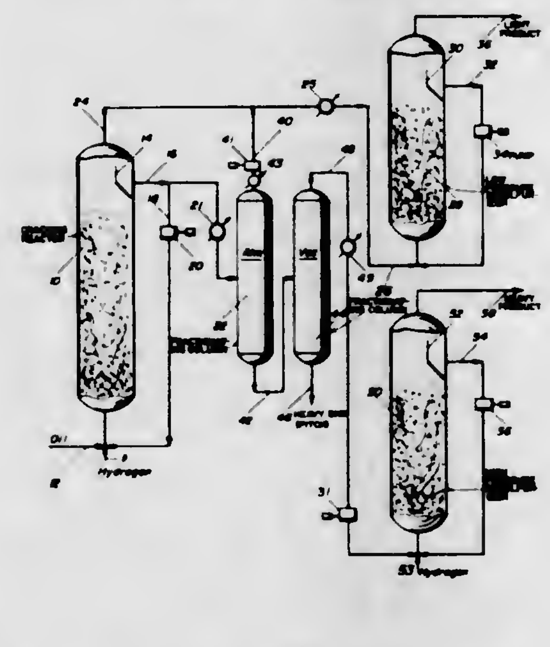


1. In a chemical reaction involving a three component system of a liquid hydrocarbon oil, a gasiform material and a mass of particulate solids consisting of at least two bodies of particles which particles are between ½" diameter and 60 mesh (Tyler) wherein each of these bodies of particles has a distinct function, wherein the liquid and gasiform material, under temperature and pressure conditions required for the specified reaction, pass upwardly through the mass of particulate solids in a reaction zone of substantially uniform cross section with a liquid linear velocity in the range of 5 to 500 gallons per minute per square foot of horizontal cross section of the reaction zone so as to expand one of the bodies of particles at least 10% above the settled state of body but below a rate to carry any substantial amount of any of the particulate solids out of the reaction zone, the linear gas rate for the size and density of the particles being sufficient to aid in producing a random motion of each group of the particles in the liquid, but, by itself, insufficient to accomplish fluidization of the particles, the improvement in promoting stratification of the bodies of particles which comprises using bodies of particulate solids of different fluidization characteristics having independent voidage under the same liquid and gas flow conditions of between 0.35 and 0.75 and having a minimum difference of fluidized voidage of 0.05 and a maximum difference of fluidized voidage such that the more easily fluidized bodies are not carried out of the reaction zone under normal operating conditions, and maintaining the gas rate, at a given liquid rate insufficient to cause such excessive backmixing as tends to destroy stratification of the two beds of particles.

3,183,179
TWO STAGE HYDROCRACKING-DESULFURIZATION PROCESS

Seymour C. Schuman, Princeton, N.J., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed May 28, 1962, Ser. No. 198,139
3 Claims. (Cl. 208—97)

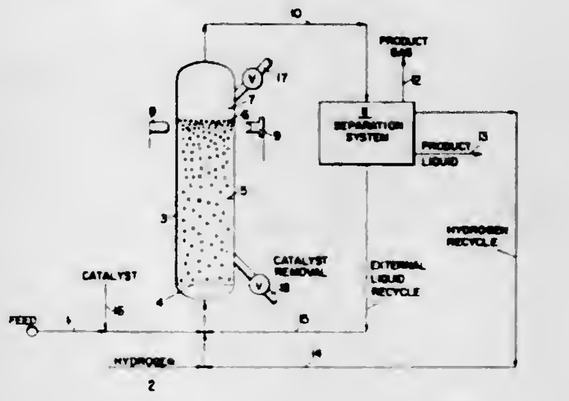


1. In a process for refining a sulfur-containing heavy oil having at least 10% by volume of hydrocarbons boiling above 900° F., in which said oil is cracked in a primary reaction zone, said oil being substantially in the liquid phase and in the presence of hydrogen at a pressure of at least 800 p.s.i.g. to convert at least 25% by volume of said hydrocarbons boiling above 900° F., and wherein the liquid components are separated from vapor components at the outlet of said reaction zone without substantial cooling of these components and essentially at reaction zone outlet conditions, and wherein said liquid components are fractionated to remove material boiling above about 900–1100° F., the improvement wherein the vapor overhead from such fractionating step is condensed and passed to a secondary reaction zone, reacting said condensate in liquid phase with hydrogen at a pressure of at least 800 p.s.i.g. and upflow in the presence of a particulate sulf-active hydrogenation catalyst at a temperature in the range of 600 to 875° F. to produce a heavy product, condensing the vapor component from the primary reaction zone, passing said condensate to another secondary reaction zone and reacting said condensate with hydrogen at a pressure of at least 800 p.s.i.g. in the presence of a particulate sulf-active hydrogenation catalyst to produce a light product.

3,183,180
HYDROGENATION OF OILS

Seymour C. Schuman, Princeton, Ronald H. Wolk, Lawrence Township, Mercer County, and Michael C. Chervenak, Pennington, N.J., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Filed Feb. 18, 1964, Ser. No. 345,639
7 Claims. (Cl. 208—143)



1. The process of hydrogenating a hydrocarbon oil in the liquid phase in the presence of a mass of particulate solids, of between about 20 mesh and 325 mesh (Tyler) average particle size, said solids being nominally maintained within a contact zone, which comprises passing the liquid oil and a hydrogen rich gas upwardly through the mass of solids, maintaining the zone at hydrogenation conditions of elevated temperature in the range of 650°–900° F. and hydrogen pressure in excess of 400 pounds per square inch gauge and up to about 4,000 pounds per square inch gauge, so that at least a substantial part of the oil remains in the liquid phase, maintaining liquid and gas velocity within the reactor so that the mass of particulate solids is in a state of random motion and expanded to occupy at least 10% greater volume than the settled state of the mass, maintaining in said contact zone an interface below which the mass of solids exists at a concentration greater than 5 pounds per cubic foot and above which said solids are at a concentration of less than 0.10 pound per cubic foot without employing a settling zone or other disengagement device, and operating the hydrogenation system to consume at least 500 cubic feet of hydrogen per barrel of liquid oil charged, and maintaining a liquid velocity in the hydrogenation reactor so as not to exceed 0.4 times the gas velocity.

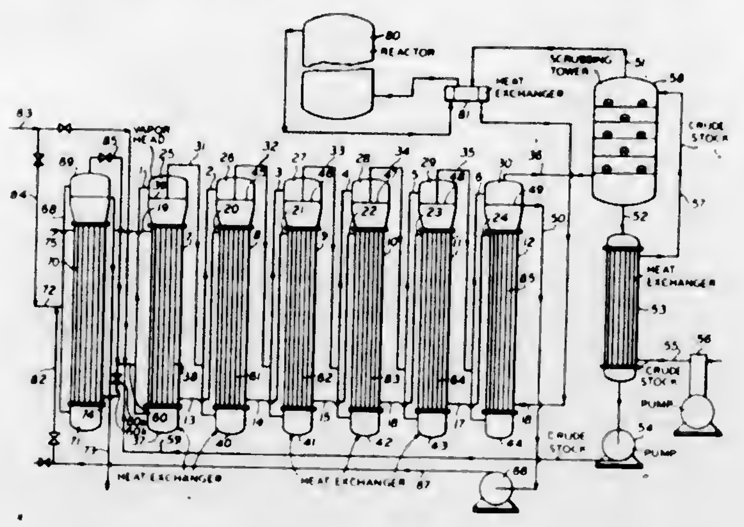
3,183,181
VAPORIZATION OF HYDROCARBONS

Wolfgang Rudbach, Griedel, near Butzbach, Hesse, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany

Filed Apr. 9, 1963, Ser. No. 271,659
Claims priority, application Germany, Nov. 23, 1957, M 35,974; Sept. 10, 1959, M 42,695
22 Claims. (Cl. 208—211)

1. In the process for the vaporization of hydrocarbons in the presence of a gas, the improvement which comprises establishing a plurality of series connected vaporization zones including a first and a last zone, each including a vertically extending indirect heat exchanger, introducing liquid hydrocarbons into the first of said zones, circulating liquid hydrocarbon to be vaporized as a continuous liquid phase downwardly through the indirect heat exchanger in each zone, removing heated liquid hydrocarbon from the bottom of each heat exchanger in each zone and transporting the same back to the upper portion of the same heat exchanger along a separate flow path by introducing a gas into said separate flow path to cause upward flow therein, separating gas and liquid phase in each zone,

passing liquid hydrocarbon to the next series connected zone, passing separated gas to the separate flow paths of the next series connected zone, and removing the separated gas phase from the last zone.



3,183,182
PROLONGATION OF SIEVE CAPACITY BY CONTROLLED DESULFURIZATION

Alan Arthur Yeo, Clive Leonard Hicks, and Roger Templeton Lewis Mowll, Sunbury-on-Thames, Middlesex, England, assignors to The British Petroleum Company Limited, of Britannic House, London, England, a British joint-stock corporation

Filed Aug. 13, 1962, Ser. No. 216,476

Claims priority, application Great Britain, Sept. 8, 1961, 32,302/61

9 Claims. (Cl. 208—212)

1. A process for separating straight-chain hydrocarbons from feedstocks of petroleum fractions boiling between 85–400° C. containing the straight-chain hydrocarbons in admixture with branched-chain and/or cyclic hydrocarbons by extraction with a 5 A. molecular sieve wherein the feedstock containing more than 1% weight sulfur hydrocatalytic is first subjected to a desulfurization step in which the sulfur content is reduced to a value within the range 0.002 to 0.015% weight by hydrocatalytic desulfurization in the presence of a catalyst comprising at least one metal selected from Groups VI*a* and VIII of the Periodic Table supported on a refractory oxide, at a temperature between 300–480° C., a pressure between 50–2000 p.s.i.g., a space velocity between 0.5–20 v./v./hr. and a hydrogen flow rate between 50–10,000 s.c.f./b.

3,183,183
PRODUCTION OF HYDROCARBON FEEDSTOCKS FOR PETROLEUM SULFONATES

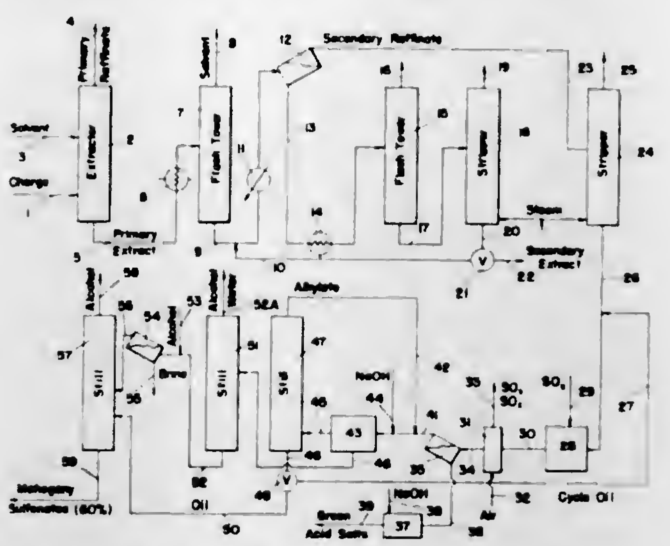
Jack A. Guthrie, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Jan. 16, 1962, Ser. No. 184,867

2 Claims. (Cl. 208—311)

1. In a process for the preparation of feed stock for sulfonation to petroleum sulfonic acids which comprises the steps of:

- (*a*) extracting a petroleum distillate fraction of lubricating viscosity having a boiling range of 600–900° F. and containing from about 15 to about 35 vol. percent aromatic hydrocarbons with a selective solvent for aromatic hydrocarbons at a temperature in the range of from about 150° F., to about 265° F.,
- (*b*) recovering a primary extract solution containing from 60 to 90 vol. percent aromatics,
- (*c*) distilling a major proportion of the solvent fŕóm the primary extract solution,
- (*d*) cooling said solution,
- (*e*) subjecting said solution to phase separation at a temperature in the range of from 130° F. to 160° F. to produce an oil rich secondary raffinate and a solvent rich secondary extract,
- (*f*) recovering the secondary raffinate as said desired sulfonation feed stock,



- (*g*) and removing solvent from said secondary extract to render said secondary extract substantially solvent free, the improvement comprising adding from 35 to 100 vol. percent of said solvent free secondary extract to said primary extract to adjust the solvent to oil ratio for phase separation.

3,183,184
REMOVAL OF DISSOLVED OXYGEN FROM WATER

Sallie A. Fisher, Levittown, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 3, 1960, Ser. No. 12,510

13 Claims. (Cl. 210—26)

1. The process of removing dissolved oxygen from water which comprises bringing the water into contact with the dithionite form of a quaternary ammonium anion-exchange resin.

5. A composition for removing dissolved oxygen from water which comprises a quaternary ammonium anion-exchange resin having functional groups of which approximately one-half are in the hydroxide form and the remainder are in the dithionite form.

3,183,185
OXYGEN REMOVAL FROM WATER BY MEANS OF ION EXCHANGER RESINS

Karl Haagen, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Apr. 4, 1960, Ser. No. 19,473

Claims priority, application Germany, Apr. 9, 1959, F 28,153

5 Claims. (Cl. 210—26)

1. Process for removing oxygen from oxygen containing water by means of ion exchangers charged with reducing agents which comprises contacting the oxygen-containing water with a water-insoluble anion exchanger resin containing quaternary ammonium groups to which are ionically bonded polysulfide ions.

3,183,186
SLUDGE CONDITIONING

Thomas H. Oster, 156 S. Franklin St., Dearborn, Mich.

No Drawing. Filed Apr. 11, 1962, Ser. No. 186,634

2 Claims. (Cl. 210—52)

1. In the process for dewatering sewage sludge wherein the sludge is conditioned, prior to dewatering, by treatment with lime and ferrous sulphate, the improvement which comprises effecting at least a portion of the conditioning action of the ferrous sulphate while the sludge is at a temperature between 95° F. and 130° F. and dewatering the sludge so conditioned.

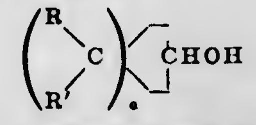
3,183,187
PRODUCTION OF MONOCARBOXYLIC ACIDS FROM LARGE RING ALICYCLIC ALCOHOLS

Jeffrey H. Bartlett, New Providence, and Samuel B. Lippincott, Springfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Original application May 20, 1960, Ser. No. 30,453, now Patent No. 3,121,728, dated Feb. 18, 1964. Divided and this application Aug. 16, 1963, Ser. No. 302,740

4 Claims. (Cl. 252—41)

1. A process for preparing a lubricating grease which comprises: admixing a mineral lubricating oil with 2–30 weight percent, based on final composition, of a fatty acid having from 12 to 22 carbon atoms, 1 to 10 weight percent, based on final composition, of a low molecular weight carboxylic acid, and a cyclic secondary alcohol represented by the formula presented below



wherein *n* is 2 to 20, wherein each R and R′ is a radical selected from the group consisting of C_1 to C_{17} alkyl groups and a hydrogen atom, and wherein the total number of carbon atoms in the alcohol is 10 to 20, the amount of said cyclic secondary alcohol being sufficient for the salt derived therefrom by subsequent alkali fusion to amount to 2–20 weight percent of the final composition, and the mole ratio of the salt derived from said cyclic secondary alcohol to the soap and salt derived from said fatty and carboxylic acids being in the range of 1:4 to 4:1; adding to the resulting admixture sufficient sodium hydroxide to neutralize all acids present and to convert by subsequent alkali fusion said cyclic secondary alcohol into the corresponding acid salt; heating the admixture to a saponification temperature in the range of 150° to 205° C. until all acids originally added are converted to soaps and salts, and the water present is substantially removed by volatilization; then further heating the admixture to an alkali fusion temperature in the range of 260 to 305° C.; maintaining the admixture at said alkali fusion temperature until gas evolution recedes substantially; and cooling the thus heated admixture to obtain a lubricating grease composition.

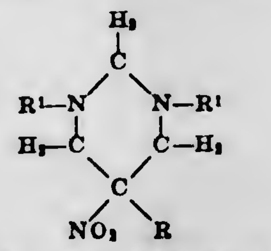
3,183,188
PETROLEUM LUBRICANTS STABILIZED WITH BACTERICIDES

Edward B. Hodge, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Mar. 20, 1961, Ser. No. 96,670

11 Claims. (Cl. 252—49.5)

5. An aqueous petroleum emulsion consisting essentially of an aqueous petroleum lubricant hydrocarbon emulsion and a sufficient amount of a nitrohexahydropyrimidine to stabilize said hydrocarbon against metabolizing bacteria, said nitrohexahydropyrimidine having the structural formula:



wherein R is lower alkyl and wherein R^1 is selected from the group consisting of lower alkyl and lower hydroxyalkyl.

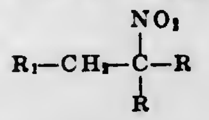
3,183,189
PETROLEUM LUBRICANTS STABILIZED WITH BACTERICIDES

Edward B. Hodge, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Mar. 20, 1961, Ser. No. 96,695

16 Claims. (Cl. 252—49.5)

11. An aqueous petroleum emulsion consisting essentially of an aqueous petroleum lubricant hydrocarbon emulsion and a sufficient amount of a nitroamine to stabilize said hydrocarbon against metabolizing bacteria, said nitroamine having the structural formula:



$$R_1-CH_2-\overset{NO_2}{\underset{R}{C}}-R$$

where R is selected from the group consisting of lower alkyl and hydrogen; where R_1 is a member selected from the group consisting of $—N(R_2)_2$, morpholino, and piperidyl; and where R_2 is a member selected from the group consisting of hydrogen, tetrahydrofurfuryl, lower alkyl, and lower hydroxyalkyl.

3,183,190
DISTYRENATED ALKYL AROMATIC HYDROCARBON AS LUBRICANT

John W. Schick, Merchantville, and Edward A. Oberright, Woodbury, N.J., assignors to Socony Mobil Oil Company, Inc., a corporation of New York

No Drawing. Filed Nov. 2, 1961, Ser. No. 149,532

4 Claims. (Cl. 252—59)

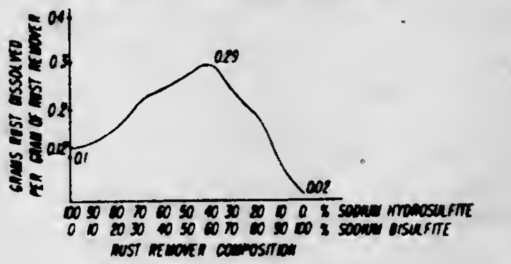
1. In the lubrication of jet engines and rockets, the improvement that comprises lubricating relatively moving parts of said jet engines and rockets with the distyrenated reaction product obtained by reacting styrene reactant with an alkyl aromatic hydrocarbon selected from the group consisting of alkylbenzenes having between 1 and 18 carbon atoms per alkyl group and alkylnaphthalenes having between 1 and 18 carbon atoms per alkyl group, said alkyl aromatic hydrocarbon having 1–3 alkyl groups, in the presence of a catalyst selected from the group consisting of an acid-treated bentonite non-swelling montmorillonite clay and synthetic silca-alumina containing between about 7 percent and about 15 percent alumina by weight, at a temperature varying between about 80° C. and about 150° C.; the molar ratio of said alkyl aromatic hydrocarbon to said styrene reactant being between about 1:1 and about 1.5:1 and the amount of said catalyst being between about 0.7 percent and about 5 percent of the weight of the total reactants.

3,183,191
STAIN AND RUST REMOVING COMPOSITION

Clifford C. Hach, Ames, Iowa, assignor to Hach Chemical Company, Ames, Iowa, a corporation of Iowa

Filed Apr. 19, 1960, Ser. No. 23,190

5 Claims. (Cl. 252—105)



1. A rust stain removing composition consisting essentially of about 40% by weight sodium hydrosulfite and about 60% by weight sodium bisulfite.

4. A composition consisting essentially of surface ac-

tive agent and an amount of from about 0.5 to about 20% by weight of the rust stain removing composition of claim 1.

3,183,192
CHLOROFLUOROALKANE COMPOSITIONS

Albert W. Bauer, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 30, 1961, Ser. No. 148,724
7 Claims. (Cl. 252—188.3)

1. A composition, resistant to reaction with primary and secondary polyols, which consists essentially of at least one chlorofluoroalkane of the group consisting of trichlorofluoromethane, trichlorotrifluoroethanes and tetrachlorodifluoroethanes and from about 0.05% to about 5% by weight based on the chlorofluoroalkane of allo ocimene.

3,183,193
OPTICAL MASER CRYSTALS

Ralph R. Soden, Scotch Plains, and Le Grand G. Van Uitert, Morris Township, Morris County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 7, 1961, Ser. No. 129,797
3 Claims. (Cl. 252—301.5)

1. A composition of matter having the empirical formula

$$A_{0.5}Tb_{0.5-x}Eu_xB$$

where A is selected from the group consisting of rubidium and cesium, B is selected from the group consisting of WO_4 and MoO_4, but when A is cesium, B must be MoO_4, and x has a value of from 0.001 to 0.40.

3,183,194
METHOD OF PREPARING SPHERICAL ACTIVE ALUMINA GEL AND SPHERICAL ACTIVE ALUMINA-SILICA GEL

Tsutomu Kuwata, Tokyo, Yujiro Sugawara, Tsuroka-shi, Yamagata-ken, and Tadahisa Nakazawa, Oebata, Nakajo-machi, Kitakanbara-gun, Niigata-ken, Japan, assignors to Mizusawa Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Apr. 17, 1961, Ser. No. 103,207
Claims priority, application Japan, Mar. 31, 1961, 36/10,720
13 Claims. (Cl. 252—317)

1. A method of preparing spherical active alumina gel and spherical active alumina-silica gel, said gels being without cracks, which comprises passing through an inert, water-immiscible, liquid medium whose temperature is 40° to 100° C. a stock solution selected from the group consisting of an aqueous colloidal solution of basic aluminum sulfate having the composition $Al_2O_3 \cdot 1.6–0.8\ SO_3$, and a mixed solution of an aqueous colloidal solution of basic aluminum sulfate having the composition $Al_2O_3 \cdot 1.6–0.8\ SO_3$ and a silica sol of pH 1–3 wherein the $SiO_2/(Al_2O_3+SiO_2)$ is on a weight basis less than 55%, thereby forming said solution into homogeneous spherical hydrogels, then transferring into water said hydrogels before a softening phenomenon occurs therein, followed by washing said hydrogels with water so as to render the same spherical hydrogels whose SO_3/Al_2O_3 on a molar basis is 0.4–0.7, repeatedly contacting said hydrogels with an alkaline solution which is capable of gradually converting the sulfate radicals remaining in said hydrogels into the corresponding water-soluble salts, said repeated contacting being continued until a greater portion of said sulfate radicals are converted into said water-soluble salts and the amount of said alkaline solution directly contacting said hydrogels at any time being less than that requisite for said conversion of said greater part of said sulfate radicals, and thereafter contacting the hydrogels with an aqueous alkaline solution which is capable of forming a water-soluble sulfate salt upon contacting aluminum sulfate and having a pH of at least 7, thereby forming spherical hydrogels selected from the group consisting of aluminum hydroxide and hydrated alumina-silica, followed by drying and calcining the same.

3,183,195
METHYLENATION CATALYST

Henry R. Hushebeck, Wilmington, Del., assignor to Joseph Bancroft & Sons Co., Wilmington, Del., a corporation of Delaware

No Drawing. Original application May 18, 1961, Ser. No. 116,637. Divided and this application Jan. 8, 1963, Ser. No. 253,780
6 Claims. (Cl. 252—428)

1. A composition of matter comprising an aqueous solution of an acid, an acid salt and a reducing agent, said acid being a polybasic organic acid, said acid salt being a polyvalent metal salt of a Lewis acid and said reducing agent being a metal compound having its reducing activity in the anionic portion of the molecule, said reducing agent being selected from the group consisting of alkali metal and alkaline earth metal hypophosphites and nitrites, said composition being further characterized in that it is capable of acid curing methylenation reactions of cellulose at elevated temperatures in the range provided by heating for thirty minutes at temperatures of 185° F. to that provided by heating for thirty seconds at 400° F.

3,183,196
SILICA-VANADIUM OXIDE OXIDATION CATALYST

Masami Watanabe, Suginami-ku, Tokyo, and Kiyoshi Shirai, Kokura, Japan, assignors to Yawata Chemical Industry Co., Ltd., Tokyo, Japan

No Drawing. Filed May 11, 1962, Ser. No. 194,157
Claims priority, application Japan, Feb. 21, 1962, 37/6,766
6 Claims. (Cl. 252—456)

1. A process for producing a highly active oxidation catalyst which comprises hydrating solid SiO_2 at a temperature of between 120° to 250° C. and at a pressure of between 2 kg./cm.^{2} to 200 kg./cm.^{2}, thereby producing $SiO_2.nH_2O$ wherein n is a positive integer from 1 to 2, intimately admixing said $SiO_2.nH_2O$ and a vanadium compound selected from the group consisting of vanadium pentoxide and ammonium metavanadate thereby obtaining a pasty mixture, molding said pasty mixture to tablets, and firing the thus obtained tablets at a temperature, below 400° C., sufficient to decompose said vanadium compound to vanadium oxide.

3,183,197
PETROLEUM WAX COMPOSITIONS

Eugene E. Richardson and Cecil G. Brannen, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Aug. 31, 1962, Ser. No. 220,883
4 Claims. (Cl. 260—17)

1. A composition of matter consisting essentially of: a paraffin wax having a melting point from about 120° F. to about 150° F. containing a low density, low molecular weight polyolefin present in an amount from about 0.05 to about 20 percent by weight and from about 0.1 to about 15 percent by weight of a cellulose triester wherein the acid portion of said triester is derived from the group consisting of saturated aliphatic monocarboxylic acids having

from 4 to 22 carbon atoms per molecule and mixtures thereof.

3,183,198
TWO-PART ADHESIVE BONDING COMPOSITIONS COMPRISING AN EPOXY RESINOUS MATERIAL AND A POLY-AMIDO AMINE

Herman B. Wagner, Blooming Glen, Pa., assignor to Tile Council of America, Inc., New York, N.Y., a corporation of New York

No Drawing. Original application Aug. 9, 1960, Ser. No. 48,359, now Patent No. 3,140,566, dated July 14, 1964. Divided and this application June 13, 1962, Ser. No. 207,844
14 Claims. (Cl. 260—18)

1. A two-part adhesive bonding composition comprising a resin base portion and a filler hardener portion; said resin base portion comprising an epoxy resinous material containing terminal epoxy groups; said filler hardener portion comprising a poly-amido-amine having an equivalent weight of 135, said resin portion and said hardener portion when admixed producing an adhesive composition which is water cleanable and which is capable of curing to a hard, adherent, chemical resistant bond at room temperature in the presence of water.

3,183,199
PETROLEUM WAX POLYVINYLSTEARATE COMPOSITIONS

John J. Alexander, Munster, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Dec. 23, 1960, Ser. No. 77,854
6 Claims. (Cl. 260—28.5)

1. A wax composition consisting essentially of: (*a*) paraffin wax having a melting point from about 120 to about 145° F., (*b*) a low molecular weight polyethylene having an average molecular weight from about 1,000 to about 2,500, (*c*) polyvinylstearate having a molecular weight of from about 85,000 to about 95,000, said polyethylene being present in an amount of at least about 0.05% and said polyvinylstearate being present in an amount of at least about 0.01% and the total amount of said polyethylene and said polyvinylstearate being from about 0.06% to about 0.1%.

3,183,200
PREPARATION OF LIQUID UREA-FORMALDEHYDE CONDENSATES AND CONDENSATES SO PRODUCED

William B. Hewson, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 27, 1961, Ser. No. 105,862
11 Claims. (Cl. 260—29.4)

1. In a process for the preparation of a liquid urea-formaldehyde condensate containing urea in a mole ratio to formaldehyde greater than 1, the improvement providing for an increased stability and solids content of said condensate, comprising admixing an aqueous formaldehyde polymethylol urea condensate containing formaldehyde in a mole ratio to urea greater than 1 and characterized by a solids content of at least 65 percent, with urea in an amount to provide a resulting admixture containing urea to formaldehyde in a mole ratio greater than 1, and maintaining the said admixture while containing at least an initial portion of the said urea at a temperature within the range of from 90 to 110° C. and at a pH of from 10.4 to 12 for a period sufficient to form said condensate.

3,183,201
METHOD OF PRODUCING POLYVINYL CHLORIDE FIBERS HAVING IMPROVED THERMAL PROPERTIES

Jiro Shimeha, Shuji Ozawa, Ikuzo Tanaka, Shunichi Matsumura and Hiroaki Kubota, all of Iwakuni-shi, Yamaguchi-ken, Japan, assignors to Teikoku Jinzo Kenshi Kabushiki Kaisha, Nishi-ku, Osaka, Japan, a corporation of Japan

Filed Mar. 29, 1960, Ser. No. 18,280
Claims priority, application Japan, Mar. 31, 1959, 34/9,895; Apr. 22, 1959, 34/12,941; Sept. 3, 1959, 34/27,976, 34/27,977; Sept. 25, 1959, 34/30,678; Oct. 29, 1959, 34/34,154
9 Claims. (Cl. 260—31.2)

1. A method of producing polyvinyl chloride fibers, wherein there is employed as a starting material a polyvinyl chloride polymer containing at least 90 mol percent of vinyl chloride, said polyvinyl chloride polymer having a $D1426/D1434$ value of infrared absorption, as defined, of 1.08 to 1.27, a polymerization degree of between 500 and 2500, and an apparent specific gravity of less than 0.2 g./cm.^{3}, said polyvinyl chloride being obtained by polymerizing vinyl chloride at a low temperature ranging from 20° C. to −50° C., which method comprises heating said polyvinyl chloride at a temperature above the softening temperature at which the thermal motion of the molecules become active whereby stabilization of the fine structure occurs, but below the decomposition temperature of said polymer, thereby increasing the apparent specific gravity of the polyvinyl chloride to 0.3 g./cm.^{3} to 0.6 g./cm.^{3}, mixing particles of said heat-treated polyvinyl chloride polymer with a solvent therefor, thereby swelling the particles and forming a fluid, stable, swollen mixture with small change in the viscosity thereof, heating the swollen mixture thereby providing a uniform solution of said swollen mixture, and finally extruding the solution.

3,183,202
POLYMER TREATMENT

William Baird, Gwilym Thomas Jones, and Raymond Deverell-Smith, all of Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed July 30, 1962, Ser. No. 213,151
Claims priority, application Great Britain, Aug. 25, 1961, 30,740/61
5 Claims. (Cl. 260—32.6)

1. A polyolefine selected from the group consisting of polyethylene and polypropylene having a reduced tendency to acquire charges of static electricity, said polyolefine including from 0.01% to 5% of an N,N-di-(β-hydroxyethyl) fatty acid amide as an antistatic agent therefor, the fatty acid of said amide containing from 6 to 22 carbon atoms.

3,183,203
COMPOSITIONS AND SHAPED ARTICLES OF A SAPONIFIED ETHYLENE-VINYL ACETATE COPOLYMER AND A GLYCOL CONTAINING 3 TO 4 CARBON ATOMS

Yasuo Yoshimura and Masaru Takata, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Okayama, Japan, a corporation of Japan

No Drawing. Filed Aug. 23, 1961, Ser. No. 133,295
Claims priority, application Japan, Aug. 30, 1960, 35/36,278
3 Claims. (Cl. 260—33.4)

1. A composition effective to be formed into shaped articles consisting essentially of a saponified copolymer of ethylene and vinyl acetate, said copolymer containing 20 to 65 mol percent of ethylene and having a degree of

saponification of more than 90%, and an amount of a glycol containing 3 to 4 carbon atoms sufficient to impart anti-static properties to said copolymer.

3,183,204
PROCESS FOR THE PRODUCTION OF RUBBER-LIKE POLYMERS

Frederico Engel, Paul Kranzlein, and Johannes Schafer, all of Marl, Kreis Recklinghausen, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Kreis Recklinghausen, Germany, a corporation of Germany

No Drawing. Filed Dec. 20, 1960, Ser. No. 77,007
Claims priority, application Germany, Apr. 5, 1960, C 21,140
1 Claim. (Cl. 260—33.6)

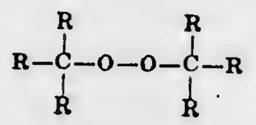
Process for producing a mixture of 100 parts by weight of an elastomeric polymer and 1 to 60 parts by weight of an extender oil which comprises polymerizing an olefine selected from the group consisting of monoolefines, diolefines and mixtures thereof in the presence of a catalyst formed by reacting a compound selected from the group consisting of compounds of metals of Subgroups IV to VI and Group VIII of the Periodic System of Mendeleeff with a compound selected from the group consisting of metallo-alkyl compounds of metals of Groups I to III of the Periodic System of Mendeleeff, said catalyst being dispersed in an extender oil selected from the group consisting of aliphatic hydrocarbons and mono- and dialkylbenzenes having higher alkyl groups which remains in the polymer, the polymerization being carried out under the action of a worm extruder.

3,183,205
ALKY PEROXIDE HEAT-CURED ORGANOPOLYSILOXANE ELASTOMERS

Donald L. Bailey, Snyder, William T. Black, Buffalo, and Milton L. Dunham, Kenmore, N.Y., assignors to Union Carbide Corporation, a corporation of New York

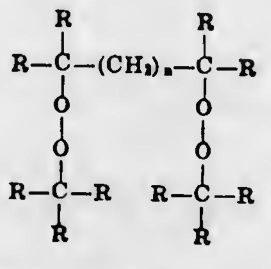
No Drawing. Filed Nov. 23, 1954, Ser. No. 470,834
5 Claims. (Cl. 260—37)

1. A heat-curable gum stock composition that comprises (1) a hydrocarbon-substituted polysiloxane gum wherein the siloxane units consist essentially of (*a*) at least one of the units selected from the class consisting of dimethylsiloxane, methylphenylsiloxane and diphenylsiloxane, and (*b*) at least one of the units selected from the class consisting of methylvinylsiloxane, ethylvinylsiloxane, and phenylvinylsiloxane, the ratio of hydrocarbon groups to silicon atoms being about 2 and from about 0.037 to about 0.74 percent of the silicon atoms in said gum being bonded to vinyl groups, (2) a peroxide curing agent selected from the class consisting of compounds represented by the formulas:



$$R-\overset{R}{\underset{R}{C}}-O-O-\overset{R}{\underset{R}{C}}-R$$

and



$$\begin{array}{ccccc} & R & & R & \\ R- & C & -(CH_2)_n- & C & -R \\ & | & & | & \\ & O & & O & \\ & | & & | & \\ & O & & O & \\ & | & & | & \\ R- & C & -R \quad R- & C & -R \\ & R & & R & \end{array}$$

wherein R is an alkyl radical containing from 1 to 3 carbon atoms and *n* is a multiplier selected from the group consisting of whole numbers and zero, and (3) a filler material.

3,183,206
PROCESS FOR THE PRODUCTION OF SELF-SEALING ORGANO-POLYSILOXANE COMPOSITIONS

Wilfried Kniege, Cologne-Mulheim, and Karl Schnurrbusch, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 13, 1962, Ser. No. 202,071
Claims priority, application Germany, June 14, 1961, F 34,170
7 Claims. (Cl. 260—37)

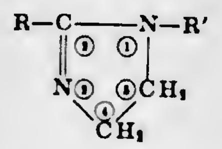
1. Process for the production of self-sealing moisture-insensitive-organo-polysiloxane elastomers, which comprises forming a mixture of 45 to 75% by weight of a poly-dihydrocarbosiloxane convertible to the cured, solid, elastic state, 20 to 50% by weight of a filler selected from the group consisting of silica, iron oxide, titanium oxide, aluminum oxide, zinc oxide, and mixtures thereof, 0.4 to 1% by weight of an organic peroxide and 0.02 to 10% by weight of a boron hydrogen compound selected from the group consisting of alkyl-substituted boron hydrides, N-alkyl-substituted borazanes, N-alkyl-substituted borazenes, N-alkyl-substituted borazines, and thereafter heating the mixture to a temperature of about 350° C. to effect production of the self-sealing-moisture-insensitive-organo-polysiloxane elastomer.

3,183,207
VINYL HALIDE POLYMERS AND COPOLYMERS AND IMIDAZOLINE-METALLIC CURING SYSTEM THEREFOR

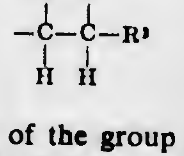
Melvin Nimoy, Hyde Park, Elizabeth C. Dearborn, Boston, and Philip K. Isaacs, Brookline, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Oct. 11, 1960, Ser. No. 61,831
21 Claims. (Cl. 260—41)

1. A thermosettable composition comprising a vinyl halide polymer, an imidazoline having the structure:



where R represents an aliphatic group containing 1 to 36 carbon atoms and R′ is a member of the group consisting of hydrogen and the group



$$-\overset{H}{\underset{H}{C}}-\overset{H}{\underset{H}{C}}-R^2$$

where R^2 is a member of the group consisting of hydrogen, hydroxyl, NH_2, a chain containing aliphatic ester groups, aliphatic amido groups, aliphatic amino groups, and an imidazoline ring having the structure as defined hereabove, and a metal compound which is characterized by its ability to form ammonia complexes and selected from the group consisting of an oxide, sulfide and salt of zinc, cadmium, mercury and lead.

3,183,208
INCORPORATING FINELY DIVIDED PARTICLES DURING SUSPENSION POLYMERIZATION

Hans Wolfgang Jurgeleit, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Aug. 22, 1961, Ser. No. 133,028
3 Claims. (Cl. 260—41)

1. A process for homogeneously incorporating finely divided solid substances in beads of normally solid vinyl polymers comprising:

(*a*) partially polymerizing a vinyl monomer selected from the group consisting of styrene monomer and acrylic monomer to convert at least 30 but not more than 85 percent of said monomer to polymer,

(*b*) incorporating an inert finely divided solid substance in said partially polymerized monomer,

(*c*) forming an aqueous suspension of said partially polymerized monomer having said finely divided substance incorporated therein, and

(*d*) substantially completing the polymerization of said suspended partially polymerized monomer.

3,183,209
ORGANOPOLYSILOXANES

Homer A. Hartung, Grand Island, and Robert C. Borchert, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 28, 1960, Ser. No. 25,205
6 Claims. (Cl. 260—46.5)

1. A copolymeric organosiloxane consisting of from 2.0 to 3.5 moles of methylvinylsiloxane units per kilogram of the total polymer, at least 3.0 moles of diphenylsiloxane units per kilogram of the total polymer, from 0 to 3.16 moles of dimethylsiloxane units per kilogram of the total polymer and from 0 to 0.5 mole of $(R_3SiO_{0.5})$ units per kilogram of the polymer wherein R is selected from the group consisting of alkyl, cycloalkyl, and aryl radicals, said copolymeric organosiloxane having a molecular weight above about 4000.

3. A heat-curable composition of matter comprising (1) a copolymeric organosiloxane consisting of from 2.0 to 3.5 moles of methylvinylsiloxane units per kilogram of the total polymer, at least 3.0 moles of diphenylsiloxane units per kilogram of the total polymer, from 0 to 3.16 moles of dimethylsiloxane units per kilogram of the total polymer and from 0 to 0.5 mole of $(R_3SiO_{0.5})$ units per kilogram of the polymer wherein R is selected from the group consisting of alkyl, cycloalkyl and aryl radicals, said cyclopolymeric organosiloxane having a molecular weight above about 4000 and (2) a free radical producing curing catalyst.

3,183,210
POLYMERIZATION OF ALDEHYDE BY ORGANOMETALLIC COMPOUND

Junji Furukawa and Takeo Saegusa, Kyoto, Japan, assignors to Zaidan Hojin Nihon Kagaku Seni Kenkyusho and Bridgestone Tire Company Limited, Kyoto, Japan, and Tokyo, Japan, respectively

Filed Aug. 15, 1960, Ser. No. 49,711
Claims priority, application Japan, Nov. 6, 1959, 34/34,618; Dec. 23, 1959, 34/39,908
7 Claims. (Cl. 260—67)

1. A process for preparing high molecular weight polymers of aldehydes which comprises: polymerizing an aldehyde having the general formula RCHO wherein R represents a radical selected from the group consisting of methyl, ethyl and trichloromethyl, with organometallic compounds as the polymerization catalyst, said organometallic compounds having the formula MeRn, wherein Me is a metal of valence *n* selected from the group consisting of zinc, aluminum, boron, magnesium and cadmium and R represents a saturated aliphatic hydrocarbon having from two to four carbon atoms.

3,183,211
STABILIZED POLYOXYMETHYLENE

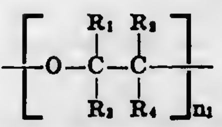
Keith Clark Brinker and Carl Earle Schweitzer, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 14, 1961, Ser. No. 124,021
8 Claims. (Cl. 260—67)

1. A thermally stable polyoxymethylene having improved base stability and having the formula

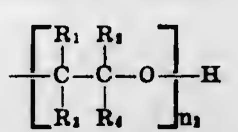
$$X-O-CH_2O_n-Y$$

where X is a member of a class consisting of the groups having the formula



$$H\left[-O-\overset{R_1}{\underset{R_3}{C}}-\overset{R_2}{\underset{R_4}{C}}-\right]_{n_1}$$

and alkyl groups of 1–10 carbon atoms, Y is a group having the formula



$$\left[-\overset{R_1}{\underset{R_3}{C}}-\overset{R_2}{\underset{R_4}{C}}-O-\right]_{n_2}H$$

n is a positive integer greater than 300, n_1 and n_2 are positive integers of 1–20 and R_1, R_2, R_3, and R_4 are members selected from the class consisting of hydrogen, alkyl groups of 1–20 carbon atoms, aryl groups of 6–10 carbon atoms and arylalkyl groups of 7–20 carbon atoms, and having a reaction rate constant for thermal degradation of less than 1% by weight per minute at 222° C.

3,183,212
PRODUCTION OF POLYOXYMETHYLENES

Heinrich Hopff and Hermann Metzler, Zurich, Switzerland, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed July 27, 1961, Ser. No. 127,096
Claims priority, application Germany, July 30, 1960, D 33,898
3 Claims. (Cl. 260—67)

1. A process for the production of polyoxymethylenes from a water free formaldehyde compound selected from the group consisting of monomeric formaldehyde and low polymers of formaldehyde which comprises polymerizing such formaldehyde compound in the absence of water in contact with 0.01 to 1% by weight with reference to the formaldehyde compound of a perhalic compound selected from the group consisting of, potassium perchlorate and potassium periodate perchloric acid, periodic acid as the sole polymerization catalyst.

3,183,213
CATALYTIC POLYMERIZATION OF ALDEHYDES USING AN ALKALI METAL THIOCYANATE CATALYST

Otto Ernst van Lohuizen, Arnhem, and Geert de Vries, Delft, Netherlands, assignors to Algemene Kunstzijde Unie N.V., Arnhem, Netherlands, a corporation of the Netherlands

No Drawing. Filed Oct. 9, 1961, Ser. No. 143,551
Claims priority, application Netherlands, Oct. 24, 1960, 257,184
10 Claims. (Cl. 260—67)

1. A process for the catalytic polymerization of an aldehyde selected from the group consisting of formaldehyde, acetaldehyde, propionaldehyde, butyraldehyde, isobutyraldehyde, valeraldehyde, hexaldehyde, monochloracetaldehyde, dichloracetaldehyde and trichloracetaldehyde, which comprises polymerizing said aldehyde in the presence of from about 0.001 to about 2 mol percent, based on said aldehyde, of an alkali metal thiocyanate catalyst.

3,183,214
FLAME-RESISTANT POLYMERS

Frank J. Welch, Charleston, and Herbert J. Paxton, Jr., Elkview, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 27, 1962, Ser. No. 205,541
12 Claims. (Cl. 260—67)

1. An adduct of a polymer selected from the group consisting of polyacrolein and poly(methacrolein) and a dihydrocarbyl phosphite of the formula $(R'O)_2P(O)H$ wherein R′ is selected from the group consisting of alkyl, aryl, aralkyl, alkaryl and haloalkyl of from 1 to 10 car-

bon atoms, said adduct containing at least 1 weight percent phosphorus present in the form of α-hydroxyphosphonate ester units.

3,183,215
CROSS-LINKED POLY(ESTER-ACETALS)

Everett H. Pryde, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Apr. 16, 1962, Ser. No. 187,994
5 Claims. (Cl. 260—75)
(Granted under Title 35, U.S. Code (1952), sec. 266)

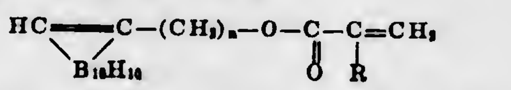
1. Cross-linked, infusible, transparent poly(ester-acetal) gels that are extremely adherent to glass, said gels being the product obtained by distilling methanol from the reaction produced by heating a mixture consitsing of 10–30 mole percent of 3,9-bis(7-carbomethoxyheptyl)-2,4,8,10-tetraoxaspiro[5,5]undecane, 90–70 mole percent of dimethyl terephthalate, at least one mole equivalent of ethylene glycol, and a catalytic amount of calcium oxide for about 10 hours at about 260–275° C., initially at atmospheric pressure and then at progressively lowered pressures, to form a linear poly(ester-acetal), adding a catalytic amount of a crosslinking catalyst selected from the group consisting of lead oxide, antimony trioxide, and zinc acetate and heating at about 260° C. until crosslinking as evidenced by gel formation occurs.

3,183,216
BORON-CONTAINING POLYMER AND METHOD OF MAKING THE SAME

Murray S. Cohen, Convent Station, Joseph Green, Dover, Sidney I. Karlan, Nutley, and Nathan Mayes, Rockaway, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Oct. 2, 1959, Ser. No. 844,819
18 Claims. (Cl. 260—83.5)

1. A compound of the formula:



$$\underset{B_{10}H_{10}}{HC{=}C}-(CH_2)_n-O-\underset{O}{\overset{}{\underset{\|}{C}}}-\underset{R}{\underset{|}{C}}=CH_2$$

where R is a member of the group consisting of hydrogen and methyl and *n* has a small integral value.

4. Copolymers of the compound claimed in claim 1 with butadiene.

3,183,217
COPOLYMERIZATION OF POLAR WITH NON-POLAR MONOMERS IN THE PRESENCE OF A FRIEDEL-CRAFTS AND A FREE RADICAL INITIATOR

George E. Serniuk, Roselle, and Robert M. Thomas, Mountainside, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 1, 1961, Ser. No. 92,457
14 Claims. (Cl. 260—85.5)

1. A process for copolymerizing a polar vinyl monomer responsive only to free radical polymerization catalysis with a second monomeric monoolefin responsive only to Friedel-Crafts polymerization catalysis which comprises, copolymerizing, under anhydrous conditions, a complexed mixture, comprising a polar vinyl monomer selected from the group consisting of vinyl halides, vinylidene halides, vinyl acetate, acrylic acid, acrylic esters, methacrylic acid, methacrylic esters, methacrylonitrile, acrylonitrile and acrolein and up to and including an equimolar amount of a Friedel-Crafts halide per mole of said polar vinyl monomer, with a second monomeric monoolefin selected from the group consisting of isobutylene, α-methyl styrene, isopropenyl toluene, ethylene, propylene, hexene-1, 2-methyl-1-pentene and vinyl ethers in the presence of from about 0.001 to about 5 wt. percent, based on polar vinyl monomer, of a free radical initiator at a temperature of from about −78° C. to about 175° C., the mole ratio of polar vinyl monomer and second monomeric monolefin to each other being from about 0.1:1 to about 50:1.

3,183,218
ALUMINUM AND MERCURIC CHLORIDE CATALYST COMPOSITION AND PROCESS

Frank X. Werber, Rockville, and Rajendra N. Chadha, Silver Spring, Md., assignors to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Filed May 21, 1963, Ser. No. 282,149
13 Claims. (Cl. 260—85.5)

4. The process of polymerizing vinyl monomers of the group consisting of esters of acrylic acid, esters of methacrylic acid, vinyl esters, styrene and substituted styrenes which comprises polymerizing said vinyl monomers in the presence of a catalyst consisting essentially of aluminum and $HgCl_2$ in a weight ratio of 0.1 to 10:1 respectively, the weight ratio of $HgCl_2$ to the vinyl monomer group member being in the range 1:5 to 100 respectively.

3,183,219
2-BENZOYL-5-METHOXYPHENYL ACRYLATE AND POLYMERS THEREOF

Norman W. Schuler, Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,693
3 Claims. (Cl. 260—86.1)

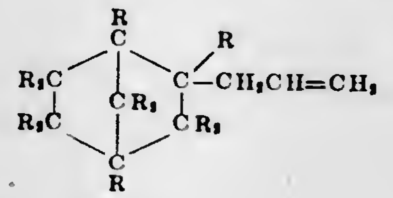
2. A copolymer of acrylamide with 2-benzoyl-5-methoxyphenol acrylate.

3,183,220
UNSATURATED CYCLIC COMPOUNDS

Henri G. G. Dekking, Montville, N.J., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 28, 1959, Ser. No. 842,601
8 Claims. (Cl. 260—88.2)

5. A process of forming a copolymer of an olefin containing from 2 to 6 carbon atoms and a compound of the formula:



wherein each R is separately selected from the group consisting of hydrogen, alkyl containing up to 4 carbon atoms, phenyl, napthyl, phenyl radicals substituted with alkyl groups containing up to 4 carbon atoms and naphthyl radicals substituted with alkyl groups containing up to 4 carbon atoms admixed with an organic solvent for said compound and a catalyst system comprising a titanium halide, in which the titanium has a valence above two and an organo-aluminum compound in which an aluminum atom is directly bonded to a carbon atom.

3,183,221
RUBBERY POLYMER OF A HEAVY PETROLEUM HYDROCARBON, PROCESS OF MAKING SAME, AND BLENDS THEREOF WITH A RUBBERY DIENE POLYMER

William N. Axe, James T. Gragson, and Sidney Schiff, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 30, 1960, Ser. No. 79,489
12 Claims. (Cl. 260—887)

1. A method for producing a rubbery polymer product which comprises heating at a reacting temperature a heavy petroleum hydrocarbon essentially free of olefinic unsaturation and containing naphthenic and aromatic constituents and having an average molecular weight of at least about 600 and not containing any substantial amount of fractions having an average molecular weight below about 400, with an organic peroxide selected to cause a reaction between said hydrocarbon and peroxide to form a rubbery polymer, said peroxide being used in a ratio of about one-tenth mol to about three mols for each mol of hydrocarbon treated, and then recovering said polymer from the reaction mixture.

5. An extended conjugated diene rubber containing the rubbery polymer produced according to claim 1.

3,183,222
PROCESS OF PREPARING POLYVINYLCHLORIDE AND MIXED POLYMERIZATES OF VINYLCHLORIDE

Werner Trautvetter, Spich, Troisdorf, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk Cologne, Germany, a corporation of Germany

No Drawing. Filed Sept. 20, 1961, Ser. No. 139,367
Claims priority, application Germany, Dec. 24, 1960, D 35,040
9 Claims. (Cl. 260—92.8)

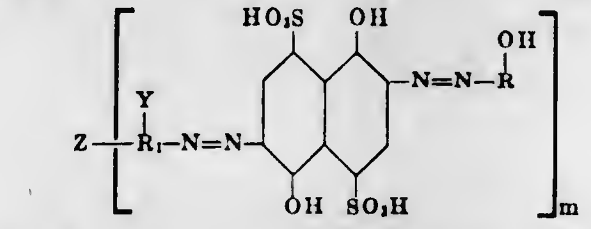
1. The process of preparing vinylchloride polymerization products which comprises homopolymerizing vinylchloride with a catalyst comprising a mixture of two components B and A, B is a metal organo compound selected from the group consisting of boron, aluminum, scandium, yttrium, lanthanum antimony, bismuth, zinc, cadmium and mercury alky and aryl compounds and A is an α-halogen ether, wherein the halogen portion is a member selected from the group consisting of chlorine and bromine, under polymerizing conditions including a temperature of from about −40 to +10° C., and wherein said α-halogen ether is present in an amount of 0.05 to 1% referred to the monomer, and the molar ratio of *A*:*B* is less than 1, and recovering the vinylchloride polymerization products so produced.

3,183,223
METAL-CONTAINING POLYAZO DYESTUFFS

Karl-Heinz Schündehütte, Leverkusen, Horst Nickel, Cologne-Stammheim, Karl-Heinz Schmidt, Cologne-Flittard, and Fritz Suckfüll, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 11, 1960, Ser. No. 14,204
Claims priority, application Germany, Mar. 13, 1959, F 27,947
8 Claims. (Cl. 260—145)

1. The copper complex of a polyazo dyestuff of the formula



wherein R represents a member selected from the group consisting of naphthalene, azo-naphthalene and pyrazolone coupling component, said member carrying the OH group in adjacent position to the azo bridge, and at least one —SO_3H group on the coupling component; R_1 stands for a member selected from the class consisting of a benzene, benzene-azo-benzene and naphthalene-azo-diphenyl diazo component when *m* stands for the integer 1, and a diazo component of the benzene series when *m* stands for the integer 2; Z is a hydrogen when *m* is 1, and a member taken from the class consisting of a direct linkage and —NHCOHN— when *m* is 2; R_1 carrying the metal complex-forming group Y, in ortho-position to the —N=N— bridge.

3,183,224
PYRIMIDINE DYESTUFFS

Jakob Benz, Muenchenstein, Hermann Burkhard, Basel, Karl Kaegi, Riehen, and Hans von Tobel, Basel, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed Apr. 25, 1960, Ser. No. 24,257
Claims priority, application Switzerland, Apr. 27, 1959, 72,598
12 Claims. (Cl. 260—146)

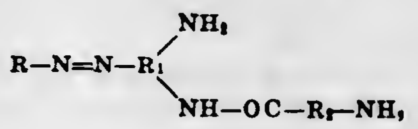
1. A dyestuff selected from the group consisting of water-soluble azo, anthraquinone and phthalocyanine dyestuffs containing one to two dihalogenopyrimidyl radicals bearing in the 5-position a substituent selected from the group consisting of carboxymethyl, α-chlorovinyl and α-bromovinyl, the said dihalogenopyrimidyl radicals being connected to the remainder of the dyestuff molecule by a bridge selected from the group consisting of —O—, —NH— and —$N(CH_3)$—, both halogens of the dihalogenopyrimidyl radicals having the same atomic number from 17 to 35 inclusive.

3,183,225
WATER SOLUBLE UREA OBTAINED BY CONDENSING PHOSGENE WITH AN AZO DYE

Paul Dreyfuss, Basel, Switzerland, assignor to Ciba States Limited, New York, N.Y.

No Drawing. Filed July 7, 1960, Ser. No. 41,267
Claims priority, application Switzerland, July 9, 1959, 75,531
9 Claims. (Cl. 260—167)

1. A water-soluble urea obtained by condensing with phosgene an amino azo dyestuff of the formula



$$R-N{=}N-R_1\left\langle\begin{matrix}NH_2\\NH-OC-R_2-NH_2\end{matrix}\right.$$

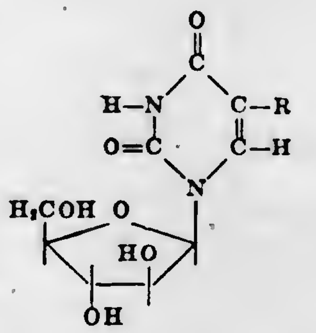
in which R is a member selected from the group consisting of the radical of a benzene diazo component and a naphthalene diazo component, R_1 is a member selected from the group consisting of phenyl and sulfophenyl, and R_2 is phenyl, and in the radical R_1 the groups —NH_2 and —NH—OC— are in meta-position to one another.

3,183,226
PROCESS FOR TRANSFORMING 1-β-D-XYLOFURANOSYLURACIL NUCLEOSIDES INTO 1-β-D-ARABINOFURANOSYLURACIL NUCLEOSIDES

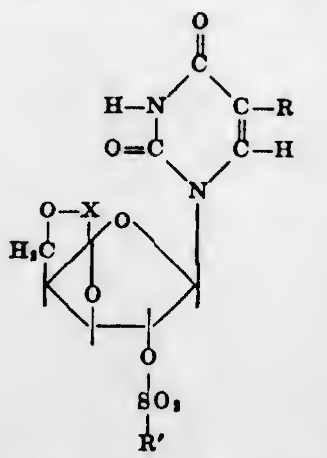
James H. Hunter, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Jan. 10, 1961, Ser. No. 81,691
15 Claims. (Cl. 260—211.5)

1. The process for preparing a 1-β-D-arabinofuranosyluracil represented by the following structural formula



wherein R is selected from the group consisting of hydrogen, halogen, and lower-alkyl which comprises hydrolyzing with acid a xylofuranosyl nucleoside represented by the following structural formula



wherein R is as defined above; R′ is selected from the group consisting of lower-alkyl, phenyl, alkylphenyl, halophenyl, and phenylalkyl; and X is selected from the group consisting of alkylidene and aralkylidene to produce the corresponding 1-[2′-O-(R′-sulfonyl)-β-D-xylofuranosyl]uracil, subjecting the thus-produced 1-[2′-O-(R′-sulfonyl)-β-D-xylofuranosyl]uracil to alkaline hydrolysis to produce the corresponding 1-(2′,3′-epoxy-β-D-lyxofuranosyl)uracil, and hydrolyzing with dilute aqueous acid the thus-produced 1-(2′,3′-epoxy-β-D-lyxofuranosyl) uracil to obtain the corresponding 1-β-D-arabinofuranosyluracil.

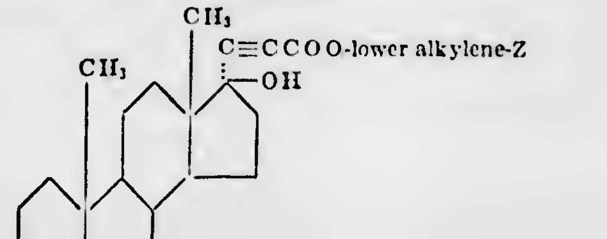
3,183,227
AMINOALKYL 3β,17β-DIHYDROXYANDROST-5-EN-17α-YLPROPIOLATES AND 3-OXO-5-ENES CORRESPONDING

Robert W. Hamilton, Wilmette, and Kurt J. Rorig, Glenview, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 17, 1963, Ser. No. 309,400

9 Claims. (Cl. 260—239.5)

1. A compound of the formula



wherein X represents a member of the class consisting of β-hydroxymethylene and carbonyl radicals, the lower alkylene radical called for separates the groups attached thereto by at least 2 carbon atoms, Z represents a member of the class consisting of di(lower alkyl)amino, pyrrolidino, and piperidino radicals, and the dotted line represents a 5(6) double bond when X represents a β-hydroxymethylene radical and a 4(5) double bond when X represents a carbonyl radical.

3,183,228
21-FLUORO-17α-METHYLPREGNANE DERIVATIVES

Romano Deghenghi, Montreal, Ontario, and Yvon Lefebvre, Pierrefonds, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 14, 1963, Ser. No. 287,761

Claims priority, application Canada, June 25, 1962, 852,382

6 Claims. (Cl. 260—239.55)

2. 21-fluoro - 3β - hydroxy-17α-methyl-5α,6α-oxidopregnan-20-one.

3,183,229
HYDRAZONES DERIVED FROM 1-AMINO-4-DIPHENYLALKYLPIPERAZINES AND HETEROCYCLIC ALDEHYDES AND KETONES

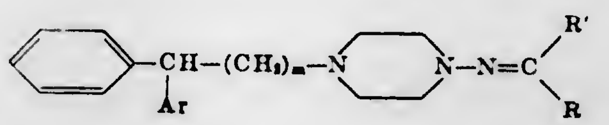
John W. Cusic, Skokie, and Ernest F. Le Von, Morton Grove, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 4, 1963, Ser. No. 270,562

Claims priority, application Philippines, Sept. 17, 1962, 4,397

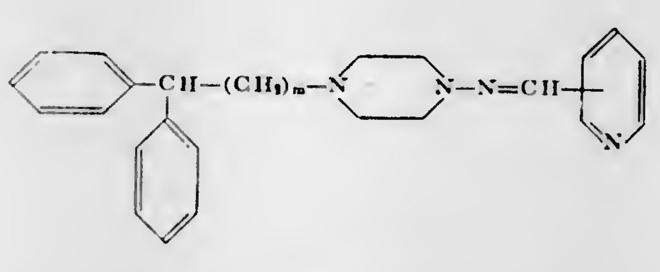
16 Claims. (Cl. 260—240)

1. A compound of the formula



wherein Ar is selected from the group consisting of phenyl, halophenyl, tolyl, and pyridyl; R is selected from the group consisting of pyridyl, methylpyridyl, quinolyl, the N-oxides of the preceding heterocyclic groups, indolyl, N-methylpyrrolyl, N-phenyl-2,5-dimethylpyrrolyl, thienyl, furyl, nitrofuryl, dihydropyranyl, and, when combined with R′, 3-methyl-3-azapentamethylene; R′ is selected from the group consisting of hydrogen and, when combined with R, 3-methyl-3-azapentamethylene; *m* is a whole number between 0 and 1 inclusive.

2. A compound of the formula



wherein *m* is a whole number between 0 and 1 inclusive.

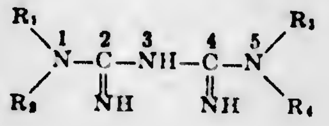
3,183,230
HALOARALKYL BIGUANIDES

Seymour L. Shapiro, Hastings on Hudson, N.Y.; Florence M. Shapiro, executrix of said Seymour L. Shapiro, deceased, and Louis Freedman, Bronxville, N.Y., assignors to U.S. Vitamin & Pharmaceutical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 13, 1961, Ser. No. 93,007

18 Claims. (Cl. 260—244)

1. A monobiguanide having the formula



wherein at least one of R_1 and R_2 and at least one of R_3 and R_4 are selected from the group consisting of haloaralkyl and aralkyl groups and at least one of R_1, R_2, R_3 and R_4 is a haloaralkyl group, the haloaralkyl and aralkyl groups having from about seven to about eighteen carbon atoms and from one to three halogen atoms, the remaining R radicals being selected from the group consisting of hydrogen and organic radicals having from one to about six carbon atoms, selected from the group consisting of alkyl, alkenyl and cycloalkyl radicals.

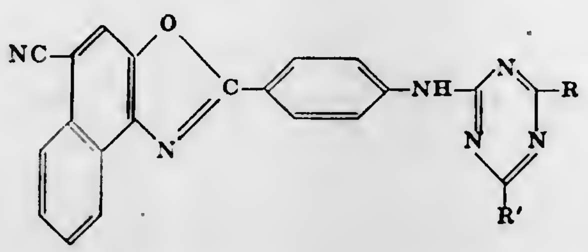
3,183,231
CYANONAPHTHOXAZOLE BRIGHTENERS

Bennett George Buell, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

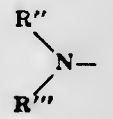
No Drawing. Filed July 17, 1963, Ser. No. 295,831

7 Claims. (Cl. 260—249.5)

1. A compound of the formula:



where R and R′ are individually selected from the group consisting of lower alkoxy, lower alkylmercapto, allyloxy, allylmercapto, phenoxy, phenylmercapto, lower hydroxyalkoxy, lower dihydroxyalkoxy, morpholino, piperidino and an amino moiety of the formula:



wherein R″ and R‴ individually represent a member selected from the group consisting of hydrogen, lower hydroxyalkyl, lower alkyl, allyl, phenyl, carboxyphenyl, sulfophenyl, chlorophenyl, lower alkoxyphenyl, lower sulfoalkyl, lower carboxyalkyl and tris(hydroxymethyl) methyl.

3,183,232
O,S-DISUBSTITUTED THIOL-TYPE THIAMINES

Akira Takamizawa, Osaka, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed May 27, 1963, Ser. No. 283,537

Claims priority, application Great Britain, Feb. 6, 1963, 4,916/63

4 Claims. (Cl. 260—256.5)

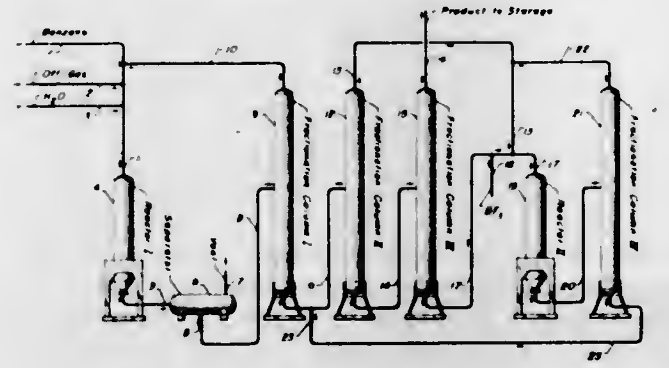
1. O,S-diallyloxycarbonylthiamine.
3. O,S-diallylthiocarbonylthiamine.

3,183,233
ALKYLATION-TRANSALKYLATION PROCESS

Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed May 4, 1962, Ser. No. 192,428

15 Claims. (Cl. 260—671)



1. A process for the production of an aromatic compound which comprises alkylating an alkylatable aromatic compound with an olefin-acting compound in the presence of a regulated amount of water in an alkylation reaction zone containing a solid phosphoric acid catalyst, passing the effluent of said alkylation zone to a separation zone, separating from the separation zone unreactive gases and a liquid mixture comprising alkylatable aromatic compound, monoalkylated aromatic compound, polyalkylated aromatic compound and water, passing said liquid mixture to a first fractionation column, removing overhead from said first fractionation column an alkylatable aromatic compound-water azeotrope, recycling said azeotrope to the alkylation zone, passing as bottoms from said first fractionation column to a second fractionation column a substantially anhydrous mixture of alkylatable aromatic compound, monoalkylated aromatic compound and polyalkylated aromatic compound, removing overhead from said second fractionation column alkylatable aromatic compound, passing said alkylatable aromatic compound to a commingling step as hereinafter set forth, passing as bottoms from said second fractionation column to a third fractionation column monoalkylated aromatic compound in admixture with polyalkylated aromatic compound, removing overhead from said third fractionation column monoalkylated aromatic compound as product from the process, passing as bottoms from said third fractionation column to the commingling step polyalkylated aromatic compound, commingling the alkylatable aromatic compound from said second fractionation column with polyalkylated aromatic compound from said third fractionation column and with boron trifluoride, passing the effluent from said commingling step to a transalkylation reaction zone containing a boron trifluoride-modified substantially anhydrous inorganic oxide catalyst and therein reacting the polyalkylated aromatic compound with the alkylatable aromatic compound, passing the effluent of said transalkylation zone to a fourth fractionation column, removing overhead from said fourth fractionation column in admixture alkylatable aromatic compound and boron trifluoride, recycling said admixture to the commingling step, and recycling the bottoms from said fourth fractionation column, comprising transalkylation products substantially free of boron trifluoride, to the second fractionation column.

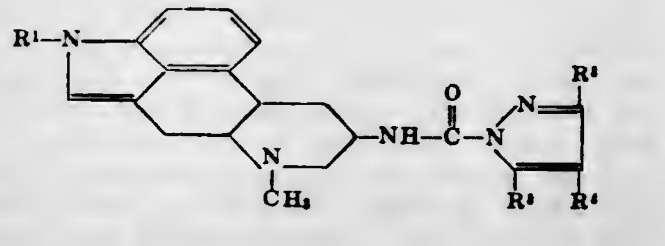
3,183,234
OCTAHYDROINDOLOQUINOLINES

William L. Garbrecht and Tsung-Min Lin, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Nov. 21, 1963, Ser. No. 325,448

5 Claims. (Cl. 260—285.5)

1. A member selected from the group consisting of compounds of the formula



and the salts thereof with pharmaceutically acceptable acids, wherein R^1 is selected from the group consisting of hydrogen, methyl, ethyl, isopropyl, allyl, and propargyl; R^2 and R^3 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, isopropyl, phenyl, and halophenyl; R^4 is selected from the group consisting of hydrogen, C_1–C_3 aliphatic radicals, benzyl, halobenzyl, and halo; and R^3 and R^4, when taken together, comprise an alkylene chain of 3 to 4 carbon atoms which, together with the carbon atoms to which they are attached, form a cycloaliphatic ring selected from the group consisting of cyclopentyl and cyclohexyl.

3,183,235

1-[3-, 2-, and 1-INDOLYL-LOWER-ALKANOYL] PIPERIDINES

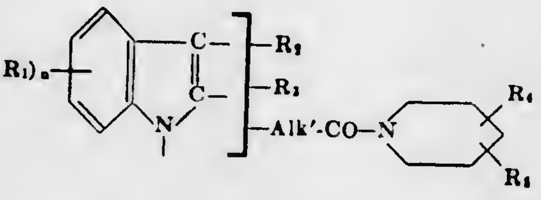
Bernard L. Zenitz, Colonie, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 27, 1961, Ser. No. 119,805

7 Claims. (Cl. 260—294)

6. 4 - aminocarbamyl - 1 - [β - (3 - indolyl)propionyl] piperidine.

7. A compound having the formula



where any one of the three free valences on the indole ring is taken up by the 1-[lower-alkanoyl]piperidine group and the valences at the 1- and 2-positions, when not taken up by the 1-[lower-alkanoyl]piperidine group, are taken up by the groups R_2 and R_3, respectively; and where R_1 is a member of the group consisting of hydrogen, hydroxy, halogen, lower-alkoxy, methylenedioxy, lower-alkylmercapto, lower-alkylsulfonyl, and benzyloxy; R_2 is a member of the group consisting of hydrogen, lower-alkyl, phenyl-lower-alkyl, and Y_1-phenyl-lower-alkyl; R_3 is a member of the group consisting of hydrogen, lower-alkyl, phenyl, and Y_2-phenyl; R_4 is a member of the group consisting of hydrogen and from one to five lower-alkyls each of from one to four carbon atoms; R_5 is a member of the group consisting of hydroxy, hydroxy-lower-alkyl, lower-alkanoyloxy, benzoyloxy, Y_3-benzoyloxy, lower-alkanoyloxy-lower-alkyl, benzoyloxy-lower alkyl, (Y_4-benzoyloxy)-lower-alkyl, cycloalkyl-lower-alkyl of from five to seven ring carbon atoms, carbo-lower-alkoxy of from one to six carbon atoms in the lower-alkoxy moiety, unsubstituted-carbamyl, N-lower-alkylcarbamyl, N-lower-alkenylcarbamyl of from three to four carbon atoms in the lower-alkenyl moiety, N,N-di-lower-alkylcarbamyl, N,N-di-lower alkenylcarbamyl of from three to four carbon atoms in each lower-alkenyl moiety, aminocarbamyl, N-lower-alkylaminocarbamyl, N-lower-alkylidenehydrazono of from three to four carbon atoms in the lower-alkylidene moiety, N,N-di-lower-alkylaminomethyl, N,N-di-lower-alkenylaminomethyl of from three to four carbon atoms in each lower-alkenyl moiety, N,N-di-lower-alkylamino, and N,N-di-lower alkenylamino of from three to four carbon atoms in each lower-alkenyl moiety; Alk′ is lower-alkylene of from one to six carbon atoms and interposing from one to five carbon atoms between the indolyl group and the carbonyl carbon atom of the lower-alkanoyl group; and *n* is the integers 1 and 2; and wherein Y_1 is at least one member of the group consisting of halogen, lower-alkyl, hydroxy, lower-alkoxy, methylenedioxy, lower-alkylmercapto, lower-alkylsulfinyl, and lower-alkylsulfonyl; Y_2 is at least one member of the group consisting of halogen, lower-alkyl, hydroxy, lower-alkoxy, methylenedioxy, lower-alkylmercapto, lower-alkylsulfinyl, and lower-alkylsulfonyl; Y_3 is at least one member of the group consisting of halogen, lower-alkyl, hydroxy, lower-alkoxy, methylenedioxy, lower-alkylmercapto, lower-alkylsulfinyl, lower-alkylsulfonyl, amino, and lower-alkanoylamino; and Y_4 is at least one member of the group consisting of halogen, lower-alkyl, hydroxy, lower-alkoxy, methylenedioxy, lower-alkylmercapto, lower-alkylsulfinyl, lower-alkylsulfonyl, amino, and lower-alkanoylamino.

3,183,236

PREPARATION OF N-ALKANOXY AMMONIUM HALIDES

Denys Cook and Stephen Joseph Kuhn, Sarnia, Ontario, Canada, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 12, 1962, Ser. No. 172,819

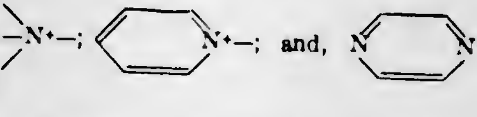
6 Claims. (Cl. 260—294.8)

1. A compound having the formula

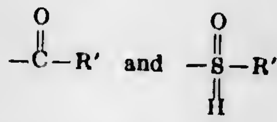
$$X^-$$

$$Z^+—O—A$$

wherein Z represents an ammonium radical selected from the group consisting of



A represents a radical selected from the group consisting of



$$-\overset{O}{\overset{\|}{C}}-R' \quad \text{and} \quad -\underset{O}{\underset{\|}{\overset{O}{\overset{\|}{S}}}}-R'$$

wherein R represents alkyl having from 1 to 5 carbon atoms, R′ represents a member selected from the group consisting of alkyl, phenyl, phenylalkyl, diphenyl, and N,N-diphenyl amino, and having no more than 12 carbon atoms, and X represents a halogen having an atomic number from 17 to 35.

3,183,237

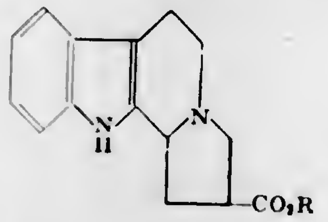
HEXAHYDROINDOLO[3,2-g]INDOLIZINE COMPOUNDS

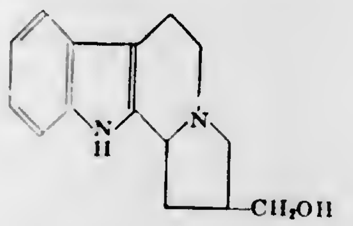
Yao Hua Wu and Harold J. Rhodes, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

No Drawing. Filed Mar. 21, 1963, Ser. No. 266,812

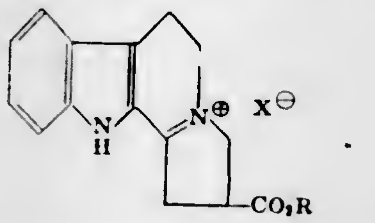
15 Claims. (Cl. 260—295)

1. The process for the preparation of a compound selected from the group consisting of





and the acid addition salts thereof wherein R is an alkyl group having up to 4 carbon atoms which comprises reacting a compound of the formula



wherein R has the same meaning as above and $X^{\ominus}$ is the anion of an acid selected from the group consisting of a mineral acid, a hydrocarbon sulfonic acid having up to 12 carbon atoms, and a hydrocarbon acid sulfate having up to 12 carbon atoms with a reducing agent selected from the group consisting of (*a*) the alkali metal aluminum hydrides, (*b*) the alkali metal borohydrides, and (*c*) hydrogen in the presence of a catalyst selected from the group consisting of the platinum, palladium, rhodium, and nickel hydrogenation catalysts.

3,183,238

ORGANOTIN MERCAPTO COMPOUNDS

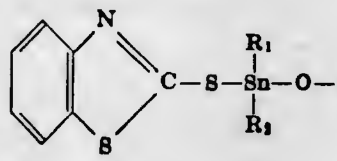
Edouard Barbanson, Ribecourt (Oise), France, assignor to Carlisle Chemical Works, Inc., Reading, Ohio

No Drawing. Filed Jan. 2, 1963, Ser. No. 248,879

Claims priority, application France, Jan. 3, 1962, 883,753

3 Claims. (Cl. 260—299)

1. A compound of the formula



wherein R_1 and R_2 are hydrocarbons of up to 22 carbon atoms, and R_6 is a member of the group consisting of phenyl, alkylphenyl, and OC—R_3, wherein R_3 is a hydrocarbon carboxylic acyl containing 8–18 carbon atoms.

3,183,239

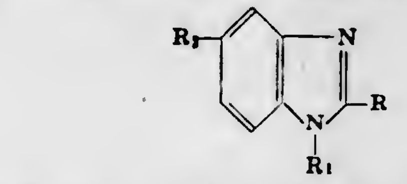
5-ETHER AND 5-THIOETHER-2-HETEROCYCLIC BENZIMIDAZOLES

Horace D. Brown, Plainfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 23, 1961, Ser. No. 90,966

10 Claims. (Cl. 260—302)

1. A benzimidazole compound having the formula



wherein R is a member of the class consisting of thiazolyl, isothiazolyl and thiadiazolyl, R_1 is selected from the class consisting of hydrogen, lower alkyl, lower alkenyl, lower alkanoyl, benzoyl and phenylacetyl, and R_2 is a member of the class consisting of lower alkoxy, lower alkylthio, phenoxy and phenylthio, and non-toxic acid addition salts thereof.

3,183,240

NEW PROCESS FOR THE PREPARATION OF 2-AMINOTHIAZOLE COMPOUNDS

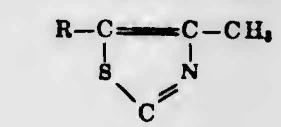
Yasuo Yura, Tokyo, Japan, assignor to Sankyo Company, Limited, Tokyo, Japan

No Drawing. Filed May 2, 1962, Ser. No. 191,739

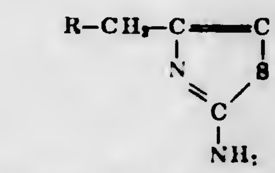
Claims priority, application Japan, May 13, 1961, 36/16,407

4 Claims. (Cl. 260—306.8)

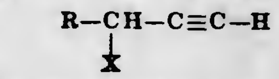
1. A process for the preparation of compounds having the formulae



and



wherein R is a member selected from the group consisting of straight and branched alkyl of 1 to 8 carbon atoms which comprises heating under reflux and in an inert organic solvent a compound having the formula



$$R-\underset{X}{\underset{|}{C}}H-C\equiv C-H$$

wherein R has the same meaning as described above and X is halogen with thiourea.

3,183,241

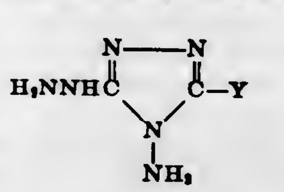
PREPARATION OF CERTAIN TRIAZOLES

Phyllis D. Oja, San Francisco, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 11, 1963, Ser. No. 258,666

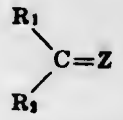
4 Claims. (Cl. 260—308)

1. A process for preparing 5-substituted-4-amino-3-hydrazinotriazoles corresponding to the formula



where Y is a member selected from the group consisting of —OH, —SH, —NH_2 and —$NHNH_2$ which comprises;

mixing triaminoguanidine and a compound of the structure



with a polar organic solvent, wherein Z in said compound is a member selected from the group consisting of =O, =S, =NH and=NNH_2, and, R_1 and R_2 are members independently selected from the group consisting of amino, hydrazino, and methyl mercapto and further characterized in that if Z is a member selected from the group consisting of =NH and =NNH_2 one of the groups R_1 and R_2 in said compound is a member selected from the group consisting of —NH_2 and —$NHNH_2$, and

heating said mixture at a temperature of from about 100 to about 155° C. for a period of from about 0.5 to about 12 hours.

3,183,242

PROCESS FOR THE PRODUCTION OF 3-BENZOYL DERIVATIVES OF SUBSTITUTED HYDANTOINS

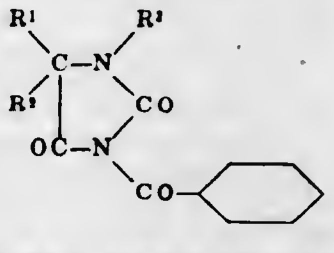
Karl Dithmar, Peter Koblischek, and Elfriede Naujoks, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt ,vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed May 29, 1963, Ser. No. 283,968

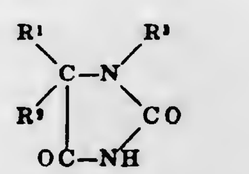
Claims priority, application Germany, May 30, 1962, D 39,046; Sept. 28, 1962, D 39,939; Dec. 18, 1962, D 40,530

2 Claims. (Cl. 260—309.5)

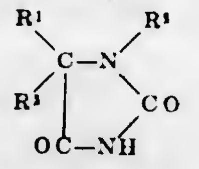
1. In a process for the production of a benzoylated hydantoin derivative of the formula



wherein each of R^1 and R^2 is selected from the group consisting of hydrogen and lower alkyl and R^3 is selected from the group consisting of hydrogen, lower alkyl, cycloalkyl, aryl, aralkyl and carboxylic acid acyl wherein a hydantoin derivative of the formula



is reacted with an alkali selected from the group consisting of alkali metal and alkaline earth metal hydroxides and oxides and with a benzoyl halide the steps of first reacting said hydantoin derivative of the formula



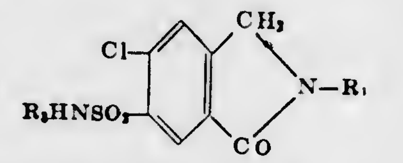
with about an equivalent quantity of said alkali in an inert organic solvent, removing the free water contained in the reacting mixture and then reacting the resulting dehydrated hydantoin salt in an inert organic solvent with a benzoyl halide selected from the group consisting of benzoyl chloride and benzoyl bromide at a temperature up to 150° C.

3,183,243
ISOINDOLINONE DERIVATIVES

Glyn Evan Lee, Brentwood, and William Robert Wragg, Woodford Green, England, assignors to May & Baker Limited, Dagenham, England, a company of Great Britain

No Drawing. Filed July 19, 1962, Ser. No. 211,099
Claims priority, application Great Britain, July 28, 1961, 27,562/61; Jan. 8, 1962, 687/62
12 Claims. (Cl. 260—325)

12. A compound selected from the group consisting of compounds of the formula:



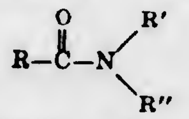
wherein R_1 represents a member of the class consisting of alkyl of up to 6 carbon atoms, unsubstituted saturated monocyclic hydrocarbon of 5 to 8 carbon atoms, unsubstituted saturated bicyclic hydrocarbon of 5 to 8 carbon atoms, saturated monocyclic hydrocarbon of 5 to 8 carbon atoms substituted by one alkyl of up to 6 carbon atoms, alkyl of up to 6 carbon atoms substituted by an unsubstituted saturated monocyclic hydrocarbon of 5 to 8 carbon atoms, and R_2 represents a member of the class consisting of hydrogen and methyl, and alkali metal salts thereof.

3,183,244
SOLID REACTION PRODUCTS OF AMIDES AND BORANES

Marvin M. Fein, Westfield, N.J., assignor, by mesne assignments, to Thiokol Chemical Corporation, a corporation of Delaware

No Drawing. Filed May 22, 1957, Ser. No. 660,987
14 Claims. (Cl. 260—326.3)

2. A process for the preparation of solid reaction products of amides and boranes which comprises reacting from 0.1 to 10 moles of the amide per mole of the borane at a temperature of 0° to 170° C. in the presence of a solvent inert with respect to the reactants, the amide being selected from the group consisting of 2-pyrrolidone and an amide of the formula



$$R-\overset{O}{\overset{\|}{C}}-N\genfrac{}{}{0pt}{}{R'}{R''}$$

in which R is a radical selected from the group consisting of hydrogen, lower alkyl and lower alkenyl radicals, and R′ and R″ are radicals selected from the group consisting of hydrogen, methyl and ethyl radicals, and the borane being a borane selected from the group consisting of tetraborane, pentaboranes, decaborane, lower alkyl pentaboranes, and lower alkyl decaboranes.

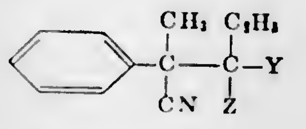
9. The product produced by the process of claim 2.

3,183,245
PROCESS FOR THE PRODUCTION OF α-METHYL-α-PHENYL-β-ETHYLSUCCINIMIDE

Charles A. Miller, Detroit, and Robert L. Hull, Madison Heights, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Jan. 4, 1963, Ser. No. 249,334
2 Claims. (Cl. 260—326.5)

1. Process for the production of α-methyl-α-phenyl-β-ethylsuccinimide which comprises heating a cyano compound of the formula



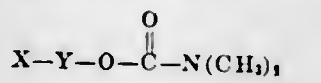
with a strong base in a solvent containing water, followed by acidifying the resulting product; where Y is a member of the class consisting of hydrogen, lower alkoxycarbonyl, carbamoyl, and carboxyl, and Z is a member of the class consisting of cyano and carbamoyl.

3,183,246
1,1-DIOXOTHIENYLCARBAMATES

Herman E. Faith, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 10, 1962, Ser. No. 222,630
6 Claims. (Cl. 260—332.1)

1. A dioxothienylcarbamate selected from the group consisting of compounds having the formula



$$X-Y-O-\overset{O}{\overset{\|}{C}}-N(CH_3)_2$$

wherein X is a member of the group selected from H, halide and dimethylamino; and Y is a member of the group selected from the 3-sulfolanyl radical and the 1,1-dioxo-2,3-dihydro-3-thienyl radical, said X being a substituent in the 4 position of said Y, and the hydrohalide and methohalide salts of the compound.

3,183,247
GALACTONOLACTONES, DERIVATIVES THEREOF, AND PROCESS FOR THEIR PREPARATION

Joseph Kiss and Hans Spiegelberg, Basel, and Bruno Peter Vaterlaus, Binningen, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 11, 1961, Ser. No. 137,045
Claims priority, application Switzerland, Sept. 13, 1960, 10,386/60
6 Claims. (Cl. 260—343.6)

1. 2 - O - lower alkyl - 3,5,6 - tri - O - benzyl - γ - D-galactonolactone.

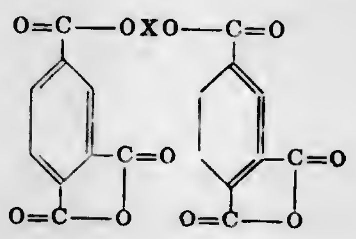
3,183,248
ESTERS OF TRIMELLITIC ANHYDRIDE

Arthur G. Hirsch, Dyer, and Richard E. Van Strien, Griffith, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Aug. 2, 1961, Ser. No. 128,671
3 Claims. (Cl. 260—346.3)

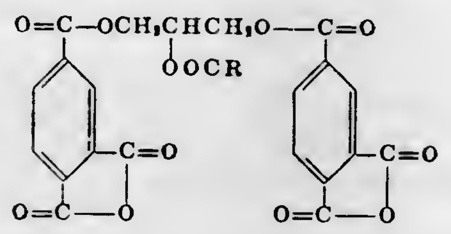
1. A compound having a formula selected from the group consisting of Formula I

(I)



wherein X is a divalent C_{2-12} alkylene radical and Formula II

(II)



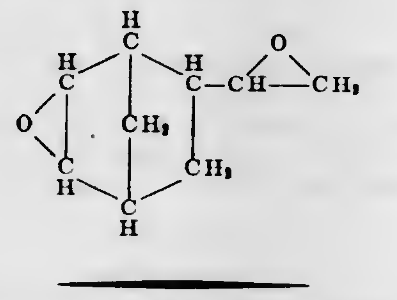
wherein R is selected from the group consisting of hydrogen and a C_{1-3} alkyl group.

3,183,249
DIEPOXIDES OF BUTADIENE CYCLOPENTADIENE CODIMERS

Herbert K. Wiese, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Mar. 5, 1959, Ser. No. 797,340
2 Claims. (Cl. 260—348)

1. A compound of the formula



3,183,250
EPOXIDES FROM ETHYLENIC COMPOUNDS CONTAINING ELECTRON-WITHDRAWING GROUPS

David H. Rosenblatt, Baltimore, Md., and Gordon H. Broome, Gastonia, N.C., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed June 5, 1962, Ser. No. 200,288
3 Claims. (Cl. 260—348)
(Granted under Title 35, U.S. Code (1952), sec. 266)

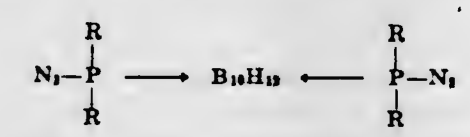
1. The compound selected from the group consisting of 2,2-dicyano-3-o-chlorophenyl oxirane and 2-cyano-2-carboxamido-3-o-chlorophenyl oxirane.

3,183,251
BIS(AZIDODIARYLPHOSPHINE) DECABORANES AND A PROCESS FOR THEIR PREPARATION

Thomas A. Knowles, Hamden, and Hansjuergen A. Schroeder, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed July 23, 1962, Ser. No. 211,823
13 Claims. (Cl. 260—349)

1. A bis(azidodiarylphosphine) decaborane of the formula:



$$N_3-\underset{R}{\overset{R}{P}} \longrightarrow B_{10}H_{12} \longleftarrow \underset{R}{\overset{R}{P}}-N_3$$

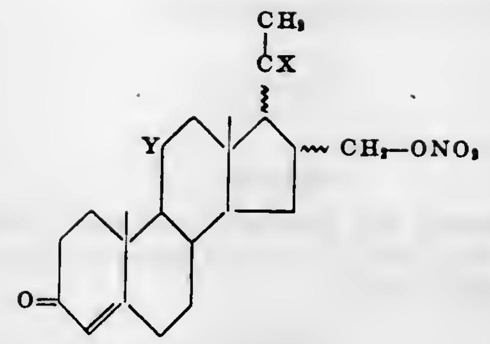
wherein R is aryl selected from the group consisting of phenyl, tolyl, xylyl, naphthyl and biphenyl.

3,183,252
16-NITRATOALKYL-PREGNANES

Pierre Crabbé, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Sept. 5, 1963, Ser. No. 306,674
22 Claims. (Cl. 260—397.4)

1. A compound of the following formula:



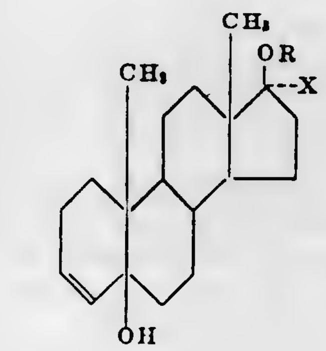
wherein X is selected from the group consisting of β-nitrato and a keto group; and Y is selected from the group consisting of hydrogen, β-hydroxyl and keto.

3,183,253
(OPTIONALLY 17-ALKYLATED) ANDROST-3-ENE-5β,17β-DIOLS AND ESTERS THEREOF

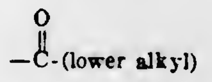
Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 23, 1963, Ser. No. 304,247
6 Claims. (Cl. 260—397.5)

1. A compound of the formula



wherein R is a member of the class consisting of hydrogen and



$$-\overset{O}{\overset{\|}{C}}\text{-(lower alkyl)}$$

radicals, and X is selected from the group consisting of hydrogen and lower alkyl radicals.

3,183,254
ORGANIC SILICONE COMPOUNDS AND METHOD FOR PRODUCING SAME

Gerd Rossmy, Altendorf (Ruhr), and Jakob Wassermeyer, Dusseldorf, Germany, assignors to Th. Goldschmidt A.-G., Essen, Germany

No Drawing. Filed Jan. 25, 1962, Ser. No. 168,833
Claims priority, application Germany, Oct. 28, 1959, G 28,256, G 28,257; Feb. 18, 1960, G 29,058
10 Claims. (Cl. 260—448.2)

1. A process of preparing an equilibrated mixture of compounds of the general unit formula

$$R_xSiO_y(SO_4)_zX_{4-(x+2y+2z)}$$

wherein

- R is a member selected from the group consisting of hydrogen, hydrocarbon, γ-cyanopropyl-, β-cyanoethyl-, γ-acyloxypropyl-, β-carboethoxyethyl-, γ-halogenpropyl- and chlorinated phenyl,
- X is a member selected from the group consisting of chlorine, bromine, iodine and alkoxy, and mixtures of those radicals at least one-tenth of all X atoms being chlorine,

x, y and z are numbers defined by

$$1\leqq x<3$$
$$0.5<y>1.5$$
$$z=0.0001\text{–}0.5$$

and

$$4>(x+2y+2z)>2$$

which comprises first reacting a substance selected from the group consisting of a silane and mixtures of silanes of the general formula

$$R_xSiX_{4-x}$$

wherein the symbols have the above defined meaning, with water and z mole of sulfuric acid per silicon atom, the total amount of said water and said sulfuric acid added to the reaction per mole of silane being in excess of 0.5 mole but less than

$$\frac{4-x}{2}$$

mole, and thereafter equilibrating the reaction product obtained by heating.

7. An equilibrated mixture of compounds of the unit formula

$$R_xSiO_y(SO_4)_zX_{4-(x+2y+2z)}$$

wherein

R is a member selected from the group consisting of hydrogen, hydrocarbon, γ-cyanopropyl-, β-cyanoethyl-, γ-acyloxypropyl-, β-carboethoxyethyl-, γ-halogenpropyl- and chlorinated phenyl, and mixtures of those radicals,

X is a member selected from the group consisting of chlorine, bromine, iodine and alkoxy, and mixture of those radicals, at least one-tenth of all X atoms being chlorine,

x, y and z are numbers defined by

$$1\leqq x<3$$
$$0.5<y>1.5$$
$$z=0.0001\text{–}0.5$$

and

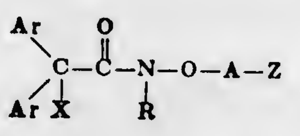
$$4>(x+2y+2z)>2$$

3,183,255
ESTERS OF DIPHENYL ACETOHYDROXAMIC AND ALPHA-HYDROXY-DIPHENYL ACETOHYDROXAMIC ACIDS WITH TERTIARY AMINO ALCOHOLS

Joseph Levy, Paramus, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Sept. 17, 1962, Ser. No. 224,236
6 Claims. (Cl. 260—453)

4. A compound of the class consisting of a free base, its addition salts with non-toxic acids and lower alkyl quaternary ammonium salts, said free base having the formula:



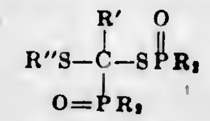
in which Ar is an aromatic radical selected from the group consisting of phenyl, methylphenyl, halophenyl and methoxyphenyl, X is selected from the group consisting of hydrogen and hydroxyl, R is selected from the group consisting of hydrogen and alkyl of from 1 to 5 carbon atoms, A is alkylene of from 2 to 5 carbon atoms and Z is selected from the group consisting of di-(1 to 5 carbon atom alkyl)-amino, piperidino, pyrrolidino and morpholino.

3,183,256
S-[(ARYLTHIO)(PHOSPHINYL)METHYL] PHOSPHORUS ESTERS AND PROCESS FOR PREPARING SULFUR-CONTAINING ORGANIC PHOSPHORUS COMPOUNDS

Gail H. Birum, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Jan. 3, 1961, Ser. No. 80,034
14 Claims. (Cl. 260—461)

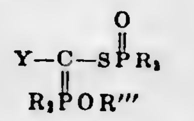
1. A compound of the formula



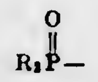
$$R''S{-}\overset{R'}{\underset{O=PR_2}{C}}{-}S\overset{O}{\overset{\|}{P}}R_2$$

wherein R is selected from the group consisting of hydrocarbyl having from 1 to 6 carbon atoms, hydrocarbyloxy having from 1 to 6 carbon atoms, and halohydrocarbyloxy having from 1 to 6 carbon atoms; R′ is selected from the group consisting of hydrogen, chlorine, bromine, alkylthio having from 1 to 15 carbon atoms, chloroalkylthio having from 1 to 15 carbon atoms, bromoalkylthio having from 1 to 15 carbon atoms, phenylthio, chlorophenylthio, bromophenylthio, alkylphenylthio having a total of from 7 to 12 carbon atoms, chloroalkylphenylthio having a total of from 7 to 12 carbon atoms, and bromoalkylphenylthio having a total of from 7 to 12 carbon atoms; and R″ is selected from the group consisting of phenyl, chlorophenyl, bromophenyl, and alkylphenyl having from 7 to 12 carbon atoms.

6. A method of preparing a sulfur-containing organic phosphorus compound which comprises reacating a compound of the formula



wherein R is selected from the group consisting of hydrocarbyl having from 1 to 6 carbon atoms, hydrocarbyloxy having from 1 to 6 carbon atoms, and halohydrocarbyloxy having from 1 to 6 carbon atoms; Y is selected from the group consisting of phenylthio, chlorophenylthio, bromophenylthio, alkylphenylthio having from 7 to 12 carbon atoms, and



$$R_2\overset{O}{\overset{\|}{P}}{-}$$

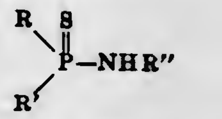
wherein each R is as defined above; and R‴ is selected from the group consisting of aliphatic and halogen-substituted hydrocarbyl having from 1 to 6 carbon atoms, with a halogen-containing reactant selected from the group consisting of hydrogen chloride, hydrogen bromide, chlorine, bromine, alkylsulfenyl chlorides and bromides having from 1 to 15 carbon atoms, chloroalkylsulfenyl chlorides and bromides having from 1 to 15 carbon atoms, bromoalkylsulfenyl chlorides and bromides having from 1 to 15 carbon atoms, benzenesulfenyl chloride and bromide, chlorobenzene- and bromobenzenesulfenyl chlorides and bromides, alkylphenylsulfenyl chlorides and bromides having from 7 to 12 carbon atoms, chloroalkylphenylsulfenyl chlorides and bromides having from 7 to 12 carbon atoms, and bromoalkylphenylsulfenyl chlorides and bromides having from 7 to 12 carbon atoms.

3,183,257
PREPARATION OF N-SUBSTITUTED PHOSPHORAMIDOTHIOATES

Bernard Miller, Princeton, and Thomas P. O'Leary, Jr., Cranbury, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 20, 1962, Ser. No. 188,970
11 Claims. (Cl. 260—461)

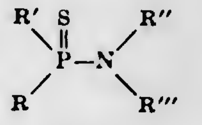
1. A process for preparing a N-alkylated phosphoramidothioate which comprises the steps of bringing into reactive combination: (*a*) a N-unsubstituted phosphoramidothioate of the structure:



wherein R and R′ are each represented by a radical selected from the group consisting of lower alkyl, lower alkoxy phenoxy and naphthoxy, and R″ is a substituent selected from the group consisting of hydrogen, lower alkyl phenyl and naphthyl, in the presence of an inert solvent thereof, and a strong base selected from the group consisting of alkyl lithium, an alkali metal alkoxide and an alkali metal hydride, and (*b*) an alkylating agent of the structure:

$$R'''X$$

selected from the class consisting of methyl chloride, methyl iodide, methyl bromide, ethyl chloride, allyl chloride, allyl bromide, methyl chloroacetate, ethyl bromoacetate, dimethyl sulfate, diethyl sulfate and methyl benzenesulfonate, where R‴ is the cation and X is the anion of said alkylating agent, and thereafter recovering a N-alkylated phosphoramidothioate of the structure:



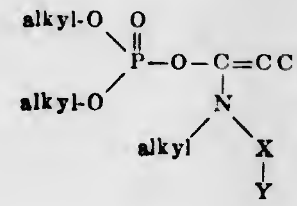
wherein R, R′, R″ and R‴ are all as defined above.

3,183,258
DIALKYL 1-ACYLAMINO 2,2-DICHLOROVINYL PHOSPHATES

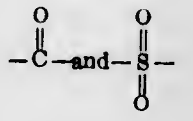
Max Schuler, Arlesheim, Basel-Land, Hans Helfenberger, Reinach, Basel-Land, and Karl Lutz, Basel, Switzerland, assignors to Sandoz A.G., Basel, Switzerland

No Drawing. Filed Oct. 15, 1962, Ser. No. 230,683
Claims priority, application Switzerland, Nov. 10, 1961, 13,070/61
8 Claims. (Cl. 260—461)

1. A compound of the formula



wherein X is a member selected from the group consisting of

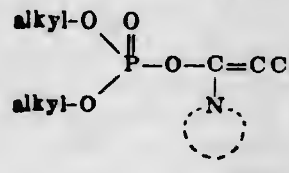


$$-\overset{O}{\overset{\|}{C}}-\text{and}-\overset{O}{\overset{\|}{\underset{O}{\underset{\|}{S}}}}-$$

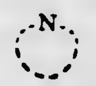
and

Y is a member selected from the group consisting of H, alkyl, —O-alkyl, —N(alkyl)$_2$ and —NH(alkyl), alkyl being throughout alkyl with a maximum of two carbon atoms.

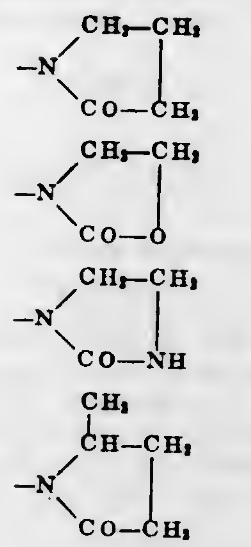
8. A compound of the formula



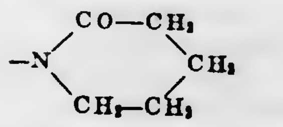
wherein



represents a member selected from the group consisting of



and



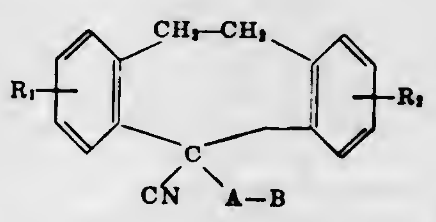
and each alkyl has a maximum of two carbon atoms.

3,183,259
5-CYANO-10,11-DIHYDRO-5H-DIBENZO[a,d] CYCLOHEPTENE DERIVATIVES

Cornelis van der Stelt, Haarlem, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken V/H Brocades Stheeman en Pharmacia, Amsterdam, Netherlands, a corporation of Dutch law

No Drawing. Filed Apr. 18, 1962, Ser. No. 188,569
Claims priority, application Great Britain, Apr. 27, 1961, 15,356/61
5 Claims. (Cl. 260—465)

1. A compound selected from the group consisting of bases of the general formula



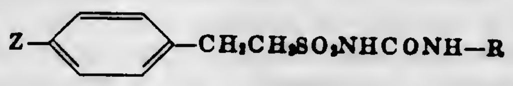
wherein A is a lower alkylene radical of at least two carbon atoms, B is selected from the group consisting of amino, (lower alkyl)amino, di(lower alkyl)amino and basic saturated 5 to 6 membered N-heterocyclic groups of less than twelve carbon atoms, and R$_1$ and R$_2$ are each selected from the group consisting of hydrogen, chloro and lower alkyl; and non-toxic acid-addition salts thereof.

3,183,260
SULFONYLUREA HYPOGLYCEMIC AGENTS

Bernard Loev, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 14, 1962, Ser. No. 244,582
5 Claims. (Cl. 260—465)

1. A compound of the formula:

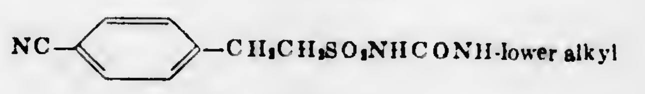


wherein

Z is a member selected from the group consisting of nitro and cyano, and

R is a member selected from the group consisting of (lower)alkyl, cyclo(lower)alkyl, phenyl, phenyl (lower)alkyl, phenoxy(lower)alkyl, (lower)alkoxy (lower)alkyl, 1-azacyclohexane and 1-azacycloheptane.

3. A compound of the formula:



3,183,261
OXIDATION OF AROMATIC DERIVATIVES

Bradshaw F. Armendt, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed June 25, 1963, Ser. No. 290,546
5 Claims. (Cl. 260—523)

1. A method for oxidizing an aromatic derivative having the formula: $(CH_3)_mRX_n$, where R is a benzene ring; X is a functional group selected from the group consisting of $—CH_2OCH_3$ and $—CH_2Cl$; *m* is within the range of 0 to 5; and *n* is within the range of 1 to 3 which comprises contacting said aromatic derivative in an oxidizing zone under oxidizing conditions which include a temperature within the range from about 80° to about 130° C. with NO_2 in the presence of water such that a single liquid phase is maintained in said zone wherein said functional group is selectively oxidized to form the corresponding carboxylic acid in a time period of less than 20 hours.

3,183,262
PROCESS FOR THE PREPARATION OF SODIUM NITRILO TRIACETATE

John J. Singer, Westboro, Mass., and James P. Singer, Nashua, N.H., assignors to Hampshire Chemical Corporation, Nashua, N.H., a corporation of Delaware
Filed Oct. 25, 1961, Ser. No. 147,637
5 Claims. (Cl. 260—534)

1. A method of converting nitrilo triaceto nitrile into sodium nitrilo triacetate as its hydrolysis product, which comprises providing nitrilo triaceto nitrile, a stoichiometric quantity of sodium hydroxide, and sodium nitrilo triacetate in solution in an amount corresponding to the reaction product of said nitrilo triaceto nitrile and sodium hydroxide, adding the sodium hydroxide to the aqueous solution of sodium nitrilo triacetate, thereby to provide a solution having about 15–20% free sodium hydroxide therein, separating crystals of sodium nitrilo triacetate formed, thereby to provide a mother liquor containing free sodium hydroxide and a residual small amount of sodium nitrilo triacetate, adding to said mother liquor nitrilo triaceto nitrile to form a slurry, hydrolyzing said nitrile to form a solution of sodium nitrilo triacetate and, thereafter, repeating the cycle.

3,183,263
METHOD FOR CHANGING THE CRYSTAL HABIT OF MONO-SODIUM GLUTAMATE

John A. Frump, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Filed Oct. 19, 1962, Ser. No. 231,844
8 Claims. (Cl. 260—534)

1. In a method for the production of monosodium glutamate crystals from a solution of said salt by causing said solution to be supersaturated with respect to monosodium glutamate to crystallize the monosodium glutamate, the improvement which comprises crystallizing monosodium glutamate in the presence of an amount of lysine in the solution sufficient to change the crystal habit of the monosodium glutamate crystals.

3,183,264
PROCESS FOR THE MANUFACTURE OF UNSATURATED PHOSPHONIC ACID DICHLORIDES

Fritz Rochlitz, Frankfurt am Main, and Herbert Vilcsek, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed June 17, 1960, Ser. No. 36,732
Claims priority, application Germany, June 20, 1959, F 28,743; Oct. 27, 1959, F 29,707
5 Claims. (Cl. 260—543)

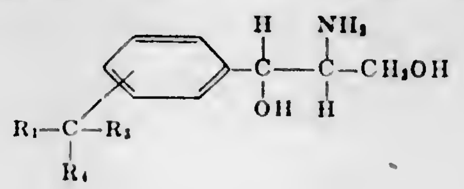
1. A process for preparing alkene phosphonic acid dichlorides which consists essentially of heating a β-halo alkane phosphonic acid dichloride having 2 to 8 carbon atoms and selected from the group consisting of chloroalkane phosphonic acid dichlorides and bromo-alkane phosphonic acid dichlorides at temperatures of from 60° C. to 300° C., and then isolating the alkene phosphonic acid dichloride formed from the resulting reaction mixture.

5. A process for preparing propene phosphonic acid dichloride which consists essentially of heating chloropropane phosphonic acid dichloride at 200° C. under a blanket of nitrogen, absorbing the escaping vapors of hydrogen chloride in a sodium hydroxide solution, and isolating the propene phosphonic acid dichloride formed from the remaining reaction mixture by distillation.

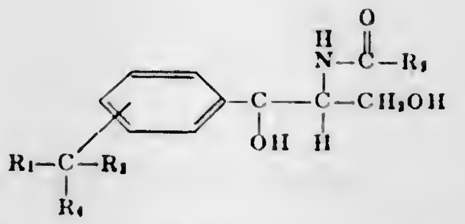
3,183,265
ACYLPHENYLACYLAMIDO-1,3-PROPANEDIOLS AND PREPARATION THEREFOR

Maximilian von Strandtmann, Rockaway Township, John Shavel, Jr., Mendham, and George Bobowski, East Orange, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Oct. 16, 1962, Ser. No. 231,027
15 Claims. (Cl. 260—552)

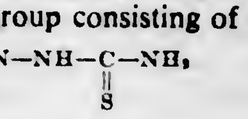
1. A compound selected from the group consisting of:



and



wherein R_1 is a member selected from the group consisting of lower alkyl, cyclopentyl, cyclohexyl, and phenyl, R_2 is a member selected from the group consisting of lower alkyl, and halo lower alkyl, R_3 is hydrogen when R_4 is hydroxy and R_3 and R_4 taken together form a member selected from the group consisting of =O, =NH and

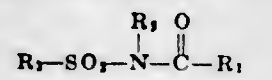


$$=N-NH-\underset{\underset{\displaystyle S}{\|}}{C}-NH_2$$

3,183,266
SULFONAMIDE COMPOUNDS

Edwin A. Matzner, St. Louis, Mo., assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed July 18, 1962, Ser. No. 210,836
6 Claims. (Cl. 260—556)

1. A compound of the formula



$$R_2-SO_2-\overset{\overset{\displaystyle R_3}{|}}{N}-\overset{\overset{\displaystyle O}{\|}}{C}-R_1$$

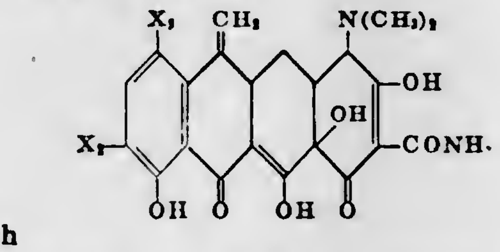
where R_1 is an aromatic group selected from the group consisting of phenyl, pyridyl, benzyl, alpha and beta naphthyl, quinolyl, anthryl, benzquinolyl groups and halo-, hydroxyl, nitro-, and sulfo-substituted phenyl, pyridyl, benzyl, alpha and beta naphthyl, quinolyl, anthryl, benzquinolyl groups; R_2 is selected from the group consisting of alkyl groups containing from 1 to 10 carbon atoms and halo-, hydroxyl, sulfo-, nitro-, carboxy- and alkoxy-substituted alkyl groups containing from 1 to 10 carbon atoms and R_3 is alkyl.

4. N-methyl, N-benzoyl, methylsulfonamide.

3,183,267
6-METHYLENETETRACYCLINE DERIVATIVES

Robert K. Blackwood, Gales Ferry, Hans H. Rennhard, Lyme, John J. Beereboom, Waterford, and Charles R. Stephens, Jr., Niantic, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 6, 1962, Ser. No. 221,870
14 Claims. (Cl. 260—559)

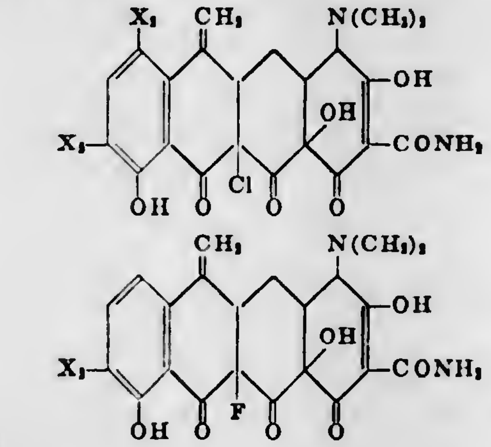
1. A compound selected from the group consisting of compounds of the formula:



in which

- X_2 is selected from the group consisting of hydrogen, nitro and amino;
- and X_3 is selected from the group consisting of hydrogen and chloro;
- and acid addition salts and pharmaceutically acceptable metal salts thereof.

5. A compound selected from the group consisting of compounds of the formulae:



in which

- X_3 is selected from the group consisting of hydrogen and chloro;
- and X_5 is selected from the group consisting of hydrogen and nitro;
- and acid addition salts and pharmaceutically acceptable metal salts thereof.

3,183,268
PROCESS FOR PREPARING N-PHENETHYL-N'-PHENYL-PHENYLENE DIAMINES

Farris H. Wilson, Jr., Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 15, 1960, Ser. No. 56,114
5 Claims. (Cl. 260—570.8)

1. A process for preparing an N-aralkyl-N'-phenylphenylene diamine comprising bringing a mixture of (1) a phenylene diamine selected from the group consisting of phenylene diamine and ring substituted phenylene diamines wherein the substituent is selected from the group consisting of halogen radicals, alkyl radicals having from 1 to 9 carbon atoms and alkoxy radicals having from 1 to 9 carbon atoms and (2) an aralkyl composition selected from the group consisting of styrene, methyl styrene, ethyl styrene, methoxy styrene, ethoxy styrene, chlorostyrene, bromostyrene and nitrostyrene to reflux at a temperature between 150 and 250° C., adding to the refluxing reactants from 0.01 to 5.0% by weight, based on the weight of the reactants, of a catalyst selected from the group consisting of alkali metals, alkali metal hydrides and alkali metal amides and introducing to the reaction mixture an additional amount of said aralkyl composition at a rate sufficient to maintain the reaction at an approximately constant reflux temperature between 150 and 250° C. until the reaction is complete, the total amount of aralkyl composition employed being between 1.5 and 2.5 mols per mol of phenylene diamine.

3,183,269
PROCESS FOR MAKING ETHYLENE DIAMINE BY TREATING ETHYLENE DICHLORIDE WITH AMMONIA, AND SEPARATION OF VINYL CHLORIDE FROM AMMONIA

Dino Costabello, Novara, Camillo Merli, Milan, and Giovanni Maiorano and Gioacchino Boffa, Novara, Italy, assignors to Montecatini Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy
Filed Sept. 12, 1960, Ser. No. 55,304
Claims priority, application Italy, Sept. 25, 1959, 16,024/59
5 Claims. (Cl. 260—585)

1. A process for removing vinyl chloride from recycle ammonia in the production of ethylene diamine from ammonia and ethylene dichloride, which comprises withdrawing the vinyl chloride-ammonia mixture produced in the production of ethylene diamine, absorbing the ammonia in ammoniacal water at a pressure above atmospheric and below 25 atmospheres, passing unabsorbed gaseous ammonia and vinyl chloride into a second washing with water operated at substantially atmospheric pressure, employing the washing water of the first-mentioned washing, and ammonia contained therein, for reaction with ethylene dichloride to make ethylene diamine, and venting gaseous vinyl chloride from said second washing.

3,183,270
PREPARATION OF FORMALDEHYDE

Johannes J. M. Evers, Sittard, and Willem J. van Asselt, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed Mar. 6, 1961, Ser. No. 93,358
Claims priority, application Netherlands, Mar. 7, 1960, 249,163; June 4, 1960, 252,342; Aug. 2, 1960, 254,465; Jan. 25, 1961, 260,480
10 Claims. (Cl. 260—606)

1. In a process for the preparation of formaldehyde by the thermal decomposition of a mixture consisting essentially of water and a component selected from the group consisting of formaldehyde, paraformaldehyde, α-polyoxymethylene and β-polyoxymethylene, wherein a mixture of vapors is given off as a result of said thermal decomposition, the improvement which comprises

(1) carrying out said thermal decomposition in the presence of
  (*a*) a substance which, under the reaction conditions of a pH of less than 7 and a degree of volatility not exceeding 1% of its weight per hour without respect to water present as diluent and shows an acid reaction and
  (*b*) a liquid vehicle which is inert under the reaction conditions and has a high boiling point such that the partial vapor pressure thereof is low at the reaction conditions, said boiling point being

such that more than half of the issuing vapor mixture consists of liquid vehicle, said liquid vehicle being capable of dissolving the substance showing acid reaction and being solvent for water both at the reaction conditions and at a cooling temperature above the boiling point of formaldehyde.

(2) passing the mixture of vapors formed during said thermal decomposition into a cooling zone maintained at a temperature above the boiling point of formaldehyde to form a condensate containing the evaporated vehicle and water,

(3) discharging the resulting condensate from said zone, and

(4) recovering as the remaining part of said mixture of vapors a highly pure formaldehyde which does not tend to form undesirable low molecular weight polymerization products.

3,183,271
FORMALDEHYDE STABILIZATION

Benjamin D. Halpern, Jenkintown, Pa., and Robert B. Dean, Bainbridge, and Verna B. Gardner, Mount Upton, N.Y., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 1, 1961, Ser. No. 156,519

8 Claims. (Cl. 260—606)

1. An aqueous solution stabilized against separation of paraformaldehyde, the solution comprising water, formaldehyde dissolved therein to a concentration of about 30%–50% by weight and an admixed water dispersible nonionic surfactant, the surfactant being the product of alkoxylation of an aliphatic compound with ethylene oxide in the proportion of about 3–40 moles of the oxide to one mole of said aliphatic compound, said aliphatic compound being a partial ester of sorbitol with a C_{12}–C_{18} fatty acid, and the proportion of the stabilizer being below the critical micellar concentration and being about 0.000001–0.05 part by weight for 100 parts of said solution.

3,183,272
BORON COMPOUNDS AND METHOD FOR MAKING THE SAME

Joseph J. Dvorak, Rockaway, Daniel Grafstein, Morristown, and Marvin M. Fein, Westfield, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Apr. 25, 1961, Ser. No. 106,428

7 Claims. (Cl. 260—606.5)

1. The method of making carborane which comprises oxidizing a member of the group consisting of bis(hydroxymethyl)carborane and its lower alkanoic acid diesters under alkaline conditions with an oxidizing agent selected from the group consisting of hydrogen peroxide, and water-soluble dichromates and permanganates.

3,183,273
TRI-SUBSTITUTED PHENOLS HAVING ALKYL, TERTIARY ALKYL, AND ARALKYL SUBSTITUENTS

Ronald B. Specht, Kent, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Original application Mar. 31, 1955, Ser. No. 498,430, now Patent No. 2,967,853, dated Jan. 10, 1961. Divided and this application July 26, 1960, Ser. No. 45,276

5 Claims. (Cl. 260—619)

1. As composition of matter, a tri-substituted phenol having the ortho positions substituted with (*a*) an aralkyl substituent selected from the group consisting of alpha phenyl alkyl radicals and benzyl radicals and (*b*) a tertiary alkyl substituent having at least 4 but not over 12 carbon atoms and the para position substituted with a methyl radical.

3,183,274
TRIMETHYLOLPROPANE

Max O. Robeson, Corpus Christi, Tex., assignor to Celanese Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 9, 1956, Ser. No. 614,805

7 Claims. (Cl. 260—635)

4. Process for the production of trimethylolpropane which comprises continuously reacting, in an aqueous medium, a mixture of butyraldehyde, formaldehyde and sodium hydroxide, there being about 6 to 10 moles of formaldehyde per mole of butyraldehyde, to produce trimethylolpropane and sodium formate and separating the trimethylolpropane from the sodium formate.

3,183,275
PREPARATION OF PARA-NITROHALOBENZENES

Allen K. Sparks, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,188

11 Claims. (Cl. 260—646)

1. In the nitration of a halobenzene with an acylnitrate, the improvement which comprises increasing the amount of the para isomer in the nitrohalobenzene nitration product by nitrating said halobenzene with said acyl nitrate in an alkyl halide solvent.

3,183,276
PROCESS FOR THE PRODUCTION OF FLUORINATED ORGANIC COMPOUNDS

Martino Vecchio, Milan, Italy, assignor, by mesne assignments, to Edison, Milan, Italy, a corporation of Italy

No Drawing. Filed Feb. 28, 1961, Ser. No. 92,142

Claims priority, application Italy, Mar. 16, 1960, 4,571/60, Patent 628,607; May 25, 1960, 9,365/60, Patent 630,920

14 Claims. (Cl. 260—653.4)

1. A fluorination process comprising the step of reacting a halogenated aliphatic compound selected from the group consisting of one and two carbon chlorinated alkanes and alkenes with gaseous hydrofluoric acid over a thorium fluoride catalyst at a temperature between 100 and 500° C. and with a contact time of less than 60 seconds.

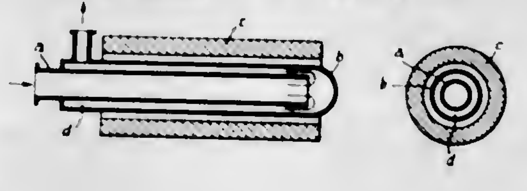
3,183,277
PROCESS FOR THE MANUFACTURE OF FLUORETHYLENES

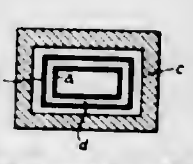
Otto Scherer, Frankfurt am Main, Alfons Steinmetz, Kelkheim, Taunus, and Heinrich Kühn, Walter Wetzel, and Karlheinz Grafen, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

Filed Mar. 10, 1961, Ser. No. 94,864

Claims priority, application Germany, Feb. 6, 1958, F 24,987

16 Claims. (Cl. 260—653.5)





1. In the process for preparing fluorethylenes by pyrolytic dehydrochlorination of a compound of the formula

RCF_2Cl, in which R is a member selected from the group consisting of hydrogen, methyl, and methyl substituted by from one to two halogen atoms having an atomic weight of at most 36, the improvement which comprises pyrolyzing said compound by passing it in the gaseous state through a reaction zone having a slit-shaped cross-section defined by a single self-recurrent line, the length-to-width ratio of said slit-shaped cross-section being at least 2:1, and the width of said section being between 1.5 mm. and 18 mm.

3,183,278
PROCESS FOR HYDROGENATING CARBOCYCLIC AROMATIC COMPOUNDS

John J. Koch, Jr., Nutley, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Filed Nov. 20, 1962, Ser. No. 239,063

11 Claims. (Cl. 260—667)

1. A process for the nuclear hydrogenation of a carbocyclic aromatic compound of the group consisting of unsubstituted carbocyclic aromatic compounds and nuclear substitution derivatives thereof wherein the substituent is an alkyl radical, which comprises contacting the compound in the presence of hydrogen with a supported ruthenium-containing catalyst also containing as promoter a material selected from the group consisting of platium, rhodium and palladium, the ruthenium content of the catalyst being at least about 20 percent by weight of the catalytically active metal content of the catalyst.

3,183,279
PURIFICATION OF 2-METHYLNAPHTHALENES BY SELECTIVE OXIDATION OF THEIR ISOMERS

Ivor W. Mills, Glenolden, and John J. Melchiore, Wallingford, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed May 11, 1961, Ser. No. 109,271

6 Claims. (Cl. 260—674)

1. Process for purifying 2,6-dimethylnaphthalene which comprises contacting it in liquid phase with moleclular oxygen at a temperature in the range from 50 to 145° C. in the presence of a metallic catalyst for liquid phase partial oxidation of alkyl aromatic compounds to carboxylic acids, thereby to selectively oxidize isomers of 2,6-dimethylnaphthalene, and separating unoxidized 2,6-dimethylnaphthalene from the oxidation products.

4. Process for purifying an alkylnaphthalene having a methyl group in the 2-position which comprises contacting a mixture of said alkylnaphthalene and an alkylnaphthalene having a methyl group in the 1-position, in liquid phase with an oxidizing agent consisting essentially of molecular oxygen at a temperature in the range from 50 to 145° C. in the presence of a metallic catalyst for liquid phase oxidations of alkyl aromatic compounds to carboxylic acids, thereby to selectively oxidize alkylnaphthalene having a methyl group in the 1-position, and separating the first-named alkylnaphthalene from the oxidation products.

3,183,280
HYDROCARBON CONVERSION PROCESS AND CATALYST

William Schoen, Houston, Tex., and Joe T. Kelly, Lake Charles, La., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Jan. 8, 1962, Ser. No. 165,278

15 Claims. (Cl. 260—683.76)

8. A process of isomerizing less branched paraffin hydrocarbons to more highly branched paraffin hydrocarbons, which process comprises contacting the paraffin hydrocarbon charge with a catalyst comprising a Friedel-Crafts halide and an organophosphorous acid in a weight ratio of between about 0.2:1 to 2:1, at a reaction temperature of between about 100° F. to 250° F. for between about 0.5 to 6 hours, and recovering therefrom a product which is substantially more highly branched than the feed.

3,183,281
STABLE SELF-CATALYZING EPOXY RESIN COMPOSITIONS

David H. Clemens, Willow Grove, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

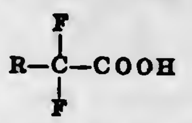
No Drawing. Filed July 19, 1961, Ser. No. 125,096

4 Claims. (Cl. 260—837)

1. A composition comprising an organic solvent having dissolved therein

(A) at least one linear addition copolymeric material selected from the group consisting of

(1) a copolymer consisting of monoethylenically unsaturated copolymerizable monomers and having 3 to 15% by weight of dicarboxylic acid anhydride-containing units and 0.25 to 10% by weight of organic base-containing units selected from the group consisting of units having amine and quaternary ammonium groups in the form of a salt of an acid of the formula



$$R-\overset{\displaystyle F}{\underset{\displaystyle F}{\overset{|}{\underset{|}{C}}}}-COOH \qquad (IV)$$

where R is selected from the group consisting of fluorine, bromine, chlorine, methyl, ethyl, halomethyl, and haloethyl,

(2) a copolymer consisting of monoethylenically unsaturated copolymerizable monomers and having 5 to 25% by weight of units containing both carboxylic acid groups and and basic groups selected from the group consisting of amine and quaternary ammonium groups in the form of a salt of Formula IV, and

(3) a blend of a copolymer consisting of monoethylenically unsaturated copolymerizable monomers and having 1 to 35% by weight of carboxylic acid-containing units and a copolymer consisting of monoethylenically unsaturated copolymerizable monomers and having 0.25 to 10% by weight of organic base-containing units selected from the group consisting of units having amine and quaternary ammonium groups in the form of a salt of an acid of Formula IV, and

(B) from 5 to 200% by weight of the copolymeric of a resin-forming polyether containing a plurality of vic-epoxide groups.

3,183,282
NON-AQUEOUS SOLUTIONS OF ACRYLIC ESTER/ACID COPOLYMER AND THERMOSETTING ALKYLATED AMINOPLAST RESIN-FORMING CONDENSATE

Melvin D. Hurwitz, Huntingdon Valley, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed July 27, 1956, Ser. No. 600,406

23 Claims. (Cl. 260—856)

1. A composition comprising a solution in an organic solvent of (*a*) 5 to 95 parts by weight of a linear water-insoluble thermoplastic copolymer of 1 to 10 mole percent of an acid selected from the group consisting of acrylic acid, methacrylic acid, and itaconic acid and 90 to 99 mole percent of at least one alkyl ester of one of said acids in which the alkyl group contains 1 to 18 carbon atoms, and (*b*) 95 to 5 parts by weight respectively of a resin-forming alkylated condensate of formaldehyde with a compound selected from the group consisting of urea and aminotriazines, said alkylated condensate containing alkoxymethyl groups having from 2 to 19 carbon

atoms, the amount of condensate being at least sufficient to provide 1.5 equivalents of oxymethyl per equivalent of carboxyl in the copolymer.

3,183,283
BLENDS OF LOW MOLECULAR WEIGHT, HIGHLY BRANCHED POLYETHYLENES WITH HIGH MOLECULAR WEIGHT, SPARSELY BRANCHED POLYETHYLENES

Frederick P. Reding, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 8, 1958, Ser. No. 707,668

6 Claims. (Cl. 260—897)

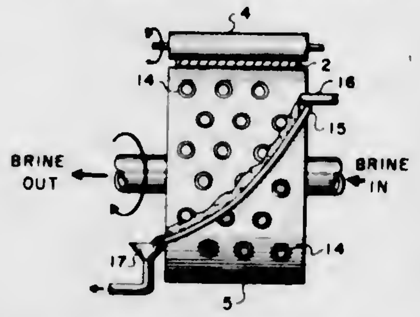
1. A composition of matter having improved environmental stress cracking resistance and extrudability properties, which consists essentially of a homogeneous mixture of from about 5 to about 25 parts by weight of a low molecular weight, highly branched polyethylene having a melt index of from about 120 to about 20,000 decigrams per minute and a degree of branching above about 2 methyl groups per 100 carbon atoms with from about 75 to about 95 parts by weight of a sparsely branched, high molecular weight polyethylene having a melt index below about 4 decigrams per minute and a degree of branching below about 2 methyl groups per 100 carbon atoms, per 100 parts by weight of said composition, said composition having a melt index of from about 0.1 to about 18 decigrams per minute and a density of from about 0.915 to about 0.935 gram per cc.

3,183,284
MANUFACTURE OF CONTAINER GASKETS

Richard J. Haberlin, Weston, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Sept. 1, 1961, Ser. No. 135,501

3 Claims. (Cl. 264—28)



1. A method of forming a multiplicity of gaskets on a form-stable sheet comprising: providing a multiplicity of mold cavities of the desired shape in a printing surface, filling said mold cavities with a gasket-forming composition supplied at a temperature at least 100° F. higher than the temperature of said printing surface, shock chilling said gasket forming composition to form-stable shapes in said mold cavities, thereafter contacting the exposed surfaces of the chilled shapes with a form-stable sheet heated to a temperature sufficient to at least soften said exposed surfaces and cause said chilled shapes to adhere thereto, disengaging said sheets and adhering shapes from said printing surface and treating said adhering shapes to convert them to gaskets which are form-stable at room temperatures.

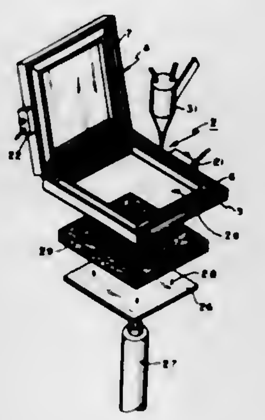
3,183,285
METHOD OF MAKING A UNIT FILTER ASSEMBLY

Robert J. Boylan, Jeffersonville, Ind., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed July 31, 1961, Ser. No. 128,039

4 Claims. (Cl. 264—45)

1. A method of forming a filter assembly of a type including an open-end border frame member having a sheet of filter medium disposed therein and supported thereby comprising the steps of supplying a controlled quantity of expansible polymeric plastic compound in unexpanded form along a partially confined border frame mold surrounding a filter medium support zone, positioning and supporting an appropriately sized sheet of porous filter medium adjacent said partially confined mold with peripheral edge portions of said medium extending over said expansible plastic compound introduced along said partially confined mold, confining the remaining portion of said border frame mold with said edge portions of said filter medium extending therein, heating said plastic compound to expand said compound to the limits of confinement of said mold with said edge portions of said porous filter medium embedding in said plastic compound, and releasing the finished filter assembly from confinement after said heated and expanded plastic compound has set.

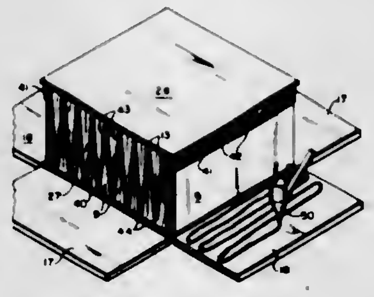


3,183,286
METHOD OF MAKING UNIT FILTER ASSEMBLIES

John D. Harms, Valley Station, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed July 31, 1961, Ser. No. 128,047

8 Claims. (Cl. 264—45)



1. A method of forming a filter assembly of a type including an open-end border frame member having a sheet of filter medium disposed therein and supported thereby comprising the steps of supporting a sheet of porous filter medium on a support jig in the form it is to have in final assembly with peripheral edge portions thereof extending into a partially assembled and partially confined border frame mold adjacent to and surrounding said support jig, applying a controlled quantity of expansible plastic compound along one side of said border frame mold in unexpanded form, assembling and completely confining the overall boundaries of said border frame mold with said unexpanded compound disposed therein, expanding said plastic compound to the limits of confinement of said mold so that said porous edge portions of said filter medium are embedded in the expanded compound, and allowing said plastic compound to set in such embedded relationship before releasing the finished filter assembly.

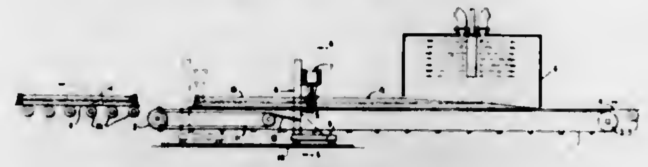
3,183,287
METHOD AND APPARATUS FOR FORMING PARTICLE BOARD PANELS

Kurt Fischer, Bad Munder, Germany, assignor to Metallwerk Bahre K.G., Springe, Hannover, Germany, a firm of Germany

Filed Apr. 16, 1962, Ser. No. 187,532

Claims priority, application Germany, Apr. 25, 1961, B 62,273

12 Claims. (Cl. 264—118)



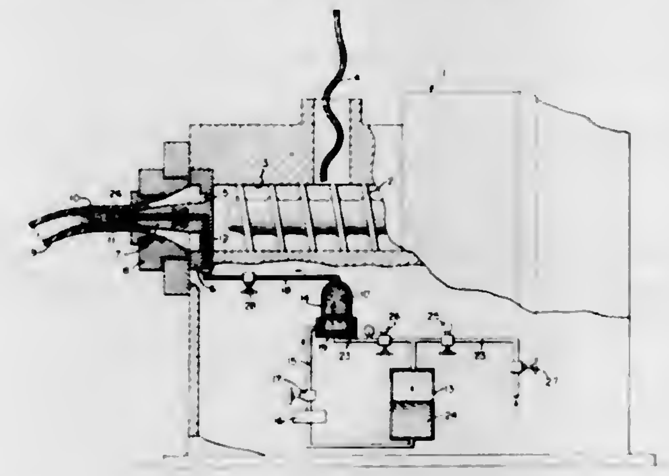
1. In a method for forming particle board panels from discrete particles in which an uncompressed loose mat is first laid on a continuous movable conveyor, then severed into individual sections which sections are subsequently compressed to form cured panels, the improvement comprising cutting a narrow channel transversely of the uncompressed loose mat to sever a section of predetermined length therefrom while supported by the conveyor and concurrently with the cutting of said channel tamping the particles forming the opposed walls of said channel.

3,183,288
METHOD FOR EXTRUDING

Challen E. Taylor, Waukegan, and Robert George Hall, Libertyville, Ill., assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Dec. 21, 1961, Ser. No. 160,981

2 Claims. (Cl. 264—130)



1. In the continuous extrusion of a tubular structure of plastic material, the improved method of lubricating the interior surface of the tubular structure comprising continuously injecting into the interior of the structure as it leaves the extrusion die a lather of minute bubbles formed from an aerated lubricating liquid material to thoroughly cover the interior surface of the tubular structure with a film of the lubricating material formed thereon as the lather deteriorates.

3,183,289
METHOD OF MAKING A POSITIVE FACE VACUUM FORMING MOLD

George W. Leavesley, Jr., Levittown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 15, 1961, Ser. No. 159,505

2 Claims. (Cl. 264—220)

1. The method of making a positive face vacuum forming mold from a negative pattern consisting essentially of the steps:

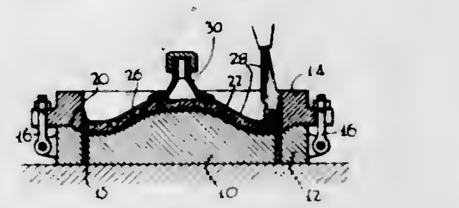
placing said negative pattern in a lower frame box with its front face exposed,

coating the front face of said negative pattern with a parting agent,

placing an upper frame box on said lower frame box,

spraying a plurality of layers of porous deposited spray metal on said pattern to form a porous shell on the front face of said pattern and simultaneously bonding said porous shell to said upper frame box,

covering a small area of the rear surface of said porous shell with a hollow outlet fixture,



applying a self-hardening non-porous sealer over the rear surface of said porous shell to simultaneously interconnect said hollow outlet fixture with said porous shell and to simultaneously interconnect said upper frame box with said sealer,

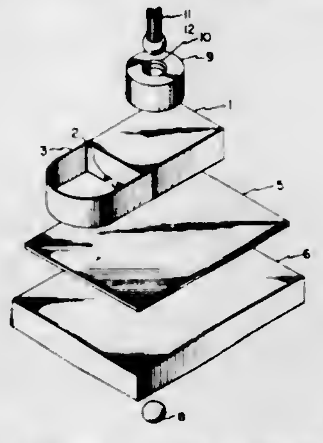
and removing said porous shell, said sealer, said upper frame box and said hollow outlet as an intergral positive face vacuum forming mold from said negative pattern and said lower frame box.

3,183,290
METHOD OF FILLING GROOVES ON SUBSTRATES WITH CURABLE RESINS

Robert J. Guarnieri, Norwalk, and Seymour Weiner, Stamford, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware

Filed Aug. 17, 1962, Ser. No. 217,593

6 Claims. (Cl. 264—259)



1. A process of filling grooves in substantially flat solid substrates with cured resins comprising in combination,

(*a*) forming a dam around one end of the substrate the lower edge of which is substantially flush with the grooved surface of the substrate, said dam extending above the bottom of the grooves, and enclosing one end of each groove,

(*b*) applying the substrate and dam to a smooth sealing surface with sufficient pressure to substantially flat seal the grooved substrate surface whereby the other end of the grooves remain open,

(*c*) maintaining sealing relationship between the surface and the grooved surface of the substrate,

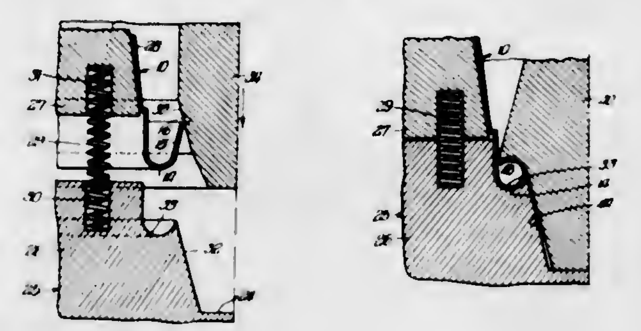
(*d*) filling the reservoir defined by the dam, the end of the substrate and the sealing surface with liquid resin to a level sufficiently above the bottom of the grooves in the substrate so that on removal of a volume of resin corresponding to the volume of the grooves the level still remains above the bottom of the grooves,

(*e*) permitting the liquid resin to flow into and fill the grooves by capillary attraction,

(*f*) curing the resin and removing the sealing surface, dam and resin content of the reservoir from the substrate.

3,183,291
RIM SHAPING APPARATUS FOR PLASTIC CONTAINERS AND METHOD

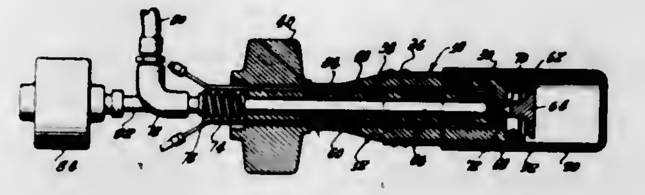
William L. Miller, Skokie, and Kaiji Negoro, Clarendon Hills, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed July 24, 1961, Ser. No. 126,186
4 Claims. (Cl. 264—322)



1. A method of finishing the rim portion of a cup which is initially formed by molding a sheet of thermo-plastic material to provide a cup body having a relatively narrow exterior skirt which extends in the direction of the bottom of the cup, which is outwardly flared and which is connected to the top of the cup body by a portion of semi-circular cross section, which method comprises, engaging the outwardly flared free marginal portions of the skirt with a first heated die ring so as to first soften said marginal portions and then shaping the skirt into a substantially cylindrical section by moving the die ring relative to the skirt, and thereafter curling the cylindrical skirt by engaging the free marginal portions thereof with a curved surface on a second heated die ring and moving the second die ring relative to the skirt so as to produce a smooth finished bead of rounded contour on the cup rim.

3,183,292
PLASTIC MOLDING APPARATUS AND METHOD

Frank Dvoracek, 728 E. Fairmount, Burbank, Calif.
Continuation of application Ser. No. 765,704, Sept. 30, 1958. This application May 25, 1962, Ser. No. 199,561
3 Claims. (Cl. 264—335)

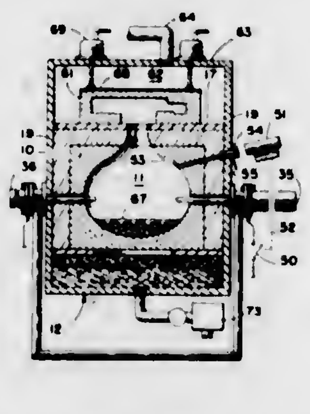


1. A method of removing a hollow, elastomeric article having an open end from a core which extends into said article through said open end thereof and which has an external configuration conforming to the internal configuration of said article, including the steps of: placing over at least a portion of said article a guard having an internal configuration conforming to the external configuration of said portion of said article and closely fitting said portion of said article; and introducing a fluid into said article through said open end thereof and between said article and said core to blow said article off said core, said guard restraining said portion of said article against substantial enlargement while said article is being blown off said core, and said guard being blown off said core with said article.

ELECTRICAL

3,183,293
ELECTRIC FURNACE

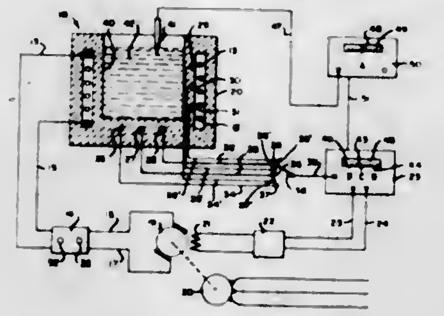
Jack M. Beasley, Grand Prairie, and Herbert Greenewald, Jr., Dallas, Tex., assignors to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware
Original application Aug. 11, 1961, Ser. No. 130,830, now Patent No. 3,106,594, dated Oct. 8, 1963. Divided and this application Nov. 19, 1962, Ser. No. 238,600
7 Claims. (Cl. 13—9)



7. A device for maintaining a material in a molten state, said device comprising:
- a chamber containing said material,
- means for maintaining an atmosphere of thermally ionized noble gas within said chamber, and
- means for establishing a diffuse flow of electrical current substantially throughout said noble gas atmosphere to maintain said chamber at a temperature above the melting point of said material.

3,183,294
TEMPERATURE CONTROL APPARATUS

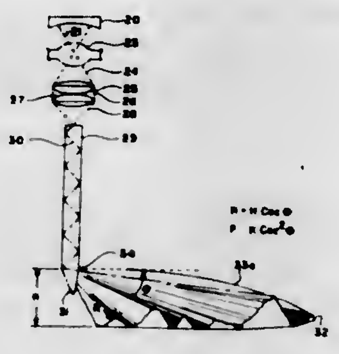
Robert J. Kasper, Seven Hills, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 9, 1962, Ser. No. 186,104
4 Claims. (Cl. 13—27)



2. An apparatus for controlling the temperature of a molten metal within a furnace having refractory walls, said apparatus comprising an induction heating coil surrounding said furnace, an electric generator for energizing said coil, temperature sensing means within said refractory walls and spaced from said molten metal, means for measuring the temperature sensed by said sensing means, calibrating means for establishing a temperature sensed by said sensing means which corresponds to the desired temperature for the molten metal in said furnace, a control device for comparing said temperature measured by said measuring means and said established temperature, a signal generating device to control said generator in accordance with the difference between said measured temperature and said established temperature.

3,183,295
LIGHT PIPE

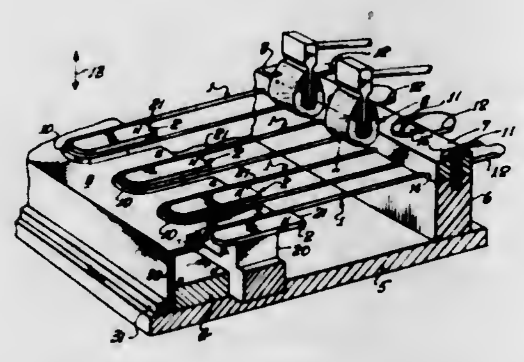
Walter E. Myles, Alexandria, Va., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed June 11, 1962, Ser. No. 201,691
5 Claims. (Cl. 35—10.4)



1. In a radar simulator, a system for simulating a cosecant squared θ type radar antenna beam comprising: a high intensity source of light; a sapphire light pipe having a vertically disposed longitudinal axis and a cylindrical surface at the emitting end of the light pipe; a condensing lens system for focussing light rays from said source along said light pipe axis; two intersecting plane reflecting surfaces oblique to the paths of said rays within the light pipe forming a dihedral angle subtending the cylindrical surface for reflecting said rays vertically through the cylindrical surface into a cosecant squared θ type pattern and horizontally into a desired beam width; and substantially parallel scratches on said cylindrical surface for diffusing said reflected rays only horizontally.

3,183,296
TONE GENERATING MEANS FOR ELECTRICAL MUSICAL INSTRUMENTS

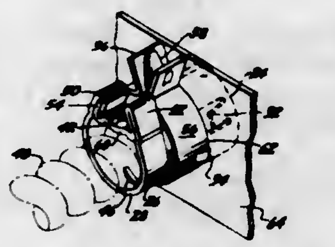
Benjamin F. Miessner, 680 NE. 105th St., Miami Shores, Fla.
Filed Nov. 5, 1964, Ser. No. 409,063
14 Claims. (Cl. 84—1.15)



1. Apparatus for generating musical tones comprising
- a mechanical oscillator in the form of an elongated electrically-conductive loop having a free closed end portion and two fixed open end portions, and disposed substantially in one plane,
- a magnet structure defining a radial magnetic field whose lines of force extend in and parallel to said plane and intersect said closed end portion,
- means to excite said oscillator into vibratory oscillation at its natural frequency in a direction substantially normal to said plane,
- electroacoustic transducing means,
- and an electrical signal path from said open end portions to said transducing means.

3,183,297
CONNECTOR FOR OUTLET BOXES

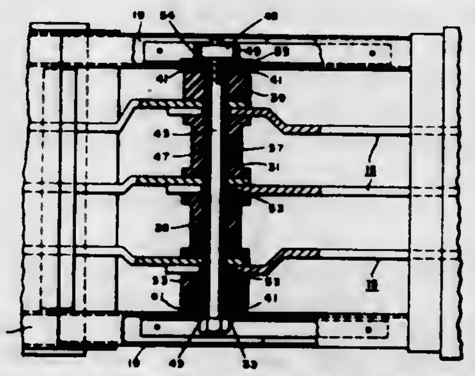
Lawrence M. Curtiss, Mountainside, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Oct. 24, 1962, Ser. No. 232,692
12 Claims. (Cl. 174—65)



1. A connector fitting adapted to be secured in an outlet box knock out opening comprising a split cylindrical member, and coactable means integral with said cylindrical member, extending radially therefrom in opposed, diverging relation and including abutting camming members operable to expand said cylindrical member upon application of squeeze pressure on said coactable means.

3,183,298
BUS BAR CONNECTING MEANS

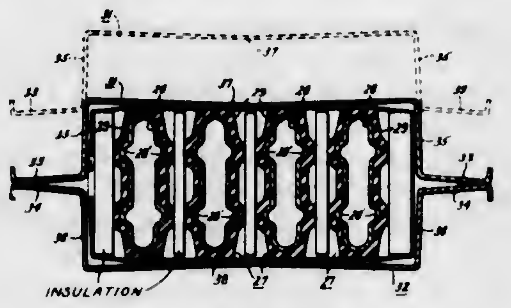
Charles L. Weimer, Patterson Heights, and Rex S. Garrett, Brighton Township, Beaver County, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 11, 1960, Ser. No. 8,151
3 Claims. (Cl. 174—88)



1. In combination, two elongated sets of bus bars, each of said sets comprising at least two bus bars, connecting means comprising a first connecting member and a second connecting member cooperating with said first connecting member to connect said two sets of bus bars together in a longitudinal relationship with each of the two bus bars of one of said sets overlapping a different one of the two bus bars of the other of said sets, each of the two bus bars of said one set having an opening therein, an insulating spacing member having an opening therein in line with said bus bar openings, said first connecting member extending through said openings in said bus bars and through said opening in said insulating spacing member, said insulating spacing member comprising a first part and a second part, said first part engaging a bus bar at each of its two opposite ends to space two overlapped bus bars from two other overlapped bus bars, each of the two bus bars of said other set being bifurcated at the overlapped end thereof and straddling said first connecting member, said second part of said insulating spacing member being straddled by the bifurcated end of a first of said bus bars, said first bus bar being in overlapping relationship with a second bus bar, said connecting means being operable to permit separation of said two sets of bus bars, said two sets of bus bars being separable by means of a longitudinal movement of either one of said sets, when separated said second part of said insulating spacing member spacing said second bus bar from said first part of said insulating spacing member, and

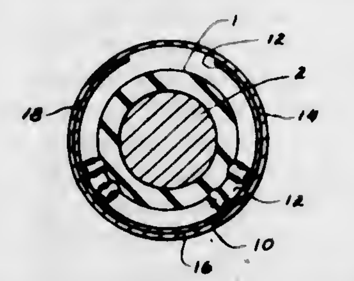
the dimension of said second part of said insulating spacing member in the direction of said spacing being less than the thickness of said overlapped first and second bus bars.

3,183,299
BUSWAY WITH RESILIENTLY BOWED HOUSING
Frank C. Johnston, West Hartford, Conn., and Paul Krauss, Broomall, Pa., assignors to General Electric Company, a corporation of New York
Original application May 26, 1958, Ser. No. 737,954, now Patent No. 3,042,889, dated July 3, 1962. Divided and this application Apr. 16, 1962, Ser. No. 187,664
10 Claims. (Cl. 174—99)



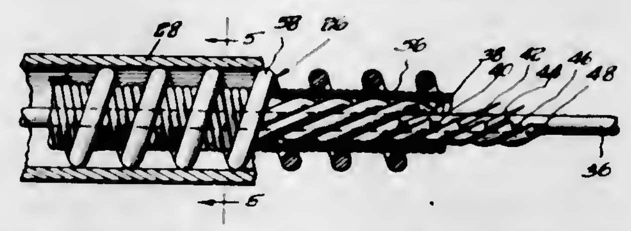
1. An electric power busway comprising a plurality of bus bars in side-by-side spaced relation with their opposed edges in two substantially parallel spaced planes, insulation covering at least the edges of each bus bar, an elongated housing surrounding said bus bars comprising a pair of resilient housing parts having bases normally inwardly bowed about their longitudinal center lines, said housing parts being positioned with their bases adjacent the edges of said bus bars, and means connecting said housing parts in deformed condition flattening said bases against the bus bar edges in intimate thermal and frictional contact with said insulation of said bus bars.

3,183,300
ELECTRICAL CABLE HAVING A LAMINATED CORRUGATED SHEATH
Ludwik Jachimowicz, Elizabeth, and Jerzy Adam Olszewski, Perth Amboy N.J., assignors to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed Feb. 11, 1963 Ser. No. 257,505
6 Claims. (Cl. 174—106)



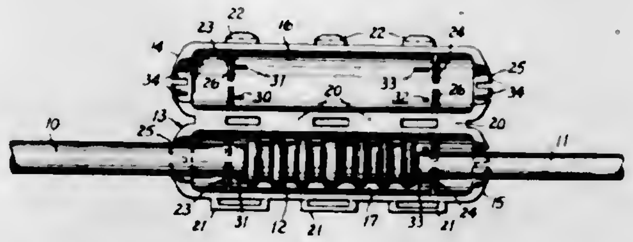
6. A laminated helically corrugated sheath for an electric cable comprising an outer steel strip folded longitudinally into a tube with the abutting longitudinal edges of said strip welded together in a longitudinally extending seam to form a moisture-impervious barrier, a narrower strip of highly conductive material within said steel sheath, said highly conductive strip being folded longitudinally into a tube with the longitudinal edges thereof separated from each other and from said seam so that the seam is within the gap between edges of said conductive strip, said laminated sheath being helically corrugated and said highly conductive strip being contiguous and tightly bonded to said steel sheath along the entire convoluted surface of said highly conductive sheath, and means for electrically coupling said highly conductive strip to said steel sheath.

3,183,301
FLEXIBLE PUSH-PULL CABLE
Andrew J. Kompanek, Jr., Lansdale, Pa., and Lawrence Phelan, Massapequa, N.Y., assignors to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Apr. 5, 1961, Ser. No. 100,833
7 Claims. (Cl. 174—108)



2. A flexible push-pull cable of the type described comprising a plurality of wire means helically wound with a relatively long lead and defining a longitudinally extending central passageway, said wire means being adapted to accommodate tension loads, core means extending through said passageway, at least a part of one of said means comprising flow conducting means and which part is substantially free of longitudinal cable loads, and a peripherally disposed wire helically wound around said wire means with a relatively short lead and presenting spaced coils providing tooth elements cooperable with gear means and the like.

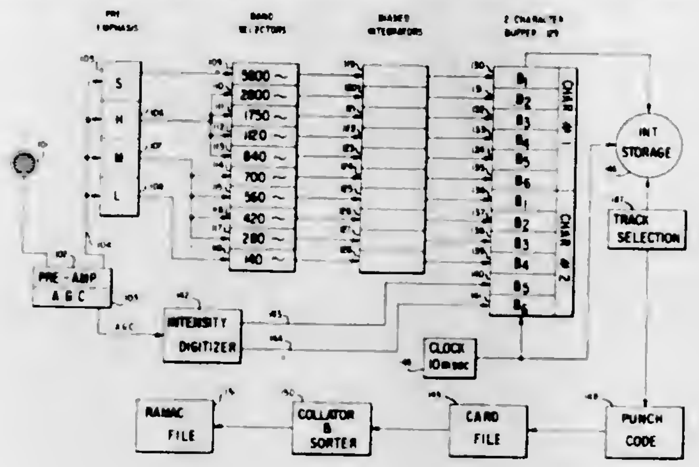
3,183,302
COVER FOR AN ELECTRICAL CONNECTOR
Charles J. Wochner, Florissant, and John A. Toedtman, Warson Woods, Mo., assignors to Jasper Blackburn Corporation, St. Louis, Mo., a corporation of Missouri
Filed Jan. 8, 1962, Ser. No. 164,746
2 Claims. (Cl. 174—138)

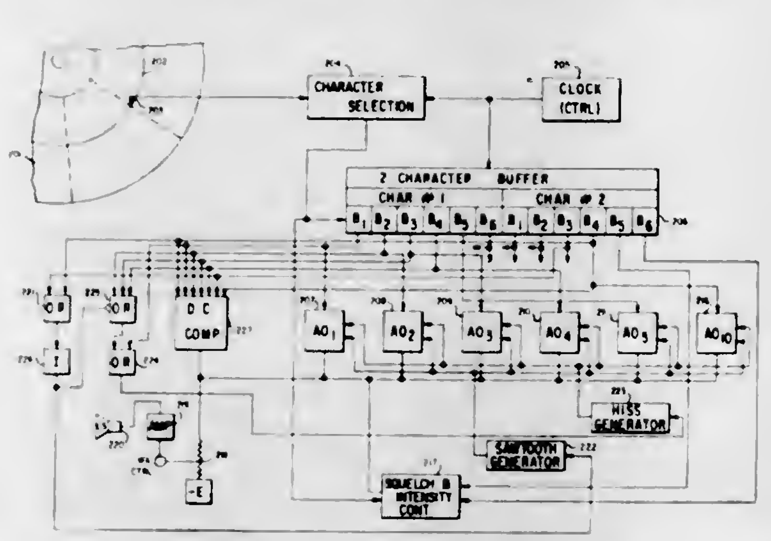


1. A cover for an electrical connector comprising:
(*a*) an elongate tubular casing made of insulating material, the casing having end walls,
(*b*) a pair of integral partitions extending into the casing in longitudinally spaced relation to provide a compartment therebetween, and
(*c*) a plurality of abutments integral with the casing and extending into the casing compartment, at least one abutment being located at one end of the compartment, and more than one abutment being located at the other end of the compartment,
(*d*) the longitudinal distances between each abutment at the said one end of the compartment and each abutment at the said other end of the compartment being different for accommodating connectors of different lengths adapted to be located therebetween and engaged endwise thereby.

3,183,303
SYSTEM FOR VOICE ANSWER-BACK FROM DATA PROCESSOR
Genung L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 21, 1961, Ser. No. 160,994
1 Claim. (Cl. 179—1)

A voice answer-back system comprising an audio input to electrical output transducer, means for periodically sampling said electrical output, means for translating said samples to multiple bit digital codes representing the frequency and intensity of said audio input, means for storing said digital codes, a buffer storage device containing a plurality of bit storage locations equal in number to the number of bits specifying each audio sample, means for sequentially reading said digital codes out of storage in a desired order, means for placing each of said digital codes into said buffer storage device, a plurality of oscillators, certain of the bit storage locations in said buffer storage device being connected to associated ones of said oscillators, each of said oscillators including means responsive to the condition of the bit storage locations connected thereto for enabling said oscillator, the output of each of

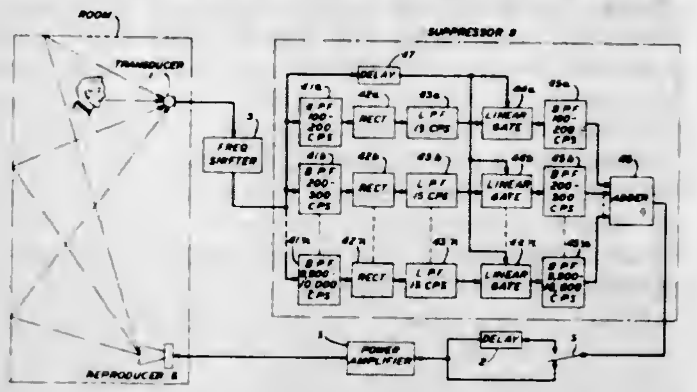




said oscillators being connected to an audio transducer whereby said audio transducer produces audio sounds synthesized from the outputs of said oscillators, an intensity control circuit, certain of said storage locations in said buffer storage device being connected to said intensity control circuit, said intensity control circuit including means responsive to the conditions of the associated storage locations, said last-named means producing a variable impedance output, said variable impedance output being connected to said audio transducer whereby the amplitude of the audio sound produced varies in accordance with the digital codes stored in said buffer storage device.

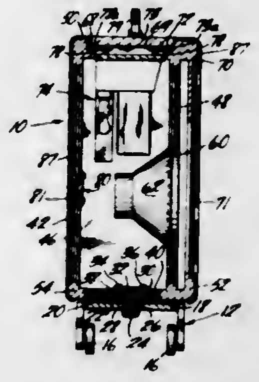
3,183,304
SOUND AMPLIFICATION SYSTEM
Manfred R. Schroeder, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 7, 1962, Ser. No. 178,190
5 Claims. (Cl. 179—1)

1. In a sound amplification system comprising a microphone, a power amplifier, and a loudspeaker,
  means in circuit relation with said microphone, amplifier and loudspeaker for preventing instability due to acoustic feedback between said loudspeaker and said microphone including
  a frequency shifter for changing the frequency of each frequency component in the amplitude spectrum of an incoming wave by a uniform, predetermined amount, to form a frequency shifted wave having an amplitude spectrum with frequency components that differ from the corresponding frequency components of the spectrum of said incoming wave by said predetermined amount of frequency change, and



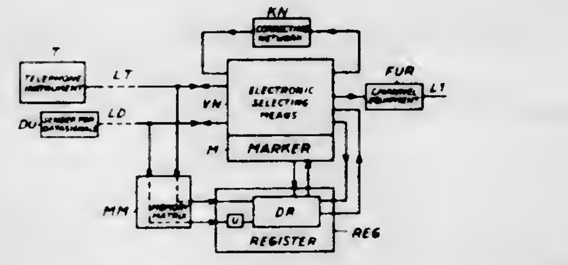
  means connected to said frequency shifter for individually suppressing in the spectrum of said frequency shifted wave each frequency component whose amplitude is less than a preassigned threshold.

3,183,305
PORTABLE SOUND SYSTEM
Oliver Jespersen, Flushing, N.Y., assignor to Ampeg Company, Inc., Linden, N.J., a corporation of New York
Filed July 27, 1962, Ser. No. 212,990
3 Claims. (Cl. 179—1)



1. In a portable sound system, the combination of a loudspeaker enclosure having an opening therein, a detachable and reversible closure removable from and replaceable in inverted relationship in said opening, amplifier means secured to and on one side of said closure, and means retaining said closure releasably in closing relation to said opening.

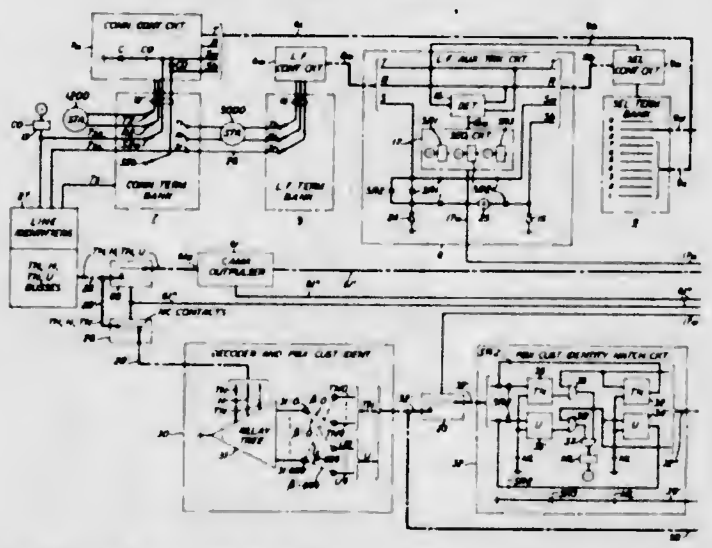
3,183,306
EXCHANGE FOR AUTOMATIC DATA TRANSMISSION IN TELEPHONE SYSTEMS
Anton Christian Jacobaeus, Stockholm, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Nov. 15, 1960, Ser. No. 69,375
Claims priority, application Sweden, Oct. 10, 1960, 9,680/60
1 Claim. (Cl. 179—2)



An exchange in an automatic telehpone system for selective speech and data transmission over channels connected thereto, comprising selecting means for connecting calling channels to called channels, a register, a marker, a correcting network for correcting phase distortion in data transmission and having an input and an output, the input being connected as called channel and the output as calling channel to said selecting means, and means for identifying a calling channel and transmitting numercial signals to said register and said marker in response thereto, said marker responding to said numerical signals by setting up a communication through said selecting means and said register between said calling channel and a called channel, a separate signal indicating whether the calling channel is carrying data transmission or speech transmission, said marker further responding to an indication by said separate signal that data transmission is on said calling channel by selectively connecting said calling channel through said selecting means to said input of said correcting network and by connecting the said output of said correcting network through said selecting means to said called channel.

3,183,307
MULTICUSTOMER PRIVATE BRANCH EXCHANGE

Oscar H. Williford, Bronxville, N.Y., assignor to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed May 11, 1961, Ser. No. 121,799
17 Claims. (Cl. 179—7)

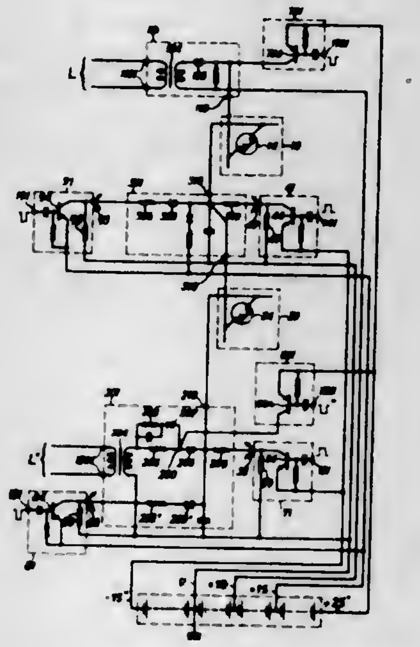


16. In a multicustomer PBX telephone system, a plurality of extension substations, means for establishing connections between substations of the same customer and of different customers in said PBX, said establishing means having means for selectively obtaining the extension numbers of calling and called ones of said substations, and means controlled by said extension number obtaining means for assessing a charge for said connections between substations of different customers in said PBX but not between substations of the same customer in said PBX.

3,183,308
CONTROL DEVICE FOR ELECTRONIC TELEPHONIC SWITCHING NETWORKS OF LARGE CAPACITY

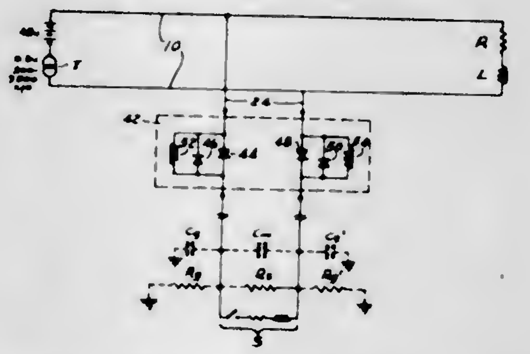
Michel M. Rouzier, 22 Chemin des Postes,
Clichy-sous-Bois, France
Filed Nov. 13, 1961, Ser. No. 151,981
Claims priority, application France, Dec. 30, 1960,
848,404/60
3 Claims. (Cl. 179—18)

1. In a multi-stage switching network comprising a first switching stage and at least one other switching stage connected in cascade therebetween, each of said switching stages being constituted by a plurality of identical matrices of crosspoints having the same number of outputs numbered in a given number sequence, a control device for establishing transmission paths through said cascade-connected stages comprising means for applying connection control pulses selectively to each input of said matrices of said first stage, means for applying connection control pulses in parallel to groups of outputs of the matrices of each stage, each of said groups including an output per matrix of said stage and said outputs having the same number in the matrices of the stage, means for applying connection noise suppression pulses simultaneously with said connection control pulses to said output groups, means for subtracting said connection noise suppression pulses from said connection control pulses at the outputs of switched-on crosspoints and means for inhibiting said connection noise suppression pulses at the outputs of switched-off crosspoints.



3,183,309
TELEPHONE ISOLATION DEVICE

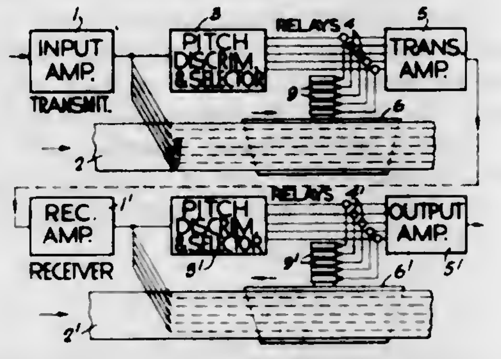
Philip M. Hunt, Falls Church, Va., assignor to Orbit Industries, Inc., Vienna, Va., a corporation of Puerto Rico
Filed Aug. 8, 1960, Ser. No. 48,248
2 Claims. (Cl. 179—35)



1. An isolation device for insertion between the conductors of a telephone line and a subscriber tap line, which tap line is characterized by unavoidable shunt capacitance and leakage resistance, comprising a four-terminal network providing individual paths from each telephone line conductor to a corresponding tap line conductor, each such path including a reversely-poled parallel-connected pair of non-linear rectifying elements individually characterized by substantially zero impedances for absolute values of applied voltage greater than the effective voice-frequency signals carried by said telephone line and a much higher impedance for absolute values of applied voltage less than such signals, and an inductive reactance element shunted across each such pair of rectifying elements.

3,183,310
BANDWIDTH COMPRESSION AND EXPANSION SYSTEM FOR TRANSMISSION OF SPEECH

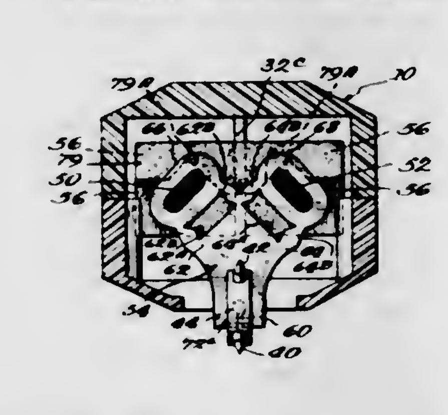
Dennis Gabor, London, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed June 5, 1962, Ser. No. 200,243
7 Claims. (Cl. 179—100.2)



1. Apparatus for the processing of speech signals to produce a change in the bandwidth thereof comprising means for producing a plurality of separate records of the speech signals to be processed, a plurality of sets of pick-up devices, each set comprising a plurality of pick-up devices and each set being associated with a different record, means for enabling said sets to scan the associated records at respectively different recurrence frequencies, means for combining the outputs of the pick-up devices of a set to produce a processed signal consisting of a changed bandwidth version of the speech signals, gating means in the output from each set of pick-up devices, and means responsive to the pitch component of said speech signals for selectively operating said gating means so as to continuously select one of said processed signals as an output signal.

3,183,311
PIEZOELECTRIC PHONOGRAPH PICKUP WITH COMPLIANT YOKE

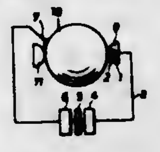
John C. McAlvay, Racine, Wis., assignor, by mesne assignments, to Electro-Voice, Incorporated, Buchanan, Mich., a corporation of Indiana
Filed Feb. 24, 1959, Ser. No. 795,174
6 Claims. (Cl. 179—100.41)



3. Transducer apparatus, including in combination, a pair of elongated bender type transducer elements arranged to be bent in planes at right angles to each other for generation of binaural signals, stylus means for actuating said elements having components of movement in said directions, and coupling means between said stylus means and transducer elements comprising a unitary resilient structure including divergent portions arranged at 90° to each other, each divergent portion having spaced parallel generally diamond shaped arms constituting a linkage for an associated transducer element and providing rigidity in a direction to bend the associated element and having substantial compliance in a direction at right angles thereto.

3,183,312
METHOD AND APPARATUS FOR IMPROVING HEARING

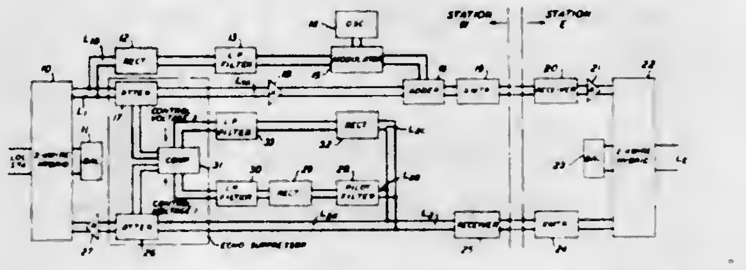
Hans Jechiel Salomon, 21 Joseph St., and Leo Herzl Schandinischky, 31 Hathikhon St., Neve Shaanan, both of Haifa, Israel
Filed Sept. 22, 1961, Ser. No. 140,083
Claims priority, application Israel, Oct. 9, 1960, 14,465
9 Claims. (Cl. 179—107)



1. A method of improving the hearing ability of persons having one good ear capable of hearing satisfactorily and one deaf ear not capable of hearing satisfactorily which comprises detecting sound adjacent the deaf ear and transmitting the sound detected to the good ear while permitting the good ear to receive sounds in a manner discernible from the sound transmitted to the good ear from the deaf ear.

3,183,313
ECHO SUPPRESSOR OPERABLE BY A PILOT TONE

Cassius C. Cutler, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 16, 1960, Ser. No. 76,358
6 Claims. (Cl. 179—170.4)



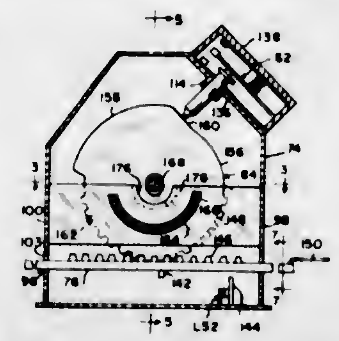
1. In a communication system comprising at least first and second stations interconnected by a forward transmission path and a return transmission path, means in said first station for applying an intelligence signal to said forward path for transmission to said second station, means in said second station for receiving a portion of said intelligence signal while inherently reflecting a portion thereof as an echo upon said return path, and means in said first station for reducing said echo comprising means for applying a pilot signal representative of said intelligence signal energy to said forward path, a portion of said pilot signal being inherently reflected upon said return path along with said portion of said inelligence signal, means in said first station for comparing said pilot signal and intelligence signal in said return path and for producing an output representative of their difference, and means responsive to said output of said means for comparing for varying the transmission losses in said paths.

3,183,314
SEAT ADJUSTING MECHANISM POSITION RESPONSIVE SWITCH

Joseph Pickles, Dearborn, Mich., assignor to Ferro Stamping Company, Detroit, Mich., a corporation of Michigan
Filed Aug. 10, 1959, Ser. No. 832,782
18 Claims. (Cl. 200—1)

1. A position responsive switching device comprising a support, a first member supported thereby and movable relative thereto in response to the position of an article, a second member mounted on said support, rotatable means mounting said second member on said support for engaging and disengaging said second member with said first member on rotation of said rotatable means,

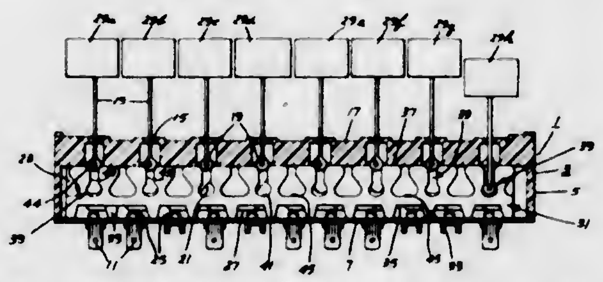
said second member being movable by said first member when said first and second members are engaged, means acting between said support and said second member tending to bias said second member into engagement with said first member at all times and to return said second member to a fixed predetermined position on disengagement of said first and second member, and a position sensing switch operably associated with said second member and actuable thereby on movement thereof.



3,183,315

PUSH BUTTON SWITCH WITH DETENT ARRANGEMENT

Richard H. Kiely, Huntington, Conn., assignor to General Electric Company, a corporation of New York
Filed Dec. 8, 1961, Ser. No. 157,994
8 Claims. (Cl. 200—5)

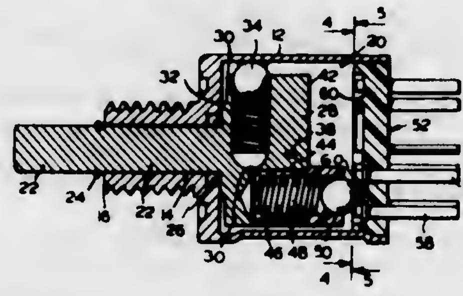


3. In a pushbutton switch having a housing and at least one pushrod mounted on said housing for reciprocating movement between first and second positions, a thin planar element disposed in said housing for controlling said pushrod, a section of said pushrod engageable with said element, said element having at least one edge engaged with said section of the pushrod, said edge resiliently engaging said section of the pushrod and said edge being moved thereby in the plane of said element upon reciprocation of said pushrod to restrain the reciprocating movement of said pushrod.

3,183,316

DOUBLE BREAK ROTARY SELECTOR SWITCH CONSTRUCTION WITH CONTACT SEPARATION MEANS

John O. Roeser, Park Ridge, Ill.
(8611 Lincoln Ave., Morton Grove, Ill.)
Filed June 4, 1962, Ser. No. 199,704
5 Claims. (Cl. 200—11)

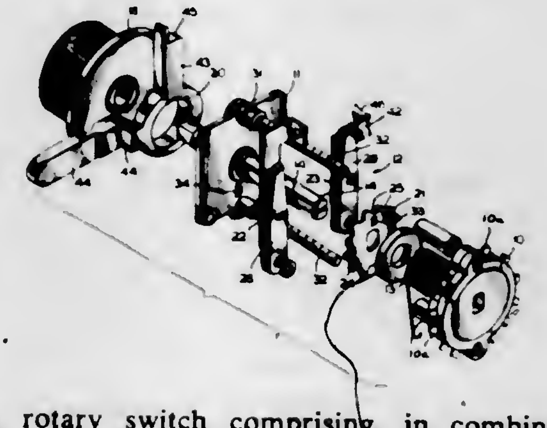


1. In a miniature rotary switch, first fixed contact means having a curvilinear contact surface of substantial extent, a plurality of second fixed contact means each radially spaced from said curvilinear contact surface a similar fixed dimension, each of said second fixed contact means being spaced from each other, movable contact means having a substantially spherical shape adapted to selectively bridge said first fixed contact means and any individual one of said pluralty of second fixed contact means, and insulating projection means located in a cylindrical plane intermediate said curvilinear surface of said first fixed contact means and said plurality of second fixed contact means, said projection means being operable to cause positive movement of said movable contact means away from physical and electrical contact with said first fixed contact means and any individual one of said second fixed contact means upon movement of said movable contact means from one to another bridging relationship with individual second fixed contact means and first fixed contact means.

3,183,317

ROTARY SWITCH EMPLOYING TWO-STEP RELEASING MECHANISM AND RESET ENERGY STORAGE MEANS

Kenneth C. McCartney, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed July 23, 1963, Ser. No. 297,155
6 Claims. (Cl. 200—18)



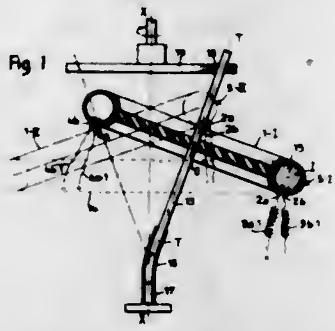
1. A rotary switch comprising, in combination: a frame, a plurality of stationary contacts mounted on said frame in a sequential arrangement, a rotatable shaft mounted on said frame, a movable contact connected to said shaft for movement therewith, said shaft moving said movable contact from a reference position into selective contact with said stationary contacts, indexing means comprising a star wheel fixedly mounted on said shaft for rotation therewith and for indexing said movable contact into aligned engagement with any selected one of said stationary contacts, first and second cam followers pivotally mounted to spaced points on said frame, a pair of springs each connected at one end to said frame and at their other ends to different ones of said cam followers for resiliently biasing said cam followers into engagement with the periphery of said star wheel, energy storage means connected between said frame and said shaft for biasing said shaft toward a given position upon rotation thereof, and disengaging means mounted on said frame for moving each of said cam followers away from engagement with said star wheel thereby causing said energy storage means to return said movable contact to its reference position.

3,183,318

HIGH SPEED CYCLICAL ROTARY MERCURY SWITCH

Marcel Cyprien Knczewski de Poray, Rue des Quatre-Saisons, Rodez, France
Filed Dec. 7, 1962, Ser. No. 243,139
Claims priority, application France, Dec. 12, 1961, 881,759; Dec. 17, 1962, Patent 1,315,885
4 Claims. (Cl. 200—32)

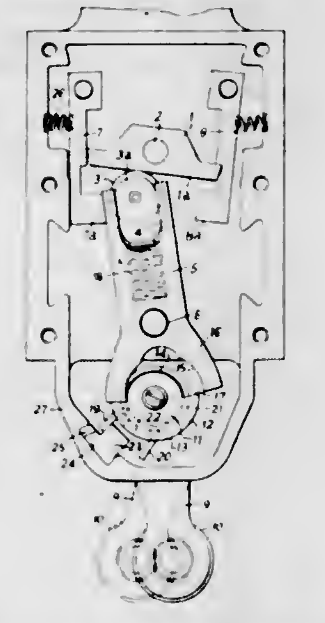
1. A cyclic rotary switch, comprising: an insulating annulus in the form of a hollow toroidal tube, a plurality of spaced electrodes extending into the annulus through the wall thereof, a globule of mercury confined within and freely movable around said annulus to successively engage said electrodes, a shaft solid with said annulus and in alignment with the central axis thereof, a fixed support for the lower end portion of said shaft, driving means freely movably engaging the upper end portion of said shaft and driving said upper end portion around a horizontal circular path having its center directly above said fixed support, and yieldable connecting means connecting said lower end portion to said fixed support, said yieldable connecting means being capable of bending in any axial vertical plane passing through the center of said path, said connecting means effectively preventing any rotation of said shaft with respect to said fixed support.



3,183,319

MOVEMENT-CONTROL SWITCHES

Frederick Charles Boyce, Swindon, and Peter John Fogaty, Ashburton, England, assignors, by mesne assignments, to The Birmingham Small Arms Company Limited, Birmingham, England
Filed Nov. 27, 1962, Ser. No. 240,477
Claims priority, application Great Britain, July 26, 1962, 28,823/62
8 Claims. (Cl. 200—47)

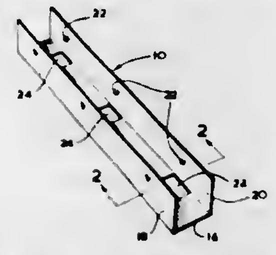


1. A movement-control switch device for the termination or reversal of the movement of a motor-driven element, comprising a switch frame structure, a switching element movable relative to said structure between two switching positions, a rocker lever pivoted in said structure for movement about a fulcrum axis between two terminal positions to reverse the position of the switching element when the rocker lever is moved from either of its terminal positions to the other, over-centre resilient coupling means interposed between the rocker lever and the switching element, a switch-actuating shaft rotatable about its axis in said structure and having a pair of abutment members rotatable with it, the rocker lever having a pair of abutment surfaces for respective co-operation with said abutment members, said abutment surfaces being arranged on the rocker lever symmetrically at opposite sides of a plane which when the rocker lever is halfway between the said terminal positions, contains said fulcrum axis and the axis of the switch-actuating shaft, said surfaces being inclined inwardly to form an acute angle with a radial plane containing said fulcrum axis, the mutually adjacent edges of said abutment surfaces being so positioned that each said surface will move out of engagement with the associated abutment member when the rocker lever reaches one of its terminal positions, two co-operating pairs of stop surfaces, the surfaces of one at least of said pairs being surfaces of revolution about the axis of the switch-actuating shaft, the stop surfaces of each pair being respectively associated with said abutment members, and said stop surfaces being so positioned on the shaft and rocking lever respectively as to become engaged to lock the rocking lever in position without limiting the rotation of the switch-actuating shaft when either abutment surface moves out of engagement with the associated abutment member, a centering spring having two ends extending approximately radially of the switch-actuating shaft in spaced side-by-side relation to each other, a stationary dog fixed in said frame structure, and a second dog fixed to the actuating shaft, both said dogs projecting between said radial ends of the centering spring in axially spaced relation so as to tension the spring when the switch-actuating shaft is turned from a central position by more than half the difference of the angles about the axis of the shaft respectively sub-tended by the two dogs.

3,183,320

TIE BAR FOR CIRCUIT BREAKER HANDLES

Brian S. Darlow, London, Ontario, Canada, assignor to Taylor Electric Mfg. Co., Limited, London, Ontario, Canada
Filed Feb. 18, 1963, Ser. No. 259,202
2 Claims. (Cl. 200—50)



1. A tie bar for connecting the handles of juxtaposed circuit breakers, switches or the like comprosing a channel of a resilient material having a bottom and opposed sides, at least one of said sides having sharp pointed spur means extending from the inside thereof, said material having a resilience to cause said spur means to dig into a handle as said tie bar is projected onto the free end of said handle with a holding force that will resist easy removal of said tie bar from said handles, said channel member having a length adapted to bridge the handles of at least two juxtaposed circuit breakers, switches, or the like, said spur means extending in a direction inclined towards the bottom of said channel.

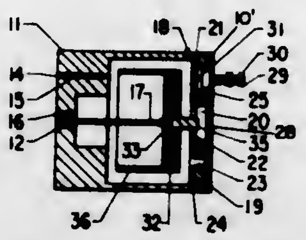
3,183,321

GRAVITY RESPONSIVE SWITCH

James R. Miller, Huntington, N.Y., assignor to Aerodyne Controls Corporation, Farmingdale, N.Y., a corporation of New York
Filed July 8, 1960, Ser. No. 41,541
11 Claims. (Cl. 200—61.48)

1. A gravity responsive switch comprising a hollow casing closed at one of its ends and open at the other, said closed end having several internally threaded mounting holes extending partially through it, a cantilever rod centrally and electrically secured to inner face of the closed end of said casing, an insulating disc mounted in the open end of the casing having a central contact opening and a terminal opening laterally disposed relative to the con-

tact opening both of said openings passing completely through said disc, a contact plate secured to the inner face of the insulating disc and provided with an opening aligned with and smaller than the contact opening therein, a cover plate overlying the outer-face of the disc, peripherally connected electrically to the casing, a pair of terminals carried by the cover plate, one electrically connected to the plate and the other insulated from and passing through said plate to project through the terminal opening of the disc and bear against the contact plate, a bob-weight surrounding and attached to the cantilever rod, and a contact concentrically secured to the bob-weight and projecting into the aligned contact openings, of the plate and disc aforesaid.



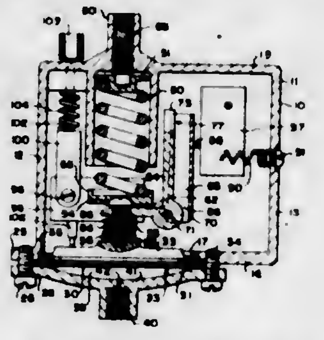
3,183,322

PRESSURE OPERATED ELECTRICAL DIFFERENTIAL SWITCHING DEVICES

Ernst Singer, 3491 Puget Drive, Vancouver, British Columbia, Canada

Filed May 22, 1961, Ser. No. 111,602

8 Claims. (Cl. 200—83)



1. An electrical differential switching device comprising a pressure element adapted to be moved by pressure to which it is exposed during use, a pivotally mounted actuator lever, means connecting the pressure element to the lever to cause said element to move the lever in one direction around its pivotal mounting when the pressure element is moved by pressure, pressure means bearing against the lever and opposing the movement of the pressure element, a pivotally mounted follower element beside the lever movable both therewith and relative thereto, limiting means between the lever and follower element permitting relative movement between the lever and the follower element between predetermined limits, a plunger-operated switch for controlling an electric circuit, said switch requiring a certain operating force and having a smaller return force, said switch being positioned to have its plunger moved by the follower element upon predetermined movement of said lever beyond one of said limits by the pressure element to operate the switch, means for adjusting said limiting means to adjust said one of said limits without moving the follower element relative to the actuator lever, and a coil spring connected to the follower element spaced away from the pivotal mounting thereof and normally drawing said follower element into engagement with the switch plunger with a force less than the switch operating force and greater than the switch return force, whereby said coil spring is effective to maintain the plunger in the switch-operated position until the lever reaches one of said predetermined limits to move the follower element therewith against the action of said coil spring.

3,183,323

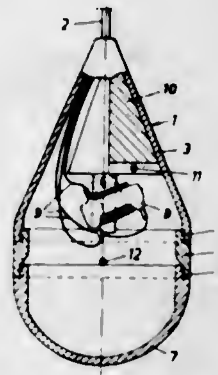
SUBMERGED FLOAT SWITCH WITH MEANS TO MUTUALLY ADJUST THE METACENTER AND CENTER OF GRAVITY

Sixten Englesson, Djursholm, Sweden, assignor of one-half to AB Flygts Pumpar, Solna, Sweden

Filed Nov. 2, 1962, Ser. No. 234,917

Claims priority, application Great Britain, Nov. 7, 1961, 39,763/61

4 Claims. (Cl. 200—84)



1. In a device for indicating the level of liquids of various densities comprising a hollow body pendulously suspended in a vessel for a liquid, said body enclosing a switch adapted to control an electric circuit when angularly moved in a vertical plane to an oblique position, means for loading said hollow body so that it will be submerged in the respective liquid eccentrically in such a manner that the metacentre mean of the hollow body is spaced relative to its centre of gravity, and means for mutually adjusting the metacentre and centre of gravity in order to obtain a predetermined oblique position when said body is immersed in said liquid.

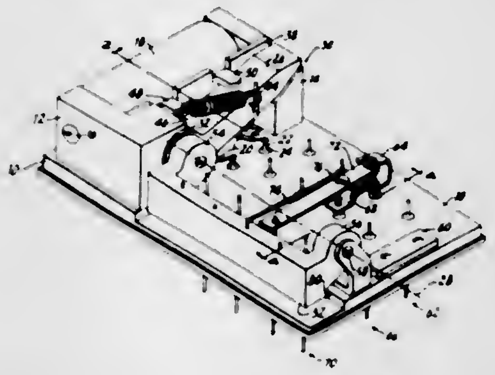
3,183,324

ELECTROMAGNETIC RELAYS

Graydon Smith, Concord, Mass., assignor to Connecticut Valley Enterprises, Incorporated, Essex, Conn., a corporation of Connecticut

Filed Dec. 5, 1962, Ser. No. 242,528

14 Claims. (Cl. 200—87)



1. An electromagnetic relay comprising a header, a U-shaped electromagnet carried by the header, a moving system having an axis of rotation and comprising a rotary armature and an actuator carried by the rotary armature and rotatable therewith, the U-shaped electromagnet having two spaced-apart legs, the rotary armature having one end extending toward and forming a working air gap with one leg of the electromagnet, the other end of the armature being adjacent to and forming a non-working air gap with the other leg of the electromagnet, the axis of rotation being adjacent the non-working air gap, the center of gravity of the moving system being on its axis of rotation so that the moving system is balanced about its axis, at least one fixed contact carried by the header, at least one movable contact carried by the header, and means carried by the actuator adapted to engage the movable contact to move it when the moving system is rotated responsive to energization of the electromagnet.

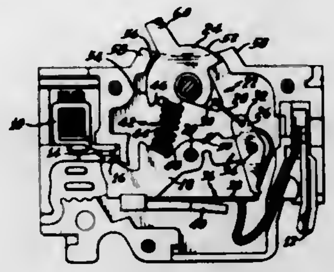
3,183,325

TRIP INDICATING CIRCUIT BREAKERS

Alexander R. Norden, New York, N.Y., assignor to Federal Pacific Electric Company, a corporation of Delaware

Filed May 3, 1961, Ser. No. 107,401

10 Claims. (Cl. 200—116)



1. In a circuit breaker, a pair of companion contacts, a contact arm pivoted between is ends and having one of said companion contacts at one end, an actuator pivoted to the opposite end of said contact arm and having at one end thereof a latching portion, an overcurrent latching device carried by said contact arm and disposed normally as an obstruction in the path of said latching portion, and operating mechanism for opening and closing the contacts including a handle and including means for restoring said contacts to their open position upon release of said actuator by said overcurrent latching device, said contact arm and said operating mechanism having mutually obstructing means in the restoring paths thereof immediately after release of said actuator, said obstructing means being effective to arrest the handle in a partially restored trip-indicating position.

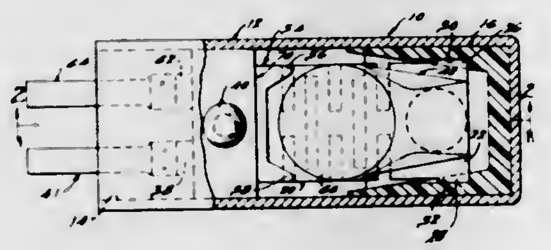
3,183,326

THERMAL MOTOR PROTECTOR WITH GAS PRODUCING ARC CHAMBER

Homer F. Malone, Jackson, Mich., assignor, by meme assignments, to Mechanical Products, Inc., Jackson, Mich., a corporation of Delaware

Filed Dec. 14, 1962, Ser. No. 244,776

3 Claims. (Cl. 200—120)



1. A motor protector comprising
a housing,
a pair of terminals extending outwardly of said housing,
an elongated heater having opposite end portions mechanically secured against movement relative to said housing, one end of said heater being eletrically connected to one of said terminals,
a fixed contact on the other end of said heater,
a bimetallic blade extending generally parallel to and spaced from said heater having one end portion electrically connected to the other of said terminals and a free end portion,
a movable contact on the free end portion of said blade engageable with said fixed contact, and
a gas producing arc chamber within said housing of generally hexahedron construction having an open side through which said heater and blade extend, said arc chamber substantially enveloping said fixed and movable contacts on five sides thereof.

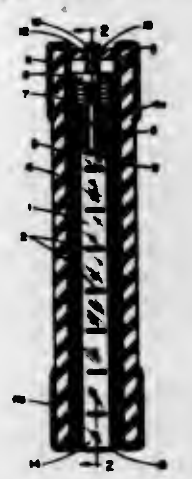
3,183,327

INDICATING FUSE

Frederick J. Kozacka, South Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.

Filed Mar. 22, 1963, Ser. No. 267,192

4 Claims. (Cl. 200—121)



1. An electric dual element fuse comprising in combination:
(*a*) a single continuous fusible element adapted to fuse only at relatively high fault currents;
(*b*) a pulverulent arc-quenching substance embedding said element;
(*c*) means for housing said element and said substance, said housing means including a tubular casing of insulating material;
(*d*) a piston;
(*e*) a spring biasing said piston;
(*f*) a pair of terminal caps mounted on the lateral outer surface of said casing, one of said pair of caps having an end surface substantially flush with one of the ends of said casing and being conductively connected to one end of said fusible element and the other of said pair of caps defining a chamber inside said casing housing said piston and said spring and segregating said piston and said spring from said substance, the portion of said other of said pair of caps-defining said chamber being arranged immediately adjacent to the other of the ends of said casing;
(*g*) a conductive piston rod arranged on one side of said piston and projecting transversely through said other of said pair of caps toward said fusible element;
(*h*) a soft solder joint securing said piston rod to said fusible element adapted to soften only at relatively small protracted overload currents; and
(*i*) an external indicator pin arranged on the side of said piston remote from said solder joint and jointly movable with said piston upon fusion of said fusible element as well as upon fusion of said solder joint.

3,183,328

ELECTRIC SWITCH WITH CONTACT WELD CHECK MEANS

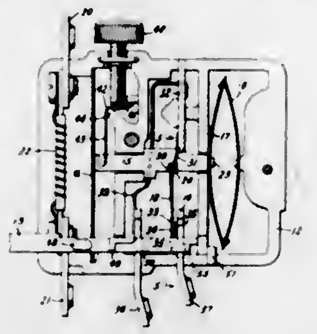
Roy E. Wheeler, Champaign, Ill., assignor to General Electric Company, a corporation of New York

Filed Apr. 8, 1963, Ser. No. 271,294

5 Claims. (Cl. 200—122)

1. An electric switch comprising, a fixed contact, a snap spring movable contact movable into and out of engagement with said fixed contact with a snap action, condition responsive means for effecting automatic movement of said movable contact out of engagement with said fixed contact, a manually actuatable member supported for movement relative to said contacts in opposing directions for resetting said contacts into engagement and for providing a contact weld check, means positioning said member in a predetermined normal axial position, said actuatable member being effective when actuated from said normal position in a first direction for moving said

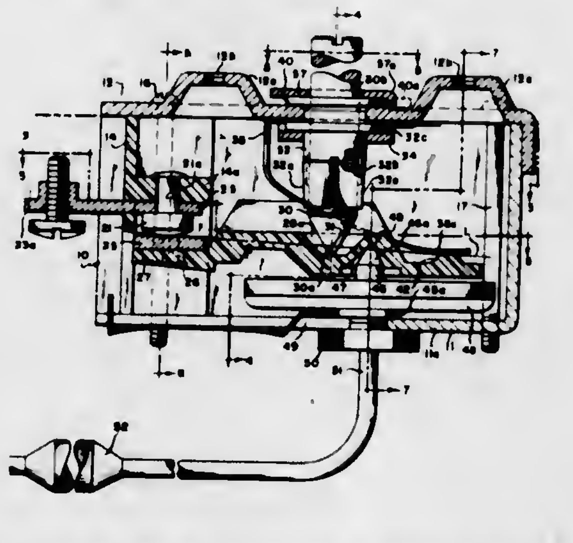
movable contact into engagement with said fixed contact to reset said contacts when the contacts are disengaged, and being effective when actuated from said normal position in a second direction opposite to the first direction for engaging and applying a force to the movable contact acting to move the movable contact out of engagement with the fixed contact when the contacts are engaged to provide a contact weld check, and means limiting movement of said member in said second direction to an extent permitting separation of said contacts without causing snap action of the movable contact.



3,183,329
PRESSURE OPERATED SWITCH WITH LEVER WHICH ROCKS FREELY ABOUT ITS TRANSVERSE AXIS THROUGH TWO POINTS OF ENGAGEMENT

John V. S. Dahlgren, Fair Haven, N.J., assignor to The Wilcolator Company, Elizabeth, N.J., a corporation of New Jersey

Filed Apr. 24, 1961, Ser. No. 104,900
2 Claims. (Cl. 200—140)

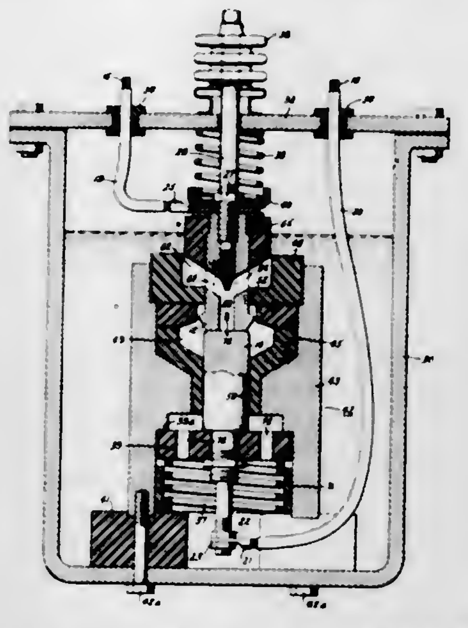


1. A switch mechanism comprising a support structure, a pair of spaced fixed contacts on said structure, a lever carrying a contact bar extending transversely thereof and movable by said lever into and out of engagement with said contacts, pivot means for said lever comprising a recess in said lever intermediate the ends thereof and having two opposed plane sides extending parallel to the longitudinal axis of said lever and inclined toward one another inwardly from one side of said lever and a shaft carried on said support structure and having a rounded end engaging said opposed plane sides by point contacts, a spring supported on said structure and engaging said lever to urge said lever in one direction about said pivot means, means forming a rolling point contact between said spring and lever, condition responsive means for moving said lever in one direction about said pivot means, and means forming a rolling point contact between said condition responsive means and said lever, said rolling point contacts lying in a common plane which extends longitudinally of said lever and through the center of said rounded end of said shaft.

3,183,330
CURRENT-LIMITING ELECTRIC CIRCUIT INTERRUPTER OF THE FLUID BLAST TYPE

Philip Barkan, Lima, and Ernest H. Bogert, Media, Pa., assignors to General Electric Company, a corporation of New York

Filed Mar. 21, 1961, Ser. No. 97,355
20 Claims. (Cl. 200—150)



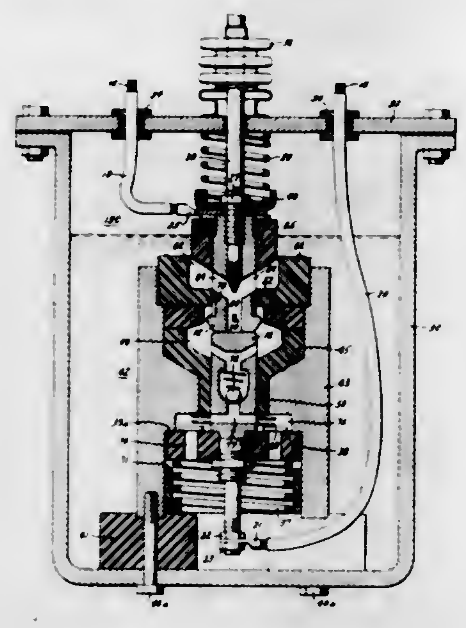
1. An electric circuit breaker comprising a pair of relatively movable butt-type contacts separable to establish an arcing gap across which an arc is drawn, an arcing chamber enclosing said arcing gap, said arcing chamber being substantially completely filled with arc-extinguishing liquid when said contacts are in engagement, means for biasing one of said contacts into engagement with the other with a force less than the total force tending to pop apart said contacts during heavy overcurrents through said contacts within the interrupting rating of the circuit breaker so that said contacts separate automatically in response to said overcurrents, exhaust passage means confined to said contacts and leading from said arcing gap in a direction longitudinally thereof through at least one of said contacts, said arcing chamber being substantially imperforate except for said exhaust passage means so that the pressures generated by arcing force fluid into said exhaust passage means via paths extending radially inwardly about the periphery of said arcing gap, means for severely restricting flow through said exhaust passage means from the time said contacts first part until a predetermined length of gap has been established whereby the arc develops relatively high pressures that act to continue separation of said one contact from said other contact, means for opening said exhaust passage means when said predetermined length of gap has been established so that said high pressures can then drive fluid through said arcing gap and said exhaust passage means at an increased rate of flow.

3,183,331
AUTOMATIC RECLOSING CIRCUIT BREAKER

Philip Barkan, Lima, Pa., assignor to General Electric Company, a corporation of New York

Filed Mar. 27, 1961, Ser. No. 98,569
12 Claims. (Cl. 200—150)

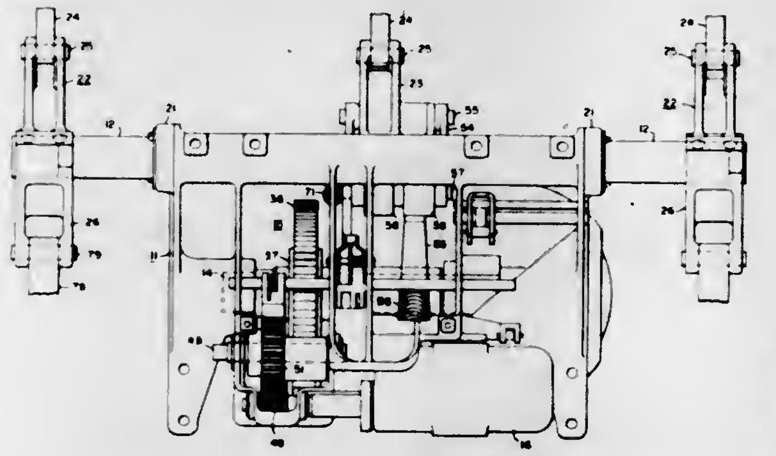
1. An electric circuit breaker comprising a pair of relatively movable contacts, each having a closed-circuit position in which said contacts engage each other, means for moving one of said contacts out of said closed-circuit position to establish an arcing gap between said contacts across which an arc is established, an arcing chamber enclosing said arcing gap and containing liquid that is adapted to react with said arc to cause high pressures to be developed in said arcing chamber, said other contact being movable out of its closed-circuit position in response to said high pressures developed within said arcing chamber during arcing, biasing means for returning said other contacts to said closed-circuit position when the pressure in said arcing chamber subsides to a predetermined level, piston means controlled by return movement of said other contact for forcing a flow of scavenging liquid into said arcing chamber to expel arcing products therefrom, and biasing means for returning said one contact to said closed-circuit position after said other contact has reached said closed-circuit position.



3,183,332
CIRCUIT BREAKER CLOSING MECHANISMS

Russell E. Frink, Forest Hills, and Paul Olsson, Penn Township, Allegheny County, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 9, 1962, Ser. No. 215,854
19 Claims. (Cl. 200—153)

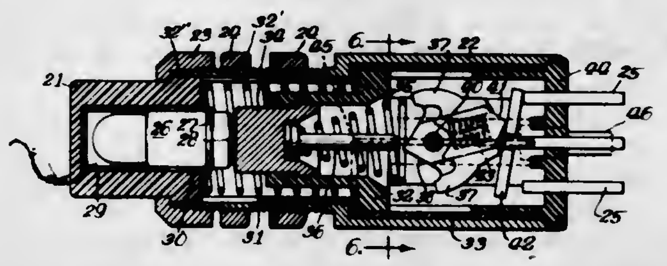


1. A stored-energy mechanism comprising a frame, a trip-free shaft rotatably mounted in the frame, a closing spring, a crankshaft rotatably mounted in the frame, means for driving the crankshaft to charge the spring, closing latch means for releasably retaining the spring in the charged condition, cam means driven by the crankshaft when said closing latch means is released to release said spring, tripping latch means, toggle means connected between the tripping latch means and the trip-free shaft, and said toggle means being extended by said cam means to rotate the trip-free shaft when the closing latch means is released to release the energy stored in said spring.

3,183,333
ILLUMINATED PUSH BUTTON SWITCH USING SPRINGS AS CONDUCTIVE ELEMENTS

Bernard J. Golbeck, Crystal Lake, Ill., assignor to Oak Manufacturing Co., a corporation of Delaware

Filed Sept. 18, 1961, Ser. No. 138,867
2 Claims. (Cl. 200—159)

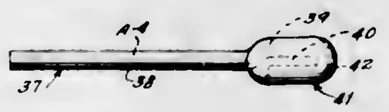


2. An illuminated push button switch for controlling electrical circuits comprising: an open-ended housing including an actuatable switch having a plurality of contacts for controlling said circuits; a light transmitting push button slidably mounted in said open end of said housing and retained therein for limited longitudinal motion, said push button having an end portion; an electrically conductive member positioned against said end portion; first spring means biasing said member into engagement with said end portion and urging said push button toward the open end of said housing; a light source in said push button and having first and second terminals, said first terminal being positioned against said conductive member; an electrically conductive plunger slidably mounted in said housing and adapted to actuate said switch, said plunger being positioned against said second terminal; second spring means biasing said plunger into engagement with said second terminal and urging said first terminal into engagement with said conductive member; and means connecting said springs to a source of electrical energy to energize said light source.

3,183,334
INSULATED ACTUATOR FOR MOVABLE ELECTRICAL CONTACT

Alfred H. Grebe, Cheshire, Conn., assignor to Allied Control Company, Inc., New York, N.Y., a corporation of New York

Filed Oct. 18, 1962, Ser. No. 231,378
5 Claims. (Cl. 200—166)



5. An insulated actuator for use with a movable electrical contact comprising an elongated rod of substantially uniform cross sectional area throughout its length including a looped end part forming an opening and an electric insulating member including a body bearing against and projecting substantially wholly beyond one side of said end part and a stem registering with said opening and bearing against portions of said end part which define said opening.

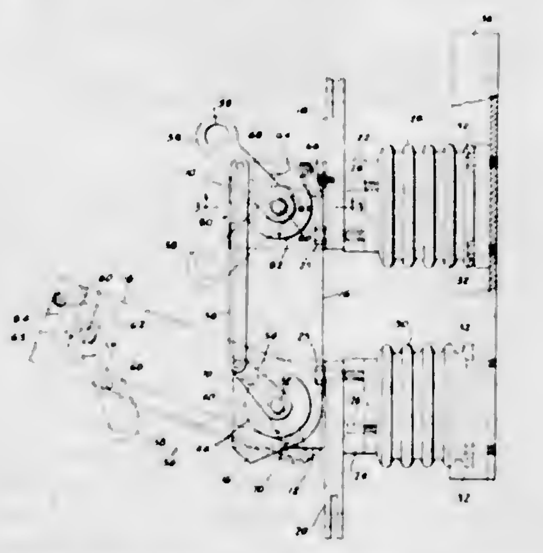
3,183,335
HIGH PRESSURE CONTACT SWITCH WITH ROTATABLE LOCKING MEANS

Leonard C. Cobbett, Sharon, Mass., assignor to Albert & J. M. Anderson Manufacturing Company, Boston, Mass., a corporation of Massachusetts

Filed Mar. 23, 1962, Ser. No. 182,056
7 Claims. (Cl. 200—170)

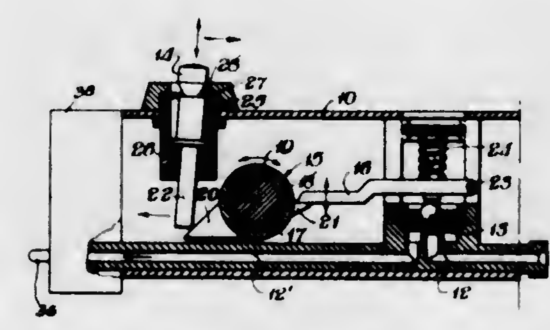
1. In an electrical switch, in combination, a pair of spaced contact members, a double blade switch member arranged to embrace said contact members and hingedly

connected to one of said contact members, clamping means at said hinged end and at the free end of said switch member, parallel linkage including an operating arm connecting both of said clamping means arranged to effect clamping of the double blade switch member into high pressure engagement with said spaced contact members, means carried by said switch member for preventing clamping movement of said operating arm until the switch member is moved into circuit closing position, and means for locking said switch member in its circuit closing position upon clamping movement of said operating arm, said locking means including a bolt carried by said free end arranged to be rotated to effect the clamping operation, said bolt being received in a narrow slot in its contact member and terminating in an opening of the same diameter as the bolt, said bolt having a cutout portion to permit entrance through the narrow slot into said opening, rotation of the bolt presenting its uncut side to the narrow slot to lock the switch member to its contact.



3,183,336
INERT GAS WELDING TORCH WITH A DELAY DEVICE FOR THE GAS VALVE

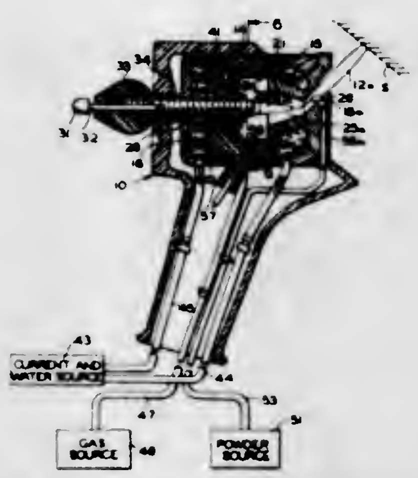
Walter Sopicki, Schwalbach, Taunus, and Günther Hannappel, Frankfurt am Main, Germany, assignors to Knapsack-Griesheim Aktiengellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
Filed June 8, 1962, Ser. No. 201,172
Claims priority, application Germany, June 10, 1961, K 43,963; Feb. 10, 1962, K 45,862
5 Claims. (Cl. 219—75)



1. An inert gas welding torch having a torch body, an electrode in said body, a handgrip portion connected to said body, an inert gas conduit in said handgrip portion and said body, and means for regulating a temporary afterflow of inert gas following a welding operation, characterized in that said regulating means is in said handgrip portion, said regulating means including a supply valve communicating with said inert gas conduit, and delaying means for closing said supply valve after a predetermined period of delay.

3,183,337
ELECTRICAL PLASMA-JET SPRAY TORCH AND METHOD

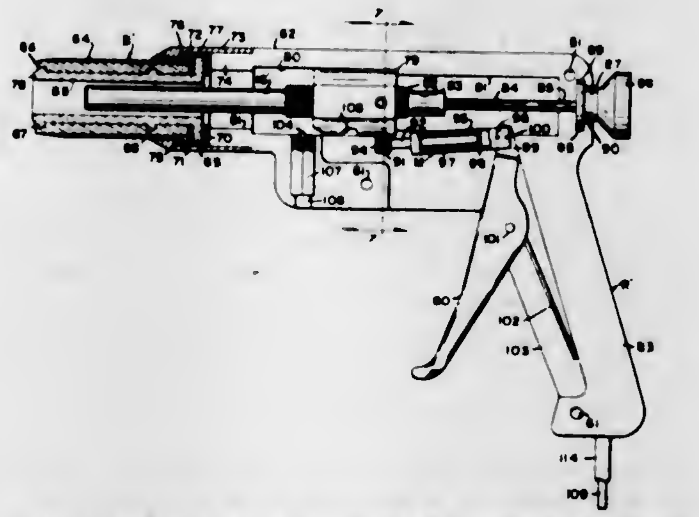
John W. Winzeler and James F. Tucker, both of Santa Ana, Calif., assignors, by meme assignments, to Giannini Scientific Corporation, Long Island, N.Y., a corporation of Delaware
Filed June 13, 1961, Ser. No. 126,402
5 Claims. (Cl. 219—76)



1. A method of spraying a powder onto a substrate, comprising providing a back electrode, providing a nozzle electrode having a nozzle passage therethrough, said nozzle passage having at least a downstream portion which extends at an angle to the axis of said back electrode, maintaining a high-current low-voltage electric arc generally longitudinally of said passage between said back electrode and a predetermined portion of the wall of said passage, said predetermined portion of said passage wall being located in said downstream portion of said nozzle passage whereby said arc extends at an angle to said back electrode, effecting flow of gas through said passage and out the outlet end thereof in a manner effecting stabilization and gas-constriction of said arc to a smaller cross-sectional area than it would normally occupy in space, said arc heating said gas to create a plasma jet downstream from said predetermined portion, injecting into said plasma jet through a first material-injection port and at an axial location downstream from said predetermined portion a spray powder adapted to be melted by said plasma jet, and injecting into said plasma jet at generally said axial location and through a second material-injection port a spray powder adapted to be melted by said plasma jet.

3,183,338
SPOT WELDING GUN

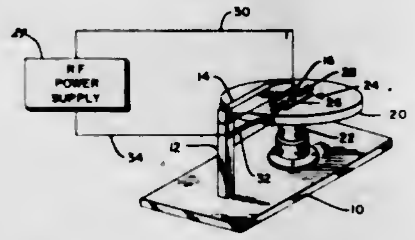
Jack D. Forney, 1820 Laporte Ave., Fort Collins, Colo.
Filed Apr. 3, 1962, Ser. No. 184,847
11 Claims. (Cl. 219—127)



1. A spot welding gun including a housing; a barrel operatively associated with said housing; a slide in said housing; a rod formed of carbon and the like; screw means extending into at least a portion of said slide, one of said slide and said screw means having a recess at the forward end thereof for receiving said carbon rod; a knob operatively connected to said screw means for adjusting said rod longitudinally of said barrel; and means for supplying electric current to said slide.

3,183,339
CUTTING SOLID DIELECTRIC MATERIAL WITH RADIO-FREQUENCY ENERGY

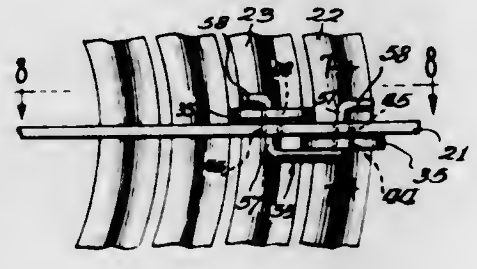
Raymond G. Lins, 2035 Opal Place, St. Paul 11, Minn.
Filed Oct. 5, 1962, Ser. No. 228,571
4 Claims. (Cl. 219—383)



3. Apparatus of the nature described, comprising: an electrically conductive plate member upon which the material to be cut is detachably held; means for applying a continuous concentration of radio-frequency energy to the material to be cut so that the energy passes in a straight line through the material to said plate member, said energy characterized by a frequency of oscillation and energy level such that concentrated heat is generated along said straight line path through the material to a degree to cause separation of the material along said path; and means for moving the material with respect to said energy applying means while the energy is applied in said manner such that contiguous separation lines are formed to sever said material into sections.

3,183,340
HEATING UNIT

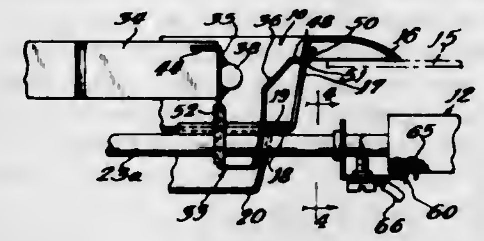
William D. Kelly, Western Springs, Ill., assignor to Ferro Corporation, a corporation of Ohio
Filed Jan. 23, 1961, Ser. No. 84,379
2 Claims. (Cl. 219—455)



2. A heating unit comprising: an electric heating element having a substantially rigid outer sheath; a spider support for said heating element having a leg with an opening therein; a bracket rigidly secured to the sheath of said heating element and having an opening therein aligned with the opening in said support; and a link having a portion extending through the opening in said bracket and through the opening in said support, said link having opposite ends extending outwardly beyond the openings with means on the ends for retaining the link in said openings, attaching the bracket and the heating element to the support, said link portion being movable relative to said bracket and to said support to permit limited relative movement therebetween with changes in temperature thereof.

3,183,341
HEATING UNIT

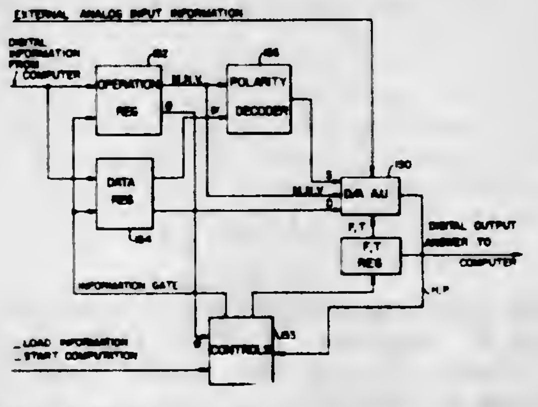
Leroy C. Hanson, Elmhurst, Ill., assignor to Ferro Corporation, a corporation of Ohio
Filed Feb. 23, 1962, Ser. No. 174,982
3 Claims. (Cl. 219—455)



1. A heating unit assembly comprising: a base having a slit; a heating unit overlying said base and including a spider having outwardly diverging legs with outer end portions, a finger extending in a direction outwardly from and generally opposite that of at least one of said legs and having opposite sides and an outer end portion, and at least one coiled, sheathed electric heating element received on said spider; and a resilient clip having a generally V-shaped body including opposed arms, one of said arms having an opening receiving the finger end portion, said opening being defined by generally opposed inwardly extending first tabs, one snugly engaging each of said finger sides, and generally opposed inwardly extending second tabs converging in a direction toward the other arm and one snugly engaging each of said finger edges, a flange extending inwardly from the free end of said one arm and having a second opening spaced from the first said opening and receiving said finger, said clip snugly engaging said finger opposite sides adjacent said second opening for firmly connecting said clip with said spider, said other arm having an outwardly extending flange with an abutment and a reduced outer end extending outward from said abutment, and a lip extending transversely from said flange, said flange being removably received in said slit and said lip extending along and spaced from a side of said base opposite said spider so that said clip may be easily positioned in said slit and pivoted therein; and abutment means including the leg outer end portions and the clip abutment, and cooperating portions of said base effectively limiting movement of said heating unit across said base and said clip resiliently urging at least the one said leg opposite the clip into firm engagement with the base for releasably and resiliently holding the heating unit on the base.

3,183,342
HYBRID ARITHMETIC UNIT

Donald Wortzman, New Paltz, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 2, 1960, Ser. No. 46,979
4 Claims. (Cl. 235—156)



1. A hybrid arithmetic unit comprising:
(*a*) a first and a second plurality of digital-to-analog converters,

(*b*) means for applying first digital data signals to each of the first plurality of converters,

(*c*) a plurality of analog signal sources,

(*d*) a source of digital control signals,

(*e*) first multiplexer switching means responsive to the digital control signals for applying selected analog signals to the first plurality of converters, thereby providing at the output of each of the first plurality of converters an analog output signal proportional to the corresponding first digital data signal and selected analog input signal applied thereto,

(*f*) second multiplexer switching means responsive to the digital control signals for applying the analog output signals to the second plurality of digital-to-analog converters,

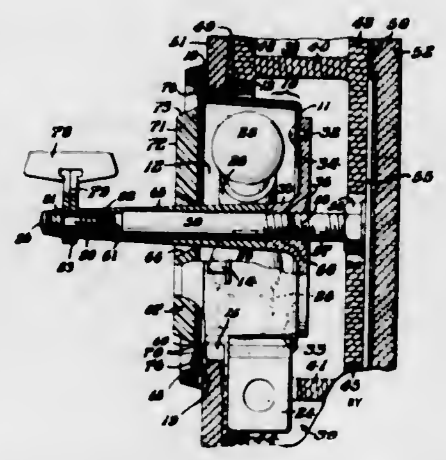
(*g*) means for applying second digital data signals to the second plurality of converters, thereby providing at the output of each of the second plurality of converters a second analog output signal proportional to the corresponding first analog output signal and second digital data signal applied thereto,

(*h*) inverting means responsive to the digital control signals for inverting the second analog output signals,

(*i*) circuit means for summing the second analog output signals to produce a resultant analog output signal, and

(*j*) third switching means responsive to the digital control signals for connecting the second analog output signals to the circuit means.

3,183,343
ILLUMINATED WALL BRACKET AND HANDRAIL
Louis Blum, Pittsburgh, Pa., assignor to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm
Filed July 31, 1961, Ser. No. 128,122
15 Claims. (Cl. 240—2)



14. In a handrailing and illuminated supporting bracket for attachment to a wall or the like, the combination comprising a box having an open top, said box being adapted for being set in said wall, means carried by said box for anchoring the same to said wall, a light source disposed within said box, a translucent covering over the open top of said box, an elongated member affixed to said box and extending through said covering, and a handrail secured to the free end of said member and thereby disposed in spaced relation to said covering in position for being illuminated thereby.

3,183,344
LAMP ASSEMBLY FOR EDGE-LIGHTED PANEL
Leslie E. Madansky, Burbank, Calif., assignor to California Plasteck, Inc., Reseda, Calif., a corporation of California
Filed June 11, 1962, Ser. No. 201,414
8 Claims. (Cl. 240—8.16)

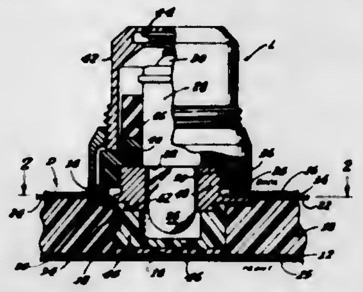
1. In an edge-lighted panel assembly, the combination of:

a panel having a main relatively thick light-transmitting layer and having a well extending into the main layer from one face of the panel with an annular recess in said one face around the rim of the well;

a lamp circuit incorporated in the panel including a first conductor and a second conductor adjacent said rim recess, a portion of said first conductor extending into the annular rim recess;

a lamp bulb with a circumferential contact and an end contact;

a lamp housing holding said lamp bulb in said well;



a sleeve included in said housing and fixedly attached to the panel to seat said circumferential contact of the lamp bulb, said sleeve being externally threaded and having an outward conductive flange seated in said annular recess in contact with said portion of the first conductor, said outward flange extending only part way around the circumference of the annular recess and having a circumferential gap in the annular recess in the region of the second conductor of the panel, a portion of said second conductor extending into said gap of the flange;

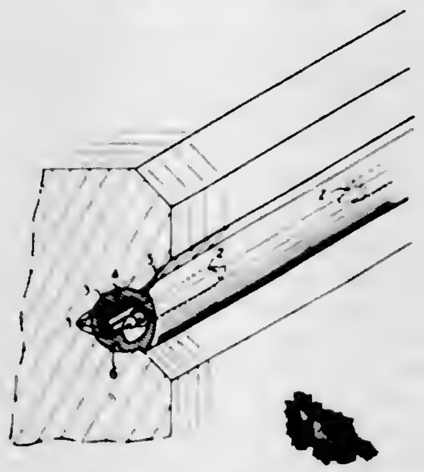
a layer of non-conducting material covering the outer surface of said flange;

a conductive ring included in said housing and surrounding said sleeve at radial spacing from the sleeve, said ring having an inner shoulder;

a conductive cap included in said housing in screw-threaded engagement with said conductive ring to close the outer end of the housing and to connect the conductive ring with the end contact of the lamp bulb; and

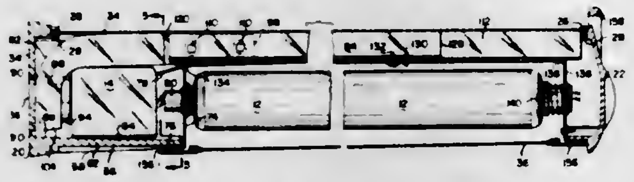
an internally threaded non-conductive bushing in engagement with said shoulder of the conductive ring and in screw-threaded engagement with said sleeve to press the conductive ring against said portion of the second conductor.

3,183,345
ILLUMINATING AND GROUND-LIGHTING SYSTEM
Edouard Adolphe Dupuis and Edouard-Léon Dupuis, Ollignies, and José Dupuis, Ghislenghien, Belgium
Filed July 18, 1962, Ser. No. 210,765
Claims priority, application Belgium, Feb. 9, 1962, Patent 613,717
1 Claim. (Cl. 240—9)



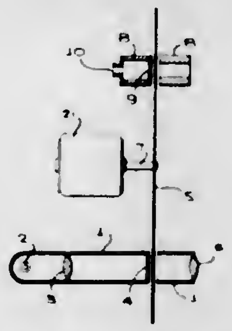
A marker unit comprising a block, said block being provided with a groove extending along the length of the block, said block having divergent faces extending outwardly from said groove, a resilient tube of synthetic plastic material located in said groove and having a visible exposed portion, at least the exposed portion of said tube being translucent, electric cables housed inside said tube and light sources connected to said cables and located in front of the cables and adjacent the visible exposed portion of the tube, the said block being adapted for being positioned relative to the road which is to be marked such that the exposed portion of said tube which is supported in said block is visible from said road, the tube including internal ribs opposite each other to support the cables within the tube, outer grooves provided in said tube in registry with said inner ribs, and external reinforcing ribs protruding on said tube and positioned so as to overlap the edges of the block, said ribs having inclined faces mating with the divergent faces of the block.

3,183,346
FLUORESCENT LIGHTING FIXTURE
Joseph H. Spaulding and Gerald M. Rodmaker, Cincinnati, Ohio, assignors to Whiteway Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 26, 1962, Ser. No. 247,216
15 Claims. (Cl. 240—25)



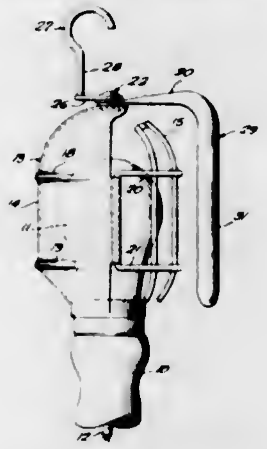
1. In a cantilever type fluorescent lighting fixture, the combination of an elongate rigid head end plate including a ballast chamber extending longitudinally thereof, an elongate lamp housing having an end fixed to said end plate for support of the housing in cantilever fashion, means on the end plate for attachment thereof to a support, and an elongate electrical ballast located within the ballast chamber of the end plate transversely of the lamp housing axis and in close proximity with said attachment means.

3,183,347
SEARCHLIGHTS FOR USE IN FOG AND MIST
Paul Euler de Salles Coelho, Rua Sao Jose 90—7 and., Rio de Janeiro, Brazil
Filed Aug. 17, 1962, Ser. No. 217,675
Claims priority, application Brazil, Feb. 23, 1962, 136,710
2 Claims. (Cl. 240—46.23)



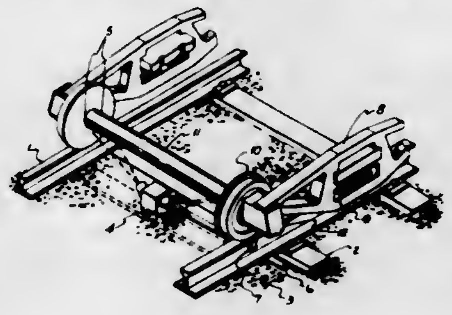
1. An apparatus for improving the illumination of an object during adverse weather conditions comprising searchlight means for emitting and projecting a beam of light along an emitting path toward said object, disk means having apertures therein, said disk means having a portion including said apertures disposed within the emitting path of said beam of light, and means operatively connected to said disk means for rotating said disk means so as to cause said beam of light to be intermittently projected by said apertures toward said object, a sighting device being disposed adjacent and parallel to said searchlight means, said disk means including said apertures being disposed within the line of sight of said sighting device, said apertures being spaced at intervals and defining first and second concentric circles in said disk means, said first concentric circle of apertures intersecting said emitting path, said second concentric circle of apertures intersecting the line of sight of said sighting device, the apertures of said first and second concentric circles being positioned on said disk means so that when light is projected through an aperture of said first concentric circle, said disk means blocks the line of sight of said sighting device.

3,183,348
PORTABLE LAMP DEVICE
Mack Reid Porter, Wassona Park, Marion, Va.
Filed Oct. 4, 1962, Ser. No. 228,297
6 Claims. (Cl. 240—54)



1. A portable lamp device comprising a base member, a lamp mounted on said base member, a protective member enclosing said lamp secured to said base member, said protective member comprising a reflector partially enclosing said lamp and a wire network enclosing the remaining portion of said lamp, means for suspending said device disposed on said protective member, a counterweight member having a weighted portion offset from the axis of said device, rotatably mounted on said device, said counterweight member being connected to said protective member adjacent said suspending means and having the weighted portion thereof extending along the length of said protective member for rotation about the axis of said device and yieldable means for retaining at least said counterweight member in preselected positions about the axis of said device.

3,183,349
HOT BOX DETECTOR
Robert Bowling Barnes and Frank Schwarz, Stamford, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Oct. 30, 1959, Ser. No. 849,782
8 Claims. (Cl. 246—169)

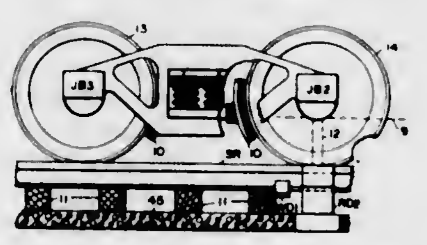


1. A hot box detector comprising in combination a length of railroad track, an infrared detection device mounted between the rails of said track, said detection device comprising infrared detectors and optical means

with substantially uniform transmission through a predetermined wavelength band imaging each infrared detector along an axis inclined upwardly with respect to the track elevation and substantially at right angles to the track, the inclination of the axis being such as to image a portion of the central part of railroad car wheels passing over the said infrared detection device whereby infrared energy radiated from said central portion of the railroad car wheels along said axis is shielded from rain from both top and sides as an axle passes over the detecting device.

3,183,350
SYSTEM FOR DETECTING HOT ELEMENTS ON RAILWAY VEHICLES

Henry C. Sibley, Rochester, N.Y., assignor to General Signal Corporation
Continuation of application Ser. No. 849,880, Oct. 30, 1959. This application Feb. 9, 1960, Ser. No. 7,727
8 Claims. (Cl. 246—169)



8. A system for detecting and registering the overheating of either of two portions of a wheel of a railway car upon passage of the car along a stretch of railway track comprising,

(*a*) detector means disposed at a point along said stretch of track having an element sensitive to infrared radiation and having means for imaging upon said element during the passage of the car the infrared radiations emitted by said wheel while scanning a plurality of different radial portions of said wheel at a predetermined elevational level including a portion of the wheel hub, said detector means being operable to generate a signal continuously variable in accordance with the degree of heat of the portion of the wheel being scanned,

(*b*) gating means including wheel detectors subject to actuation by said car wheel for forming first and second gating intervals for registration of temperatures of first and second of said radial portions of said car wheel respectively as detected by said detector means,

(*c*) storage means for storing the signal corresponding to the temperature of said first radial portion until after registration of the temperature of said second radial portion,

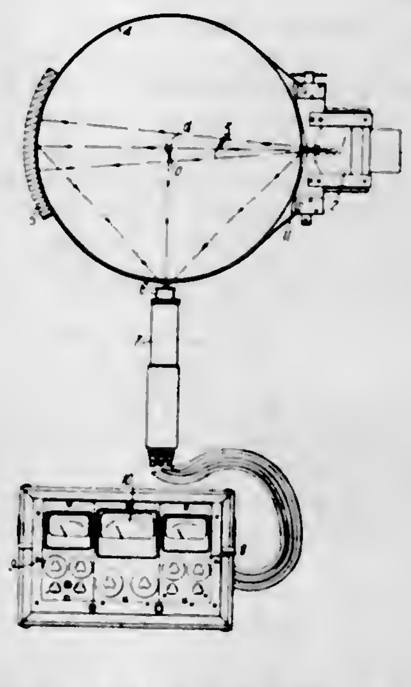
(*d*) means for comparing the signal indicative of the temperature of said first and second radial portions of the wheel, and

(*e*) means controlled by said comparing means for registering which of the two radial portions has the highest temperature.

3,183,351
MEASUREMENT OF FLUID DENSITY BY DETECTING RADIATION SCATTERED FROM SELECTED PORTIONS ALONG THE PRIMARY BEAM PATH

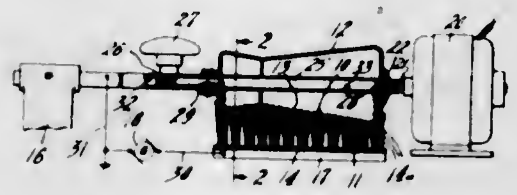
Douglas F. White, Rayleigh, Essex, England, assignor to E. K. Cole Limited, Ekco Works, Priory Crescent, Southend-on-Sea, England
Filed Dec. 18, 1961, Ser. No. 160,037
Claims priority, application Great Britain, Dec. 22, 1960, 44,015/60
3 Claims. (Cl. 250—43.5)

1. Apparatus for determining the density of a gaseous fluid at a given time which comprises a chamber through which the fluid is passed, means for directing a beam of penetrative radiation across the chamber, the radiation being such, having regard to the fluid characteristics, that energy dissipated from the beam within the chamber is a small fraction of the total energy and wherein of that dissipated energy a very large percentage is dissipated as scattered radiation, detector means outside the chamber and to one side of the beam for selectively sampling from successive elemental lengths of the beam the scattered radiation, a pulse height discriminator in the output of said detector means, for selecting pulses of successively varying amplitude determined by the angle through which the radiation energy is scattered and corresponding to said successive elemental lengths and a pulse counter in the output of the said discriminator.



3,183,352
CORONA TREATING OF SHAPED ARTICLES

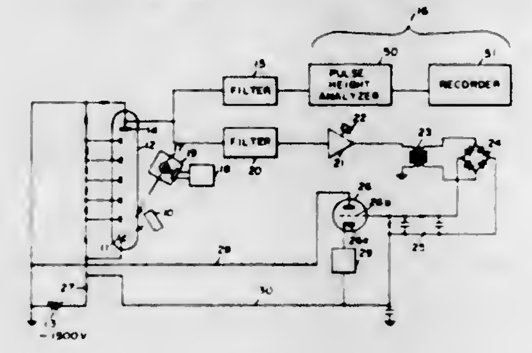
Roger Brandt, Andover, and Charles Hill Hartford, Maynard, Mass., assignors to American Can Company, New York, N.Y., a corporation of New York
Filed Nov. 23, 1960, Ser. No. 71,241
7 Claims. (Cl. 250—49.5)



1. Apparatus for corona discharge treating at least one of two opposing surface areas of shaped articles comprising, a first electrode presenting flexible first means conformable to the shape of the first surface of an article placed in contiguity therewith and capable of instantly changing upon instantaneous change of the shape of said first surface, said first means comprising flexibly connected, conductive elements providing a multiplicity of minute local contact areas with said first surface, a second electrode presenting second means conformed to the shape of the opposite surface of an article placed in contiguity therewith, structure supporting said first and second electrodes proximate each other with the first and second means simultaneously contiguous with the respective of the opposing surface areas of a shaped article positioned therebetween, and an energy source associated with said electrodes to form corona discharge at at least one of said means in corona discharge treating association with at least one of said opposing surface areas of the article.

3,183,353
GAIN-STABILIZED SCINTILLATION DETECTION SYSTEM

Willett F. Baldwin, Dallas, Tex., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed May 24, 1962, Ser. No. 197,446
7 Claims. (Cl. 250—71.5)



1. A scintillation detecting assembly comprising:

(*a*) a scintillation means responsive to radioactive particles for producing pulses of light energy of a given wavelength band,

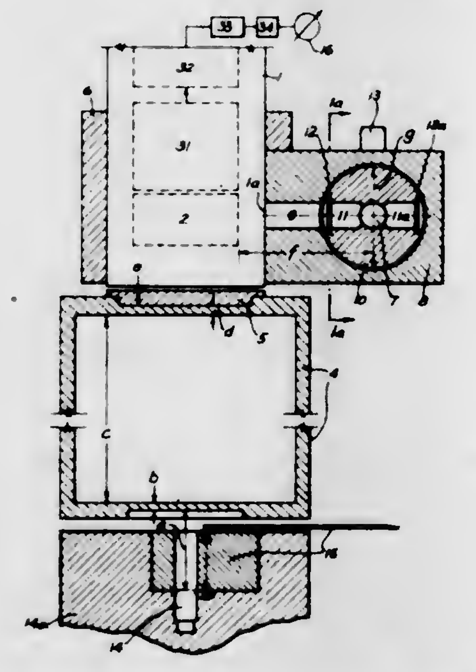
(*b*) a light amplifier,

(*c*) a source of light whose wavelength band substantially matches that of said light pulses and whose intensity is substantially constant, and

(*d*) means for applying said light and said light pulses to said light amplifier.

3,183,354
CALIBRATOR FOR GAMMA RAY DENSITY MEASURING APPARATUS INCLUDING SETS OF ABSORBER PLATES INSERTABLE IN THE PATH OF RADIATION

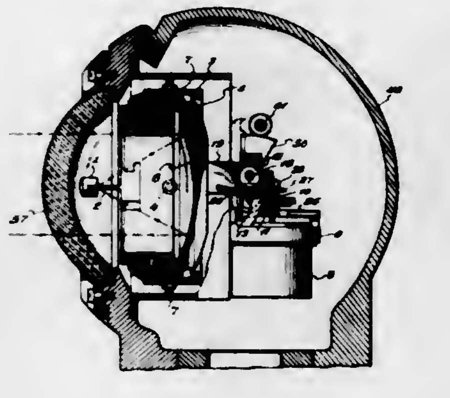
Hermann Amrehn, Marl, Germany, assignor to Chemische Werke Hüls, A.G., Marl, Kreis Recklinghausen, Germany
Filed July 3, 1962, Ser. No. 207,309
Claims priority, application Germany, July 12, 1961, C 24,596
4 Claims. (Cl. 250—71.5)



1. Calibrator for density measuring apparatus using gamma rays, comprising: a container having a bore and a cylindrical cavity having its axis perpendicular to the extension of said bore; a lead capsule in said cavity; a centrally affixed gamma ray source in said capsule; two oppositely directed windows in said capsule communicating with said source and being individually alignable with said bore; and means at said windows for receiving gamma ray absorption plates.

3,183,355
INFRARED ANTENNA ACTUATING DEVICE

Lennox F. Beach, Sea Cliff, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Sept. 27, 1951, Ser. No. 248,618
18 Claims. (Cl. 250—83.3)



13. An antenna for receiving infrared energy and adapted to be carried aboard a craft comprising a gimbal mounted for rotation about a horizontal axis, a reflector supported by the gimbal for rotation about a vertical axis, infrared pickup means supported by the gimbal and adapted to receive infrared radiation reflected from the reflector, driving means, and means actuated by the driving means to impart simultaneous wobble and sector scan movements to the reflector.

3,183,356
NEUTRON SOURCE

Julian H. Cherubini, Quincy, Mass., assignor to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
No Drawing. Filed July 30, 1962, Ser. No. 213,130
1 Claim. (Cl. 250—84.5)

A neutron emissive target adapted to bombardment by a high power charged particle beam for extended periods of time comprising a coupon consisting of a compacted mixture of powdered lithium tritide and powdered aluminum, a copper backing plate affixed thereto, and a surface coating of vaporized aluminum powder, said lithium tritide and said aluminum being powdered to less than 170 mesh size and compacted to a density exceeding ninety-eight percent of theoretical, said mixture containing not less than twenty percent nor more than eighty percent by volume of lithium tritide powder and being adapted to provide target thermal conductivity that is substantially an average of the thermal conductivities of the lithium tritide and the aluminum.

3,183,357
AUTOMATICALLY ADJUSTABLE POWER SUPPLY FOR X-RAY TUBES

William J. Phelan, Olyphant, and James B. MacPherson, Clarks Summit, Pa., assignors to Weston Instruments, Inc., a corporation of Texas
Filed Oct. 22, 1962, Ser. No. 232,076
4 Claims. (Cl. 250—103)

1. An adjustable power supply for an X-ray tube having compensation for undesirable variations in the intensity of the X-ray beam resulting from the leaking off of excess static charge built up in said tube when the applied high voltage is decreased to a lower voltage comprising,

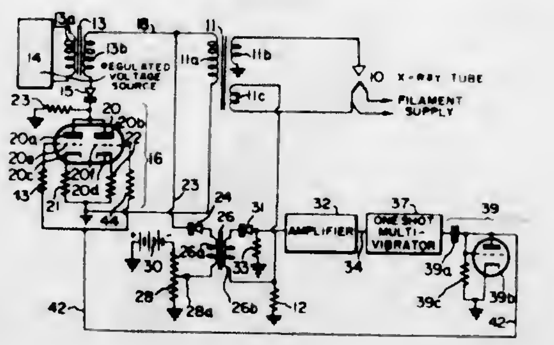
a high voltage source of supply,

a high voltage transformer having its primary winding connected to said source of supply and its secondary winding connected to said tube,

reference means for selectively producing reference potentials,

means connected to said source of supply and to said reference means for comparing the output of said source with a selected reference potential to produce a feedback signal,

means including a switching device coupled to said source of supply and to said primary winding and responsive to said feedback signal for controlling the magnitude of the voltage applied to said tube,



means connected in circuit with said tube for producing a potential change proportional to the change in the current flow through said tube,

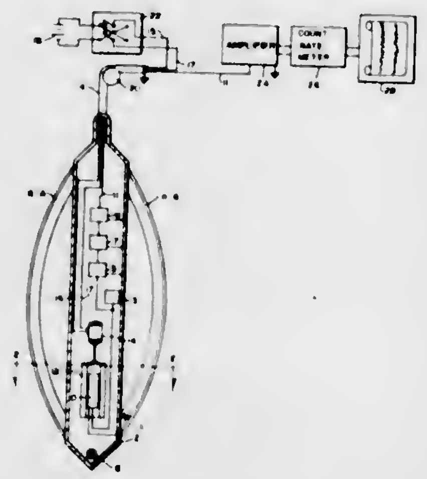
and means responsive to the magnitude of said potential change for producing a corresponding change in said feedback signal thereby to further change the magnitude of said voltage applied to said tube as a function of the change in said tube current and to compensate for said variations in beam intensity resulting from the leaking off of said excess static charge.

3,183,358
METHOD AND APPARATUS FOR NEUTRON WELL LOGGING

James A. Cooley, Tulsa, Okla., assignor, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed July 7, 1961, Ser. No. 122,533

4 Claims. (Cl. 250—108)



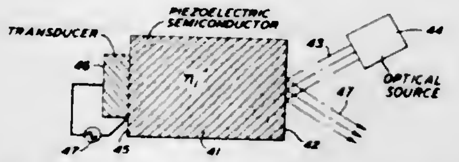
1. In a radiological system for investigating the character of subsurface substances surrounding a borehole, said system comprising an elongated housing adapted to be passed longitudinally through said borehole, a source of fast neutrons disposed in said housing, thermal neutron sensing means also disposed within said housing and spaced from said source longitudinally of said housing, and means for urging said housing diametrically in said borehole in a manner such that said sensing means is positioned in close proximity to a part of the wall of said borehole, the improvement in combination therewith comprising a shield having a window and rotatably disposed about said sensing means, said shield being formed of a material having a relatively high thermal neutron capture cross section and a relatively low epithermal neutron capture cross section.

3,183,359
OPTICAL MODULATOR EMPLOYING REFLECTION FROM PIEZOELECTRIC - SEMICONDUCTIVE MATERIAL

Donald L. White, Mendham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 21, 1961, Ser. No. 161,114

16 Claims. (Cl. 250—199)



1. Apparatus for modulating a beam of coherent electromagnetic radiation in the optical frequency range comprising a member of material which has piezoelectric properties when in high resistivity form but which has an electron concentration that renders said material semiconductive with a resistivity that is substantially below that for which a substantial piezoelectric field is supported, means for directing said beam upon said member, means for launching an acoustic wave within said material, and means for modulating said acoustic wave.

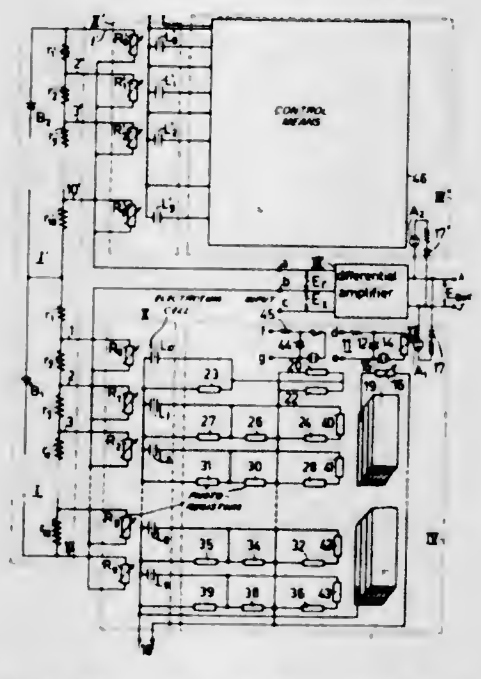
3,183,360
SIGNAL AMPLITUDE ANALYZER

Johannes Gerrit van Santen, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 5, 1961, Ser. No. 143,143

Claims priority, application Netherlands, Oct. 11, 1960, 256,750

13 Claims. (Cl. 250—208)



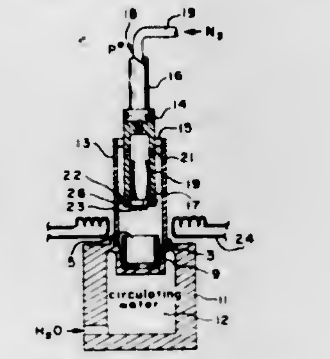
1. A circuit arrangement for analyzing the amplitude of a given signal comprising, a source of reference signal having a plurality of output terminals for providing discrete amplitude levels of said reference signal, means for sampling said discrete amplitude levels in mutually exclusive time intervals, means for comparing the amplitude of said given signal and the sampled amplitude levels of said reference signal to provide an output signal proportional to the difference of said signals, said sampling means comprising a plurality of photosensitive elements, each of said elements being coupled to an individual output terminal of said reference signal source and to the input of said comparing means, a plurality of light sources optically coupled to said photosensitive elements, and control means responsive to said output signal for selectively energizing said light sources thereby to selectively activate said photosensitive elements in said mutually exclusive time intervals, said control means further comprising means responsive to said output signal for terminating said sampling at a predetermined level of said output signal.

3,183,361
METHOD OF MAKING GLASS SEALED ELECTRIC CIRCUIT DEVICES AND ARTICLE RESULTING THEREFROM

Robert W. Bronson, Dallas, and Norman D. Korbitz, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 7, 1959, Ser. No. 832,386

3 Claims. (Cl. 250—239)



1. A method of hermetically enclosing an electric element in a metal housing having a window comprising the steps of inserting transparent glass plug having a perimeter slightly less than the inside perimeter of said housing into said housing and into engagement with the housing in the vicinity of said window and inductively heating above the fusion temperature of the glass plug only that area of the housing around the periphery of said window until the glass plug fuses into hermetic engagement with said housing adjacent said window.

3. A hermetically sealed photodiode comprising a fusable glass support having a circular tapered periphery, wire leads projecting through said support, a semiconductor element on one surface of said support and electrically connected to at least one of said leads, a circular metallic housing enclosing said photodiode and having a glass window in one end thereof and being fusibly sealed to the periphery of said support at its other end and forming a hermetically sealed enclosure about said semiconductor element with a light admitting surface on opposite sides of said element.

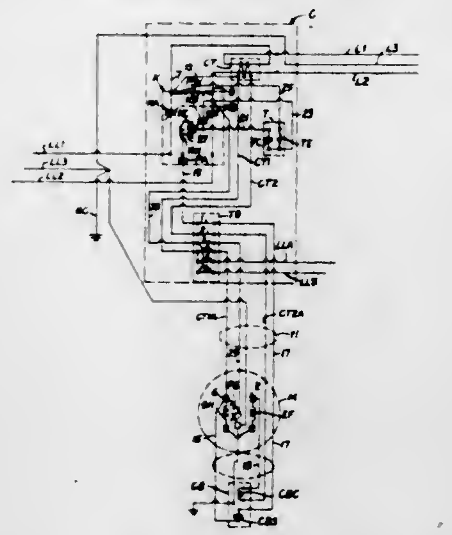
3,183,362
ELECTRIC SERVICE SYSTEM

Leroy B. Ronk, Nokomis, Ill., assignor to System Analyzer Corp., Nokomis, Ill., a corporation of Wisconsin

Filed Apr. 25, 1961, Ser. No. 105,497

7 Claims. (Cl. 307—38)

1. In an electric service system including service drop conductors adapted to supply power to service equipment mounted on a pole and feeder conductors adapted to supply power from said service equipment to various electric loads; said service equipment comprising a current transformer mounted near the top of the pole and adapted to sense the magnitude of current flowing in said service drop conductors, an electric meter positioned on said pole substantially below said current transformer and electrically connected therewith by electrical conductors, a contactor mounted adjacent said current transformer near the pole top and having at least two sets of contacts respectively serially connected between service drop conductors and feeder conductors, said contactor having an actuating winding adapted when energized to close said sets of contacts, a delay cutout device energized from and connected to said service drop conductors and having a set of contacts which will open only after a predetermined delay following failure of current supplied by said service drop conductors and will reclose after a delay upon reenergization of said service drop conductors, and a control switch mounted adjacent said meter, said control switch and the cutout contacts being serially connected in a circuit with said contactor winding whereby the contactor may be actuated to a closed or open position by operation of said control switch but said contactor cannot be reclosed immediately if power supplied to said drop conductors has been interrupted for more than the period of said predetermined delay.

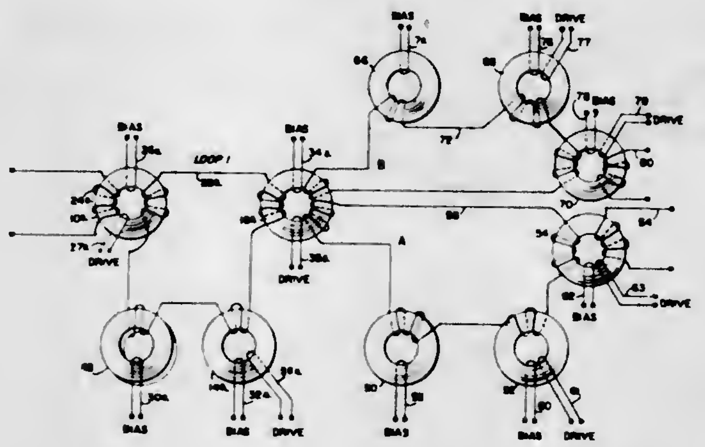


3,183,363
LOGIC MECHANIZATION SYSTEM

Kenneth E. Batcher, 1010 W. Green St., Room 510, Urbana, Ill.; Harold R. Greene, 47 Apple Orchard Drive, New Shrewsbury, N.J.; and Saul B. Yochelson, 10010 Lasaine Ave., Northridge, Calif.

Filed Feb. 26, 1962, Ser. No. 175,681

7 Claims. (Cl. 307—88)



6. In a magnetic core circuit, a first, second, third and fourth magnetic core having bistable magnetic states and internal openings, the first, third and fourth core having substantially identical cross-sectional areas, the cross-sectional area of the second core being larger than the other cores but having substantially the same internal opening, conductor means having negligible resistance including turns surrounding a portion of each core and connecting the cores in series to form a closed circuit, the sense of the turns on the first, third and fourth core being identical and opposite the sense of the turns on the second core, means to selectively bias at least some of said cores, and means to selectively drive at least some of said cores simultaneously with the selective bias to sequentially transfer information in the form of magnetic flux from one magnetic core to another wherein the reset time for each core is equal to the transfer time.

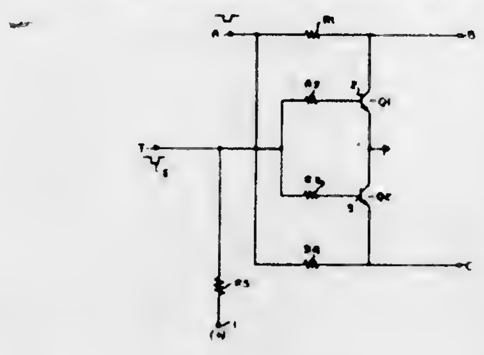
3,183,364

ELECTRONIC SINGLE POLE-DOUBLE THROW SWITCH

Thomas A. Pickering, Chicago, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed May 29, 1959, Ser. No. 816,869

2 Claims. (Cl. 307—88.5)



1. An electronic single pole-double throw switch comprising an input terminal, a trigger terminal, and two output terminals, said input terminal being connected to both said output terminals via direct current resistance, a pair of transistors having opposite polarity control characteristics, each of said transistors having emitter, collector, and base electrodes, emitter-collector electrodes of the two transistors being connected in series between said pair of output terminals, a neutral potential connected to said series circuit between said transistors, means for normally applying a potential of first polarity to the base electrodes of both of said transistors whereby one of said transistors is turned "on" and the other of said transistors is turned "off," and means responsive to the receipt of a signal at said trigger terminal for applying a potential of opposite polarity to the base electrodes of both said transistors whereby said one transistor is turned "off" and the other of said transistors is turned "on."

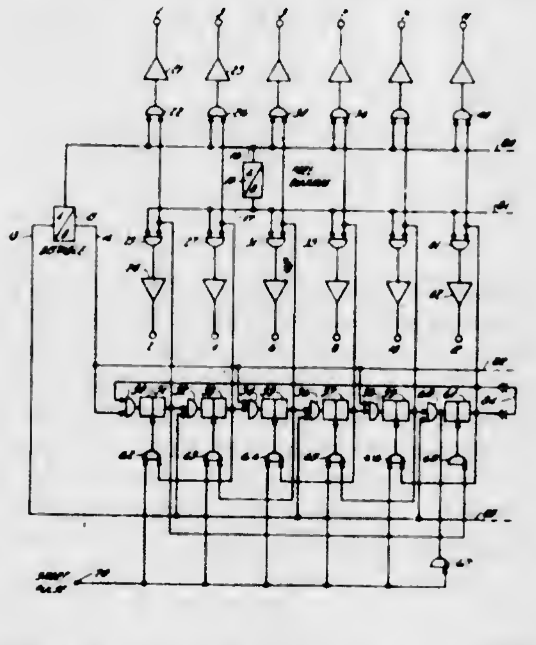
3,183,365

ELECTRONIC COUNTER OR SCANNER USING MEMORY MEANS AND LOGIC GATE

Harri K. Ligotky, Chicago, Ill., assignor to International Telephone & Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Oct. 15, 1959, Ser. No. 846,730

3 Claims. (Cl. 307—88.5)



1. A scanning or counting device for sequentially marking a plurality of decimally numbered output means comprising a plurality of "AND" gates having only first and second inputs, a first group of said "AND" gates, means connecting one of each of said "AND" gates of said first group to the odd numbered output means, a second group of said "AND" gates, means connecting one of each of said "AND" gates of said second group to the even numbered output means, a first and a second bistable multivibrator means, each alternately providing either of two stable output signals, means responsive to successive output signals of said first bistable multivibrator means for alternately group marking said first input of every "AND" gate in each of said groups, a multistage chain of memory means, each stage of said memory means being individually, simultaneously associated with one of said second inputs of said "AND" gates in said first group and one of said second inputs of said "AND" gates in said second group, means responsive to said output signals of said second bistable multivibrator means for stepping said multistage chain of memory means in stage-by-stage sequence for simultaneously marking the second input of successive ones of said "AND" gates in said first group and the second input of the successive ones of said "AND" gates in said second group, and means responsive to every second output signal from said first bistable multivibrator means for switching the second bistable multivibrator means from one stable output condition to another stable output condition to step said multistage chain of memory means.

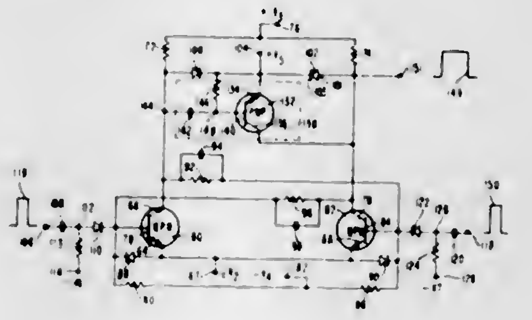
3,183,366

SIGNAL TRANSLATING APPARATUS

Gerald D. Brode, Sayre, Pa., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 31, 1959, Ser. No. 863,143

2 Claims. (Cl. 307—88.5)



1. Signal translating apparatus including: a first transistor of a particular conductivity type connected in the common emitter configuration as a basic inverter; said first transistor having a first base, a first collector and a first emitter; an impedance; a signal input terminal connected to said first base via said impedance; a resistive-impedance; a first voltage source connected to said first collector via said resistive-impedance for supplying conduction current thereto; a signal output terminal connected to said first collector; a second transistor of opposite conductivity type having a second base, a second collector and a second emitter; a capacitor; said capacitor being connected between said signal input terminal and said second base; a resistor; said resistor being connected between said second base and said second emitter; diode means; said second emitter being connected to said first collector via said diode means; a second voltage source of the same polarity as the first voltage source but of lesser potential; said second emitter being connected to said second voltage source; and said second collector being directly connected to said first collector; whereby a signal to said first base via said input terminal of a polarity to terminate conduction therein is differentiated by said capacitor and said resistor to a signal of opposite polarity and applied to said second base to initiate conduction in said second transistor, thereby temporarily connecting said first collector via said second transistor to said second voltage source.

3,183,367

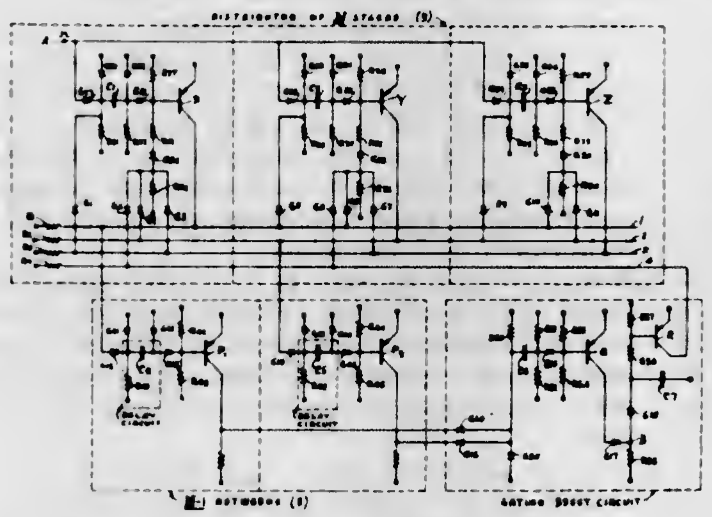
SELF RESETTING COUNTER CIRCUIT

Petrus Ludovicus Maria van Berkel, Voorburg, Netherlands, assignor to De Staat der Nederlanden, ten deze vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Filed Oct. 20, 1960, Ser. No. 63,741

Claims priority, application Netherlands, Oct. 30, 1959, 244,911

6 Claims. (Cl. 307—88.5)



1. A self re-setting counter circuit comprising:
(A) a distributor having
  (*a*) *n* stages each having two conductive states, and
  (*b*) conductor means interconnecting said stages,
(B) less than *n* networks each having
  (*a*) two conductive states,
  (*b*) a time delay circuit, and
  (*c*) a connection to a corresponding one of said distributor stages; and
(C) a gating re-set circuit means controlled only by said networks to re-set all said stages in said distributor in their initial condition provided said distributor has not been brought into its next position within a predetermined time determined by the time delay circuit in one of said networks.

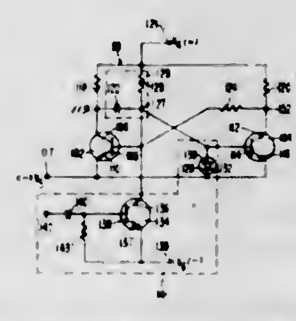
3,183,368

MULTIVIBRATOR CIRCUIT WITH INPUT SIGNAL SYNCHRONIZED MEANS

Bernard James Ross, Owego, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed July 3, 1961, Ser. No. 121,718

1 Claim. (Cl. 307—88.5)



A mono-stable multivibrator circuit having means for synchronizing the operation thereof with random input signals comprising:

first and second transistors of equal conductivity type each having base, emitter and collector electrodes;

a first voltage source for supplying collector voltage to said transistors;

first and second collector resistors respectively connecting the collectors of said first and second transistors to said first voltage source;

first and second base resistors, the first resistor connecting the base of the first transistor to the collector of the second transistor, and the second base resistor connecting the base of the second transistor to the first voltage source;

a capacitor connected between the collector of the first transistor and the base of the second transistor to form with said second base resistor an RC timing network for the second transistor;

a source of reference potential connected to the emitters of the first and second transistors;

a random signal synchronizing means including a third transistor having base, emitter and collector electrodes, resistance means electrically connecting the base and emitter electrodes of said third transistor, a voltage supply for biasing the emitter of said third transistor, capacitance input means for applying random synchronizing signals to the base of said third transistor, and means interconnecting the collector of the third transistor and the base of the second transistor whereby operation of the multivibrator circuit is under control of the synchronizing pulses; and

a diode having anode and cathode electrodes, the anode of said diode being connected to the base of the second transistor and the cathode of said diode being connected to the emitter of the second transistor, said diode having a characteristic breakdown voltage operable to establish a maximum voltage differential between the base of said second transistor and the emitter of said second transistor, thereby preventing the third transistor from saturating and simultaneously providing a reference voltage for said RC network.

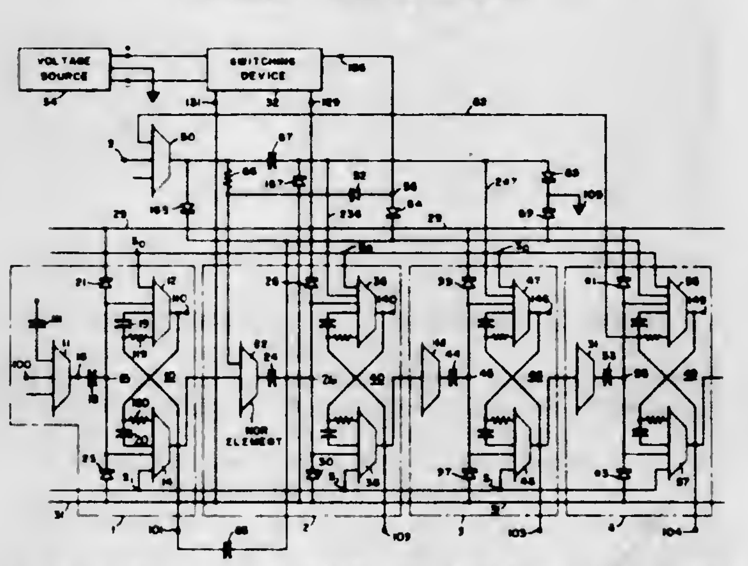
3,183,369

REVERSIBLE COUNTER OPERATIVE TO COUNT EITHER BINARY OR BINARY CODED DECIMAL NUMBER SYSTEM

Charles A. Lauer, Eggertsville, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 16, 1961, Ser. No. 131,864

4 Claims. (Cl. 307—88.5)

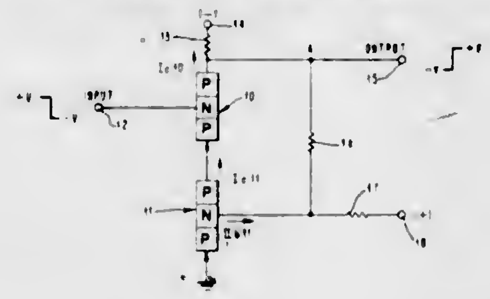


1. In pulse counting apparatus operative with input signals having a leading and a trailing edge, the combination of a plurality of bistable counting stages, with each of said counting stages being provided for a different binary digit of a number of input pulses to be counted and including input and output terminals and having at least two states of operation wherein ZERO and ONE output signals are respectively provided at said output terminal, a plurality of gating circuits connected respectively between the output terminal of each counting stage and the input terminal of the next adjacent counting stage such that said input pulses are successively counted by said plurality of counting stages, control means operatively

connected between each of said counting stages and said gating circuits, said control means being operative to provide spike signals of different polarities in response to the leading and trailing edges respectively of the output signals from the preceding gating element, and a bias voltage source operative to provide a first control signal for providing a first predetermined counting operation in response to spike pulses of one polarity being sensed and having a second control signal for providing a second predetermined counting operation when spike pulses of another polarity are being sensed.

3,183,370
TRANSISTOR LOGIC CIRCUITS OPERABLE THROUGH FEEDBACK CIRCUITRY IN NONSATURATING MANNER

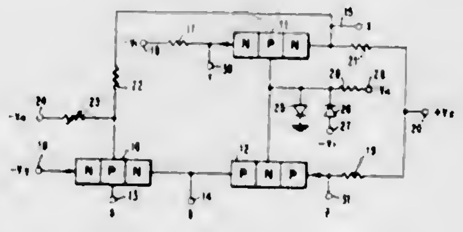
Kurt M. Trampel, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 7, 1961, Ser. No. 157,742
7 Claims. (Cl. 307—88.5)



1. A transistor switching circuit operable in nonsaturating manner in response to an input signal variable between first and second levels, comprising a regulated current supply, an output circuit, a transistor connected in common emitter circuit configuration with its emitter electrode coupled to said supply and its collector electrode to said output circuit enabling the base electrode of said transistor to respond to said input signal, so that when said signal is at the first level said transistor is in a cutoff condition providing a signal at a first level at said output circuit and when said signal is at the second level said transistor is in a conductive condition providing a signal at a second level at said output circuit, said second level being determined by the amount of current flowing from said supply to said emitter electrode, and a feedback circuit coupled between said output circuit and said supply for regulating the amount of current flowing from said supply to said emitter electrode, whereby said transistor is operable in non-saturating manner.

3,183,371
NONSATURATING TRANSISTOR TRIGGER CIRCUITS

Kurt M. Trampel, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 10, 1962, Ser. No. 193,764
13 Claims. (Cl. 307—88.5)



1. A trigger circuit having first and second states of operation, comprising:

an input circuit for supplying an input signal to said circuit to switch the state of operation from said first state to said second state;

a first transistor having emitter, base and collector and conducting in the first state of operation and nonconductive in the second state of operation;

a second transistor having emitter, base and collector and coupled to said first transistor;

said second transistor being responsive to the output of said first transistor to be in a conductivity condition opposite to the conductivity condition of said first transistor during said first and second states of operation;

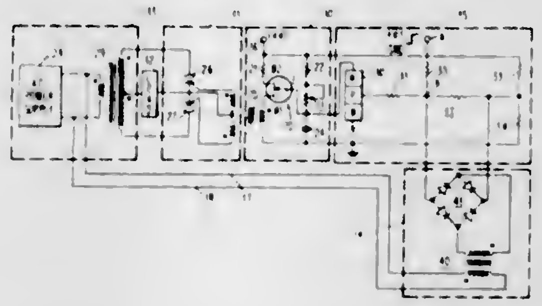
means coupled to the collector of said second transistor and to the base of said first transistor for regulating the base current of said first transistor during the first state of operation to prevent saturation of said first transistor and for acting as a limited source of current for said second transistor during the second state of operation to prevent saturation of said second transistor while simultaneously biasing said first transistor to nonconduction;

said means being coupled to said input circuit to respond to the application of the input signal to render said first transistor nonconducting thereby rendering said second transistor conducting and switching the state of operation from said first state to said second state;

and trigger means coupled to said second transistor for rendering said second transistor nonconducting permitting said circuit to revert from said second state to said first state by enabling said first named means to regulate the base current of said first transistor for conductivity thereof.

3,183,372
CONTROL AND SYNCHRONIZING CIRCUIT FOR A WAVE GENERATOR

Pao H. Chin, Pleasantville, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 21, 1962, Ser. No. 204,202
9 Claims. (Cl. 307—88.5)



1. A circuit for controlling the operation of a wave generator in synchronism with the powering means for a load circuit driven in response to the operation of the wave generator, comprising

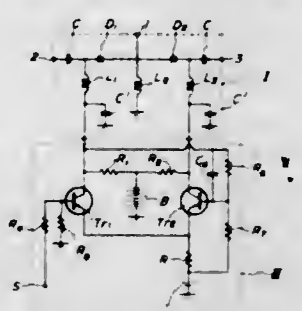
a signal responsive device having conducting and nonconducting states of operation coupled to said wave generator and operative when conducting to inhibit the operation of the generator and operative when nonconducting to permit the operation of the generator, ,

means for coupling an input signal residing at either of two levels to said device so that said device is nonconducting in response to the signal at the first level and conducting in response to the signal at the second level,

and means coupled to said device and to the powering means for developing a signal to synchronize the operation of said generator with the powering of said load circuit by periodically inhibiting the operation of said wave generator when the input signal is at the first level.

3,183,373
HIGH FREQUENCY HIGH SPEED SWITCHING CIRCUITS

Masami Sakurai, 1406 Hasunuma, Ohmiya-shi, Saitama-ken, Japan
Filed Sept. 25, 1962, Ser. No. 226,081
1 Claim. (Cl. 307—88.5)

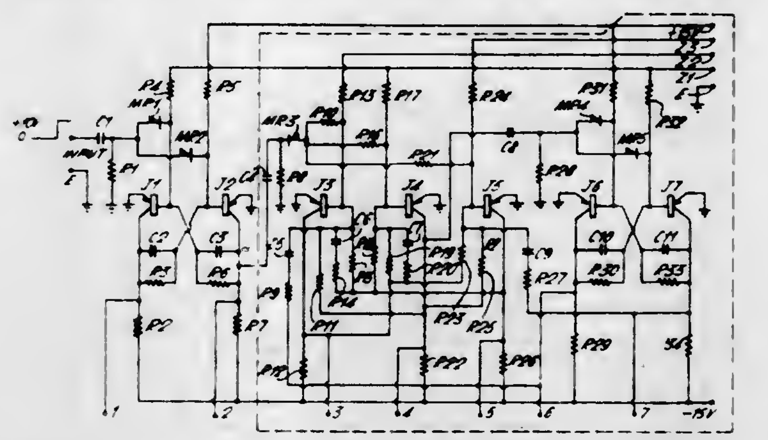


A gate driving device for controlling the operation of any of a plurality of electronic gates; said plurality of electronic gates comprising at least two diodes, a common transmission path, at least two signal lines, each of said diodes being connected between said common path and one of said signal lines and being effective when conductive to connect said common path with the respective one of said signal lines; said driving device comprising at least two transistors, a single transistor being provided for each of said diodes; each of said transistors comprising a base electrode, a collector electrode and an emitter electrode; a source of electrical energy; a separate resistor connecting each of said collector electrodes to one side of said source; means for connecting the other side of said source to ground; means for connecting each of the collector electrodes to the signal line side of the diode associated therewith; means for connecting the common path side of said diodes to ground to establish a complete electrical circuit from said source, through said resistors to said diodes, and through said diodes to ground and said source; means connected to the base electrode of one of said transistors for applying control pulses thereto; first resistor means for connecting the collector electrode of said one transistor to the base electrode of another transistor; means for connecting the emitter electrodes of said transistors together; a biasing means; means for connecting the emitter electrodes of said transistors to said biasing means; and second resistor means for connecting the base electrode of said other transistor to said biasing means so that current normally flows from said source through said other transistor to maintain the diode associated with its collector electrode nonconductive and said one transistor nonconductive until a control pulse is applied to said one transistor to render it conductive and the diode associated with its collector electrode nonconductive.

3,183,374
SCALE-OF-FIVE CIRCUITS

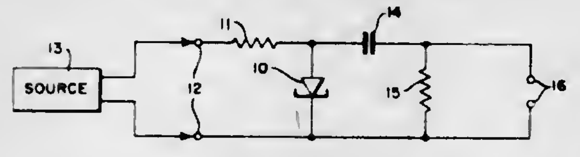
Edmund Harry Cooke-Yarborough, Longworth, Abingdon, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Dec. 3, 1962, Ser. No. 241,991
Claims priority, application Great Britain, Dec. 5, 1961, 43,605/61
4 Claims. (Cl. 307—88.5)

1. A scale-of-five circuit comprising a three-state stage having three electronic switching devices each having two states of conduction, said devices being direct current interconnected such that in each stable state two of said devices are in one state of conduction and the third is in the other state of conduction, alternating current connections from a first pair of said three devices to a second pair of said three devices respectively for sequencing said other state in response to input pulses applied simultaneously to said three devices, a binary stage, and an alternating current connection from the one of said devices excluded from said first pair of devices by way of said binary stage to each of the devices of said second pair of devices for sequencing said other state of conduction from said one of the devices alternately to each of the devices of said second pair.



3,183,375
PULSE GENERATOR UTILIZING TUNNEL DIODE

Wesley V. Harrison, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed July 31, 1961, Ser. No. 127,915
4 Claims. (Cl. 307—106)



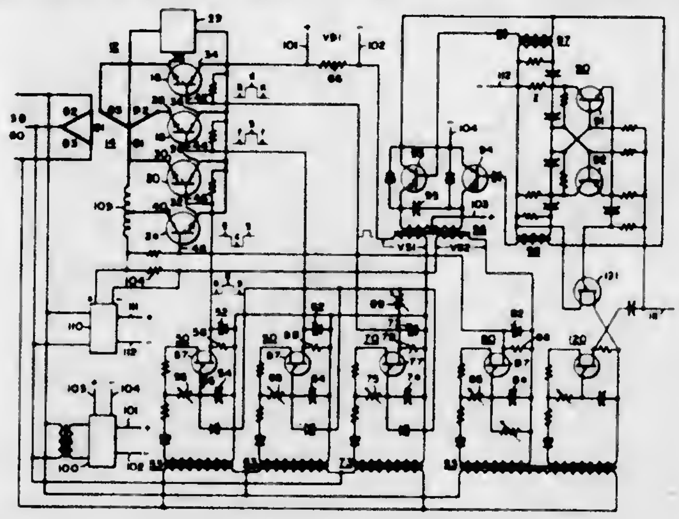
3. A pulse generator comprising a bistable circuit having an input and an output and composed of a tunnel diode and impedance means connected serially, a source of periodic electrical pulses having a magnitude adequate to drive said bistable circuit from one stable state to the other stable state, said source being connected to said input of said bistable circuit, and a differentiating circuit having an input and an output, said input of said differentiating circuit being connected to said output of said bistable circuit, said differentiating circuit having a time constant of the same order of magnitude as the transition time of said bistable circuit when switching from one stable state to the other stable state.

3,183,376
RECTIFIER CIRCUIT FOR PERIODIC REVERSE POWER SUPPLIES

John L. Boyer, Forest Hills, Willard S. Albert, Penn Township, Westmoreland County, and Arthur B. Ross, Latrobe, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 27, 1961, Ser. No. 120,068
9 Claims. (Cl. 307—107)

1. In combination, a controlled rectifier having an anode, a cathode, and a control electrode, terminals to which a source of alternating current may be connected, the anode-cathode circuit of said rectifier being serially connected with means to which a load may be connected between said terminals, a pulse circuit, means in said pulse circuit for producing a pulse during each half cycle of the applied alternating current in which said anode-cathode circuit is biased in the proper direction for conduction of said rectifier, means for developing a substantially square wave having a frequency equal to one half the frequency of the applied alternating current, means for superimposing said pulses on said square wave, means for applying the resulting pulse superimposed wave to said control electrode, the peak magnitude of said pulse

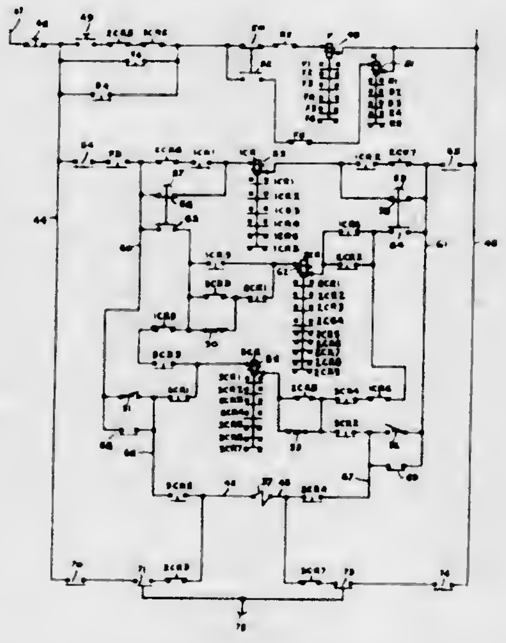
superimposed square wave being such that said control electrode is biased with respect to said cathode in the proper direction for conduction of said rectifier only when said square wave is at a particular one of its two values.



3,183,377
ELECTRICAL CONTROL CIRCUITS

Frank H. Holland, Cleveland, Ohio, assignor to The Clark Controller Company, Cleveland, Ohio, a corporation of Ohio

Filed May 3, 1961, Ser. No. 123,603
34 Claims. (Cl. 307—113)

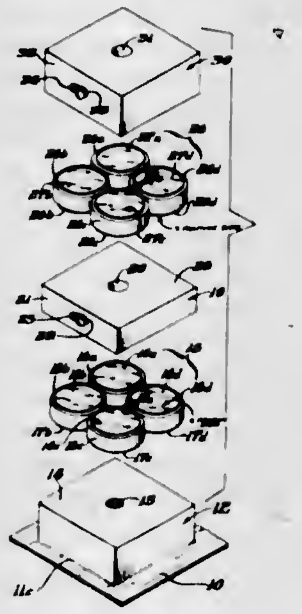


33. A circuit for energizing a work device to control a cyclically operating machine comprising a first, second, third, and fourth contactor; each contactor having a plurality of normally open and normally closed contacts; a fifth contactor having normally closed contacts; a first and second machine operated limit switch, each limit switch having contacts set to operate at various preselected points in the machines operating cycle; a source of electrical power for energizing the contactor and the work device, and connected to the circuit through normally closed first contacts of both limit switches, each normally closed contact having a normally open contact of its respective limit switch connected in parallel therewith; an operator push button having a normally open and a normally closed contact; said first contactor to be connected to energize through the normally closed contact of the push button; said fifth contactor connected to be energized through the normally closed contact of the push button, a normally open contact of the first contactor and normally open contact of the push button; said second contactor energized through a normally open contact of said first contactor and sustained energized through one of its own normally open contacts and a normally closed contacts of said third contactor; and upon depression of said push button said first contactor is de-energized and said third contactor is energized through the normally open contact of the push button, a normally closed contact of said first and fifth contactors, and a normally open contact of said second contactor, and sustained energized through one of its normally open contacts; and after the third contactor is energized, the second contactor is de-energized by the opening of said normally closed third contactor contact in its sustaining circuit; said fourth contactor is energized through the normally open contact of the push button, a normally closed contact of the first and second and fifth contactors, and a normally open contact of the third contactor; and said work device is energized through the normally open contact of said push button, a normally closed contact of said first and second and fifth contactors, and a normally open contact of said third and fourth contactors to operate the machine whereby said second contacts of the limit switches are operated to close and immediately thereafter said first contacts of the limit switches are operated to open and reclose, and said second contacts are operated to reopen to thereby de-energize the circuit and stop the machine should either of the limit switches not be operating properly.

3,183,378
SANDWICH TRANSDUCER

William L. McCracken, Southfield, and Frank J. Opolski, Dearborn, Mich., assignors to Detrex Chemical Industries, Inc.

Filed Jan. 11, 1960, Ser. No. 1,606
5 Claims. (Cl. 310—8.7)



1. An electro-mechanical transducer system for conversion of electrical energy into sonic energy, said system including a metal membrane for radiating sonic energy, said membrane having mechanically and conductively secured thereto a transducer comprised of a stack of alternating layers of metal of similar kind and of piezoelectric material secured together mechanically and conductively, the individual thickness dimensions of the metal layers being substantially greater than the individual thickness dimension of the piezo-electric layers, the two end and center layers of said stack being of said metal of similar kind, and means for applying alternating-current energy between the center metal layer and the two end metal layers of the transducer stack to cause said stack and membrane to vibrate mechanically, the thickness dimensions of said metal radiating membrane and of said layers of metal of similar kind in said transducer stack being so selected

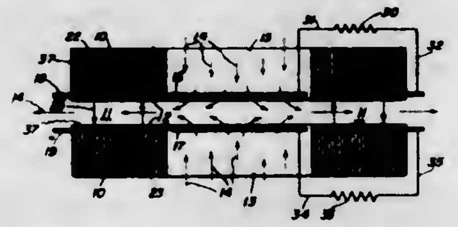
---

that the nodal zone of the mechanical vibration set up by the applied electrical energy falls within said center metal layer.

3,183,379
ELECTRIC GENERATION

Henry Hurwitz, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Oct. 6, 1960, Ser. No. 60,996
9 Claims. (Cl. 310—11)

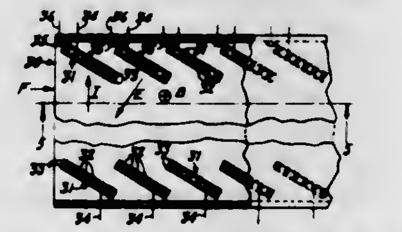


1. A magnetohydrodynamic generator comprising, at least two rings displaced axially with respect to each other to form a channel between opposing surfaces thereof, means for establishing a magnetic field in said channel having lines of flux parallel to the axis of said rings, means for causing an ionized fluid to flow radially between said rings transverse to said lines of flux thereby creating a potential in said fluid in the direction of fluid flow, and means for electrically connecting said potential to a load.

3,183,380
ELECTRODE STRUCTURE FOR MAGNETO-HYDRODYNAMIC DEVICE

Henry Hurwitz, Jr., Schenectady, N.Y., and George W. Sutton, Lafayette Hill, Pa., assignors to General Electric Company, a corporation of New York

Filed June 2, 1961, Ser. No. 114,434
6 Claims. (Cl. 310—11)



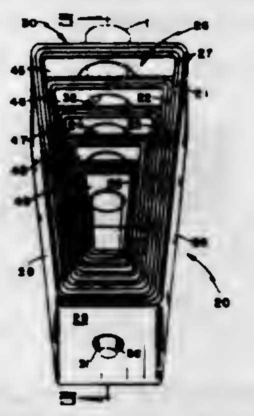
5. In a magnetohydrodynamic device including a conduit defining a flow path for a conductive fluid and magnetic field producing means providing a magnetic field extending transversely across the flow path, a plurality of mutually insulated pairs of electrodes disposed on opposite sides of and inclined at a predetermined angle with respect to said flow path and providing opposed electrode surfaces substantially perpendicular to the direction of the electric field induced in said conducting fluid by the interaction of said conducting fluid and the magnetic field produced by said magnetic field producing means when said device is operating with a longitudinal component of electric field.

3,183,381
ELECTROMAGNET

Thomas R. Brogan, Arlington, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Aug. 27, 1962, Ser. No. 219,689
4 Claims. (Cl. 310—11)

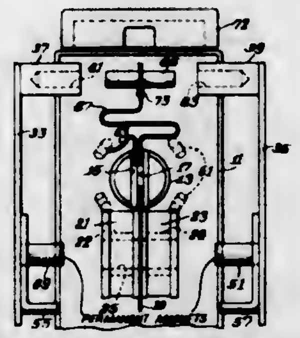
1. In an electric magnet for providing a high strength magnetic field through a duct transverse of the longitudinal axis of said duct the combination comprising a winding having a plurality of serially connected turns, each turn comprising a strip of conductive metal whose width dimension is substantially everywhere parallel to the axis of said turn, normal to the longitudinal axis of said duct and greater than the maximum dimension of said duct parallel to the axes of and enclosed by said turns, each said turn having opposed first and second end portions transverse of the longitudinal axis of the said duct and a middle portion parallel to the longitudinal axis of said duct, said first end portions being closely spaced and at least some of said second end portions being spaced from other of said second end portions a distance greater than that of said first end portions.



3,183,382
ELECTROMAGNETIC DRIVE TUNING FORK RECIPROCATING MOTOR

Cleon D. O'Neal, Deerfield, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Filed Aug. 15, 1962, Ser. No. 217,056
14 Claims. (Cl. 310—17)



2. An electromechanical translating device, including in combination, a supporting chassis, first and second axially aligned coils mounted on said chassis, a tuning fork structure resonant of a given frequency and having first and second tines and a common base portion, said tuning fork structure being disposed so that said first tine is perpendicular to the axis of said first coil adjacent an end thereof and so that said second tine is perpendicular to the axis of said second coil adjacent an end thereof, a first core member on said first tine extending in a direction to be suspended within said first coil, a second core member on said second tine extending therefrom opposite said first core to be suspended within said second coil, resilient means mounted on said chassis and fixed to said base portion of said tuning fork structure to support said tuning fork structure in position relative to said coils, and damping material engaging said base portion of said tuning fork structure to provide a dynamically stabilized base portion for said tuning fork structure at said resonant frequency.

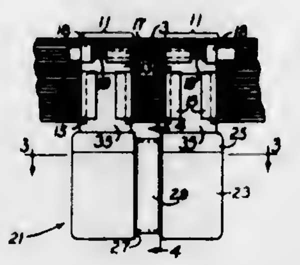
3,183,383
THERMAL PROTECTOR FOR ELECTRICAL TRANSLATING DEVICES

Bruce K. Slonneger, Dayton, Ohio, assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 25, 1961, Ser. No. 147,519
4 Claims. (Cl. 310—68)

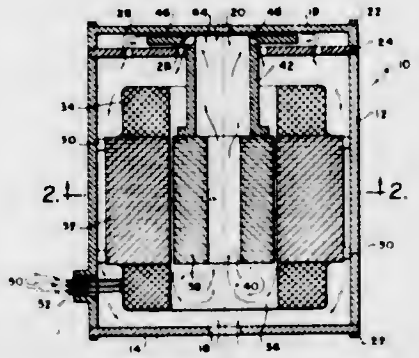
1. In combination, an electrical winding subject to heating, a pair of spaced conductive socket-forming mem-

bers permanently embedded between loops in said winding, each of which members has an opening for access from the outside of the winding and being electrically connected with a portion of the winding to form winding terminal sockets in the winding, a plug removably connecting said terminal sockets into electrical series-circuit relation to one another in the winding, said plug comprising a housing, conductive plugging elements extending from the housing for insertion into and removal from said terminal sockets, said housing forming a hollow support for said plugging elements, and a thermostatic switch located in said housing and connecting said plugging elements.



3,183,384
IMMERSIBLE DYNAMOELECTRIC DEVICE

Robert J. Flaherty, Jr., Annapolis, Md. (632 Binsted Road, Glen Burnie, Md.) and Watt V. Smith, Annapolis, Md. (315 Old County Road, Severna Park, Md.)
Filed Sept. 24, 1962, Ser. No. 225,943
5 Claims. (Cl. 310—90)
(Granted under Title 35, U.S. Code (1952), sec. 266)

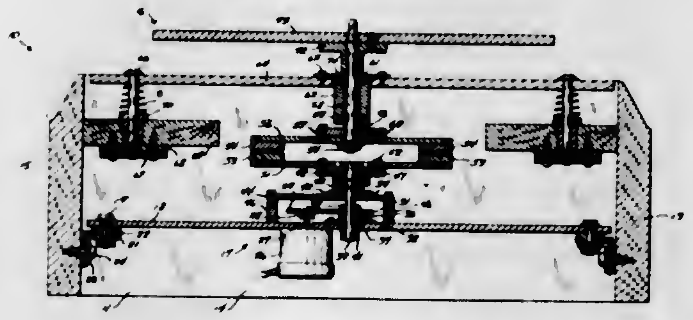


1. A dynamoelectric device capable of operation while immersed in an ambient fluid, said device comprising:

a hollow casing element having at least one aperture therein for admitting ambient fluid into and out of said casing;
a thrust bearing means mounted within said casing adjacent one end thereof;
a stator element affixed to said casing element and having a smooth cylindrical bore extending therethrough;
a cylindrical rotor element having a smooth outer surface located within said stator cylindrical bore and having a smaller diameter than said stator cylindrical bore and thus defining a spaced region between said stator and rotor; said rotor element also having a cylindrical bore
a thrust runner affixed at one end to the thrust bearing end of the rotor and rotatable therewith, said thrust runner being provided at its other end with a thrust shoe means in spaced cooperative relation with said thrust bearing means and having an opening coaxial with said cylindrical bore of said rotor; and
power supply means for producing a magnetic field in said stator element which in turn causes rotation of said rotor element and its affixed thrust runner about an axis of rotation;
said rotation creating a hydrodynamic fluid film in the spaced region between said stator and rotor and a hydrodynamic film in the spaced region between said thrust bearing means and thrust shoe means, said films being comprised exclusively of ambient fluid;
said hydrodynamic film between said stator and rotor providing the total support for said rotor element radially of said axis of rotation and said thrust bearing hydrodynamic film providing the total support for said rotor element axially of said axis of rotation.

3,183,385
TURNTABLE DRIVE SYSTEM

Gustave O. Gabriel, Columbus, Nebr. (P.O. Box 5285, Fulton Road Station, Mobile, Ala.)
Filed Dec. 19, 1962, Ser. No. 245,826
5 Claims. (Cl. 310—103)

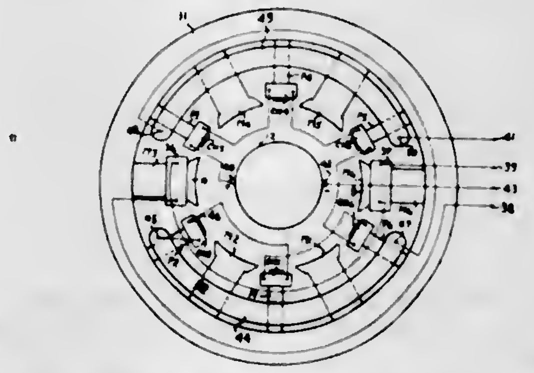


1. A drive system for a phonograph turntable comprising in combination:

housing means;
plate means resiliently mounted on said housing means;
motor means mounted on said plate means;
gear means operably connected to said motor means for transmitting drive therefrom;
deck means resiliently mounted on said housing means;
means including a turntable rotatably mounted on said deck means; and
magnetic means for coupling said turntable means to said gear means for transmitting drive therebetween, said magnetic means including a pair of normally vertically spaced discs each having a like plurality of circumferentially spaced permanent magnets mounted on opposed surfaces of said discs, said vertically spaced magnets having opposed polarities whereby the magnetic coupling is provided for transmitting drive between said turntable means and said gear means.

3,183,386
MULTIPLE OUTPUT GENERATOR

William R. Miller, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed May 17, 1962, Ser. No. 195,484
5 Claims. (Cl. 310—149)



1. A direct-current generator for exciting a plurality of external circuits comprising: a lap-wound armature without equalizer connections; three pairs of main poles arranged to co-act with said armature; interpoles disposed adjacent each main pole so that there are as many interpoles as main poles; a pair of brushes for each pair of main poles for taking three external circuits off from said armature, two of said external circuits being taken

---

from pairs comprising adjacent brushes and the third external circuit being taken from brushes diametrically opposed on said armature; and three separate windings associated respectively with the three external circuits disposed on each of said interpoles, an interpole winding of each of the circuits taken from adjacent brushes having substantially N commutation-forcing ampere-turns of a first polarity, the windings of each adjacent interpole having substantially K_1N commutation-forcing ampere-turns of the opposite polarity, and the remaining interpoles having substantially K_2N commutation-forcing ampere turns of a polarity opposite said first polarity while the interpole windings of the external circuit taken from the diametrically opposed brushes have substantially N_1 commutation-forcing ampere-turns on the interpoles on either side of each of said opposed brushes and substantially K_3N_1 commutation-forcing ampere-turns on the other interpoles, the windings on the interpoles on either side of each of said opposed brushes being of opposite polarity and said other interpole windings being of the polarity of the interpole windings on interpoles adjacent thereto where:

K_1 and K_2 are percentages of N
K_3 is a percentage of N_1

$$K_1=\frac{x+4}{5x+2}$$

$$K_2=\frac{x-2}{5x+2}$$

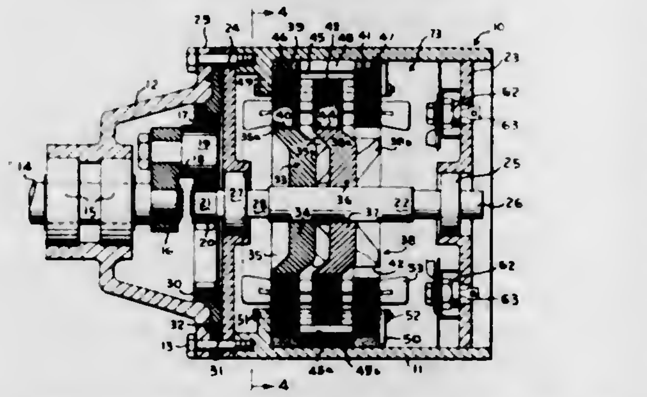
$$K_3=1-\frac{2K_c}{\sqrt{\frac{(L_1)}{(L_2)}+\frac{(L_2)}{(L_1)}}}$$

$$X=\frac{\sqrt{\frac{(L_1)}{(L_2)}+\frac{(L_2)}{(L_1)}}}{K_c}$$

L_1 and L_2 are the self inductances of the lower and upper coil sides in an armature slot, and
K_c is the coefficient of coupling between said lower and upper coil sides in said slots.

3,183,387
GENERATOR

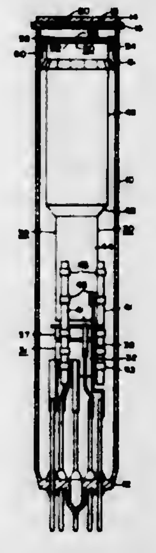
Anatol Wasynczuk, Chicago, Ill., assignor to Barnes & Reinecke, Inc., a corporation of Delaware
Filed June 5, 1962, Ser. No. 200,133
11 Claims. (Cl. 310—156)



1. An alternator structure, comprising: a rotor shaft defining an axis of rotation; rotor means on said shaft defining a plurality of radially directed, circumferentially spaced south poles and a plurality of radially directed, circumferentially spaced north poles, at least one north pole being disposed to move in an annular path axially disaligned with said south poles and at least one south pole being disposed to move in an annular path axially disaligned with said north poles; first annular stator means coaxially circumjacent said south poles; second annular stator means coaxially circumjacent said north poles; a first transfer ring concentrically around said first stator means; a second transfer ring concentrically around said second stator means, said transfer rings being arranged to transfer magnetic flux therethrough substantially uniformly in each of the radial, axial and circumferential directions; and permeable means extending axially between said transfer rings for transferring magnetic flux therebetween.

3,183,388
ELECTRON GUN PARTICLE BARRIER FORMED BY PLURALITY OF FLEXIBLE RADIAL SECTORS

Frederick H. Townsend, Elmira, and Lawrence G. Healy, Horseheads, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 12, 1960, Ser. No. 21,658
3 Claims. (Cl. 313—82)



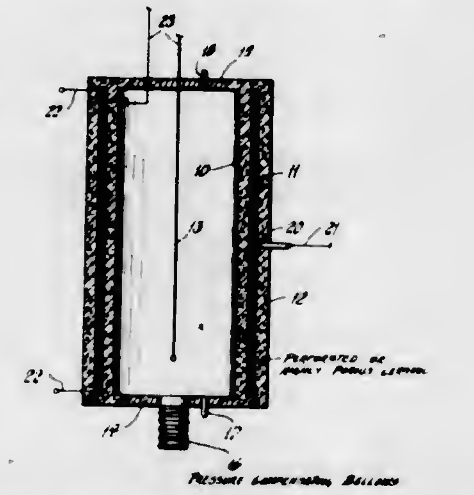
1. An electron discharge device comprising a tubular envelope and an elongated electron gun comprising a plurality of tubular electrodes positioned within said tubular envelope, the outer diameter of said tubular electrodes less than the internal diameter of said envelope thereby defining an annular region, means for supporting said electron gun and closing off said annular region to prevent passage of particles, said means comprising a tubular member of resilient sheet metal having a flange portion, said tubular member having its inner surface secured to the outer surface of one of said electrodes with said flange portion extending outwardly from the outer surface of said electrode, the other diameter of said flange portion when perpendicular to said electrode being greater than the internal diameter of said envelope, said flange portion comprised of a plurality of radial sectors so that when said electron gun is inserted into said envelope, said flange sector portions are flexed to overlap and provide a barrier portion with respect to passage of particles and substantially all of the outer periphery of said flange resiliently engages the inner surface of said envelope supporting said electron gun within said envelope.

3,183,389
DETECTOR FOR RADIOACTIVE HYDROGEN GAS

Ralph C. Maggio, 2175 Hudson Terrace, Fort Lee, N.J., and Charles Christianson, New York, N.Y. (1192 Walton Ave., Bronx, N.Y.)
Filed Dec. 27, 1960, Ser. No. 78,789
6 Claims. (Cl. 313—93)
(Granted under Title 35, U.S. Code (1952), sec. 266)

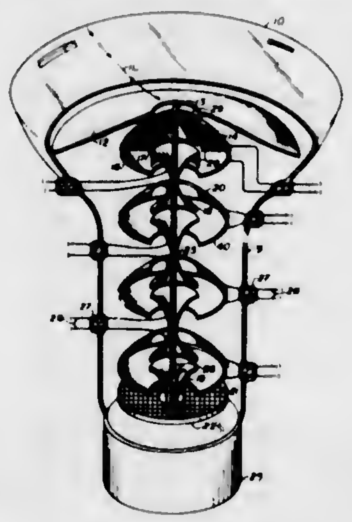
5. A device for use in detecting the presence of uncombined radioactive hydrogen in other gases and in the presence of other radioactive gases and for making measurements of the radioactive hydrogen comprising a hollow cylinder of unglazed ceramic that is permeable to diffusion

of gases through the wall thereof, electrical heating wire distributed through said ceramic cylinder, a thin continuous imperforate layer of metal approximately one to five mils thick overlaying the entire inner surface of said ceramic cylinder in intimate face-to-face contact, said layer of metal being of the type that is relatively permeable to diffusion therethrough of uncombined radioactive hydrogen when said layer of metal is at elevated temperature and comparatively impermeable to other gases, gas impermeable end walls sealing the cylinder ends and together therewith forming a closed container, an electrode supported centrally in said cylinder, and a counting gas confined by and occupying the interior of said container whereby when a unidirectional field is established between said electrode and said thin layer of metal overlaying the inner surface of said ceramic cylinder and said heating wire is energized to raise the ceramic cylinder to a selected temperature, radioactive hydrogen that may be present in the surrounding atmosphere will diffuse into said container and cause ionization pulses in said counting gas which are a measure of the quantity of radioactive hydrogen in the surrounding atmosphere.



3,183,390
PHOTOMULTIPLIER

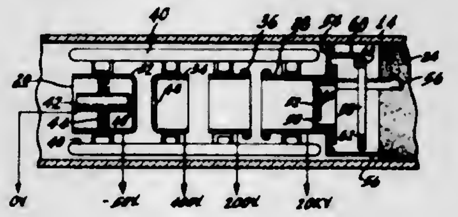
Roderick J. Grader, Pleasanton, Calif., and Minoru Paul Nakada, Silver Spring, Md., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 5, 1963, Ser. No. 285,843
13 Claims. (Cl. 313—95)



5. An electron multiplier comprising a first linear coaxially aligned series of paired dynodes having frusto-conical curved secondary electron emissive surfaces facing inwardly toward said axis of coaxial alignment, a second linear coaxially aligned series of paired dynodes having frusto-conical curved secondary electron emissive surfaces facing outwardly from said axis of coaxial alignment, and spaced in alternating serial complementary relation coaxially within said first series of said dynodes, said first and second series of dynodes together forming an arrangement with a first terminal member thereof in electron receiving relation to an electron source, and an anode in electron receiving relation to a second terminal member of said arrangement of dynodes, whereby the secondary electrons formed within said arrangement of dynodes travel sequentially from a first member of a pair of either of said series of dynodes, then thence longitudinally to the second member of said pair, thence radially to a first member of an adjacent pair of dynodes of the other of said series of dynodes, and in like manner through the dynode structure until collected by said anode.

3,183,391
SHIELDING OF ELECTRON GUN FROM VAPORIZED GETTER BY DECOMPOSABLE FOIL OVER ELECTRODE APERTURE

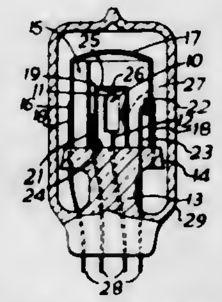
Robert E. Benway, Marion, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 16, 1960, Ser. No. 76,287
7 Claims. (Cl. 313—181)



1. An electron gun comprising a plurality of aligned electrodes including an apertured end electrode, a metal foil overlying the aperture of said end electrode, and a getter disposed on the side of said metal foil opposite the other electrodes of said gun.

3,183,392
COLD CATHODE GAS DISCHARGE TUBES

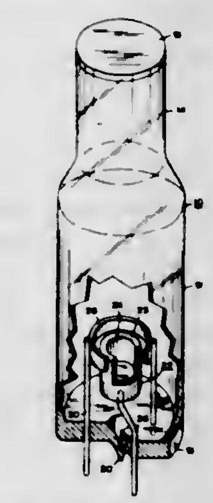
Noel David Craker and George Peter Stenning, Stanmore, Middlesex, and Frank Temple Cotton, Chalfont St. Giles, England, assignors to Hivac Limited, South Ruislip, England, a British company
Filed Dec. 4, 1961, Ser. No. 156,571
Claims priority, application Great Britain, Dec. 8, 1960, 42,305/60
10 Claims. (Cl. 313—188)



1. A cold cathode gas discharge tube of the trigger type comprising a pair of main discharge cathode and anode electrodes, a trigger electrode and a keep-alive electrode located within a sealed envelope having a gaseous filling, said trigger electrode consisting of a cylinder of perforated sheet metal, a first one of said main discharge electrodes comprising a metal member located centrally within said trigger electrode cylinder and the other of said main discharge electrodes comprising a metal member located outside said trigger electrode cylinder and said keep-alive electrode consisting of a further metal member located outside said trigger electrode cylinder and in close spaced relationship to the other of said main discharge electrodes, said trigger electrode cylinder being deformed inwardly towards said first one of said main discharge electrodes to provide a trigger discharge gap to said first main discharge electrode, which discharge gap is screened from the keep-alive discharge gap between said keep-alive electrode and the other of said main discharge electrodes by said trigger electrode.

3,183,393
DISCHARGE DEVICE

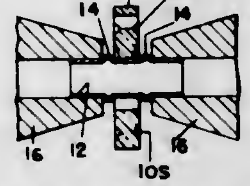
James E. Paterson, Bethel Park, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 20, 1962, Ser. No. 189,088
3 Claims. (Cl. 313—218)



3. An arc discharge device comprising an envelope, a gaseous atmosphere within said envelope comprising argon at a pressure of about 3 millimeters of mercury, an anode and a cathode consisting substantially of an alloy of calcium, magnesium and aluminum wherein the calcium and magnesium each constitute about 10 to 15% of the total mass of the alloy.

3,183,394
CATHODE SLEEVE WITH FLANGES CRIMPED AGAINST CERAMIC DISC

Thomas J. Hipszer, Trappe, and Norman Royle, Norristown, Pa., assignors to Superior Tube Company, Norristown, Pa., a corporation of Pennsylvania
Filed July 31, 1961, Ser. No. 128,127
3 Claims. (Cl. 313—270)

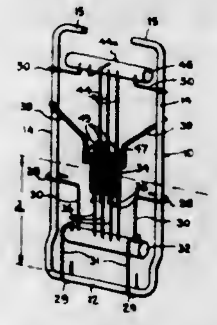


2. A cathode assembly comprising a ceramic spacer disc having an opening extending therethrough between its opposite faces, at least one of said faces having symmetrically angularly spaced grooves of progressively decreasing depth and each extending outwardly from said opening, and a cathode sleeve extending through said opening and having a pair of embossed flanges crimped against said opposite faces of the disc and into interlocking engagement with said grooves.

3,183,395
MODULE ASSEMBLY FOR PROJECTION LAMPS

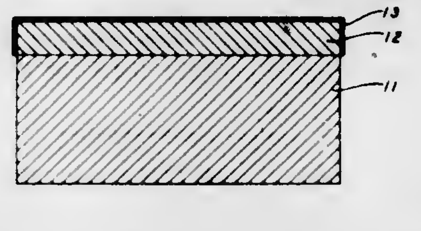
Clair M. Rively, Rockaway, and Jacob F. Michael, Englewood, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 12, 1960, Ser. No. 28,576
2 Claims. (Cl. 313—271)

1. A module assembly for a projection lamp filament mount having a predetermined light-center length, said module assembly comprising, a one-piece generally U-shaped frame member having two side portions connected by a base portion, a projection lamp filament comprising a plurality of adjacent sections, one end of said filament electrically connecting to one side portion of said frame member and the other end of said filament electrically connecting to the other side portion of said frame member, a fixed bridge member having an electrically insulating portion intermediate its ends and fixedly secured to and between the side portions of said frame member, a floating bridge member having an electrically insulating portion intermediate its ends and slidingly secured to and between the side portions of said frame member, and said filament supported by and between the electrically insulating portions of said fixed bridge member and said floating bridge member in a predetermined position with respect to said frame member to provide said predetermined light-center length.



3,183,396
METHOD OF MANUFACTURING SINTERED CATHODE

Edward J. Becker, North Plainfield, Donald E. Koontz, Summit, and Dean W. Maurer, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 21, 1962, Ser. No. 196,261
5 Claims. (Cl. 313—355)



1. A cathode element destined for use in a thermionic tube comprising a sintered matrix having three regions, the first region consisting essentially of one member selected from the group consisting of (*a*) nickel and an activator material, and (*b*) an alloy of nickel and an activator material; the second region comprising nickel and at least one alkaline earth oxide, and the third region consisting essentially of a thin film of at least one metal selected from the group consisting of nickel, molybdenum, tungsten and cobalt, said third region overlapping the entirety of said second region.

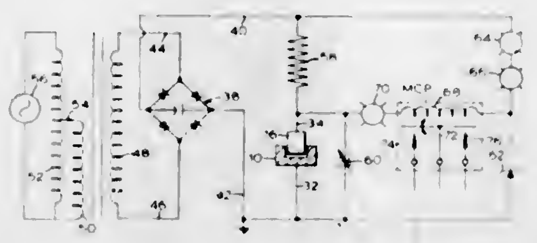
3,183,397
MOTOR CONTROL APPARATUS

Robert L. Henry, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 28, 1963, Ser. No. 261,650
3 Claims. (Cl. 314—71)

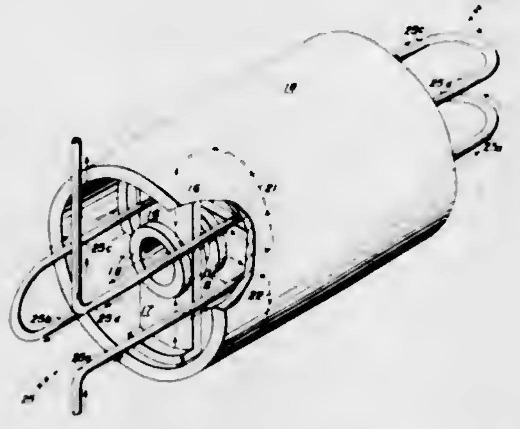
1. In an electrical machining apparatus having a reversibly operable motor connected to shift a tool electrode of one potential toward and away from a workpiece defining a second electrode of another potential to maintain a close spacing therebetween during a machining

operation and a machining operation and a source of electrical power, a control apparatus responsive to the potential difference across the space between said electrodes to operate the motor comprising in combination:

- (*a*) a current conducting path connected to said second electrode and across the source and including
  - (1) a Zener diode and
  - (2) a variable resistance device in series with said Zener diode having a resistance changing to compensate for variations in potential of the source whereby the junction point between the Zener diode and variable resistance remains at a constant reference potential with respect to said second electrode,
- (*b*) a polarized relay having
  - (1) an energizing coil connected in circuit between said junction point and the tool electrode,
  - (2) a pole member movable from a center position one way and the other in accordance with the direction of current flow in said energizing coil, and
- (*c*) means for energizing the motor to move said tool electrode toward and away from the second electrode when said pole member is moved from the center position thereof one way and the other, respectively.

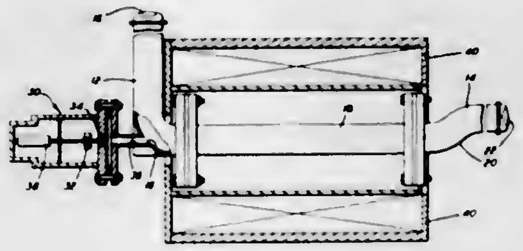


3,183,398
BEAM FOCUSING MAGNET
Rudolf C. Hergenrother, West Newton, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Aug. 4, 1960, Ser. No. 47,499
14 Claims. (Cl. 315—3.5)



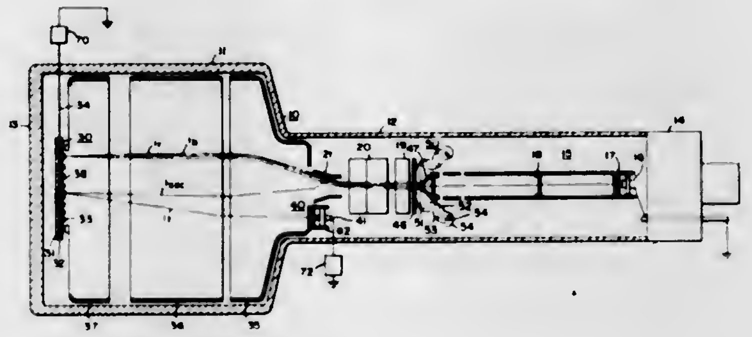
1. A magnetic focusing device comprising a relatively large tubular highly magnetically permeable body, a plurality of relatively small tubular highly magnetically permeable bodies disposed coaxially within said large body, individual magnetically permeable radial support members coupling each of said small bodies to the inner walls of said large body, so that adjacent support members are disposed transverse to each other and means conducting electric current longitudinally within said first tubular body to induce magnetic fields between adjacent small bodies which magnetize said tubular body as a quadrupolar magnet.

3,183,399
TRAVELING WAVE INTERACTION DEVICE
Richard H. Pantell, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed May 31, 1960, Ser. No. 32,762
11 Claims. (Cl. 315—4)



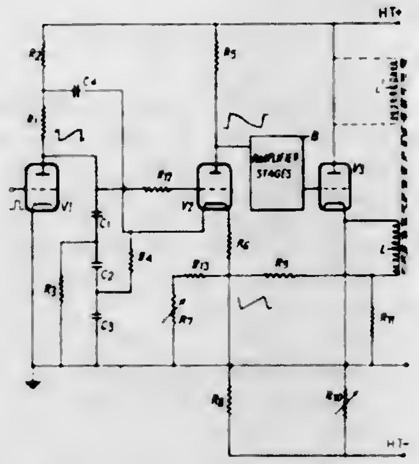
1. A traveling wave interaction device which comprises, a fast-wave propagating structure, means for injecting an electron beam into said structure generally longitudinally thereof with individual electrons having a transverse component of motion, and means for producing a magnetic field directed generally longitudinally of said propagating structure and having a strength to provide an electron cyclotron resonance frequency substantially equal to the frequency of electromagnetic wave energy propagated by said wave-propagating structure.

3,183,400
PICKUP TUBE WITH DARK CURRENT SUPPLY SOURCE
Arthur S. Jensen and Melvin P. Siedband, Baltimore, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 31, 1962, Ser. No. 198,984
6 Claims. (Cl. 315—11)



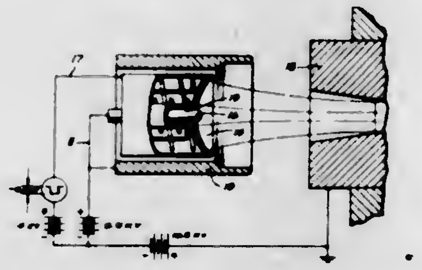
1. An image pickup tube comprising an evacuated envelope, a radiation sensitive target positioned within said envelope, said target exhibiting the property of producing a charge image in accordance with the radiation image thereon, said target being of a material having a resistance sufficiently low to produce a dark current in the absence of an image, first electron beam producing means positioned remotely from said target for directing an electron beam on said target, means including a source of potential between said first beam producing means and said target whereby said electron beam supplies the signal current for said target, collector means for receiving beam electrons rejected by said target, second electron beam producing means positioned to direct a beam of electrons on said target to supply at least the bulk of the dark current, a source of potental connected between said target and said second beam producing means, and electron beam deflection means associated with said collector means to provide that only those electrons from the first of said beams which are rejected by the target and those electrons emanating from the target in the immediate area of incidence of said first electron beam are collected on said collector.

3,183,401
SAWTOOTH WAVEFORM GENERATOR AND DEFLECTION YOKE
Sammy M. A. Bach, Cambridge, England, assignor to Pye Limited, Cambridge, England, a British company
Filed Sept. 12, 1960, Ser. No. 55,520
Claims priority, application Great Britain, Sept. 18, 1959, 31,868/59
13 Claims. (Cl. 315—27)



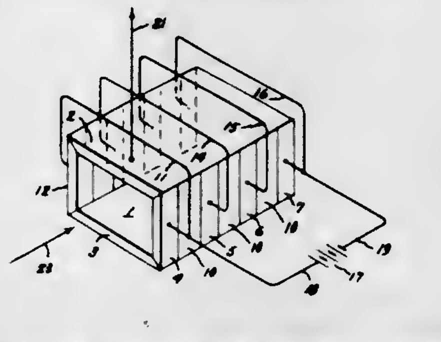
1. A sawtooth waveform generator for feeding an inductive load including a valve, an anode load for said valve across which is developed a sawtooth waveform, an output stage fed with said sawtooth waveform, an inductive load fed from said output stage, a cathode load for said valve across which is also developed the sawtooth waveform, a negative feedback connection from said inductive load to said cathode load for applying negative feedback to said cathode load, the grid circuit of said valve including at least one charging capacitor which is charged through a first resistor and a second resistor in series with said first resistor, a further capacitor connected between the junction of said two resistors and the cathode of said valve and a further valve for resetting the charge on said at least one charging capacitor and having said first and second resistors as its anode load.

3,183,402
CHARGED PARTICLE FLOW CONTROL APPARATUS WITH APERTURED CATHODE
Louis T. Zitelli, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Original application Feb. 24, 1956, Ser. No. 568,422, now Patent No. 2,943,234, dated June 28, 1960. Divided and this application May 5, 1960, Ser. No. 27,152
3 Claims. (Cl. 315—30)



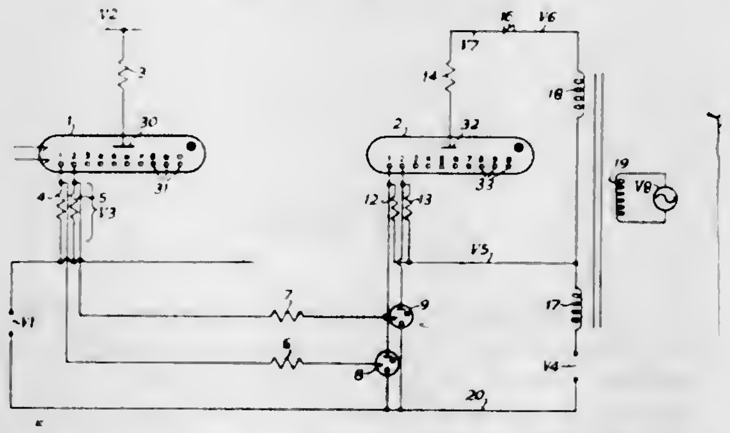
1. A gated electron gun assembly for high power high frequency velocity modulation electron tube apparatus including, an apertured electron emitter having a concave emitting surface closely approximating a spherical segment for emitting a high current beam, an accelerating electrode facing said concave surface of said emitter and having but a single aperture in axial alignment with said emitter through which is drawn a substantially solid converging beam of electrons from said emitter in a substantially non-intercepting manner with the margin of said aperture in said accelerating electrode, a first apertured, current control electrode electrically insulated from said emitter having a portion disposed between said accelerating electrode and said emitter and disposed in close spatial proximity to said electron emitter and in encircling spatial relationship to the emitting surface of said electron emitter, a second electron control electrode mounted in axial alignment with the aperture in said electron emitter and electrically insulated from said emitter, and means for applying only a negative variable potential to said control electrodes with respect to said electron emitter whereby the flow of electrons from said electron emitter may be effectively gated without said current control electrodes physically intercepting the electron beam to produce undesired thermal emission therefrom, in use.

3,183,403
MAGNETO HYDRODYNAMIC FLUID ACCELERATOR AND COMPRESSOR
Henry Hurwitz, Jr., and Harold R. Koenig, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Oct. 6, 1960, Ser. No. 60,995
10 Claims. (Cl. 315—111)



1. A method for accelerating or compressing an ionized fluid in a channel having a longitudinal axis comprising, establishing a magnetic field having lines of flux transverse to the longitudinal axis of said channel and passing through the ionized fluid in said channel, impressing a voltage on said fluid at spaced points along said channel to establish a longitudinal electric field in said channel cooperating with said magnetic field to produce a current component transverse to said lines of flux and to said electric field, and providing a completed electrical circuit externally of said fluid for said transverse current to flow in said fluid.

3,183,404
CONTROL CIRCUITS FOR MULTICATHODE INDICATING DEVICES
Norbert Kitz, Hugh Lyon Mansford, and John George Lloyd, London, England, assignors to Bell Punch Company Limited, London, England, a British company
Filed July 20, 1960, Ser. No. 44,110
Claims priority, application Great Britain, Aug. 11, 1959, 27,433/59
11 Claims. (Cl. 315—135)

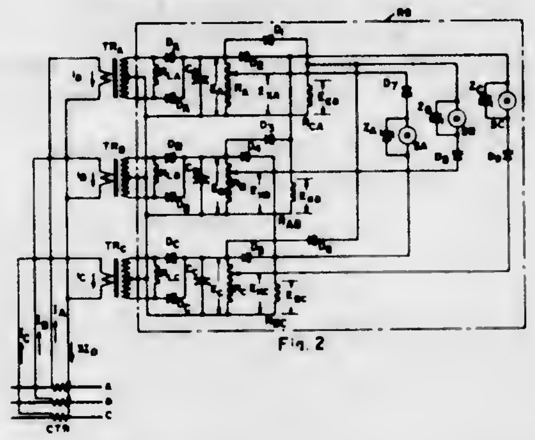


1. An electrical circuit comprising a multi-cathode counting tube, a cold-cathode indicating tube having multiple cathodes, a separate trigger tube connected in each

cathode circuit of the indicating tube, means connecting each cathode of the counting tube to the control electrode of the trigger tube in the corresponding cathode circuit of the indicating tube, and means for limiting the potential on the anode of each trigger tube to a value lower than the potential required to cause main gap breakdown of such trigger tube when no potential is applied to the control electrode thereof.

3,183,405
RELAYING ASSEMBLY

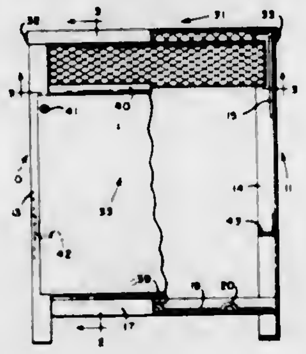
William K. Sonnemann, Roselle Park, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 24, 1961, Ser. No. 91,394
16 Claims. (Cl. 317—27)



1. In a protective arrangement for a polyphase electrical system, a responding device having separate terminals for receiving first, second and third inputs, said device including controlled means having a non-operated condition and first, second and third operated conditions, and means effective only when the first input exceeds each of the remaining inputs for operating the controlled means into the first operated condition, said means being effective only when the second input exceeds each of the remaining inputs for operating the controlled means into the second operated condition, and said means being effective only when the third input exceeds each of the remaining inputs for operating the controlled means into the third operated condition.

3,183,406
TRANSFORMER CASE

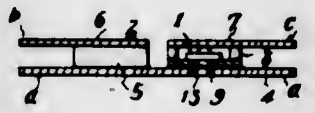
Edward A. Neydli, Watertown, Wis., assignor to Basic Products Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 19, 1962, Ser. No. 238,485
3 Claims. (Cl. 317—99)



1. An enclosure for housing a transformer or the like comprising in combination, oppositely facing end panel members joined together in spaced relation by angle means near one end thereof; a bottom plate fixed to said angle means; a cover attached to the opposite ends of said end panel members, said cover including inwardly directed grid means along at least one side thereof and between said end sheet panel members; bowed panel means removably attached to said end panel members, said bowed panel means overlapping the edges of said end panel members; and means for fixing the top and bottom of said bowed panel means to said end panel members such that cooperation between the edges of said end panel members and said bowed panel means forces said bowed panel means into a single plane to provide a resiliently acting force preventing vibration of said front and rear panels.

3,183,407
COMBINED ELECTRICAL ELEMENT

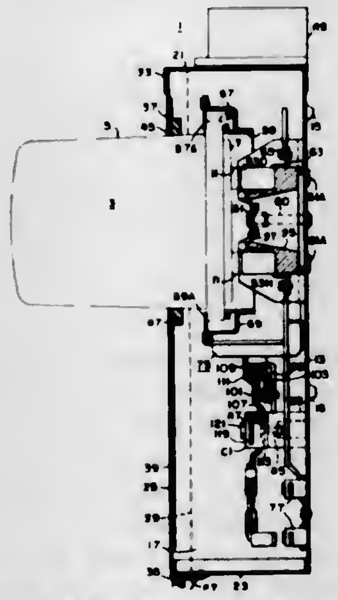
Junichi Yasuda, Tokyo, and Yasuharu Kubota, Ichikawa-shi, Chiba-ken, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Continuation of application Ser. No. 121,551, July 3, 1961. This application Oct. 4, 1963, Ser. No. 314,841
6 Claims. (Cl. 317—101)



1. A combined electrical element comprising a conductive strip support having a flat longitudinal surface, a semi-conductor diode situated adjacent said surface of said strip support and having one of its electrodes in electrical contact with said strip support, a first conductive strip in electrical contact with the other electrode of said diode and in spaced apart relation to said strip support, insulating means disposed between said first conductor strip and said strip support to maintain said spaced apart relation therebetween, an electric circuit element situated adjacent said surface of said strip support and in longitudinally spaced relation with said semiconductor diode relative to said strip support with one of its electrodes in electrical contact with said strip support and a second conductive strip secured to the other electrode of said electric circuit element and in spaced apart relation to said strip support.

3,183,408
INSTRUMENT MOUNTING ASSEMBLY

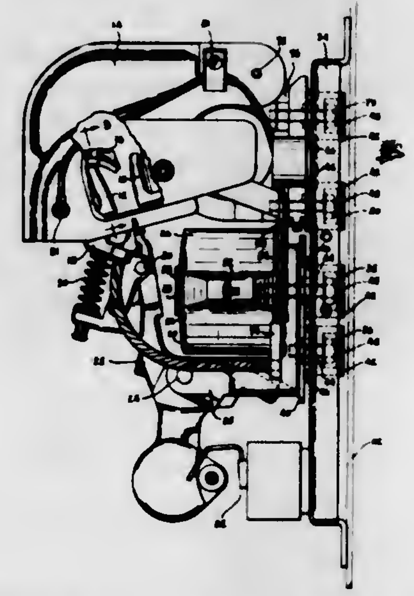
William A. Keller, Atlanta, Ga., and Thomas G. Willis, Raleigh, N.C., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 12, 1960, Ser. No. 21,668
8 Claims. (Cl. 317—104)



1. In a mounting for an electrical device, an enclosure member, a socket unit having contact jaws for detachably receiving contact blades of a detachable electric device having contact blades, a plurality of terminals disposed in side-by-side relationship with the socket unit in the enclosure, a through-type transformer having a plurality of rigid primary windings removably located in a magnetic core having a secondary winding associated therewith and located on one side of the socket unit, rigid connectors for detachably connecting said rigid primary windings respectively across separate pairs of said terminals, and means connecting the secondary winding to certain of said contact jaws, whereby the energizaion of said secondary winding may be modified by modifying the connections of said rigid primary windings relative to said terminals.

3,183,409
ELECTROMAGNETIC CONTACTOR

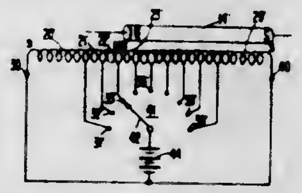
Jerome F. Dries, Hales Corners, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Nov. 17, 1960, Ser. No. 69,875
8 Claims. (Cl. 317—119)



1. An electromagnetic contactor attachable to and removable from the front of a control panel by performing attachment and removal work solely in front of said contactor and panel comprising a contactor assembly including a pair of contacts, power terminal means, and an electromagnet; a mounting plate; means for attaching said contactor assembly to said mounting plate and electrically insulating said contactor assembly therefrom; means operable from the front of said mounting plate for securing said mounting plate to the front of said panel; terminal stud means mounted adjacent said mounting plate and extending away from said panel to connect with said power terminal means; and means operable from the front of said contactor for fastening said terminal stud means to said power terminal means.

3,183,410
MAGNETIC MULTIPOSITIONING ACTUATORS

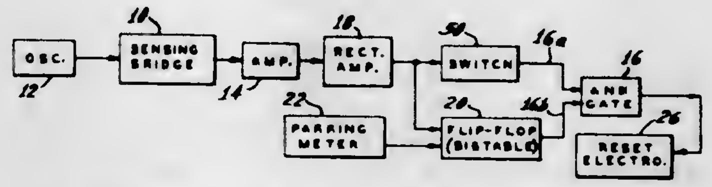
James Flora, Santa Clara, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1960, Ser. No. 79,786
6 Claims. (Cl. 317—123)



3. A magnetic positioning device including
a tubular sleeve member of non-magnetic material,
a winding arranged about said sleeve member,
said winding having interconnected terminals and a plurality of taps intermediate said terminals,
a unitary permanent magnet armature of length at least as great as the total length of said winding between the first and last of said intermediate taps and arranged for longitudinal movement within said sleeve member, and
means to apply unidirectional electric potential between said interconnected terminals and one of said intermediate taps for producing two magnetic fields of opposing magnetic flux about said armature
to position the same within said sleeve member in accordance with the null between said opposing magnetic fields.

3,183,411
PROXIMITY-DETECTORS FOR PARKING METERS AND THE LIKE

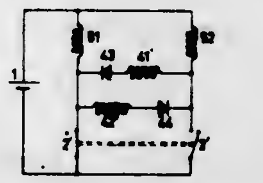
Thomas L. Palfi, Brockton, Mass., assignor to Cornell-Dubilier Electric Corporation, a corporation of Delaware
Filed Dec. 27, 1961, Ser. No. 163,011
10 Claims. (Cl. 317—123)



1. A control circuit for a parking meter having a reset electromagnet, including vehicle-responsive means adapted to be shifted from its normal condition in the absence of a vehicle to a reset-suppressing condition when a vehicle is in control proximity thereto, bistable means, said vehicle responsive means and said bistable means being connected to said electromagnet in "and" control relation thereto, and a control connection from said vehicle responsive means to said bistable means effective to set said bistable means in its stable electromagnet-operating condition when said vehicle-responsive means is properly operative and in said reset-suppressing condition, whereby when said vehicle responsive means responds properly to the departure of a vehicle and consequently shifts to its normal condition both the bistable means and said vehicle responsive means are in condition to cause operation of the electromagnet.

3,183,412
SWITCHING DEVICE FOR IMPEDANCES WITH INDUCTIVE CHARACTER

Erik W. Arends, Amstelveen, Netherlands, assignor to N.V. Electrologica, Rijswijk (Z.H.), Netherlands
Filed Jan. 22, 1962, Ser. No. 167,839
13 Claims. (Cl. 317—123)



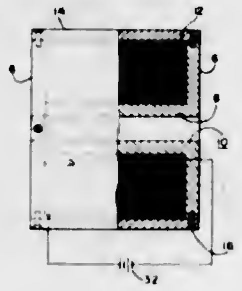
1. An alternate OFF and ON switching circuit for at least one impedance control coil comprising:
(A) a power source having two terminals,
(B) a pair of inductances connected at one of their ends to one terminal of said source,
(C) an impedance control coil means connected to the other end of at least one of said inductances,
(D) a pair of switching means each connected on one of their sides to the other terminal of said

source, and each connected on their other sides to the opposite ends of said impedance control coil means, and

(E) means connected to each of said switching means to insure that when one of said switching means is closed the other is open, and vice versa, whereby one of said switching means connects said other power source terminal to said one of said inductances while the other of said switching means connects said same other power source terminal to said impedance control means and vice versa, respectively.

3,183,413
PROTECTIVE MEANS FOR SUPERCONDUCTING SOLENOIDS

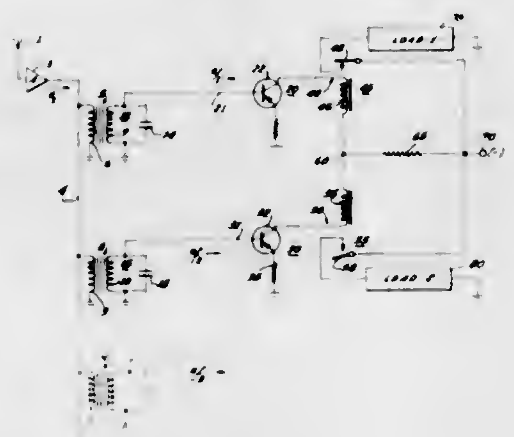
Henry Riemersma, Penn Hills, and Cameron B. Satterthwaite, Monroeville, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 12, 1962, Ser. No. 244,200
5 Claims. (Cl. 317—123)



1. A solenoid comprising a plurality of turns of material capable of being made superconducting, and at least one shorted turn of a material having electrical conductivity at ambient temperature and being incapable of being made superconducting, said shorted turn enclosing said solenoid and magnetically coupled thereto.

3,183,414
NOISE SUPPRESSOR SYSTEM

Heinz E. Goetz, Ontario, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
Filed Feb. 14, 1962, Ser. No. 173,616
8 Claims. (Cl. 317—138)



2. A control circuit for N controllable devices, and responsive to one or more of a predetermined number less than N electrical input signals of predetermined, mutually-differing frequencies to operate corresponding controllable devices, where N represents a whole number, but inoperative to control any devices in response to a number of input signals exceeding the predetermined number, said control circuit comprising:

a signal input terminal;

a pair of electrical-power input terminals;

N switches, each including a control element responsive to an electrical operating signal, and a portion of a load circuit having one terminus coupled to one of the power-input terminals, and another terminus coupled in common to another termini of the load circuits to form a plurality of parallel load circuits;

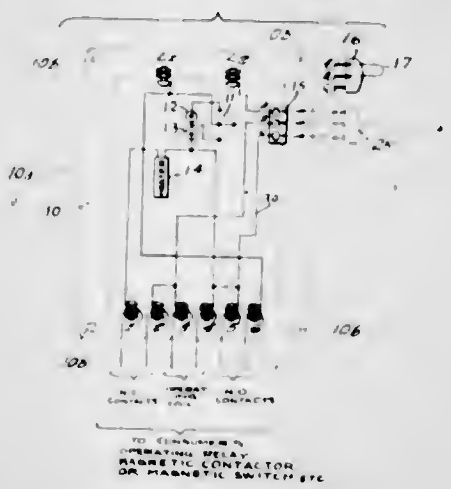
a plurality of controllable devices having control members operative only in response to an electrical quantity of predetermined magnitude, and effectively coupled, respectively, to the commonly-coupled termini of the load circuits of the switches;

a plurality of means for developing switch-operating signals having respective input elements coupled to the signal-input terminal and output elements coupled, respectively, to the control elements of the switches, and each of the plurality of means responsive selectively only to an electrical input signal having a predetermined frequency differing from the response frequencies of the other means; and

means coupled effectively between another termini of the switch load circuits and the other power input terminal for limiting the electrical quantity to a value below the magnitude of the predetermined electrical quantity whenever the simultaneous occurrence of a multiplicity of input signals results in simultaneous operation of at least two of the switches.

3,183,415
ELECTRICAL TIMING APPARATUS—COMBINATION UNIT FLASHER TIMER, REPEATER TIMER

John A. Ginard, 3056 Albany Crescent, Bronx, N.Y.
Filed Oct. 2, 1961, Ser. No. 150,609
3 Claims. (Cl. 317—141)

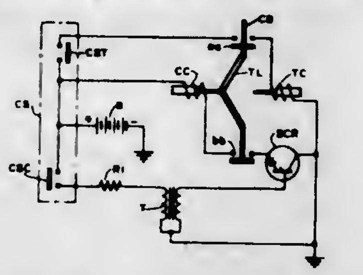

10
10a
10b
14
16
17
30
TO CONSUMER'S OPERATING RELAY MAGNETIC CONTACTOR OR MAGNETIC SWITCH ETC

1. Electric timing apparatus for automatic timed actuation of first electromagnetic means having an operating coil and at least one set of magnetically operated normally closed contacts, which apparatus comprises: thermally responsive first switch means adapted to be actuated after a preselected heating time and first electric heater means therefor; first circuit means connected to said first switch means and arranged to place the same in series with said first electromagnetic means operating coil and a source of voltage; and, second circuit means connected to said first heater means and arranged to place the same in series with said first switch means, said first electromagnetic means normally closed contacts and said source of voltage.

3,183,416
CIRCUIT BREAKER CONTROL SYSTEM

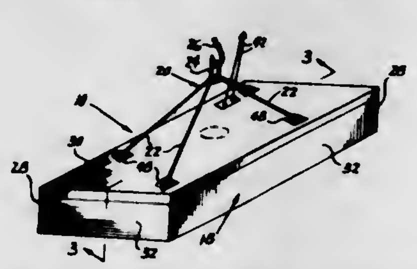
Robert R. Circle, Elizabeth Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 5, 1962, Ser. No. 200,096
2 Claims. (Cl. 317—148.5)

1. A control system comprising a circuit breaker mechanism, a closing coil for the mechanism, a semiconductor device for controlling the energization of the coil, impulse generating means for applying when energized only a single impulse to said device to cause the semiconductor device to become conductive, a control switch for controlling the energization of the impulse generating means, and auxiliary switching means actuated by the breaker mechanism to cause the semiconductor device to become nonconductive, said generating means comprising a source of unidirectional current, a resistance and a transformer having a primary winding connected in series with said switch and said source and a secondary winding connected in circuit relation with said device.



3,183,417
LIFTING MAGNET HAVING A CORNER LESS THAN 90 DEGREES

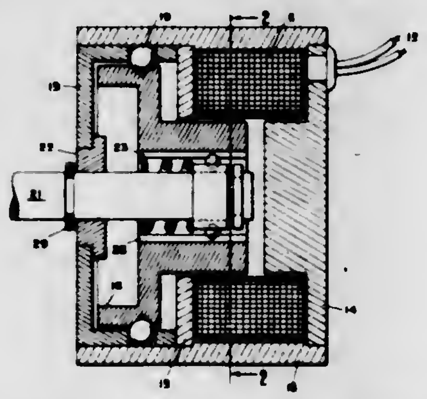
Add Lee Wright, 1919 Manhattan St., Pittsburgh, Pa.
Filed Apr. 19, 1963, Ser. No. 274,283
4 Claims. (Cl. 317—164)



1. In a lifting magnet for lifting ferrous material from a container means having substantially right-angular portions, and including an electromagnet member and a lifting means secured thereto, said magnet member including at least one magnetic winding, portions of said magnet member defining at least one magnetic pole, said magnetic winding being wrapped around said one magnetic pole, further portions of said magnet member defining at least one additional magnetic pole spaced from said one magnetic pole, and means to energize said magnetic winding, said magnet member having at least one sharp corner of less than 90° to facilitate magnetic engagement of said magnet member with ferrous material disposed in said right-angular portions of said container means.

3,183,418
ROTARY SOLENOID

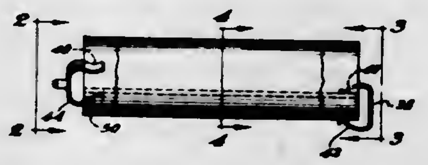
George S. Cherniak, Eau Gallie, Fla.
(522 Andros Lane, Indian Harbour Beach, Fla.)
Filed Aug. 14, 1961, Ser. No. 131,189
4 Claims. (Cl. 317—192)



1. A rotary solenoid comprising an armature member mounted for combined translational and rotational movement, an electromagnet to create a linearly acting force on said armature member tending to produce translational movement thereof, camming means acting upon a surface portion of said armature member extending generally in the direction of its translational movement to impart rotational movement as said member moves in translation, and an output member mounted for rotational movement, said armature member being coupled to said output member for rotation therewith but being free to move in translation with respect thereto.

3,183,419
ELECTRICAL CAPACITOR HAVING AN INTERNAL RIB STRUCTURE

Harold F. Rieth, Pasadena, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif.
Filed Feb. 1, 1960, Ser. No. 6,063
15 Claims. (Cl. 317—242)



1. A capacitor, including, a shell made from electrically insulating material and provided with an external surface, a plurality of ribs made from electrically insulating material and disposed within the shell in integral relationship to the shell and in particular relationship to define a first continuous internal surface and a plurality of isolated continuous internal surfaces disposed in spaced relationship to one another, there being at one end a first cap made from electrically insulating material and having an external surface and an internal surface and extending only from the first internal surface to the external surface of the shell and there being at the other end a second cap made from electrically insulating material and having an external surface and an internal surface and extending only between the plurality of isolated internal surfaces, the external surface of the shell and the first continuous internal surface and the plurality of isolated internal surfaces and the external and internal surfaces of the first and second caps being coated with a conductive material and there being a gap in the conductive coating at a single position for the formation of a first plate of the capacitor by the external surface of the shell, the first internal surface and the external surface of the first cap and for the formation of a second plate of the capacitor by the external surface of the second cap and the plurality of isolated internal surfaces, the plurality of isolated internal surfaces being disposed relative to the external surface of the shell and the first continuous internal surface to produce a capacitive effect between the isolated internal surfaces and the full area of the external surface of the shell and between the isolated internal surfaces and the full area of the first continuous internal surface.

3,183,420
POSITIONING SERVOSYSTEMS

Carl Eugene Westenskow, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 18, 1962, Ser. No. 167,003
6 Claims. (Cl. 318—18)

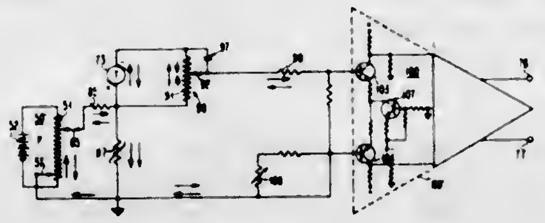
1. In a servosystem for positioning a utilization device of the type comprising

means for moving said device along a predetermined path,

means coupled to said device moving means for generating a voltage proportional to the distance said device is to be moved in positioning the same, means coupled to said device moving means for generating a voltage proportional to the velocity at which said device is moved in positioning the same, and

electric circuit means coupled to said device moving means for controlling the same;

a control voltage developing circuit arrangement comprising

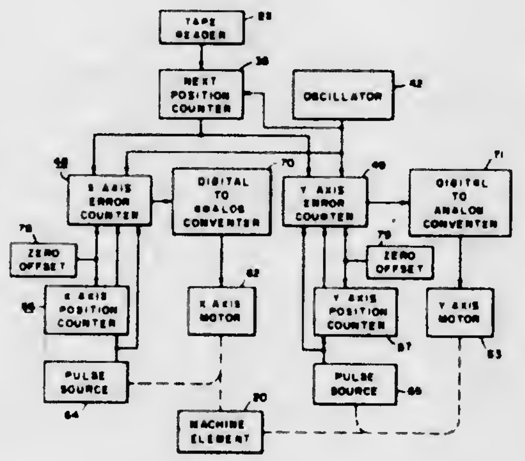


electric circuit means for shaping voltages,

means connecting said distance voltage generating means across said shaping circuit means for passing electric current therethrough in a given direction, and

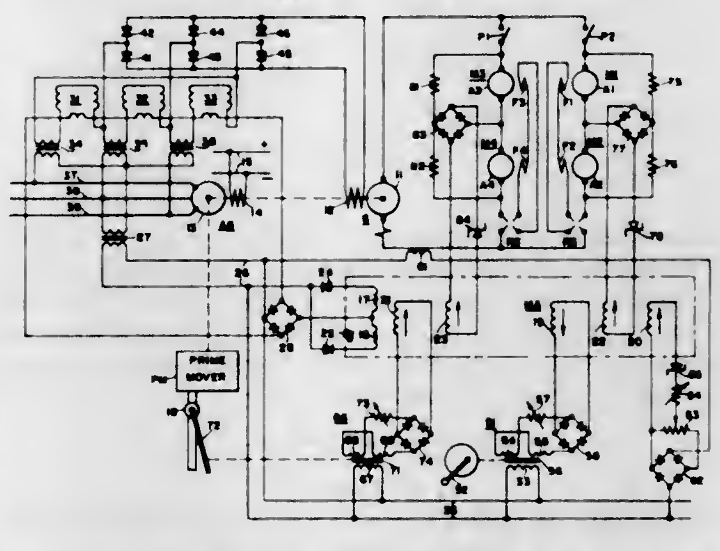
means connecting said velocity voltage generating means and said electric circuit means in series across said controlling circuit means for passing electric current through said shaping circuit means in said given direction.

3,183,421
DIGITAL POSITIONAL SERVO APPARATUS
Louis W. Herchenroeder, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 16, 1960, Ser. No. 29,192
5 Claims. (Cl. 318—28)



1. In position control apparatus for a machine member operative with a desired position signal source, the combination of a first signal counter device having a plurality of stages and being operative with said signal source for receiving a plurality of digits of said desired position signal, a second signal counter device operative with said machine member for retaining an actual position signal in accordance with the actual position of said machine member, a third signal counter device having a plurality of stages and being operative with each of said first signal counter device and said second signal counter device for retaining a position difference signal in accordance with a predetermined difference between said desired position signal and said actual position signal, and a counting signal source operative with each of said first signal counter device and said third signal counter device for supplying counting signals to said first and third signal counters for providing said position difference signal.

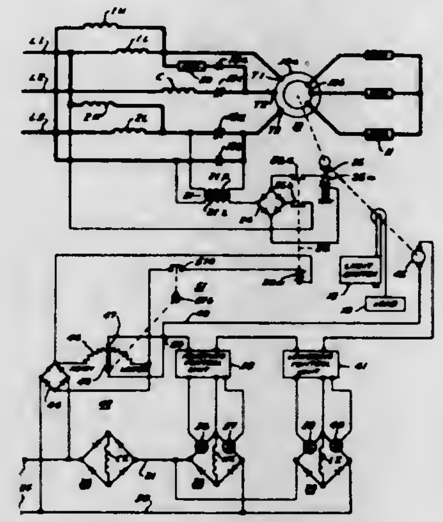
3,183,422
GENERATOR FED PLURAL MOTOR SYSTEM INCLUDING VOLTAGE CONTROL, CURRENT CONTROL AND SLIP CONTROL
John J. Stamm, Export, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 18, 1963, Ser. No. 259,261
3 Claims. (Cl. 318—52)



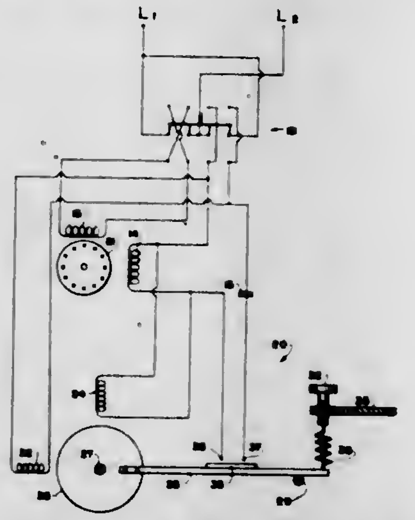
1. In a power system, in combination, a generator having an armature winding and a field winding, a prime mover for driving the generator, a plurality of pairs of series connected motors connected across the generator armature, a magnetic amplifier having a magnetic core and load coils for controlling the excitation current for the field winding of the generator, a voltage control winding for producing a flux in the core of the amplifier, manually operable control means for controlling the energization of the control winding to control the voltage of the generator, a torque control winding for producing a flux in the core of the amplifier opposing the flux of the voltage control winding, control means responsive to the generator current for controlling the energization of the torque winding, a load regulating winding for producing a flux in the core of the amplifier opposing the flux of the voltage control winding, control means responsive to the quantity of fuel being supplied to the prime mover for controlling the energization of the load regulating winding, a slip control winding for each pair of series connected motors, said slip control windings producing flux in the core of the amplifier opposing the flux of the voltage control winding, and control means responsive to a difference in the voltage across the motors of each pair of motors for controlling the energization of each one of said slip control windings.

3,183,423
LIMIT CONTROL FOR MOTORS
Frank Alan Manners, Cleveland, Ohio, assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Sept. 22, 1961, Ser. No. 140,053
5 Claims. (Cl. 318—203)

1. A limit control system for a polyphase motor and electroresponsive brake therefor, said system comprising a polyphase motor, a circuit connected to said motor and adapted for connection to a source of polyphase voltage, variable impedance means in said circuit for controlling the direction of phase rotation and the magnitude of the voltage applied to the motor from said source, an electromagnetic brake, a transformer having a primary and a secondary winding, means for connecting the brake for energization from a single phase of said source through said secondary winding, a limit control means normally connecting said primary winding across a circuit of low impedance thereby to render said secondary winding of low impedance, said limit control means being operative, upon said motor reaching a limit of operation in one direction while said secondary winding impedance is low, to interrupt said circuit of low impedance and to connect said primary winding to said source and to connect said secondary winding and said source in series opposition with each other.



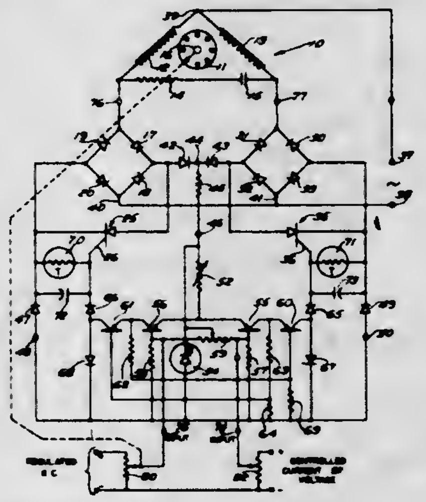
3,183,424
REVERSIBLE SINGLE-PHASE MOTOR
Max Goldberg, 141 E. 3rd St., New York, N.Y.
Filed Feb. 20, 1962, Ser. No. 174,585
10 Claims. (Cl. 318—207)



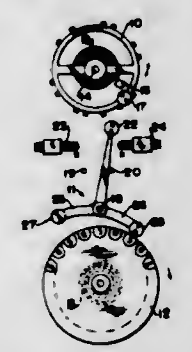
1. In a reversible single-phase induction motor, a main primary winding, an auxiliary or starting winding, a rotor, switch means connecting said primary winding and said auxiliary or starting winding to a single phase current source, said switch means having a first position for operation of said rotor in one direction and a second position for operation of said rotor in the other direction, and control means having a first coil connected across the current source, a second coil connected across at least a portion of said auxiliary or starting winding, an element movably mounted in relation to said first and second coils so as to be moved in response to the phase relation between said first and second coils, and contact means opened by the movement of said element, said contact means being connected in series with said auxiliary or starting winding.

3,183,425
SCR SUPPLY FOR REVERSIBLE MOTOR SYSTEM
Richard S. Slawson, Barrington, R.I., assignor to George W. Dahl Company, Inc., a corporation of Rhode Island
Filed Jan. 30, 1963, Ser. No. 254,962
4 Claims. (Cl. 318—227)

2. A control system for a reversible motor having first and second windings, a first and second bridge rectifier, a source of alternating current having one terminal connected to each winding and the other terminal connected to an input terminal of each bridge rectifier, the other input terminal of the first and second bridge rectifiers directly connected to the other terminal of the first and second motor windings respectively, first and second silicon controlled rectifiers connected across the output respectively of the first and second bridge rectifiers, a voltage dropping resistor, a zener diode and blocking rectifiers connected across the outputs of said bridge rectifiers, a balanced differential amplifier having its outputs coupled to the gates of the silicon controlled rectifiers, the supply voltage for said amplifier taken across said zener diode.



3,183,426
MAGNETICALLY COUPLED CONSTANT SPEED SYSTEM
Arthur W. Haydon, Milford, Conn., assignor to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware
Filed Feb. 14, 1962, Ser. No. 173,179
34 Claims. (Cl. 318—302)



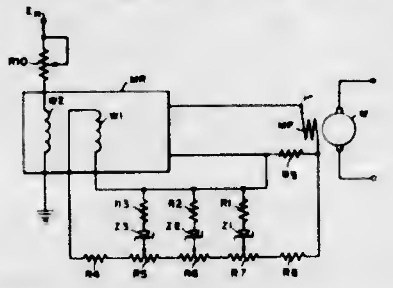
1. A constant speed mechanism comprising a constantly oscillating inertia member having regular cycles comprised of two inactive and two active periods, an intermittently actuated member movably mounted adjacent said inertia member and having alternative operating positions, said intermittently actuated member having regular cycles comprised of two inactive and two active periods corresponding to those of said inertia member, said intermittently actuated member being movable during said active periods and stationary during said inactive periods, first magnetic means on said inertia member having a predetermined first field of influence, second magnetic means on said intermittently actuated member having a predetermined second field of influence, said first and second magnetic means being positioned to accommodate effective magnetic interaction of said first and second fields at predetermined limited active portions only of the oscillating excursion of the inertia member during said active periods, the fields of influence of said first and second magnetic means being so related that said first field acts upon said second field at the commencement of said active periods to initiate movement of said intermittently actuated means from one alternative operating position

toward the other at regular intervals determined by the natural frequency of said inertia member, and external energy input means acting upon said intermittently actuated member during said active periods to effect movement of said member from one alternative operating position toward the other, said second field of influence during said active period acting upon said first field of influence to impart to said inertia member a predetermined increment of energy to sustain the oscillatory motion of said inertia member, said first magnetic means moving beyond the effective influence of said second magnetic means during said inactive periods, said inactive periods commencing at the arrival of said intermittently actuated member at one of its alternative operating positions.

3,183,427
FIELD REGULATOR FOR DYNAMOELECTRIC MACHINE

David M. Hawkins, Tonawanda, and Thomas J. Dolphin, Williamsville, N.Y., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 1, 1961, Ser. No. 92,527
11 Claims. (Cl. 318—350)

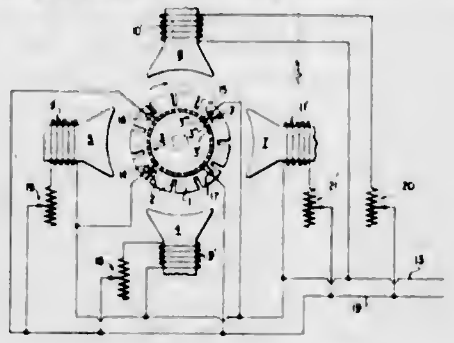


1. In apparatus for regulating a condition of a dynamoelectric machine having electromagnetic field means including field winding means, said field means being subject to magnetic saturation and having a field flux vs. field current characteristic at least a portion of which is non-linear, signal responsive control means for controlling the supply of power to said field winding means, and fourth means responsive to a condition of said machine for producing and supplying to said control means a signal which is a function of said field characteristic including said nonlinear portion, said fourth means comprising fifth means for producing a voltage proportional to the current in said field winding means, a circuit connecting said fifth means to said control means, and a plurality of branches connected across said circuit, each of said branches having a different threshold voltage value.

3,183,428
MEANS FOR IMPROVING COMMUTATION AND DECREASING RADIO INTERFERENCE VOLTAGES OF D.C. COMMUTATING MACHINES

John E. Diehl, St. Marys, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania

Filed Feb. 13, 1962, Ser. No. 172,958
6 Claims. (Cl. 318—439)

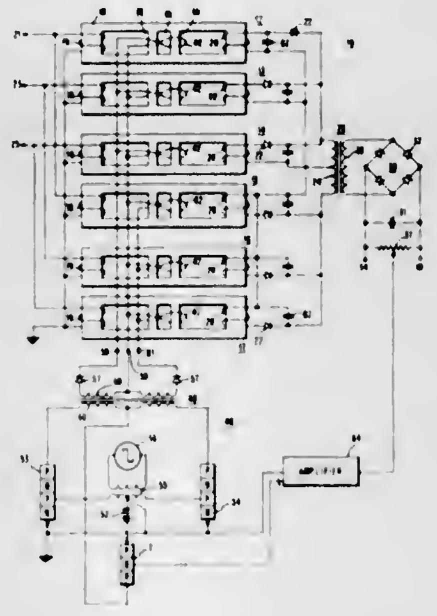


1. A D.C. commutating machine of the type having two or more poles comprising, armature means, commutator means carried by said armature means, means for commutating said commutator means upon rotation of said armature, a plurality of field pole means arranged about and spaced from said armature means, field windings disposed on said field pole means and electrically connected with each other, and individual resistance means connected to conduct current under all operating conditions of the machine each connected in electrical circuit with a respective field winding for separately balancing the strengths and changing the shapes of the magnetic fields of said field pole means, dissipating undesirable commutation energy, and compensating for magnetic and electrical unbalances built into the machine.

3,183,429
INVERTER CONTROLLED POWER SUPPLY

Orestes M. Baycura, Vestal, and Pierre Essinger, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 27, 1960, Ser. No. 78,578
9 Claims. (Cl. 321—18)



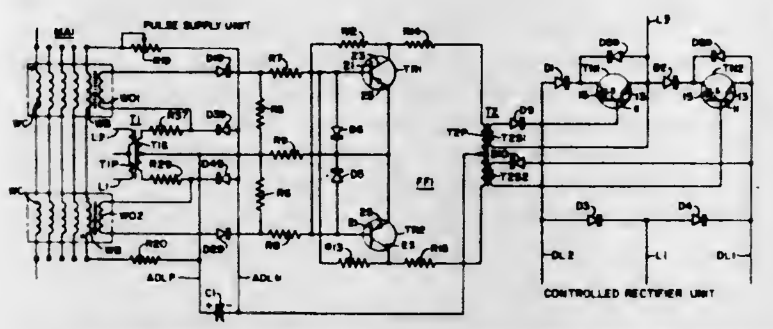
8. In a converter type power supply, a main transformer having input and output windings, rectifier means connecting the output winding to a load circuit, three pairs of auxiliary transformers having primary windings connected to a relatively low frequency three-phase source and secondary windings separated from the primary windings by magnetic shunts having saturation control windings, unidirectional means connecting the secondary windings of each pair to the main transformer input winding in opposite senses, a relatively high frequency controllable square wave control source, means connecting the control source to the control winding of each pair of auxiliary transformers in opposed relation, and means connecting the output circuit to the control source to vary the amplitude of the high frequency source in accordance with the voltage of the load circuit.

3,183,430
MAGNETIC AMPLIFIER-CONTROLLED TRANSISTOR APPARATUS

Emil T. Schonholzer, Williamsville, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 18, 1960, Ser. No. 43,515
24 Claims. (Cl. 321—47)

1. Apparatus for producing a signal of steep wave front including magnetic-amplifier means having a first output winding and a second output winding, first and second transistors each having a base, an emitter and a collector, positive feedback connections between each collector and the base of the other transistor, means connecting said first winding in controlling relationship with the emitter and base of said first transistor, and means connecting said second winding in controlling relationship between the emitter and base of said second transistor.

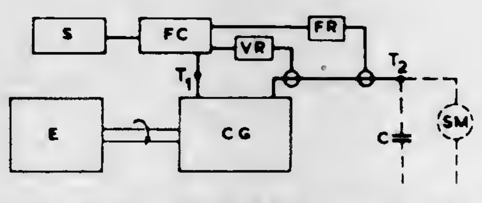


17. Pulse producing apparatus comprising magnetic amplifier means for producing consecutive output pulses with abrupt wavefronts, means for adjusting the time position of said wavefronts with respect to a reference position, a bistable flip-flop, means including coupling means between the amplifier and the flip-flop for alternating the flip-flop between its respective stable states in response to and at the occurrence rate of said consecutive output pulses, a saturating transformer, and means responsive to the alternating states of the flip-flop for alternately driving said transformer to opposite polarities to produce output pulses, one for each change of state of the flip-flop.

3,183,431
CONSTANT FREQUENCY BRUSHLESS GENERATING SYSTEM

Arthur William Ford, London, England, assignor to Sundstrand Corporation, a corporation of Illinois

Filed Jan. 23, 1961, Ser. No. 84,365
13 Claims. (Cl. 322—32)



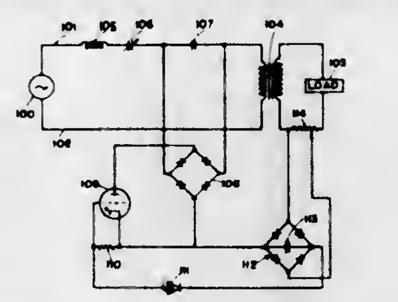
3. A constant frequency, brushless generating system, comprising: a source of variable speed mechanical power; a first electrical machine having a stator and a rotor, said rotor being driven from said source of mechanical power and having an electrical output with at least three phases; a second electrical machine having a stator and a rotor, said second rotor being driven from said source of mechanical power and electrically connected with the output of said first rotor and in reverse phase relation; means for deriving electrical power from the stator of said second machine; and means operable as a function of the speed of said mechanical power source for exciting the stator of said first machine at a frequency related to said speed and variable therewith to keep constant the frequency of electrical power from the stator of said second electrical machine.

3,183,432
VOLTAGE OR CURRENT REGULATOR

Robert H. Pintell, New York, N.Y., assignor to Intron International, Inc., Bronx, N.Y., a corporation of New York

Filed Aug. 18, 1961, Ser. No. 132,454
21 Claims. (Cl. 323—66)

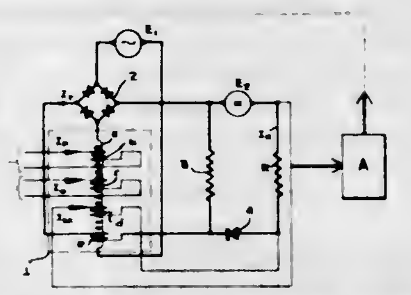
1. A circuit arrangement for supplying electrical energy to a load while substantially stabilizing a load-dependent electrical parameter of which said energy is a function, comprising an input circuit including a source of alternating current, a transmission circuit coupling said input circuit to said load, a network in said transmission circuit having a resonance frequency in the vicinity of the operating frequency of said source, the frequency of said source lying on a steeply sloping portion of the resonance curve of said network, frequency-determining means in one of said circuits including a source of unidirectional pulses substantially in cadence with said source of alternating current for shifting said resonance frequency and said operating frequency relatively to each other whereby the reactance of said network is altered, and feedback means coupled with said load and with said frequency-determining means for actuating the latter in a sense tending to compensate for changes in said parameter, said frequency-determining means comprising a voltage-responsive capacitor forming part of said network.



3,183,433
IMPULSE REACTOR-TYPE REGULATOR

Jerzy Kazimierz Soldek, Gdansk, Poland, assignor to Politechnika Gdanska of Katedra Elektroenergetyki, Gdansk, Poland, and Gdansk Technical University-Chair of Electrotechnics, Gdansk, Poland

Filed Nov. 27, 1961, Ser. No. 155,151
6 Claims. (Cl. 323—89)

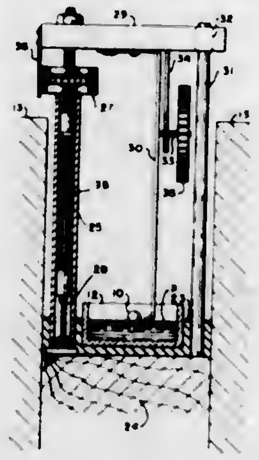


1. A regulator comprising a saturable core reactor having a load winding, a polarizing winding, a measuring winding, a functional feedback winding, and a positive internal feedback winding, a rectifier having a pair of A.C. input terminals and a pair of D.C. output terminals, an A.C. current source, a circuit connecting the A.C. input terminals of said rectifier and said load winding in series across said A.C. source, a first load resistance, a circuit connecting said positive internal feedback winding and said first load resistance in series across the D.C. output terminals of said rectifier, a D.C. source, a second load resistance, a circuit connecting said D.C. source and said second load resistance in series with each other across said first load resistance, and means to apply a feedback current to said functional feedback winding varying in accordance with the current flowing in said load resistances, the ampere-turns and polarity of the measuring, polarization and functional feedback windings being related in such a manner that said reactor switches continuously back and forth between saturated and unsaturated states and that the relationship of the period when the current flowing in the load winding of said reactor varies towards its maximum and the period when such current varies towards its minimum varies in accordance with the current flowing in said measuring winding, and that the pulsation amplitude of the magnetic field strength produced by the functional feedback winding is greater than the width of the flux current loop of the hysteresis characteristic of said reactor.

3,183,434
UNIVERSAL ROTATION METHOD AND APPARATUS FOR LOCATING AXES IN SINGLE SPHERICAL FERRIMAGNETIC CRYSTALS

Martin F. Auer, 3215 Brighten Ave., Belmar, N.J. assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 30, 1961, Ser. No. 148,774
2 Claims. (Cl. 324—14)
(Granted under Title 35, U.S. Code (1952), sec. 266)

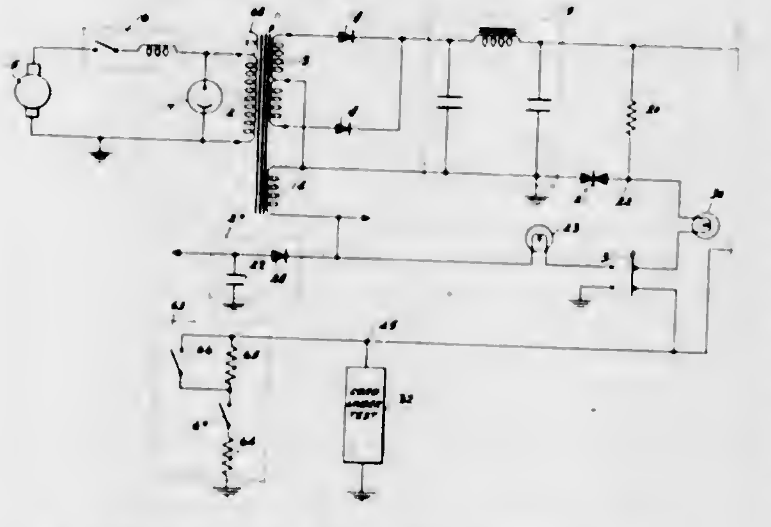


1. A method of locating crystallographic axes in single crystal spherical ferrimagnetic crystals comprising floating the spherical crystal upon the surface of a stationary pool of mercury, applying a magnetic field to the crystal with the flux lines extending substantially parallel to the mercury surface whereby an easy axis of the crystal will align itself with the flux lines, positioning the point of a marking stylus upon the horizontal plane which bisects said crystal, positioning said crystal so that the vertical plane in which said marking stylus lies substantially bisects said crystal, said vertical plane being parallel to the flux lines, applying marking material to said point and moving said stylus along the line formed by the intersection of said horizontal and said vertical planes until it contacts said sphere thereby marking a spot on the sphere which locates an easy axis of the crystal.

3,183,435
APPARATUS FOR TESTING STRANDED CONDUCTORS UTILIZING PULSES ORIGINATING IN THE CONDUCTORS UNDER TEST

David L. Donville, Seaford, Walter B. Lueft, North Merrick, and Arthur G. Zuch, White Plains, N.Y., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 10, 1960, Ser. No. 28,124
2 Claims. (Cl. 324—51)



1. In an electrical system for detecting variations in resistance value of a multi-strand cable as it is continually flexed,

a voltage divider comprising a resistor in a first branch and the multi-strand cable in the second branch,

a source of D.C. potential connected to the termination of the first branch,

a source of ground potential connected to the termination of said second branch,

a Class A amplifier connected to the junction of said first and second branches and responsive to variation in potential at said junction point due to changes in resistance of said second branch resulting from the flexing of said multi-strand cable for producing output pulses varying in magnitude and direction in accordance with said changes,

a cathode follower amplifier connected to said Class A amplifier and operated in accordance with said output pulses,

a rectifier means connected to the cathode and the anode of said cathode follower for producing positive going pulses in response to variations in potential of said cathode and anode,

a thyratron connected to said rectifier means,

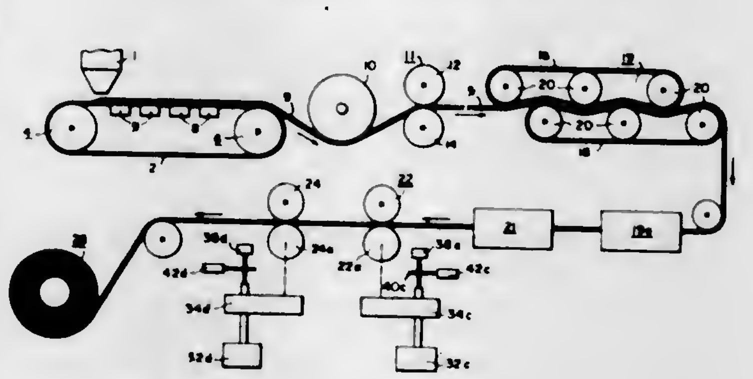
means for biasing said thyratron from conduction until the magnitude of the pulses from the cathode follower exceed a predetermined value indicative of a faulty multi-strand cable, and

an indicator operated by said thyratron for indicating that cable being flexed is faulty.

3,183,436
PULSE OPERATED COUNTING APPARATUS FOR MEASURING SPEED DIFFERENCE

Warren J. Schmidt, Upper Montclair, and Seymour Salowe, East Orange, N.J., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 14, 1960, Ser. No. 36,046
25 Claims. (Cl. 324—69)

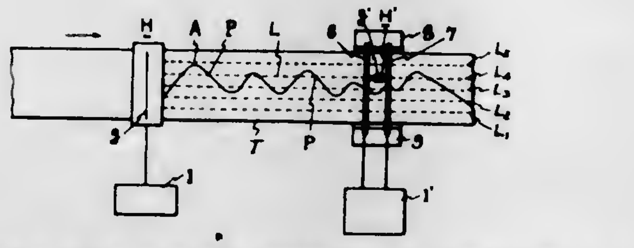


1. In an apparatus for measuring the difference in the speed of two movements, a first pulse producing means providing a pulse for each predetermined increment of movement of a first of said movements, a second pulse producing means providing a pulse for each predetermined increment of movement of a second of said movements, pulse counting means, means for supplying said pulses to said counting means, and means for timing the durations during which said counting means is responsive to said pulses, said timing means acting to time the period during which said first pulse producing means is effective to actuate said counter as a direct function of the magnitude of said predetermined increment of said first movement and to time the period during which said second pulse producing means is effective to actuate said counter as a direct function of the magnitude of said predetermined increment of said second movement, said counting means including means for determining the numerical difference of the pulses supplied by said first and second pulse producing means.

3,183,437
METHOD AND APPARATUS FOR WAVE FORM ANALYSIS

Saburo Uemura and Kazuo Nagase, Tokyo, Japan, assignors to Sony Corporation (Sony Kabushikikaisha), Tokyo, Japan, a corporation of Japan

Filed Sept. 25, 1959, Ser. No. 842,358
Claims priority, application Japan, Oct. 29, 1958, 31,086/58
16 Claims. (Cl. 324—77)

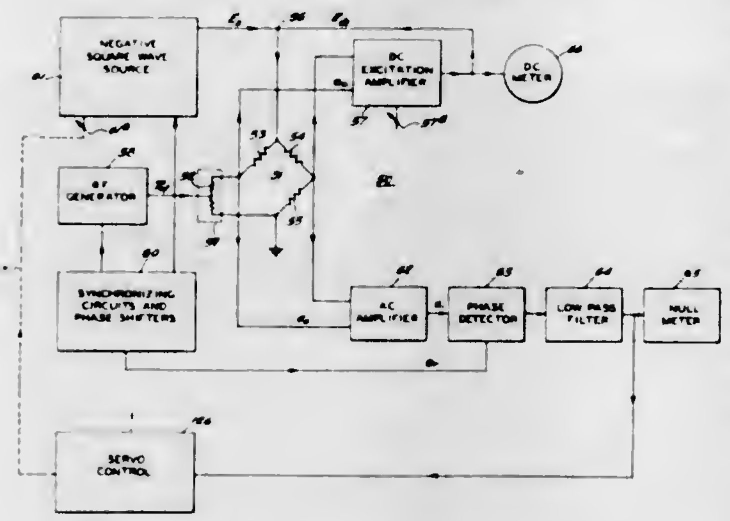


1. In wave form analysis apparatus, in combination, a magnetic recording medium having a magnetically recorded strip-line extending therealong, a magnetic transducing head, means to produce a relatively and substantially constant speed motion between said head and said recording medium, said head having a magnetic gap of a relatively short length extending transversely to said direction of substantially constant speed motion and means to produce relative, lateral motions between said head and said recorded strip transverse to said direction of substantially constant speed motion in a wave whose amplitudes correspond to a signal to be analysed and which amplitudes are materially greater than the said gap length of said head so that said gap length extends across only a small fractional part of the amplitude width of said wave.

3,183,438
MODULATED POWER MEASURING BRIDGE WITH AUTOMATIC A.C. AND D.C. REBALANCING

Max M. Hirsch, Philadelphia, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Mar. 8, 1960, Ser. No. 13,480
2 Claims. (Cl. 324—106)

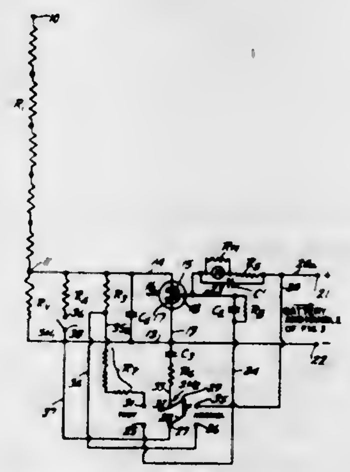


1. A power meter for measuring small amounts of electromagnetic energy comprising any energy sensing means capable of sensing energy by changing electrical resistance, said energy sensing means forming one arm of a bridge, means to apply a direct current voltage to said bridge, means to sense the direct current balance of said bridge and automatically control said direct current voltage to maintain said bridge balanced in spite of ambient temperature fluctuations, means to direct the energy to be measured onto said energy sensing means, energy modulating means in the path of said energy to periodically block and unblock said energy before it is sensed, means to periodically reduce said direct current voltage synchronously with each sensing by said energy sensing means of said electromagnetic energy, an alternating current amplifier connected to the output of said bridge, said amplifier being tuned to variations of bridge balance at the frequency of said energy modulating means, means to automatically vary the amount of periodic reduction in said direct current voltage in such a direction as to minimize the output of said alternating current amplifier, and means to measure the amount of said periodic reduction in said direct current voltage as a measure of said energy.

3,183,439
PORTABLE HIGH VOLTAGE TEST STICK

Isidore Rosinek, Brooklyn, N.Y.
(1512 W. Flagler St., Miami, Fla.)

Filed Aug. 23, 1960, Ser. No. 51,411
5 Claims. (Cl. 324—122)



1. A portable high voltage test stick having a lower handle and upper extension, said upper extension serving to contact an elevated outdoor high tension line and including a series of resistances in series with an ungrounded lower circuit connection and said lower handle including a battery with positive and negative connections and an elongated plastic cylinder and a metal cylinder liner for said plastic cylinder forming a capacitor, a circuit connection between the negative side of said battery and said liner and circuitry between the ungrounded connection and the positive and negative connections of the battery, an intermediate carrier on said stick between said upper extension and said lower handle for said circuitry, said circuitry including a thyratron tube having a grid, anode and cathode, and an extinguishing circuit including parallel connected resistance, capacity and indicating meter elements, circuit connections from the lower connection to the grid, and from the positive connection to one side of the extinguishing circuit and from the other side of the extinguishing circuit to the anode, and a connection from the negative connection of the D.C. battery to the cathode.

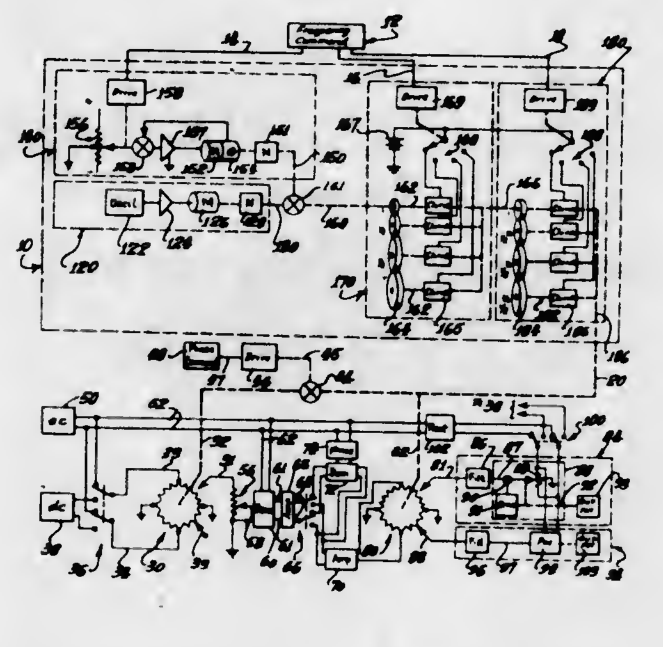
3,183,440
SERVO TEST SYSTEM WITH COMPONENT RESOLVER

Robert Charles Howard, Costa Mesa, Calif., assignor to Giannini Controls Corporation, Duarte, Calif., a corporation of New York

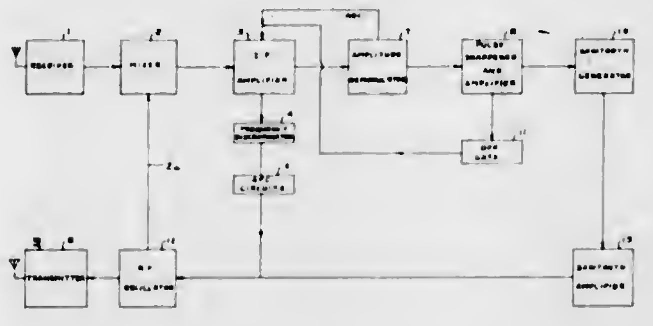
Filed Aug. 29, 1960, Ser. No. 52,601
7 Claims. (Cl. 324—158)

1. Mechanism for testing a servo system or the like, comprising in combination means for supplying as input to the servo system a test signal that varies sinusoidally at a test frequency, means for deriving from the servo system a response signal that constitutes a measure of the servo response to said input, means for modulating the response signal sinusoidally at the test frequency, means actuable to continuously vary the phase relation of said

modulation with respect to said sinusoidal variation of said input, and means for producing an output signal proportional to the time average of the magnitude of the modulated response signal.

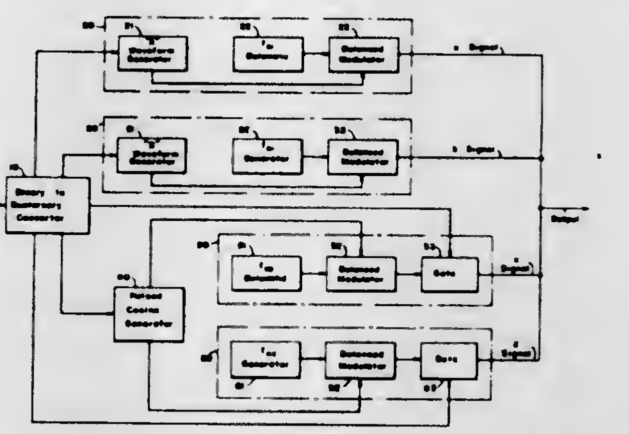


3,183,441
TRANSPONDER AUTOMATIC FREQUENCY CONTROL SYSTEM
John P. Francis, Catonsville, Md., and Paul V. de la Cova, Jackson, Mich., assignors to Martin Marietta Corporation, a corporation of Maryland
Filed July 12, 1961, Ser. No. 123,482
6 Claims. (Cl. 325—13)



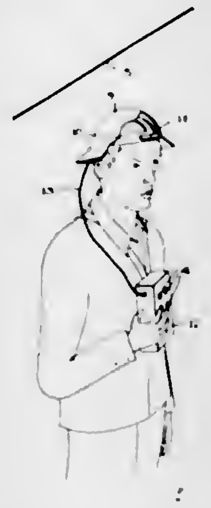
1. A transponder comprising a radio receiver connected to an antenna to receive a pulsed radio signal of a first frequency, means to generate a radio signal of variable frequency for transmission from another antenna connected thereto, means to heterodyne said pulsed and variable frequency signals in order to produce a difference signal which is the difference between said pulsed and variable frequency signals, amplifying means to reproduce said difference signal, means for deriving an output proportional to changes in said difference signal, means in response to said deriving means to produce a reference voltage, interconnecting means between said generating means and said reference producing means, means connected to the output of said amplifying means having an output proportional to the modulation of said difference signal, gating means connected to said proportional means and being operative to place said amplifier in alternative operative and inoperative states, means responsive to the proportional means for applying an amplified sweep signal to both said generating means and to said interconnecting means, said interconnecting means having an output present only when said amplifier is in said inoperative state, said output of the interconnecting means being of said first frequency.

3,183,442
PHASEPROOF PULSE SIGNAL TRANSMISSION SYSTEM UTILIZING BINARY TO QUATERNARY CONVERSION MEANS
Richard F. J. Filipowsky, Glen Burnie, Md., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 9, 1959, Ser. No. 845,548
2 Claims. (Cl. 325—40)



1. A system for transmitting a plurality of intelligence signals comprising, means for producing a first symbolic electrical signal having a first center frequency modulated by a first bidirectional symbolic waveform so as to provide a first plurality of sidebands, means for producing a second electrical signal having the same center frequency as said first center frequency and modulated by a second bidirectional symbolic waveform so as to provide a second plurality of sidebands, means for producing a third electrical signal having a second center frequency above said first center frequency and modulated by a third unidirectional symbolic waveform so as to provide a third plurality of sidebands, means for producing a fourth electrical signal having a third center frequency below said first center frequency and modulated by said third symbolic waveform so as to provide a fourth plurality of sidebands, and said third and said fourth plurality of sidebands being intermediate said first and said second plurality of sidebands.

3,183,443
TRANSMISSION SYSTEM WITH ANTENNA MEANS FOR COUPLING TO AN INSULATED CONDUCTOR
Albert Lefévre, Verneuil-en-Halatte, France, assignor to Charbonnages de France, Paris, France, a public institution organized in France
Filed Sept. 11, 1962, Ser. No. 222,869
Claims priority, application France, Sept. 16, 1961, 873,398, patent 1,307,380; Jan. 8, 1962, 884,193
3 Claims. (Cl. 325—178)

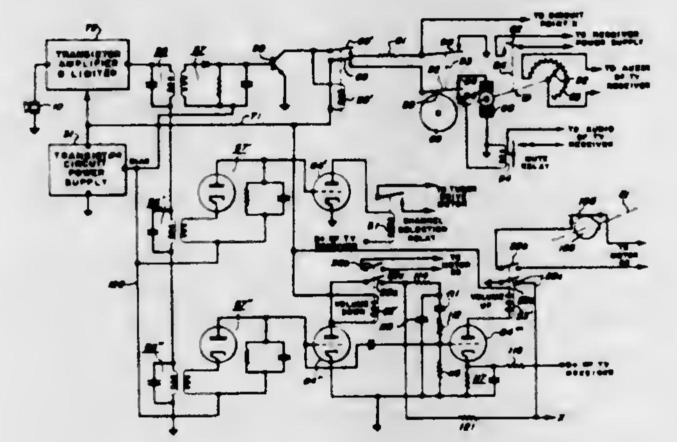


1. Coupling apparatus for the transmission or reception of high-frequency signals through capacitive coupling

on an insulated conductor extending at least adjacent to the points of transmissions and reception comprising:

- a coupler for capacitive coupling with said insulated conductor;
- and transmitting or receiving apparatus operatively connected to said coupler;
- said coupler including a helmet for wear by an operator transmitting or receiving the signals having
- an insulated headgear fitted inside said helmet,
- a metallized part of said helmet having a surface of substantially constant electrical value in any orientation in relation to said insulated conductor
- a metallized portion having contact with the earth terminal of the apparatus for transmission or reception of high-frequency signals and contact with the body of the operator wearing said helmet whereby the earth return is affected through the intermediary of the body of the operator,
- a casing worn by the operator,
- and control means on said casing for selecting signals for transmission through said coupler to the insulated conductor.

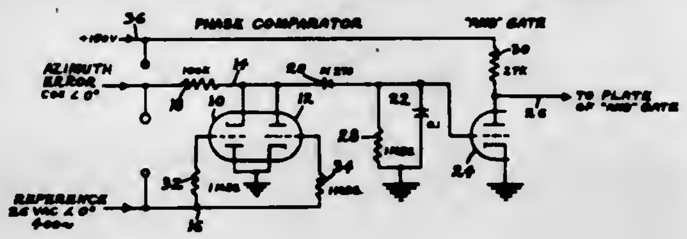
3,183,444
REMOTE CONTROL SYSTEM
Erwin M. Roschke, Des Plaines, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware
Filed Mar. 22, 1960, Ser. No. 16,679
18 Claims. (Cl. 325—392)



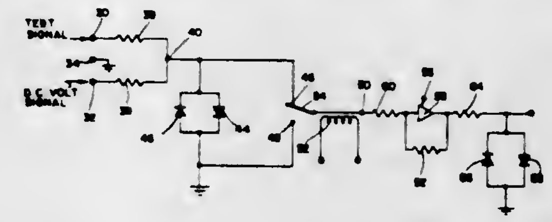
2. A remote control system for a wave-signal receiver which has a motor-driven adjustable element serving as a power on/off switch and volume control and further has another adjustable element for controlling an operating characteristic of said receiver, said control system comprising: a signal-translating channel including a transducer for receiving command signals originated at a remote point and an amplifier for amplifying said command signals; a first control relay coupled to said channel to be actuated by said command signals; a second control relay for adjusting said other element; and a control circuit which is completed in response to actuation of said first relay and which during off conditions of said switch energizes the driving motor thereof to displace said element to turn said receiver on and which during on conditions of said switch energizes said second control relay.

3,183,445
PHASE COMPARATOR "AND" GATE
David Sigel, Verona, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 4, 1962, Ser. No. 185,168
2 Claims. (Cl. 328—134)

1. A phase comparator circuit comprising; comparison means to compare two alternating current signals; means operatively connected to said comparison means to provide an output signal which is coincident with the coincidence of the two alternating current signals; said comparison means including means to provide an output signal whenever two input signals are not coincident in phase, and further including dual triodes connected anode to cathode with reference signal means applied to their grids and error signal means applied to one interconnected plate and cathode; rectifier means, said rectifier means connected to said phase comparison means, for providing a signal which produces an output when two alternating current input signals are coincident in phase and for providing an output signal when two alternating current input signals connected to said phase comparison means are not coincident in phase; and capacitor storage means, said capacitor storage means being connected to the output of said rectifier means, for storing and discharging electric charges in conformance with the phase coincidence of the two alternating current input signals to said phase comparison means; and signal generating means, said signal generating means being operatively connected to said capacitor storage means, and controlled by the signals generated thereby.



3,183,446
ELECTRICAL SIGNAL COMPARATOR
Peter L. Richman, Lexington, Mass., assignor, by mesne assignments, to Weston Instruments, Inc., Newark, N.J., a corporation of Texas
Filed Mar. 15, 1962, Ser. No. 179,849
11 Claims. (Cl. 328—151)



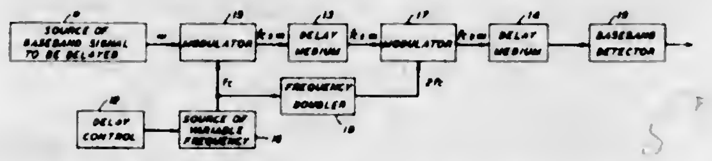
1. A precision comparison device for comparing an oscillatory voltage with a direct-current reference voltage, said device comprising in combination:

- means for providing to a summing junction a first wavetrain, said first wavetrain having an amplitude which is an attenuated sum of said voltages and being limited within a predetermined value at least on one side of a fixed reference plane potential common to both of said voltages,
- sampling means for alternately sampling said first wavetrain on said summing junction and said fixed reference plane potential so as to provide a second wavetrain having alternating portions thereof derived respectively from said first wavetrain and said fixed reference plane potential, and
- said sampling means being disconnected from said summing junction when sampling said plane potential, any difference between the peak value of a portion derived from said first wavetrain and the value of an adjacent portion derived from said fixed reference plane potential being proportional to a corresponding difference between the peak value of said oscillatory voltage and the value of said reference voltage.

3,183,447
VOLTAGE-CONTROLLED NONDISPERSIVE VARIABLE DELAY SYSTEM UTILIZING MODULATION TO PASS SIGNAL AND FREQUENCY-INVERTED SIGNAL THROUGH IDENTICAL DISPERSIVE DELAY LINES

Irvin E. Fair, Center Valley, Pa., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 11, 1962, Ser. No. 222,788
5 Claims. (Cl. 328—177)

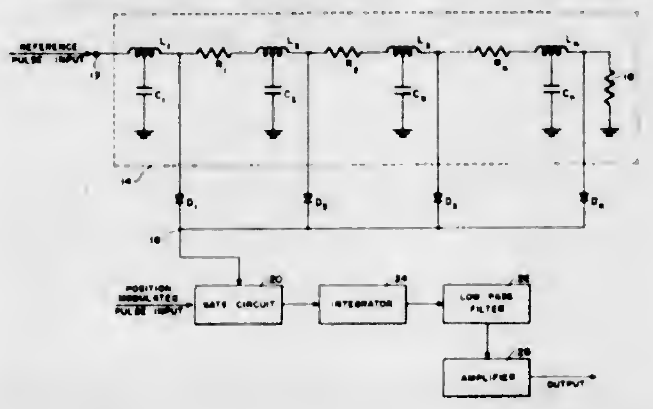


1. A delay system for controlling the magnitude of dispersionless delay introduced to a carrier modulated input signal comprising first and second substantially identical delay media each having a delay characteristic that varies with frequency, means for variably modifying said carrier frequency of said input signal and for applying said modified signal to said first delay medium to dispersively delay said input signal, and means for canceling said dispersion and doubling said delay including means for inverting about said carrier frequency the signal components in the output of said first delay medium and for applying the inverted signal components to said second delay medium.

3,183,448
DELAY LINE PULSE POSITION MODULATION DEMODULATOR

Claude Strother, Jr., Corona, and Bennie D. Macomber, Norco, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Apr. 20, 1962, Ser. No. 189,218
9 Claims. (Cl. 329—107)
(Granted under Title 35, U.S. Code (1952), sec. 266)

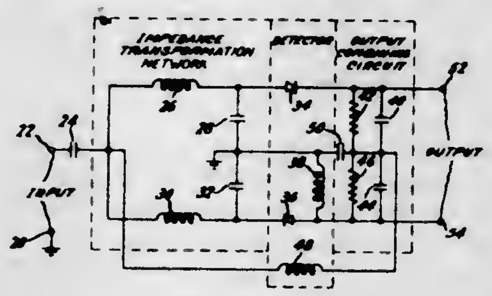


6. A pulse position demodulator circuit comprising:
- (*a*) a source of reference pulse and a position modulated pulse source, and a delay line being padded with a plurality of resistive elements to obtain linear attenuation of a reference pulse applied thereto as it is transmitted along the delay line,
- (*b*) said delay line being tapped at a plurality of points along the length thereof through respective diodes connected to a gate circuit,
- (*c*) said gate circuit allowing transmission of said reference pulse from said delay line through one of said diodes when a position modulated pulse is applied to the gate circuit,
- (*d*) the time of occurrence of said position modulated pulse being proportional to its modulation and the attenuation of said reference pulse being proportional to its point of transmission from said delay line through one of said diodes thus converting the position modulation of the position modulated pulse to the amplitude modulation of the reference pulse when passed through said gate circuit.

3,183,449
WIDE BAND FREQUENCY DISCRIMINATOR

David W. Bray, South Lansing, N.Y., assignor to General Electric Company, a corporation of New York

Filed Feb. 7, 1962, Ser. No. 172,065
6 Claims. (Cl. 329—142)



1. A frequency discriminator circuit responsive to input signal frequency variations about a center frequency comprising:
- (*a*) a first impedance matching network coupled in series with an input signal and tuned above the center frequency with a frequency differential approximately equal to or greater than half the center frequency and having a Q approximately equal to the center frequency;
- (*b*) a second impedance matching network similar to said first network coupled in series with said input signal and in parallel with said first network and tuned below the center frequency with a frequency differential approximately equal to or greater than half the center frequency and having a Q approximately equal to the center frequency;
- (*c*) first detector means coupled to said first impedance matching network for providing an instantaneous D.-C. voltage proportional to the instantaneous A.-C. voltage produced in said first network;
- (*d*) second detector means coupled to said second impedance matching network for providing an instantaneous D.-C. voltage proportional to the instantaneous A.-C. voltage produced in said second network;
- (*e*) output combining means coupled to said first and second detector means to provide an output signal in accordance with the instantaneous difference in said D.-C. voltages;
- (*f*) said impedance matching networks having an output impedance to input impedance ratio exceeding one whereby a voltage gain into the detecting devices is obtained; and
- (*g*) said impedance matching networks being tuned so as to provide substantially linear volts per cycle response about the center frequency over a frequency bandwidth of the same order as the center frequency itself.

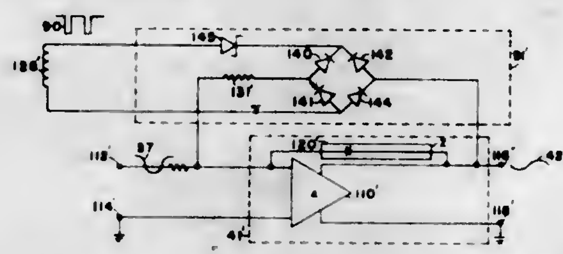
3,183,450
AMPLIFIER STABILIZATION

Richard N. Merington, Irving, Tex., assignor to Ling-Temco-Vought, Inc., Dallas, Tex., a corporation of Delaware

Filed Feb. 19, 1962, Ser. No. 174,157
2 Claims. (Cl. 330—9)

1. In an integrator circuit that has a high-gain direct-current amplifier and an integrating capacitor, said capacitor being connected between the input and the output of said amplifier, signal generating means for applying a sinusoidal signal to said input of said amplifier,

a drift stabilizer circuit for maintaining substantially constant reference voltage of the sinusoidal output of said amplifier, said drift stabilizer including an electronic switch, said electronic switch having a control input and an output switching circuit, said output switching circuit being connected in parallel with said capacitor, said electronic switch operating in response to application of a signal impulse to its input to short-circuit said capacitor, and thereby to equalize the voltage between said output and said input of said amplifier,

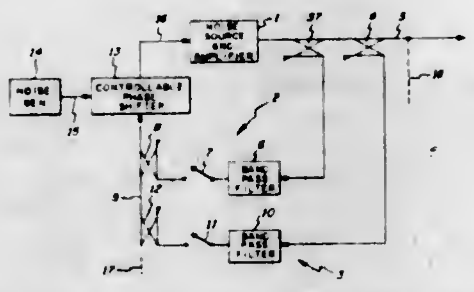


means coupled to said signal generating means to apply bursts of signal synchronized with said sinusoidal signal to said control input of said electronic switch, each of said bursts occurring precisely at each of the peaks of the sinusoidal signal that is applied to the input of said amplifier for an interval that is short compared with the period of the simultaneous wave of said sinusoidal signal, whereby said equalization of voltages occurs at an instant when said output voltage of said amplifier normally equals said reference voltage.

3,183,451
SATURABLE MULTI-MODE OSCILLATOR

Charles R. Zolnik, Plainview, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Aug. 27, 1962, Ser. No. 219,490
8 Claims. (Cl. 331—78)



1. A saturable multi-mode oscillator comprising
a regenerative oscillatory loop,
a source of noise signals within said loop,
said loop being characterized by a build-up time for signals which are delayed substantially an integral number of wavelengths in traversing said loop and being further characterized by a decay time for signals which are delayed substantially a non-integral number of wavelengths in traversing said loop,
and means within said loop for recurrently changing the electrical length of said loop from one value to another at a rate whereby said electrical length remains substantially fixed for a time less than said build-up time at any one frequency and reverts to the same electrical length within said decay time.

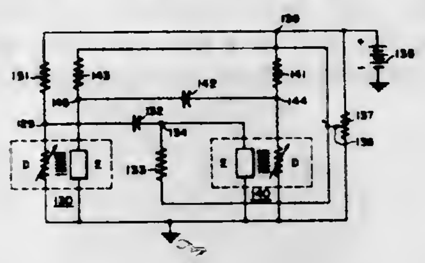
3,183,452
MULTIVIBRATOR USING ELECTROLUMINESCENT-PHOTOCONDUCTIVE CONTROL ELEMENTS

Edgar A. Sack, Jr., Penn Township, Allegheny County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Original application Dec. 17, 1959, Ser. No. 860,177. Divided and this application Sept. 18, 1961, Ser. No. 139,339

7 Claims. (Cl. 331—107)

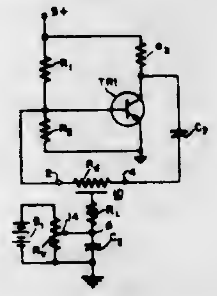
4. In a control apparatus, in combination, first and second control elements, each said control element comprising an electroradiative transducer having control terminals and a radiation sensitive device having load terminals, means for connecting a direct current source to a parallel circuit having two branches, each of said branches comprising said radiation sensitive device of one of said control elements and a resistive means, circuit means connecting a coupling capacitor and said electroradiative transducer of each said control element across said radiation sensitive device of the other said control element, and means for applying a direct current voltage to said electroradiative transducer of said first and second control elements.



3,183,453
TUNABLE PHASE SHIFT OSCILLATOR WITH VARIABLE RC FILTER

Philipp R. Amlinger, Latrobe, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 7, 1961, Ser. No. 115,544
3 Claims. (Cl. 331—108)



1. A tunable oscillator including: transistor amplifying means having input and output terminals; a phase shift filter device in a monolithic structure having a distributed resistance connected between said input and output terminals, a distributed capacitance operative with said distributed resistance to form a resistive-capacitive network, and a lumped resistor operatively connected to said distributed capacitance, with the feedback characteristics of said phase shift device being dependent on the bias voltage applied thereto; capacitor means connected between said lumped resistance and ground and means connected in parallel with said capacitor means for applying a variable D.C. bias voltage between said lumped resistance and ground, whereby a reverse D.C. bias may be applied to change the tuning of the oscillator while the value of the lumped resistance to A.C. ground and the feedback characteristics remain substantially unchanged.

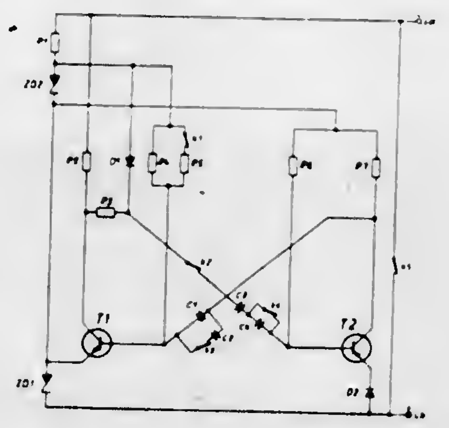
3,183,454
CIRCUIT FOR PROVIDING SEQUENCES OF PULSES AND INTERVALS

Rudolf Streit, Solothurn, Solothurn, Switzerland, assignor to Autophon A.G., Solothurn, Switzerland

Filed Apr. 24, 1961, Ser. No. 139,559
5 Claims. (Cl. 331—113)

1. A device including an astable multivibrator, for providing sequences of pulses and intervals, for periodically reducing a direct spacing current fed by a twin line, one being positive and the other negative with respect to ground, comprising: first and second transistors, each having base, emitter, and collector electrodes, the emitter

electrode of said second transistor being connected to the positive one of said twin line; first and second resistive elements, one end of said first resistive element being connected to the collector electrode of said first transistor and one end of said second resistive element being connected to the collector electrode of said second transistor, the other ends of said first and second resistive elements being connected respectively to the negative one of said twin line and to a first junction; first and second capacitive means respectively coupling the base electrodes of said first and second transistors to the collector electrodes of said first and second transistors; lead means connecting the emitter electrode of said first transistor to said first junction; at least one first Zener diode connected between said first junction and said positive one of said twin line; a series circuit comprising third resistance element and a second Zener diode connected between the negative one of said twin line and said first junction, said series circuit offering greater impedance to the flow of current than said first Zener diode.

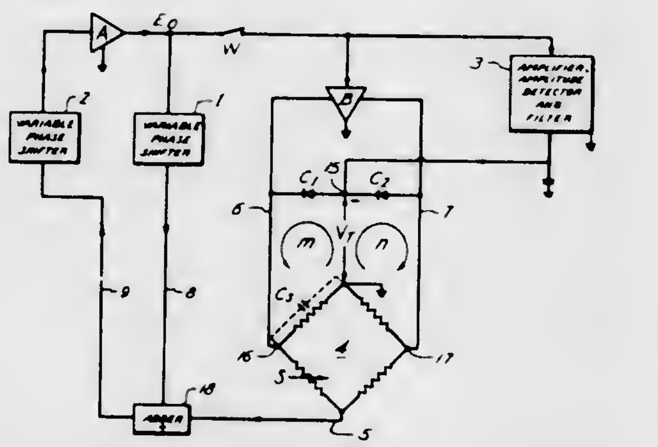


3,183,455

AUTOMATICALLY STABILIZED OSCILLATOR CIRCUITS

William H. Swain, Sarasota, Fla., assignor to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut

Filed Aug. 25, 1960, Ser. No. 51,937
8 Claims. (Cl. 332—18)



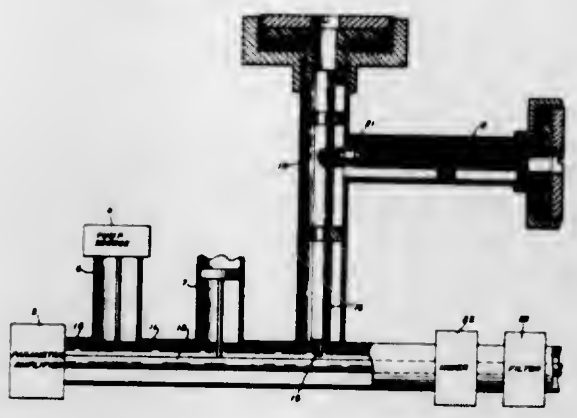
5. A measuring system comprising: a bridge circuit producing an output signal representing impedance variations in at least one of its arms, a variable frequency source producing a carrier frequency which is frequency modulated by said output signal, amplitude detecting means coupled to said source to derive an error signal representing amplitude variations on said carrier frequency, and a variable reactance network connected to said bridge circuit, the reactance value of said network varying as a function of said error signal.

3,183,456

FREQUENCY MODULATION APPARATUS

Harold Seidel, Fanwood, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 17, 1961, Ser. No. 96,491
4 Claims. (Cl. 332—29)



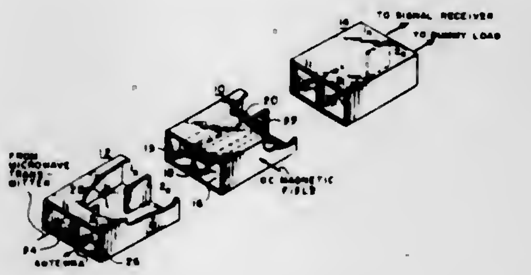
1. Apparatus for translating input signal information into a high index frequency modulated output signal comprising means for generating two synchonously related variable frequency oscillations, means for producing equal but opposite changes in the frequencies of said oscillations in response to input information, means for mixing said oscillations, and means for adbstracting from said mixing means energy of a frequency corresponding to the difference between the frequencies of said oscillations.

3,183,457

FERRITE POWER LIMITER DUPLEXER

John L. Carter, Asbury Park, and Irving Reingold, Deal Park, Deal, N.J., assignors to the United States of America as represented by the Secretary of the Army

Filed Apr. 18, 1960, Ser. No. 23,108
4 Claims. (Cl. 333—10)
(Granted under Title 35, U.S. Code (1952), sec. 266)



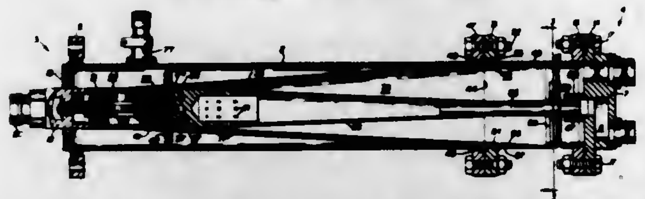
1. A microwave duplexer comprising a center dual waveguide portion including two waveguide sections having a narrow common wall, a first and second short-slot hybrid coupler respectively terminating each end of said center dual waveguide portion, a first and second ferrite slab respectively affixed to a corresponding wide wall of each of the waveguide sections comprising said center dual waveguide portion and spaced from the oppositely disposed wide walls thereof, said ferrite slabs being equally spaced from said narrow common wall and extending the same distance longitudinally within their respective waveguide sections, and a direct-current magnetic field continuously applied to said center dual waveguide portion in a direction parallel to the broad dimension of the wide walls of said center dual waveguide portion, said ferrite slabs being adapted to reflect relatively high power energy and being pervious to relatively low power energy.

3,183,458

RADIO FREQUENCY LIQUID DIELECTRIC LOAD WITH INNER CONDUCTOR AND TAPERED SHELL

Arthur A. Goldfinger, Palo Alto, Calif., assignor to Eitel-McCullough, Inc., San Carlos, Calif., a corporation of California

Filed Dec. 8, 1960, Ser. No. 74,571
3 Claims. (Cl. 333—22)



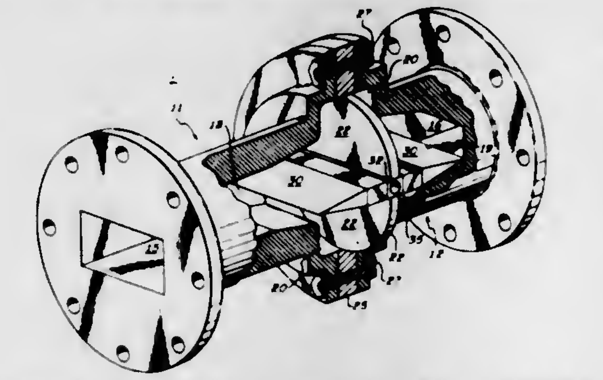
1. In a radio-frequency load for coaxial transmission lines, the combination comprising a hollow outer housing, an inner conductor located within the outer housing and slidably supported adjacent each of its ends spaced from the outer housing, dielectric wall means sealingly interposed between the inner conductor and outer housing intermediate the ends thereof and therewith defining a chamber for a liquid dielectric, and tapered shell means adjacent opposite ends of said well means forming extensions thereof merging smootlhy and respectively in contact with the associated inner conductor and outer housing.

3,183,459

HIGH POWER BROADBAND WAVEGUIDE WINDOW STRUCTURE HAVING SEPTUM TO REDUCE REFLECTION AND GHOST MODE

James B. Caputo, Bayville, and Thaddeus I. Sokolowski, Farmingdale, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Oct. 4, 1963, Ser. No. 313,822
6 Claims. (Cl. 333—98)



1. A waveguide window structure for establishing a broadband, strong hermetic seal across a section of circular waveguide, said window structure comprising,
  a disc of dielectric material disposed transversely across said circular waveguide section and sealed along its periphery to said waveguide section,
    said disc being permeable to electromagnetic waves and impervious to fluids,
  a longitudinally extending septum extending through said dielectric disc along a diametral plane to divided said disc into two substantially equal portions, and
  means for coupling electromagnetic waves in the dominant TE_{11} mode into said circular waveguide with the electric field of said waves normal to the broad surface of said septum.

3,183,460

ELECTRICAL INDUCTIVE APPARATUS HAVING COOLANT DUCTS IN INSULATION

Saul Bennon, Sharon, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 28, 1960, Ser. No. 45,902
15 Claims. (Cl. 336—57)

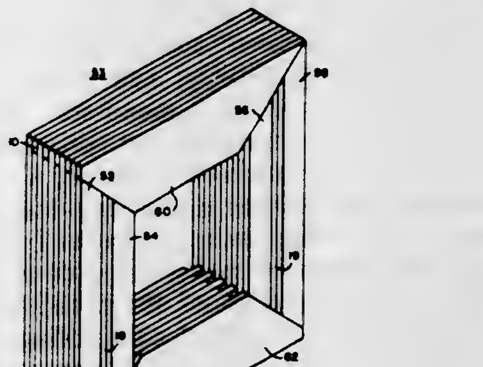
1. A transformer comprising a casing, magnetic core disposed in said casing, a dielectric cooling medium disposed in said casing, first and second windings of different voltage ratings disposed on said core in spaced relation, said first winding comprising a plurality of coils spaced apart from and interconnected with one another, each of said coils comprising a plurality of layers of spirally wound conductors connected in parallel circuit relation and spaced apart from one another to provide cooling passageways therebetween in close bontact with said conductor layers, a plurality of layers of substantially solid insulation disposed in areas between said coils and between said windings, the voltage stress between said windings being non-uniform across the areas therebetween when a potential is applied to said first winding, and one or more passageways disposed to pass between the layers of solid insulation in the space between said windings in the areas of lower voltage stress to permit the flow of the cooling medium therethrough and to reduce the maximum voltage stress in the space between said windings.

3,183,461

MAGNETIC CORE STRUCTURE WITH COOLING PASSAGES THEREIN

Earl W. Tipton, Hickory Township, Mercer County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 5, 1962, Ser. No. 170,970
5 Claims. (Cl. 336—60)



1. A laminated magnetic core comprising two yoke portions and at least two leg portions, said leg portions including two stacks of laminations spaced in side by side relation to provide a duct between said stacks, each of the laminations in said yoke and leg portions having first and second ends cut at an oblique angle, each of said leg and yoke portions including a plurality of layers of laminations, with each layer of laminations being

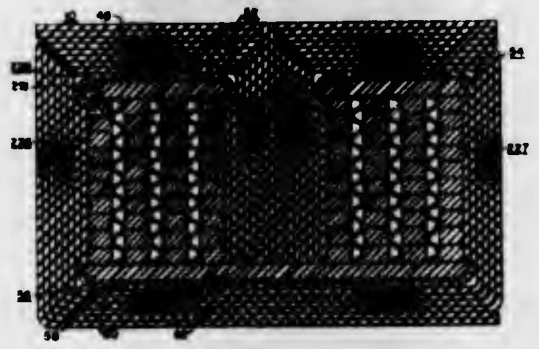
positioned with the ends of the leg laminations connected to a yoke lamination to form a substantially rectangular core having joints in each layer which overlap the joints in adjacent layers, the adjacent ends of the laminations in each layer of the two stacks of laminations which form each of said leg portions being connected to the same yoke lamination.

3,183,462

SHIELDING MEANS FOR ELECTRICAL APPARATUS

Roy L. Brown, Sharon, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 10, 1963, Ser. No. 272,077
1 Claim. (Cl. 336—84)



A winding for an electrical transformer comprising a plurality of coils disposed in spaced side-by-side relation to form a stack of coils having first and second ends, solid insulation disposed between said coils, each of said coils including a plurality of insulated conductors, each of said conductors being wound into a spiral comprising a plurality of superposed turns to form a single conductor pancake having innermost and outermost turns, duct forming members disposed between each of said pancakes in each of said coils, means connecting each of the pancakes of one coil in series circuit relation with one of the pancakes in the adjacent coils to form a plurality of series circuits through said plurality of coils, said means connecting the innermost turns of each of the pancakes of one coil with the innermost turns of the pancakes in one of the adjacent coils and the outermost turns of the pancakes of each coil to the outermost turns of the pancakes of the other adjacent coil, means connecting the outermost turns of the pancakes of the first end coil together, means connecting the outermost turns of the pancakes of the second end coil together, a plurality of voltage gradient reducing members disposed adjacent the innermost and outermost turns of the pancakes of said plurality of coils, two of said voltage gradient reducing members being disposed adjacent the outermost turns of the end coils, respectively, and each of the remaining voltage gradient reducing members being disposed adjacent the turns of two adjacent coils, said voltage gradient reducing members each including a thin metallic conductive member having a concavo-convex cross section surrounded by solid insulation, each of said voltage gradient reducing members being disposed with their concave portion facing the turns of the coils, said metallic conductive member in each of said voltage gradient reducing members being electrically connected to one of the turns of the pancakes it is adjacent to.

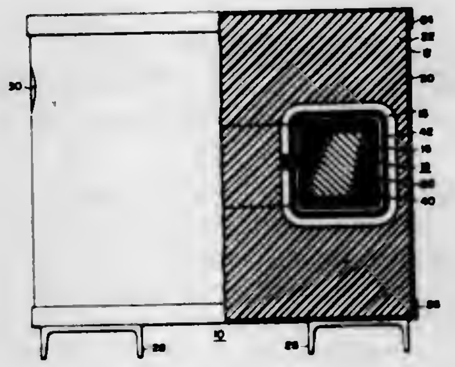
3,183,463

LOW SOUND LEVEL ELECTRICAL TRANSFORMER

Leonard L. Wright, Sharon, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 20, 1962, Ser. No. 211,278
7 Claims. (Cl. 336—96)

1. Electrical inductive apparatus comprising, a magnetic core, a first enclosure, said magnetic core being disposed in said first enclosure, said first enclosure being filled with a first insulating and sound dampening means to completely surround said magnetic core and separate it from said first enclosure, electrical windings, said electrical windings being disposed in inductive relation with said enclosed core, a second enclosure, said enclosed core and electrical windings being disposed in said second enclosure, and second insulating and sound dampening means, said second insulating and sound dampening means substantially filling said second enclosure to embed and completely suspend said enclosed core and electrical windings in said second enclosure.

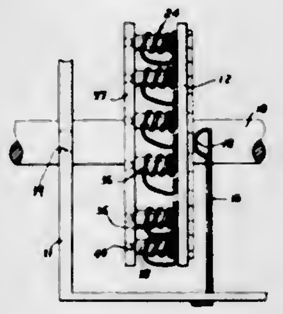


3,183,464

TUNER DEVICE FOR A RADIO OR TELEVISION RECEIVING APPARATUS

Tsuneo Takahata and Tsuneo Utsunomiya, Tokyo, Japan, assignors to Sony Corporation, a corporation of Japan

Filed Nov. 28, 1960, Ser. No. 72,186
Claims priority, application Japan, Nov. 30, 1959, 34/62,355; Dec. 21, 1959, 34/65,949 and 34/65,950; Jan. 14, 1960, 35/1,408 and 35/1,410
2 Claims. (Cl. 336—142)



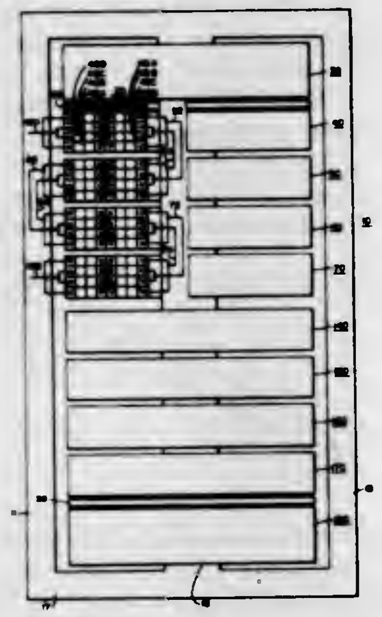
1. A rotary switch comprising a support, a shaft journalled within said support, means for rotating said shaft, an insulated disc mounted on said shaft, a plurality of circumferentially spaced contact members affixed to said disc having inturned and outturned portions with respect to the center of the disc respectively at opposite ends thereof and having recesses formed centrally therealong, a resilient stationary contact connected to one side of a power line and biased into engagement with a contact member and having a contact point positionable within said recesses so that rotation of said shaft will move said contact member successively into engagement with said contact, inductance elements connected to said contact members, means interconnecting said elements with the opposite side of said power line, a disc element affixed to said shaft having a plurality of concavities formed in the periphery thereof, a member positionable within said concavities, and means resiliently biasing said member into said concavities to positively but resiliently maintain said shaft in a desired rotated position.

3,183,465

TRANSPOSED WINDING FOR ELECTRICAL APPARATUS

Harold R. Moore, Hamilton, Ind., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 9, 1962, Ser. No. 193,388
3 Claims. (Cl. 336—187)



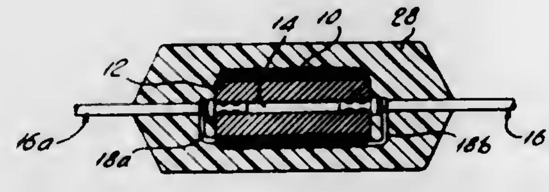
1. A winding for electrical inductive apparatus comprising a plurality of flat disc type coils, each of said coils including a conductor comprising four electrically insulated strands, said four strands including two parallel-connected outer strands and two parallel-connected inner strands, said four strands being connected together at the start and finish of said winding, said four strands being transposed at least once in each of said coils, said transposition reversing the sequence of said strands, the outer two strands being connected together at each end of each coil, the inner two strands being connected together at each end of each coil, said coils being connected by conductors joining the inner strands of each coil to the outer strands of each adjacent coil and conductors joining the outer strands of each coil to the inner strands of each adjacent coil.

3,183,466

INDUCTIVE ELECTRICAL COMPONENT

Joseph J. Martus, New Providence, N.J., assignor to Nytronics, Inc., Berkeley Heights, N.J., a corporation of New Jersey

Filed May 27, 1963, Ser. No. 283,225
6 Claims. (Cl. 336—192)



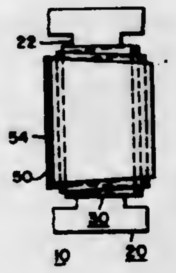
1. An electrical inductor assembly comprising, a core, a coil of wire wound about said core, an electrical conductor connected to one end of said coil, and another electrical conductor connected to the other end of said coil, said conductors each including a first portion of non-ferromagnetic material and a second portion of ferromagnetic material, each of said first portions extending within the effective range of electromagnetic influence of said coil, and substantially all of said second portions being disposed outside the effective range of electromagnetic influence of said coil.

3,183,467

WINDING FOR ELECTRICAL APPARATUS

Andrew W. Edwards, Hickory Township, Mercer County, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 11, 1961, Ser. No. 102,188
7 Claims. (Cl. 336—223)



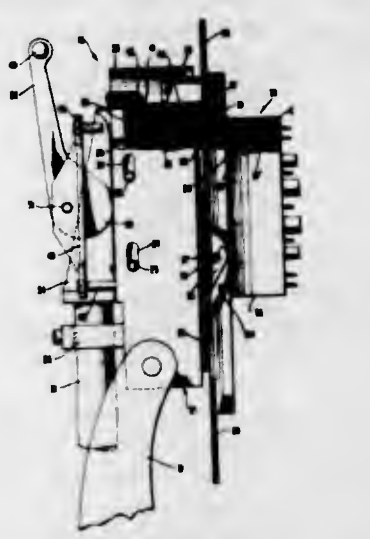
1. A winding for electrical inductive apparatus comprising a plurality of spirally wound turns of conducting strip material, said strip material having a coating of electrical insulation on at least one side thereof substantially coextensive with the strip, said strip material having a pair of longitudinal edges, said longitudinal edges being generally scalloped, said longitudinal edges of said material being displaced from a straight reference line lying between said edges in a continuously varying manner between substantially predetermined limits.

3,183,468

ELECTRICAL CONNECTOR

Walter F. Hennessey, Jr., Sidney, N.Y., assignor to The Bendix Corporation, a corporation of Delaware

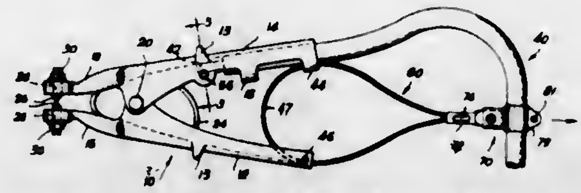
Filed Apr. 27, 1960, Ser. No. 25,043
34 Claims. (Cl. 339—45)



21. In an electrical connector a shell, a first electrically insulating insert fixedly mounted in said shell, an elongated contact extending through and supported by said insert, a second electrically insulating insert slidably mounted in said shell for limited longitudinal reciprocation in the direction of the longitudinal axis of said contact and having a passage through which the end portion of said contact extends, resilient means for urging said second insert toward a limiting position away from said first insert, the outer end portion of said contact being surrounded and shielded by said second insert when the latter is in said limiting position and projecting from said second insert when the latter is moved to a position adjacent said first insert in opposition to said resilient means, support means, and means connecting said shell to said support means for longitudinal movement therewith and limited transverse movement relative thereto.

3,183,469
DISCONNECTING CLAMP

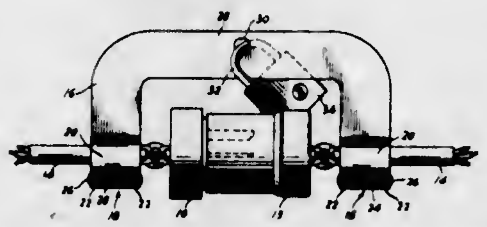
Robert S. Trachtenberg, Stamford, Conn., assignor to Burndy Corporation, a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,615
4 Claims. (Cl. 339—45)



1. A tensile force disconnect clamp assembly, comprising: a clamp having a pair of opposed movable jaws adapted to be transversely compressed against an object axially inserted therebetween, a pair of handles connected to said jaws and adapted to be transversely compressed together to separate said jaws, and resilient means normally biasing said jaws together; and tensile force direction changing means for transmitting a given axial tensile force to said clamp handles both transversely and axially to respectively compress said handles and axially withdraw said clamp from an object inserted between said jaws; said force direction changing means including an elongate flexible cable having a substantially closed loop portion, first cable engaging means on one of said handles including an integral tubular portion opened at both ends for guiding a conductor and slidably engaging said cable loop portion, means on said cable for transmitting a given axial force thereto, and second cable engaging means on the other of said handles for slidably engaging said cable within said loop; and means on said one of said handles for electrically and mechanically securing a conductor thereto.

3,183,470
ELECTRIC CONNECTOR LOCKING MEANS

Leigh E. Hale, 1891 Flower St., Bakersfield, Calif.
Filed Jan. 9, 1964, Ser. No. 336,754
7 Claims. (Cl. 339—82)

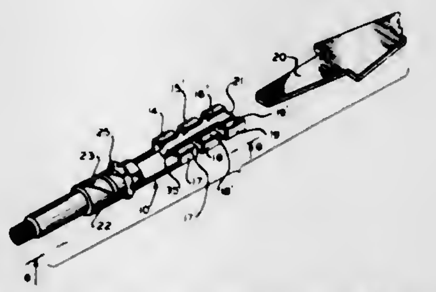


1. Locking means to prevent the separation of two connected electric connectors and comprising in combination, a plurality of relatively flat U-shaped members arranged for relative movement between operative locking position and inoperative position, the bight portion of said members extending between the opposite ends of said electric connectors and the legs of said members being movably interconnected to receive electric cords therebetween, and locking means operable by key-like means engaging said members to hold said bight portions of said members against appreciable separation when in operative locking position relative to a plurality of connected electric connectors and thereby prevent separation of said electric connectors except by authorized personnel.

3,183,471
ELECTRICAL TERMINAL AND CONNECTION

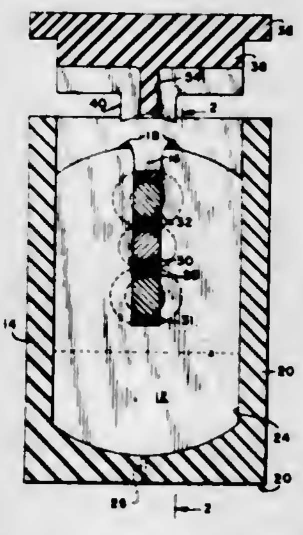
Herbert G. Burkert, South Plainfield, N.J., assignor to The Thomas & Betts Co., a corporation of New Jersey
Filed Feb. 8, 1963, Ser. No. 257,333
2 Claims. (Cl. 339—95)

2. A female electric terminal formed of resilient flexible material for the reception of an elongated tapered male tab terminal attached to a first conductor, said female terminal comprising, an elongated base portion having marginal edges, means at one end of said base portion adapted to be crimped to a second conductor, a plurality of spaced apart marginal flanges on each of said marginal edges, said marginal flanges extending upwardly of the base portion and having portions then directed inwardly so as to be disposed in spaced overlying relation to the base, each of said marginal flanges on one marginal edge comprising a pair with a companion marginal flange on the other marginal edge, the distance between the marginal flanges in each pair increasing successively from said one end to the other end of the base portion to conform to the taper of the said male tab terminal adapted to be received therebetween, the marginal flanges defining with the base portion a channel adapted for reception of said tapered male tab terminal, each of said flanges being resiliently and independently flexible upwardly of the base and outwardly of their respective companion flanges upon insertion of the said male tab terminal therewithin, the inner corner of the overlying portion of each flange nearest the said one end being turned downwardly to define a sharp tab-engaging projection, and an elongated rib formed on the base and directed toward the overlying flange portions and defining a rail for maintaining the male tab terminal spaced from the base portion upon insertion and in engagement with said tab-engaging projections, the marginal flanges each being adapted to engage edges of said tapered male tab terminal.



3,183,472
UNITARY RIGID WIRE CONNECTORS AND METHOD OF MAKING WIRE CONNECTIONS

Walter S. Pawl, 2844 Powder Mill Road, Adelphi, Md.
Filed Oct. 2, 1963, Ser. No. 313,282
6 Claims. (Cl. 339—97)



1. A rigid unitary connector element of hard conductive material adapted to connect at least one wire thereto and having at least one slot with smooth flat parallel sides spaced less than the diameter of wire sizes which it is adapted to receive and hold in compression, between its parallel sides, said sides being flared at one end of the slot to receive and smoothly compress the wires as they are forced into the slot,

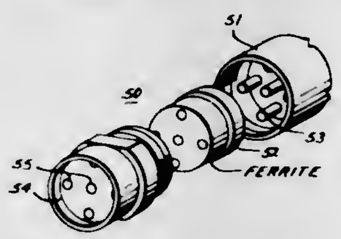
each slot having a flared entrance formed to receive and flatten the wire as it passes therethrough into said slot and to rupture and remove any insulation on the wire at the flattened pressure contacts with said parallel sides,

said element being shaped generally like a round disc with a single slot extending diametrically from its edge and with segments cut off on opposite sides of the slot parallel thereto,

said slot being long enough to receive at least two wires to provide an electrical connection between them.

3,183,473
COUPLING DEVICES

Edward L. Crosby, Jr., Sarasota, Fla., assignor to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut
Filed Aug. 28, 1962, Ser. No. 219,898
3 Claims. (Cl. 339—143)



1. A coupling device for detachably connecting at least one end of a first conductor to at least another end of a second conductor, said device comprising:

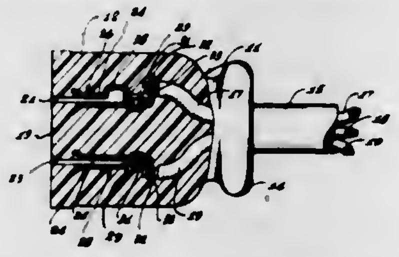
a coupling member, said member being made at least in part of ferrite for suppressing noise signals transmitted through said conductors,

a coupling terminal mounted in said member for receiving said one end of said first conductor, and

said coupling terminal being adapted for connection to said other end of said second conductor, thereby detachably establishing electrical contact between said first and second conductors.

3,183,474
FEMALE SOCKET FOR ELECTRICAL COUPLING

Harold Robert Hamel, Rolling Hills Estates, Calif., assignor to Pacific Electricord Company, Gardena, Calif., a corporation of California
Filed Mar. 5, 1962, Ser. No. 177,302
1 Claim. (Cl. 339—187)



A female socket member for receiving a male plug, said socket member and male plug forming an electrical coupling, comprising:

a unitary main body portion of molded insulating material and having a flat front face;

three arcuate passageways formed in said main body leading from the front face rearwardly into the interior thereof, one of said passageways being formed with a radially extending groove along its length, the rear portion of said one passageway having a circumferential continuation of said radially extending groove, the other two of said arcuate passageways being identical and formed on a different radius with respect to the center of said main body than the radius of said one of said passageways, and the rear of each of said passageways being formed with undercut, arcuate extensions in the same direction as the direction of said circumferential continuation of said one passageway;

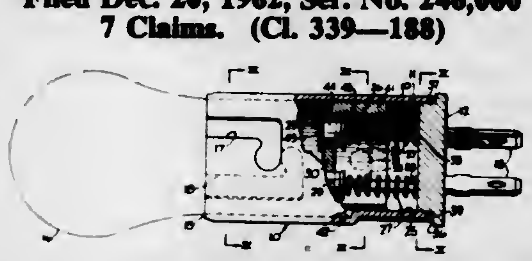
a pair of arcuate electrical conducting socket connections straddling each of said passageways along the major portion of the length of said passageways, the front end of each of said connectors being flared forwardly and radially and the rear of each of said pairs of said connectors being electrically interconnected, the radially outermost of the pair of socket connectors in said one of said passageways having a radially outwardly directed groove conforming to said radially extending groove of said one of said passageways to receive a complementary indexing prong on said male plug;

a cable having three conduits extending from the rear of said main body, said conduits being electrically connected to the rear of said conducting socket elements;

and said conducting socket elements and the front portion of said cable conduits being solely and independently supported by the molded material of said main body.

3,183,475
LAMP SOCKET

Robert B. Meyer and Samuel A. Findley, Bronson, Mich., assignors to Kingston Products Corporation, Kokomo, Ind., a corporation of Indiana
Filed Dec. 20, 1962, Ser. No. 246,060
7 Claims. (Cl. 339—188)



1. In a socket assembly, an open ended socket body having a generally cylindrical inner wall having a base end and a socket end and having a guide extending axially along the base end and a stop adjacent the base end and spaced circumferentially from said guide, an insulator cup slidable within said body from the base end thereof, slidably engaging and indexed by said guide and having a stop portion engageable with said stop and limiting movement of said insulator cup towards the socket end of said socket body, at least one contact carried by said insulator cup, a shouldered base made from a nonconducting material mounted in the base end of said base and extending within said socket body and having a spade terminal extending therethrough, said base having a cylindrical wall portion extending within said socket body and having an indexing notch therein having interengagement with said guide and indexed thereby to align said spade terminal with said contact, a spring seated at its opposite ends on said spade terminal and said contact, and means staking said base to said socket assembly.

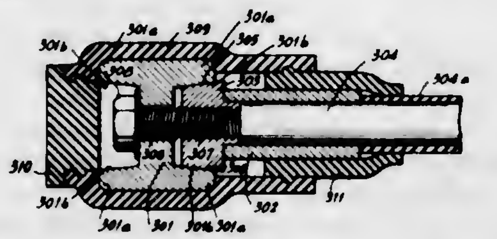
3,183,476
CONNECTOR

Norman M. Sacks, Norwalk, Walter J. Frank, Jr., Darien, and Thomas C. Price, Jr., Monroe, Conn., assignors to Burndy Corporation, a corporation of New York
Filed Aug. 26, 1960, Ser. No. 52,292
3 Claims. (Cl. 339—242)

1. An electrical bus connector for interconnecting a plurality of wire conductors through a common conductive body, comprising:

an elongate conductive body member including a longitudinally extending termination-receiving channel portion having a base and a pair of oppositely disposed, resiliently spreadable contact surfaces;

- a plurality of termination securing bores disposed in parallel side-by-side relationship on said base, said bores being positioned in a plane substantially intermediate said contact surfaces;
- a plurality of conductor termination members each characterized by a longitudinal dimension not greater than one half the distance between adjacent securing bores;



- said termination members each having a first end portion including a pair of oppositely facing side surfaces for insertion into said channel along the axis of one of said bores, and a second end portion having means for electrically and mechanically securing a wire conductor thereto;
- a plurality of tensile force applying means separately extending through said securing bores and engaging both said termination members and said body member, operable to advance said first end portion of each of said termination members into said channel;
- said side surfaces on said first end portion being disposed in tapered wedge relationship for engaging and spreading said resiliently spreadable contact surfaces to maintain constant contact pressure therewith upon advancement of said end portion into said channel under control of said tensile force applying means.

3,183,477

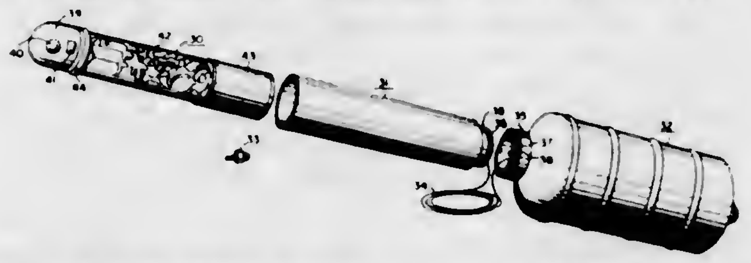
ACOUSTIC DISTANCE MEASURING EQUIPMENT

Lauro Clement Ricalzone, Forest Heights, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 30, 1963, Ser. No. 255,129

4 Claims. (Cl. 340—2)

(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An underwater acoustic distance measuring equipment, comprising:

- a plurality of transmit-receive means separately located at distances to be measured and acoustically responsive to each other so that a signal received by one will cause it to transmit which transmission will in turn be received and cause subsequent transmission by other of said transmit-receive means;
- at least one of said transmit-receive means being contained within a portable buoy of the type providing:
- a buoyant member capable when floating in water of supporting a watertight member;
- a watertight member containing the circuitry of one of said transmit-receive means,
- said buoyant member adapted to contain said watertight member when the buoy is out of water and to release said watertight member when said buoy is dropped into the water;
- each of said transmit-receive means comprising:
- a transmitter;
- a receiver;
- a transducer;
- switch means alternately coupling said transmitter and said receiver to said transducer;
- and a keyer connected and responsive to said receiver for triggering said transmitter upon receipt of a signal from said receiver;
- the transmitters of said transmit-receive means each transmitting at a different frequency;
- the receivers of said transmit-receive means each being tuned to the frequency of the transmitter of one other of said transmit-receive means;
- and at least one of said transmit-receive means including recording means coupled to the receiver thereof to provide time-based indication between a transmitted and a received signal.

3,183,478

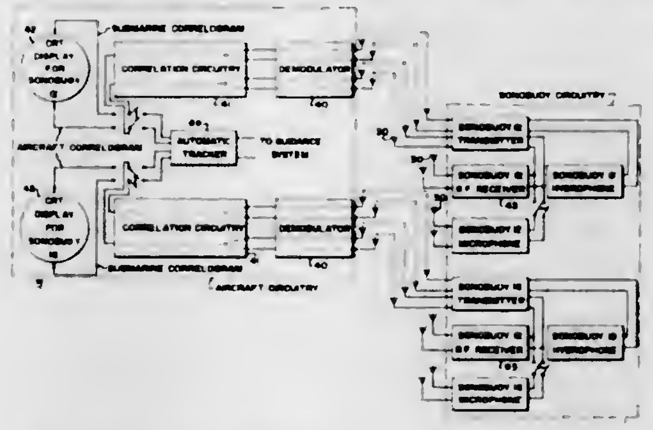
CORRELATION SONOBUOY SYSTEM AND METHOD

Zaka I. Slawsky, Bethesda, and Samuel J. Raff, Chevy Chase, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Feb. 25, 1963, Ser. No. 260,921

11 Claims. (Cl. 340—2)

(Granted under Title 35, U.S. Code (1952), sec. 266)



7. In a system for detecting a submarine and positioning a tracking aircraft directly above said submarine, in combination:

- (*a*) a radio receiver carried by an aircraft for receiving channeled signals,
- (*b*) generating means carried by said aircraft for transmitting a position indicating signal,
- (*c*) a transmitting station having means for transmitting channeled signals to said radio receiver corresponding to acoustic signals emanating from said submarine and position indicating signals emanating from said aircraft and sensed by receiving means at said transmitting station,
- (*d*) computing means connected to said radio receiver for processing said channel signals thereby indicating the relative positions of said aircraft and said submarine, and
- (*e*) automatic tracking means connected to said computing means for positioning said aircraft responsive to said computing means whereby said aircraft can be positioned directly above said submarine.

3,183,479

GUIDANCE SYSTEM FOR AIRCRAFT

Carl B. Austin, 520 Carlson Drive, Lebanon, Oreg.

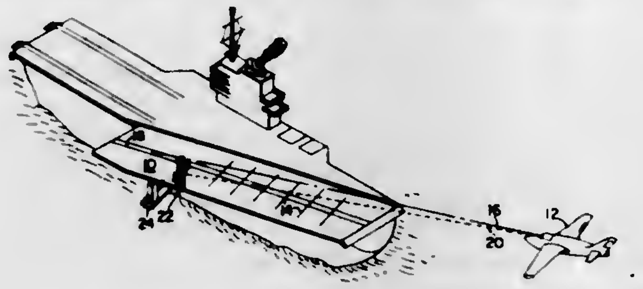
Filed Nov. 13, 1962, Ser. No. 237,408

5 Claims. (Cl. 340—26)

(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A device for aiding the pilot of an aircraft to follow a correct approach path to touchdown on a landing area of restricted size, said device being controllable by an observer of said craft stationed in the vicinity of said landing area, said device comprising:

- (*a*) a first row of selectively-energizable colored signal light sources arranged in substantially vertical alignment, adjacent light sources in said row having different chromaticity characteristics, and with the total number of different chromaticity characteristics of all of the light sources in said row being at least three, said row of signal light sources being located to one side of said landing area and facing in the direction from which said aircraft approaches;



- (*b*) a second row of constantly-energized colored light sources each possessing a similar chromaticity characteristic which is identical to that of one of the light sources making up said first row, said second row of light sources being arranged in substantially horizontal alignment and disposed intermediate the extremities of said first row of vertically-aligned light sources;
- (*c*) said second row of constantly-energized light sources constituting a reference level for signals displayed to the pilot of said aircraft through selective energization of the light sources comprising said first row;
- (*d*) and switch means operable by said aircraft observer for selectively controlling the energization of the light sources comprising said first row to thereby convey to the pilot of said aircraft information concerning the position of his craft with respect to the correct approach path to said landing area.

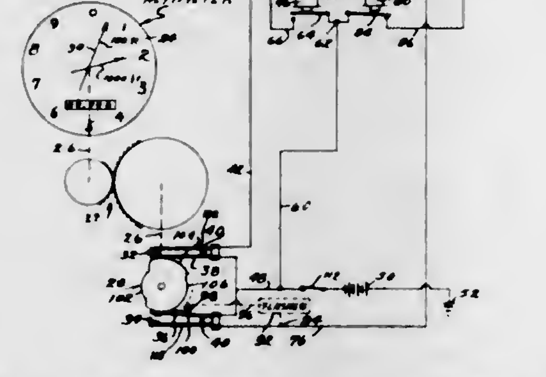
3,183,480

ROTATING ANTI-COLLISION LIGHTS FOR AIRCRAFT

Charles Adler, Jr., 609 W. North Ave., Baltimore 17, Md.

Filed Nov. 5, 1962, Ser. No. 235,562

6 Claims. (Cl. 340—27)



1. An aircraft anti-collision system comprising at least one beacon of a first color mounted on the exterior of an aircraft, at least one beacon of a second color mounted on the exterior of an aircraft, and means including switching means coupled to said beacons, for responding to the altitude of the aircraft so as to illuminate a beacon of said first color and extinguish a beacon of said second color when the aircraft is flying within particular predetermined intervals of altitudes and so as to extinguish a beacon of said first color and illuminate a beacon of said second color when the aircraft is flying within other particular predetermined intervals of altitude, whereby observers outside the aircraft have a visual indication of the altitude of the aircraft.

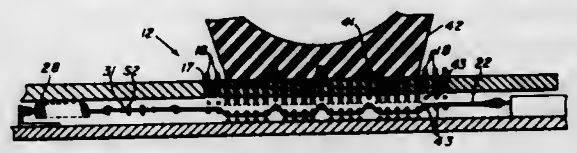
3,183,481

AUTOMATIC TIRE TREAD GAUGE

John F. McCrory, Chula Vista, Calif., assignor of two and one-half percent to Verda Allen, San Diego, Calif., and five percent to David J. Ward and Betty M. Ward, San Diego, Calif.

Filed Nov. 14, 1962, Ser. No. 237,654

9 Claims. (Cl. 340—52)



1. An automatic tire tread gauge for sensing and indicating the tread condition of tires comprising a plurality of probes positioned for entrance into one or more tread grooves of a tire on an automobile rolling over said probe means;

- sensing means mechanically coupled to said plurality of probes for sensing probe displacement of any one of said probes;
- first and second indicating means;
- first and second actuating means mechanically connected to said sensing means for actuating said first and second indicating means, respectively, whereby said first actuating and indicating means is actuated upon any tire rolling over said plurality of probes and said second actuating and indicating means is actuated upon the tread depth of said tire being over a predetermined minimum; said second actuating means being operable to disconnect said first indicating means;
- third and fourth indicating means connected to a switching means, timing means connected for activation to said first and second actuating means and to said switching means for switching said first and second actuating means from said first and second indicating means to said third and fourth indicating means upon being activated by said timing means, and temperature compensating means mechanically coupled to said sensing means for automatically compensating said sensing means for any physical variations due to a change in ambient temperature.

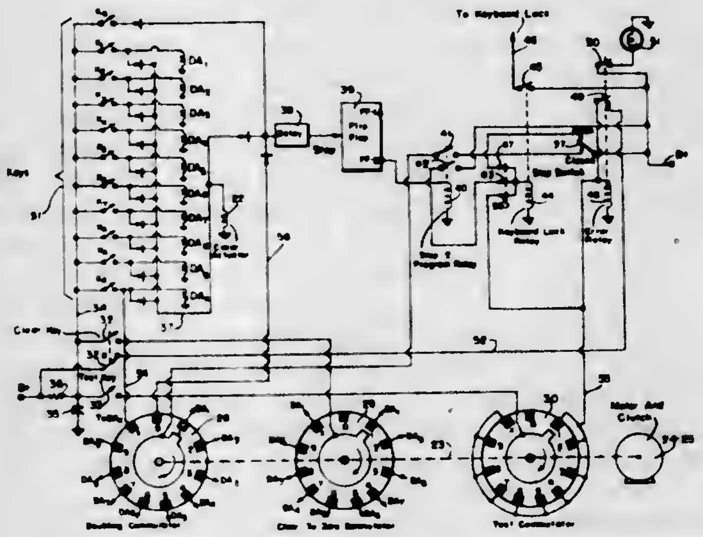
3,183,482

CHECK DIGIT VERIFIERS

Oliver G. Aberth, Philadelphia, and Per L. Andersson, Berwyn, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed July 3, 1958, Ser. No. 746,521

9 Claims. (Cl. 340—146.1)



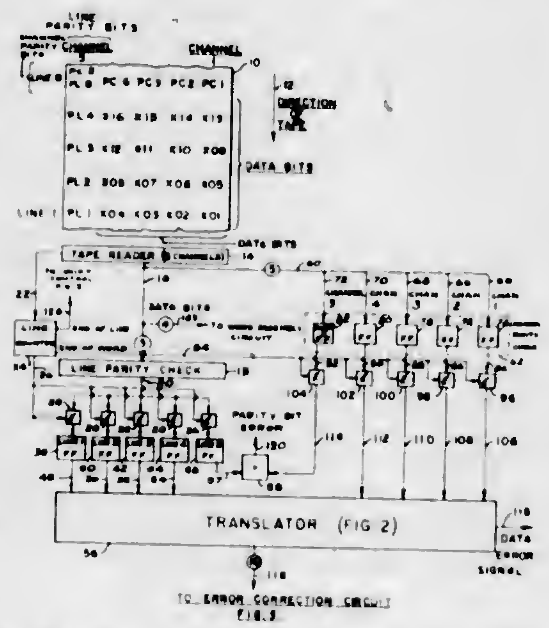
1. A check digit verifier comprising an accumulator, input means for successively entering manifestations, representative respectively of a sequence of information in-

dicia including a check symbol, step programmer mechanical relay means responsive to the operation of said input means to permit said manifestations to be entered into said accumulator, said programmer means operable subsequent to each entering operation of said input means for replacing the manifestation in said accumulator by a different manifestation representative of a multiple of the sum of said entered manifestation and of the indicium manifestation in said accumulator immediately prior to said entering operation, said step programmer mechanical relay means becoming inoperative upon the entry of said manifestation representative of said multiple of the sum, and means for indicating whether or not the final indicium manifestation in said accumulator, subsequent to complete entry of said sequence, differs from a predetermined manifestation.

3,183,483
ERROR DETECTION APPARATUS

John R. Lisowski, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 16, 1961, Ser. No. 82,868
4 Claims. (Cl. 340—146.1)

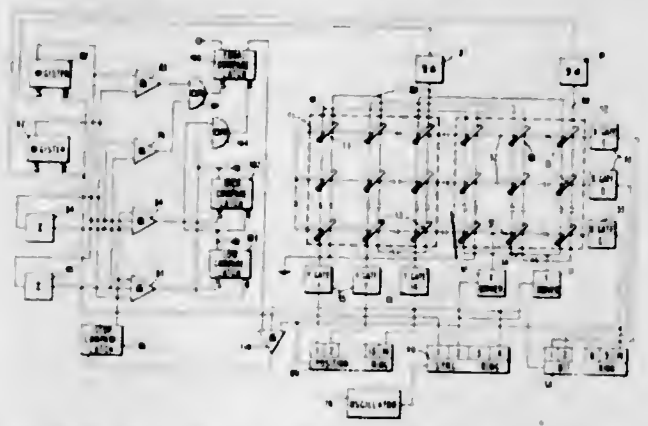


1. For a binary-coded data-processing system wherein the data bits are arranged in a coordinate system of lines and channels such that each data bit has a unique line and channel coordinate position, error detection and correction apparatus comprising: a line of parity bits having a parity bit for each channel of bits based upon modulo 2 summing; a channel of parity bits having a parity bit for each line of bits based upon modulo 2 summing, said line and channel of parity bits including one parity bit common to each; bit reading means for sensing all bits; line parity error detection means responsive to said reading means for developing line parity error signals corresponding to the lines containing detected parity errors; a plurality of first AND circuits corresponding to respective lines and connected to said line parity error detection means whereby detection of an error in a line activates an associated AND circuit; a plurality of first flip-flops connected to respective AND circuits; a line counter connected to said reading means and said AND circuits whereby detection of an error in a checked line activates an associated AND circuit causing a corresponding flip-flop to change to a second stable state; channel parity error detection means responsive to said reading means for developing channel parity error signals corresponding to the channels containing detected parity errors including a plurality of second flip-flops connected to the reading means; an end-of-word lead line extending from the line counter; a plurality of second AND circuits connected to the second flip-flops and to said lead line whereby detection of channel errors causes corresponding second flip-flops to change stable states and termination of reading all lines causes the second AND circuits associated with said second flip-flops to be activated to produce an output signal; a first OR circuit connected to one of said second AND circuits corresponding to a parity bit channel and to one of said first flip-flops corresponding to a parity bit line for combining said parity error signals corresponding to said channels of data bits and said lines of data bits for providing a data bit error signal; a third plurality of AND circuits for combining each of said parity error signals corresponding to said channels of data bits with each of said parity error signals corresponding to said lines of data bits; an exclusive OR circuit responsive to said third plurality of AND circuits for providing an enable signal when only one of said third AND circuits combines both parity error signals thereto; a fourth plurality of AND circuits responsive to said third AND circuits and said enable signal for providing an error correction signal; a data bit storage register having a stage for each data bit, each of said stages corresponding to the unique line and channel coordinate position of each data bit; means responsive to said bit sensing means for storing each sensed data bit into its corresponding stage in said storage register; and means responsive to said error correction signal for correcting the storage register stage corresponding to the erroneous data bit.

3,183,484
SERIAL BY BIT, SERIAL BY CHARACTER, DATA COMPARING APPARATUS

Richard A. Christiansen, Rochester, Minn., Norman S. Stockdale, Endwell, N.Y., and Harry J. Tashjian, Rochester, Minn., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 13, 1961, Ser. No. 151,860
8 Claims. (Cl. 340—146.2)



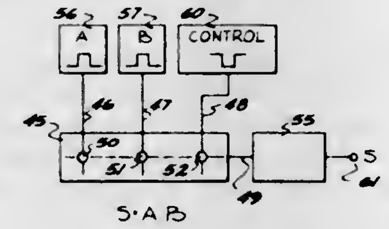
5. In data processing apparatus for serially examining pairs of bit positions forming characters to determine if the characters are equal and, if unequal, which character is considered to be high according to a predetermined collatable code assigned to the characters;
- a first settable indicator for indicating that the bits forming two characters being examined are equal;
- a second settable indicator for indicating that the bits forming one character compare high to the bits forming the other character being examined;
- a third settable indicator for indicating that the bits forming said one character compare low to the bits forming said other character;
- means responsive to the bits forming said characters for setting said first indicator;
- means responsive to the bits forming said one character and the corresponding absence of bits forming said other character for setting said second indicator;
- means responsive to the bits forming said other character and the corresponding absence of bits forming said one character for setting said third indicator;

- first means operably connected to reset said first and third settable indicators upon said second indicator being set; and
- second means operably connected to reset said first and second settable indicators upon said third indicator being set.

3,183,485
LOGIC CIRCUIT EMPLOYING CAPACITOR SWITCHING ELEMENTS

John F. Cubbage, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York

Filed Oct. 3, 1962, Ser. No. 228,106
3 Claims. (Cl. 340—147)

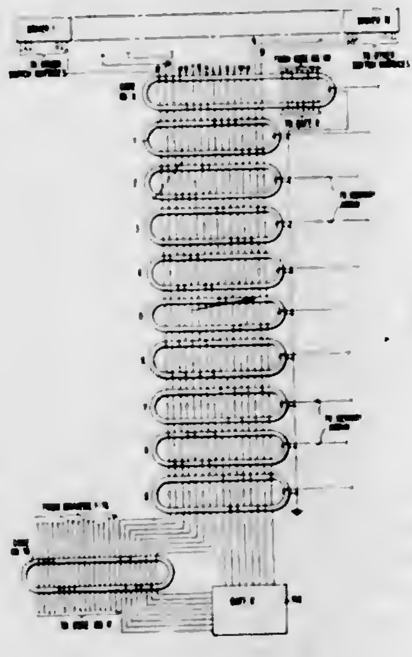


1. A logical AND-gate comprising, a sheet of insulating material, a plurality of pairs of capacitive pads, the individual pads of each pair of pads arranged on opposite sides of said sheet of insulating material and positioned opposite each other, a sensing conductor electrically connecting all of the pads on one side of said sheet, a plurality of drive conductors each connected to a different one of said pads on the other side of said sheet, a plurality of logic pulse sources and a plurality of control pulse sources each connected to a different one of said drive conductors, the plurality of control pulse sources being one less than the plurality of logic pulse sources, said control pulse sources providing a pulse of opposite polarity to and equal in amplitude to pulses provided by said logic pulse sources.

3,183,486
CORE MEMORY ADDRESSING SYSTEM

Fred B. Jones, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Nov. 21, 1960, Ser. No. 70,688
2 Claims. (Cl. 340—166)

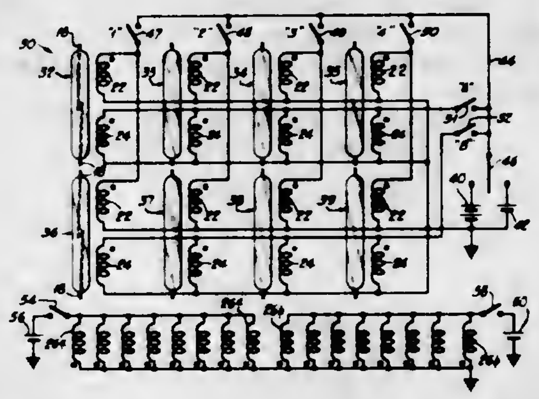


1. A system for addressing two sequential address locations in a memory matrix array of cores having substantially square-loop hysteresis characteristics, comprising, in combination,
- an addressing matrix including a plurality of cores divided into two groups,
- one set of input windings threaded in either a set or a reset sense through all cores of one of the groups according to a predetermined pattern,
- another set of input windings threaded in either a set or a reset sense through all cores of the other group according to a similar pattern, said pattern varying from one core to the next succeeding core according to a variable arrangement in which half of the windings associated with one core of one group are wound in the same pattern as the other half of the windings which are associated with a succeeding core of the same group so that irrespective of which group of cores is addressed the next succeeding core in the remaining group will be selected concurrently therewith, and
- driving means for selectively energizing a portion of the windings of the group during successive selection periods.

3,183,487
SWITCHING MATRIX HAVING SEALED SWITCHES OPERATING AS A NORMALLY CLOSED SWITCH MATRIX OR AS A NORMALLY OPEN SWITCH MATRIX

Wyman L. Deeg, Glenview, Ill., assignor to C. P. Clare & Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 8, 1962, Ser. No. 228,836
11 Claims. (Cl. 340—166)



1. A switching matrix comprising a plurality of sealed switches, each of said switches including a pair of magnetic elements movable into engagement by an applied flux field of a given strength; first and second winding means for applying a flux field to each of said sealed switches; circuit means for connecting the first and second winding means in a two coordinate matrix; and control means for operating said matrix as a normally closed switch matrix and as a normally open switch matrix, said control means including first means for selectively applying signals to said circuit means to energize the first and second winding means to apply a flux field of said given strength to only the coordinately selected switch, said control means also including second means for operating all of the switches and for selectively applying signals to said circuit means to energize the first and second winding means to apply a flux field of less than said given strength to the coordinately selected switch to release this selected switch.

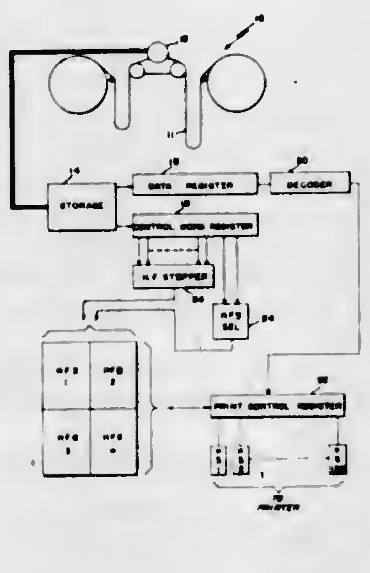
3,183,488
DATA PROCESSING APPARATUS

Richard M. Bloch, West Newton, Alan J. Deerfield, Franklin, and Lynn W. Marsh, Jr., Marblehead, Mass., assignors to Honeywell Inc., a corporation of Delaware

Filed Sept. 26, 1958, Ser. No. 763,563
15 Claims. (Cl. 340—172.5)

13. Apparatus for manipulating digital data comprising a digital data source, a digital data receiver, a coupling circuit means connected between said source and said receiver, a manual plugboard means external to said coupling circuit and connected thereto, and means including said plugboard connected to said receiver to feed data

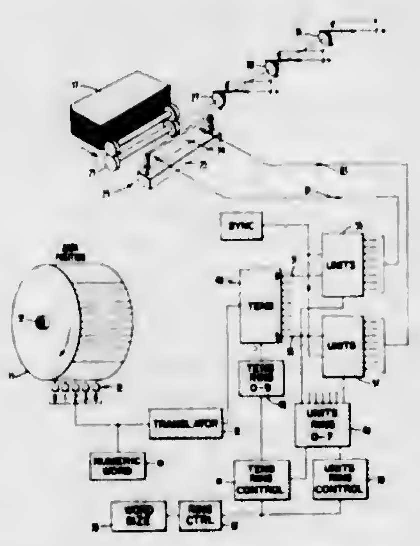
selectively and conditionally to said receiver in fields of sensible digital data having starting and stopping locations in said receiver defined by plugging on said plugboard.



3,183,489
DATA TRANSFER DEVICE

George J. Laurer, Johnson City, and Carl D. Southard, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 6, 1960, Ser. No. 20,438
4 Claims. (Cl. 340—172.5)

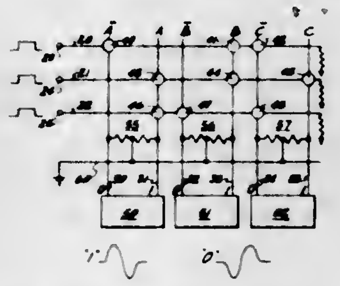


1. A data transfer device for serially available data divided into a plurality of words, a series of output devices for storing said data, gating means for each of said output devices, a digit position ring circuit successively advanced for enabling each said output device to accept said data, a word size control operative in response to each said word of data to generate a preselected number of timing pulses, means connecting said word size control and said timing pulses to said digit position ring circuit to successively enable a number of said output devices for each word of data, said word size control includes a static register settable in accordance with the number of pulses desired for each word, a word size ring circuit, means for setting said word size ring circuit in accordance with the digit position set in said static register at the beginning of each word of data, timing pulses for each digit position of said data, an AND circuit connecting said timing pulses to said digit position ring circuit, and means for enabling said timing pulse AND circut when the word size ring circuit reaches the last stage.

3,183,490
CAPACITIVE FIXED MEMORY SYSTEM

John F. Cubbage, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York

Filed Dec. 31, 1962, Ser. No. 248,642
7 Claims. (Cl. 340—173)

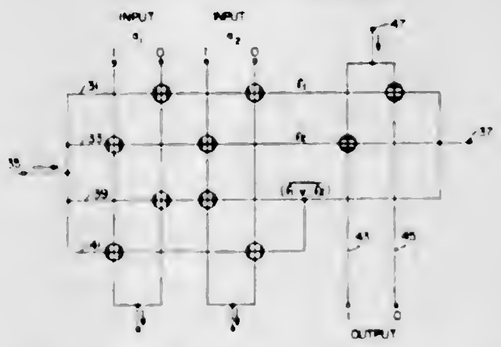


7. A capacitive memory comprising: a sheet of insulating material; a plurality of drive conductors on one side of said sheet, said drive conductors extending in a first direction: a plurailty of pairs of sense conductors on the other side of said sheet, said pairs of sense conductors extending in a direction transverse to that of said drive conductors whereby said drive conductors and said sense conductors form a crossing grid, the crossing of a single drive conductor with one of said pairs of sense conductors corresponding to a single binary digit; a plurality of pairs of capacitive pads, the individual pads of each pair of pads arranged on opposite sides of said sheet of insulating material, one pad of each pair of pads connected to one of said drive conductors, the other pad of each pair of pads connected to one conductor of a pair of sense conductors, the drive conductor and the pair of sense conductors corresponding to a binary digit having only one pair of capacitive pads; and means connected to each pair of sense conductors for detecting voltage differences between the sense conductors of each pair.

3,183,491
RECTANGULAR ARRAY CRYOGENIC STORAGE CIRCUITS USING INHIBITOR LOGIC

Raymond E. Miller, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 30, 1960, Ser. No. 18,691
2 Claims. (Cl. 340—173.1)

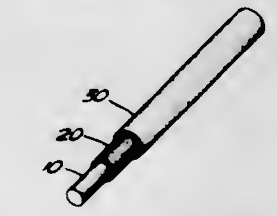


1. A cryogenic inhibitor logic storage circuits for performing logical operations definable as polynomial functions in terms of at least one variable, the circuit comprising first and second rectangular arrays, said first array having a predetermined number of first superconductive lines for each of the variables selected in accordance with the radix employed, a plurality of second superconductive lines disposed in the first array for the terms in the polynomial functions and the negations of these functions, at least one of said second superconductive lines representing the terms in the negations of the polynomial functions, cryotron inhibitor means disposed at selected points of interaction of the lines representing the variables and the lines representing the terms, said second rectangular array having a plurality of output superconductive lines equal to the predetermined number of lines for the variables in the first array, the plurality of second superconductive lines for the terms forming a part of the second array, and cryotron inhibitor means disposed at selected points of interaction of the plurality of second superconductive lines for the terms of the functions and the output lines, whereby the output lines will retain a given pattern for all variable values other than certain predetermined values.

3,183,492
BISTABLE MAGNETIC DEVICE AND METHOD

Eric T. K. Chow, Los Angeles, and Anthony J. Kolk, Jr., Rolling Hills, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Apr. 28, 1960, Ser. No. 25,317
7 Claims. (Cl. 340—174)

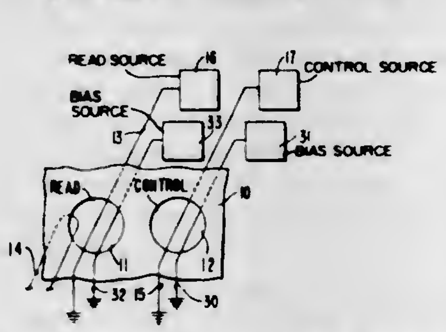


1. A magnetic device comprising: a base member; a thin electrically-conductive substrate comprising essentially a major proportion of silver reduced in situ on a surface of said base member, and a minor proportion of mercury provided in said substrate by immersing the substrate in an aged mercuricyanide solution; and a thin layer of bistable magnetic material electro-deposited upon said electrically conductive substrate.

3,183,493
MAGNETIC DEVICES

Albert W. Vinal, Owego, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed June 29, 1960, Ser. No. 39,476
8 Claims. (Cl. 340—174)

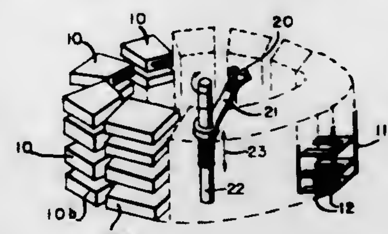


8. A magnetic device comprising a slab of magnetizable material and having at least one pair of apertures passing therethrough, each pair of apertures and the immediately surrounding magnetizable material forming a bistable storage device, each of said apertures of a pair having approximately the same inner perimeter, one of said apertures acting as a read aperture having read and biasing winding means and sense winding means passing therethrough, said other aperture acting as a control aperture having contro. and bias winding means passing therethrough, the magnetic material around said aperture pair representing a first binary digital state when the remanent flux passing around said read aperture does not also encircle said control aperture, the magnetic material around said aperture pair representing the other binary digital state when the remanent flux disposed about said read aperture also encircles said control aperture, a current source for selective energization of said control and bias winding means, a current source for selective energization of said read and biasing winding means, during said first binary digital state appropriate energization of read winding means acting to induce voltage pulses within said sense winding means, during said other binary digital state said appropriate energization of said read winding means being ineffective to induce voltage pulses within said sense winding means, said source of biasing current being selectively applied to said bias winding means during said reading operation with an amplitude and polarity so that the amplitude of said energization applied to said read winding means may be relatively large to provide large induced voltages within said sense winding means during said first binary digital state and at the same time not destroy said other binary digital state, said source of selective energization of said control winding means acting to switch the magnetic material around said aperture pair from the first binary digital state to the other and vice versa, said source connected to said biasing winding means in said read operation acting to bias the inner wall of said read aperture with an amplitude and polarity to minimize the tolerance to which the energization of said control winding means must be maintained and at the same time prevent an undesired switching of the device from the first binary digital state.

3,183,494
RANDOM ACCESS MEMORY SYSTEMS

Herbert Frazer Welsh, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 31, 1956, Ser. No. 607,457
23 Claims. (Cl. 340—174.1)

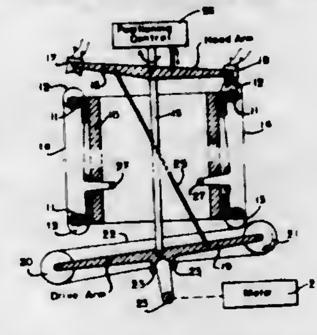


8. In a magnetic information system, a plurality of magnetic tapes disposed in a hollow substantially cylindrical array, a magnetic transducer movably mounted for rotation adjacent the center of said cylindrical array, first means for rotatably moving said transducer in a first search dimension concentric with the axis of said array, second means for longitudinally moving said transducer in a second search dimension substantially parallel to the axis of said array, whereby said transducer is moved into operative juxtaposition with and thereafter halted adjacent a preselected one of said tapes, and third means operative subsequent to operation of said first and second means for driving said preselected tape past said transducer.

3,183,495
RANDOM ACCESS MAGNETIC TAPE MEMORY SYSTEMS

Albert Blain, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 31, 1956, Ser. No. 607,458
5 Claims. (Cl. 340—174.1)



1. In a magnetic information system a plurality of magnetic tapes disposed for motion in intersection with a surface of revolution, a magnetic transducer moveably

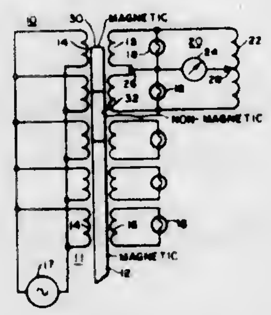
mounted for rotation about the axis of said surface of revolution, first means for rotatably moving said transducer in a first search dimension concentric with said axis of said surface and adjacent areas of said intersection of said tapes with said surface, second means for moving said transducer in a second search dimension transverse to said first search dimension and along said surface, whereby said transducer is moved into operative juxtaposition with and thereafter halted adjacent a preselected one of said tapes, and third means operative to drive said preselected tape past said transducer.

3,183,496
POSITION INDICATING ARRANGEMENT

Robert P. Goldstein, Forest Hills, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 15, 1961, Ser. No. 117,223

10 Claims. (Cl. 340—196)



1. An arrangement for indicating the position of a movable element fabricated at least partially from a magnetic material, said arrangement comprising elongated primary coil means distributed along the path of said movable element and energizable by a source of fluctuating potential, a plurality of elongated secondary coils positioned for respective substantial magnetic coupling with said primary coil means when said movable element is positioned adjacently thereto, and said movable element including an elongated magnetic portion having its long dimension less than twice that of any one of said secondary coils, said magnetic portion being magnetically isolated from the remainder of said movable element, first voltage indicating means coupled across each of said secondary coils to indicate generally and continuously the varying magnetic coupling thereof with said primary coil means and the attendant adjacent positionings of said movable element and its magnetic portion, circuit means connectable to any given pair of adjacent ones of said secondary coils for producing a predetermined voltage condition at a given juxtaposition of said magnetic portion of said movable element relative to said pair of secondary coils, and second voltage indicating means coupled to said circuit means to indicate said voltage condition and to provide at least one precisely determined position of said movable element and its magnetic portion for comparison to the indications obtained from said first voltage indicating means.

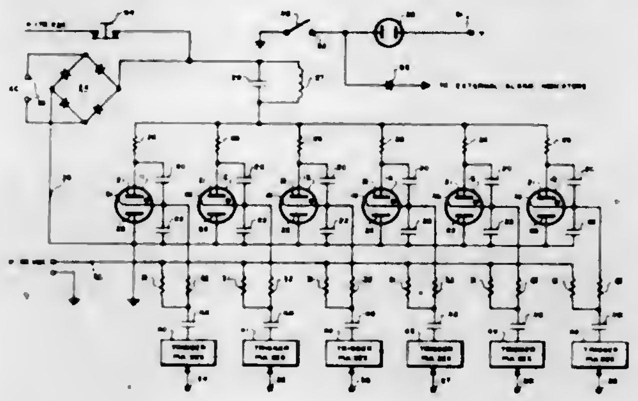
3,183,497
INDICATING AND ALARM SYSTEM

Clyde M. Whitby, Beltsville, and Robert R. Fontaine, Riverdale, Md., assignors to ACF Industries, New York, N.Y., a corporation of New Jersey

Filed Oct. 27, 1961, Ser. No. 148,071

4 Claims. (Cl. 340—213)

1. An alarm system comprising:
(*a*) a plurality of gaseous glow discharge tubes having an anode, a cold cathode and a trigger electrode,
(*b*) a source of unidirectional voltage pulses,
(*c*) a relay having a winding connected in series with said source between the anodes and cathodes of said tubes,
(*d*) a source of direct voltage connected between said cathodes and trigger electrodes for biasing the trigger electrodes positively relative to the cathodes,



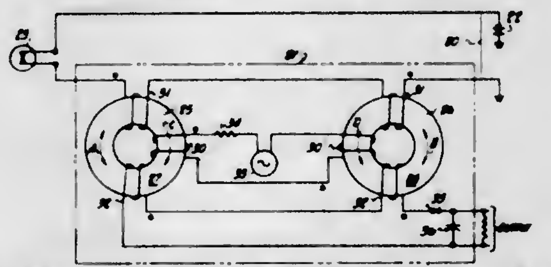
(*e*) a plurality of sources of triggering signals each connected to one of the trigger electrodes, and
(*f*) alarm means connected to the contacts of said relay for indicating triggering signals of predetermined magnitudes.

3,183,498
LINE-MONITOR CIRCUIT

Anthony M. Midis and Wilfred C. Howe, both of Chicago, Ill., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed Oct. 2, 1961, Ser. No. 142,150

4 Claims. (Cl. 340—253)



1. A monitor device comprising a communication line for transmitting undulating currents representing a voice message, signal means for applying a direct current to said line, at least one set of data transmitting pulsing contacts for selectively applying and removing said direct current to or from said line depending upon whether said contacts are closed or open, monitor means for detecting the direct current on said line without affecting the undulating current on said line, said monitor means comprising a current sensing circuit inductively coupled to said line at a point on said line where said direct current appears on or is removed from said line by said pulsing contacts, means responsive to current flow over said line for effectively changing the impedance of a circuit controlled by said monitor means, and means responsive to said change of impedance for providing a signal indicating whether said contacts are opened or closed.

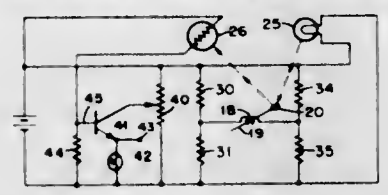
3,183,499
HIGH DIRECTIVITY SOLID CURTAIN PERIMETER INTRUSION SYSTEM

Richard G. Cowen, Frederick, Md., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed July 3, 1963, Ser. No. 292,808

14 Claims. (Cl. 340—258)

1. In a *security* protective system having an alarm, an elongated light source, and a plurality of light-sensitive detectors, the combination comprising a plurality of elongated light-conducting *tubes*, means for mounting and spacing said tubes substantially equal distances from each other in a plane including the tubes and the source with the elongated dimension of the tubes perpendicular to the elongated dimension of the source so that direct light rays from the source enter one end of said tubes and pass down the light-conducting tubes without attenuation, means for mounting said light-sensitive detectors on the other ends of the light-conducting tubes for receiving said conducted light, each of said tubes having a diameter and length for passing direct light from substantially different longitudinal segments of said source with adjacent tubes passing light from adjacent segments, and means including a Wheatstone bridge circuit for connecting said detectors for operating the alarm in response to a substantial variation in said light received by any one or all of the light-sensitive cells.

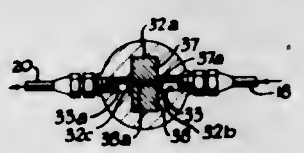


3,183,500
BEARING FAILURE PREDICTING DEVICE

Lloyd Hornbostel, Jr., and Lawrence B. Ward, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Feb. 15, 1963, Ser. No. 258,826

5 Claims. (Cl. 340—269)



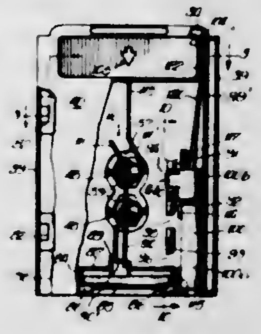
1. In a bearing lubrication system,
a closed housing,
an elongate narrow chamber in said housing,
a transverse lubricant inlet passage leading into said chamber,
a transverse lubricant outlet passage leading from said chamber,
and opposed walls within said chamber being of opposite magnetic polarity and being electrically insulated with electrical leads connected thereto so that lubricant will flow into said chamber from said inlet passage and flow out through said outlet passage with magnetic particles being retained in the chamber spanning said walls.

3,183,501
SIGNAL STATION

Harold E. Seaton, Shelby, Ohio, assignor to The Autocall Company, Shelby, Ohio, a corporation of Ohio

Filed Apr. 9, 1963, Ser. No. 271,653

12 Claims. (Cl. 340—296)



1. In an emergency call box, the combination of
(*a*) a mounting support,
(*b*) a manually engaged pull-down slide panel,
(*c*) means mounting said slide panel on said support for vertical rectilinear sliding movement from a normal position into a plurality of signalling positions,
(*d*) a plurality of electrical switches responsive to the movement of said slide panel into said plurality of signalling positions,
(*e*) manually engaged means for manually sliding said slide panel downwardly from one of said positions to another,
(*f*) and latch means controlling the sliding movement of said slide panel from one of said signalling positions into another of said signalling positions.

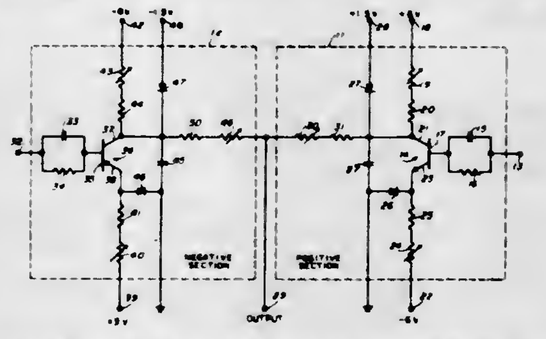
3,183,502
DIGITAL TO ANALOG WAVEFORM SYNTHESIZER

John Marez, 3407 Lockwood Drive, San Diego, Calif.

Filed Aug. 15, 1961, Ser. No. 131,688

8 Claims. (Cl. 340—347)

(Granted under Title 35, U.S. Code (1952), sec. 266)



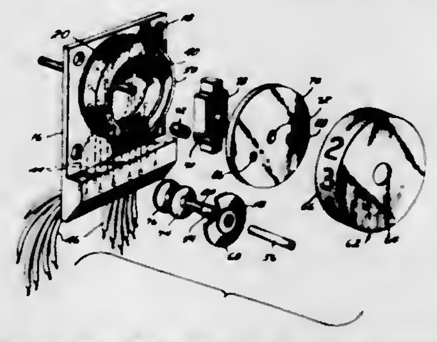
7. A digital to analog waveform synthesizer comprising;
(*a*) input means for coupling digital information thereto;
(*b*) a voltage;
(*c*) switching means operatively connected to said input means and said voltage source for turning on and off said voltage source in response to digital information coupled to said switching means;
(*d*) integrating means connected to the output of said switching means for integrating the output from said switching means;
(*e*) voltage level clamping means operatively connected to said integrating means for clamping the voltage level at said integrating means by a predetermined level during one of said off and on positions in said switching means;
(*f*) and other voltage level clamping means connected to said integrating means for clamping the output of said integrating means at a predetermined level during the other of said on and off positions of said switching means;
(*g*) said synthesizer thereby generating a substantially linear waveform when said switch is turned off and on in response to said digital information.

3,183,503
ELECTROMAGNETIC INDICATOR

Robert F. Casey, East Acton, Mass., assignor to Arthur D. Little Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Nov. 8, 1960, Ser. No. 67,956

2 Claims. (Cl. 340—378)

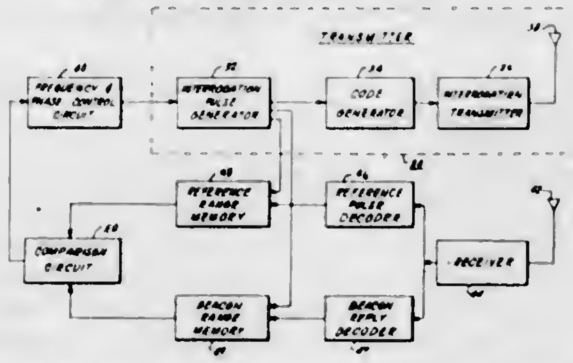


2. A character indicating device comprising, a shaft, electrically energizable means for selectively establishing

any one of a plurality of discrete non-coincident magnetic fields about said shaft, a magnet rotatably mounted on said shaft in position to be responsive to each of said non-coincident fields whereby said magnet assumes a different angular position upon the establishment of each of said fields, a character-bearing member connected to and rotatable with said magnet so as to assume a different display position for each different angular position of said magnet, and damping means rotatably mounted on said shaft for damping oscillatory movement of said magnet after it has shifted to any one of said different angular positions, said damping means comprising a disc rotatably mounted on said shaft and two projecting pins on said disc coacting with said magnet for limiting rotation of said disc relative to said magnet to a few degrees, said pins being oriented parallel to said shaft and spaced apart a distance greater than the distance between opposite side surfaces of said magnet.

3,183,504
COMPATIBLE AIRBORNE NAVIGATION-AIR TRAFFIC CONTROL AND COLLISION AVOIDANCE SYSTEM

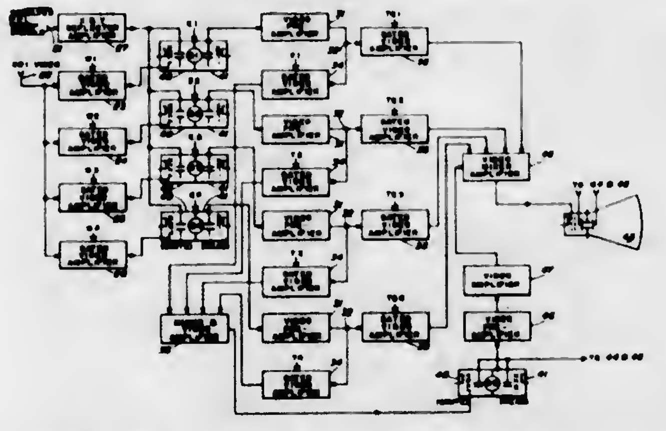
Walton Graham, Roslyn, N.Y., assignor, by mesne assignments, to Control Data Corporation, South Minneapolis, Minn., a corporation of Minnesota
Filed June 13, 1960, Ser. No. 35,659
30 Claims. (Cl. 343—7.5)



8. In a pulse transmission system the combination comprising first means for producing a first pulse, second means for producing a second pulse, said second means also producing a third pulse in response to said first pulse, and means connected to said first means for synchronizing the production of said first and second pulses, said last named means being operative in response to second and third pulses.

3,183,505
ELECTRONIC TIME COMPRESSION SYSTEM

Howard J. Strauss, Astoria, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec 20, 1962, Ser. No. 246,662
7 Claims. (Cl. 343—17.1)



1. In a radar tracking system having an electronic time compression system, the combination comprising:

input means for receiving a plurality of electronic signals corresponding to a number of target return signals of an object being tracked by radar;

a plurality of storage means for separately storing each of the plurality of signals from said input means;

write means electrically connected to said input means for controlling the passage of signals from said input means to said storage means;

said write means being electrically controlled so that each of the electronic signals are applied to a separate storage means, respectively, in the time sequence in which they are received at said input means;

readout means connected to said storage means;

display means electrically connected to said readout means for displaying the information stored in said storage means;

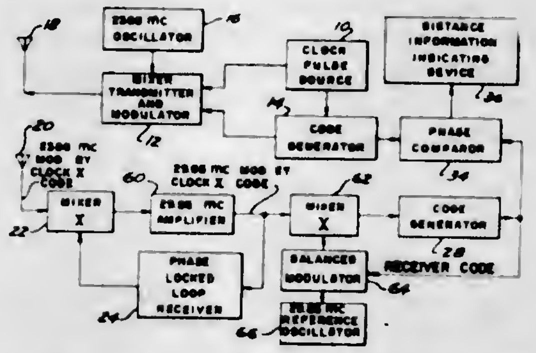
time compression means controlling said readout means to enable said readout means to apply the signals stored in each of said storage means to said display means in the sequence in which the signals are received at said input means, said time compression means modifying the time span of sequential application so that this time span is relatively short compared to the time span in which the signals are received at the input means;

trail generating means operably connected to selectively receive information stored in said storage means and for transferring this information to said display means subsequent to the display of this information as controlled by the time compression means, to thereby generate a fading trial on said display means which trail is a composite of the information transferred from said storage means; and

transfer means interposed between said readout means and said trail generating means for controlling the transfer of signals from said readout means to said trail generating means.

3,183,506
RADAR RANGING RECEIVER

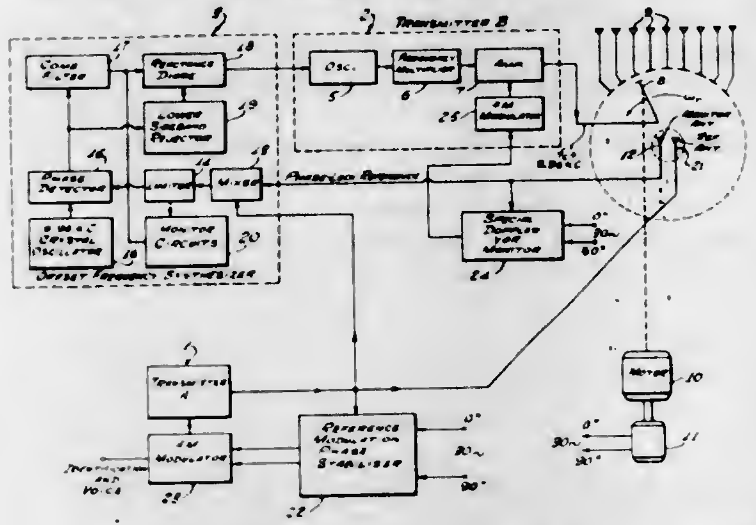
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Mahlon F. Easterling
Filed Apr. 2, 1962, Ser. No. 184,649
3 Claims. (Cl. 343—17.2)



3. In a radar system of the type wherein signals comprising a carrier modulated by the product of clock signals and code signals is transmitted to a distant target to be reflected and thereafter received and utilized by said receiver for indicating the distance of said target, the improvement in said receiver for said signals comprising means for converting said received signals to an intermediate frequency modulated by the product of said clock and code signals, means for generating local code signals which are identical with the code signals on said received signals, means for generating local oscillations having the frequency of said intermediate frequency, means for balance-modulating said code oscillations with said locally generated code signals, means for mixing the output of said means for balance-modulating and said intermediate-frequency modulated by said clock and code signals to provide as a resultant clock signals, and means for synchronizing the operation of said means for generating said code signals with said clock signals.

3,183,507
RADIO NAVIGATION SYSTEM

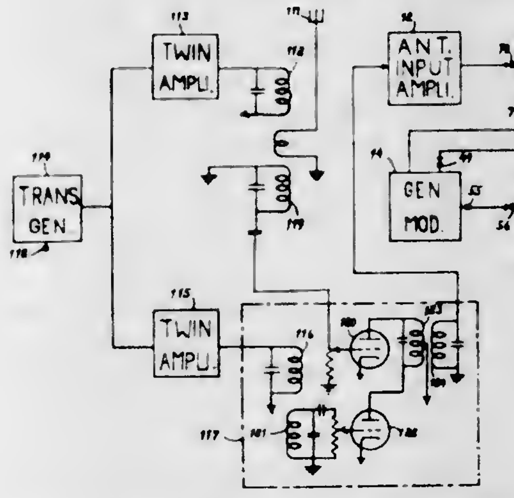
Paul G. Hansel, Greenvale, N.Y., assignor to Servo Corporation of America, Hicksville, N.Y., a corporation of New York
Filed Dec. 23, 1959, Ser. No. 861,550
6 Claims. (Cl. 343—106)



1. In a radio beacon system, a plurality of radiating elements, a first source of signal energy, a second source of signal energy and means for successively coupling said second source of signal energy to said radiating elements, means to supress extraneous modulations of the radiated energy due to the successive coupling of the second source of signal energy to the plurality of radiating elements comprising antenna means spaced from said radiating elements for receiving said radiated energy, means coupled to said antenna means for detecting the extraneous modulations of said radiated energy, and means responsive to said detected modulations to maintain a constant frequency difference between said first and second sources of signal energy.

3,183,508
METHOD OF, AND MEANS FOR, DUPLEX-MULTIPLEX COMMUNICATIONS

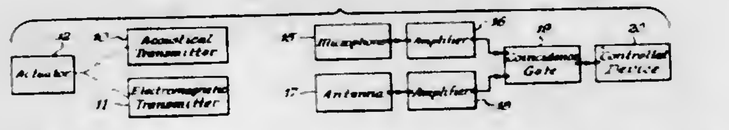
Paul Curry, 2669 Main St., Santa Monica, Calif.
Filed Feb. 13, 1961, Ser. No. 88,801
4 Claims. (Cl. 343—176)



4. In a radio receiver having means to reduce interference and eliminate frequency components of radio waves in a receiver input which are asymmetrical with respect to a predetermined frequency: means converting signal components deviating in frequency from a predetermined frequency into components of amplitude modulation so that signals symmetrical with respect to said predetermined frequency will cancel, leaving components of amplitude modulation representative of asymmetrical interfering signals; means including local-wave generator for providing a local-wave, modulation means connected to said converting means to modulate said local-wave by said components of amplitude modulation representative of asymmetrical signals; means applying said modulated local-wave to the receiver input as components of negative feedback, thus to reduce the amplitude of the input signals asymmetrical with respect to said predetermined frequency, whereby said asymmetrical signals appear as phase modulations of the local-wave; and means connected to said receiver input for detecting the said phase modulations substantially representative of said symmetrical signals.

3,183,509
REMOTE CONTROL BY PLURAL CONCURRENT DIVERSE TYPE SIGNALS

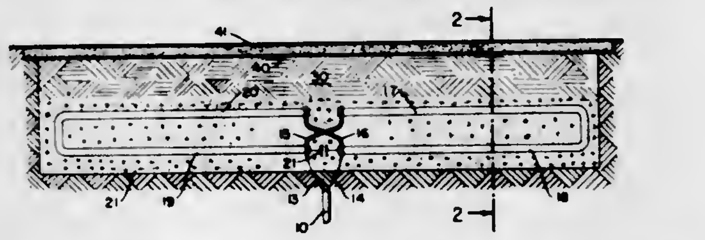
Alexander Ellett, River Forest, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware
Filed Apr. 7, 1958, Ser. No. 726,718
3 Claims. (Cl. 343—225)



1. A remote control system for permitting an operator to control a function of a utilizing device from a remote point, comprising: a first receiver responsive to signal energy of a first type for developing a first control signal; a second receiver responsive to signal energy of a second and different type for developing a second control signal; a utilizing device for performing a predetermined function; coincidence means responsive only to the conjoint application of said first and second control signals for actuating said utilizing device to perform said predetermined function; and remote control transmitting apparatus remotely located and entirely separate from said utilizing device and including a first transmitter for producing and radiating signal energy of said first type to said first receiver, a second transmitter for producing and radiating signal energy of said second type to said second receiver, and uni-control means for actuating said first and second transmitters to effect radiation from both in order to effect actuation of said utilizing device.

3,183,510
UNDERGROUND LOOP ANTENNA

Lucien E. Rawls, Leesburg, Va., assignor, by mesne assignments, to Deco Electronics, Inc., Washington, D.C., a corporation of Virginia
Filed Dec. 22, 1960, Ser. No. 77,778
3 Claims. (Cl. 343—719)



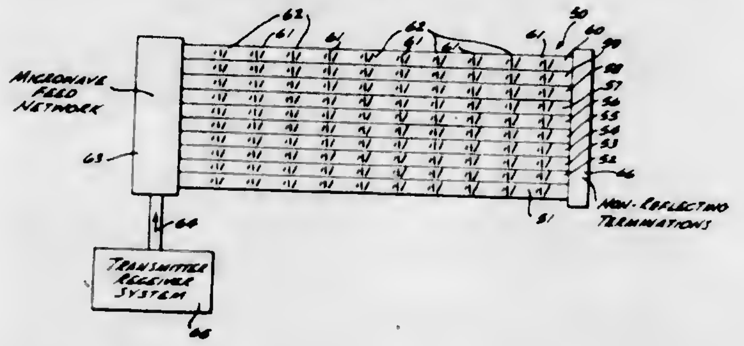
1. A loop antenna for transmitting radio waves, comprising a single turn loop having an upper conductor and a lower conductor located in a vertical plane, a transmission line connected to said loop for feeding the same, said loop having a length approximately equal to a quarter wavelength in air of the radio waves transmitted thereby, the distance between the upper and lower wires of the loop being a very small fraction of the length of the loop, said loop being buried in a trench within the earth with the center of said loop at a depth below the earth's surface of no more than one skin depth, said trench being filled to above the loop with a material having a lower loss than the surrounding earth, separate drainage trenches on each side of said loop antenna extend-

ing the entire length thereof, and a liquid impermeable cover located above said trench and extending the entire length of the loop for shielding said loop antenna from surface water.

3,183,511
BROADBAND WAVEGUIDE SLOT RADIATOR WITH MUTUALLY COUPLED SLOTS OF DIFFERENT PERIMETERS AND ORIENTATION

James S. Ajioka, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Mar. 28, 1963, Ser. No. 268,613
8 Claims. (Cl. 343—771)

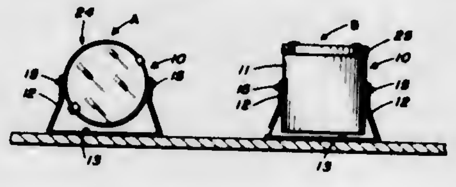


1. A radiating element comprising a rectangular waveguide having first and second parallel narrow walls and first and second parallel broad walls for propagating electromagnetic energy therethrough within a predetermined band of frequencies; a first slot of a first predetermined perimeter disposed only in said first narrow wall at an acute angle with the center line thereof thereby to couple to said rectangular waveguide, said first predetermined perimeter corresponding to a resonance at a first selected frequency within said predetermined band of frequencies; and a second slot of a second perimeter different from said first predetermined perimeter having mutual coupling to said first slot and disposed only in said first narrow wall transverse to the center line thereof, said second perimeter corresponding to a resonance at a second selected frequency within said predetermined band of frequencies.

3,183,512
MECHANICAL GRAPHIC RECORDING OMNIDIRECTIONAL ACCELEROMETER

Alfred B. Castle, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy

Filed June 17, 1963, Ser. No. 288,566
5 Claims. (Cl. 346—7)
(Granted under Title 35, U.S. Code (1952), sec. 266)

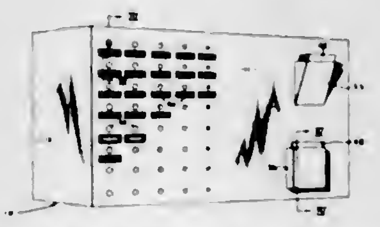


1. A recording accelerometer comprising:
a cylindrical casing;
an annular frame secured to one end of said casing;
a closure plate secured to the other end of the casing;
a cantilever spring disposed within the casing and having one end secured to said closure plate;
a mass mounted on the free end of said cantilever spring and displaceable in response to acceleration forces;
a disc disposed within and supported by said frame;
a recording surface on said disc;
a stylus carried by said mass and constantly in engagement with said recording surface for producing thereon records according to the displacement of the mass;
a spring disposed within the mass in engagement with the stylus for maintaining the stylus in engagement with the recording surface;
shoulder means on the frame in engagement with the disc for supporting the disc within said frame;
a dial pivotally mounted on the frame in engagement with the disc for maintaining the disc in engagement with said shoulder means;
means carried by said dial in locking engagement with the frame for releasably locking the dial to the frame;
adjustable means mounted in said closure plate and movable along the cantilever spring for controlling the effective length thereof;
means mounted on the closure plate and engageable with said adjustable means for locking said adjustable means in adjusted positions; and
means disposed within the casing for limiting the movement of the mass therein.

3,183,513
MACHINE FOR RECORDING SELECTIONS

Richard E. Swank, Battle Creek, Mich.
(12520 Pacific Ave., Los Angeles, Calif.)

Filed Sept. 18, 1961, Ser. No. 138,780
11 Claims. (Cl. 346—17)



1. An apparatus for recording on an impression receiving member the positions of a plurality of objects comprising:
a unit support structure;
a plurality of spaced indicia means, identifying a plurality of objects separate from the apparatus, mounted upon said support structure and arranged in a group of substantially adjacent locations;
a plurality of manually operable, actuating elements mounted upon said support structure in predetermined and respective association with said indicia means;
an impression receiving member having markings on a side thereof arranged in a pattern corresponding to the relative positions of said objects;
holding means for positioning the impression receiving member upon said support structure;
impression effecting means mounted adjacent said holding means for applying impressions in selected positions to said impression receiving member while said member is positioned within said holding means; and
connecting means between said actuating elements and said impression effecting means whereby operation of an actuating element causes said impression effecting means to make an impression upon an impression receiving member in said holding means at the markings on said impression receiving member corresponding to the objects identified on the operated actuating elements.

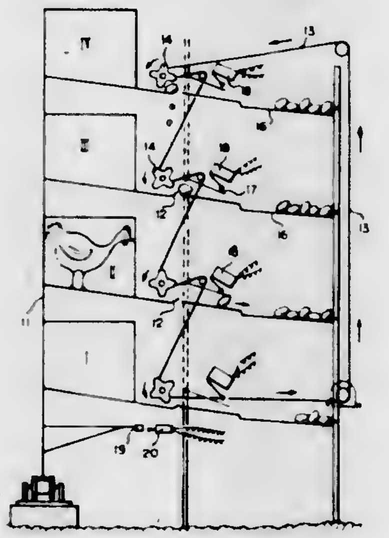
3,183,514
AUTOMATIC EGG-LAYING RECORDING APPARATUS

Akira Ishibashi, Fukuoka-shi, Japan, assignor to Nippon Reizo Kabushiki Kaisha, Tokyo, Japan

Filed Dec. 28, 1961, Ser. No. 162,699
6 Claims. (Cl. 346—25)

1. Egg collecting and recording apparatus comprising, in combination, a henhouse including a bank of nests

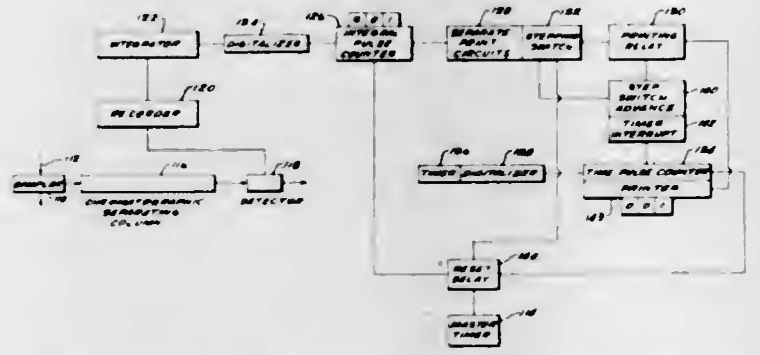
arranged in vertical alignment in horizontally adjacent columns and in horizontal alignment in vertically adjacent rows, each nest having a floor sloping downwardly and outwardly and forming an egg-retaining veranda for the associated nest; an egg detecting and collecting device including egg receptacles equal in number to said rows, arranged in vertical alignment in a column and each including an egg guide ramp horizontally aligned with the verandas in a respective row; means mounting said henhouse and said detecting and collecting device for relative displacement parallel to and along said rows; a plurality of transfer means each positioned adjacent the end of a respective guide ramp, and arranged, when the guide ramps are aligned with the verandas of a respective column of nests, to engage and transfer any eggs then on the verandas to the associated guide ramps for movement into the associated egg receptacles; a plurality of switches each associated with a respective guide ramp and having an operator engageable by an egg moving over the latter to actuate the associated switch; and electrically operable recording means connected to said switches.



3,183,515
RECORDING APPARATUS

Anthony B. Hartman, Verona, James A. Petrocelli, North Versailles Township, Allegheny County, and Thomas J. Puzniak, Cheswick, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Apr. 22, 1963, Ser. No. 274,728
17 Claims. (Cl. 346—34)

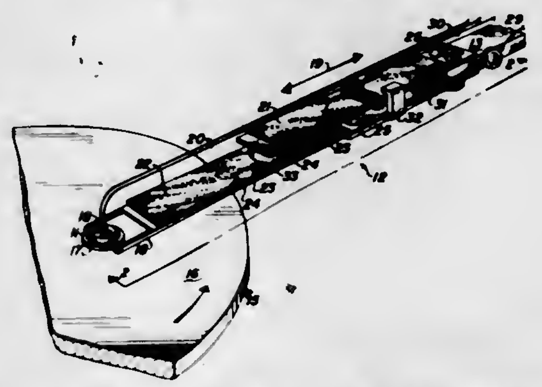


1. Apparatus for automatically recording values that are a function of one variable at predetermined values that are a function of another variable, comprising a primary means furnishing a primary digitalized output that is a function of a first variable, primary pulse counting means actuated by said primary means for counting the primary digitalized output pulses, secondary means furnishing a secondary digitalized output that is a function of a second variable, secondary pulse counting means actuated by said secondary means for counting said secondary digitalized output pulses, printing means associated with said secondary pulse counting means for printing a number that is a function of said second variable, actuating means, actuated by said primary pulse counting means when a predetermined number of primary digitalized output pulses has been reached, for actuating said printing means.

3,183,516
DATA RECORDING APPARATUS

Donald D. Sliter, San Jose, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Feb. 21, 1958, Ser. No. 716,801
4 Claims. (Cl. 346—74)

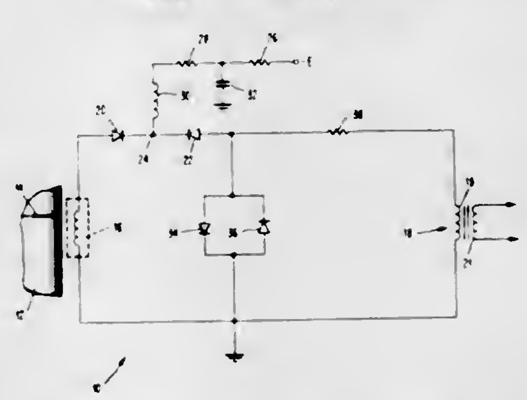


4. A control device for supporting a transducer on an access arm and for translating the transducer in response to a control signal, said device comprising a first electrostrictive element having one end fixed to the access arm, a resilient member fixed to and extending from the access arm, and a second electrostrictive element having one end fixed to the resilient member, the first electrostrictive element and the resilient member being mechanically coupled together whereby the first electrostrictive element is urged downwardly at the mid-point thereof, the extremity of the first electrostrictive element being coupled to urge downwardly against the mid-point of the second electrostrictive element, said first and second electrostrictive elements being electrically connected in parallel by a pair of conductors, one of said conductors being grounded, said transducer being pivotally supported by the second electrostrictive element and being translated by an amount substantially greater than the individual deflections of each of the electrostrictive elements.

3,183,517
SPROCKET PROTECTOR CIRCUIT

Walter Dorfman, Warminster, and Norman J. Weniger, Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 16, 1962, Ser. No. 173,755
3 Claims. (Cl. 346—74)

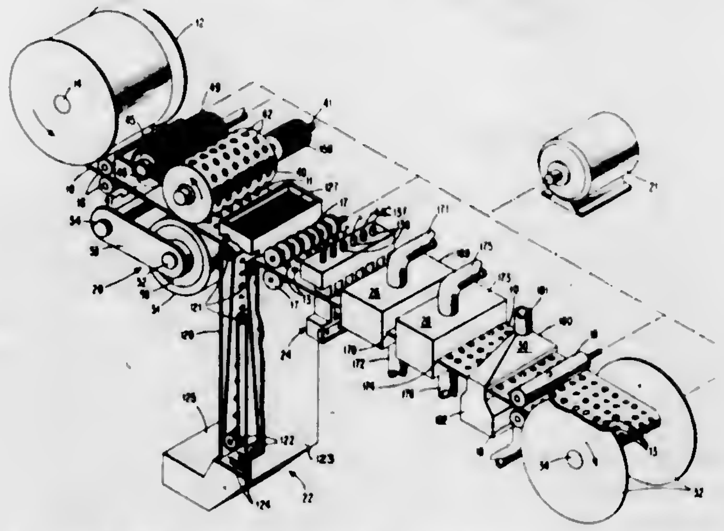


1. A protective circuit for preventing transient signals of excessive amplitude from being fed back from a utilization circuit to a recording head to erase recorded information on a recording medium comprising a first diode connected to said recording head, a second diode between said first diode and said utilization circuit, said first and second diodes being connected in polarity opposition with

respect to each other, a pair of parallel diodes connected across said utilization circuit for limiting the voltage applied to said first and second diodes from said utilization circuit, a source of power, and means for applying said power to the junction point of said first and second diodes to maintain said diodes normally conducting, one of said diodes becoming non-conductive when a signal from said utilization circuit exceeds a predetermined amplitude, the particular diode becoming non-conductive being dependent upon the polarity of said signal from said utilization circuit.

3,183,518
RECORD PERFORATING APPARATUS

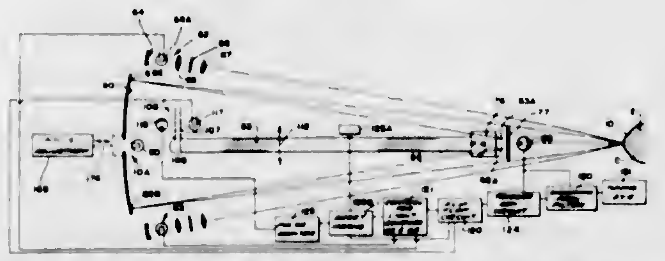
William F. Henry and Herman C. Scheer, Endicott, and Harold P. Wicklund, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 4, 1961, Ser. No. 156,824
9 Claims. (Cl. 346—76)



1. Apparatus for producing perforations in a data record member comprising:
- means for coating predetermined areas of said member with a combustible material; and
- control means for igniting and consuming selected ones of said coated areas in accordance with data to be recorded.

3,183,519
SYSTEM FOR OPTICALLY DETERMINING CURVATURE OF AN OBJECT

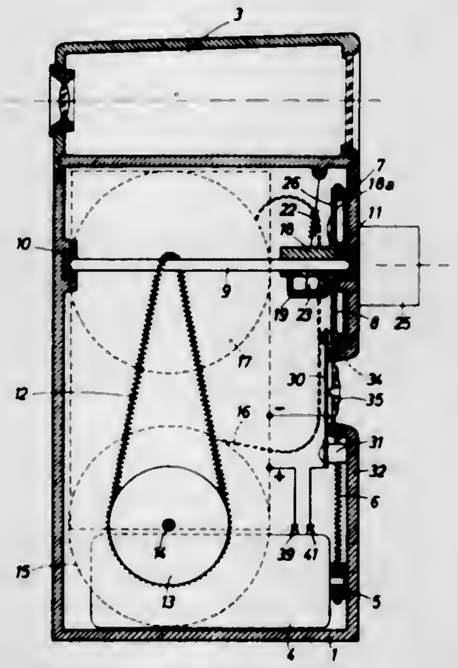
Clyde W. Harris, Goleta, and Paul S. Sugino and Robert S. Neiswander, Santa Barbara, Calif., assignors to The TE Company, Santa Barbara, Calif., a corporation of California
Filed July 1, 1960, Ser. No. 40,302
17 Claims. (Cl. 351—17)



13. In a system of the character described for determining curvature of an object, a pair of optical means each effective to produce a corresponding reflected light image from said object with the spacing between the image produced by one of said optical means and the image produced by the other of said optical means being representative of the curvature of said object, means moving said images, means controlled by said moving means and said images for alternately rendering one of said pair of optical means ineffective and the other one of said optical means effective to produce a corresponding one of said images, and means operated by said moving means and controlled in response to said images for indicating the spacing between said images.

3,183,520
CINEMATOGRAPHIC CAMERA WITH SNAP-SPRING RELEASE MECHANISM

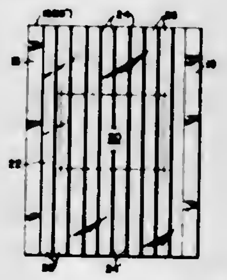
Knut Schaefer, 65 Gotthelfstrasse, Munich, Germany
Filed July 25, 1960, Ser. No. 44,987
Claims priority, application Germany, July 30, 1959, Sch 26,450
7 Claims. (Cl. 352—178)



1. In a cinematographic camera having a camera casing housing means for advancing the film, the improvement comprising: means defining a recess in said casing, a release mechanism in said casing for said advancing means, a resilient membrane light-tightly mounted in said recess capable of being moved from a resting position into a release position thereby passing through a range of decreasing resilient force wherein said membrane actuates said release mechanism, there being means including said membrane tending to return it into its resting position by snap spring action.

3,183,521
GLASS APERTURE PLATE

Walter Goldstein, 75 Main St., Dobbs Ferry, N.Y.
Filed Feb. 21, 1962, Ser. No. 174,877
6 Claims. (Cl. 352—221)



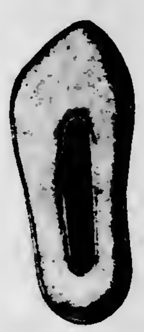
1. A glass aperture plate for use in a plate assembly for holding film in spaced relation to a light source, said film being normally movable in a given direction past said light source, said plate having a portion of the surface thereof including the projection area covered in a pattern with light transparent ridges of permanently adhering material comprising silicon dioxide (SiO_2) of a thickness from 10^{-5} to 10^{-4} inches, said material being characterized by smoothness and hardness whereby a minor proportion of the film surface within the projection area is supported by said ridges.

DESIGNS

MAY 11, 1965

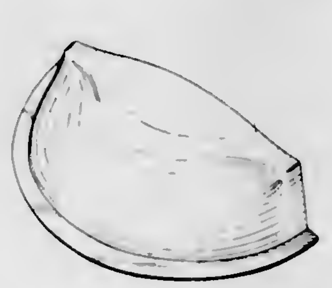
201,070
SLIPPER

Winalee Gentry Mitchell, Perrysburg, Ohio
(205 Farnsworth Road, Waterville, Ohio)
Continuation of design application Ser. No. D67,088, Oct. 16, 1961. This application Mar. 13, 1963, Ser. No. 73,997
Term of patent 14 years
(Cl. D7—7)



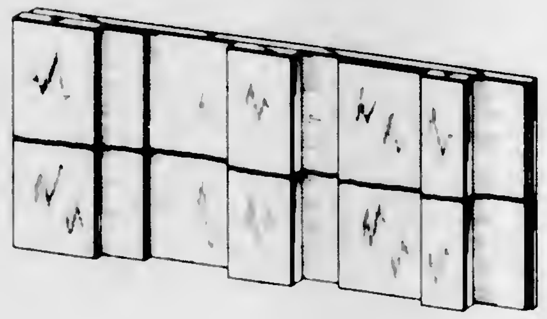
201,071
WINDOW WELL COVER

Armel U. Faubion, Adams County, Colo., assignor to Related Sales, Inc.
Filed May 11, 1964, Ser. No. 79,902
Term of patent 14 years
(Cl. D13—1)



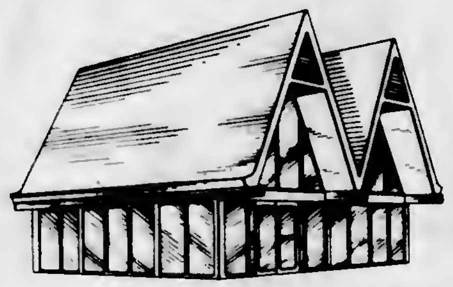
201,072
PARTITION

Arnon Hiller, 82—46 Lefferts Blvd., Kew Gardens 15, N.Y.
Filed July 27, 1964, Ser. No. 81,014
Term of patent 14 years
(Cl. D13—1)



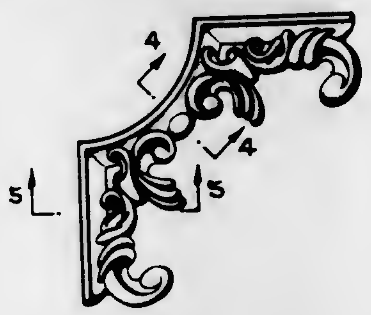
201,073
BUILDING

Merrill Spivak, Cook County, Ill., assignor to Franksville, Inc., a corporation of Illinois
Filed July 27, 1964, Ser. No. 81,022
Term of patent 14 years
(Cl. D13—1)



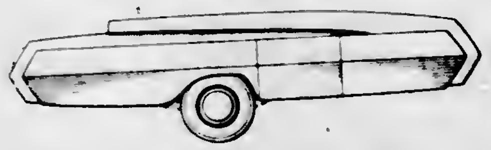
201,074
PANEL ORNAMENT

La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois
Filed July 24, 1964, Ser. No. 81,003
Term of patent 14 years
(Cl. D13—6)



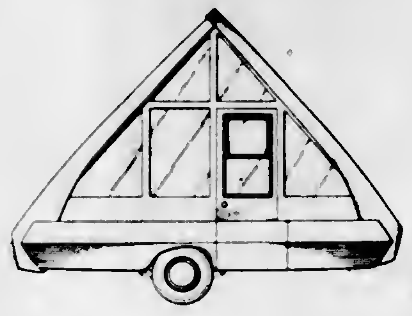
201,075
TRAILER

Le Roy K. Patnode, 2011 Alba Road, Ben Lomond, Calif.
Filed May 27, 1964, Ser. No. 80,176
Term of patent 14 years
(Cl. D14—3)



201,076
TRAILER

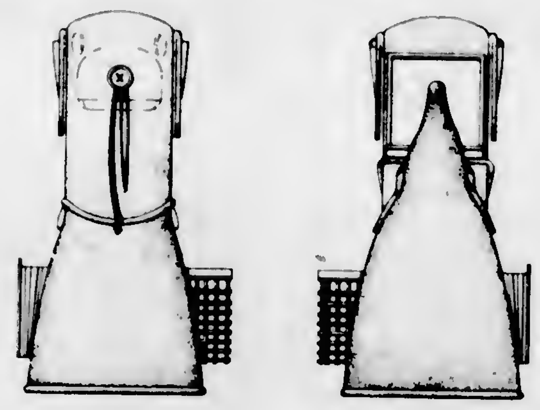
Le Roy K. Patnode, 2011 Alba Road, Ben Lomond, Calif.
Filed May 27, 1964, Ser. No. 80,177
Term of patent 14 years
(Cl. D14—3)



201,077

COMBINED SEAT, BLACKBOARD AND TOY HOLDER FOR A CHILD

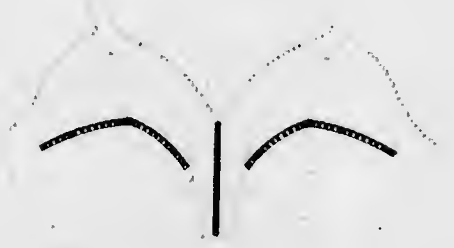
Natalie Mayer Gingold, 1525 E. 26th St.,
Brooklyn 29, N.Y.
Filed Apr. 7, 1964, Ser. No. 79,385
Term of patent 7 years
(Cl. D15—1)



201,078

BRASSIERE

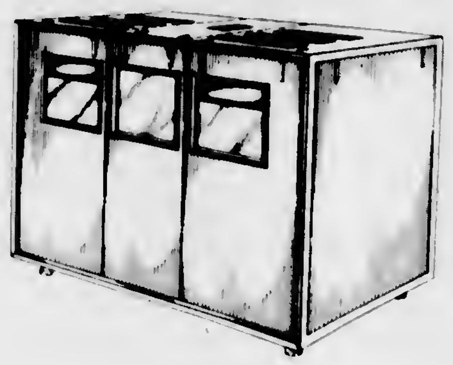
Charles M. Sachs, Fort Lee, N.J., assignor to International Latex Corporation, Dover, Del., a corporation of Delaware
Filed Jan. 22, 1963, Ser. No. 73,281
Term of patent 14 years
(Cl. D20—4)



201,079

CABINET FOR ELECTRICAL EQUIPMENT OR THE LIKE

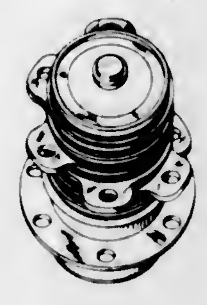
Joseph E. Smith, Jr., Birmingham, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich.
Filed June 7, 1962, Ser. No. 70,461
Term of patent 14 years
(Cl. D26—5)



201,080

HERMETICALLY SEALED ELECTROMAGNETIC RELAY

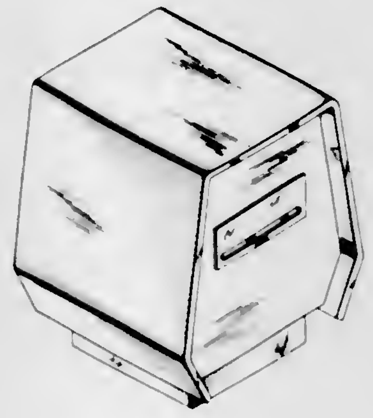
Jack S. Hawkins, San Jose, Calif., assignor to Jennings Radio Manufacturing Corporation, San Jose, Calif., a corporation of Delaware
Filed Jan. 2, 1964, Ser. No. 78,025
Term of patent 14 years
(Cl. D26—13)



201,081

PERFORATED CARD READER

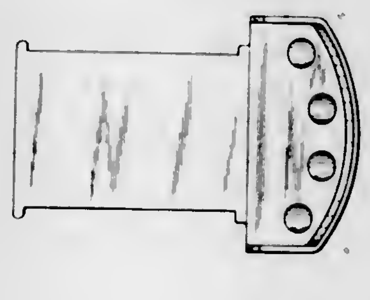
Alfred W. Stewart, New Paltz, N.Y., assignor to A. W. Stewart Associates, Inc., Kingston, N.Y., a corporation of New York
Filed Jan. 16, 1964, Ser. No. 78,217
Term of patent 14 years
(Cl. D26—14)



201,082

WRITING IMPLEMENT HOLDER FOR A TELEPHONE

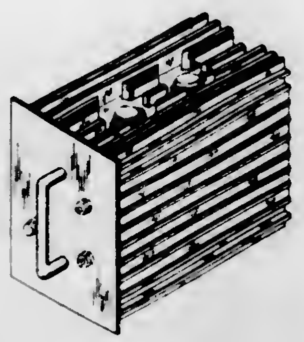
Joseph Rossman, 76 Paulison, Passaic, N.J.
Filed May 19, 1964, Ser. No. 80,051
Term of patent 14 years
(Cl. D26—14)



201,083

MODULAR ELECTRONIC POWER SUPPLY UNIT OR SIMILAR ARTICLE

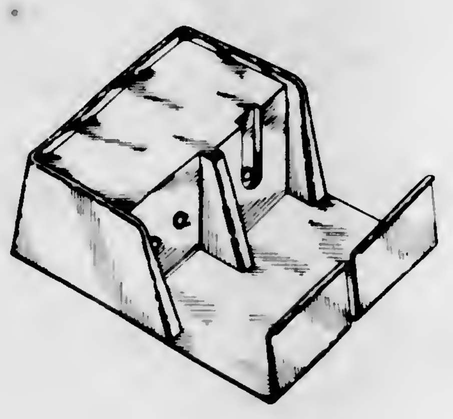
Herbert Roth, 64—11 228th St., Bayside, N.Y.
Filed Nov. 21, 1963, Ser. No. 77,534
Term of patent 14 years
(Cl. D26—15)



201,084

BATTERY CHARGER

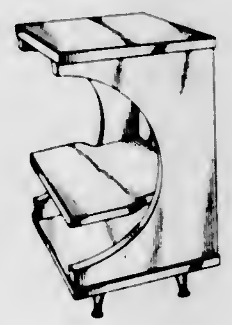
Franklin C. Bradshaw, 4319 NE. 7th St., Minneapolis, Minn., and Terrance M. Smith, 354 E. Wheelock Parkway, St. Paul, Minn.
Filed Sept. 3, 1964, Ser. No. 81,578
Term of patent 14 years
(Cl. D26—15)



201,085

MAGAZINE RACK

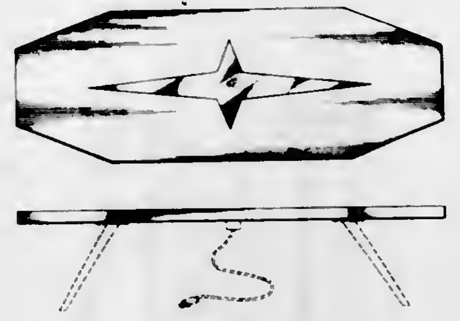
Carl G. Anderson, Rte. 1, Box 15, Wausa, Nebr.
Filed Nov. 22, 1963, Ser. No. 77,580
Term of patent 14 years
(Cl. D33—2)



201,086

TABLE

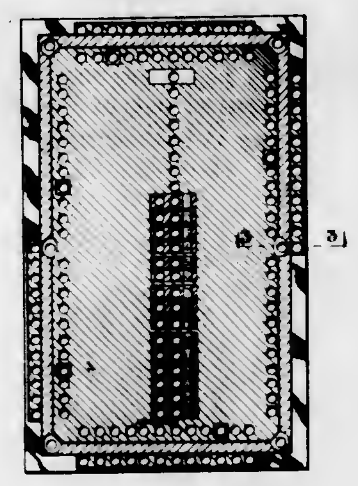
Hester Covington, 229 Woodlawn Ave.,
Jacksonville 4, Fla.
Filed Apr. 19, 1963, Ser. No. 74,523
Term of patent 14 years
(Cl. D33—14)



201,087

GAME BOARD

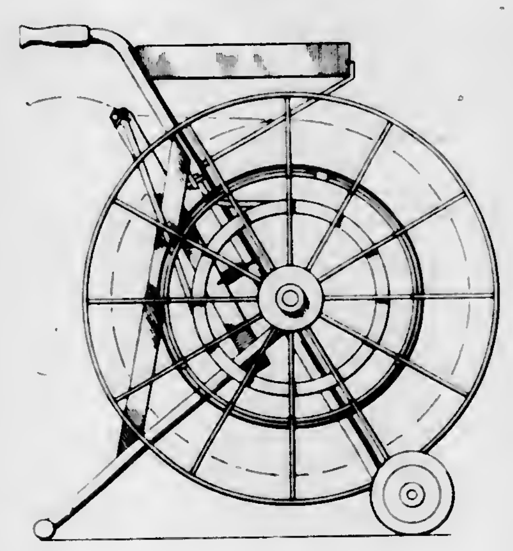
Marcel D. de Clercq, 2228 Dickerman, Pomona, Calif.
Filed Sept. 17, 1964, Ser. No. 81,761
Term of patent 14 years
(Cl. D34—5)



201,088

PORTABLE STRAP DISPENSER

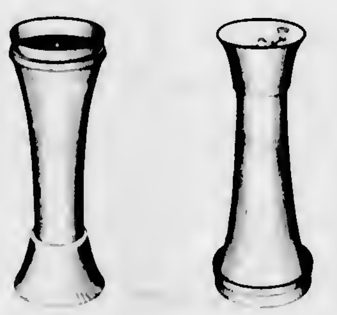
Michael O. Derrickson, Norwood, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 9, 1964, Ser. No. 80,339
Term of patent 14 years
(Cl. D41—1)



201,089
FLOUR SIFTER OR THE LIKE

James J. Swett, Barrington, and Henry J. Marien, Warwick, R.I., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

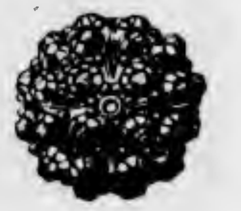
Filed June 30, 1964, Ser. No. 80,641
Term of patent 14 years
(Cl. D44—29)



201,090
BEAD

Adolph Katz, Providence, R.I., assignor to Coro, Inc., Providence, R.I., a corporation of Rhode Island

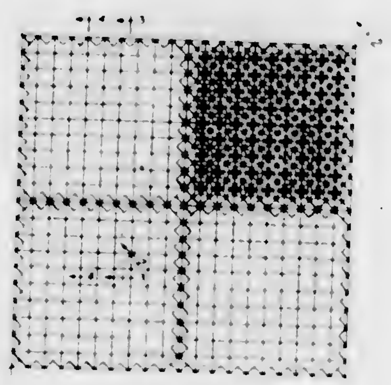
Filed July 13, 1964, Ser. No. 80,833
Term of patent 7 years
(Cl. D45—1)



201,091
PRISMATIC PANELING FOR LIGHTING FIXTURES AND THE LIKE

Carl X. Meyer, St. Louis County, Mo., assignor to The Emerson Electric Manufacturing Company, St. Louis, Mo., a corporation of Missouri

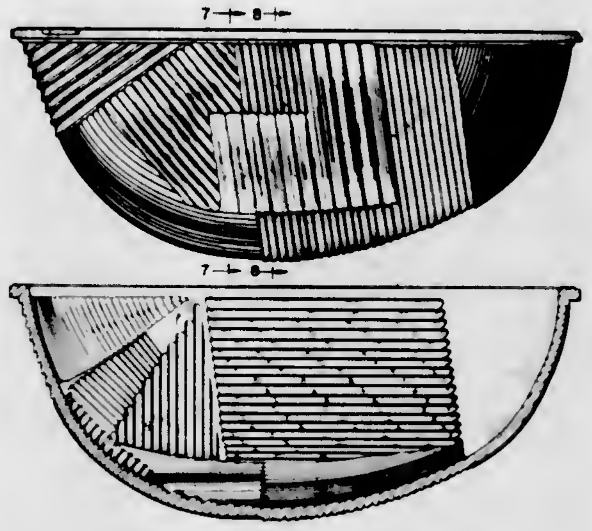
Filed Sept. 25, 1963, Ser. No. 76,719
Term of patent 14 years
(Cl. D48—16)



201,092
STREET LIGHTING REFRACTOR

Franklin M. Neal, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

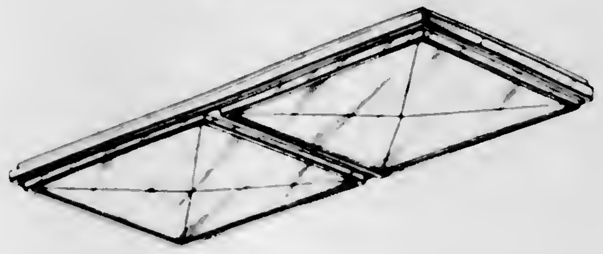
Filed July 7, 1964, Ser. No. 80,741
Term of patent 14 years
(Cl. D48—16)



201,093
LIGHTING FIXTURE

Vearl S. Wince, Newark, Ohio, and Carl X. Meyer, St. Louis, Mo., assignor of one-half to Holophane Company, Inc., New York, N.Y., a corporation of Delaware, and one-half to Day-Brite Lighting, Inc., St. Louis, Mo., a corporation of Missouri

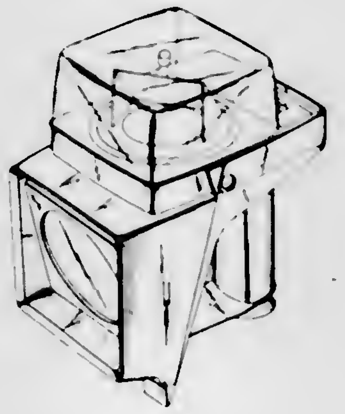
Filed May 9, 1962, Ser. No. 70,055
Term of patent 14 years
(Cl. D48—23)



201,094
ROTARY BEACON LANTERN

Samuel S. Leotta, Hatboro, Pa., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

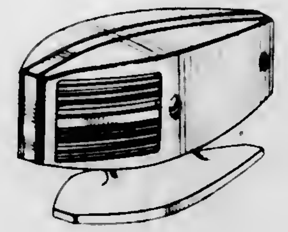
Filed Aug. 13, 1963, Ser. No. 76,197
Term of patent 14 years
(Cl. D48—24)



201,095
NAUTICAL NAVIGATION LIGHT

Ronald G. Martelet, 1330 N. Central Ave., Chicago, Ill.

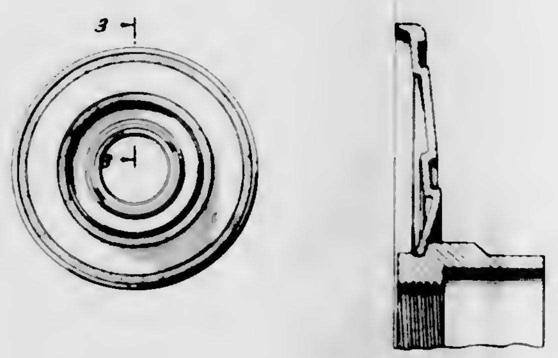
Filed Jan. 31, 1964, Ser. No. 78,542
Term of patent 14 years
(Cl. D48—31)



201,096
COMBINED ROSE AND COLLAR FOR A DOOR KNOB

Fred J. Russell, 8635 Otis St., South Gate, Calif.

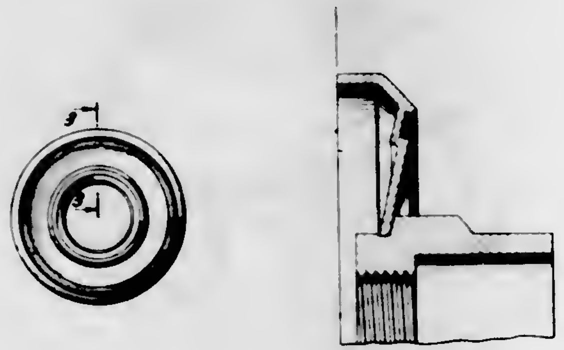
Filed Mar. 31, 1964, Ser. No. 79,261
Term of patent 14 years
(Cl. D50—6)



201,097
COMBINED ROSE AND COLLAR FOR A DOOR KNOB

Fred J. Russell, 8635 Otis St., South Gate, Calif.

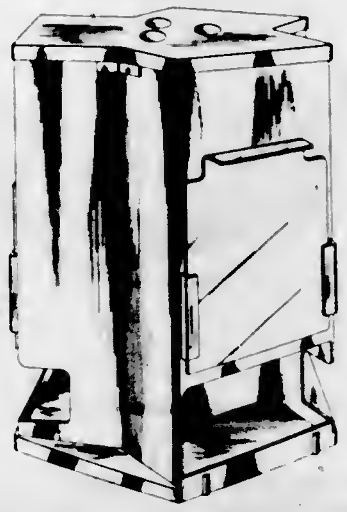
Filed Mar. 31, 1964, Ser. No. 79,278
Term of patent 14 years
(Cl. D50—6)



201,098
DISPENSER FOR HAIR ROLLERS OR THE LIKE

Vincent J. Aversa, 1135 Banner Ave., Brooklyn, N.Y.

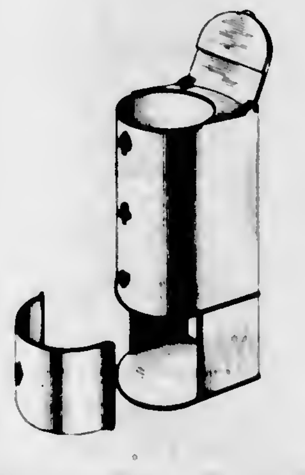
Filed Mar. 26, 1962, Ser. No. 69,432
Term of patent 14 years
(Cl. D52—2)



201,099
PAPER-ROLL STORAGE CONTAINER

George F. Brillante, W. Beresford Ave., De Land, Fla.

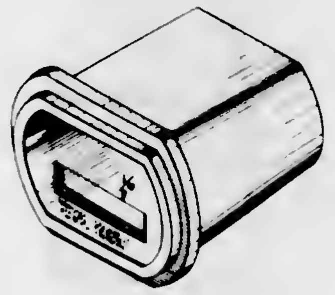
Filed Nov. 22, 1963, Ser. No. 77,542
Term of patent 14 years
(Cl. D52—2)



201,100
METER

Arthur J. Little, Frank A. Ryder, and Charles A. Woodcock, Springfield, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

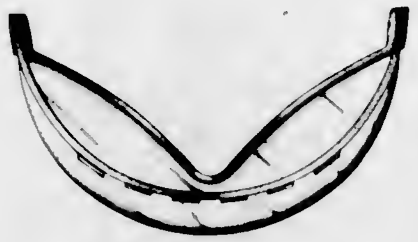
Filed Feb. 12, 1964, Ser. No. 78,607
Term of patent 14 years
(Cl. D52—6)



201,101
EYE SHIELD OR SIMILAR ARTICLE

Felix Gilbert, New York, N.Y., assignor to De Luxe Reading Corporation, Elizabeth, N.J., a corporation of New Jersey

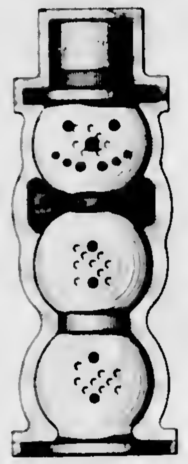
Filed Oct. 20, 1964, Ser. No. 82,244
Term of patent 14 years
(Cl. D57—1)



201,102
GOLF BALL PACKAGE

Stanley J. Panek, Buffalo, N.Y., assignor to Dunlop Tire and Rubber Corporation, Buffalo, N.Y., a corporation of New York

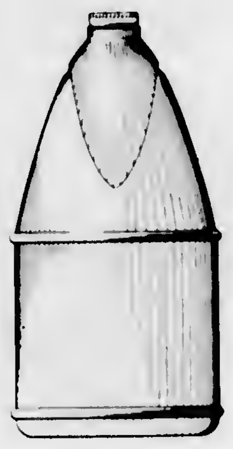
Filed July 13, 1964, Ser. No. 80,836
Term of patent 14 years
(Cl. D58—2)



201,103
PLASTIC JUG

Paul G. Caisse, Windsor, Conn., assignor to The Fuller Brush Company, East Hartford, Conn., a corporation of Connecticut

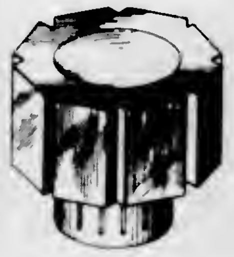
Filed Nov. 6, 1964, Ser. No. 82,496
Term of patent 14 years
(Cl. D58—5)



201,104
COMBINED DECANTER CLOSURE AND CANDLE STICK HOLDER

Ernest L. Du Pree, New York, N.Y., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware

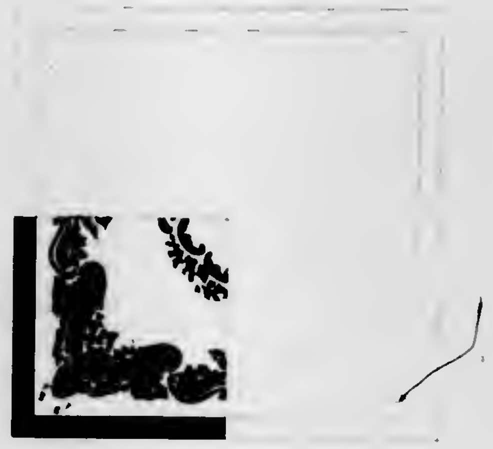
Filed Oct. 10, 1963, Ser. No. 76,929
Term of patent 14 years
(Cl. D58—26)



201,105
EMBOSSED PAPER NAPKIN

Albert C. Jensen, Milwaukee, Wis., assignor to American Paper & Plastic Products, Inc., Milwaukee, Wis., a corporation of Wisconsin

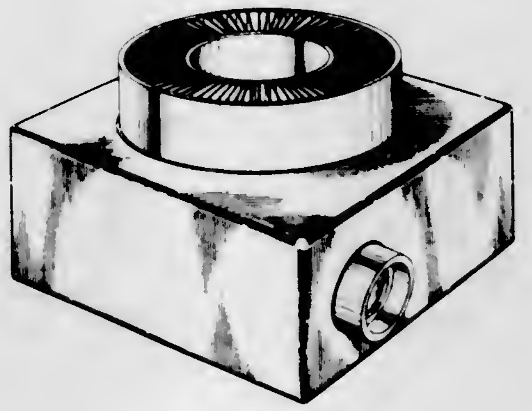
Filed Oct. 12, 1964, Ser. No. 82,126
Term of patent 14 years
(Cl. D59—2)



201,106
COMBINED SLIDE PROJECTOR AND SLIDE TRAY

David E. Hansen, Fairport, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

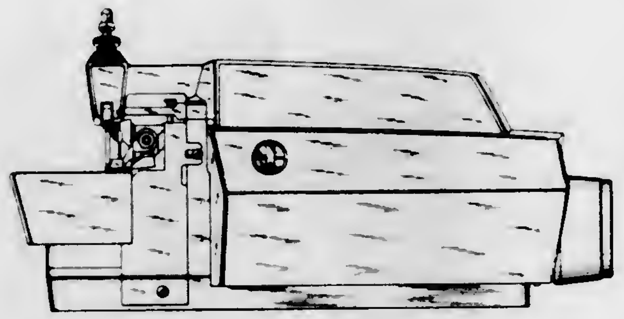
Filed Dec. 22, 1961, Ser. No. 68,025
Term of patent 14 years
(Cl. D61—1)



201,107
SEWING MACHINE

James H. Sullivan, Lake Forest, Ill., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois

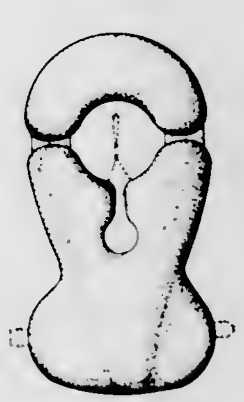
Filed Dec. 7, 1964, Ser. No. 82,946
Term of patent 14 years
(Cl. D70—1)



201,108
FLOTATION VEST

Edgar G. Baker, Carbondale, Pa., assignor to Gentex Corporation, New York, N.Y., a corporation of Delaware

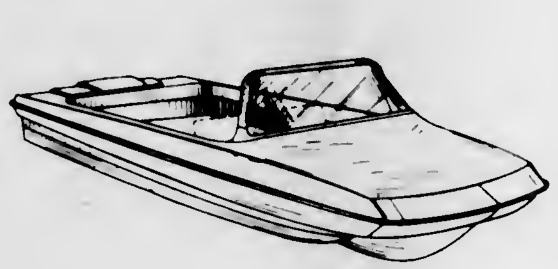
Filed May 22, 1963, Ser. No. 75,007
Term of patent 14 years
(Cl. D71—1)



201,109
BOAT

Myron T. Stevens, Kenosha, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware

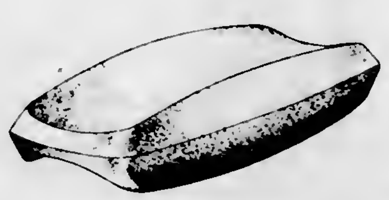
Filed May 14, 1964, Ser. No. 79,982
Term of patent 14 years
(Cl. D71—1)



201,110
BAR OF SOAP OR THE LIKE

Willard Reeder Horne, Northvale, N.J., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

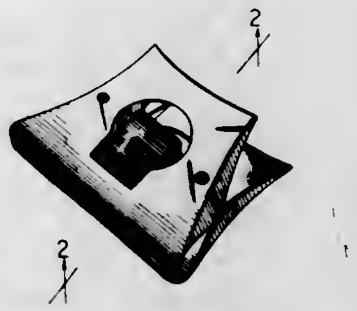
Filed Jan. 29, 1964, Ser. No. 78,414
Term of patent 14 years
(Cl. D73—1)



201,111
SPRING CLIP

Jack Fairchild Fleming, Summit, N.J., assignor to Sterling Plastics Co., Mountainside, N.J., a corporation of New Jersey

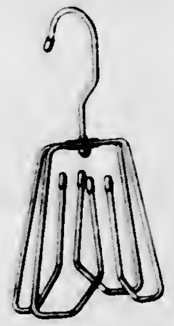
Filed Apr. 15, 1964, Ser. No. 79,503
Term of patent 14 years
(Cl. D74—2)



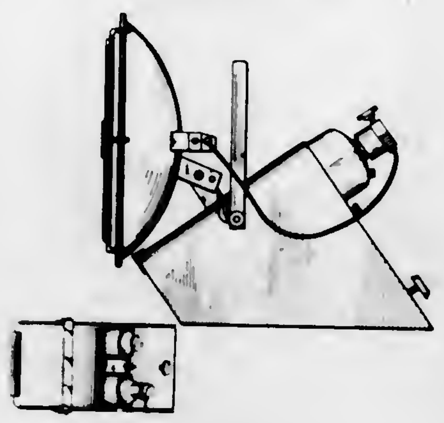
201,112
NECKTIE HANGER

Alexander Stein, Los Angeles, Calif., assignor to Riba Manufacturing Co., Inc., Los Angeles, Calif., a corporation of California

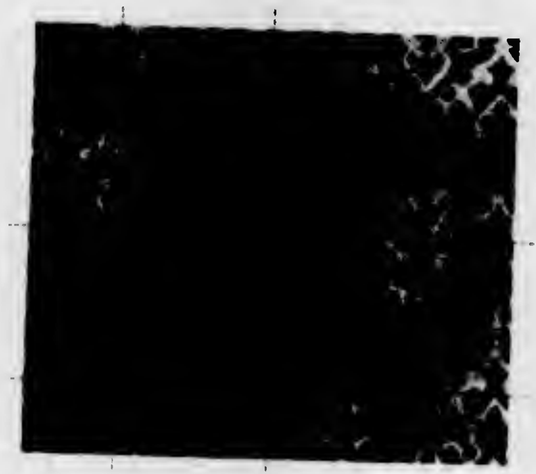
Filed Apr. 20, 1964, Ser. No. 79,594
Term of patent 14 years
(Cl. D80—8)



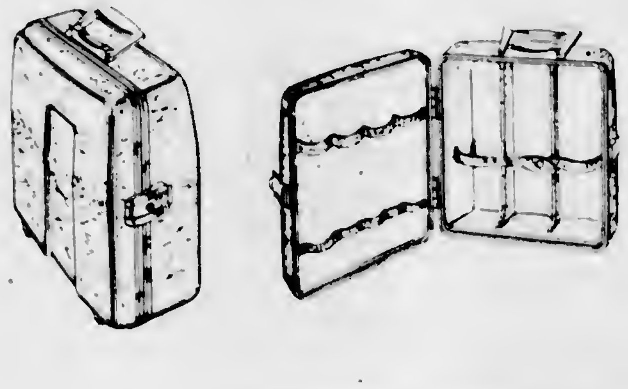
201,113
PORTABLE HEATER
John A. Groves, Hull St., Rochester, Pa.
Filed Nov. 18, 1963, Ser. No. 77,474
Term of patent 7 years
(Cl. D81—20)



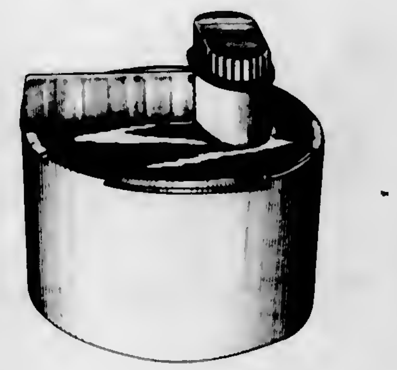
201,114
PLASTIC SHEET MATERIAL OR SIMILAR ARTICLE
Wallis E. Stuart, Hingham, Mass., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 23, 1964, Ser. No. 80,523
Term of patent 14 years
(Cl. D87—3)



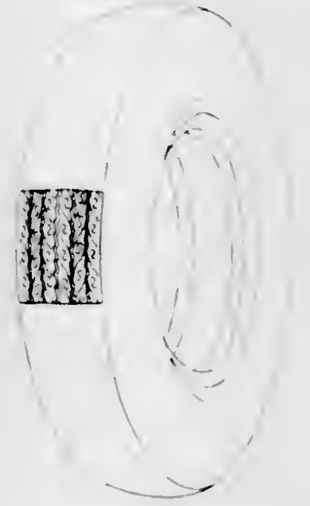
201,115
CARRYING CASE FOR BAR EQUIPMENT OR THE LIKE
Kendrick T. Parsell, 2121 Orrington Ave., Evanston, Ill., and Harold Brickman, 5517 N. California Ave., Chicago, Ill.
Filed Aug. 13, 1962, Ser. No. 71,269
Term of patent 14 years
(Cl. D87—5)



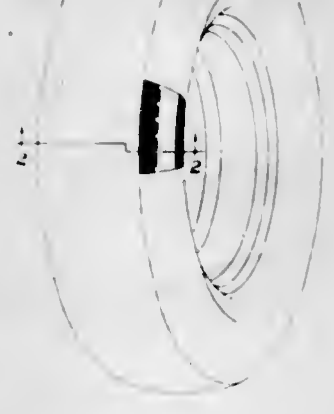
201,116
VEGETABLE COMMINUTOR RECEPTACLE OR THE LIKE
Walter Häuptli, Bruscholz, Aarburg, Switzerland, assignor to Rotel AG, Aarburg, Switzerland, a corporation of Switzerland
Filed June 19, 1964, Ser. No. 80,476
Term of patent 7 years
(Cl. D89—1)



201,117
TIRE
Frank S. Vukan, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Nov. 13, 1964, Ser. No. 82,594
Term of patent 14 years
(Cl. D90—20)



201,118
TIRE
Frank S. Vukan, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Nov. 13, 1964, Ser. No. 82,578
Term of patent 14 years
(Cl. D90—20)



LIST OF REISSUE PATENTEES
TO WHOM
PATENTS WERE ISSUED ON THE 11TH DAY OF MAY, 1965

Note.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Burger, Alex: *See*—
  Schubert, Friedrich, Lang, Schabacher, and Burger. Re. 25,777.
Farbenfabriken Bayer Aktiengesellschaft: *See*—
  Schubert, Friedrich, Lang, Schabacher, and Burger. Re. 25,777.
Haseltine Research, Inc.: *See*—
  Loughlin, Bernard D. Re. 25,775.
Lang, Konrad: *See*—
  Schubert, Friedrich, Lang, Schabacher, and Burger. Re. 25,777.
Loughlin, Bernard D., to Haseltine Research, Inc. Screen structure for constant luminance color receiver. Re. 25,775, 5-11-65, Cl. 178—5.4.
Rosen, George, to United Aircraft Corp. Marine propeller. Re. 25,776, 5-11-65, Cl. 170—135.24.
Schabacher, Werner: *See*—
  Schubert, Friedrich, Lang, Schabacher, and Burger. Re. 25,777.
Schubert, Friedrich, K. Lang, W. Schabacher, and A. Burger, to Farbenfabriken Bayer Aktiengesellschaft. Method for preparing alkali-metal borohydrides. Re. 25,777, 5-11-65, Cl. 23—14.
United Aircraft Corp.: *See*—
  Rosen, George. Re. 25,776.

LIST OF PLANT PATENTEES

Bourne, Benjamin A.: *See*—
  Weetman, Leslie M., and Bourne. 2,510.
  Weetman, Leslie M., and Bourne. 2,511.
Roberts, Winston, to Selected Glads, Inc. Gladiolus plant. 2,509, 5-11-65, Cl. 85.
Selected Glads, Inc.: *See*—
  Roberts, Winston. 2,509.
Shammarello, Anthony M. Azalea plant. 2,507, 5-11-65, Cl. 57.
Shammarello, Anthony M. Azalea plant. 2,508, 5-11-65, Cl. 55.
Silva, William E. Apple tree. 2,512, 5-11-65, Cl. 34.
United States Sugar Corp.: *See*—
  Weetman, Leslie M., and Bourne. 2,510.
  Weetman, Leslie M., and Bourne. 2,511.
Weetman, Leslie M., and B. A. Bourne, to United States Sugar Corp. Sugar cane. 2,510, 5-11-65, Cl. 89.
Weetman, Leslie M., and B. A. Bourne, to United States Sugar Corp. Sugar cane. 2,511, 5-11-65, Cl. 89.

LIST OF DESIGN PATENTEES

Air Reduction Co., Inc.: *See*—
  Stuart, Wallis E. 201,114.
American Paper & Plastic Products, Inc.: *See*—
  Jensen, Albert C. 201,105.
Amerock Corp.: *See*—
  Clayton, La Verne E. 201,074.
Anderson, Carl G. Magazine rack. 201,085, 5-11-65, Cl. D33—2.
Aversa, Vincent J. Dispenser for hair rollers or the like. 201,098, 5-11-65, Cl. D52—2.
Baker, Edgar G., to Gentex Corp. Floatation vest. 201,108, 5-11-65, Cl. D71—1.
Bradshaw, Franklin C., and T. M. Smith. Battery charger. 201,084, 5-11-65, Cl. D26—15.
Brickman, Harold: *See*—
  Parsell, Kendrick T., and Brickman. 201,115.
Brillante, George F. Paper-roll storage container. 201,099, 5-11-65, Cl. D52—2.
Caisse, Paul G., to The Fuller Brush Co. Plastic jug. 201,103, 5-11-65, Cl. D58—5.
Clayton, La Verne E., to Amerock Corp. Panel ornament. 201,074, 5-11-65, Cl. D13—6.
Corning Glass Works: *See*—
  Neal, Franklin M. 201,092.
Coro, Inc.: *See*—
  Katz, Adolph. 201,090.
Covington, Hester. Table. 201,086, 5-11-65, Cl. D33—14.
Day-Brite Lighting, Inc.: *See*—
  Wince, Vearl S., and Meyer. 201,093.
De Clercq, Marcel D. Game board. 201,087, 5-11-65, Cl. D34—5.
De Luxe Reading Corp.: *See*—
  Gilbert, Felix. 201,101.
Derrickson, Michael O., to FMC Corp. Portable strap dispenser. 201,088, 5-11-65, Cl. D41—1.
Dunlop Tire and Rubber Corp.: *See*—
  Panek, Stanley J. 201,102.
Du Pree, Ernest L., to Schenley Industries, Inc. Combined decanter closure and candle stick holder. 201,104, 5-11-65, Cl. D58—26.
Eastman Kodak Co.: *See*—
  Hansen, David E. 201,106.
Emerson Electric Mfg. Co., The: *See*—
  Meyer, Carl X. 201,091.
Ex-Cell-O Corp.: *See*—
  Smith, Joseph E., Jr. 201,079.
FMC Corp.: *See*—
  Derrickson, Michael O. 201,088.
Faubion, Armel U., to Related Sales, Inc. Window well cover. 201,071, 5-11-65, Cl. D13—1.
Fleming, Jack F., to Sterling Plastics Co. Spring clip. 201,111, 5-11-65, Cl. D74—2.
Franksville, Inc.: *See*—
  Spivak, Merrill. 201,073.
Fuller Brush Co., The: *See*—
  Caisse, Paul G. 201,103.
Gentex Corp.: *See*—
  Baker, Edgar G. 201,108.
Gilbert, Felix, to De Luxe Reading Corp. Eye shield or similar article. 201,101, 5-11-65, Cl. D57—1.
Gingold, Natalie M. Combined seat, blackboard and toy holder for a child. 201,077, 5-11-65, Cl. D15—1.
Goodrich, B. F., Co., The: *See*—
  Vukan, Frank S. 201,117.
  Vukan, Frank S. 201,118.
Groves, John A. Portable heater. 201,113, 5-11-65, Cl. D81—20.
Hansen, David E., to Eastman Kodak Co. Combined slide projector and slide tray. 201,106, 5-11-65, Cl. D61—1.
Häuptli, Walter, to Rotel AG. Vegetable comminutor receptacle or the like. 201,116, 5-11-65, Cl. D89—1.
Hawkins, Jack S., to Jennings Radio Mfg. Corp. Hermetically sealed electromagnetic relay. 201,080, 5-11-65, Cl. D26—13.
Hiller, Arnon. Partition. 201,072, 5-11-65, Cl. D13—1.
Holophane Co., Inc.: *See*—
  Wince, Vearl S., and Meyer. 201,093.
Horne, Willard R., to The Procter & Gamble Co. Bar of soap or the like. 201,110, 5-11-65, Cl. D73—1.
International Latex Corp.: *See*—
  Sachs, Charles M. 201,078.
Jennings Radio Mfg. Corp.: *See*—
  Hawkins, Jack S. 201,080.
Jensen, Albert C., to American Paper & Plastic Products, Inc. Embossed paper napkin. 201,105, 5-11-65, Cl. D59—2.
Katz, Adolph, to Coro, Inc. Bead. 201,090, 5-11-65, Cl. D45—1.
Leotta, Samuel S., to P. R. Mallory & Co., Inc. Rotary beacon lantern. 201,094, 5-11-65, Cl. D48—24.
Little, Arthur J., F. A. Ryder, and C. A. Woodcock, to Stewart-Warner Corp. Meter. 201,100, 5-11-65, Cl. D52—6.
Mallory, P. R., & Co., Inc.: *See*—
  Leotta, Samuel S. 201,094.
Marien, Henry J.: *See*—
  Swett, James J., and Marien. 201,089.
Martelet, Ronald G. Nautical navigation light. 201,095, 5-11-65, Cl. D48—31.
Meyer, Carl X., to The Emerson Electric Mfg. Co. Prismatic paneling for lighting fixtures and the like. 201,091, 5-11-65, Cl. D48—16.
Meyer, Carl X.: *See*—
  Wince, Vearl S., and Meyer. 201,093.
Mitchell, Winalee G. Slipper. 201,070, 5-11-65, Cl. D7—7.
Neal, Franklin M., to Corning Glass Works. Street lighting refractor. 201,092, 5-11-65, Cl. D48—16.
Outboard Marine Corp.: *See*—
  Stevens, Myron T. 201,109.
Panek, Stanley J., to Dunlop Tire and Rubber Corp. Golf ball package. 201,102, 5-11-65, Cl. D58—2.

- Parsell, Kendrick T., and H. Brickman. Carrying case for bar equipment or the like. 201,115, 5–11–65, Cl. D87—5.
- Patnode, Le Roy K. Trailer. 201,075, 5–11–65, Cl. D14—3.
- Patnode, Le Roy K. Trailer. 201,076, 5–11–65, Cl. D14—3.
- Procter & Gamble Co., The : *See*—
  - Horne, Willard R. 201,110.
- Related Sales, Inc. : *See*—
  - Faubion, Armel U. 201,071.
- Rexall Drug and Chemical Co. : *See*—
  - Swett, James J., and Marien. 201,089.
- Riba Mfg. Co., Inc. : *See*—
  - Stein, Alexander. 201,112.
- Rossman, Joseph. Writing implement holder for a telephone. 201,082, 5–11–65, Cl. D26—14.
- Rotel AG. : *See*—
  - Häuptli, Walter. 201,116.
- Roth, Herbert. Modular electronic power supply unit or similar article. 201,083, 5–11–65, Cl. D26—15.
- Russell, Fred J. Combined rose and collar for a door knob. 201,096, 5–11–65, Cl. D50—6.
- Russell, Fred J. Combined rose and collar for a door knob. 201,097, 5–11–65, Cl. D50—6.
- Ryder, Frank A. : *See*—
  - Little, Arthur J., Ryder, and Woodcock. 201,100.
- Sachs, Charles M., to International Latex Corp. Brassiere. 201,078, 5–11–65, Cl. D20—4.
- Schenley Industries, Inc. : *See*—
  - Du Pree, Ernest L. 201,104.
- Smith, Joseph E., Jr., to Ex-Cell-O Corp. Cabinet for electrical equipment or the like. 201,079, 5–11–65, Cl. D26—5.
- Smith, Terrance M. : *See*—
  - Bradshaw, Franklin C., and Smith. 201,084.
- Spivak, Merrill, to Franksville, Inc. Building. 201,073, 5–11–65, Cl. D13—1.
- Stein, Alexander, to Riba Mfg. Co., Inc. Necktie hanger. 201,112, 5–11–65, Cl. D80—8.
- Sterling Plastics Co. : *See*—
  - Fleming, Jack F. 201,111.
- Stevens, Myron T., to Outboard Marine Corp. Boat. 201,109, 5–11–65, Cl. D71—1.
- Stewart, A. W., Associates, Inc. : *See*—
  - Stewart, Alfred W. 201,081.
- Stewart, Alfred W., to A. W. Stewart Associates, Inc. Perforated card reader. 201,081, 5–11–65, Cl. D26—14.
- Stewart-Warner Corp. : *See*—
  - Little, Arthur J., Ryder, and Woodcock. 201,100.
- Stuart, Wallis E., to Air Reduction Co., Inc. Plastic sheet material or similar article. 201,114, 5–11–65, Cl. D87—3.
- Sullivan, James H., to Union Special Machine Co. Sewing machine. 201,107, 5–11–65, Cl. D70—1.
- Swett, James J., and H. J. Marien, to Rexall Drug and Chemical Co. Flour sifter or the like. 201,089, 5–11–65, Cl. D44—29.
- Union Special Machine Co. : *See*—
  - Sullivan, James H. 201,107.
- Vukan, Frank S., to The B. F. Goodrich Co. Tire. 201,117, 5–11–65, Cl. D90—20.
- Vukan, Frank S., to The B. F. Goodrich Co. Tire. 201,118, 5–11–65, Cl. D90—20.
- Wince, Vearl S., and C. X. Meyer, ½ to Holophane Co., Inc., and ½ to Day-Brite Lighting, Inc. Lighting fixture. 201,093, 5–11–65, Cl. D48—23.
- Woodcock, Charles A. : *See*—
  - Little, Arthur J., Ryder, and Woodcock. 201,100.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 11TH DAY OF MAY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- ACF Industries, Inc. : *See*—
  - Johnson, Eldon A. 3,182,601.
  - Myles, Walter E. 3,183,295.
  - Whitby, Clyde M., and Fontaine. 3,183,497.
- Abelson, Louis. Cricothyrotomy needle. 3,182,663, 5–11–65, Cl. 128—305.
- Aberth, Oliver G., and P. L. Andersson, to Sperry Rand Corp. Check digit verifiers. 3,183,482, 5–11–65, Cl. 340—146.1.
- Abrams, Morris, to Arrow Fastener Co., Inc. Tackers and the like stapling machines. 3,182,878, 5–11–65, Cl. 227—83.
- Accurate Steel Rule Die Manufacturers : *See*—
  - Scott, Erhardt K. and M. L. 3,182,530.
- Acosta, Allan J. : *See*—
  - Kiceniuk, Taras, and Acosta. 3,182,927.
- Addor, Roger W. : *See*—
  - Cannon Donald S., and Addor. 3,183,148.
- Adler, Charles, Jr. Rotating anti-collision lights for aircraft. 3,183,480, 5–11–65, Cl. 340—27.
- Aellen, John P., Jr., and R. H. Fuge, to American Can Co. Skived brim cup and blank therefor. 3,182,882, 5–11–65, Cl. 229—4.5.
- Aerodyne Controls Corp. : *See*—
  - Miller, James R. 3,183,321.
- Aerojet-General Corp. : *See*—
  - Lemke, Albert E. 3,183,133.
- Agfa Aktiengesellschaft : *See*—
  - Jakob, Franz, and Wagner. 3,182.575.
  - Lohmer, Karl, and Morcher. 3,183,087.
- Ahlen & Akerlund Forpackning, AB : *See*—
  - Persson, Karl R. 3,182,886.
- Aiorno, Giovanni : *See*—
  - Costabello, Dino, Merli, Aiorno, and Boffa. 3,183,269.
- Air France : *See*—
  - Bachelet, Gilbert H., and Bruiet. 3,182,379.
- Ajioka, James S., to Hughes Aircraft Co. Broadband waveguide slot radiator with mutually coupled slots of different perimeters and orientation. 3,183,511, 5–11–65, Cl. 343—771.
- Akiyama, Tadashi : *See*—
  - Sato, Takehiko, and Akiyama. 3,182,457.
- Albert, Willard S. : *See*—
  - Boyer, John L., Albert, and Ross. 3,183 376.
- Albrecht, Robert G., to Wismer & Becker Contracting Engineers. Penstock erecting machine. 3,182,814, 5–11–65, Cl. 214—1.
- Aler, Mary E., and R. M. Todd, to The Drackett Co. Novel coating composition. 3 183,110, 5–11–65, Cl. 106—287.
- Alexander, John J., to Standard Oil Co. Petroleum wax polyvinylstearate compositions. 3,183,199, 5–11–65, Cl. 260—28.5.
- Alford, Harvey E., and F. Veatch, to The Standard Oil Co. Glass sphere filled plastering compositions. 3,183,107, 5–11–65, Cl. 106—110.
- Algemene Kunstzijde Unie N.V. : *See*—
  - Van Lohuizen, Otto E., and De Vries. 3,183,213.
- Algonquin Shipping and Trading Ltd. : *See*—
  - Campbell, George T. R., and Laskey. 3,182,669.
- Alix, Arthur J., to Riley Stoker Corp. Steam generating unit. 3,182,639, 5–11–65, Cl. 122—478.
- Allegheny Plastics, Inc. : *See*—
  - Yost, James M. 3,183,008.
- Allen, Verda : *See*—
  - McCrory, John F. 3,183,481.
- Allied Chemical Corp. : *See*—
  - Scott, Herbert F., Jr. 3,182,395.
- Allied Control Co., Inc. : *See*—
  - Grebe, Alfred H. 3,183 334.
- Allinquant, Fernand S. Level correcting systems for vehicles having oleopneumatic or like suspension systems. 3,183,015, 5–11–65, Cl. 280—6.1.
- Allis-Chalmers Mfg. Co. : *See*—
  - Carlin, Robert, and Plate. 3,182,729.
  - Haworth, Daniel T. 3,183 123.
  - Helfrich, Wayne J. 3,182.980.
  - Jasinski, Raymond J. 3,183,124.
  - Ribble, Guy H., Jr. 3,183,047.
- Allman, Charles E. : *See*—
  - Sporer Alfred H., and Allman. 3,183,091.
- All-Steel Equipment Inc. : *See*—
  - Ericson, John P., and Buhrmaster. 3,183,049.
- Alsop, Charles R., and R. M. Semple, to Simon-Carves Ltd. Apparatus for the aeration of liquids. 3,182,972, 5–11–65, Cl. 259—107.
- Alziari, Louis. Telescopic metal girders. 3,182,772, 5–11–65, Cl. 189—37.
- Ambrose, Bernard J. : *See*—
  - France, Leonard L., Lewis, Ammon, and Richardson. 3,183,085.
- Ambrose, Peter P. Wheel locking device. 3,182,523, 5–11–65, Cl. 74—495.
- Amerace Corp. : *See*—
  - Fleming, Robert S., and Neibling. 3,182,404.
- American Agricultural Chemical Co., The : *See*—
  - Taylor, James A. 3,183,062.
- American Air Filter Co., Inc. : *See*—
  - Boylan, Robert J. 3,183,285.
  - Harms, John D. 3,183,286.
- American Can Co. : *See*—
  - Aellen, John P., Jr., and Fuge. 3,182,882.
  - Blakeslee, Harry N. 3,182,599.
  - Brandt. Roger, and Hartford. 3.183.352.
  - Ecklund, Oscar F., and Rein. 3,182,891.
  - Elam, William B. 3,182,890.
  - Hoag, Lehman E. 3,182,839.
  - Huth, Carl A. 3 182,994.
  - Peterson, Howard B. 3,182,998.
  - Taylor, William E. 3,182,851.
  - Wilkinson, Harlen E. 3.182,852.
  - Willey, Allen R. 3,182,853.
- American Cyanamid Co. : *See*—
  - Buell, Bennett G. 3,183,231.
  - Cannon, Donald S., and Addor. 3,183,148.
  - Miller, Bernard, and O'Leary. 3,183,257.
  - Walworth, Bryant L. 3,183,075.
  - Walworth, Bryant L., Lutz, and Wood. 3,188,074.
- American Enka Corp. : *See*—
  - Sluijters, Robert. 3,182,965.
- American Excelsior Corp. : *See*—
  - Hubbard, Warren E. 3,182,696.
- American Home Products Corp. : *See*—
  - Deghenghi, Romano, and Lefebvre. 3,183,228.
- American Machine & Foundry Co. : *See*—
  - Liu, Chien. and McMillin. 3,183,114.
  - Pedersen, Mathias. 3,182,618.
- American Machine & Foundry Co. : *See*—
  - Williamson, William R. 3,183,174.
- American Radiator & Standard Sanitary Corp. : *See*—
  - Doomernik, Cornelis. 3,183,014.
  - Karppinen, Charles E., and Rising. 3,182,910.
  - Midyette, Allen L., Jr. 3,183,084.
  - Noakes, Thomas E., and Bahrani. 3,182,909.
  - Pierce, Robert E. 3,182,717.
- American Screen Process Equipment Co. : *See*—
  - Green, Melvin E., and Derrickson. 3,182,589.
- American Seating Co. : *See*—
  - Hoven, Alfred C., and Nordmark. 3,182,377.
- Ames, Lloyd L., Jr. : *See*—
  - Reisenauer, Andrew E., and Ames. 3,183,059.
- Ametek, Inc. : *See*—
  - Gooch, Frederic P. 3,182,802.
  - Schmaus, Siegfried H. A. 3,182,506.
- Amlinger, Philipp R., to Westinghouse Electric Corp. Tunable phase shift oscillator with variable R.C. filter. 3,183,453, 5–11–65, Cl. 331—108.
- Ammon, Robert L. : *See*—
  - France, Leonard L., Lewis, Ammon, and Richardson. 3,183,085.
- Ampeg Co., Inc. : *See*—
  - Jespersen, Oliver. 8.183,305.
- Amrehn, Hermann, to Chemische Werke Huls, A.G. Calibrator for gamma ray density measuring apparatus including sets of absorber plates insertable in the path of radiation. 3,183,354, 5–11–65, Cl. 250—71.5.
- Anaconda Wire and Cable Co. : *See*—
  - Arnaudin, Edwin H., Jr. 3,182,355.
- Anciens Etablissements Panhard & Levassor, Societe Anonyme des : *See*—
  - Panhard, Paul. 3,182,895.
- Anderson, Albert & J.M., Mfg. Co. : *See*—
  - Cobbett, Leonard C. 3,183,885.
- Anderson, Clayton & Co. : *See*—
  - Sinclair, Stuart W. 3,182,836.
- Anderson-Dunham, Inc. : *See*—
  - Murphy, Bynum E. 3,182,730.
- Andersson, Per L. : *See*—
  - Aberth, Oliver G., and Andersson. 3,188,482.
- Andresen, Jack M. : *See*—
  - Sobeck, Eugene E., and Andresen. 3,182,564.
- Anscherlik, Arnošt, to Výzkumný ústav energetický. Refilling arrangement for an automatic burette. 8,182,865, 5–11–65, Cl. 222—416.
- Antocall Co., The : *See*—
  - Seaton, Harold E. 3,183,501.
- Archer, Erling B. Automatic ice making devices. 3,182,464, 5–11–65, Cl. 62—135.
- Archer, Erling B. Automatic ice cube freezing apparatus. 3.182,468, 5–11–65, Cl. 62—358.
- Arends, Erik W., to Electrologica, N.V. Switching device for impedances with inductive character. 8,183,412, 5–11–65, Cl. 317—123.
- Argoudelis, Alexander D., C. De Boer, T. E. Eble, and R. Herr, to The Upjohn Co. Antibiotic pactacin and method of production. 3,183,154, 5–11–65, Cl. 167—65.
- Armantrout, Kenneth M., and D. W. Keibel, to Borg-Warner Corp. Drive unit for boats. 3,182,629, 5–11–65, Cl. 115—41.
- Armco Steel Corp. : *See*—
  - Clarke, William C., Jr., and Goller. 8,183,081.
  - Yake, William H. 3,182,764.

- Armendt, Bradshaw F., to Esso Research and Engineering Co. Oxidation of aromatic derivatives. 3,183,261, 5–11–65, Cl. 260—528.
- Armington, Donald T., and J. E. Dimmett, to The Stanley Works. Press apparatus for package compressing and strapping. 3,182,586, 5–11–65, Cl. 100—7.
- Armstrong Patents Co., Ltd.: *See*—
  - Smith, Richard D. 3,182,458.
- Armstrong, Samuel. Means for obtaining an optical third dimension in motion pictures. 3,182,547, 5–11–65, Cl. 88—24.
- Arnaudin, Edwin H., Jr., to Anaconda Wire and Cable Co. Tube stretching apparatus. 3,182,355, 5–11–65, Cl. 18—19.
- Arnett, Samuel E., The Bendix Corp. Pneumatically operated servomechanism. 3,182,561, 5–11–65, Cl. 91—384.
- Arnold, Thomas H.: *See*—
  - Pitifer, Michael J. 3,182,736.
- Arrow Fastener Co., Inc.: *See*—
  - Abrams, Morris. 3,182,878.
- Arwine, Alva S., to Refractory & Insulation Corp. High pressure refractory gun. 3,182,915, 5–11–65, Cl. 239—142.
- Asari, Akira, to Kobe Steel Works, Ltd. Hydraulic metal extruding machine. 3,182,478, 5–11–65, Cl. 72—255.
- Aske, Charles B., Jr., to Gar Wood Industries, Inc. Wheel and tire trim construction. 3,183,038, 5–11–65, Cl. 301—37.
- Aske, Charles B., Jr., to Gar Wood Industries, Inc. Vehicle wheel and tire rim. 3,183,039, 5–11–65, Cl. 301—37.
- Atlas Bolt & Screw Co., The: *See*—
  - Schellentrager, Eugene W. 3,182,603.
- Attermeyer, Lawrence A., to The Cincinnati Milling Machine Co. Support mechanism for movable machine tool member. 3,182,521, 5–11–65, Cl. 74—424.8.
- Audy, Gerard E. Nine point flotation mirror holding device. 3,182,552, 5–11–65, Cl. 88—96.
- Auer, Martin F., to United States of America, Army. Universal rotation method and apparatus for locating axes in single spherical ferrimagnetic crystals. 3,183,434, 5–11–65, Cl. 324—14.
- Austin, Carl B. Guidance system for aircraft. 3,183,479, 5–11–65, Cl. 340—26.
- Auto Transmissions Ltd.: *See*—
  - Lamburn, Alan S. 3,182,528.
- Autophon A.G.: *See*—
  - Streit, Rudolf. 3,183,454.
- Avco Corp.: *See*—
  - Brogan, Thomas R. 3,183,381.
- Avellino, Sebastian. Toy boat. 3,182,628, 5–11–65, Cl. 115—22.2.
- Avien, Inc.: *See*—
  - Koletsky, Harold, and De Graffenried. 3,182,498.
  - Mavleos, Michael G., and Desy. 3,182,653.
- Axe, William N., J. T. Gragson, and S. Schiff, to Phillips Petroleum Co. Rubbery polymer of a heavy petroleum hydrocarbon, process of making same, and blends thereof with a rubbery diene polymer. 3,183,221, 5–11–65, Cl. 260—887.
- Axt, Robert C., to Esso Research and Engineering Co. Apparatus for fractionation of gaseous mixtures. 3,182,435, 5–11–65, Cl. 55—162.
- Ayers, David T., Jr.: *See*—
  - Pulkownik, Lawrence E., and Ayers. 3,182,562.
- Azoplate Corp.: *See*—
  - Fritz, Gerhard, Sus, Uhlig, and Neubauer. 3,184,310.
- Babcock & Wilcox Co., The: *See*—
  - Gibson, Walter J. 3,182,490.
- Bach, Sammy M. A., to Pye Ltd. Sawtooth waveform generator and deflection yoke. 3,183,401, 5–11–65, Cl. 315—27.
- Bachelet, Gilbert H., and D. Brulet, to Air France. Method of forming bearing mountings. 3,182,379, 5–11–65, Cl. 29—148.4.
- Bachler, Werner G., to Leybold Holding A.G. Diffusion vacuum pump apparatus. 3,182,896, 5–11–65, Cl. 230—101.
- Baer, Russell F., to Monsanto Co. Spinnerette. 3,182,352, 5–11–65, Cl. 18—8.
- Bahrani, Abdul S.: *See*—
  - Noakes, Thomas E., and Bahrani. 3,182 909.
- Bailey, Donald L., W. T. Black, and M. L. Dunham, to Union Carbide Corp. Alky peroxide heat-cured organopolysiloxane elastomers. 3,183,205, 5–11–65, Cl. 260—37.
- Baird, William, G. T. Jones, and R. Deverell-Smith, to Imperial Chemical Industries Ltd. Polymer treatment. 3,183,202, 5–11–65, Cl. 260—32.6.
- Baker Oil Tools, Inc.: *See*—
  - Stone, Dewey C., Jr. 3,182,726.
- Baldwin, Enal E. Venturi type safety device. 3,182,680, 5–11–65, Cl. 137—351.
- Baldwin, Willette F., to Socony Mobil Oil Co., Inc. Gain-stabilized scintillation detection system. 3,183,353 5–11–65, Cl. 250—71.5.
- Ballester, Claudio J.: *See*—
  - Krupivk, Walter J., Hoffman, and Ballester. 3,182,514.
- Banbury Equipment Corp.: *See*—
  - Warfel, Richard M. 3,183,032.
- Bancroft, Joseph, & Sons Co.: *See*—
  - Hushebeck, Henry R. 3,183,195.
- Bank of the Southwest National Association: *See*—
  - McCollum, Burton. 3,182,743.
- Bankauf, William F.: *See*—
  - Donadio, Vincent J., Bankauf, and Skinner. 3,182,788.
- Barakauskas, Edward J., to United States of America, Navy. Missile election method and apparatus. 3,182,554, 5–11–65, Cl 89—1.7.
- Barbanson, Edouard, to Carlisle Chemical Works, Inc. Organotin mercapto compounds. 3,183,238, 5–11–65, Cl. 260—299.
- Barber-Colman Co.: *See*—
  - Livingston, Richard D. 3,182,925.
- Barham, Allan M.: *See*—
  - Toone, Brian, and Barham. 3,182,472.
- Barkan, Philip, to General Electric Co. Automatic reclosing circuit breaker. 3,183,331, 5–11–65, Cl. 200—150.
- Barkan, Philip, and E. H. Bogert, to General Electric Co. Current-limiting electric circuit interrupter of the fluid blast type. 3,183,330, 5–11–65, Cl. 200—150.
- Barnes Engineering Co.: *See*—
  - Barnes, Robert B., and Schwarz. 3,183,349.
  - Guarnieri, Robert J., and Weiner. 3,183,290.
- Barnes & Reinecke, Inc.: *See*—
  - Wasynczuk, Anatol. 3,183,387.
- Barnes, Robert B., and F. Schwarz, to Barnes Engineering Co. Hot box detector. 3,183,349, 5–11–65, Cl. 246—169.
- Barnes-Hind Pharmaceuticals, Inc.: *See*—
  - Szekely, Ivan J., and Hind. 3,183,152.
- Barnhart, Carlton L. Coin collector. 3,182,781, 5–11–65, Cl. 194—9.
- Barocca, Aldo J., to Commercial Solvents Corp. Blasting caps. 3,182,592, 5–11–65, Cl. 102—28.
- Barosko, John M., and J. C. Krug, to Walker Mfg. Co. Dispensing mechanism. 3,182,867, 5–11–65, Cl. 222—486.
- Barrington, Charles E., to The Goodyear Tire & Rubber Co. Self-energizing ring disc brake. 3,182,757, 5–11–65, Cl. 188—76.
- Barry, Herbert: *See*—
  - Yuska, Henry, Lynch, and Barry. 3,183,117.
- Bartelt Engineering Co., Inc.: *See*—
  - Canfield, Allen B. 3,182,432.
  - Nutting, Robert G., Wagner, and Christensen. 3,182,541.
- Bartlett, Allen R., J. A., and R. N., to Mosler Harbor Metal products Corp. Shelf interlocking device. 3,182,811, 5–11–65, Cl. 211—126.
- Bartlett, Jeffrey H., and S. B. Lippincott, to Esso Research and Engineering Co. Production of monocarboxylic acids from large ring alicyclic alcohols. 3,183,187, 5–11–65, Cl. 252—41.
- Bartlett, June A.: *See*—
  - Bartlett, Allen R., J. A., and R. N. 3,182,811.
- Bartlett, Robert N.: *See*—
  - Bartlett, Allen R., J. A., and R. N. 3,182,811.
- Basford, Kenneth A., to Rolls-Royce Ltd. Control mechanism for a gas turbine engine. 3,182,774, 5–11–65, Cl. 192—.02.
- Basic Products Corp.: *See*—
  - Neydll, Edward A. 3,183,406.
- Batcher, Kenneth E., H. R. Greene, and S. B. Yochelson. Logic mechanization system. 3,183,363, 5–11–65, Cl. 307—88.
- Batson, Frank E., to Borg-Warner Corp. Burner-positioning and mounting assembly for fuel burning appliances. 3,182,707, 5–11–65, Cl. 158—2.
- Bauer, Albert W., to E. I. du Pont de Nemours and Co. Chlorofluoroalkane compositions. 3,183,192, 5–11–65, Cl. 252—188.3.
- Bauer, Peter, to Sperry Rand Corp. Binary counter. 3,182,676, 5–11–65, Cl. 137—81.5.
- Bauerlein, Carl C.: *See*—
  - Miller, Donald E., and Bauerlein. 3,182,465.
- Baugh, Hollis A.: *See*—
  - Slator, Damon T., and Baugh. 3,182,877.
- Baur, Fredric J., to The Procter & Gamble Co. Dry mix for frozen desserts. 3,183 098 5–11–65, Cl. 99—136.
- Baycura, Orestes M., and P. Essinger, to International Business Machines Corp. Inverter controlled power supply. 3,183,429, 5–11–65, Cl. 321—18.
- Bayuk Cigars Inc.: *See*—
  - Groom, William H. 3,182,819.
- Beach, Lennox F., to Sperry Rand Corp. Infrared antenna actuating device. 3 183,355. 5–11–65. Cl. 250—83.3.
- Beach, Paul H. Movable top for material in silo. 3,182,582, 5–11–65, Cl. 99—235.
- Beasley, Jack M., and H. Greenewald, Jr., to Ling-Temco-Vought, Inc. Electric furnace. 3,183,298, 5–11–65, Cl. 13—9.
- Beatrice Foods Co.: *See*—
  - Noznick, Peter P., Bundus, and Lukas. 3,183,103.
- Beatty, James R., A. E. Juve, and P. W. Karper, to The B. F. Goodrich Co. Viscurometer. 3,182,494, 5–11–65, Cl. 73—101.
- Beaudoin, Jean. Perforating stopper for collapsible tubes. 3,182,858, 5–11–65, Cl. 222—83.
- Beaugard, Inc.: *See*—
  - Rigoni, Matt A. 3,182,695.
- Becker, Edward J., D. E. Koontz, and D. W. Maurer, to Bell Telephone Laboratories, Inc. Method of manufacturing sintered cathode. 3,183,396, 5–11–65, Cl. 313—355.
- Beckham, Robert R., to Libbey-Owens-Ford Glass Co. Apparatus for loading a dehumidifying device. 3,182,433, 5–11–65, Cl. 53—183.
- Beckman & Whitley, Inc.: *See*—
  - Corcoran, John W. 3,182,503.
- Beckwith, Sterling, to Dual Jet Refrigeration Co. Conditioned storage cabinet. 3,182,466, 5–11–65, Cl 62—256.
- Beckwith, Sterling, to Dual Jet Refrigeration Co. Refrigeration system with defrost. 3,182,467, 5–11–65, Cl. 62—256.
- Becton, Dickinson and Co.: *See*—
  - Bieganousky, Frank, Faulseit, and Senkowski. 3,182,790.
- Beereboom John J.: *See*—
  - Blackwood, Robert K., Rennhard, and Beereboom. 3,183,267.
- Beller, Aaron P., and D. B. Stoltzfus, to Sperry Rand Corp. Bale conveyor. 3,182,782, 5–11–65, Cl. 198—7.
- Bell Alan, to Foster Wheeler Corp. Nuclear reactor. 3,183,168, 5–11–65, Cl. 176—59.
- Bell, Harold S., Jr., to Thiokol Chemical Corp. Reaction motor. 3,182,447, 5–11–65, Cl 60—35.6.
- Bell Punch Co. Ltd.: *See*—
  - Kitz, Norbert, Mansford, and Lloyd. 3,183,404.
- Bell Telephone Laboratories, Inc.: *See*—
  - Becker, Edward J., Koontz, and Maurer. 3,183,396.
  - Cutler, Cassius C. 3,183,313.
  - Fair, Irvin E. 3,183,447.
  - Schroeder, Manfred R. 3,183,304.

- Bell Telephone Laboratories, Inc.: *See*—Continued
  - Seidel, Harold. 3,183,456.
  - Sikorski, Mathew E. 3,182,492.
  - Soden, Ralph R., and Van Uitert. 3,183,193.
  - White, Donald L. 3,183,359.
  - Williford, Oscar H. 3,183,307.
- Beloit Corp.: *See*—
  - Hornbostel, Lloyd, Jr., and Ward. 3,183,500.
  - Parker, Joseph D., Dobratz, Gustafson, and Mih. 3,182,874.
- Beloit Iron Works: *See*—
  - Sargent, George W. 3,182,683.
- Bemis Bro. Bag Co.: *See*—
  - De Laittre, Howard M. 3,182,617.
  - Hoeppner, Arthur D. 3,182,430.
- Bender, Louis, ½ to L. Miller. Portable and storable doll house or display. 3,182,420, 5–11–65, Cl. 46—12.
- Bendix Corp.: The: *See*—
  - Arnett, Samuel E. 3,182,561.
  - Eldred, Wendell E. 3,182,452.
  - Grossnickle, Garold E., Elliott, and Williamson. 3,183,041.
  - Haase, Elmer A. 3,182,501.
  - Hennessey, Walter F., Jr. 3,183,468.
  - Kasten, Walter, and Landree. 3,182,800.
  - Messerly, George H. 3,182,451.
  - Widell, George M., and Hawk. 3,182,450.
- Bendix-Balzers Vacuum Inc.: *See*—
  - Kraus, Thaddeus. 3,183,077.
- Bennett, John D., to Sun Oil Co. Closure means for withstanding high pressures. 3,182,850, 5–11–65, Cl. 220—46.
- Bennon, Saul, to Westinghouse Electric Corp. Electrical inductive apparatus having coolant ducts in insulation. 3,183,460, 5–11–65, Cl. 336—57.
- Benoit, Roland A., R. F. Gingras, and R. H. Duprey. Article holder. 3,182,808, 5–11–65, Cl. 211—69.
- Bentley, Raymond B.: *See*—
  - Mencacci, Samuel A., and Bentley. 3,182,583.
- Benway, Robert E., to Radio Corp. of America. Shielding of electron gun from vaporized getter by decomposable foil over electrode aperture. 3,183,391, 5–11–65, Cl. 313—181.
- Benz, Jakob, H. Burkhard, K. Kaegi, and H. von Tobel, to Sandoz Ltd. Pyrimidine dyestuffs. 3,183,224, 5–11–65, Cl. 260—146.
- Berg Airlectro Products Co.: *See*—
  - Dobrikin, Harold L. 3,182,362.
- Berg, Arthur A., H. L. Dobrikin, and C. Horowitz, to Berg Mfg. & Sales Co. Brake system and release. 3,182,566, 5–11–65, Cl. 92—24.
- Berg Mfg. & Sales Co.: *See*—
  - Berg, Arthur A., Dobrikin, and Horowitz. 3,182,566.
  - Horowitz, Charles, Dobrikin, and Mastis. 3,182,849.
- Bergmann, Hermann G. A., to Leijon, Tage Nils Wilhelm, Director. Arrangement in loading and digging machines. 3,182,831, 5–11–65, Cl. 214—140.
- Bergy, Malcolm E.: *See*—
  - Vavra, James J., and Bergy. 3,183,156.
- Berlings, Oresta B., to Sono-Slide Corp. Picture slide projector with cooling. 3,182,548, 5–11–65, Cl. 88—24.
- Bermann, James: *See*—
  - Grether, Tobias H., and Bermann. 3,182,459.
- Berquist, Leonard G., to National-Standard Co. Method for the manufacture of tires. 3,183,135, 5–11–65, Cl. 156—126.
- Berrill, William H., H. O. Chaplin, and P. B. Pratt, to United Shoe Machinery Corp. Molding machines for repairing shoe sole and heel units. 3,182,354, 5–11–65, Cl. 18—17.
- Betjemann, Christopher, to Isbrandtsen Co., Inc. Combination shipping container and showcase. 3,182,424, 5–11–65, Cl. 50—80.
- Bhuyan, Bijoy K., R. B. Kelly, and R. M. Smith, to The Upjohn Co. Antibiotic nogalamycin and method of producing. 3,183,157, 5–11–65, Cl. 167—65.
- Bieganousky, Frank, F. C. Faulseit, and T. S. Senkowski, to Becton, Dickinson and Co. Thermometer case. 3,182,790, 5–11–65, Cl. 206—45.19.
- Biller, George J., Jr., to Hawthorn Co., a division of Kellwood Co. Tents. 3,182,672, 5–11–65, Cl. 135—5.
- Binon, Georges M. Frozen food shaving and thawing machine. 3,182,699, 5–11–65 Cl. 146—91.
- Bintz, Louis J., to Norris-Thermador Corp. Flame arrestor for crankcase ventilating apparatus. 3,182,647, 5–11–65, Cl. 123—119.
- Birmingham Small Arms Co. Ltd., The: *See*—
  - Boyce, Frederick C., and Fogaty. 3,183,319.
- Birum, Gail H., to Monsanto Co. s-[(arylthio)(phosphinyl) methyl]phosphorus esters and process for preparing sulfur-containing organic phosphorus compounds. 3,183,256, 5–11–65, Cl. 260—461.
- Bischoff, Garth L., and D. I. Holberg. Periodically actuated aerosol dispenser. 3,218,857, 5–11–65, Cl. 222—70.
- Bishop and Babcock Corp., The: *See*—
  - Hamann, Harry L., and Silatorf. 3,182,367.
- Bittner, Donald L. Metering device. 3,182,692, 5–11–65, Cl. 141—25.
- Bjork, Carl K., to The Dow Chemical Co. Protective treatment for Mg and Mg-based alloys. 3,183,125, 5–11–65, Cl. 148—6.2.
- Black, William T.: *See*—
  - Bailey, Donald L., Black, and Dunham. 3,183,205.
- Blackburn, Jasper Corp.: *See*—
  - Wochner, Charles J., and Toedtman. 3,183,302.
- Blackwood, Robert K., H. H. Rennhard, J. J. Beereboom, and C. R. Stephens, Jr., to Chas. Pfizer & Co., Inc. 6-methylenetracycline derivatives. 3,183,267, 5–11–65, Cl. 260—559.
- Blain, Albert, to Sperry Rand Corp. Random access magnetic tape memory systems. 3,183,495, 5–11–65, Cl. 340—174.1.
- Blakeslee, Harry N., to American Can Co. Two-stage pump with internal washing system. 3,182,599, 5–11–65, Cl. 103—50.
- Bliss, E. W., Co.: *See*—
  - Di Lella, Paul, and Wolf. 3,182,815.
- Bloch, Herman S., to Universal Oil Products Co. Alkylation-transalkylation process. 3,183,233, 5–11–65, Cl. 260—671.
- Bloch, Richard M., A. J. Deerfield, and L. W. Marsh, Jr., to Honeywell Inc. Data processing apparatus. 3,183,488, 5–11–65, Cl. 340—172.5.
- Bloom, George I.: *See*—
  - Goltz, Joseph. 3,182,856.
- Bloom, I. C.: *See*—
  - Goltz, Joseph. 3,182,856.
- Blount, Lester L., to Gordon D. McMaude. Oxygen and inhalant mask. 3,182,659, 5–11–65, Cl. 128—205.
- Blum, Louis, to Blumcraft of Pittsburgh. Illuminated wall bracket and handrail. 3,183,343, 5–11–65, Cl. 240—2.
- Blumcraft of Pittsburgh: *See*—
  - Blum, Louis. 3,183,343.
- Blume, Alan F.: *See*—
  - Blume, Frank J. and A. F. 3,182,751.
- Blume, Frank J. and A. F. Vertical conveyor and guided carrier connected by a tension arm. 3,182,751, 5–11–65, Cl. 187—17.
- Bobowski, George: *See*—
  - Von Strandtmann, Maximilian, Shavel, and Bobowski. 3,183,265.
- Bobst, J., and Son S.A.: *See*—
  - Bolliger, Edwin. 3,182,588.
- Bodenseewerk Perkin-Elmer & Co. G.m.b.H.: *See*—
  - Jentzsch, Dietrich. 3,182,394.
- Bodin, Sven A. O. Loader equipped with shovel. 3,182,832, 5–11–65, Cl. 214—140.
- Boenisch, Dietmar: *See*—
  - Patterson, Wilhelm, and Boenisch. 3,182,486.
  - Patterson, Wilhelm, and Boenisch. 3,182,493.
- Boffa, Gioacchino: *See*—
  - Costabello, Dino, Merli, Aiorno, and Boffa. 3,183,269.
- Bofors, Aktiebolaget: *See*—
  - Gustafsson, Axel G. V. 3,183,016.
- Bogert, Ernest H.: *See*—
  - Barkan, Philip, and Bogert. 3,183,330.
- Bolie, Victor W., to Iowa State University Research Foundation, Inc. Dual-chamber artificial heart. 3,182,335, 5–11–65, Cl. 3—1.
- Bolliger, Edwin, to J. Bobst and Son S.A. Presses comprising a movable platen driven by toggle levers. 3,182,588, 5–11–65, Cl. 100—286.
- Bonewits, Robert P. Screw retaining device for screwdriver. 3,182,697, 5–11–65, Cl. 145—50.
- Bonini, John H., to Union Bag-Camp Paper Corp. Display food package. 3,183,100. 5–11–65, Cl. 99—171.
- Bono, Luigi, to Necchi Societa per Azioni. Device for stretching a plurality of fabric pieces on a fabric holding frame. 3,182 412, 5–11–65, Cl. 38—102.1.
- Borchert, Robert C.: *See*—
  - Hartung, Homer A., and Borchert. 3,183,209.
- Borden Co., The: *See*—
  - Halpern, Benjamin D., Dean, and Gardner. 3,183,271.
- Borger, Jack W., to Pullman Inc. Gate valve devices for hopper cars. 3,182,954, 5–11–65, Cl. 251—203.
- Borger, Jack W., and A. J. Christian, to Pullman Inc. Multiple deck rack means attachment for railway cars. 3,182,609, 5–11–65, Cl. 105—368.
- Borg-Warner Corp.: *See*—
  - Armantrout, Kenneth M., and Kelbel. 3,182,829.
  - Batson, Frank E. 3,182,707.
  - La Kaff, Edward P. 3,182,846.
  - Oddy, Edward P. 3,182,380.
  - Oddy, Edward P., and Kinal. 3,182,481.
  - Prijatel, Edward A. 3,182,596.
- Bork, Karl-Heinz: *See*—
  - Von Werder, Fritz, Bruckner, Bork, and Metz. 3,183,150.
- Bosch, Robert, G.m.b.H.: *See*—
  - Klein, Hermann. 3,182,915.
- Botar, Bela. Seat belt reel mechanism. 3,182,923, 5–11–65, Cl. 242—55.
- Boulton Paul Aircraft Ltd.: *See*—
  - Millard, Dennis J. 3,182,565.
- Bowen Tools, Inc.: *See*—
  - Slator, Damon T., and Baugh. 3,182,877.
- Boyce, Frederick C., and P. J. Fogaty, to The Birmingham Small Arms Co. Ltd. Movement-control switches. 3,183,319, 5–11–65, Cl. 200—47.
- Boyd, Keith A.: *See*—
  - Gleason, Quin R., and Boyd. 3,182,750.
- Boyer, John L., W. S. Albert, and A. B. Ross, to Westinghouse Electric Corp. Rectifier circuit for periodic reverse power supplies. 3,183,376, 5–11–65, Cl. 307—107.
- Boylan, Donald A., to Westinghouse Electric Corp. Holding device. 3,182,687, 5–11–65, Cl. 140—71.5
- Boylan, Robert J., to American Air Filter Co., Inc. Method of making a unit filter assembly. 3,183,285, 5–11–65, Cl. 264—45.
- Brack, Artur: *See*—
  - Heim, Roger, Hofmann, Brack, Kobel, and Cailleux. 3,183,172.
- Bradd, Ernest, to William Gluckin & Co., Inc. All-way stretch fabric girdle with a front latex reinforcement. 3,182,664, 5–11–65, Cl. 128—539.
- Bradley, Norman, to United Kingdom Atomic Energy Authority. Steam cooled nuclear reactor. 3,183,167, 5–11–65, Cl. 176—59.
- Bram, Georges E., to Centre de Recherches de Pont-a-Mousson. Reinforcement for sealing element and sealing element incorporating said reinforcement. 3,183,010, 5–11–65, Cl. 277—235.
- Brandenbusch, Günter, to Koppers Co., Inc. Charging-hole-cover lifting-device for coke oven batteries. 3,182,838, 5–11–65, Cl. 214—658.

- Brandt, Roger, and C. H. Hartford, to American Can Co. Corona treating of shaped articles. 3,183,352, 5–11–65, Cl. 250—49.5.
- Brandt, Roy G., and Z. Fabian, to Oliver Corp. Seed planter. 3,182,863, 5–11–65, Cl. 222—328.
- Brannen, Cecil G.: *See*—
  - Richardson, Eugene E., and Brannen. 3,183,197.
- Brasher, Lawrence J. Vehicle control. 3,182,605, 5–11–65, Cl. 105—342.
- Braskamp, Willem H., to Industriele Onderneming W. H. Braskamp, N.V. Locking device for a pull chain. 3,182,370, 5–11–65, Cl. 24—116.
- Braun, Karl J., to Kimball Systems, Inc. Apparatus for handling record cards. 3,182,992, 5–11–65, Cl. 271—3.
- Braverman, Alexandr S.: *See*—
  - Mil, Mikhail L., and Braverman. 3,182,931.
- Bray, David W., to General Electric Co. Wide band frequency discriminator. 3,183,449, 5–11–65, Cl. 329—142.
- Breitbach, Fritz, and K. Lorenz, to Carl Still Firma. Regenerative coke oven construction and means for controlling the fuel distribution therein. 3,183,175, 5–11–65, Cl. 202—144.
- Bremkamp, Terrance L., to The Dow Chemical Co. Plastic film bread band. 3,182,893, 5–11–65, Cl. 229—87.
- Brevets Aero-Mecaniques S.A.: *See*—
  - Wyser, Giulio. 3,182,416.
- Brian, James A., to Crown Zellerbach Corp. Carton. 3,182,913, 5–11–65, Cl. 229—31.
- Bricker, Samuel R., to Westinghouse Electric Corp. Steam iron. 3,182,411, 5–11–65, Cl. 38—77.
- Bridgestone Tire Co. Ltd.: *See*—
  - Furukawa, Junji, and Saegusa. 3,183,210.
- Brillaud, Andre R., to Sun Oil Co. Preparation of salicylic acid. 3,183,169, 5–11–65, Cl. 195—28.
- Brinker, Keith C., and C. E. Schweitzer, to E.I. du Pont de Nemours, and Co. Stabilized polyoxymethylene. 3,183,211, 5–11–65, Cl. 260—67.
- British Insulated Callender's Cables Ltd.: *See*—
  - Gibbon, William. 3,182,938.
- British Petroleum Co. Ltd., The: *See*—
  - Yeo, Alan A., Hicks, and Mowll. 3,183,182.
- Broadhead, Ronald L., to Standard Oil Co. Method of polishing leather. 3,183,119, 5–11–65, Cl. 117—142.
- Brockman, Arthur C. Resilient bushing structure. 3,182,986, 5–11–65, Cl. 267—1.
- Brode, Gerald D., to International Business Machines Corp. Signal translating apparatus. 3,183,366, 5–11–65, Cl. 307—88.5.
- Brogan, Thomas R. ,to Avco Corp. Electromagnet. 3,183,381, 5–11–65, Cl. 310—11.
- Broken Hill Associated Smelters Proprietary Ltd., The: *See*—
  - McNicol, John H., and Rowell. 3,182,716.
- Bronson, Robert W., and N. D. Korbitz, to Texas Instruments Inc. Method of making glass sealed electric circuit devices and article resulting therefrom. 3,183,361, 5–11–65, Cl. 250—239.
- Brooks & Perkins, Inc.: *See*—
  - Mollon, Leslie. 3,182,608.
- Brooks, William, to Lockheed Aircraft Corp. Electroluminescent display panels. 3,182,415, 5–11–65, Cl. 40—130.
- Broome, Gordon H.: *See*—
  - Rosenblatt, David H., and Broome. 3,183,250.
- Brosseau, Victor N. Tackle boxes. 3,182,872, 5–11–65, Cl. 224—5.
- Brown, Andrew P. Trailer spotter. 3,183,013, 5–11–65, Cl. 280—3.
- Brown, Francis X., to Westinghouse Electric Corp. Heat exchange apparatus. 3,182,720, 5–11–65, Cl. 165—158.
- Brown, Horace D., to Merck & Co., Inc. 5-ether and 5-thioether-2-heterocyclic benzimidazoles. 3,183,239, 5–11–65, Cl. 260—302.
- Brown, Ross K.: *See*—
  - Browning, Edgar P., and Brown. 3,182,777.
- Brown, Roy L., to Westinghouse Electric Corp. Shielding means for electrical apparatus. 3,183,462, 5–11–65, Cl. 336—84.
- Browning, Edgar P., and R. K. Brown, to Deere & Co. Torque-limiting drive. 3,182,777, 5–11–65, Cl. 192—56.
- Bruckner, Klaus, to E. Merck, Aktiengesellschaft. Steroids possessing anti-phlogistic activities. 3,183,158, 5–11–65, Cl. 167—65.
- Brückner, Klaus: *See*—
  - Von Werder, Fritz, Brückner, Bork, and Metz. 3,183,150.
- Brulet, Désire: *See*—
  - Bachelet, Gilbert H., and Brulet. 3,182,379.
- Bryan, Darrel L., to Pacific Car and Foundry Co. Self-lubricating differential. 3,182,527, 5–11–65, Cl. 74—713.
- Buckman Laboratories, Inc.: *See*—
  - Buckman, Stanley J., and Pera. 3,183,111.
- Buckman, Stanley J., and J. D. Pera, to Buckman Laboratories, Inc. Barium titanium borate, pigments containing the same, and processes for their production. 3,183,111, 5–11–65, Cl. 106—299.
- Bucyrus-Erie Co.: *See*—
  - Zimmerman, John G., and Clark. 3,182,830.
- Budd Co., The: *See*—
  - Leavesley, George W., Jr. 3,183,289.
  - Trimble, John O. 3,182,361.
- Bueler, Richard C., to Wagner Electric Corp. Ratio selector valve. 3,183,042, 5–11–65 Cl. 303—52.
- Buell, Bennett G., to American Cyanamid Co. Cyanonaphthoxazole brighteners. 3,183,231, 5–11–65, Cl. 260—249.5.
- Buffet, Jean, to Compagnie du Filage des Metaux et des Joints Curty. Hot extrusion of materials. 3,182,474, 5–11–65, Cl. 72—41.
- Buhr Machine Tool Co.: *See*—
  - Zajac, Michael. 3,182,526.
- Buhrmaster, Bruce O.: *See*—
  - Ericson, John P., and Buhrmaster. 3,183,049.
- Bundus, Robert H.: *See*—
  - Noznick, Peter P., Bundus, Lukaas. 3,183,103.
- Burcat Development Ltd.: *See*—
  - Franklin, Maurice R. 3,182,995.
- Burkert, Herbert G., to The Thomas & Betts Co. Electrical terminal and connection. 3,183,471, 5–11–65, Cl. 339—95.
- Burkhard, Hermann: *See*—
  - Benz, Jakob, Burkhard, Kaegi, and Von Tobel. 3,183,224.
- Burndy Corp.: *See*—
  - Sacks, Norman M., Frank, and Price. 3,183,476.
  - Sund, William. 3,182,485.
  - Trachtenberg, Robert S. 3,183,469.
- Burnett, Elmer B., to Ingersoll-Rand Co. Remote control mechanism. 3,182,456, 5–11–65, Cl. 60—54.5.
- C & C Button & Trimming Co., Inc.: *See*—
  - Lerma, Stephen L. 3,182,369.
- CAH Industries, Inc.: *See*—
  - Minton, Carl T. 3,182,727.
- Cailleux, Roger: *See*—
  - Heim, Roger, Hofmann, Brack, Kobel, and Cailleux. 3,183,172.
- California Plasteck, Inc.: *See*—
  - Madansky, Leslie E. 3,183,344.
- California Research Corp.: *See*—
  - De Bolt, Richard R. 3,183,065.
- Camiener, Gerald W., G. B. Whitfield, Jr., and P. F. Wiley, to The Upjohn Co. Antibiotic desideus and method of production. 3,183,155, 5–11–65, Cl. 167—65.
- Campagnolo, Tullio. Hydraulically and mechanically operated disc brake for motor vehicles. 3,182,755, 5–11–65, Cl. 188—73.
- Campbell, George T. R., and N. V. Laskey, to Algonquin Shipping and Trading Ltd. Combined tanker service unit. 3,182,669, 5–11–65, Cl. 134—105.
- Canfield, Allen B., to Bartelt Engineering Co., Inc. Machine for packaging products in a controlled atmosphere. 3,182,432, 5–11–65, Cl. 53—112.
- Cannon, Donald S., and R. W. Addor, to American Cyanamid Co. Combating nematodes with carbamate hetero-sulfur compounds. 3,183,148, 5–11–65, Cl. 167—33.
- Caputo, James B., and T. I. Sokolowski, to Sperry Rand Corp. High power broadband waveguide window structure having septum to reduce reflection and ghost mode. 3,183,459, 5–11–65, Cl. 333—98.
- Carey, William R.: *See*—
  - Tinder, David V., and Carey. 3,182.525.
- Carlin, Robert, and J. R. Plate, to Allis-Chalmers Mfg. Co. Hydraulic implement control for tractors. 3,182,729, 5–11–65, Cl. 172—7.
- Carlisle Chemical Works, Inc.: *See*—
  - Barbanson, Edouard. 3,183.238.
- Carlson, Chester F., to Xerox Corp. Image forming apparatus and method. 3,182.591, 5–11–65, Cl. 101—426.
- Carlson, Elmer V., and O. E. Pyle, to Industrial Research Products, Inc. Method of making self-supporting coils and mandrel therefor. 3,182.384, 5–11–65, Cl. 29—155.57.
- Carlsson, Åke S. Method and means for equalizing quality fluctuations in manufacture of fibre mass. 3,182,966, 5–11–65, Cl. 259—4.
- Carondelet Foundry Co.: *See*—
  - Culling, John H. 3,182,654.
- Carpac Investments Ltd.: *See*—
  - Moore, Monte N. 3,182,725.
- Carpenter, Herbert L., Jr.: *See*—
  - Carpenter, Herbert L., and H. L. Carpenter, Jr. 3,182,571.
- Carpenter, Herbert L., and H. L. Carpenter, Jr., to The Greif Bros. Cooperage Corp. Method of manufacturing plastic lined fiber containers. 3,182,571, 5–11–65, Cl. 93—55.1.
- Carpenter Steel Co., The: *See*—
  - Heydt, Gerald B., and Whitney. 3,183,084.
- Carter, John L., and I. Reingold, to United States of America, Army. Ferrite power limiter duplexer. 3,183,457, 5–11–65, Cl. 333—10.
- Casey, Robert F., to Arthur D. Little, Inc. Electromagnetic indicator. 3,183,503, 5–11–65, Cl. 340—378.
- Castle, Alfred B., to United States of America, Navy. Mechanical graphic recording omni-directional accelerometer. 3,183 512, 5–11–65, Cl. 346—7.
- Castle, Leslie J.: *See*—
  - Guild, James C., and Castle. 3,183,164.
- Cates, Gilbert. Board game apparatus. 3,183,003, 5–11–65, Cl. 273—130.
- Caviglia, Enzo P., to The Hoosier Crown Corp. Method of making polyethylene seals. 3,183,144, 5–11–65, Cl. 161—252.
- Cecchi, Anna (née Gori), to B. Cecchi. Twisting and humidifying apparatus for textile rovings. 3,182,439, 5–11–65, Cl. 57—35.
- Cecchi, Bruno: *See*—
  - Cecchi, Anna. 3,182,439.
- Celanese Corp. of America: *See*—
  - Dekking, Henri G. G. 3,183,220.
  - Robeson Max O. 3,183,274.
- Centre de Recherches de Pont-a-Mousson: *See*—
  - Bram, Georges E. 3,183,010.
- Cerwonka, Edward, and A. K. Schwerin, to General Aniline & Film Corp. Method of speed increasing photopolymerizable compositions. 3,183,094, 5–11–65, Cl. 96—92.
- Chades, William J. Bowling bag holder. 3,182,804, 5–11–65, Cl. 211—14.
- Chadha, Rajendra N.: *See*—
  - Werber, Frank X., and Chadha. 3,183,218.
- Chaplin, Hubert O.: *See*—
  - Berrill, William H., Chaplin, and Pratt. 3,182,354.
- Charbonnages de France: *See*—
  - Lefevre, Albert. 3,183,443.

- Charland, Telesphore L., and Y. Tao, to Westinghouse Electric Corp. Process of preparing thermoelectric elements. 3,182,391, 5–11–65, Cl. 29—420.5.
- Chasar, Anthony R., to The Triax Co. Transfer equipment. 3,182,823, 5–11–65, Cl. 214—16.4.
- Chase-Shawmut Co., The: *See*—
  - Kozacka, Frederick J. 3,183,327.
- Chemetron Corp.: *See*—
  - Crawford, Louis L., and Harrington. 3,182,365.
- Chemin, Paul, and J. Lephilibert, to Commissariat a l'Energie Atomique. Sealing system for the handling hood of a nuclear reactor. 3,183,162, 5–11–65, Cl. 176—30.
- Chemische Werke Huls, A.G.: *See*—
  - Amrehn, Hermann. 3,183,354.
- Chemische Werke Huls Aktiengesellschaft: *See*—
  - Engel, Frederico, Kranzlein, and Schafer. 3,183,204.
- Cherniak, George S. Rotary solenoid. 3,183,418, 5–11–65, Cl. 317—192.
- Cherubini, Julian H., to High Voltage Engineering Corp. Neutron source. 3,183,356, 5–11–65, Cl. 250—84.5.
- Chervenak, Michael C.: *See*—
  - Schuman, Seymour C., Wolk, and Chervenak. 3,183,180.
- Chevillon, Manuel. Protective covering. 3,182,393, 5–11–65, Cl. 29—428.
- Chicago Show Printing Co.: *See*—
  - Snediker, Robert R. 3,182,414.
- Chidsey, Francis A., Jr., and R. J. Muth, to Container Corp. of America. Carton with multiple locking tabs. 3,182,888, 5–11–65, Cl. 229—39.
- Chin, Pao H., to International Business Machines Corp. Control and synchronizing circuit for a wave generator. 3,183,372, 5–11–65, Cl. 307—88.5.
- Chisholm, James R. Filtering device. 3,182,803, 5–11–65, Cl. 210—266.
- Choate, Paul V., and C. B. Weeks, to Hesse-Eastern, Inc. Rocket launcher and end covering means therefor. 3,182,553, 5–11–65, Cl. 89—1.7.
- Chow, Eric T. K., and A. J. Kolk, Jr., to The National Cash Register Co. Bistable magnetic device and method. 3,183,492, 5–11–65, Cl. 340—174.
- Christ, Alfred, to Escher Wyss Aktiengesellschaft. Multitubular heat exchanger. 3,182,719, 5–11–65, Cl. 165—111.
- Christensen, Kenneth K.: *See*—
  - Nutting, Robert G., Wagner, and Christensen. 3,182,541.
- Christian, Andrew J.: *See*—
  - Borger, Jack W., and Christian. 3,182,609.
- Christiansen, Richard A., N. S. Stockdale, and H. J. Tashjian, to International Business Machines Corp. Serial by bit, serial by character, data comparing apparatus. 3,183,484, 5–11–65, Cl. 340—146.2.
- Christianson, Charles: *See*—
  - Maggio, Ralph C., and Christianson. 3,183,389.
- Chromalloy Corp.: *See*—
  - Gregory, Eric, and Epner. 3,183,127.
- Ciba States Ltd.: *See*—
  - Dreyfuss, Paul. 3,183,225.
- Cigliano, Irving. Engine drier plug. 3,182,436, 5–11–65, Cl. 55—387.
- Cincinnati Milling Machine Co., The: *See*—
  - Attermeyer, Lawrence A. 3,182,521.
  - Henry, Robert L. 3,183,397.
- Circle, Robert R., to Westinghouse Electric Corp. Circuit breaker control system. 3,183,416, 5–11–65, Cl. 317—148.5.
- Cissell, W. M., Mfg. Co.: *See*—
  - Richterkessing, Frank H. 3,182.869.
- Claassen, Howard H., H. Selig, and J. G. Malm, to United States of America, Atomic Energy Commission. Xenon tetrafluoride and process of making same. 3,183,061, 5–11–65, Cl. 23—205.
- Claeys, David M., to Orange Research. Pressure responsive indicator. 3,182,630, 5–11–65, Cl. 116—70.
- Clapper, Genung L., to International Business Machine Corp. System for voice answer-back from data processor. 3,183,303, 5–11–65, Cl. 179—1.
- Clare, C. P., & Co.: *See*—
  - Deeg, Wyman L. 3,183,487.
  - Juptner, Wilhelm. 3,182,382.
- Clark, Chester A., to United States of America, Navy. Free piston fluid pressure transducer. 3,182,745, 5–11–65, Cl. 181—.5.
- Clark Controller Co., The: *See*—
  - Holland, Frank H. 3,183,377.
- Clark, George R. Aircraft landing gear wheel safety device. 3,182,934. 5–11–65, Cl. 244—103.
- Clark, Harold E., R. W. Gundlach, and M. Levy, to Xerox Corp. Masked plate xerography. 3,182,573, 5–11–65, Cl. 95—1.7.
- Clark, Richard D.: *See*—
  - Zimmerman, John G., and Clark. 3,182,830.
- Clarke, William C., Jr., and G. N. Goller, to Armco Steel Corp. Alloy steel and method. 3,183,081, 5–11–65, Cl. 75—128.
- Clayton Mfg. Co.: *See*—
  - Cline, Edwin L. 3,182,758.
- Clayton Mark & Co.: *See*—
  - Monteal, Robert P. 3,182,952.
  - Monteal, Robert P. 3,182,953.
- Clemens, David H., to Rohm & Haas Co. Stable self-catalyzing epoxy resin compositions. 3,183,281, 5–11–65, Cl. 260—837.
- Cline, Edwin L., to Clayton Mfg. Co. Brake for chassis dynamometers. 3,182.758, 5–11–65, Cl. 188—77.
- Cobbett, Leonard C., to Albert & J. M. Anderson Mfg. Co. High presure contact switch with rotatable locking means. 3,183,335, 5–11–65, Cl. 200—170.
- Cochran, James J., to Harris-Intertype Corp. Clamp control apparatus. 3,182,542, 5–11–65, Cl. 83—453.
- Cockerell, Christopher S., to Hovercraft Development Ltd. Vehicles for travelling over land and/or water. 3,182,739, 5–11–65, Cl. 180—7.
- Cockerell, Christopher S., to Hovercraft Development Ltd. Vehicles for traveling over land and/or water. 3,182,740, 5–11–65, Cl. 180—7.
- Coe, Albert W.: *See*—
  - Kalvelage, Bernard F., and Coe. 3,182,873.
- Coelho, Paul E. Searchlights for use in fog and mist. 3,183,347, 5–11–65, Cl. 240—46.23.
- Cohen, Alfred G.: *See*—
  - Small, Samuel N. 3,182,673.
- Cohen, Murray S., J. Green, S. I. Karlan, and N. Mayes, to Thiokol Chemical Corp. Boron-containing polymer and method of making the same. 3,183,216, 5–11–65, Cl. 260—83.5.
- Coin Acceptors, Inc.: *See*—
  - Jenkins, Merrill M. E., Sr. 3,182,780.
- Colbert, Otto F. Work holder. 3,182,989, 5–11–65, Cl. 269—81.
- Cole, E. K., Ltd.: *See*—
  - White, Douglas F. 3,183,351.
- Colgate-Palmolive Co.: *See*—
  - Monick, John A. 3,183,068.
- Collins, Theron T., Jr. Odor control and heat recovery in wood pulping process. 3,183,145, 5–11–65, Cl. 162—47.
- Combustion Engineering, Inc.: *See*—
  - Rayburn, Walter H. 3,182,715.
- Commercial Solvents Corp.: *See*—
  - Barocca, Aldo J. 3,182,592.
  - Frump, John A. 3,183,263.
  - Hodge, Edward B. 3,183,188.
  - Hodge, Edward B. 3,183,189.
- Commissariat a l'Energie Atomique: *See*—
  - Chemin, Paul, and Lephilibert. 3,183,162.
- Compagnie des Ateliers et Forges de la Loire: *See*—
  - Gumuchian, Andre, and Virnot. 3,183,163.
- Compagnie du Filage des Metaux et des Joints Curty: *See*—
  - Buffet, Jean. 3,182,474.
- Connecticut Valley Enterprises, Inc.: *See*—
  - Smith, Graydon. 3,183,324.
- Conner, Charles J., to United States of America, Agriculture. Reaction products of nickel, copper and mercury salts and process for rendering cotton fabric rot resistant therewith. 3,183,118, 5–11–65, Cl. 117—138.5.
- Consolidated Electronics Industries Corp.: *See*—
  - Haydon, Arthur W. 3,183,426.
- Consolidated Thermoplastics Co.: *See*—
  - Grether, Tobias H., and Bermann. 3,182,459.
- Container Corp. of America: *See*—
  - Chidsey, Francis A., Jr., and Muth. 3,182,888.
- Continental Can Co., Inc.: *See*—
  - Miller, William L., and Negoro. 3,183,291.
- Continental Folding Paper Box Co., Inc.: *See*—
  - Malo, Patrick. 3,182,885.
- Continental Machines, Inc.: *See*—
  - Whitmore, Charles H., Sebastian, and Winquist. 3,182,538.
- Control Data Corp.: *See*—
  - Graham, Walton. 3,183,504.
  - Rabinow, Jacob. 3,182,905.
- Cook, Albert W.: *See*—
  - Hawley, Jesse G., Runner, and Cook. 3,182,756.
- Cook, Carl E. Method of and apparatus for molding concrete buildings monolithically. 3,182,374, 5–11–65, Cl. 25—131.
- Cook, Denys, and S. J. Kuhn, to The Dow Chemical Co. Preparation of N-alkanoxy ammonium halides. 3,183,236, 5–11–65, Cl. 260—294.8.
- Cook, George W.: *See*—
  - Reed, Stanley F., and Cook. 3,182,796.
- Cooke-Yarborough, Edmund H., to United Kingdom Atomic Energy Authority. Scale-of-five circuits. 3,183,374, 5–11–65, Cl. 307—88.5.
- Cooley, James A., to Dresser Industries, Inc. Method and apparatus for neutron well logging. 3,183,358, 5–11–65, Cl. 250—108.
- Corcoran, John W., to Beckman & Whitley, Inc. Meteorologic instrument. 3,182,503, 5–11–65, Cl. 73—229.
- Cornell Aeronautical Laboratory, Inc.: *See*—
  - Kirchner, Henry P. 3,182,469.
- Cornell-Dubilier Electric Corp.: *See*—
  - Palfi, Thomas L. 3,183,411.
- Costabello, Dino, C. Merli, G. Aiorno, and G. Boffa, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Process for making ethylene diamine by treating ethylene dichloride with ammonia, and separation of vinyl chloride from ammonia. 3,183,269, 5–11–65, Cl. 260—585.
- Cotton, Frank T.: *See*—
  - Craker, Noel D., Stenning, and Cotton. 3,183,392.
- Cousins, Edward, to The Goodyear Tire & Rubber Co. Anti-skid tire. 3,182,706, 5–11–65, Cl. 152—211.
- Cousteau, Jacques Y., E. Gagnan, A. Laban, and J. Mollard, to La Spirotechnique. Mercury tilting system for watercraft. 3,182,622, 5–11–65, Cl. 114—16.
- Cowen, Richard G., to United States of America, Atomic Energy Commission. High directivity solid curtain perimeter intrusion system. 3,183,499, 5–11–65, Cl. 340—258.
- Coy, Walter E. Hinged double flight conveyer. 3,182,784, 5–11–65, Cl. 198—99.
- Crabbe, Pierre, to Syntex Corp. 16-nitratoalkyl-pregnanes. 3,183,252, 5–11–65, Cl. 260—397.4.
- Craker, Noel D., G. P. Stenning, and F. T. Cotton, to Hivac Ltd. Cold cathode gas discharge tubes. 3,183,392, 5–11–65, Cl. 313—188.
- Crane Co.: *See*—
  - Hutchison, Gibson T. 3,182,684.
- Crawford, Louis L., and B. S. Harrington, Jr., to Chemetron Corp. Meat casing clamp. 3,182,365, 5–11–65, Cl. 24—30.5.

- Creeger, Larry D., and W. S. Neff, to Westinghouse Electric Corp. Fail-safe bearing structure. 3,183,043, 5-11-65, Cl. 308—1.
- Cremer, William C. Sewing machine with pattern attachment. 3,182,616, 5-11-65, Cl. 112—2.
- Crile, Eugene E., W. R. Thomas, and C. W. Warmkssel. Pallet magazine loading device for concrete block producing machines. 3,182,818, 5-11-65, Cl. 214—6.
- Crompton & Knowles Corp.: *See—*
  - Nelson, Alden W. 3,182,921.
- Crosby, Edward L., Jr., to Electro-Mechanical Research, Inc. Coupling devices. 3,183,472, 5-11-65, Cl. 339—143.
- Crossman, James E. Paint can and brush holder. 3,182,943, 5-11-65, Cl. 248—210.
- Crown Zellerbach Corp.: *See—*
  - Brian, James A. 3,182,913.
  - Larson, Louis P. 3,182,887.
- Cubbage, John F., to General Electric Co. Logic circuit employing capacitor switching elements. 3,183,485, 5-11-65, Cl. 340—147.
- Cubbage, John F., to General Electric Co. Capacitive fixed memory system. 3,183,490, 5-11-65, Cl. 340—173.
- Culbertson, Robert D., R. C. McRae, and H. C. Warner, to Eitel-McCullough, Inc. Housing for an electronic device. 3,182,845, 5-11-65, Cl. 220—2.3.
- Culling, John H., to Carondelet Foundry Co. Solar energy heating apparatus. 3,182,654, 5-11-65, Cl. 126—270.
- Curry, Paul. Method of, and means for, duplex-multiplex communications. 3,183,508, 5-11-65, Cl. 343—176.
- Curtis, Frank W., to Lexsuco, Inc. Vapor barrier and adhesive applicators. 3,183,139, 5-11-65, Cl. 156—575.
- Curtis, Gerald R., J. C. Kyle, and G. Robinson, to Physical Sciences Corp. Method of making magnetic transducers. 3,183,126, 5-11-65, Cl. 148—12.
- Curtiss, Lawrence M., to The Thomas & Betts Co. Connector for outlet boxes. 3,183,297, 5-11-65, Cl. 174—65.
- Cusic, John W., and E. F. Le Von, to G. D. Searle & Co. Hydrazones derived from 1-amino-4-diphenylalkylpiperazines and heterocyclic aldehydes and ketones. 3,183,229, 5-11-65, Cl. 260—240.
- Cutler, Cassius C., to Bell Telephone Laboratories, Inc. Echo suppressor operable by a pilot tone. 3,183,313, 5-11-65, Cl. 179—170.4.
- Cutler-Hammer, Inc.: *See—*
  - Dries, Jerome F. 3,183,409.
  - Klager, Wallace K. 3,182,402.
- Cycle Equipment Co.: *See—*
  - Rodrigues, Anthony F. 3,182,991.
- D.B.A., Societe Anonyme: *See—*
  - Gancel, Pierre. 3,182,753.
- Dahl, Edward T., to George W. Dahl Co., Inc. Valve assembly for supplying and venting pressure fluid. 3,182,678, 5-11-65, Cl. 137—102.
- Dahl, George W., Co., Inc.: *See—*
  - Dahl, Edward T. 3,182,678.
  - Slawson, Richard S. 3,183,425.
- Dahlgren, John V. S., to The Wilcolator Co. Pressure operated switch with lever which rocks freely about its transverse axis through two points of engagement. 3,183,329, 5-11-65, Cl. 200—140.
- Daimler-Benz Aktiengesellschaft: *See—*
  - Lamm, Heinz. 3,182,641.
- Dale Electronics, Inc.: *See—*
  - Root, Raymond C. 3,182,807.
- Dalton, Thomas B., to Westran Corp. Landing gear structure for semi-trailers and the like. 3,182,956, 5-11-65, Cl. 254—86.
- Dalton, Thomas B., to Westran Corp. Landing gear for semi-trailer vehicles and the like. 3,182,957, 5-11-65, Cl. 254—86.
- Dana Corp.: *See—*
  - Hermanns, Martin J. 3,182,443.
  - Schall, Myron M. 3,182,775.
- Daniels, Joseph, to Koppers Co. Inc. Apparatus for repulverising a compressed plug. 3,182,920, 5-11-65, Cl. 241—282.
- Darlow, Brian S., to Taylor Electric Mfg. Co., Ltd. Tie bar for circuit breaker handles. 3,183,320, 5-11-65, Cl. 200—50.
- Darrell, George H. Separable fastener. 3,182,372, 5-11-65, Cl. 24—230.
- Davey Compressor Co.: *See—*
  - Thorson, John R. 3,182,900.
- Davis, Arthur G. Piston for expanding arbor. 3,182,568, 5-11-65, Cl. 92—194.
- Day, Harry M.: *See—*
  - Harris, Wilbur, and Day. 3,182,594.
- Deakin, Cyril R., ½ to Hosiery Equipment Ltd. Lubricating apparatus. 3,182,862, 5-11-65, Cl. 222—255.
- Dean, Eugene F.: *See—*
  - Kolec, Robert F., and Dean. 3,183,342.
- Dean, Norman L. Variable oscillator system. 3,182,517, 5-11-65, Cl. 74—61.
- Dean, Robert B.: *See—*
  - Halpern, Benjamin D., Dean, and Gardner. 3,183,271.
- Dearborn, Elizabeth C.: *See—*
  - Nimoy, Melvin, Dearborn, and Isaacs. 3,183,207.
- Deaton, Charles U. Holder for pens and the like. 3,182,637, 5-11-65, Cl. 120—108.
- De Boer, Clarence: *See—*
  - Argoudelis, Alexander D., De Boer, Eble, and Herr. 3,183,154.
- De Bolt, Richard R., to California Research Corp. Mixing and reaction apparatus. 3,183,065, 5-11-65, Cl 23—285.
- Deco Electronics, Inc.: *See—*
  - Rawls, Lucien E. 3,183,510.
- Deeg, Wyman L., to C. P. Clare & Co. Switching matrix having sealed switches operating as a normally closed switch matrix or as a normally open switch matrix. 3,183,487, 5-11-65, Cl. 340—166.
- Deere & Co.: *See—*
  - Browning, Edgar P., and Brown. 3,182,777.
  - Hyland, William A. 3,183,046.
- Deerfield, Alan J.: *See—*
  - Bloch, Richard M., Deerfield, and Marsh. 3,183,488.
- Deghenghi, Romano, and Y. Lefebvre, to American Home Products Corp. 21-fluoro-17a-methylpregnane derivatives. 3,183,228, 5-11-65, Cl. 260—239.55.
- De Graffenried, Albert L.: *See—*
  - Koletsky, Harold, and De Graffenried. 3,182,498.
- Dekking, Henri G. G., to Celanese Corp. of America. Unsaturated cyclic compounds. 3,183,220, 5-11-65, Cl. 260—88.2.
- De la Cova, Paul V.: *See—*
  - Francis, John P., and De la Cova. 3,183,441.
- De Laittre, Howard M., to Bemis Bro. Bag Co. Bag apparatus. 3,182,617, 5-11-65, Cl. 112—10.
- De Larebeyrette, Jean. Steroid medication for metabolic disorders. 3,183,160, 5-11-65, Cl. 167—77.
- Delcon Corp. *See—*
  - Hamilton, Robert H. 3,182,489.
- Den Beste, Marion, to The Gillette Co. Hair curler with heating and cooling hair contacting jaws. 3,182,667, 5-11-65, Cl. 132—32.
- Den Herder, Willem, to Landbouwwerktuigen-en Machinefabriek H. Vissers N.V. Apparatus for spreading or sowing granular or pulverised materials. 3,183,006, 5-11-65, Cl. 275—8.
- De Ridder, Ernst J., to Reynolds Metals Co. Interlocking constructions and parts therefor or the like. 3,182,769, 5-11-65, Cl. 189—36.
- Derrickson, Charles H.: *See—*
  - Green, Melvin E., and Derrickson. 3,182,589.
- De Sante, Joseph J., and L. K. Schultz, to Western Electric Co., Inc. Electroplating barrel with current reversal means. 3,183,177, 5-11-65, Cl. 204—213.
- De Staat der Nederlanden, ten deze vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie: *See—*
  - Van Berkel, Petrus L. M. 3,183,367.
- Desy, Jacques J.: *See—*
  - Mavleos, Michael G., and Desy. 3,182,653.
- Detrex Chemicals Industries, Inc.: *See—*
  - McCracken, William L., and Opolski. 3,183,378.
- Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See—*
  - Dithmar, Karl, Koblischek, and Naujoks. 3,183,242.
  - Hopff, Heinrich, and Metzler. 3,183,212.
- Deverell-Smith, Raymond: *See—*
  - Baird, William, Jones, and Deverell-Smith. 3,183,202.
- De Vries, Geert: *See—*
  - Van Lohuizen, Otto E., and De Vries. 3,183,213.
- Diehl, John E., to Stackpole Carbon Co. Means for improving commutation and decreasing radio interference voltages of D.C commutating machines. 3,183,428, 5-11-65, Cl. 318—439.
- Di Leila, Paul, and S. G. Wolf, to E. W. Bliss Co. Clamping structure for grinding machine. 3,182,815, 5-11-65, Cl. 214—1.
- Dillaha, Hubert D. Dispensing apparatus for rolling containers. 3,182.779, 5-11-65, Cl. 193—32.
- Dilling, Elmer D., to Titanium Metals Corp. of America. Metal working tool. 3,182,475, 5-11-65, Cl. 72—77.
- DiMargio, Nick A.: *See—*
  - Syak, Charles W., and DiMargio. 3,182,762.
- Di Menichi, Dante S.: *See—*
  - Di Menichi, Kenneth R. and D. S. 3,182,480.
- Di Menichi, Kenneth R. and D. S. Bar twister. 3,182,480, 5-11-65, Cl. 72—299.
- Dimmett, James E.: *See—*
  - Armington, Donald T., and Dimmett. 3,182,586.
- Dithmar, Karl, P. Koblischek, and E. Naujoks, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Process for the production of 3-benzoyl derivatives of substituted hydantoins. 3,183,242, 5-11-65, Cl. 260—309.5.
- Ditting, Adolf: *See—*
  - Engi, Walter. 3,182,700.
- Dittrick, Carl W., to J. P. Dittrick. Transplating box. 3,182,844, 5-11-65, Cl. 217—12.
- Dittrick, John P.: *See—*
  - Dittrick, Carl W. 3,182,844.
- Dix, James A. Baseball holder. 3,183,000, 5-11-65, Cl. 273—26.
- Doble, Kendall D., Jr., to Pneumatic Scale Corp., Ltd. Lined carton. 3,182,883, 5-11-65, Cl. 229—14.
- Dobrats, Terry L.: *See—*
  - Parker, Joseph D., Dobrats, Gustafson, and Mih. 3,182,874.
- Dobrikin, Harold L., to Berg Airlectro Products Co. Method of forming a member and shaft assembly. 3,182,362, 5-11-65, Cl. 22—203.
- Dobrikin, Harold L.: *See—*
  - Berg, Arthur A., Dobrikin, and Horowitz. 3,182,566.
  - Horowitz, Charles, Dobrikin, and Mastis. 3,182,849.
- Dodson, Vance H., Jr.: *See—*
  - Serafin, Frank G., and Dodson. 3,183,105.
- Dole Valve Co., The: *See—*
  - Drapeau, Harold B. 3,182,911.
  - Miller, Donald E., and Bauerlein. 3,182,465.
- Dolphin, Thomas J.: *See—*
  - Hawkins, David M., and Dolphin. 3 183,427.
- Donadio, Vincent J., W. F. Bankauf, and C. H. Skinner, to Hewitt-Robins Inc. Flexible idler assembly. 3,182,788, 5-11-65, Cl. 198—192.
- Donnelley, R. R., & Sons Co.: *See—*
  - Hoffswell, Wilbur J. 3,182,996.
- Donohoo, David D., Jr., and E. H. Sonnanstine, Jr., to The National Cash Register Co. Business machine rack stopping mechanism. 3,182,907, 5-11-65, Cl. 235—61.

- Donville, David L., W. B. Lueft, and A. G. Zuch, to Western Electric Co., Inc. Apparatus for testing stranded conductors utilizing pulses originating in the conductors under test. 3,183,435, 5-11-65, Cl. 324—51.
- Doomernik, Cornelia, to American Radiator & Standard Sanitary Corp. Pneumatic suspension system. 3,183,014, 5-11-65, Cl. 280—6.
- Dorfman, Walter, and N. J. Weniger, to Sperry Rand Corp. Sprocket protector circuit. 3,183,517, 5-11-65, Cl. 346—74.
- Douglas, George R.: *See—*
  - Jones, Charles H., Thompson, and Douglas. 3,182,512.
- Dow Chemical Co., The: *See—*
  - Bjork, Carl K. 3,183,125.
  - Bremkamp, Terrance L. 3,182,893.
  - Cook, Denys, and Kuhn. 3,183,236.
  - Faith, Herman E. 3,183,246.
  - Foerster, George S. 3,182,390.
  - Foerster, George S. 3,183,083.
  - Layne, Gilbert S., Huml, and Smith. 3,183,079.
  - Leasure, John K., and Mussell. 3,183,076.
  - Lowes, Fred J., Jr. 3,182,445.
  - Oja, Phyllis D. 3,183,241.
  - Rubens, Louis C., and Skochdopole. 3,182,497.
- Dow, Douglas. Electric drive mechanism and method of operating same. 3,182,742, 5-11-65, Cl. 180—14.
- Downs, Burton J. Electrical control system. 3,182,649, 5-11-65, Cl. 123—179.
- Doyle, Donald J., and J. W. Kehoe, to Shelby Business Forms, Inc. Combined business form and envelope. 3,182,894, 5-11-65, Cl. 229—92.7.
- Drackett Co., The: *See—*
  - Aler, Mary E., and Todd. 3,183,110.
- Drapeau, Harold B., to The Dole Valve Co. Dual thermostatic valve. 3,182,911, 5-11-65, Cl. 236—34.
- Dravo Corp.: *See—*
  - Reilly, Bertram B. 3,182,978.
- Dresser Industries, Inc.: *See—*
  - Cooley, James A. 3,183,358.
  - Trumpler, William E. 3,182,897.
- Dreyfuss, Paul, to Ciba States Ltd. Water soluble urea obtained by condensing phosgene with an azo dye. 3,183,225, 5-11-65, Cl. 260—167.
- Dries, Jerome F., to Cutler-Hammer, Inc. Electromagnetic contactor. 3,183,409, 5-11-65, Cl. 317—119.
- Dritz, Arthur. Stapling device. 3,182,879, 5-11-65, Cl. 227—119.
- Droschel, Helmut. Apparatus for automatic changing and shifting of gear transmission of power units particularly of motor vehicles. 3,182,778, 5-11-65, Cl. 192—92.
- Drtina, Otto V. Internal combustion engine with enforced double-loop scavenging and overall cooling. 3,182,642, 5-11-65, Cl. 123—41.35
- Drtina, Otto V. Internal combustion engine. 3,182,644, 5-11-65, Cl. 123—58.
- Dual Jet Refrigeration Co.: *See—*
  - Beckwith, Sterling. 3,182,466.
  - Beckwith, Sterling. 3,182,467.
- Dudko, Nicholas. Swing-away can opener. 3,182,946, 5-11-65, Cl. 248—291.
- Duke, James B., to Minerals & Chemicals Philipp Corp. Process of recovering cassiterite from ores. 3,182,798, 5-11-65, Cl. 209—166.
- Dunham Mfg. Co.: *See—*
  - Murphy, Bynum E. 3,182,730.
- Dunham, Milton L.: *See—*
  - Bailey, Donald L., Black, and Dunham. 3,183,205.
- Du Pont de Nemours, E. I., and Co.: *See—*
  - Bauer, Albert W. 3,183,192.
  - Brinker, Keith C., and Schweitzer. 3,183,211.
  - Hunt, Heman D. 3,183,088.
- Duprey, Richard H.: *See—*
  - Benoit, Roland A., Gingras, and Duprey. 3,182,808.
- Dupuis, Edouard A., E.-L. and J. Illuminating and ground-lighting system. 3,183,345, 5-11-65, Cl. 240—9.
- Dupuis, Edouard-Léon: *See—*
  - Dupuis, Edouard A., E.-L. and J. 3,183,345.
- Dupuis, Jose: *See—*
  - Dupuis, Edouard A., E.-L. and J. 3,183,345.
- Dura Corp.: *See—*
  - Taylor, Carl S. 3,182,405.
  - Tinder, David V., and Carey. 3,182,525.
- Du Rose, Arthur H., and R. L. Stern, to The Harshaw Chemical Co. Metal having two coats of sulfur containing nickel and method of making same. 3,183,067, 5-11-65, Cl. 29—194.
- Durston, Harry D., and A. Perry, to J. A. Terteling & Sons, Inc. Apparatus for making permeable conduits in subterranean lines of drainage. 3,182,460, 5-11-65, Cl. 61—63.
- Dusterloh, G., Fabrik fur Bergwerksbedorf G.m.b.H.: *See—*
  - Heckt, Heinz. 3,182,650.
- Dvoracek, Frank. Plastic molding apparatus and method. 3,183,292, 5-11-65, Cl. 264—335.
- Dvorak, Joseph J., D. Grafstein, and M. M. Fein, to Thiokol Chemical Corp. Boron compounds and method for making the same. 3,183,272, 5-11-65, Cl. 260—606.5.
- Dynamit Nobel Aktiengesellschaft: *See—*
  - Trautvetter, Werner. 3,183,222.
- Earnest, J T. Horizontal earth boring machine. 3,182,732, 5-11-65, Cl. 173—57.
- Earnheart, George E. Automatic cotton chopper. 3,182,731, 5-11-65, Cl. 172—51.
- Easter Splash-Mats Inc.: *See—*
  - Ferree, Roy E. 3,182,363.
- Eastern Co., The: *See—*
  - White, Wilfrid G. 3,182,625.
- Eble, Thomas E.: *See—*
  - Argoudelis, Alexander D., De Boer, Eble, and Herr. 3,183,154.
- Ecklund, Oscar F., and A. R. Rein, to American Can Co. Can with quick-opening lap seam. 3,182,891, 5-11-65, Cl. 229—51.
- Edcliff Instruments: *See—*
  - Kiceniuk, Taras, and Acosta. 3,182,927.
- Edison: *See—*
  - Vecchio, Martino. 3,183,276.
- Edwards, Andrew W., to Westinghouse Electric Corp. Winding for electrical apparatus. 3,183,467, 5-11-65, Cl. [illegible]36—223.
- Egli, Alwin, to Schweizerische Industrie-Gesellschaft. Device for the production of bags. 3,182,570, 5-11-65, Cl. 93—12.
- Eichorn, Robert N., and C. Holovka, Jr., to International Business Machines Corp. Paper forms cutter selectively adjustable to cut equal portions of a predetermined length. 3,182,540, 5-11-65, Cl. 83—346.
- Eimco Corp., The: *See—*
  - Simoni, Vittorio. 3,182,665.
- Eitel-McCullough, Inc.: *See—*
  - Culbertson, Robert D., McRae, and Warner. 3,182,845.
  - Goldfinger, Arthur A. 3,183,458.
- Elam, William B., to American Can Co. Compartment container. 3,182,890, 5-11-65, Cl. 229—51.
- Eldred, Wendell E., to The Bendix Corp. Movable thrust nozzle and sealing means therefor. 3,182,452, 5-11-65, Cl. 60—35.55.
- Eldridge, Edward L.: *See—*
  - Lynch, Leslie S., Jr., Eldridge, and Schiller. 3,183,025.
- Electric Auto-Lite Co.: *See—*
  - Rue, Charles V., Fisher, and Heischman. 3,183,071.
- Electric Storage Battery Co., The: *See—*
  - Klinger, Guy G. 3,182,658.
- Electrologica, N. V.: *See—*
  - Arends, Erik W. 3,183,412.
- Electro-Mechanical Research, Inc.: *See—*
  - Crosby, Edward L., Jr. 3,183,473.
  - Swain, William H. 3,183,455.
- Electro-Voice, Inc.: *See—*
  - McAlvay, John C. 3,183,311.
- Ellett, Alexander, to Zenith Radio Corp. Remote control by plural concurrent diverse type signals. 3,183,509, 5-11-65, Cl. 343—225.
- Elliott, Robert A.: *See—*
  - Grosanickle, Garold E., Elliott, and Williamson. 3,183,041.
- Ellis, Auston R., and H. G. Marshall. Artificial honeycomb. 3,182,339, 5-11-65, Cl. 6—11.
- Ellis, John G., V. C. Groth, and A. J. Hall; said Ellis, and said Groth assors. to Sprayon Products Inc. Valves for spray cans. 3,182,864, 5-11-65, Cl. 222—394.
- Emerson Electric Co.: *See—*
  - Komor, Peter S. 3,183,048.
- Emery, Edgar F. and F. D., deceased, (by R. C. Haworth, M. A. Fawkes, and E. F. Emery, personal representatives), to Insulated Mfg. Co. Ltd. Binding or mounting clips. 3,182,940, 5-11-65, Cl. 248—74.
- Emery, Frank D.: *See—*
  - Emery, Edgar F. and F. D. 3,182,940.
- Enders, Paul: *See—*
  - Klein, Arthur, and Enders. 3,182,429.
- Engel, Frederico, P. Kranzlein, and J. Schafer, to Chemische Werke Huls Aktiengesellschaft. Process for the production of rubber-like polymers. 3,183,204, 5-11-65, Cl. 260—33.6.
- Engelhard Industries, Inc.: *See—*
  - Koch, John J., Jr. 3,183,278.
- Engi, Walter, to Adolf Ditting. Slicing machine including knife sharpening means. 3,182,700, 5-11-65, Cl. 146—102.
- Englesson, Sixten, ½ to Flygts Pumpar, AB. Submerged float switch with means to mutually adjust the metacenter and center of gravity. 3,183,323, 5-11-65, Cl. 200—84.
- Ensine Corp.: *See—*
  - Wonder, Robert A., and Harris. 3,182,560.
- Entenmann, Charles E. Cake release cutter. 3,182,397, 5-11-65, Cl. 30—301.
- Epner, Martin: *See—*
  - Gregory, Eric, and Epner. 3,183,127.
- Ericson, John P., and B. O. Buhrmaster, to All-Steel Equipment Inc. Desk pedestal construction. 3,183,049, 5-11-65, Cl. 312—221.
- Erni, Enrico, to Gesellschaft du Ludw. von Roll'schen Eisenwerke Ag. Apparatus for mixing and purifying fluid mediums. 3,182,977, 5-11-65, Cl. 261—112.
- Escher Wyss Aktiengesellschaft: *See—*
  - Christ, Alfred. 3,182,719.
- Esposito, Frank. Alternator field rotor separating tool. 3,182,385, 5-11-65, Cl. 29—205.
- Essinger, Pierre: *See—*
  - Baycura, Orestes M., and Essinger. 3,183,429.
- Esso Research and Engineering Co.: *See—*
  - Armendt, Bradshaw F. 3,183,261.
  - Axt, Robert C. 3,182,435.
  - Bartlett, Jeffrey H., and Lippincott. 3,183,187.
  - Serniuk, George E., and Thomas. 3,183,217.
  - Wiese, Herbert K. 3,183,249.
- Esterling, Mahlon F.: *See—*
  - Webb, James E. 3,183,506.
- Esumi, Shinichiro: *See—*
  - Sumiki, Yusuke, Umezawa, Fukunaga, Yonehara, Kubo, Fujita, Shirato, Takaga, Kato, Esumi, and Ono. 3,183,153.
- Etablissements Kuhlmann: *See—*
  - Nordmann, Joseph. 3,183,151.
- Evers, Johannes J. M., and W. J. Van Asselt, to Stamicarbon N. V. Preparation of formaldehyde. 3,183,270, 5-11-65, Cl. 260—606.
- F & F Enterprises, Inc.: *See—*
  - Hawks, Robert L. 3,182,418.
- FMC Corp.: *See—*
  - Jones, Allen P., B. L. Sr., and Zits. 3,182,924.
  - Reimers, James L. 3,182,786.

Fabian, Zdenek: *See*—
  Brandt, Roy G., and Fabian. 3,182,863.
Fafnir Bearing Co., The: *See*—
  Hannon, William F. 3,182,428.
Fagan, William W.: *See*—
  Schaefer, Frederic J., II. 3,182,746.
Fahralloy Co., The: *See*—
  Fahrenwald, Francis M. 3,182,810.
Fahrenwald, Francis M., to The Fahralloy Co. Heat treating apparatus and method of assembly therefor. 3,182,810, 5–11–65, Cl. 211—118.
Fair, Irvin E., to Bell Telephone Laboratories, Inc. Voltage-controlled nondispersive variable delay system utilizing modulation to pass signal and frequency-inverted signal through identical dispersive delay lines. 3,183,447, 5–11–65, Cl. 328—177.
Fair, William J. Disengageable clothing clip device. 3,182,368, 5–11–65, Cl. 24—86.
Fairchild Camera and Instrument Corp.: *See*—
  Leistiko, Otto, Jr., and Sah. 3,183,128.
  Tripp, Gareth A. 3,183,129.
Fairchild Hiller Corp.: *See*—
  Frisby, Vincent C. 3,183,134.
Faith, Herman E., to The Dow Chemical Co. 1,1,-dioxothienyl-carbamates. 3,183,246, 5–11–65, Cl. 260—332.1.
Farbenfabriken Bayer Aktiengesellschaft: *See*—
  Gemassmer, Alois. 3,183,112.
  Haagen, Karl. 3,183,185.
  Homeyer, Bernhard, and Johannis. 3,183,147.
  Kniege, Wilfried, and Schnurrbusch. 3,183,206.
  Neumann, Wolfram, and Zankl. 3,183,109.
  Schundehutte, Karl-Heinz, Nickel, Schmidt, and Suckfull. 3,183,223.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See*—
  Rochlitz, Fritz, and Vilcsek. 3,183,264.
  Scherer, Otto, Steinmetz, Kuhn, Wetzel, and Grafen. 3,183,277.
  Sommer, Ernest P., and F. C. and H. E. Schneider. 3,183,052.
Farmer, Stanley E., H. F. Weinert, and E. J. Todoroff. Swiveling arm for load clamp. 3,182,837, 5–11–65, Cl. 214—653.
Faulseit, Francis C.: *See*—
  Bieganousky, Frank, Faulseit, and Senkowski. 3,182,790.
Fawkes, Marjorie A: *See*—
  Emery, Edgar F. and F. D. 3,182,940.
Federal Pacific Electric Co.: *See*—
  Norden, Alexander R. 3,183,325.
Federics, Bela. Process for tenderizing meat. 3,183,097, 5–11–65, Cl. 99—107.
Federn, Klaus, H. Geiss, and A. Seibert, to Carl Schenck Maschinenfabrik G.m.b.H. Vibratory testing machine, particularly balancing machine. 3,182,511, 5–11–65, Cl. 73—477.
Fein, Marvin M., to Thiokol Chemical Corp. Solid reaction products of amides and boranes. 3,183,244, 5–11–65, Cl. 260—326.3.
Fein, Marvin M.: *See*—
  Dvorak, Joseph J., Grafstein, and Fein. 3,183,272.
Fenwick, Jay G., to Morton Mfg. Co. Combination slotted standards. 3,182,812, 5–11–65, Cl. 211—148.
Ferree, Roy E., to Easter Splash-Mats Inc. Ingot mold teeming method. 3,182,363, 5–11–65, Cl. 22—215.
Ferrell, Russell A., to H. H. Robertson Co. Trim cap structure for a curtain wall mullion. 3,182,766, 5–11–65, Cl. 189—34.
Ferro Corp.: *See*—
  Hanson, Leroy C. 3,183,341.
  Kelly, William D. 3,183,340.
Ferro Stamping Co.: *See*—
  Pickles, Joseph. 3,183,314.
Fiat Metal Mfg. Co. Inc.: *See*—
  Kuehl, Thomas J. 3,182,767.
Fibre Formations, Inc.: *See*—
  Holden, Dermot F., and Nydegger. 3,183,141.
Fibreboard Paper Products Corp.: *See*—
  Moore, Norman H. 3,182,794.
Fichtel & Sachs A.G.: *See*—
  Schwerdhofer, Hans J. 3,182,529.
Fichuk, Walter S.: *See*—
  Schneider, Alfred, Frank, and Fichuk. 3,182,648.
Fieldcrest Mills, Inc.: *See*—
  Sumpter, Charles B., Jr., and MacIsaac. 3,182,536.
Figley, Donald E., to Mid-West Abrasive Co. Mechanism for rotating slabs and billets. 3,182,817, 5–11–65, Cl. 214—1.
Filipowsky, Richard F. J., to Westinghouse Electric Corp. Phaseproof pulse signal transmission system utilizing binary to quaternary conversion means. 3,183,442, 5–11–65, Cl. 325—40.
Findley, Samuel A.: *See*—
  Meyer, Robert B., and Findley. 3,183,475.
Fischer, Georg, Aktiengesellschaft: *See*—
  Gramespacher, Herbert, and Frischknecht. 3,182,533.
Fischer, Kurt, to Metallwerk Bahre K.G. Method and apparatus for forming particle board panels. 3,183,287, 5–11–65, Cl. 264—118.
Fischer, Rudolph F., and C. W. Smith, to Shell Oil Co. Aldehyde condensation products and their use in treating fibrous materials. 3,183,054, 5–11–65, Cl. 8—94.33.
Fisher, Eugene A.: *See*—
  Rue, Charles V., Fisher, and Heischman. 3,183,071.
Fisher, John T. Controlled fuel limiter. 3,182,709, 5–11–65, Cl. 158—36.3.
Fisher, Sallie A., to Rohm & Haas Co. Removal of dissolved oxygen from water. 3,183,184, 5–11–65, Cl. 210—26.
Flaherty, Robert J., Jr., and W. V. Smith. Immersible dynamoelectric device. 3,183,384, 5–11–65, Cl. 310—90.
Flanigan, Marjorie A. Nursing bottle holder. 3,182,942, 5–11–65, Cl. 248—107.
Fleisher, Harold, T. J. Harris, and E. Shapiro, to International Business Machines Corp. Display apparatus. 3,182,574, 5–11–65, Cl. 95—4.5.
Fleming, John S., to Floxite Co., Inc. Machine for tearing paper. 3,182,875, 5–11–65, Cl. 225—99.
Fleming, Robert S., and E. G. Neibling, to Amerace Corp. Bowling ball grip measuring device. 3,182,404, 5–11–65, Cl. 33—174.
Fletcher, Theodore F., to United States of America, Navy. Lift-appendage for underwater vehicle. 3,182,621, 5–11–65, Cl. 114—16.
Flora, James, to International Business Machines Corp. Magnetic multipositioning actuators. 3,183,410, 5–11–65, Cl. 317—123.
Floxite Co., Inc.: *See*—
  Fleming, John S. 3,182,875.
Flygts Pumpar, AB: *See*—
  Englesson, Sixten. 3,183,323.
Fockens, Foppe H.: *See*—
  Jonkers, Cornelius O., and Fockens. 3,182,454.
Foerster, George S., to The Dow Chemical Co. Method of die-expressing a magnesium-base alloy. 3,182,390, 5–11–65, Cl. 29—420.
Foerster, George S., to The Dow Chemical Co. Magnesium-base alloy. 3,183 083, 5–11–65, Cl. 75—168.
Fogaty, Peter J.: *See*—
  Boyce, Frederick C., and Fogaty. 3,183,319.
Fontaine, Robert R.: *See*—
  Whitby, Clyde M., and Fontaine. 3,183,497.
Force Control, Inc.: *See*—
  Sommer, Gordon M. 3,182,776.
Ford, Arthur W., to Sundstrand Corp. Constant frequency brushless generating system. 3,183,431, 5–11–65, Cl. 322—32.
Foris, Victor G., to Westinghouse Electric Corp. Refrigeration apparatus. 3,182,902, 5–11–65, Cl. 230—235.
Forney, Jack D. Spot welding gun. 3,183,338, 5–11–65, Cl. 219—127.
Foster, Allen A., Jr., and J. M. Velardo. Telephone office mounting plate. 3,182,805, 5–11–65, Cl. 211—26.
Foster Wheeler Corp.: *See*—
  Bell, Alan. 3,183,168.
  Lee, Frank A., Von Wiesenthal, and Wagner. 3,182,638.
Foxx, Robert J., and E. H. Krause, Jr., to Nordberg Mfg. Co. Set-off device and method for railway machines. 3,182,604, 5–11–65, Cl. 105—177.
Foye, Allen B., to W. R. Grace & Co. Closure for containers. 3,182,843, 5–11–65, Cl. 215—44.
France, Leonard L., A. I. Lewis, deceased, by B. J. Ambrose, administrator, R. L. Ammon, and L. S. Richardson, to Westinghouse Electric Corp. Tantalum base alloys. 3,183,085, 5–11–65, Cl. 75—174.
Francis, John P., and P. V. de la Cova, to Martin-Marietta Corp. Transponder automatic frequency control system. 3,183,441, 5–11–65, Cl. 325—13.
Frank, Robert K.: *See*—
  Schneider, Alfred, Frank, and Fichuk. 3,182,648.
Frank, Walter J., Jr.: *See*—
  Sacks, Norman M., Frank, and Price. 3,183,478.
Frankert, Otto P., to F. L. Smidth & Co. Method of making cement. 3,183,106, 5–11–65, Cl. 106—103.
Franklin, Maurice R., to Burcat Development Ltd. Means for separating superimposed sheets. 3,182,995, 5–11–65, Cl. 271—64.
Frazel, Wilbur H., to The New York Air Brake Co. Gravimetric feeder. 3,182,738, 5–11–65, Cl. 177—120.
Freedman, Louis: *See*—
  Shapiro, Seymour L., and Freedman. 3,183,230.
French, Alton A. Electrician's wire fish pole. 3,182,960, 5–11–65, Cl. 254—134.7.
Fried, Benjamin. Striping device for a knitting machine. 3,182,471, 5–11–65, Cl. 66—35.
Frink, Russell E., and P. Olsson, to Westinghouse Electric Corp. Circuit breaker closing mechanisms. 3,183,332, 5–11–65, Cl. 200—153.
Frisby, Vincent C., to Fairchild Hiller Corp. Tire building apparatus and method. 3,183,134, 5–11–65, Cl. 156—117.
Frischknecht, Paul: *See*—
  Gramespacher, Herbert, and Frischknecht. 3,182,533.
Frost, James D. Object conveying chute. 3,182,827, 5–11–65, Cl. 214—83.1.
Frost, Walter W., to Sunbrand Supply Co., Inc. Stackers. 3,182,822, 5–11–65, Cl. 214—7.
Frump, John A., to Commercial Solvents Corp. Method for changing the crystal habit of monosodium glutamate. 3,183,263, 5–11–65, Cl. 260—534.
Fryar, Jack R., to Phillips Petroleum Co. Glycol-gas separator system and method. 3,182,434, 5–11–65, Cl. 55—32.
Fuge, Richard H.: *See*—
  Aellen, John P., Jr., and Fuge. 3,182,882.
Fujita, Shigeo: *See*—
  Sumiki, Yusuke, Umezawa, Funkunaga, Yonehara, Kubo, Fujita, Shirato, Takaga, Kato, Esumi, and Ono. 3,183,153.
Fukunaga, Kazuo: *See*—
  Sumiki, Yusuke, Umezawa, Fukunaga, Yonehara, Kubo, Fujita, Shirato, Takaga, Kato, Esumi, and Ono. 3,183,153.
Fuller, John W. Wastebasket. 3,182,847, 5–11–65, Cl. 220—4.
Furlong, Donn B.: *See*—
  Tamny, Simon, and Furlong. 3,182,917.
Furukawa, Junji, and T. Saegusa, to Zaidan Hojin Nihon Kagaku Seni Kenkyusho and Bridgestone Tire Co. Ltd. Polymerization of aldehyde by organometallic compound. 3,183,210, 5–11–65, Cl. 260—67.
G.B.D. Societe Anonyme Holding: *See*—
  Long, Bernard. 3,183,072.

Gabor, Dennis, to National Research Development Corp. Bandwidth compression and expansion system for transmission of speech. 3,183,310, 5–11–65, Cl. 179—100.2.
Gabriel, Gustave O. Turntable drive system. 3,183,385, 5–11–65, Cl. 310—103.
Gaddini, Norman E. Fruit positioning cup unit. 3,182,698, 5–11–65, Cl. 146—72.
Gagnan, Emile: *See*—
  Cousteau, Jacques Y., Gagnan, Laban, and Mollard. 3,182,622.
Gallo, Elia A., to Martin-Marietta Corp. Pressure control valve and regulator. 3,182,681, 5–11–65, Cl. 137—468.
Gallo, John, Sr. Dispensing device. 3,182,860, 5–11–65, Cl. 222—136.
Gancel, Pierre, to D.B.A., Societe Anonyme. Swingable caliper, spot type disc brake. 3,182,758, 5–11–65, Cl. 188—73.
Ganz, Henry. Packaging machine and method. 3,182,431, 5–11–65, Cl. 53—32.
Garbrecht, William L., and T.-M. Lin, to Eli Lilly and Co. Octahydroindoloquinolines. 3,183,234, 5–11–65, Cl. 260—285.5.
Gardner, John J., to Morgan Automation, Inc. Sheet steel conveyor and stacking device. 3,182,820, 5–11–65, Cl. 214—6.
Gardner, Verna B.: *See*—
  Halpern, Benjamin D., Dean, and Gardner. 3,183,271.
Garrett Corp., The: *See*—
  Seidner, Orville R. 3,182,593.
  Wirt, Leslie S. 3,182,748.
Garrett, Rex S.: *See*—
  Weimer, Charles L., and Garrett. 3,183,298.
Gärtner, Fritz: *See*—
  Tschirf, Ludwig, and Gärtner. 3,182,491.
Gates, Thomas S., to National Broach & Machine Co. Gear finishing equipment. 3,182,558, 5–11–65, Cl. 90—1.6.
Gaylord, John A., to H. Koch & Sons. Actuating devices for aerial survival kits. 3,182,928, 5–11–65, Cl. 244—1.
Gdansk Technical University: *See*—
  Soldek, Jerzy K. 3,183,438.
Geecen Ltd.: *See*—
  Heritier, Francis R. 3,182,906.
Geerlings, Petrus J. Disk type feed blender and comminuter. 3,182,919, 5–11–65, Cl. 241—101.
Geerlings, Petrus J. Belt type feed blender. 3,182,968, 5–11–65, Cl. 259—9.
Gehrie, Charles S., to Presto Lock Co., Inc. Catches. 3,183,029, 5–11–65, Cl. 292—302.
Geiss, Heinrich: *See*—
  Federn, Klaus, Geiss, and Seibert. 3,182,511.
Geller, Harry, to General Electric Co. Silverware basket for dishwasher. 3,182,854, 5–11–65, Cl. 220—83.
Gemassmer, Alois, ½ to Farbenfabriken Bayer Aktiengesellschaft, and ½ to Mobay Chemical Co. Isocyanates and method of preparing same. 3,183,112, 5–11–65, Cl. 106—316.
Gemmer, Erwin, to Knapsack-Griesheim Aktiengesellschaft. Fluidized bed coating process and apparatus. 3,183,113, 5–11–65, Cl. 117—21.
General Aniline & Film Corp.: *See*—
  Cerwonka, Edward, and Schwerin. 3,183,094.
  Klinger, Gunther H. 3,183,095.
  Mackey, E. S., and Walford. 3,183,092.
  Randall, David I., and Schmidt-Nickels. 3,183,053.
General Cable Corp.: *See*—
  Jachimowicz, Ludwik, and Olszewski. 3,183,300.
General Electric Co.: *See*—
  Barkan, Philip. 3,183,331.
  Barkan, Philip, and Bogert. 3,183,330.
  Bray, David W. 3,183,449.
  Cubbage, John F. 3,183,485.
  Cubbage, John F. 3,183,490.
  Geller, Harry. 3,182,854.
  Hurwitz, Henry, Jr. 3,183,379.
  Hurwitz, Henry, Jr., and Koenig. 3,183,403.
  Hurwitz, Henry, Jr., and Sutton. 3,183,380.
  Johnston, Frank C., and Krauss. 3,183,299.
  Johnston, Frank C., and Krauss. 3,182,381.
  Ketterer, Richard J. 3,183,115.
  Kiely, Richard H. 3,183,315.
  McCartney, Kenneth C. 3,183,317.
  Miller, William R. 3,183,386.
  Rosenberg, Joseph, and Larsen. 3,182,383.
  Schmidt, Kurt. 3,183,051.
  Shive, William M. 3,182,918.
  Wheeler, Roy E. 3,183,328.
General Foods Corp.: *See*—
  Winston, Adolph A. 3,182,346.
General Motors Corp.: *See*—
  Tanaka, Akira. 3,182,947.
General Precision, Inc.: *See*—
  Krupick, Walter J., Hoffman, and Ballester. 3,182,514.
General Signal Corp.: *See*—
  Sibley, Henry C. 3,183,350.
Gentile, Robert, to Sea-All, Inc. Float. 3,182,340, 5–11–65, Cl. 9—8.
Gero, John B., to Gero Metallurgical Corp. Vacuum casting apparatus. 3,182,359, 5–11–65, Cl. 22—73.
Gero Metallurgical Corp.: *See*—
  Gero, John B. 3,182,359.
Gershon, Milton: *See*—
  Kerney, Francis W., Gershon, and Zimmet. 3,182,449.
Gerst, Frans. Flying-off reel with rollers truing a wire fed thereto. 3,182,477, 5–11–65, Cl. 72—183.
Gesellschaft du Ludw., von Roll'schen Eisenwerke Ag.: *See*—
  Erni, Enrico. 3,182,977.
Getoor, Edward N. Locker caddy. 3,182,809, 5–11–65, Cl. 211—88.
Giannini Control Corp.: *See*—
  Howard, Robert C. 3,183,440.
Giannini Scientific Corp.: *See*—
  Winzeler, John W., and Tucker. 3,183,337.
Gibbon, William, to British Insulated Callender's Cables Ltd. Suspension clamps for overhead electric conductors. 3,182,938, 5–11–65, Cl. 248—63.
Gibson, Ralph W., Jr., to Jos. Schlitz Brewing Co. Simulated divided transparent sheet and method of making the same. 3,183,140, 5–11–65, Cl. 161—5.
Gibson, Walter J., to The Babcock & Wilcox Co. Tube follower and search tube mounting device. 3,182,490, 5–11–65, Cl. 73—67.8.
Gilbert & Barker Mfg. Co.: *See*—
  Thiem, Gerhard G. 3,182,677.
Gilbert, Nathan, to United States of America, Navy. Amalgam mixing vessel for primary battery system. 3,182,984, 5–11–65, Cl. 266—34.
Gillette Co., The: *See*—
  Den Beste, Marion. 3,182,667.
Gilliam, James P. Combination telescopic valve and union. 3,182,682, 5–11–65, Cl. 137—515.5.
Gilson, James K., C. W. Higgins, W. O. Huff, and L. V. Stonebraker, to Western Electric Co., Inc. Autoclave for growing quartz crystals. 3,183,063, 5–11–65, Cl. 23—273.
Ginard, John A. Electrical timing apparatus-combination unit flasher timer, repeater timer. 3,183,415, 5–11–65, Cl. 317—141.
Gingras, Robert F.: *See*—
  Benoit, Roland A., Gingras, and Duprey. 3,182,808.
Ginsburg, Abraham. Multiple face handbag. 3,182,701, 5–11–65, Cl. 150—28.
Giovanelli, Alfred. Bowling ball release. 3,183,001, 5–11–65, Cl. 273—43.
Girardello, Ettore. Ladder platforms. 3,182,749, 5–11–65, Cl. 182—120.
Glaser, Kurt F., to Reynolds Metals Co. High-stressed double wall partitions or the like for freight car dividers. 3,182,763, 5–11–65, Cl. 189—34.
Glasgow, George U.: *See*—
  Marks, Henry C., Joiner, and Glasgow. 3,183,057.
Glass, Marvin I., and G. Licitis, to said Licitis assor., to said Glass. Wheeled sounding toy. 3,182,421, 5–11–65, Cl. 46—17.
Gleason, Quin R., and K. A. Boyd, to Master Pneumatic, Inc. Cup structure for air line lubricator or the like. 3,182,750, 5–11–65, Cl. 184—55.
Gluckin, William, & Co., Inc.: *See*—
  Bradd, Ernest. 3,182,664.
Goettl, William H. Air conditioning system. 3,182,718, 5–11–65, Cl. 165—60.
Goetz, Heinz E., to Packard-Bell Electronics Corp. Noise suppressor system. 3,183,414, 5–11–65, Cl. 317—138.
Golbeck, Bernard J., to Oak Mfg. Co. Illuminated push button switch using springs as conductive elements. 3,183,333, 5–11–65, Cl. 200—159.
Gold, Robert L., to Wagner Electric Corp. Retarder valve and system. 3,183,040, 5–11–65, Cl 303—6.
Goldberg, Max. Reversible single-phasemotor. 3,183,424, 5–11–65, Cl. 318—207.
Goldfinger, Arthur A., to Eitel-McCullough, Inc. Radio frequency liquid dielectric load with slidable supported inner conductor and tapered shell. 3,183,458, 5–11–65, Cl. 333—22.
Goldine, Mathew. Taxicab advertising device. 3,182,550, 5–11–65, Cl. 88—24.
Goldschmidt, Th., A.-G.: *See*—
  Rossmy, Gerd, and Wassermeyer. 3,183,254.
Goldstein, Robert P., to Westinghouse Electric Corp. Position indicating arrangement. 3,183,496, 5–11–65, Cl. 340—196.
Goldstein, Walter. Glass aperture plate. 3,183,521, 5–11–65, Cl. 352—221.
Goller, George N.: *See*—
  Clarke, William C., Jr., and Goller. 3,183,081.
Goltz, Joseph, 25% to I. C. and G. I. Bloom, jointly. Stacking box construction. 3,182,856, 5–11–65, Cl. 220—97.
Gomes, Ronald J., to Sperry Rand Corp. Dual scale shaft angle indicator. 3,182,631, 5–11–65, Cl. 116—115.
Gonzales, Elwood J., C. M. Welch, and J. D. Guthrie, to United States of America, Agriculture. Process for making cellulosic textiles rot resistant with zirconium salts and phenols. 3,183,149, 5–11–65, Cl. 167—38 7.
Gooch, Frederic P., to Ametek, Inc. Centrifugal separator having a washing means. 3,182,802, 5–11–65, Cl. 210—212.
Goodell, John D., J. Nazali, and T. N. Tengsater, to U.S. Industries, Inc Article manipulator apparatus. 3,182,813, 5–11–65, Cl. 214—1.
Goodman Mfg. Co.: *See*—
  Lundquist, Richard C. 3,183,017.
Goodrich, B. F., Co., The: *See*—
  Beatty, James R., Juve, and Karper. 3,182,494.
  Thomas, George L 3,183,104.
Goodrum, Samuel F. Skeleton structure. 3,182,761, 5–11–65, Cl. 189—15.
Goodyear Tire & Rubber Co., The: *See*—
  Barrington, Charles E. 3,182,757.
  Cousins, Edward. 3,182,706.
  Hawley, Jesse G., Runner and Cook. 3,182,756.
  Kelemen, Ladislav. 3,182,759.
  Spacht, Ronald B. 3,183,273.
  Taylor, Challen E., and Hall. 3,183,288.
  Wilson, Farris H., Jr. 3,183,268.
  Woodhall, Edwin S. 3,182,587.
Gori, Anna: *See*—
  Cecchi, Anna, and Gori. 3,182,439.
Goss, John B., and R. H. E. Schmidt. Method and apparatus for surface-blasting with abrasive. 3,182,425, 5–11–65, Cl. 51—8.
Gossler, Clair K. Rifle sling. 3,182,871, 5–11–65, Cl. 224—1.

Grace, W. R., & Co.: *See—*
Foye, Allen B. 3,182,843.
Haberlin, Richard J. 3,183,284.
Nimoy, Melvin, Dearborn, and Isaacs. 3,183,207.
Pfeiffer, Robert H. 3,183,056.
Serafin, Frank G., and Dodson. 3,183,105.
Werber, Frank X., and Chadha. 3,183,218.

Grader, Roderick J., and M. P. Nakada, to United States of America, Atomic Energy Commission. Photomultiplier. 3,183,390, 5-11-65, Cl. 313—95.

Grafen, Karlheinz: *See—*
Scherer, Otto, Steinmetz, Kuhn, Wetzel, and Grafen. 3,183,277.

Grafstein, Daniel: *See—*
Dvorak, Joseph J., Grafstein, and Fein. 3,183,272.

Gragson, James T.: *See—*
Axe, William N., Gragson, and Schiff. 3,183,221.

Graham, Frank O. Testing for volume of soluble gases. 3,182,487, 5-11-65, Cl. 73—19.

Graham, Walton, to Control Data Corp. Compatible airborne navigation-air traffic control and collision avoidance system. 3,183,504, 5-11-65, Cl. 343—7.5.

Gramespacher, Herbert, and P. Frischknecht, to Georg Fischer Aktiengesellschaft. Work piece loading and discharging device for machine tools. 3,182,533, 5-11-65, Cl. 82—2.7.

Granberg, Elof. Saw chain service tool. 3,182,442, 5-11-65, Cl. 59—7.

Gray, Robert H., to Preferred Growth Capital, Inc. Winch brake. 3,182,962, 5-11-65, Cl. 254—186.

Grebe, Alfred H., to Allied Control Co., Inc. Insulated actuator for movable electrical contact. 3,183,334, 5-11-65, Cl. 200—166.

Green, Joseph: *See—*
Cohen, Murray S., Green, Karlan, and Mayes. 3,183,216.

Green, Melvin E., and C. H. Derrickson, to American Screen Process Equipment Co. Printing and drying apparatus. 3,182,589, 5-11-65, Cl. 101—40.

Greene, Harold R.: *See—*
Batcher, Kenneth E., Greene, and Yochelson. 3,183,363.

Greenewald, Herbert, Jr.: *See—*
Beasley, Jack M., and Greenewald. 3,183,293.

Gregory, Eric, and M. Epner, to Chromalloy Corp. Heat treatable tool steel of high carbide content. 3,183,127, 5-11-65, Cl. 148—31.

Greif Bros. Cooperage Corp., The: *See—*
Carpenter, Herbert L., and H. L. Carpenter, Jr. 3,182,571.

Grether, Tobias H., and J. Bermann, to Consolidated Thermoplastics Co. Apparatus for positioning fluid barriers. 3,182,459, 5-11-65, Cl. 61—63.

Greuter, Juliette E. Tub spout diverter with fixed and flexible shower heads. 3,182,336, 5-11-65, Cl. 4—148.

Grieder, Charles K. Unitary directional control for galloping hobby horses. 3,182,752, 5-11-65, Cl. 188—26.

Grieshaber, Albin. Friction gear. 3,182,519, 5-11-65, Cl. 74—191.

Griffith, Charles C. Sewage treatment tank with aeration chamber and settling chamber. 3,182,801, 5-11-65, Cl. 210—207.

Grinnell Corp.: *See—*
Simmons, Cecil E., and Rudniski. 3,182,441.

Griswold, Hector W.: *See—*
Harmon, Carlyle, and Griswold. 3,183,137.

Grody, Donald R. Paper cutting machine with counter controlled stacking means. 3,182,537, 5-11-65, Cl. 83—88.

Groom, William H., to Bayuk Cigars Inc. Group assembling apparatus. 3,182,819, 5-11-65, Cl. 214—6.

Grossnickle, Garold E., R. A. Elliott, and J. R. Williamson, to The Bendix Corp. Combined brake adjuster and torque limiter. 3,183,041, 5-11-65, Cl. 303—49.

Groth, Vernon C.: *See—*
Ellis, John G., Groth, and Hall. 3,182,864.

Gruber, Wilhelm, to Rohm & Haas G.m.b.H. Process for the preparation of dicyan. 3,183,060, 5-11-65, Cl. 23—151.

Grumman Aircraft Engineering Corp.: *See—*
Markow, Edward G. 3,182,705.

Guarnieri, Robert J., and S. Weiner, to Barnes Engineering Co. Method of filling grooves on substrates with curable resins. 3,183,290, 5-11-65, Cl. 264—259.

Guild, James C., and L. J. Castle, to United Kingdom Atomic Energy Authority. Liquid moderated nuclear reactors. 3,183,164, 5-11-65, Cl. 176—37.

Guinard, Paul A. Pumps provided with a helical rotor of revolution and a rotating obturator plate meshing with this rotor. 3,182,600, 5-11-65, Cl. 103—125.

Gulf Research & Development Co.: *See—*
Hartman, Anthony B., Petrocelli, and Puzniak. 3,183,515.
Reed, Ronald L. 3,182,722.

Gumuchian, Andre, and A. Virnot, to Society Indatom and Compagnie des Ateliers et Forges de la Loire. Devices for handling fuel elements in a nuclear reactor. 3,183,163, 5-11-65, Cl. 176—30.

Gundlach, Robert W.: *See—*
Clark, Harold E., Gundlach, and Levy. 3,182,573.

Gurinsky, David H.: *See—*
Schweitzer, Donald G., Singer, and Gurinsky. 3,183,166.

Gustafson, David R.: *See—*
Parker, Joseph D., Dobrats, Gustafson, and Mih. 3,182,874.

Gustafsson, Axel G. V., to Bofors, Aktiebolaget. Suspension device for the chassis of a vehicle. 3,183,016, 5-11-65, Cl. 280—6.1.

Guthrie, Jack A., to Sun Oil Co. Production of hydrocarbon feedstocks for petroleum sulfonates. 3,183,183, 5-11-65, Cl. 208—311.

Guthrie, John D.: *See—*
Gonsales, Elwood J., Welch, and Guthrie. 3,183,149.

Gutske, Mark E., and W. H. Yanko, to Monsanto Co. Stabilization of organic fluids against radiation decomposition and systems employing same. 3,183,165, 5-11-65, Cl. 176—38.

H.G. Enterprises: *See—*
Nelkin, Henry G. 3,182,655.

Haagen, Karl, to Farbenfabriken Bayer Aktiengesellschaft. Oxygen removal from water by means of ion exchanger resins. 3,183,185, 5-11-65, Cl. 210—26.

Haase, Elmer A., to The Bendix Corp. Flow measuring apparatus. 3,182,501, 5-11-65, Cl. 73—207.

Haberlin, Richard J., to W. R. Grace & Co. Manufacture of container gaskets. 3,183,284, 5-11-65, Cl. 264—28.

Haberstick, George C. Paper and rubbish pick-up. 3,183,031, 5-11-65, Cl. 294—19.

Hach Chemical Co.: *See—*
Hach, Clifford C. 3,183,191.

Hach, Clifford C., to Hach Chemical Co. Stain and rust removing composition. 3,183,191, 5-11-65, Cl. 252—105.

Hagan, Leo F. Cluster tables and the like. 3,182,613, 5-11-65, Cl. 108—91.

Hahm, Heinz G., and F. Ostwald, to Alfred Teves Maschinen- und Armaturenfabrik K.G. Caliper type disc brake. 3,182,754, 5-11-65, Cl. 188—73.

Haines, William R. Roller applicator for marking animals. 3,182,347, 5-11-65, Cl. 15—575.

Hale, Leigh E. Electric connector locking means. 3,183,470, 5-11-65, Cl. 339—82.

Hall, Albert J.: *See—*
Ellis, John G., Groth, and Hall. 3,182,864.

Hall, Howard T., to Research Corp. Guide means for high pressure press. 3,182,353, 5-11-65, Cl. 18—16.

Hall, Robert G.: *See—*
Taylor, Challen E., and Hall. 3,183,288.

Halpern, Benjamin D., R. B. Dean, and V. B. Gardner, to The Borden Co. Formaldehyde stabilization. 3,183,271, 5-11-65, Cl. 260—606.

Hamann, Harry L., and H. F. Silstorf, to The Bishop and Babcock Corp. Fastener. 3,182,367, 5-11-65, Cl. 24—73.

Hamblen, John W.: *See—*
Randolph, Joseph P., Jr., Riblet, and Hamblen. 3,182,930.

Hamel, Harold R., to Pacific Electricord Co. Female socket for electrical coupling. 3,183,474, 5-11-65, Cl. 339—187.

Hames, William A., Jr., L. J. Jungemann, and G. W. Sisk, Jr., to Whirlpool Corp. Wall mounted dual fan structure. 3,182,899, 5-11-65, Cl. 230—117.

Hamilton, Lyman L. Pistol loading clip. 3,182,417, 5-11-65, Cl. 42—89.

Hamilton, Robert H., to Delcon Corp. Ultrasonic contaminant detecting. 3,182,489, 5-11-65, Cl. 73—67.

Hamilton, Robert W., and K. J. Rorig, to G. D. Searle & Co. Aminoalkyl 3β,17β-dihydroxyandrost-5-en-17α-ylpropiolates and 3-oxo-5-enes corresponding. 3,183,227, 5-11-65, Cl. 260—239.5.

Hampshire Chemical Corp.: *See—*
Singer, John J. and J. P. 3,183,262.

Haney, Donald W., and J. E. Hawxhurst, to International Business Machines Corp. Sheet handling apparatus. 3,182,993, 5-11-65, Cl. 271—47.

Hannappel, Günther: *See—*
Sopicki, Walter, and Hannappel. 3,183,336.

Hannon, William F., to The Fafnir Bearing Co. Apparatus for grinding a bevel on circular objects. 3,182,428, 5-11-65, Cl. 51—118.

Hansel, Paul G., to Servo Corp. of America. Radio navigation system. 3,183,507, 5-11-65, Cl. 343—106.

Hanson, Leroy C., to Ferro Corp. Heating unit. 3,183,341, 5-11-65, Cl. 219—455.

Harde, Elmer. Ice creeper. 3,182,407, 5-11-65, Cl. 36—7.6.

Hardy, William C., to Sun Oil Co. Method of petroleum production by forward in situ combustion. 3,182,721, 5-11-65, Cl. 166—11.

Harks, Walter M. Liquid level indicator. 3,182,505, 5-11-65, Cl. 73—307.

Harmon, Carlyle, and H. W. Griswold, to Johnson & Johnson. Methods and apparatus for treating sheet materials. 3,183,137, 5-11-65, Cl. 156—309.

Harms, John D., to American Air Filter Co., Inc. Method of making unit filter assemblies. 3,183,286, 5-11-65, Cl. 264—45.

Harpster, Norman R., to Universal-Cyclops Steel Corp. Stainless steels and products thereof. 3,183,080, 5-11-65, Cl. 75—125.

Harrington, Bert S., Jr.: *See—*
Crawford, Louis L., and Harrington. 3,182,365.

Harris, Clyde W., P. S. Sugino, and R. S. Neiswander, to The TE Co. System for optically determining curvature of an object. 3,183,519, 5-11-65, Cl. 351—17.

Harris-Intertype Corp.: *See—*
Cochran, James J. 3,182,542.

Harris, James S., and A. J. Johnson, to A. Teichert & Son, Inc. Hot mix handling plant. 3,182,859, 5-11-65, Cl. 222—132.

Harris, Ransom S., to Owens-Corning Fiberglas Corp. Structural shapes of reinforced sulfur and method of producing same. 3,183,143, 5-11-65, Cl. 161—176.

Harris, Thomas J.: *See—*
Fleisher, Harold, Harris, and Shapiro. 3,182,574.

Harris, Wilbur, and H. M. Day, to United States of America, Army. Temperature independent timing device, dashpot type. 3,182,594, 5-11-65, Cl. 102—82.

Harris, Woodrow D.: *See—*
Wonder, Robert A., and Harris. 3,182,560.

Harrison, Wesley V., to Texas Instruments Inc. Pulse generator utilizing tunnel diode. 3,183,375, 5-11-65, Cl. 307—106.

Harshaw Chemical Co., The: *See—*
Du Rose, Arthur H., and Stern. 3,183,067.

Hart, Walter R., and A. Klein; said Klein assor. to said Hart. Tool for removing and replacing engine mufflers. 3,182,388, 5-11-65, Cl. 29—267.

Hartford, Charles H.: *See—*
Brandt, Roger, and Hartford. 3,183,352.

Hartley, Edward L.: *See—*
Probert, Rhys P., Martin, and Hartley. 3,182,458.

Hartman, Anthony B., J. A. Petrocelli, and T. J. Puzniak, to Gulf Research & Development Co. Recording apparatus. 3,183,515, 5-11-65, Cl. 346—34.

Hartsell, Harold E. Ultrasonic cleaning attachment. 3,182,668, 5-11-65, Cl. 134—77.

Hartung, Homer A., and R. C. Borchert, to Union Carbide Corp. Organopolysiloxanes. 3,183,209, 5-11-65, Cl. 260—46.5.

Harvey, Richard F., to Metaltronics, Inc. Apparatus for improving the writing characteristics of ball point pens. 3,182 344, 5-11-65, Cl. 15—94.

Hassmann, Harry F., to United States of America, Army. Igniter assembly containing strands of benite. 3,182,595, 5-11-65, Cl. 102—86.5.

Hawk, Carl D.: *See—*
Widell, George M., and Hawk. 3,182,450.

Hawkins, David M., and T. J. Dolphin, to Westinghouse Electric Corp. Field regulator for dynamoelectric machine. 3,183,427, 5-11-65, Cl. 318—350.

Hawks, Robert L., to F & F Enterprises, Inc. Automatic hooker. 3,182,418, 5-11-65, Cl. 43—15.

Hawley, Jesse G., J. W. Runner, and A. W. Cook, to The Goodyear Tire & Rubber Co. Self-energizing hinge type ring disc brake. 3,182,756, 5-11-65, Cl. 188—78.

Haworth, Daniel T., to Allis-Chalmers Mfg. Co. Fuel cell electrode. 3,183,123, 5-11-65, Cl. 136—86.

Haworth, Robert C.: *See—*
Emery, Edgar F. and F. D. 3,182,940.

Hawthorn Co., a division of Kellwood Co.: *See—*
Biller, George J., Jr. 3,182,672.

Hawver, Albert J. Occupant controlled acrobatic amusement and exercise device. 3,183,020, 5-11-65, Cl. 280—208.

Hawxhurst, John E.: *See—*
Haney, Donald W., and Hawxhurst. 3,182,993.

Haydon, Arthur W., to Consolidated Electronics Industries Corp. Magnetically coupled constant speed system. 3,183,426, 5-11-65, Cl. 318—302.

Healy, Lawrence G.: *See—*
Townsend, Frederick H., and Healy. 3,183,388.

Heckt, Heinz, to G. Dusterloh, Fabrik fur Bergewerksbedorf G.m.b.H. Compressed air operable starter for internal combustion engines. 3,182,650, 5-11-65, Cl. 123—179.

Hegeman, Andrew R., to R. Hoe & Co., Inc. Roller socket mounting. 3,183,045, 5-11-65, Cl. 308—15.

Heim, Roger, A. Hofmann, A. Brack, H. Kobel, and R. Cailleux, to Sandoz Ltd. Obtaining psilocybin and psilocin from fungal material. 3,183,172, 5-11-65, Cl. 195—80.

Heischman, Frederick E.: *See—*
Rue, Charles V., Fisher, and Heischman. 3,183,071.

Heldenbrand, Russell C. Manipulating apparatus for press fitting and welding a split sleeve around drill pipe. 3,182,880, 5-11-65, Cl. 228—6.

Helfenberger, Hans: *See—*
Schuler, Max, Helfenberger, and Lutz. 3,183,258.

Helfrich, Wayne J., to Allis-Chalmers Mfg. Co. Rotary kiln. 3,182,980, 5-11-65, Cl. 263—33.

Hemmeter, George T. Controlled pneumatic jack. 3,182,959, 5-11-65, Cl. 254—93.

Hemmings, James F. W.: *See—*
Hulme, John H., Hemmings, and Turley. 3,182,689.

Hennessey, Walter F., Jr., to The Bendix Corp. Electrical connector. 3,183,468, 5-11-65, Cl. 339—45.

Henry, Robert L., to The Cincinnati Milling Machine Co. Motor control apparatus. 3,183,397, 5-11-65, Cl. 314—71.

Henry, William F., H. C. Scheer, and H. P. Wicklund, to International Business Machines Corp. Record perforating apparatus. 3,183,518, 5-11-65, Cl. 346—76.

Herchenroeder, Louis W., to Westinghouse Electric Corp. Digital positional servo apparatus. 3,183,421, 5-11-65, Cl. 318—28.

Hercules Powder Co.: *See—*
Hewson, William B. 3,183,200.

Hergenrother, Rudolf C., to Raytheon Co. Beam focusing magnet. 3,183,398, 5-11-65, Cl. 315—3.5.

Heritier, Francis R., to Geecen Ltd. Taximeters. 3,182,906, 5-11-65, Cl. 235—30.

Hermanns, Martin J., to Dana Corp. Operating mechanism including as assist device. 3,182,443, 5-11-65, Cl. 60—10.5.

Herr, Ross: *See—*
Argoudelis, Alexander D., De Boer, Eble, and Herr. 3,183,154.

Herremans, Edgard M. G., ½ to F. Leidgens. Shoe heel with a detachable wear lift. 3,182,409, 5-11-65, Cl. 36—42.

Hertz, William H.: *See—*
Kurtz, Ronald A., Kurtz, and Hertz. 3,183,086.

Hesse-Eastern, Inc.: *See—*
Choate, Paul V., and Weeks. 3,182,553.

Hewitt-Robins Inc.: *See—*
Donadio, Vincent J., Bankauf, and Skinner. 3,182,788.
Johnson, Charles E. 3,182,848.

Hewson, Colin T., to Rolls-Royce Ltd. Axial flow compressor or fan and gas turbine engine provided therewith. 3,182,898, 5-11-65, Cl. 230—116.

Hewson, William B., to Hercules Powder Co. Preparation of liquid urea formaldehyde condensates and condensates so produced. 3,183,200, 5-11-65, Cl. 260—29.4.

Heydt, Gerald B., and C. R. Whitney, to The Carpenter Steel Co. High temperature austenitic alloy. 3,183,084, 5-11-65, Cl. 75—171.

Hicks, Clive L.: *See—*
Yeo, Alan A., Hicks, and Mowll. 3,183,182.

Hieber, Ellsworth E., to Schulz Tool and Mfg Co. Seal and structure for supporting the same. 3,182,569, 5-11-65, Cl. 92—243.

Higgins, Charles W.: *See—*
Gilson James K., Higgins, Huff, and Stonebraker. 3,183,063.

High Voltage Engineering Corp.: *See—*
Cherubini, Julian H. 3,183,356.

Hill, Frederick K. Upholstered furniture. 3,183,036, 5-11-65, Cl. 297—440.

Hill, Raymond R. Carburetor. 3,182,974, 5-11-65, Cl. 261—20.

Hind, Harry W.: *See—*
Szekely, Ivan J., and Hind. 3,183,152.

Hipszer, Thomas J., and N. Royle, to Superior Tube Co. Cathode sleeve with flanges crimped against ceramic disc. 3,183,394, 5-11-65, Cl. 313—270.

Hirsch, Arthur G., and R. E. Van Strien, to Standard Oil Co. Esters of trimellitic anhydride. 3,183,248, 5-11-65, Cl. 260—346.3.

Hirsch, Max M., to United States of America, Army. Modulated power measuring bridge with automatic A.C. and D.C. rebalancing. 3,183,438, 5-11-65, Cl. 324—106.

Hiscock, Earle F., to Kip, Inc. Coffee packet and synthetic filter paper utilized therein. 3,183,096, 5-11-65, Cl. 99—77.1.

Hivac Ltd.: *See—*
Craker, Noel D., Stenning, and Cotton. 3,183,392.

Hoag, Lehman E., to American Can Co. Glass container. 3,182,839, 5-11-65, Cl. 215—1.

Hodge, Edward B., to Commercial Solvents Corp. Petroleum lubricants stabilized with bactericides. 3,183,188, 5-11-65, Cl. 252—49.5.

Hodge, Edward B., to Commercial Solvents Corp. Petroleum lubricants stabilized with bactericides. 3,183,189, 5-11-65, Cl. 252—49.5.

Hoe, R., & Co., Inc.: *See—*
Hegeman, Andrew R. 3,183,045.

Hoeppner, Arthur D., to Bemis Bro. Bag Co. Methods of making bags. 3,182,430, 5-11-65, Cl. 53—29.

Hoffman, Jay: *See—*
Krupick, Walter J., Hoffman, and Ballester. 3,182,514.

Hoffmann, Anton R. Cutting tool. 3,182,534, 5-11-65, Cl. 82—35.

Hoffmann-La Roche, Inc.: *See—*
Kiss, Joseph, Spiegelberg, and Vaterlaus. 3,183,247.

Hoffrogge, Christian, to Wenczler & Heidenhain, Fa. Apparatus for compensation of the error of a guide on measuring devices and tool machines. 3,182,375, 5-11-65, Cl. 29—1.

Hoffswell, Wilbur J., to R. R. Donnelley & Sons Co. Method of and apparatus for stacking sheets. 3,182,996, 5-11-65, Cl. 271—68.

Hofmann, Albert: *See—*
Heim, Roger, Hofmann, Brack, Kobel, and Cailleux. 3,183,172.

Holberg, Douglas I.: *See—*
Bischoff, Garth L., and Holberg. 3,182,857.

Holcroft & Co.: *See—*
Walker, Arthur. 3,182,981.

Holden, Dermot F., and R. R. Nydegger, to Fibre Formations, Inc. Shredded pulp and method for making shredded pulp bats. 3,183,141, 5-11-65, Cl. 161—43.

Holderer, Oscar C., to United States of America, National Aeronautics and Space Administration. Electric arc driven wind tunnel. 3,182,496, 5-11-65, Cl. 73—147.

Holland, Frank H., to The Clark Controller Co. Electrical control circuits. 3,183,377, 5-11-65, Cl. 307—113.

Holley Carburetor Co.: *See—*
Kaminski, Walter R. 3,182,446.
Schneider, Alfred, Frank, and Fichuk. 3,182,648.

Hollister, Allen R., to Pratt & Whitney Inc. Fluid gage adjusting unit. 3,182,488, 5-11-65, Cl. 73—37.5.

Holloway, Kenneth D.: *See—*
Reynolds, James E., and Holloway. 3,183,130.

Holmstrom, John G., to Pacific Car and Foundry Co. Vehicle spring suspension employing torsion spring mechanism. 3,183,018, 5-11-65, Cl. 280—104.5.

Holovka, Charles, Jr.: *See—*
Eichorn, Robert N., and Holovka. 3,182 540.

Homeyer, Bernhard, and J. Johannis, to Farbenfabriken Bayer Aktiengesellschaft. Process for controlling nematodes with phenyldichlorovinyl ethers. 3,183,147, 5-11-65, Cl. 167—30.

Honeywell Inc.: *See—*
Bloch, Richard M., Deerfield, and Marsh. 3,183,488.
Sato, Takehiko, and Akiyama. 3,182,457.

Hoosier Crown Corp., The: *See—*
Caviglia, Enzo P. 3,183,144.

Hoover Ball and Bearing Co.: *See—*
Rupp, William L. 3,182,969.

Hoover Co., The: *See—*
Young, Sidney A. 3,182 518.

Hopff, Heinrich, and H. Metzler, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Production of polyoxymethylenes. 3,183,212, 5-11-65, Cl. 260—67.

Hornberger, Harry M., Sr., to Wm. G. Leininger Knitting Co. Surplus thread removing apparatus. 3,182,620, 5-11-65, Cl 112—252.

Hornbostel, Lloyd, Jr., and L. B. Ward, to Beloit Corp. Bearing failure predicting device. 3,183,500, 5-11-65, Cl. 340—269.

Horowitz, Charles: *See—*
Berg, Arthur A., Dobrikin, and Horowitz. 3,182,566.

Horowitz, Charles, H. L. Dobrikin, and V. Mastis, to Berg Mfg. & Sales Co. Cylinder closure structure. 3,182,849, 5-11-65, Cl. 220—46.

Horton, Harold B., to Sperry Rand Corp. System and apparatus for producing, maintaining and controlling laminar fluid stream flow. 3,182,674, 5-11-65, Cl. 137—81.5.

Hosier, Richard D. Automatic watering device. 3,182,914, 5-11-65, Cl. 239—63.

Hosiery Equipment Ltd.: *See—*
Deakin, Cyril R. 3,182,862.

Hotchkiss, Stuart E.: *See—*
Thompson, James R., Hotchkiss, and Kleist. 3,182,549.

Hoven, Alfred C., and W. E. Nordmark, to American Seating Co. Theater chair backs and method of cushion assembly. 3,182,377, 5–11–65, Cl. 29—91.1.
Hovercraft Development Ltd.: *See*—
  Cockerell, Christopher S. 3,182,739.
  Cockerell, Christopher S. 3,182,740.
Howard, Robert C., to Giannini Controls Corp. Servo test system with component resolver. 3,183,440, 5–11–65, Cl. 324—158.
Howe, Wilfred C.: *See*—
  Midis, Anthony M., and Howe. 3,183,408.
Howell, Richard A., to Martin-Marietta Corp. Means for decontaminating fluid systems. 3,182,670, 5–11–65, Cl. 134—107.
Hubbard, Warren E., to American Excelsior Corp. Method of making excelsior. 3,182,696, 5–11–65, Cl. 144—320.
Hubensack, Walter: *See*—
  Weydans, Wilhelm, Hubensack, and Ronnenberg. 3,182,660.
Hudson, Archie C. Garbage disposal units. 3,183,050, 5–11–65, Cl. 312—270.
Huff, Wayne O.: *See*—
  Gilson, James K., Higgins, Huff, and Stonebraker. 3,183,063.
Huffman, Tommie R., to Motorola, Inc. Semiconductor diffusion method. 3,183,131, 5–11–65, Cl. 148—189.
Hug, Rudolf, to Proplasto A.G. Container. 3,182,842, 5–11–65, Cl. 215—13.
Hughes Aircraft Co.: *See*—
  Ajioka, James S. 3,183,511.
Hull, Robert L.: *See*—
  Miller, Charles A., and Hull. 3,183,245.
Hulme, John H., J. F. W. Hemmings, and A. Turley, to Vono Ltd. Spring unit lacing machines. 3,182,689, 5–11–65, Cl. 140—93.
Huml, James O.: *See*—
  Layne, Gilbert S., Huml, and Smith. 3,183,079.
Hunt, Heman D., to E. I. du Pont de Nemours and Co. Process of forming images. 3,183,088, 5–11–65, Cl. 96—27.
Hunt, Philip M., to Orbit Industries, Inc. Telephone isolation device. 3,183,309, 5–11–65, Cl. 179—35.
Hunter, James H., to The Upjohn Co. Process for transforming 1-β-D-xylofuranosyl-uracil nucleosides into 1-β-D-arabinofuranosyluracil nucleosides. 3,183,226, 5–11–65, Cl. 260—211.5.
Huntley, Roy A. Composite bow and hand grip for the same. 3,182,651, 5–11–65, Cl. 124—24.
Hurth, Carl, Maschinen- und Zahnradfabrik: *See*—
  Hurth, Fritz. 3,182,557.
Hurth, Fritz, to Carl Hurth Maschinen- und Zahnradfabrik. Apparatus for shaving gears. 3,182,557, 5–11–65, Cl. 90—1.6.
Hurwitz, Henry, Jr., to General Electric Co. Electric generation. 3,183,379, 5–11–65, Cl. 310—11.
Hurwitz, Henry, Jr., and G. W. Sutton, to General Electric Co. Electrode structure for magnetohydrodynamic device. 3,183,380, 5–11–65, Cl. 310—11.
Hurwitz, Henry, Jr., and H. R. Koenig, to General Electric Co. Magneto hydrodynamic fluid accelerator and compressor. 3,183,403, 5–11–65, Cl. 315—111.
Hurwitz, Melvin D., to Rohm & Haas Co. Non-aqueous solutions of acrylic ester/acid copolymers and thermosetting alkylated aminoplast resin-forming condensate. 3,183,282, 5–11–65, Cl. 260—856.
Hushebeck, Henry R., to Joseph Bancroft & Sons Co. Methylenation catalyst. 3,183,195, 5–11–65, Cl. 252—428.
Hutchison, Gibson T., to Crane Co. Control valve. 3,182,684, 5–11–65, Cl. 137—606.
Huth, Carl A., to American Can Co. Gauging mechanism. 3,182.994, 5–11–65, Cl. 271—49.
Hyde, John A. C., to Ruston & Hornsby Ltd. Construction of turbomachinery blade elements. 3,182,955, 5–11–65, Cl. 253—39.1.
Hydril Co.: *See*—
  Knox, Granville S. 3,182,524.
Hydrocarbon Research, Inc.: *See*—
  Johanson. Edwin S. 3,182.461.
  Schuman, Seymour C. 3,183 179.
  Schuman, Seymour C., Wolk, and Chervenak. 3,183,180.
  Wolk, Ronald. 3,183,178.
Hyland, William A., to Deere & Co. Bearing seal. 3,183,046, 5–11–65, Cl. 308—19.
Iddings, Charles D.: *See*—
  Woolslayer, Homer J., Jenkins, and Iddings. 3,183,019.
Ideal Industries, Inc.: *See*—
  Oehlerking, Dean. 3.182,532.
  Phillips, James F. 3,182,389.
Ilikon, Corp.: *See*—
  Rogen, Neil E. 3.182,507.
Illinois Tool Works, Inc.: *See*—
  Rapata, George M. 3,182,516.
  Rapata, George M. 3,182,544.
Illo, Joseph. Bar unscrambling machine. 3,182,816, 5–11–65, Cl. 214—1.
Imhof, Herman A., to United Shoe Machinery Corp. Strand guiding devices. 3,182,926, 5–11–65, Cl. 242—157.
Imperial Chemical Industries Ltd.: *See*—
  Baird, William, Jones, and Deverell-Smith. 3,183,202.
Industrial Research Products, Inc.: *See*—
  Carlson, Elmer V., and Pyle. 3,182.384.
Industriele Onderneming W. H. Braskamp, N.V.: *See*—
  Braskamp, Willem H. 3,182,370.
Ingersoll-Rand Co.: *See*—
  Burnett Elmer B. 3,182,456.
  Smith, George N. 3,182,470.
Insulated Mfg. Co. Ltd.: *See*—
  Emery, Edgar F. and F. D. 3,182,940.
Interchemical Corp.: *See*—
  Yuska, Henry, Lynch, and Barry. 3,183,117.

International Business Machines Corp.: *See*—
  Baycura, Orestes M., and Essinger. 3,183,429.
  Brode, Gerald D. 3,183,366.
  Chin, Pao H. 3,183,372.
  Christiansen, Richard A., Stockdale, and Tashjian. 3,183,484.
  Clapper, Genung L. 3,183,303.
  Eichorn, Robert N., and Holovka. 3,182,540.
  Fleisher, Harold, Harris, and Shapiro. 3,182,574.
  Flora, James. 3,183,410.
  Haney, Donald W., and Hawxhurst. 3,182,993.
  Henry, William F., Scheer, and Wicklund. 3,183,518.
  Jones, Fred B. 3,183,486.
  Laurer, George J., and Southard. 3,183,489.
  Miller, Raymond E. 3,183,491.
  Ross, Bernard J. 3,183,368.
  Sedor, John, and Strup. 3,182,876.
  Sliter, Donald D. 3,183,516.
  Sporer, Alfred H., and Allman. 3,183,091.
  Trampel, Kurt M. 3,183,370.
  Trampel, Kurt M. 3,183,371.
  Vinal, Albert W. 3,183,493.
  Westenskow, Carl E. 3,183,420.
  Wortsman, Donald. 3,183,342.
International Machinery Corp. S.A.: *See*—
  Mencacci, Samuel A., and Bentley. 3,182,583.
International Nickel Co., Inc., The: *See*—
  Sigsworth, Arthur C. M. 3,183,064.
International Pipe and Ceramics Corp.: *See*—
  Olivier, Daniel E. 3,183,011.
International Telephone & Telegraph Corp.: *See*—
  Ligotky, Harri K. 3,183 365.
  Midis Anthony M., and Howe. 3,183,498.
  Pickering, Thomas A. 3,183,364.
Intron International, Inc.: *See*—
  Pintell. Robert H. 3,183,432.
Iowa State University Research Foundation, Inc.: *See*—
  Bolie, Victor W. 3,182,335.
Isaacs, Philip K.: *See*—
  Nimoy. Melvin, Dearborn, and Isaacs. 3,183,207.
Isbrandtsen Co., Inc.: *See*—
  Betjemann, Christopher. 3,182,424.
Ishibashi, Akira, to Nippon Reizo Kabushiki Kaisha. Automatic egg-laying recording apparatus. 3,183,514, 5–11–65, Cl. 346—25.
Ishii, Kinji, to Kabushikikaisha Yokogawa Denki Seisakusho (Yokogawa Electric Works Ltd.). Rotameter transmitter. 3.182,500, 5–11–65, Cl. 73—209.
Ivanoff, Alexander, to Tyler, Hayward, & Co. Ltd. Stirrers or mixers. 3,182,970, 5–11–65, Cl. 259—95.
Jachimowicz, Ludwik, and J. A. Olszewski, to General Cable Corp. Electrical cable having a laminated corrugated sheath. 3,183,300, 5–11–65, Cl. 174—106.
Jacobaeus, Anton C., to Telefonaktiebolaget L M Ericsson. Exchange for automatic data transmission in telephone systems. 3,183,306, 5–11–65, Cl. 179—2.
Jakob, Franz, and K. Wagner, to Agfa Aktiengesellschaft. Camera capable of being operated in a fully automatic or semi-automatic manner. 3,182,575, 5–11–65, Cl. 95—10.
Jarrett, Arthur D., to Polaroid Corp. Photographic products, processes, and compositions employing azo dye developers. 3,183,090, 5–11–65, Cl. 96—29.
Jasinski, Raymond J., to Allis-Chalmers Mfg. Co. Method of making a fuel cell electrode. 3,183,124, 5–11–65, Cl. 136—122.
Jenkins, Cecil: *See*—
  Woolslayer, Homer J., Jenkins, and Iddings. 3,183,019.
Jenkins, Merrill M. E., Sr., to Coin Acceptors, Inc. Coin-operated pulse generator. 3,182,780, 5–11–65, Cl. 194—9.
Jenner, Myron. Package. 3,182,791, 5–11–65, Cl. 206—56.
Jennings, Roger G., to Pacific Vegetable Oil Corp. Erecting partition walls. 3,182,423, 5–11–65, Cl. 50—70.
Jensen, Arthur S., and M. P. Siedband, to Westinghouse Electric Corp. Pickup tube with dark current supply source. 3,183,400, 5–11–65, Cl. 315—11.
Jentzsch, Dietrich. to Bodenseewerk Perkin-Elmer & Co. G.m.b.H. Method of making capillary columns. 3,182,394, 5–11–65, Cl. 29—460.
Jespersen, Oliver, to Ampeg Co., Inc. Portable sound system. 3,183.305, 5–11–65, Cl. 179—1.
Johannis, Jürgen: *See*—
  Homeyer Bernhard, and Johannis. 3,183,147.
Johanson, Edwin S., to Hydrocarbon Research, Inc. Natural gas liquefaction and separation. 3,182,461, 5–11–65, Cl. 62—13.
Johnson, Arthur J.: *See*—
  Harris, James S., and Johnson. 3,182,859.
Johnson, Charles E., to Hewitt-Robins Inc. Movable roof drainage system. 3,182,848, 5–11–65, Cl. 220—26.
Johnson, Clarence. Force measuring instrument. 3,182,495, 5–11–65, Cl. 73—141.
Johnson, Eldon A., to ACF Industries, Inc. Fuel pump. 3 182,601, 5–11–65, Cl. 103—150.
Johnson, James R., to Johnson Operating Corp. Print roll adjusting means for printing apparatus. 3,182,590, 5–11–65, Cl. 101—248.
Johnson & Johnson: *See*—
  Harmon, Carlyle, and Griswold. 3,183,187.
Johnson Operating Corp.: *See*—
  Johnson, James R. 3,182,590.
Johnston Frank C., and P. Krauss, to General Electric Co. Busway with resiliently bowed housing. 3,183,299, 5–11–65, Cl. 174—99.
Johnston, Frank C., and P. Krauss, to General Electric Co. Method of forming apertured hollow insulated busbars. 3,182,381, 5–11–65, Cl. 29—155.5.
Joiner, Robert R.: *See*—
  Marks, Henry C., Joiner, and Glasgow. 3,183,057.

Jones, Allen P., B. L. Jones, Sr., and J. A. Zitz, to FMC Corp. Web winding apparatus and method. 3,182,924, 5–11–65, Cl. 242—68.1.
Jones, Bennett L., Sr.: *See*—
  Jones, Allen P., B. L. Jones, Sr., and Zitz. 3,182,924.
Jones, Cecil D.: *See*—
  Thom, Wenzel W. 3,182,963.
Jones, Charles H., J. H. Thompson, and G. R. Douglas, to Westinghouse Electric Corp. Angular velocity measuring device. 3,182,512, 5–11–65, Cl. 73—505.
Jones, Fred B., to International Business Machines Corp. Core memory addressing system. 3,183,486, 5–11–65, Cl. 340—166.
Jones, Gwilym T.: *See*—
  Baird, William, Jones, and Deverell-Smith. 3,183,202.
Jones, Louis B. Freight carrying apparatus. 3,182,610, 5–11–65, Cl. 105—368.
Jonkers, Cornelius O., and F. H. Fockens, to C. van der Lely, N.V. Controlling mechanisms and hydraulically operated power transmission systems. 3,182,454, 5–11–65, Cl. 60—53.
Jordan, Ernst. Helical locking washers. 3,182,704, 5–11–65, Cl. 151—36.
Joy Mfg. Co.: *See*—
  Lorenz, George G. 3,182,787.
Jueng, Carl F., to H. H. Robertson Co. Composite gravity ventilator. 3,182,580, 5–11–65, Cl. 98—42.
Jungemann, Luther J.: *See*—
  Hames, William A., Jr., Jungemann, and Sisk. 3,182,899.
Juptner, Wilhelm. to C. P. Clare & Co. Method of making sealed switches. 3,182,382, 5–11–65, Cl. 29—155.55.
Jurgeleit, Hans W., to Koppers Co., Inc. Incorporating finely divided particles during suspension polymerization. 3,183,208, 5–11–65, Cl. 260—41.
Juve, Arthur E.: *See*—
  Beatty, James R., Juve, and Karper. 3,182,494.
Kabushikikaisha Yokogawa Denki Seisakusho (Yokogawa Electric Works Ltd.): *See*—
  Ishii, Kinji. 3,182,500.
Kaegi, Karl: *See*—
  Benz, Jakob, Burkhard, Kaegi, and Von Tobel. 3,183,224.
Kaken Kagaku Kabushiki Kaisha: *See*—
  Sumiki, Yusuke, Umezawa, Fukunaga, Yonehara, Kubo, Fujita, Shirato, Takaga, Kato, Esumi, and Ono. 3,183,153.
Kalvelage. Bernard F., and A. W. Coe, to Motorola, Inc. Method for dicing semiconductor material. 3,182,873, 5–11–65, Cl. 225—2.
Kaminski, Walter R., to Holley Carburetor Co. Flow control valve. 3,182,446, 5–11–65, Cl. 60—35.5.
Karlan, Sidney I.: *See*—
  Cohen, Murray S., Green, Karlan, and Mayes. 3,183,216.
Karmazin, John. Apparatus and method for manufacturing tube sections for heat exchangers. 3,182,483, 5–11–65, Cl. 72—350.
Karoly, Robert E. Framed sign. 3,182,413, 5–11–65, Cl. 40—10.
Karper, Paul W.: *See*—
  Beatty. James R., Juve, and Karper. 3,182,494.
Karppinen, Charles E., and F. G. Rising, to American Radiator & Standard Sanitary Corp. Thermostatic valve. 3,182,910, 5–11–65, Cl. 236—34.
Kasper, Robert J., to The Ohio Crankshaft Co. Temperature control apparatus. 3,183,294, 5–11–65, Cl. 13—27.
Kasten Walter, and R. L. Landree, to The Bendix Corp. Unitary contamination sensitive fuse and separator element assembly. 3,182,800, 5–11–65, Cl. 210—96.
Kato, Masaji: *See*—
  Sumiki, Yusuke, Umezawa, Fukunaga, Yonehara, Kubo, Fujita. Shirato, Takaga, Kato, Esumi, and Ono. 3,183,153.
Kaufman, David M.: *See*—
  Kaufman, Stanley R. and D. M. 3,182,351.
Kaufman, Stanley R. and D. M. Mounting structural members. 3,182,351, 5–11–65, Cl. 16—130.
Kaye. Seymour M., to United States of America, Army. Method of delaying the ignition of white phosphorus incendiary compositions. 3,183,132, 5–11–65, Cl. 149—29.
Kehoe, James W.: *See*—
  Doyle, Donald J., and Kehoe. 3,182,894.
Kelbel, Donald W.: *See*—
  Armantrout, Kenneth M., and Kelbel. 3,182 629.
Kelemen, Ladislav, to The Goodyear Tire & Rubber Co. Combined turbo- and friction-brake with adjustable shrouding means and control means therefor. 3,182,759, 5–11–65, Cl. 188—86.
Keller, William A., and T. G. Willis, to Westinghouse Electric Corp. Instrument mounting assembly. 3,183,408, 5–11–65, Cl. 317—104.
Kelly, Joe T.: *See*—
  Schoen, William, and Kelly. 3,183,280.
Kelly, Ronald B.: *See*—
  Bhuyan, Bijoy K., Kelly, and Smith. 3,183,157.
Kelly William D., to Ferro Corp. Heating unit. 3,183,340, 5–11–65, Cl. 219—455.
Kelsey-Hayes Co.: *See*—
  Pulkownik, Lawrence E., and Ayers. 3,182,562.
  Sharpe, Frederick P. 3,182,484.
  Stelzer, William. 3,182,760.
Kendall Co., The: *See*—
  Schaar, Charles H. 3,183.116.
Kendall, James M., and G. W. Payne, to United States of America, Navy. High precision manometer. 3.182,509, 5–11–65 Cl. 73—393.
Kerney. Francis W., M. Gershon, D. Zimmet, to Thiokol Chemical Corp. Energy absorber. 3,182,449, 5–11–65, Cl. 60—35.6.

Ketterer, Richard J., to General Electric Co. Process for preparing bonded reconstituted mica. 3,183,115, 5–11–65, Cl. 117—65.2.
Keuffel & Esser Co.: *See*—
  Schlesinger, Heinz, and Muller. 3,183,093.
Kiceniuk, Taras, and A. J. Acosta, to Edcliff Instruments. Stabilized test head. 3,182,927, 5–11–65, Cl. 244—1.
Kiely, Richard H., to General Electric Co. Push button switch detent arrangement. 3,183,315, 5–11–65, Cl. 200—5.
Kimball, A., Co.: *See*—
  Parker, Charles A. 3,182,821.
Kimball Systems, Inc.: *See*—
  Braun, Karl J.: *See*—
  Braun, Karl J. 3,182,992.
Kinal, Lubomyr: *See*—
  Oddy, Edward P., and Kinal. 3,182,481.
Kingston Products Corp.: *See*—
  Meyer, Robert B., and Findley. 3,183,475.
Kip, Inc.: *See*—
  Hiscock, Earle F. 3,183,096.
Kirchner, Henry P., to Cornell Aeronautical Laboratory, Inc. Wall structure suitable for exposure to high temperature gas. 3,182,469, 5–11–65. Cl. 62—467.
Kiss, Joseph, H. Spiegelberg, and B. P. Vaterlaus, to Hoffman-La Roche, Inc. Galactonolactones, derivatives thereof, and process for their preparation. 3,183,247, 5–11–65, Cl. 260—343.6.
Kitai, Atsuo, I. Kitamura, N. Miyachi, and A. Ozaki, to Sanraku Ocean Kabushiki Kaisha. Method of L-amino acid manufacture. 3,183,170, 5–11–65, Cl. 195—30.
Kitamura, Iwao: *See*—
  Kitai, Atsuo, Kitamura, Miyachi, and Ozaki. 3,183,170.
Kitz, Norbert, H. L. Mansford, J. G. Lloyd, to Bell Punch Co. Ltd. Control circuits for multicathode indicating devices. 3,183,404, 5–11–65, Cl. 315—135.
Klager, Wallace K., to Cutler-Hammer, Inc. Measuring system. 3,182,402, 5–11–65, Cl. 33—132.
Klein, Alexander: *See*—
  Hart, Walter R., and Klein. 3,182,388.
Kleein, Arthur, and P. Enders, to H. A. Waldrich, G.m.b.H. Method and apparatus for regulating the speed of rotating bodies. 3,182,429, 5–11–65. Cl. 51—134.5.
Klein, Hermann, to Robert Bosch, G.m.b.H. Starting-motor transmission for internal combustion engines. 3,182,515, 5–11–65, Cl. 74—7.
Kleist, Leroy C.: *See*—
  Thompson, James R., Hotchkiss, and Kleist. 3,182.549.
Klimstra, Paul D., to Searle. G. D., & Co. (Optionally 17,alkylate) androst-3-ene-5β,17β-diols and esters thereof. 3,183,253 5–11–65, Cl. 260—397.5.
Kling, Harry P . *See*—
  Neal, Jackson, and Kling. 3,182,392.
Klinger, Gunther H., to General Aniline & Film Corp. Color couplers containing a tertiary amino group. 3,183,095, 5–11–65. Cl. 96—100.
Klinger, Guy G., to The Electric Storage Battery Co. Spectacle mounting for gas mask. 3,182,658, 5–11–65, Cl. 128—141.
Klotzbach, Kurt, to Maschinenfabrik Sack G.m.b.H. Apparatus for changing the position of bar stock moving over a roll table. 3,182,834, 5–11–65, Cl. 214—338.
Knapsack-Griesheim Aktiengesellschaft: *See*—
  Gemmer, Erwin. 3,183,113.
  Sopicki, Walter, and Hannappel. 3,183,336.
Kniege, Wilfried, and K. Schnurrbusch, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of self-sealing organopolysiloxane compositions. 3,183,206, 5–11–65, Cl. 260—37.
Knobel, Max: *See*—
  Vergobbi, Robert W., Knobel, and Trusselle. 3,182.691.
Knowles, Thomas A., and H. A. Schroeder, to Olin Mathieson Chemical Corp. Bis(azidodiarylphosphine) decaboranes and a process for their preparation. 3,183,251, 5–11–65, Cl. 260—349.
Knox, Granville S., to Hydril Co. Valve operator. 3,182,524, 5–11–65, Cl. 74—625.
Knox Mfg. Co.: *See*—
  Petrick, Edward J. 3,182,714.
Kobe, Inc.: *See*—
  McArthur, Ralph F., and M. R. Mecusker. 3,182,596.
Kobe Steel Works, Ltd.: *See*—
  Asari, Akira. 3,182,478.
Kobel, Hans: *See*—
  Heim, Roger, Hofmann, Brack, Kobel, and Cailleux. 3,183,172.
Koblischek, Peter: *See*—
  Dithmar, Karl, Koblischek, and Naujoks. 3,183,242.
Koch, H., & Sons: *See*—
  Gaylord, John A. 3,182.928.
Koch, John J., Jr., to Engelhard Industries, Inc. Process for hydrogenating carbocyclic aromatic compounds. 3,183,278, 5–11–65, Cl. 260—667.
Koenig, Harold R.: *See*—
  Hurwitz, Henry, Jr., and Koenig. 3,183,403.
Kolec, Robert F., and E. F. Dean, to Olympic Screw & Rivet Corp. Method and die set for forming socket heads. 3,182,342, 5–11–65, Cl. 10—7.
Koletsky, Harold, and A. L. De Graffenried, to Avien, Inc. Aircraft takeoff monitor. 3,182,498, 5–11–65, Cl. 73—178.
Kolk, Anthony J., Jr.: *See*—
  Chow, Eric T. K., and Kolk. 3,183,492.
Komor, Peter S., to Emerson Electric Co. Multiple thrust bearing structure. 3,183,048, 5–11–65, Cl. 308—160.
Kompanek, Andrew J., Jr., and L. Phelan, to Teleflex Inc. Flexible push-pull cable. 3,183,301, 5–11–65, Cl. 174—108.
Konecsni, Joseph R., to Thompson Ramo Wooldridge Inc. Cast alloy. 3,183,082, 5–11–65, Cl. 75—134.

- Koninklijke Pharmaceutische Fabrieken V/H Brocades Steeman en Pharmacia, N.V. : *See*—
  - Van der Stelt, Cornelis. 3,183,259.
- Konzak, Peter A. Device for repairing the cutter bars of mowers and other types of agricultural machinery. 3,182,396, 5–11–65, Cl. 30—168.
- Koontz, Donald E. : *See*—
  - Becker, Edward J., Koontz, and Maurer. 3,183,396.
- Koppers Co., Inc. : *See*—
  - Brandenbusch, Günter. 3,182,838.
  - Daniels, Joseph. 3,182,920.
  - Jurgeleit, Hans W. 3,183,208.
  - Obenchain, Richard F. 3,182,985.
  - Zellerhoff, Bruno. 3,182,825.
- Korbitz, Norman D. : *See*—
  - Bronson, Robert W., and Korbitz. 3,183,361.
- Korff, Wolfram G. : *See*—
  - Van Poederoyen, Karl S., and Korff. 3,182,581.
- Kozacka, Frederick J., to The Chase-Shawmut Co. Indicating fuse. 3,183,327, 5–11–65, Cl. 200—121.
- Krahe, Donald C. Apparatus and process for handling viscous materials. 3,182,967, 5–11–65, Cl. 259—4.
- Kranzlein, Paul : *See*
  - Engel, Frederico, Kranzlein, and Schafer. 3,183,204.
- Kraus, Thaddaus, to Bendix-Bolzers Vacuum Inc. Process for vacuum degassing. 3,183,077, 5–11–65, Cl. 75—10.
- Krause, Edward H., Jr. : *See*—
  - Foxx, Robert J., and Krause. 3,182,604.
- Krause, Richard P., to Pennsylvania Engineering Corp. Furnace support structure. 3,182,979, 5–11–65, Cl. 263—33.
- Krauss, Paul : *S*——
  - Johnston, Frank C., and Krauss. 3,183,299.
  - Johnston, Frank C., and Krauss. 3,182,381.
- Krofta, Milos. Method and an apparatus for purifying the unclarified waste water in the paper and pulp and like industries. 3,182,799, 5–11–65, Cl. 210—83.
- Krug, John C. : *See*—
  - Barosko, John M., and Krug. 3,182,867.
- Krupick, Walter J., J. Hoffman, and C. J. Ballester, to General Precision, Inc. Two axis case rotating gyroscope. 3,182,514, 5–11–65, Cl. 74—5.
- Kubala, Elisha S. Belt machine. 3,182,572, 5–11–65, Cl. 94—45.
- Kubo, Hideo : *See*—
  - Sumiki, Yusuke, Umezawa, Fukunaga, Yonehara, Kubo, Fufita, Shirato, Takaga, Kato, Esumi, and Ouo. 3,183,153.
- Kubota, Hiroaki : *See*—
  - Shimeha, Jiro, Ozawa, Tanaka, Matsumura, and Kubota. 3,183,201.
- Kubota, Yasuharu : *See*—
  - Yasuda, Junichi, and Kubota. 3,183,407.
- Kuczewski de Poray, Marcel C. High speed cyclical rotary mercury switch. 3,183,318, 5–11–65, Cl. 200—32.
- Kuechenmeister, Craig A. Air-bled coaxial injector. 3,182,646, 5–11–65, Cl. 123—119.
- Kuehl, Thomas J., to Fiat Metal Mfg. Co. Inc. Shower cabinet construction. 3,182,767, 5–11–65, Cl. 189—36.
- Kuhn, Heinrich : *See*—
  - Scherer, Otto, Stinmetz, Kuhn, Wetzel, and Grafen. 3,183,277.
- Kuhn, Stephen J. : *See*—
  - Cook, Denys, and Kuhn. 3,183,236.
- Kulite Tungsten Co. : *See*—
  - Kurtz, Ronald A., A. D., and Herz. 3,183,086.
- Kunel, Heinrich. Grooved packing cup. 3,183,009, 5–11–65, Cl. 277—208.
- Kurashiki Rayon Co., Ltd. : *See*—
  - Yoshimura, Yasuo, and Takata. 3,183,203.
- Kurtz, Anthony D. : *See*—
  - Kurtz, Ronald A. and A. D., and Herz. 3,183,086.
- Kurtz, Ronald A. and A. D., and W. H. Herz, to Kulite Tungsten Co. Method of making porous body with imperviously sealed surface. 3,183,086, 5–11–65, Cl. 75—222.
- Kuwata, Tsutomu, Y., Sugawara, and T. Nakazawa, to Mizusawa Kagaku Kogyo Kabushiki Kaishn. Method of preparing spherical active alumina gel and spherical alumina-silica gel. 3,183,194, 5–11–65, Cl. 252—317.
- Kwiatkowski, Herbert. Corrugated structure. 3,182,765, 5–11–65, Cl. 189—34.
- Kyle, James C. : *See*—
  - Curtis, Gerald R., Kyle, and Robinson. 3,183,126.
- Laaksonen, Mauno E. Beam type construction. 3,182,773, 5–11–65, Cl. 189—82.
- Laban, Andre : *See*—
  - ~~Cousteau,~~ Jacques Yvens, Gagnan, Laban, and Mollard. 3,182,622.
- Ladogana, Anthony : *See*—
  - Molla, Charles P., and Ladogana. 3,182,364.
- La Force, Robert C. Carburetor. 3,182,976, 5–11–65, Cl. 261—63.
- La Kaff, Edward P., to Borg-Warner Corp. Cabinet structure. 3,182,846, 5–11–65, Cl. 220—4.
- Lake Center Switch Co. : *See*—
  - Sobeck, Eugene E., and Andresen. 3,182,564.
- Lambert, Reuben B., to Lampel, Inc. Book rack. 3,182,806, 5–11–65, Cl. 211—43.
- Lamburn, Alan S., to Auto Transmissions Ltd. Planetary drive transmission device. 3,182,528, 5–11–65, Cl. 74—740.
- Lamm, Heinz, to Daimler-Benz Aktiengesellschaft. Rotary piston engine. 3,182,641, 5–11–65, Cl. 123—8.
- Lampel, Inc. : *See*—
  - Lambert, Reuben B. 3,182,806.
- Landbouwwerktuigen-en Machinefabriek H. Vissers N. V. : *See*—
  - Den Herder, Willem. 3,183,006.
- Landree, Raymond L. : *See*—
  - Kasten, Walter, and Landree. 3,182,800.
- Larsen, Walter N. : *See*—
  - Rosenberg, Joseph, and Larsen. 3,182,383.
- Larson, Clayton E., to White Metal Rolling & Stamping Corp. Dockboards. 3,182,343, 5–11–65, Cl. 14—72.
- Larson, Louis P., to Crown Zellerback Corp. Container. 3,182,887, 5–11–65, Cl. 229—37.
- Laskey, Norman V. : *See*—
  - Campbell, George T. R., and Laskey. 3,182,669.
- Lauer, Charles A., to Westinghouse Electric Corp. Reversible counter operative to count either binary or binary coded decimal number system. 3,183,369, 5–11–65, Cl. 307—88.5.
- Laurer, George J., and C. D. Southard, to International Business Machines Corp. Data transfer device. 3,183,489, 5–11–65, Cl. 340—172.5.
- Laviano, Sam. Ornamental lamp holder. 3,182,944, 5–11–65, Cl. 248—226.
- Lawrence, Earnest R. Form for concrete slabs. 3,182,948, 5–11–65, Cl. 249—18.
- Layne, Gilbert S., J. O. Huml, and R. D. Smith, to The Dow Chemical Co. Uranium-nobium-aluminum ternary alloy. 3,183,079, 5–11–65, Cl. 75—122.5.
- Layne, Warren K., Sr. Well tool for depositing material in a well. 3,182,723, 5–11–65, Cl. 166—51.
- Leasure, John K., and D. R. Mussell, to The Dow Chemical Co. Method for modifying the growth characteristics of plants. 3,183,076, 5–11–65, Cl. 71—2.7.
- Leavesley, George W., Jr., to The Budd Co. Method of making a positive face vacuum forming mold. 3,183,289, 5–11–65, Cl. 264—220.
- Le Bus, Franklin L., Sr., to Le Bus Royalty Co. Combined fleet angle compensator and braking apparatus. 3,182,961, 5–11–65, Cl. 254—175.
- Le Bus Royalty Co. : *See*—
  - Le Bus, Franklin L., Sr. 3,182,961.
- Lee, Frank A., P. von Wiesenthal, and K. R. Wagner, to Foster Wheeler Corp. Fired heater. 3,182,638, 5–11–65, Cl. 122—240.
- Lee, Glyn E., and W. R. Wragg, to May & Baker Ltd. Isoindolinone derivatives. 3,183,243, 5–11–65, Cl. 260—325.
- Lee, Walter S. Combination pressure-temperature control and valve. 3,182,713, 5–11–65, Cl. 158—129.
- Lefebvre, Yvon : *See*—
  - Deghenghi, Romano, and Lefebvre. 3,183,228.
- Lefevre, Albert, to Charbonnages de France. Transmission system with antenna means for coupling to an insulated conductor. 3,183,443, 5–11–65, Cl. 325—178.
- Lehmann, Guenther W., to United States of America, Navy. Structure for submarine jet propulsion. 3,182,623, 5–11–65, Cl. 114—16.
- Leidgens, Freddy : *See*—
  - Herremans, Edgard M. G. 3,182,409.
- Leijon, Tage N. W., Director : *See*—
  - Bergmann, Hermann G. A. 3,182,831.
- Leininger, Wm. G., Knitting Co. : *See*—
  - Hornberger, Harry M., Sr. 3,182,620.
- Leistiko, Otto, Jr., and C. Sah, to Fairchild Camera and Instrument Corp. Method of making field-effect transistors. 3,183,128, 5–11–65, Cl. 148—186.
- Lemberger, Robert A. Vertical take-off and landing aircraft. 3,182,929, 5–11–65, Cl. 244—12.
- Lemke, Albert E., to Aerojet-General Corp. Solid propellant compositions containing iron catalyst. 3,183,133, 5–11–65, Cl. 149—40.
- Lephilibert, Jean : *See*—
  - Chemin, Paul, and Lephilibert. 3,183,162.
- Lerma, Stephen L., to C & C Button & Trimming Co., Inc. Fabric covered button. 3,182,369, 5–11–65, Cl. 24—92.
- Lessmann, Gerald G., and R. L. Phebus, to Westinghouse Electric Corp. Article produced by metals joining and method for producing such article. 3,183,066, 5–11–65, Cl. 29—193.
- Le Von, Ernest F. : *See*—
  - Cusic, John W., and Le Von. 3,183 229.
- Levy, Joseph, to Universal Oil Products Co. Esters of diphenyl acetohydroxamic and alpha-hydroxy-diphenyl acetohydroxamic acids with tertiary amino alcohols. 3,183,255, 5–11–65, Cl. 260—453.
- Levy, Mortimer : *See*—
  - Clark, Harold E., Gundlach, and Levy. 3,182,573.
- Lewis, Allen I. : *See*—
  - France, Leonard L., Lewis, Ammon, and Richardson. 3,183,085.
- Lexsuco, Inc. : *See*—
  - Curtis, Frank W. 3,183,139.
- Leybold Holding A.G. : *See*—
  - Bachler, Werner G. 3,182,896.
- Libbey-Owens-Ford Glass Co. : *See*—
  - Beckham, Robert R. 3,182,433.
- Licitis, Gunars : *See*—
  - Glass, Marvin I., and Licitis. 3,182 421.
- Ligotky, Harri K., to International Telephone & Telegraph Corp. Electronic counter or scanner using memory means and logic gates. 3,183,365, 5–11–65, Cl. 307—88.5.
- Lilly, Eli, and Co. : *See*—
  - Garbrecht, William L., and Lin. 3,183,234.
- Limberger, Walter, to Lumoprint Zindler KG. Apparatus for making copies. 3,182,578, 5–11–65, Cl. 95—77.5.
- Lin, Taung-Min : *See*—
  - Garbrecht, William L., and Lin. 3,183,234.
- Ling-Temco-Vought, Inc. : *See*—
  - Beasley, Jack M., and Greenewald. 3,183,293.
  - Merington, Richard N. 3,183,450.
- Linotype G.m.b.H. : *See*—
  - Starck, Leon. 3,182 904.
- Lins, Raymond G. Cutting solid dielectric material with radio-frequency energy. 3,183,339, 5–11–65, Cl. 219—383.
- Lippincott, Samuel B. : *See*—
  - Bartlett, Jeffrey H., and Lippincott. 3,183,187.
- Lisowski, John R., to Sperry Rand Corp. Error detection apparatus. 3,183,483, 5–11–65, Cl. 340—146.1.
- Little, Arthur D., Inc. : *See*—
  - Casey, Robert F. 3,183,503.

- Liu, Chien, and C. W. McMillin, to American Machine & Foundry Co. Treatment of wood with ethylene oxide gas or propylene oxide gas. 3,183,114, 5–11–65, Cl. 117—62.2.
- Liu, Tien : *See*—
  - Rhodenbaugh, William C., and Liu. 3,183,108.
- Livingston, Richard D., and Barber-Colman Co. Bobbin handling mechanism for winders. 3,182,925, 5–11–65, Cl. 242—130.
- Lloyd, John G. : *See*—
  - Kitz, Norbert, Mansford, and Lloyd. 3,183,404.
- Lockheed Aircraft Corp. : *See*—
  - Brooks, William. 3,182,415.
- Lodige, Fritz : *See*—
  - Lodige, Wilhelm and F., and Lucke. 3,182,633.
- Lodige, Wilhelm and F., and J. Lucke. Method and apparatus for enveloping granular and/or short fibred substances in coatings of other substances, preferably in thin films of synthetic plastic substances. 3,182,633, 5–11–65, Cl. 118—417.
- Loev, Bernard, to Smith Kline & French Laboratories. New sulfonylurea hypoglycemic agents. 3,183,260, 5–11–65, Cl. 260—465.
- Loewen, Bruno F., to Phillips Petroleum Co. Treatment of carbon black. 3,182,406, 5–11–65, Cl. 34—39.
- Loewy Engineering Co. Ltd., The : *See*—
  - Rosenthal, Salli A. 3,182,479.
- Lohmer, Karl, and B. Morcher, to Agfa Aktiengesellschaft. Color reversal development process utilizing a preliminary development bath free of bromide ions. 3,183,087, 5–11–65; Cl. 96—22.
- Long, Bernard, to G.B.D. Societe Anonyme Holding. Process and apparatus for making sheet glass. 3,183,072, 5–11–65, Cl. 65—333.
- Long, Hugh M., and S. L. Wilson, to Union Carbide Corp. Cryogenic refrigerator. 3,182,462, 5–11–65, Cl. 62—55.
- Long-Lok Corp. : *See*—
  - Nason, Tucker E., and Starriett. 3,182,702.
  - Smyth, George F. 3,182,703.
- Lorenz, George G., to Joy Mfg. Co. Conveyor device. 3,182,787, 5–11–65, Cl. 198—192.
- Lorenz, Kurt : *See*—
  - Breitbach, Fritz, and Lorenz. 3,183,175.
- Loup Engineering Corp. : *See*—
  - Root, Raymond C. 3,182,771.
- Lowes, Fred J., Jr., to The Dow Chemical Co. Liquid-solid propellant rocket case and method. 3,182,445, 5–11–65, Cl. 60—35.3.
- Lucke, Josef : *See*—
  - Lodige, Wilhelm and E., and Lucke. 3,182,633.
- Lueft, Walter B. : *See*—
  - Donville, David L., Lueft, and Zuch. 3,183,435.
- Luksas, Anthony J. : *See*—
  - Noznick, Peter P., Bundus, and Luksas. 3,183,103.
- Lull, Le Grand H. Side swing carriage for loaders and the like. 3,182,833, 5–11–65, Cl. 214—147.
- Lumoprint Zindler KG. : *See*—
  - Limberger, Walter. 3,182,578.
- Lundquist, Richard C., to Goodman Mfg. Co. Shuttle car. 3,183,017, 5–11–65, Cl. 280—34.
- Lutz, Albert W. : *See*—
  - Walworth, Bryant L., Lutz, and Wood. 3,183,074.
- Lutz, Karl : *See*—
  - Schnier, Max, Helfenberger, and Lutz. 3,183,258.
- Lynch, John E. : *See*—
  - Yuska, Henry, Lynch, and Barry. 3,183,117.
- Lynch, Leslie S., Jr., E. L. Eldridge, and J. A. Schiller, to The Thomas & Betts Co. Connector with temporary cable holding means. 3,183,025, 5–11–65, Cl. 287—78.
- M & D Store Fixtures, Inc. : *See*—
  - Sedo, Gerald H. 3,182,945.
- MacIsaac, John T., Jr. : *See*—
  - Sumpter, Charles B., Jr., and MacIsaac. 3,182,536.
- Mackey, E Scudder, and R. J. Walford, to General Aniline & Film Corp. Photographic stripping film. 3,183,092, 5–11–65, Cl. 96—83.
- Mackles, Leonard. Process of hardening cellulose paper board with certain alums and polyhydroxyl lower alkanols and products produced therefrom. 3,183,055, 5–11–65, Cl. 8—116.
- Macomber, Bennie D. : *See*—
  - Strother, Claude, Jr., and Macomber. 3,183,448.
- MacPherson, James B. : *See*—
  - Phelan, William J., and MacPherson. 3,183,357.
- Madansky, Leslie E., to California Plasteck, Inc. Lamp assembly for edge-lighted panel. 3,183,344, 5–11–65, Cl. 240—8.16.
- Maggio, Ralph C., and C. Christianson. Detector for radioactive hydrogen gas. 3,183,389, 5–11–65, Cl. 313—93.
- Magnavox Co., The : *See*—
  - Thompson, James R., Hotchkiss, and Kleist. 3,182,549.
- Maio, Patrick, to Continental Folding Paper Box Co., Inc. Containers for fragile articles. 3,182,885, 5–11–65, Cl. 229—14.
- Malan, George L. Vibrator. 3,182,964, 5–11–65, Cl. 259—1.
- Malecki, George J. Blanching and canning process for green vegetables. 3,183,102, 5–11–65, Cl. 99—186.
- Malizard, Max, and A. Pattoret. Proportioning pump. 3,182,597, 5–11–65, Cl. 103—44.
- Malm, John G. : *See*—
  - Claassen, Howard H., Selig, and Malm. 3,183,061.
- Malone, Homer F., to Mechanical Products, Inc. Thermal motor protector with gas producing arc chamber. 3,083,326, 5–11–65, Cl. 200—120.
- Manners, Frank A., to Square D Co. Limit control for motors. 3,183,423, 5–11–65, Cl. 318—203.
- Manning, Richard T. Fishing rod holder. 3,182,937, 5–11–65, Cl. 248—45.
- Mansford, Hugh L. : *See*—
  - Kitz, Norbert, Mansford, and Lloyd. 3,183,404.
- Mares, John. Digital to analog waveform synthesizer. 3,183,502, 5–11–65, Cl. 340—347.
- Markow, Edward G., to Grumman Aircraft Engineering Corp. Resilient wheel. 3,182,705, 5–11–65, Cl. 152—12.
- Marks, Henry C., R. R. Joiner, and G. U. Glasgow, to Wallace & Tiernan Inc. Products and procedures for effecting treatment with chlorinous gas. 3,183,057, 5–11–65, Cl. 21—58.
- Marsh, Lynn W., Jr. : *See*—
  - Bloch, Richard M., Deerfield, and Marsh. 3,183,488.
- Marshall, Hilda G. : *See*—
  - Ellis, Auston R., and Marshall. 3,182,339.
- Martin-Marietta Corp. : *See*—
  - Francis, John P., and de la Cova. 3,183,441.
  - Gallo, Elia A. 3,182,681.
  - Howell, Richard A. 3,182,670.
  - Neal, Jackson, and Kling. 3,182,392.
- Martin, Peter : *See*—
  - Probert, Rhys P., Martin, and Hartley. 3,182,453.
- Marton, Andrew, to Wilkinson Chutes, Inc. Intake throat and hopper door assembly for vertically extending chutes. 3,182,903, 5–11–65, Cl. 282—43.1.
- Martus, Joseph J., to Nytronics, Inc. Inductive electrical component. 3,183,466, 5–11–65, Cl. 336—192.
- Maschinenfabrik Sack G.m.b.H. : *See*—
  - Klotzbach, Kurt. 3,182,834.
- Master Pneumatic, Inc. : *See*—
  - Gleason, Quin R., and Boyd. 3,182,750.
- Mastis, Victor : *See*—
  - Horowitz, Charles, Dobrikin, and Mastis. 3,182,849.
- Matsukura, Kameo : *See*—
  - Ohtake, Tadashi, and Matsukura. 3,183,078.
- Mattingly, John J. and R. J., deceased ; by R. R. Mattingly, executor. Labeling machine. 3,183,138, 5–11–65, Cl. 156—364.
- Mattingly, Richard R. : *See*—
  - Mattingly, John J. and R. J. 3,183,138.
- Mattingly, Ralph J. : *See*—
  - Mattingly, John J. and R. J. 3,183,138.
- Matsumura, Shunichi : *See*—
  - Shimeha, Jiro, Ozawa, Tanaka, Matsumura, and Kubota. 3,183,201.
- Matzner, Edwin A., to Monsanto Co. Sulfonamide compounds. 3,183,266, 5–11–65, Cl. 260—556.
- Maurer, Dean W. : *See*—
  - Becker, Edward J., Koontz, and Maurer. 3,183,396.
- Mavleos, Michael G., and J. J. Desy, to Avien, Inc. Lithium hydride body heating device. 3,182,653, 5–11–65, Cl. 126—204.
- May & Baker Ltd. : *See*—
  - Lee, Glyn E., and Wragg. 3,183,243.
- Mayes, Fred M., to Sun Oil Co. Tank gauge apparatus. 3,182,502, 5–11–65, Cl. 73—228.
- Mayes, Nathan : *See*—
  - Cohen, Murray S., Green, Karlan, and Mayes. 3,183,216.
- McAlvay, John C., to Electro-Voice, Inc. Piezoelectric phonograph pickup with compliant yoke. 3,183,311, 5–11–65, Cl. 179—100.41.
- McArthur, Ralph F., and M. R. Mecusker, to Kobe, Inc. Sealing means for fluid operated pump system. 3,182,598, 5–11–65, Cl. 103—46.
- McCartney, Kenneth C., to General Electric Co. Rotary switch employing two-step releasing mechanism and reset energy storage means. 3,183,317, 5–11–65, Cl. 200—18.
- McCollum, Burton, deceased ; P. R. Rowe, and Bank of the Southwest National Association, executors. Method of seismic exploration. 3,182,743, 5–11–65, Cl. 181—.5.
- McCracken, William L., and F. J. Opolski, to Detrex Chemicals Industries, Inc. Sandwich transducer. 3,183,378, 5–11–65, Cl. 310—8.7.
- McCrory, John F., 2½% to V. Allen, and 5% to D. J. and B. M. Ward. Automatic tire tread gauge. 3,183,481, 5–11–65, Cl. 340—52.
- McDowell Mfg. Co. : *See*—
  - Rickard, Clyde E. 3,183,021.
- McGee, William J. Buckle attaching apparatus. 3,182,386, 5–11–65, Cl. 29—212.
- McLean, I William, Jr., and F. W. Trader, Jr., to Parke, Davis & Co. Aqueous resuspension vaccine product of aluminum phosphate-adsorbed poliomyelitis virus antigen, and production process. 3,183,161, 5–11–65, Cl. 167—78.
- McLean, Scott, to L. F. Strassheim Co. Safety seat. 3,182,614, 5–11–65, Cl. 108—118.
- McMaude, Gordon D. : *See*—
  - Blount, Lester L. 3,182,659.
- McMillin, Charles W. : *See*—
  - Liu, Chien, and McMillin. 3,183,114.
- McNicol, John H., and R. H. Rowell, to The Broken Hill Associated Smelters Proprietary Ltd. Apparatus for cooling molten metals. 3,182,716, 5–11–65, Cl. 165—12.
- McRae, Russell C. : *See*—
  - Culbertson, Robert D., McRae, and Warner. 3,182,845.
- Mead Johnson & Co. : *See*—
  - Wu, Yao, H., and Rhodes. 3,183,287.
- Mechanical Products, Inc. : *See*—
  - Malone, Homer F. 3,083,326.
- Mecusker, Mathew R. : *See*—
  - McArthur, Ralph F., and Mecusker. 3,182,598.
- Mees, Kenneth C. Foldable furniture unit. 3,182,615, 5–11–65, Cl. 108—131.
- Melchior, Frederick C. Apparatus for measuring specific gravities of hydrocarbons. 3,182,510, 5–11–65, Cl. 73—438.
- Melchiore, John J. : *See*—
  - Mills, Ivor W., and Melchiore. 3,183,279.
- Meltzer, Jacques : *See*—
  - Van Den Bos, Bernardus G., and Meltzer. 3,183,146.
- Mencacci, Samuel A., and R. B. Bentley, to International Machinery Corp. S.A. Apparatus for cooking fish. 3,182,583, 5–11–65, Cl. 99—260.
- Mercier, Jean. Closure valve for the outlet port of a pressure vessel. 3,182,685, 5–11–65, Cl. 138—30.
- Merck & Co., Inc. : *See*—
  - Brown, Horace D. 3,183,239.

- Merck, E., Aktiengesellschaft : *See*—
  - Bruckner, Klaus. 3,183,158.
  - Von Werder, Fritz, Brükner, Bork, and Metz. 3,183,150.
- Merington, Richard N., to Ling-Temco-Vought, Inc. Amplifier stabilization. 3,183,450, 5–11–65, Cl. 330—9.
- Merli, Camillo : *See*—
  - Costabello, Dino, Merli, Aiorno, and Boffa. 3,183,269.
- Messerly, George H., to The Bendix Corp. Thrust control means. 3,182,451, 5–11–65, Cl. 60—35.6.
- Metallgesellschaft Aktiengesellschaft : *See*—
  - Rudbach, Wolfgang. 3,183,181.
- Metallwerk Bahre K.G. : *See*—
  - Fischer, Kurt. 3,183,287.
- Metaltronics, Inc. : *See*—
  - Harvey, Richard F. 3,182,344.
- Metz, Harald : *See*—
  - Von Werder, Fritz, Bruckner, Bork, and Metz. 3,183,150.
- Metzler, Hermann : *See*—
  - Hopff, Heinrich, and Metzler. 3,183,212.
- Meyer, Irel H. : *See*—
  - Meyer, Jack W. and I. H. 3,182,835.
- Meyer, Jack W. and I. H. Powered barrel truck. 3,182,835, 5–11–65, Cl. 214—388.
- Meyer, Robert B., and S. A. Findley, to Kingston Products Corp. Lamp socket. 3,183,475, 5–11–65, Cl. 339—188.
- Michael, Jacob F. : *See*—
  - Rively, Clair M., and Michael. 3,183,395.
- Michalka, Alois M. Folding box. 3,182,889, 5–11–65, Cl. 229—44.
- Midis, Anthony M., and W. C. Howe, to International Telephone and Telegraph Corp. Line-monitor circuit. 3,183,498, 5–11–65, Cl. 340—253.
- Midland-Ross Corp. : *See*—
  - Robb, Wendell E. 3,182,711.
- Mid-West Abrasive Co. : *See*—
  - Figley, Donald E. 3,182,817.
- Midyette, Allen L., Jr., to American Radiator & Standard Sanitary Corp. Article of furniture. 3,183,034, 5–11–65, Cl. 297—239.
- Miessner, Benjamin F. Tone generating means for electrical musical instruments. 3,183,296, 5–11–65, Cl. 84—1.15.
- Miessner, William O. Record player indicator. 3,183,004, 5–11–65, Cl. 274—1.
- Mih, Walter C. : *See*—
  - Parker, Joseph D., Dobratz, Gustafson, and Mih. 3,182,874.
- Mil, Mikhail L., and A. S. Braverman. Single-rotor helicopter having the rotor axis canted to the vertical. 3,182,931, 5–11–65, Cl. 244—17.17.
- Miles Laboratories, Inc. : *See*—
  - Oakes, Paul W. 3 183,173.
- Millard, Dennis J., to Paul Boulton Aircraft Ltd. Piston locking means. 3,182,565, 5–11–65, Cl. 92—19.
- Miller, Bernard, and T. P. O'Leary, Jr., to American Cyanamid Co. Preparation of N-substituted phosphoramidothioates. 3,183,257, 5–11–65, Cl. 260—461.
- Miller, Charles A., and R. L. Hull, to Parke, Davis & Co. Process for the production of a methyl-α-phenyl-β-ethylsuccinimide. 3,183,245, 5–11–65, Cl. 260—326.5.
- Miller, Donald E., and C. C. Bauerlein, to The Dole Valve Co. Slug valve driven ice maker. 3,182,465, 5–11–65, Cl. 62—137.
- Miller, Earle C., to Riley Stoker Corp. Steam generating unit. 3,182,640, 5–11–65, Cl. 122—479.
- Miller, James R., to Aerodyne Controls Corp. Gravity responsive switch. 3,183,321, 5–11–65, Cl. 200—61.48.
- Miller, Lee R. : *See*—
  - Pitifer, Michael J. 3,182,736.
- Miller, Leo : *See*—
  - Bender, Louis. 3,182,420.
- Miller, Raymond E., to International Business Machines Corp. Rectangular array cryogenic storage circuits using inhibitor logic. 3.183,491, 5–11–65, Cl. 340—173.1.
- Miller, William L., and K. Negoro, to Continental Can Co., Inc. Rim shaping apparatus for plastic containers and method. 3,183,291, 5–11–65, Cl. 264—322.
- Miller, William R., to General Electric Co. Multiple output generator. 3,183,386. 5–11–65, Cl. 310—149.
- Mills, Ivor W., and J. J. Melchiore, to Sun Oil Co. Purification of 2-methylnaphthalenes by selective oxidation of their isomers. 3.183,279, 5–11–65, Cl. 260—674.
- Milwaukee Chaplet & Mfg. Co., Inc. : *See*—
  - Roberts, James S. 3,182,520.
- Minerals & Chemicals Philipp Corp. : *See*—
  - Duke, James B. 3,182,798.
- Minister of Supply, in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland : *See*—
  - Probert, Rhys P., Martin, and Hartley. 3,182,453.
- Minnesota Mining & Mfg. Co. : *See*—
  - Tierney, Hubert J. 3,183,142.
- Minton, Carl T., to CAH Industries, Inc. Waste receptacle fire-prevention closure. 3,182,727, 5–11–65, Cl. 169—2.
- Miyabayashi, Shigekichi, to The Nippon Toki Kaisha Ltd. Grinding machine for brake drums for wheels. 3,182,427, 5–11–65, Cl. 51—105.
- Miyachi, Noboru : *See*—
  - Kitai, Atsuo, Kitamura, Miyachi, and Ozaki. 3,183,170.
- Misusawa Kagaku Kogyo Kabushiki Kaisha : *See*—
  - Kuwata, Tsutomu, Sugawara, and Nakazawa. 3,183,194.
- Mobay Chemical Co. : *See*—
  - Gemassmer, Alois. 3,183,112.
- Modern Toy, Inc. : *See*—
  - Purdy, John T. 3,183,136.
- Moeller, Kurt G. F. Thermoelectric generator with heat transfer and thermal expansion adaptor. 3,183,121, 5–11–65, Cl. 136—4.
- Molla, Charles P., and A. Ladogana, to Molla Inc. Coupling device for straps or webbings. 3,182,364, 5–11–65, Cl. 24—20.
- Molla Inc. : *See*—
  - Molla, Charles P., and Ladogana. 3,182,364.
- Mollard, Jean : *See*—
  - Cousteau, Jacques Y., Gagnan, Laban, and Mollard. 3,182,622.
- Moller, Jens R. L., to Reynolds Metals Co. Thin metal sheet tapered receptacles and method and apparatus for producing the same. 3 182.482, 5–11–65, Cl. 72—350.
- Mollon, Leslie, to Brooks & Perkins, Inc. Pallet locking mechanism. 3,182,608, 5–11–65, Cl. 105—366.
- Monick, John A., to Colgate-Palmolive Co. Luminously burning fuel gels. 3,183,068, 5–11–65, Cl. 44—7.
- Monsanto Co. : *See*—
  - Baer, Russell F. 3,182,352.
  - Birum, Gail H. 3,183,256.
  - Gutzke, Mark E., and Yanko. 3,183,165.
  - Matzner, Edwin A. 3,183,266.
- Monsees, Claude E., to Sperry Rand Corp. Gravity slide checkweigher. 3,182,737, 5–11–65, Cl. 177—45.
- Montecatini Societa Generale per L'Industria Mineraria e Chimica : *See*—
  - Costabello, Dino, Merli, Aiorno, and Boffa. 3,183,269.
- Monteal, Robert P., to Clayton Mark & Co. Ball valves. 3,182,952, 5–11–65, Cl. 251—148.
- Monteal, Robert P., to Clayton Mark & Co. Balanced ball valve. 3,182,953, 5–11–65, Cl. 251—175.
- Moore, Arthur I. W., and J. H. Porter, to Production Engineering Research Association of Great Britain. Reamer. 3,182,531, 5–11–65, Cl. 77—72.
- Moore, Harold R., to Westinghouse Electric Corp. Transposed winding for electrical apparatus. 3,183,465, 5–11–65, Cl. 336—187.
- Moore, Lee C., Corp. : *See*—
  - Woolslayer, Homer J., Jenkins, and Iddings. 3,183,019.
- Moore, Monte N., to Carpac Investments Ltd. Well sealing, bridging, plugging and testing attachment device. 3,182,725, 5–11–65, Cl. 166—65.
- Moore, Norman H., to Fibreboard Paper Products Corp. Can carrier. 3,182,794, 5–11–65, Cl. 206—65.
- Morcher, Bernhard : *See*—
  - Lohmer, Karl, and Morcher. 3,183,087.
- Morgan Automation, Inc. : *See*—
  - Gardner, John J. 3,182,820.
- Mori, Orlando, ½ to Soc. Toscana Industria Cucine Elettrodomestici (S.T.I.C.E.) S.p.Az. Method of washing dishes and the like. 3,183,120, 5–11–65, Cl. 134—7.
- Morphis, Oscar L Liquid containers. 3,182,881, 5–11–65, Cl. 229—3.1.
- Morrison, Garnet E. T pipe fitting. 3,183,023, 5–11–65, Cl. 285—156.
- Morton Mfg. Co. : *See*—
  - Fenwick, Jay G. 3,182,812.
- Moses, Harry, to United States of America, Atomic Energy Commission. Method of measuring wind velocity. 3,182,499, 5–11–65, Cl. 73—189.
- Mosler Harbor Metal Products Corp. : *See*—
  - Bartlett, Allen R., J. A. and R. N. 3,182,811.
- Motorola, Inc. : *See*—
  - Huffman, Tommie R. 3,183,131.
  - Kalvelage, Bernard F., and Coe. 3,182,873.
  - O'Neal, Cleon D. 3,183,382.
  - Reynolds, James E., and Holloway. 3,183,130.
- Mount, Wadsworth W. Turbine driven supersonic industrial oil burner. 3,182,710, 5–11–65, Cl. 158—77.
- Mowll, Roger T. L. : *See*—
  - Yeo, Alan A., Hicks, and Mowll. 3,183,182.
- Mozzi, Gianmario, and C. Puccinelli. Liquid fuel combustion chamber with air nozzles in walls at diverse angles. 3,182,708, 5–11–65, Cl. 158—4.
- Mülhaupt, Gustav. Railway car having independently rotating wheels and guiding rim. 3,182,513, 5–11–65, Cl. 73—514.
- Muller, Walter : *See*—
  - Schlesinger, Heinz, and Muller. 3,183,093.
- Mullers, Karl A. Automatic winding device, particularly an automatic cross-winding device with moving winding locations and a stationary knot-jointng- and spool-changing-apparatus. 3,182 922, 5–11–65, Cl. 242—35.5.
- Murdock, Abe. Flag pole holder. 3,182,936, 5–11–65, Cl. 248—44.
- Murphy, Bynum E., to Anderson-Dunham, Inc., d.b.a. Dunham Mfg. Co. Load controlling hitch assembly for hydraulic depth-controlled, trailing implements. 3,182,730, 5–11–65, Cl. 172—7.
- Mussell, Dorsey R. : *See*—
  - Leasure, John K., and Mussell. 3,183,076.
- Muth, Richard J. : *See*—
  - Childsey. Francis A., Jr., and Muth. 3.182.888.
- Mutto, Theodore R., to Nestaway Inc. Truck mounted load lifting apparatus. 3,182,826, 5–11–65. Cl. 214—75.
- Myaida, Grace B. and S. J. Obstructed entrance type birdhouse. 3,182,634, 5–11–65, Cl. 119—23.
- Myaida, Shogo J. : *See*—
  - Myaida, Grace B. and S. J. 3,182,634.
- Myers, Jack A., and L. P. Sykes, to United States of America, Navy. Radial wedge joint. 3,183,024, 5–11–65, Cl. 285—330.
- Myers, Lloyd W., R. W. Rake and B. J. Van Vooren, to Western Electric Co., Inc. Article binding apparatus. 3,182,438, 5–11–65, Cl. 57—6.
- Myles, Walter E., to ACF Industries, Inc. Light pipe. 3,183,295, 5–11–65, Cl. 35—10.4.
- Nagase, Kazuo : *See*—
  - Uemura, Saburo, and Nagase. 3,183,437.
- Nakada, Minoru P. : *See*—
  - Grader, Roderick J., and Nakada. 3,183,390.
- Nakazawa, Tadahisa : *See*—
  - Kuwata, Tsutomu, Sugawara, and Nakazawa. 3,183,194.

- Nason, Tucker E., and B. J. Starriett, to Long-Lok Corp. Self-locking fastener and method of making same. 3,182,702, 5–11–65, Cl. 151—7.
- Nataf, Paul. Bottle made of a plastic material. 3,182,861, 5–11–65, Cl. 222—212.
- National Aeronautics and Space Administration : *See*—
  - Webb, James E. 3,183,506.
- National Broach & Machine Co. : *See*—
  - Gates, Thomas S. 3,182,558.
- National Cash Register Co., The : *See*—
  - Chow, Eric T. K., and Kolk. 3,183,492.
  - Donohoo, David D., Jr., and Sonnanstine. 3,182,907.
- National Castings Co. : *See*—
  - Varju, Nicholas. 3,182,508.
- National Furniture Mfg. Co., Inc. : *See*—
  - Quakenbush, Howard M. 3,182,535.
- National Research Development Corp. : *See*—
  - Gabor, Dennis. 3,183,310.
- National-Standard Co. : *See*—
  - Berquist, Leonard G. 3,183,135.
- Naujoks, Elfriede : *See*—
  - Dithmar, Karl, Koblischek, and Naujoks.. 3,183,242.
- Nazall, Joseph : *See*—
  - Goodell, John D., Nazall, and Tengsater. 3,182,813.
- Neal, Jackson, and H. P. Kling, to Martin-Marietta Corp. Method and apparatus for explosively bonding a plurality of metal laminae to uranium alloy. 3,182,392, 5–11–65, Cl. 29—421.
- Necchi Societa per Azioni : *See*—
  - Bono, Luigi. 3,182,412.
- Nederlandsche Heide-Maatschappij : *See*—
  - Van der Sluis, Freerk A. 3,182,973.
- Neff, William S. : *See*—
  - Creeger, Larry D., and Neff. 3,183,043.
- Negoro, Kaiji : *See*—
  - Miller, William L., and Negoro. 3,183,291.
- Neibling, Edward G. : *See*—
  - Fleming, Robert S., and Neibling. 3,182,404.
- Neilan, William E., to Thompson Ramo Wooldridge Inc. Hydraulic cylinder piston. 3,182,563, 5–11–65, Cl. 91—401.
- Neiswander, Robert S. : *See*—
  - Harris, Clyde W., Sugino, and Neiswander. 3,183,519.
- Nelkin, Henry G., to H.G. Enterprises. Shoulder brace. 3,182,655, 5–11–65, Cl. 128—78.
- Nelson, Alden W., to Crompton & Knowles Corp. Continuous reel-winding apparatus. 3,182,921, 5–11–65, Cl. 242—25.
- Nestaway Inc. : *See*—
  - Mutto, Theodore R. 3,182,826.
- Neudert, Walter : *See*—
  - Wilhelmi. Hans, and Neudert. 3,182,747.
- Neumann, Wolfram, and E. Zankl, to Farbenfabriken Bayer Aktiengesellschaft. Thixotropic compositions. 3,183,109, 5–11–65, Cl. 106—252.
- Newport News Shipbuilding and Dry Dock Co. : *See*—
  - Woodall, Walter N. 3,182,988.
- New York Air Brake Co., The : *See*—
  - Frazel, Wilbur H. 3,182,738.
  - Weisenbach, Charles O. 3,182 912.
- Neydll, Edward A., to Basic Products Corp. Transformer case. 3,183,406, 5–11–65, Cl. 317—99.
- Nickel, Horst : *See*—
  - Schundehutte, Karl-Heinz, Nickel, Schmidt, and Suckfull. 3,183,223.
- Nimoy, Melvin, E. C. Dearborn, and P. K. Isaacs, to W. R. Grace & Co. Vinyl halide polymers and copolymers and imidazoline-metallic curing system therefor. 3,183,207, 5–11–65, Cl. 260—41.
- Nippon Reizo Kabushiki Kaisha : *See*—
  - Ishibashi, Akira. 3,183 514.
- Nippon Toki Kaisha Ltd., The : *See*—
  - Miyabayashi, Shigekichi. 3,182,427.
- Noakes, Thomas E., and A. S. Bahrani, to American Radiator & Standard Sanitary Corp. Air conditioner valve. 3,182,909, 5–11–65, Cl. 236—1.
- Nodaway Valley Foods Inc. : *See*—
  - Stewart. Aubrey P., Jr. 3,182,975.
- Nordberg Mfg. Co. : *See*—
  - Foxx, Robert J., and Krause. 3,182,604.
- Norden, Alexander R., to Federal Pacific Electric Co. Trip indicating circuit breakers. 3,183,825, 5–11–65. Cl. 200—116.
- Nordmann, Joseph, to Kuhlmann Etablissements. Treatment of hypocholeresis with 1-cyclohexyl-2-methyl-1-propanol. 3,183 151, 5–11–65, Cl. 167—55.
- Nordmark, Walter E. : *See*—
  - Hoven, Alfred C., and Nordmark. 3,182,377.
- Norris-Thermador Corp. : *See*—
  - Bintz, Louis J. 3,182,647.
- North American Aviation, Inc. : *See*—
  - Vorie, Innokent N. 3,182,671.
- North American Philips Co., Inc. : *See*—
  - Van Den Bos, Bernardus G., and Meltzer. 3,183,146.
  - Van Santen, Johannes G. 3,183,360.
- Noznick, Peter P., R. H. Bundus, and A. J. Luksas, to Beatrice Foods Co. Forming onion powder by spray drying. 3,183,103 5–11–65, Cl. 99—204.
- Nutting, Robert G., R. C. Wagner, and K. K. Christensen, to Bartelt Engineering Co., Inc. Rotary cut-off device with interchangeable cutter and anvil elements. 3,182,541, 5–11–65, Cl. 83—346.
- Nyc, Wladimir. Device and method for measuring the surface velocity of moving water. 3,182,400, 5–11–65, Cl. 33—46.
- Nydegger, Roland R. : *See*—
  - Holden, Dermot F., and Nydegger. 3,183,141.
- Nytronics, Inc. : *See*—
  - Martus, Joseph J. 3,183,466.
- Oakes, Paul W., to Miles Laboratories, Inc. Test composition for detecting hydrogen peroxide. 3,183,173, 5–11–65, Cl. 195—103.5.
- Oatley, Arthur F. Grilling appliance having pivoted support means. 3,182,652, 5–11–65, Cl. 126—38.
- Obenchain, Richard F., to Koppers Co., Inc. Apparatus for making steel. 3,182,985, 5–11–65, Cl. 266—34.
- Oberright, Edward A. : *See*—
  - Schick, John W., and Oberright. 3,183,190.
- Oddy, Edward P., to Borg-Warner Corp. Method of making a heat exchanger. 3,182,380, 5–11–65, Cl. 29—157.3.
- Oddy, Edward P., and L. Kinal, to Borg-Warner Corp. Heat exchanger and method of its manufacture. 3,182,481, 5–11–65, Cl. 72—326.
- Oehlerking, Dean, to Ideal Industries, Inc. Pistol grip wire stripper. 3,182,532, 5–11–65, Cl. 81—9.5.
- Officine Galileo Societa per Azioni : *See*—
  - Santoni, Ermenegildo. 3,182,398.
- Ogle, James W. Pelleting apparatus. 3,182,612, 5–11–65, Cl. 107—14.
- O'Hare, Patricia A. : *See*—
  - Strand, Erling K. 3,182,373.
- Ohio Crankshaft Co., The : *See*—
  - Kasper, Robert J. 3,183,294.
- Ohnaka, Alubinus J. Means for swinging and tilting the film face as well as the focus mat screen face of reflex camera. 3,182,577, 5–11–65, Cl. 95—50.
- Ohtake, Tadashi, and K. Matsukura, to Yawata Iron & Steel Co., Ltd. Vacuum process for producing a steel for nonageing enameling iron sheets. 3,183,078, 5–11–65, Cl. 75—49.
- Oja, Phyllis D., to The Dow Chemical Co. Preparation of certain triazoles. 3,183,241, 5–11–65, Cl. 260—308.
- O'Leary, Thomas P., Jr. : *See*—
  - Miller, Bernard, and O'Leary. 3,183,257.
- Olin Mathieson Chemical Corp. : *See*—
  - Knowles, Thomas A., and Schroeder. 3,183,251.
  - Pryor, Michael J. 3,182,795.
- Oliver Corp. : *See*—
  - Brandt, Roy G., and Fabian. 3,182,863.
- Olivier, Daniel E., to International Pipe and Ceramics Corp. Prestressed concrete pipe structures. 3,183,011, 5–11–65, Cl. 277—237.
- Olsen, Ole K. : *See*—
  - Pitifer, Michael J. 3,182,736.
- Olsson, Paul : *See*—
  - Frink, Russell E., and Olsson. 3,183,332.
- Olszewski, Jerzy A. : *See*—
  - Jachimowicz, Ludwik, and Olszewski. 3,183,300.
- Olympic Screw & Rivet Corp. : *See*—
  - Kolec, Robert F., and Dean. 3,182,342.
- O'Neal, Cleon D., to Motorola, Inc. Electromagnetic drive tuning fork reciprocating motor. 3,183,382, 5–11–65, Cl. 310—17.
- Ono, Tadao : *See*—
  - Sumiki, Yusuke, Umezawa, Fukunaga, Yonehara, Kubo, Fujita, Shirato, Takaga, Kato, Esumi,, and Ono. 3,183,153.
- Opolski, Frank J. : *See*—
  - McCracken, William L., and Opolski. 3,183,378.
- Orange Research : *See*—
  - Claeys, David M. 3,182,630.
- Orbit Industries, Inc. : *See*—
  - Hunt, Philip M. 3,183,309.
- Ormsby, Arwin E. Towing apparatus. 3,182,828, 5–11–65, Cl. 214—86.
- Ortega Torres, Jose P. E., and J. L. J. Savon. Top heel lift. 3,182,408, 5–11–65. Cl. 36—34.
- Ortho Pharmaceutical Corp. : *See*—
  - Singher, Heron O., and Wellerson. 3,183,159.
- Osgood, Bradley D. Vehicle entry and exit assist strap and bracket. 3,182,606, 5–11–65. Cl. 105—354.
- Oster, Thomas H. Sludge conditioning. 3,183,186, 5–11–65, Cl. 210—52.
- Ostwald, Fritz : *See*—
  - Hahm. Heinz G., and Ostwald. 3,182,754.
- Ott, Kenneth W. Discharge nozzle for metallurgical ladle. 3,182,360. 5–11–65, Cl. 22—84.
- Owens-Corning Fiberglas Corp. : *See*—
  - Harris, Ransom S. 3,183,143.
- Ozaki, Asaichiro : *See*—
  - Kitai, Atsuo, Kitamura, Miyachi, and Ozaki. 3,183,170.
- Ozawa, Shuji : *See*—
  - Shimeha, Jiro, Ozawa, Tanaka, Matsumura, and Kubota. 3.183,201.
- Pacific Car and Foundry Co. : *See*—
  - Bryan, Darrel L. 3,182,527.
  - Holmstrom, John G. 3,183,018.
  - Stephens, Donald L. 3,182,626.
- Pacific Electricord Co. : *See*—
  - Hamel, Harold R. 3,183.474.
- Pacific Vegetable Oil Corp. : *See*—
  - Jennings, Roger G. 3,182,423.
- Packard-Bell Electronics Corp. : *See*—
  - Goetz, Heinz E. 3,183,414.
  - Rieth, Harold F. 3,183,419.
- Palfi, Thomas L., to Cornell-Dubilier Electric Corp. Proximity-detectors for parking meters and the like. 3,183,411, 5–11–65, Cl. 317—123.
- Palmer, Burtis E., to Western Electric Co., Inc. Memory system. 3,182,797, 5–11–65, Cl. 209—74.
- Panhard, Paul, to Societe Anonyme des Anciens Etablissements Panhard & Levassor. Synchronizing devices for twin-cylinder heat engines having two opposed pistons in each cylinder. 3,182,895, 5–11–65, Cl. 230—56.
- Pantell, Richard H., to Varian Associates. Traveling wave interaction device. 3.183,399. 5–11–65, Cl. 315—4.
- Panke, Friedrich, to Voigtlander A.G. Air gap Albada viewfinder with lateral mirror and lens on front element for viewing external indicator. 3,182,545, 5–11–65, Cl. 88—1.5.

Papke, Friedrich, to Voigtlander A.G. Albada viewfinder for photographic cameras with optical means including reflector on rear element for viewing external indicator. 3,182,546, 5–11–65, Cl. 88—1.5.

Papke, Friedrich, to Voigtlander A.G. Reflex camera viewfinder including composite setting disk with Fresnel lens surfaces and focusing wedges. 3,172,576, 5–11–65, Cl. 95—42.

Parke, Davis & Co.: *See*—
McLean, I William, Jr., and Trader. 3,183,161.
Miller, Charles A., and Hull. 3,183,245.

Parker, Charles A., to A. Kimball Co. Tag stacking device. 3,182,821, 5–11–65, Cl. 214—7.

Parker, Joseph D., T. L. Dobratz, D. R. Gustafson, and W .C. Mih, to Beloit Corp. Method and mechanism for web splitting. 3,182,874, 5–11–65, Cl. 225—3.

Paterson, James E., to Westinghouse Corp. Discharge device. 3,183,393, 5–11–65, Cl. 313—218.

Patterson, Wilhelm, and D. Boenisch. Process and apparatus for measuring the thermal expansion of molding sands. 3,182,486, 5–11–65, Cl. 73—16.

Patterson, Wilhelm, and D. Boenisch. Apparatus for measuring the tensile strength of green sand. 3,182,493, 5–11–65, Cl. 73—95.

Pattoret, Andre: *See*—
Maillard, Max, and Pattoret. 3,182,597.

Paul, Albert V. Printing machine packer box delivery. 3,182,997, 5–11–65, Cl. 271—71.

Paulson, John R., to Paulson Machine Co. Ltd. Envelope and opening means therefor. 3,182,892, 5–11–65, Cl. 229—86.

Paulson Machine Co. Ltd.: *See*—
Paulson, John R. 3,182,892.

Pawl, Walter S. Unitary rigid wire connectors and method of making wire connections. 3,183,472, 5–11–65, Cl. 339—97.

Paxton, Herbert J., Jr.: *See*—
Welch, Frank J., and Paxton. 3,183,214.

Payne, George W.: *See*—
Kendall, James M., and Payne. 3,182,509.

Pedersen, Mathias, to American Machine & Foundry Co. Button stitching machines. 3,182,618, 5–11–65, Cl. 112—110.

Pennsylvania Engineering Corp.: *See*—
Krause, Richard P. 3,182,979.

Pera, John D.: *See*—
Buckman, Stanley J., and Pera. 3,183,111.

Perry, Alfred: *See*—
Durston, Harry D., and Perry. 3,182,460.

Perry, E. S., Ltd.: *See*—
Perry, Michael A. 3,182,636.

Perry, Michael A., to E. S. Perry Ltd. Fountain pen. 8,182,636, 5–11–65, Cl. 120—50.

Persson, Karl R., to Ahlen & Akerlund Forpackning, AB. Cardboard box. 3,182,886, 5–11–65, Cl. 229—34.

Pet Milk Co.: *See*—
Searer, Harold J. 3,182,841.

Peter, Juanita G.: *See*—
Peter, Robert G. 3,183,044.

Peter, Philip W. Process for leaching uranium-bearing ores. 3,183,058, 5–11–65, Cl. 23—14.5.

Peter, Robert G., and J. G., executrix of R. G. Peter (deceased). Drill bit. 3,183,044, 5–11–65, Cl. 308—8.2.

Peters, Leo. Patty package in combination with serving means. 3,183,101, 5–11–65, Cl. 99—171.

Peterson, Howard B., to American Can Co. Conveyor. 3,182,998, 5–11–65, Cl. 271—74.

Peterson Machine Tool, Inc.: *See*—
Watson, Roy L. 3,183,012.

Peterzon-Arbella, Rodolfo C., to Rodoverken, Svenungsson & Co. Apparatus for erecting a vertically extending cylindrical casing. 3,182,958, 5–11–65, Cl. 254—89.

Petrick, Edward J., to Knox Mfg. Co. Tensioner mechanism for a portable movie screen. 3,182,714, 5–11–65, Cl. 160—24.

Petrocelli, James A.: *See*—
Hartman, Anthony B., Petrocelli, and Puzniak. 3,183,515.

Pfeiffer, Robert H., to W. R. Grace & Co. Process for graft copolymerizing bath liquid and vapor monomers onto cellulose substrates. 3,183,056, 5–11–65, Cl. 8—116.2.

Pfizer, Chas., & Co., Inc.: *See*—
Blackwood, Robert K., Rennhard, Beereboom, and Stephens. 3,183 267.

Phebus, Raymond L.: *See*—
Lessmann, Gerald G., and Phebus. 3,183,066.

Phelan, Lawrence: *See*—
Kompanek, Andrew J., Jr., and Phelan. 3,183,301.

Phelan, William J., and J. B. MacPherson, to Weston Instruments, Inc. Automatically adjustable power supply for X-ray tubes. 3,183,357, 5–11–65, Cl. 250—103.

Phillips, James F., to Ideal Industries, Inc. Ejector attachment for a wire connector assembling machine. 3,182,389, 5–11–65, Cl. 29—283.

Phillips Petroleum Co.: *See*—
Axe, William N., Gragson, and Schiff. 3,183,221.
Fryar, Jack R. 3,182,434.
Loewen, Bruno F. 3,182,406.

Physical Sciences Corp.: *See*—
Curtis, Gerald R., Kyle, and Robinson. 3,183,126.

Pickering, Thomas A., to International Telephone and Telegraph Corp. Electronic single pole-double throw switch. 3 183,364, 5–11–65, Cl. 307—88.5.

Pickles, Joseph, to Ferro Stamping Co. Seat adjusting mechanism position responsive switch. 3,183,314, 5–11–65, Cl. 200—1.

Piener, Chester R. Guy line apparatus. 3,182,371, 5–11–65, Cl. 24—135.

Pierce, Robert E., to American Radiator & Standard Sanitary Corp. Duct-installable heat exchanger. 3,182,717, 5–11–65, Cl. 165—47.

Piller, Horst, to C. Zeiss. Device for adjusting beamsplitter of interference microscope. 3,182,551, 5–11–65, Cl. 88—39.

Pintell, Robert H., to Intron International, Inc. Voltage or current regulator. 3,183,432, 5–11–65, Cl. 323—66.

Pitifer, Michael J.; ¼, each, to T. H. Arnold, L. R. Miller, and O. K. Olsen. Drilling bits. 3,182,736, 5–11–65, Cl. 175—413.

Pitney-Bowes, Inc.: *See*—
Reed, Stanley F., and Cook. 3,182,796.

Plate, John R.: *See*—
Carlin, Robert, and Plate. 3,182,729.

Pneumatic Scale Corp., Ltd.: *See*—
Doble, Kendall D., Jr. 3,182,883.
Vergobbi, Robert W., Knobel, and Trusselle. 3,182,691

Polaroid Corp.: *See*—
Jarrett, Arthur D. 3,183,090.
Schuler, Norman W. 3,183,219.
Simon, Myron S. 3,183,089.

Politechnika Gdanska: *See*—
Soldek, Jerzy K. 3,183,433.

Polter, Eugene M.: *See*—
Zilberfarb, Saul N., and Polter. 3,182,675.

Polzin, Dean A. Safety bottle closure. 3,182,840, 5–11–65, Cl. 215—9.

Porter, John H.: *See*—
Moore, Arthur I. W., and Porter. 3,182,531.

Porter, Mack R. Portable lamp device. 3,183,348, 5–11–65, Cl. 240—54.

Posey, J. Thornton: *See*—
Shirrod, Barbara N. 3,182,338.

Power, Fredk A., & Sons Ltd.: *See*—
Ransom, Frank S. 3,182,690.

Powers, Daniels A., to Precision Hardware Inc. Automatic latching lever extension bolt. 3,183,027, 5–11–65, Cl. 292—40.

Pratt, Peter B.: *See*—
Berrill, William H., Chaplin, and Pratt. 3,182,354.

Pratt & Whitney Inc.: *See*—
Hollister, Allen R. 3,182,488.

Precision Hardware Inc.: *See*—
Powers, Daniels A. 3,183,027.

Preferred Growth Capital, Inc.: *See*—
Gray, Robert H. 3,182,962.

Presto Lock Co., Inc.: *See*—
Gehrie, Charles S. 3,183,029.

Preston, John M. Liquid fertilizer. 3,183,073, 5–11–65, Cl. 71—1.

Price, Nathaniel W. Flush tank attachment for lever operation of atomizer deodorant cans. 3,182,337, 5–11–65, Cl. 4—222.

Price, Robert S. Tracing converter. 3,182,399, 5–11–65, Cl. 33—23.

Price, Thomas C.: *See*—
Sacks, Norman M., Frank, and Price. 3,183,476.

Price, William B. Method of and apparatus for pumping. 3,182,602, 5–11–65, Cl. 103—152.

Price, Wilson T., and C. R. Brown, to United States of America, Navy. Vibration and noise control in liquid springs. 3,182,987, 5–11–65, Cl. 267—64.

Prijatel, Edward A., to Borg-Warner Corp. Hydraulic systems and pumps. 3,182,596, 5–11–65, Cl. 103—2.

Probert, Rhys P., P. Martin, and E. L. Hartley, to Minister of Supply, in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland. Combustion system. 3,182,453, 5–11–65, Cl. 60—39.66.

Procter & Gamble Co., The: *See*—
Baur, Fredric J. 3,183,098.

Production Engineering Research Association of Great Britain: *See*—
Moore, Arthur I. W., and Porter. 3,182,531.

Proplasto A.G.: *See*—
Hug, Rudolf. 3,182,842.

Proth, Elizabeth. Stretching device for neckties and the like. 3,182,868, 5–11–65, Cl. 223—65.

Prutton, Howard D., to Wire Machinery Co. Thread rolling means. 3,182,476, 5–11–65, Cl. 72—88.

Pryde, Everett H., to United States of America, Agriculture. Cross-linked poly(ester-acetals). 3,183,215, 5–11–65, Cl. 260—75.

Pryor, Michael J., to Olin Mathieson Chemical Corp. Container for tooth paste containing stannous fluoride and process for reducing corrosion thereof. 3,182,795, 5–11–65, Cl. 206—84.

Puccinelli, Carlo: *See*—
Mozzi, Gianmario, and Puccinelli. 3,182,708.

Pulkownik, Lawrence E., and D. T. Ayers, Jr. to Kelsey-Hayes Co. Vehicle brake mechanism. 3,182,562, 5–11–65, Cl 91—391.

Pullman Inc.: *See*—
Borger, Jack W. 3 182,954.
Borger, Jack W., and Christian. 3,182,609.
Sherrie, Robert M. 3 182 607.

Purdy, John T., to Modern Toy, Inc. Method of making plastic card holder means. 3,183,136, 5–11–65, Cl. 156—202.

Puzniak, Thamas J.: *See*—
Hartman, Anthony B., Petrocelli, and Puzniak. 3,183,515.

Pye Ltd.: *See*—
Bach, Sammy M. A. 3,183,401.

Pyle, Orville E.: *See*—
Carlson, Elmer V., and Pyle. 3,182,384.

Pyne, Jessie L. Surgical sheet. 3,182,656, 5–11–65, Cl. 128—132.

Quakenbush, Howard M., to National Furniture Mfg. Co., Inc. Scoring machine. 3,182,535, 5–11–65, Cl. 83—8.

Quayle, George F., to Yale & Towne Inc. Hydraulic drive for industrial truck. 3 182,444, 5–11–65, Cl. 60—19.

Rabe, George B., to Thiokol Chemical Corp. Rocket motor construction. 3,182,448, 5–11–65, Cl. 60—35.6.

Rabinow, Jacob, to Control Data Corp. Punch machine programmed directly by electromagnets. 3,182,905, 5–11–65, Cl. 234—108.

Racicot Donatien, 50%, to Vincent, Hector, Inc. Hydraulic drive. 3,182,455, 5–11–65, Cl. 60—53.

Rackley, Carle E., to Westinghouse Electric Corp. Lighting fixture. 3,182,768, 5–11–65, Cl. 189—36.

Radio Corp. of America: *See*—
Benway, Robert E. 3,183,391.

Raff, Samuel J.: *See*—
Slawsky, Zaka I., and Raff. 3,183,478.

Raimo, Anthony S. Pill dispenser. 3,182,694, 5–11–65, Cl. 141—321.

Rainbow Crafts, Inc.: *See*—
Rhodenbaugh, William C., and Liu. 3,183,108.

Rake, Robert W.: *See*—
Myers, Lloyd W., Rake, and Van Vooren. 8,182,438.

Ramacher, Leslie and R. H. Nut harvester. 3,182,437, 5–11–65, Cl. 56—328.

Ramacher, Rudolph H.: *See*—
Ramacher, Leslie and R. H. 3,182,437.

Randall, David I., and W. Schmidt-Nickels, to General Aniline & Film Corp. Dyeing process. 3,183,053, 5–11–65, Cl. 8—54.2.

Randolph, Joseph P., Jr., H. B. Riblet, and J. W. Hamblen, to United States of America, Navy. Missile in flight indicator. 3,182,930, 5–11–65, Cl. 244—14.

Ransom, Frank S., to Fredk A. Power & Sons Ltd. Strapping tools. 3,182,690, 5–11–65, Cl. 140—93.6.

Rapata, George M., to Illinois Tool Works, Inc. Coil tuner rod. 3,182,516, 5–11–65, Cl. 74—10.85.

Rapata, George M., to Illinois Tool Works Inc. Tuning core grommet. 3,182,544, 5–11–65, Cl. 85—80.

Raven Industries, Inc.: *See*—
Winker, James A. 3,182,932.

Rawls, Lucien E., to Deco Electronics, Inc. Underground loop antenna. 3,183,510, 5–11–65, Cl. 343—719.

Rayburn, Walker H., to Combustion Engineering, Inc. Sealing arrangement for air heaters. 3,182,715, 5–11–65, Cl. 165—9.

Raymond, A., Societe: *See*—
Seckerson, Clifford A. 3,182,939.

Raytheon Co.: *See*—
Hergenrother, Rudolf C. 3,183,398.

Reding, Frederick P., to Union Carbide Corp. Blends of low molecular weight, highly branched polyethylenes with high molecular weight, sparsely branched polyethylenes. 3,183,283, 5–11–65, Cl. 260—897.

Reed, Robert D.: *See*—
Zink, John S., and Reed. 3,182,712.

Reed, Ronald L., to Gulf Research & Development Co. Process for completing wells in unconsolidated formations by reverse in situ combustion. 3,182,722, 5–11–65, Cl. 166—25.

Reed, Stanley F., and G. W. Cook, to Pitney-Bowes, Inc. Apparatus for separating and feeding sheet-like articles. 3,182,796, 5–11–65, Cl. 209—73.

Refractory & Insulation Corp.: *See*—
Arwine, Alva S. 3,182,915.

Reichert, Robert B. Safety supporting device for dump truck bodies. 3,183,037, 5–11–65, Cl. 298—38.

Reilly, Bertram B., to Dravo Corp. Sewage treating apparatus and air diffuser for use thereon. 3,182,978, 5–11–65, Cl. 261—124.

Reimers, James L., to FMC Corp. Conveying system. 3,182,786, 5–11–65, Cl. 198—131.

Rein, Arnold R.: *See*—
Ecklund, Oscar F., and Rein. 3,182,891.

Reingold, Irving: *See*—
Carter, John L., and Reingold. 3,183,457.

Reinsenauer, Andrew E., and L. L. Ames, Jr., to United States of America, Atomic Energy Commission. Plutonium adsorption and desorption. 3,183,059, 5–11–65, Cl. 23—14.5.

Reliance Electric & Engineering Co., The: *See*—
Schacht, Sterling S. 3,182,949.

Rennhard, Hans H.: *See*—
Blackwood, Robert K., Rennhard, Beereboom, and Stephens. 3,183,267.

Rensch, Eugene F.: *See*—
Rensch, Joseph T. and E. F. 3,182,585.

Rensch, Joseph T. and E. F. Portable grill. 3,182,585, 5–11–65, Cl. 99—340.

Research Corp.: *See*—
Hall, Howard T. 3,182,353.

Rethorst, Scott C. Outboard gem. 3,182,627, 5–11–65, Cl. 115—1.

Rey, Hans-Jakob: *See*—
Wahli, Werner, and Rey. 3,182,908.

Reynolds, James E., and K. D. Holloway, to Motorola, Inc. Diffusion process and apparatus. 3,183,130, 5–11–65, Cl. 148—188

Reynolds Metals Co.: *See*—
De Ridder, Ernst J. 3,182,769.
Glaser, Kurt F. 3,182,763.
Moller, Jens R. L. 3,182,482.

Rhodenbaugh, William C., and T. Liu, to Rainbow Crafts, Inc. Plastic type modeling compound. 3,183,108, 5–11–65, Cl. 106—153.

Rhodes, Harold J.: *See*—
Wu, Yao H., and Rhodes. 3,183,237.

Ribble, Guy H., Jr., to Allis-Chalmers Mfg. Co. Bearing support for split casing pump. 3,183,047, 5–11–65, Cl. 308—22.

Ribeiro, Hasel W.: *See*—
Ribeiro, Louis P. 3,182,661.

Ribeiro, Louis P. H. W., deceased; L. P. Ribeiro heir. Sanitary garments for infants. 3,182,661, 5–11–65, Cl. 128—286.

Riblet, Henry B.: *See*—
Randolph, Joseph P., Jr., Riblet, and Hamblen. 3,182,930.

Ricalzone, Lauro C., to United States of America, Navy. Acoustic distance measuring equipment. 3,183,477, 5–11–65, Cl. 340—2.

Richardson, Eugene E., and C. G. Brannen, to Standard Oil Co. Petroleum wax compositions. 3,183,197, 5–11–65, Cl. 260—17.

Richardson, Lee S.: *See*—
France, Leonard L., Lewis, Ammon, and Richardson. 3,183,085.

Richman, Peter L., to Weston Instruments, Inc. Electrical signal comparator. 3,183,446, 5–11–65, Cl. 328—151.

Richterkessing, Frank H., to W. M. Cissell Mfg. Co. Trouser topping apparatus and buck and bag assembly for use therein. 3,182,869, 5–11–65, Cl. 223—73.

Rickard, Clyde E., to McDowell Mfg. Co. Quick assembly coupling and procedure for making. 3,183,021, 5–11–65, Cl. 285—5.

Rieffle, Paul F. Hydrofoil skis. 3,182,341, 5–11–65, Cl. 9—310.

Riegel Paper Corp.: *See*—
Vazdikis, Janis A. 3,182,632.

Rieker & Co.: *See*—
Teufel, Ewald. 3,182,366.

Riemersma, Henry, and C. B. Satterthwaite, to Westinghouse Electric Corp. Protective means for superconducting solenoids. 3,183,413, 5–11–65, Cl. 317—123.

Rieth, Harold F., to Packard-Bell Electronics Corp. Electrical capacitor having an internal rib structure. 3,183,419, 5–11–65, Cl. 317—242.

Rigoni, Matt A., to Beaugard, Inc. Safety guard for chain saws. 3,182,695, 5–11–65, Cl. 143—32.

Riley Stoker Corp.: *See*—
Alix, Arthur J. 3,182,639.
Miller, Earle C. 3,182,640.

Rising, Frank G.: *See*—
Karppinen, Charles E., and Rising. 3,182,910.

Rittenhouse, Howard E., and S. E. Wood, to Rockwell Mfg. Co. Fluid meter. 3,182,504, 5–11–65, Cl. 73—231.

Rively, Clair M., and J. F. Michael, to Westinghouse Electric Corp. Module assembly for projection lamps. 3,183,395, 5–11–65, Cl. 313—271.

Roach, Charles D., to United States of America, Army. On-road, off-road track carrying vehicle. 3,182,741, 5–11–65, Cl. 180—9.5.

Roahen, Dan C.: *See*—
Wakeman, Alden H., and Roahen. 3,182,971.

Robb, Wendell E., to Midland-Ross Corp. Nozzle mixing type gas burner. 3,182,711, 5–11–65, Cl. 158—109.

Roberts, James S., to Milwaukee Chaplet & Mfg. Co., Inc. Mounting structure for a timer. 3,182,520, 5–11–65, Cl. 74—421.5.

Robertson, H. H., Co.: *See*—
Ferrell, Russell A. 3,182,766.
Jueng, Carl F. 3,182,580.

Robeson, Max O., to Celanese Corp. of America. Trimethylolpropane. 8,183,274, 5–11–65, Cl. 260—635.

Robinson, Glen: *See*—
Curtis, Gerald R., Kyle, and Robinson. 3,183,126.

Rocha, John G., to United States of America, Army. Feed mechanism for externally powered automatic gun. 3,182,555, 5–11–65, Cl. 89—33.

Rocha, John G., to United States of America, Army. Disintegrating cartridge belt link and connector therefor. 3,182,556, 5–11–65, Cl. 89—35.

Rochlitz, Fritz, and H. Vilcsek, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of unsaturated phosphonic acid dichlorides. 3,183,264, 5–11–65, Cl. 260—543.

Rockola, David C., to Rock-Ola Mfg. Corp. Automatic phonograph. 3,183,005, 5–11–65, Cl. 274—10.

Rock-Ola Mfg. Corp.: *See*—
Rockola, David C. 3,183,005.

Rockwell Mfg. Co.: *See*—
Rittenhouse, Howard E., and Wood. 3,182,504.

Rockwell, William C.: *See*—
Schultz, Thomas H., and Rockwell. 3,183,099.

Rodmaker, Gerald M.: *See*—
Spaulding, Joseph H., and Rodmaker. 3,183,346.

Rodoverken, Svenungsson & Co.: *See*—
Peterzon-Arbella, Rodolfo C. 3,182,958.

Rodrigues, Anthony F., to Cycle Equipment Co. Web fan-folding mechanism. 3,182,991, 5–11–65, Cl. 270—73.

Roeser, John O. Double break rotary selector switch construction with contact separation means. 3,183,316, 5–11–65, Cl. 200—11.

Rogen, Neil E., to Iikon Corp. Thermal history gage. 3,182,507, 5–11–65, Cl. 73—362.

Rohm & Haas Co.: *See*—
Clemens, David H. 3,183,281.
Fisher, Sallie A. 3,183,184.
Hurwitz, Melvin D. 3,183,282.

Rohm & Haas G.m.b.H.: *See*—
Gruber, Wilhelm. 3,183,060.

Rolls-Royce Ltd.: *See*—
Basford, Kenneth A. 3,182,774.
Hewson, Colin T. 3,182,898.
Smith, Alfred J., and Metcalf. 3,182,933.
Toone, Brian, and Barham. 3,182,472.

Ronk, Leroy B., to System Analyzer Corp. Electric service system. 3,183,362, 5–11–65, Cl. 307—38.

Ronnenberg, Rudi: *See*—
Weydanz, Wilhelm, Hubensack, and Ronnenberg. 3,182,660.

Root, Raymond C., to Dale Electronics, Inc. Mounting bracket for trimmer potentiometers or the like. 3,182,807, 5–11–65, Cl. 211—49.

Root, Raymond C., to Loup Engineering Corp. Corner joinder of channelled frames. 3,182,771, 5–11–65, Cl. 189—36.

Rorig, Kurt J.: *See*—
Hamilton, Robert W., and Rorig. 3,183,227.

Rosenthal, Salli A., to The Loewy Engineering Co. Ltd. Extrusion press with twin containers. 3,182,479, 5-11-65, Cl. 72—263.

Rosinek, Isidore. Portable high voltage test stick. 3,183,439, 5-11-65, Cl. 324—122.

Ross, Arthur B.: *See*—
Boyer, John L., Albert, and Ross. 3,183,376.

Ross, Bernard J., to International Business Machines Corp. Multivibrator circuit with input signal synchronized means. 3,183,368, 5-11-65, Cl. 307—88.5.

Ross, Harry A. Child's rocker swing. 3,183,035, 5-11-65, Cl. 297—281.

Rossmy, Gerd, and J. Wassermeyer, to Th. Goldschmidt A.-G. Organic silicone compounds and method for producing same. 3,183,254, 5-11-65, Cl. 260—448.2.

Rouzier, Michel M. Control device for electronic telephonic switching networks of large capacity. 3,183,308, 5-11-65, Cl. 179—18.

Rowe, P. R.: *See*—
McCollum, Burton. 3,182,743.

Rowe, Robert. Spray gun transition piece. 3,182,866, 5-11-65, Cl. 222—464.

Rowell, Richard H.: *See*—
McNicol, John H., and Rowell. 3,182,716.

Royle, Norman: *See*—
Hipszer, Thomas J., and Royle. 3,183,394.

Rubens, Louis C., and R. E. Skochdopole, to The Dow Chemical Co. Apparatus for detecting dimensional changes of a reactant substance. 3,182,497, 5-11-65, Cl. 73—149.

Rubenstein, Irving. Apparatus for making and packaging ice cream sandwiches. 3,182,611, 5-11-65, Cl. 107—1.

Rudbach, Wolfgang, to Metallgesellschaft Aktiengesellschaft. Vaporization of hydrocarbons. 3,183,181, 5-11-65, Cl. 208—211.

Rudniski, Jack: *See*—
Simmons, Cecil E., and Rudniski. 3,182,441.

Rue, Charles V., E. A. Fisher, and F. E. Heischman; said Rue, assor. Wakefield Corp; said Fisher and Heischman, assors. Electric Auto-Lite Co. Abrasive article. 3,183,071, 5-11-65, Cl. 51—298.

Ruff, Donald E., to Universal Oil Products Co. Infra-red wire annealing apparatus. 3,182,982, 5-11-65, Cl. 266—3.

Runner, John W.: *See*—
Hawley, Jesse G., Runner, and Cook. 3,182,756.

Rupp, William L., to Hoover Ball and Bearing Co. Blending apparatus. 3,182,969, 5-11-65, Cl. 259—25.

Ruston & Hornsby Ltd.: *See*—
Hyde, John A. C. 3,182,955.

Ryan, John W. Action headgear with spring actuated flying propeller. 3,182,422, 5-11-65, Cl. 46—84.

Roschke, Erwin M., to Zenith Radio Corp. Remote control system. 3,183,444, 5-11-65, Cl. 325—392.

Rosenberg, Joseph, and W. N. Larsen, to General Electric Co. Electromagnetic construction. 3,182,383, 5-11-65, Cl. 29—155.57.

Rosenblatt, David H., and G. H. Broome, to United States of America, Army. Epoxides from ethylenic compounds containing electron-withdrawing groups. 3,183,250, 5-11-65, Cl. 260—348.

Sack, Edgar A., Jr., to Westinghouse Electric Corp. Multivibrator using electroluminescent-photoconductive control elements. 3,183,452, 5-11-65, Cl. 331—107.

Sacks, Norman M., W. J. Frank, Jr., and T. C. Price, Jr., to Burndy Corp. Connector. 3,183,476, 5-11-65, Cl. 339—242.

Saegusa, Takeo: *See*—
Furukawa, Junji, and Saegusa. 3,183,210.

Sah, Chih-tang: *See*—
Leistiko, Otto, Jr., and Sah. 3,183,128.

St. Regis Paper Co.: *See*—
Wakeman, Alden H., and Roahen. 3,182,971.

Sakurai, Masami. High frequency high speed switching circuits. 3,183,373, 5-11-65, Cl. 307—88.5.

Salimbeni, Gherardo B., and I. Veneziani. Method and means for locating subsoil formations during drilling. 3,182,735, 5-11-65, Cl. 175—50.

Sally, John, to Superior Petticoat Co., Inc. Automatic guided sewing machine. 3,182,619, 5-11-65, Cl. 112—203.

Salomon, Hans J., and L. H. Schaudinischky. Method and apparatus for improving hearing. 3,183,312, 5-11-65, Cl. 179—107.

Salowe, Seymour: *See*—
Schmidt, Warren J., and Salowe. 3,183,436.

Sandoz A.G.: *See*—
Schuler, Max, Helfenberger, and Lutz. 3,183,258.

Sandoz Ltd.: *See*—
Bena, Jakob, Burkhard, Kaegi, and von Tobel. 3,183,224.
Heim, Roger, Hofmann, Brack, Kobel, and Cailleux. 3,183,172.

Sankyo Co., Ltd.: *See*—
Yura, Yasuo. 3,183,240.

Sanraku Ocean Kabushiki Kaisha: *See*—
Kitai, Atsuo, Kitamura, Miyachi, and Osaki. 3,183,170.

Santoni, Ermenegildo, ½ to Officine Galileo Societa per Azioni. Pantograph operated stereo-photographic apparatus for platting profiles. 3,182,898, 5-11-65, Cl. 33—20.

Sargent, George W., to Beloit Iron Works. Paper stock flow system. 3,182,683, 5-11-65, Cl. 137—563.

Sato, Takehiko, and T. Akiyama, to Honeywell Inc. System for transmitting signals. 3,182,457, 5-11-65, Cl. 60—54.5.

Satterthwaite, Cameron B.: *See*—
Riemersma, Henry, and Satterthwaite. 3,183,413.

Savon, Julio L. J.: *See*—
Ortega Torres, Jose P. E., and Savon. 3,182,408.

Sawada, Yasuhiro: *See*—
Tsujihata, Keiji, and Sawada. 3,182,988.

Sayag, Andre, to Zallea Brothers, Inc. Expansion joints. 3,183,022, 5-11-65, Cl. 285—98.

Schaar, Charles H., to The Kendall Co. Method of making perforated adhesive tapes. 3,183,116, 5-11-65, Cl. 117—98.

Schacht, Sterling S., to The Reliance Electric & Engineering Co. Fingerless duct spacer for squirrel cage rotor. 3,182,949, 5-11-65, Cl. 249—60.

Schaefer, Frederic J., II, to W. W. Fagan. Voice box for aural training. 3,182,746, 5-11-65, Cl. 181—20.

Schaefer, Knut. Cinematographic camera with snap-spring release mechanism. 3,183,520, 5-11-65, Cl. 352—178.

Schafer, Johannes: *See*—
Engel, Frederico, Kranzlein, and Schafer. 3,183,204.

Schall, Myron M., to Dana Corp. Hydrokinetic converter with multiple clutches and control means to simultaneously engage the same. 3,182,775, 5-11-65, Cl. 192—3.2.

Schaudinischky, Leo H.: *See*—
Salomon, Hans J., and Schaudinischky. 3,183,312.

Scheer, Herman C.: *See*—
Henry, William F., Scheer, and Wicklund. 3,183,518.

Schellentrager, Eugene W., to The Atlas Bolt & Screw Co. Locomotive drive. 3,182,603, 5-11-65, Cl. 105—99.

Schenck, Carl, Maschinenfabrik G.m.b.H.: *See*—
Federn, Klaus, Geiss, and Seibert. 3,182,511.

Scherer, Otto, A. Steinmetz, H. Kühn, W. Wetzel, and K. Grafen, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning. Process for the manufacture of fluorethylenes. 3,183,277, 5-11-65, Cl. 260—653.5.

Schiavi, Vincent. Adjustable scraper blade for road-grading equipment. 3,182,410, 5-11-65, Cl. 37—179.

Schick, John W., and E. A. Oberright, to Socony Mobil Oil Co., Inc. Distyrenated alkyl aromatic hydrocarbon as lubricant. 3,183,190, 5-11-65, Cl. 252—59.

Schierholz, Louis: *See*—
Schleich, Josef. 3,182,824.

Schiff, Sidney: *See*—
Axe, William N., Gragson, and Schiff. 3,183,221.

Schiller, Joseph A.: *See*—
Lynch, Leslie S., Jr., Eldridge, and Schiller. 3,183,025.

Schleich, Josef, to L. Schierholz. Silo, used for the preservation of green fodder. 3,182,824, 5-11-65, Cl. 214—17.

Schlesinger, Heinz, and W. Muller, to Keuffel & Esser Co. Light sensitive diazotype material containing dibenzyl alkylamine coupling agents. 3,183,093, 5-11-65, Cl. 96—91.

Schlitz, Jos., Brewing Co.: *See*—
Gibson, Ralph W., Jr. 3,183,140.

Schlueter, Ernest. Fastening clip. 3,183,030, 5-11-65, Cl. 292—303.

Schlumberger Well Surveying Corp.: *See*—
Shore, James B. 3,182,724.

Schmaus, Siegfried H. A., to Ametek, Inc. Milk cooler temperature control. 3,182,506, 5-11-65, Cl. 73—343.

Schmidt, Karl-Heinz: *See*—
Schundehutte, Karl-Heinz, Nickel, Schmidt, and Suckfull. 3,183,223.

Schmidt, Kurt, to General Electric Co. Alkali metal vapor lamp manufacture. 3,183,051, 5-11-65, Cl. 316—8.

Schmidt, Robert H. E.: *See*—
Goss, John B., and Schmidt. 3,182,425.

Schmidt, Warren J., and S. Salowe, to Westinghouse Electric Corp. Pulse operated counting apparatus for measuring speed difference. 3,183,436, 5-11-65, Cl. 324—69.

Schmidt-Nickels, Wilhelm: *See*—
Randall, David I., and Schmidt-Nickels. 3,183,053.

Schneider, Alfred, R. K. Frank, and W. S. Fichuk, to Holley Carburetor Co. Speed responsive switching apparatus. 3,182,648, 5-11-65, Cl. 123—148.

Schneider, Freidrich C.: *See*—
Sommer, Ernest P., and F. C. and H. E. Schneider. 3,183,052.

Schneider, Heinz E.: *See*—
Sommer, Ernest P., and F. C. and H. E. Schneider. 3,183,052.

Schnitzer, Erich, to Schweizerische Industrie-Gesellschaft. Chip-removing copying machine tool. 3,182,559, 5-11-65, Cl. 90—13.4.

Schnurrbusch, Karl: *See*—
Kniege, Wilfried, and Schnurrbusch. 3,183,206.

Schoen, William, and J. T. Kelley, to Standard Oil Co. Hydrocarbon conversion process and catalyst. 3,183,280, 5-11-65, Cl. 260—683.76.

Schonholzer, Emil T., to Westinghouse Electric Corp. Magnetic amplifier-controlled transistor apparatus. 3,183,430, 5-11-65, Cl. 321—47.

Schreiner, Heinz R., to Union Carbide Corp. Process for controlling the growth rate of fungi. 3,183,171, 5-11-65, Cl. 195—81.

Schroeder, Hansjuergen A.: *See*—
Knowles, Thomas A., and Schroeder. 3,183,251.

Schroeder, Manfred R., to Bell Telephone Laboratories, Inc. Sound amplification system. 3,183,304, 5-11-65, Cl. 179—1.

Schuldiner, Sigmund: *See*—
White, Joseph C., and Schuldiner. 3,183,122.

Schuler, Max, H. Helfenberger, and K. Lutz, to Sandoz A.G. Dialkyl 1-acylamino 2,2-dichlorovinyl phosphates. 3,183,258, 5-11-65, Cl. 260—461.

Schuler, Norman W., to Polaroid Corp. 2,-benzoyl-5-methoxyphenyl acrylate and polymers thereof. 3,183,219, 5-11-65, Cl. 260—86.1.

Schultz, Lewis K.: *See*—
De Sante, Joseph J., and Schultz. 3,183,177.

Schultz, Thomas H., and W. C. Rockwell, to United States of America, Agriculture. Preparation of flavor compositions. 3,183,099, 5-11-65, Cl. 99—140.

Schulz, Ferdinand. Atomizing nozzle. 3,182,916, 5-11-65, Cl. 239—468.

Schulz Tool and Mfg. Co.: *See*—
Hieber, Ellsworth E. 3,182,569.

Schuman, Seymour C., to Hydrocarbon Research, Inc. Two stage hydrocracking-desulfurization process. 3,183,179, 5-11-65, Cl. 208—97.

Schuman, Seymour C., R. H. Wolk, and M. C. Chervenak, to Hydrocarbon Research, Inc. Hydrogenation of oils. 3,183,180, 5-11-65, Cl. 208—143.

Schundehutte, Karl-Heinz, H. Nickel, K.-H. Schmidt, and F. Suckfull, to Farbenfabriken Bayer Aktiengesellschaft. Metal-containing polyazo dyestuffs. 3,183,223, 5-11-65, Cl. 260—145.

Schwartz, Benno A., Jr., to The Steel Improvement and Forge Co. Apparatus for electrolytically treating the interior of a bore. 3,183,176, 5-11-65, Cl. 204—212.

Schwarz, Frank: *See*—
Barnes, Robert B., and Schwarz. 3,183,349.

Schweitzer, Carl E.: *See*—
Brinker, Keith C., and Schweitzer. 3,183,211.

Schweitzer, Donald G., R. M. Singer, and D. H. Gurinsky, to United States of America, Atomic Energy Commission. Low temperature graphite radiation damage removal. 3,183,166, 5-11-65, Cl. 176—38.

Schweizerische Industrie-Gesellschaft: *See*—
Egli, Alwin. 3,182,570.
Schnitzer, Erich. 3,182,559.

Schwerdhofer, Hans J., to Fichtel & Sachs A.G. Dual-speed hub. 3,182,529, 5-11-65, Cl. 74—750.

Schwerin, Andre K.: *See*—
Cerwonka, Edward, and Schwerin. 3,183,094.

Scott, Erhardt K. and M. L., to Accurate Steel Rule Die Manufacturers. Construction for steel rule cutting dies. 3,182,530, 5-11-65, Cl. 76—107.

Scott, Maximillian L.: *See*—
Scott, Erhardt K. and M. L. 3,182,530.

Scott, Herbert F., Jr., to Allied Chemical Corp. Process for cladding metals with titanium. 3,182,395, 5-11-65, Cl. 29—498.

Scott, Russell W. Fusion piercing or drilling machine. 3,182,734, 5-11-65, Cl. 175—14.

Sea-All, Inc.: *See*—
Gentile, Robert. 3,182,340.

Searer, Harold J., to Pet Milk Co. Snap-on lid for baby food containers. 3,182,841, 5-11-65, Cl. 215—11.

Searle, G. D., & Co.: *See*—
Cusic, John W., and Le Von. 3,183,229.
Hamilton, Robert W., and Rorig. 3,183,227.
Klimstra, Paul D. 3,183,253.

Seaton, Harold E., to The Antocall Co. Signal station. 3,183,501, 5-11-65, Cl. 340—296.

Sebastian, Thomas C.: *See*—
Whitmore, Charles H., Sebastian, and Winquist. 3,182,638.

Seckerson, Clifford A., to A. Raymond, Societe. Fastener. 3,182,939, 5-11-65, Cl. 248—73.

Seckerson, Clifford A., to United-Can Inc. Fasteners. 3,182,941, 5-11-65, Cl. 248—74.

Sedo, Gerald H., to M & D Store Fixtures, Inc. Multi-angle bracket. 3,182,945, 5-11-65, Cl. 248—242.

Sedor, John, and C. F. Strup, Jr., to International Business Machines Corp. Bursting device for multilayer webs. 3,182,876, 5-11-65, Cl. 225—101.

Seibert, Alfred: *See*—
Federn, Klaus, Geiss, and Seibert. 3,182,511.

Seidel, Harold, to Bell Telephone Laboratories, Inc. Frequency modulations apparatus. 3,183,456, 5-11-65, Cl. 332—29.

Seidner, Orville R., to The Garrett Corp. Rocket vehicle with auxiliary staging structure and common fuel supply. 3,182,593, 5-11-65, Cl. 102—49.

Selig, Henry: *See*—
Claassen, Howard H., Selig, and Malm. 3,183,061.

Semple, Robert M.: *See*—
Alsop, Charles R., and Semple. 3,182,972.

Senkowski, Thaddeus S.: *See*—
Bieganousky, Frank, Faulseit, and Senkowski. 3,182,790.

Serafin, Frank G., and V. H. Dodson, Jr., to W. R. Grace & Co. Cement additive composed of a mixture of methyl acetate and methyl alcohol. 3,183,105, 5-11-65, Cl. 106—90.

Serio, Anthony W., to Youngstown Steel Door Co. Beverage brewing apparatus. 3,182,584, 5-11-65, Cl. 99—284.

Serniuk, George E., and R. M. Thomas, to Esso Research and Engineering Co. Copolymerization of polar with non-polar monomers in the presence of a Friedel-Crafts and a free radical initiator. 3,193,217, 5-11-65, Cl. 260—85.5.

Servo Corp. of America: *See*—
Hansel, Paul G. 3,183,507.

Shapiro, Eugene: *See*—
Fleisher, Harold, Harris, and Shapiro. 3,182,574.

Shapiro, Florence M.: *See*—
Shapiro, Seymour L., and Freedman. 3,183,230.

Shapiro, Seymour L., deceased (F. M. Shapiro, executrix), and L. Freedman; said Freedman assor. to U. S. Vitamin & Pharmaceutical Corp. Haloaralkyl biguanides. 3,183,230, 5-11-65, Cl. 260—564.

Sharpe, Frederick P., to Kelsey-Hayes Co. Work handling device for annular workpieces. 3,182,484, 5-11-65, Cl. 72—393.

Shavel, John, Jr.: *See*—
Von Strandtmann, Maximilian, Shavel, and Bobowski. 3,183,265.

Shelby Business Forms, Inc.: *See*—
Doyle, Donald J., and Kehoe. 3,182,894.

Shell Oil Co.: *See*—
Fischer, Rudolph F., and Smith. 3,183,054.
Vogel, Charles B. 3,182,744.

Shemet, Alexander M. Fastening device. 3,182,770, 5-11-65, Cl. 189—36.

Shenk, Robert H., to Zurn Industries, Inc. Clutch actuating mechanism. 3,182,567, 5-11-65, Cl. 92—138.

Sherrie, Robert M., to Pullman Inc. Container transfer arrangement. 3,182,607, 5-11-65, Cl. 105—366.

Shimeha, Jiro, S. Ozawa, I. Tanaka, S. Matsumura, and H. Kubota, to Teikoku Jinzo Kenshi Kabushiki Kaisha. Method of producing polyvinyl chloride fibers having improved thermal properties. 3,183,201, 5-11-65, Cl. 260—31.2.

Shiokawa, Shozo. Shearing machine. 3,182,543, 5-11-65, Cl. 83—573.

Shionagi & Co., Ltd.: *See*—
Takamizawa, Akira. 3,183,232.

Shirai, Kiyoshi: *See*—
Watanabe, Masami, and Shirai. 3,183,196.

Shirato, Shiro: *See*—
Sumiki, Yusuke, Umezawa, Fukunaga, Yonehara, Kubo, Fujita, Shirato, Takaga, Kato, Esumi, and Ono. 3,183,153.

Shirodkar, Vithal N. Plastic prosthesis useful in gynaecological surgery. 3,182,662, 5-11-65, Cl. 128—303.

Shirrod, Barbara N., to J. T. Posey. Restraining belt. 3,182,338, 5-11-65, Cl. 5—336.

Shive, William M., to General Electric Co. Impeller means for food waste disposer. 3,182,918, 5-11-65, Cl. 241—46.

Shore, James B., to Schlumberger Well Surveying Corp. Orienting apparatus and its manufacture. 3,182,724, 5-11-65, Cl. 166—55.1.

Shorner, George L. Hay crushing roll. 3,182,378, 5-11-65, Cl. 29—125.

Sibley, Henry C., to General Signal Corp. System for detecting hot elements on railway vehicles. 3,183,350, 5-11-65, Cl. 246—169.

Siedband, Melvin P.: *See*—
Jensen, Arthur S., and Siedband. 3,183,400.

Sigel, David, to United States of America, Navy. Phase comparator "AND" gate. 3,183,445, 5-11-65, Cl. 328—134.

Sigsworth, Arthur C. M., to The International Nickel Co., Inc. Apparatus for contacting of solids with gases in a fluidized bed. 3,183,064, 5-11-65, Cl. 23—284.

Sikorski, Mathew E., to Bell Telephone Laboratories, Inc. Stabilised tunnel diode stress sensing devices. 3,182,492, 5-11-65, Cl. 73—88.5.

Silstorf, Harry F.: *See*—
Hamann, Harry L., and Silstorf. 3,182,367.

Simmonds, William H., to Westinghouse Electric Corp. Frame grid holding apparatus. 3,182,688, 5-11-65, Cl. 140—71.5.

Simmons, Cecil E., and J. Rudniski, to Grinnell Corp. Chain riveting machine. 3,182,441, 5-11-65, Cl. 59—7.

Simon, Myron S., to Polaroid Corp. Photographic products, compositions and processes employing azo dye developers. 3,183,089, 5-11-65, Cl. 96—29.

Simon-Carves Ltd.: *See*—
Alsop, Charles R., and Semple. 3,182,972.

Simoni, Vittorio, to The Elmco Corp. Process for purifying sugar juices. 3,182,665, 5-11-65, Cl. 127—50.

Sinclair, Stuart W., to Anderson, Clayton & Co. Push-off attachment for lift trucks. 3,182,836, 5-11-65, Cl. 214—514.

Singer, Ernst. Pressure operated electrical differential switching devices. 3,183,322, 5-11-65, Cl. 200—83.

Singer, James P.: *See*—
Singer, John J. and J. P. 3,183,262.

Singer, John J. and J. P., to Hampshire Chemical Corp. Process for the preparation of sodium nitrilo triacetate. 3,183,262, 5-11-65, Cl. 260—534.

Singer, Robert M.: *See*—
Schweitzer, Donald G., Singer, and Gurinsky. 3,183,166.

Singher, Heron O., and R. Wellerson, Jr., to Ortho Pharmaceutical Corp. Stabilised partial thromboplastin reagent. 3,183,159, 5-11-65, Cl. 167—74.

Sisk, George W.: *See*—
Hames, William A., Jungemann, and Sisk. 3,182,899.

Skinner, Clayton H.: *See*—
Donadio, Vincent J., Bankauf, and Skinner. 3,182,788.

Skochdopole, Richard E.: *See*—
Rubens, Louis C., and Skochdopole. 3,182,497.

Slator, Damon T., and H. A. Baugh, to Bowen Tools, Inc. Apparatus for feeding tubing or other objects. 3,182,877, 5-11-65, Cl. 226—172.

Slawsky, Zaka I., and S. J. Raff, to United States of America, Navy. Correlation sonobuoy system and method. 3,183,478, 5-11-65, Cl. 340—2.

Slawson, Richard S., to George W. Dahl Co., Inc. SCR supply for reversible motor system. 3,183,425, 5-11-65, Cl. 318—227.

Sliter, Donald D., to International Business Machines Corp. Data recording apparatus. 3,183,516, 5-11-65, Cl. 346—74.

Slonneger, Bruce K., to Texas Instruments Inc. Thermal protector for electrical translating devices. 3,183,383, 5-11-65, Cl. 310—68.

Sluijters, Robert, to American Enka Corp. Mixer. 3,182,965, 5-11-65, Cl. 259—4.

Small, Samuel N., to A. G. Cohen, and P. Weiss. Tiltable umbrella having gear rack operating means. 3,182,673, 5-11-65, Cl. 135—46.

Smidth, F. L., & Co.: *See*—
Frankert, Otto P. 3,183,106.

Smith, Alan D., to Westinghouse Electric Corp. Means for attaching appliance handles to a power drive shank. 3,182,345, 5-11-65, Cl. 15—176.

Smith, Alfred J., and E. Metcalf, to Rolls-Royce Ltd. Aircraft control systems. 3,182,933, 5-11-65, Cl. 244—77.

Smith, Curtis W.: *See*—
Fischer, Rudolph F., and Smith. 3,183,054.

Smith, George N., to Ingersoll-Rand Co. Sealing device. 3,182,470, 5-11-65, Cl. 64—28.

Smith, Graydon, to Connecticut Valley Enterprises, Inc. Electromagnetic relays. 3,183,324, 5-11-65, Cl. 200—87.

Smith Kline & French Laboratories: *See*—
Loev, Bernard. 3,183,260.

Smith, Richard D.: *See*—
Layne, Gilbert S., Huml, and Smith. 3,183,079.

Smith, Richard D., to Armstrong Patents Co. Ltd. Temperature compensator units for hydraulic circuits. 3,182,458, 5-11-65, Cl. 60—54.5.

- **Smith, Robert M.:** *See*—
  - Bhuyan, Bijoy K., Kelly, and Smith. 3,183,157.
- **Smith, Watt V.:** *See*—
  - Flaherty, Robert J., Jr., and Smith. 3,183,384.
- **Smoker, Alvin G.**, to Sperry Rand Corp. Conveyor. 3,182,783, 5–11–65, Cl. 198—7.
- **Smyth, George F.**, to Long-Lok Corp. Self-locking screw-threaded fastener. 3,182,703, 5–11–65, Cl. 151—7.
- **Snediker, Robert R.**, to Chicago Show Printing Co. Display means. 3,182,414, 5–11–65, Cl. 40—125.
- **Sobeck, Eugene E.**, and J. M. Andresen, to Lake Center Switch Co. Motors. 3,182,564, 5–11–65, Cl. 91—421.
- **Soc. Toscana Industria Cucine Elettrodomestici (S.T.I.C.E.) S.p.Az.:** *See*—
  - Mori, Orlando. 3,183,120.
- **Society Indatom and Compagnie des Ateliers et Forges de la Loire:** *See*—
  - Gumuchian, Andre, and Virnot. 3,183,163.
- **Socony Mobil Oil Co., Inc.:** *See*—
  - Baldwin, Willett F. 3,183,353.
  - Schick, John W., and Oberright. 3,183,190.
- **Soden, Ralph R.**, and L. G. G. Van Uitert, to Bell Telephone Laboratories, Inc. Optical maser crystals. 3,183,193, 5–11–65, Cl. 252—301.5.
- **Sogoian, Kaloust P.** Hydraulic door closer. 3,182,349, 5–11–65, Cl. 16—52.
- **Sokolowski, Thaddeus I.:** *See*—
  - Caputo, James B., and Sokolowski. 3,183,459.
- **Soldek, Jerzy K.**, to Politechnika Gdanska, and Gdansk Technical University. Impulse reactor-type regulator. 3,183,433, 5–11–65, Cl. 323—89.
- **Solomon, Benjamin E.**, to Westinghouse Electric Corp. Compressor. 3,182,901, 5–11–65, Cl. 230—206.
- **Sommer, Ernest P.**, and F. C. and H. E. Schneider, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the continuous production of brown water-insoluble azo-dyestuffs on fabrics of vegetable fibers. 3,183,052, 5–11–65, Cl. 8—46.
- **Sommer, Gordon M.**, to Force Control, Inc. Clutch-brake unit. 3,182,776, 5–11–65, Cl. 192—18.
- **Sonnanstine, Edgar H., Jr.:** *See*—
  - Donohoo, David D., Jr., and Sonnanstine. 3,182,907.
- **Sonnemann, William K.**, to Westinghouse Electric Corp. Relaying assembly. 3,183,405, 5–11–65, Cl. 317—27.
- **Sonoco Products Co.:** *See*—
  - Waldron, Jack T. 3,182,884.
- **Sono-Slide Corp.:** *See*—
  - Berlings, Orests B. 3,182,548.
- **Sony Corp.:** *See*—
  - Takahata, Tsuneo, and Utsunomiya. 3,183,464.
  - Yasuda, Junichi, and Kubota. 3,183,407.
- **Sony Corp. (Sony Kabushikikaisha):** *See*—
  - Uemura, Saburo, and Nagase. 3,183,437.
- **Sopicki, Walter**, and G. Hannappel, to Knapsack-Griesheim Aktiengesellschaft. Inert gas welding torch with a delay device for the gas valve. 3,183,336, 5–11–65, Cl. 219—75.
- **Southard, Carl D.:** *See*—
  - Laurer, George J., and Southard. 3,183,489.
- **Spacht, Ronald B.**, to The Goodyear Tire & Rubber Co. Trisubstituted phenols having alkyl, tertiary alkyl, and aralkyl substituents. 3,183 273, 5–11–65, Cl. 260—619.
- **Sparks, Allen K.**, to Universal Oil Products Co. Preparation of para-nitrohalobenzenes. 3,183,275, 5–11–65, Cl. 260—646.
- **Sparks, George C.** Dispensing package. 3,182,789, 5–11–65, Cl. 206—42.
- **Spaulding, Joseph H.**, and G. M. Rodmaker, to Whiteway Mfg. Co. Fluorescent lighting fixture. 3,183,346, 5–11–65, Cl. 240—25.
- **Spencer, Kenneth L.** Pivoted valve. 3,182,951, 5–11–65, Cl. 251—85.
- **Sperry Rand Corp.:** *See*—
  - Aberth, Oliver G., and Andersson. 3,183,482.
  - Bauer, Peter. 3,182,676.
  - Beach, Lennox F. 3,183,355.
  - Beiler, Aaron P., and Stoltzfus. 3,182,782.
  - Blain, Albert. 3,183,495.
  - Caputo, James B., and Sokolowski. 3,183,459.
  - Dorfman, Walter, and Weniger. 3,183,517.
  - Gomes, Ronald J. 3,182,631.
  - Horton, Harold B. 3,182 674.
  - Lisowski, John R. 3,183,483.
  - Monsees, Claude E. 3,182,737.
  - Smoker, Alvin G. 3,182,783.
  - Welsh, Herbert F. 3,183 494.
  - Zilberfarb, Saul N. 3,182,686.
  - Zilberfarb, Saul N., and Polter. 3,182,675.
  - Zolnik, Charles R. 3,183,451.
- **Spiegelberg, Hans:** *See*—
  - Kiss, Joseph, Spiegelberg, and Vaterlaus. 3,183,247.
- **Spirotechnique, La:** *See*—
  - Cousteau, Jacque Y., Gagnan, Laban, and Mollard. 3,182,622.
- **Sporer, Alfred H.**, and C. E. Allman, to International Business Machines Corp. Vesicular photographic film material and process for utilization of same. 3,183,091, 5–11–65, Cl. 96—48.
- **Sprague Electric Co.:** *See*—
  - Sprague, John L., and Wied. 3,182,376.
- **Sprague, John L.**, and O. J. Wied, to Sprague Electric Co. Silicon dioxide capacitor. 3,182,376, 5–11–65, Cl. 29—25.41.
- **Sprayon Products Inc.:** *See*—
  - Ellis, John G., Groth, and Hall. 3,182,864.
- **Square D Co.:** *See*—
  - Manners, Frank A. 3,183,423.
- **Stackpole Carbon Co.:** *See*—
  - Diehl, John E. 3,183,428.
- **Stamicarbon N.V.:** *See*—
  - Evers, Johannes J. M., and Van Asselt. 3,183,270.
- **Stamm, John J.**, to Westinghouse Electric Corp. Generator fed plural motor system including voltage control, current control and slip control. 3,183,422, 5–11–65, Cl. 318—52.
- **Standard Oil Co. (Indiana):** *See*—
  - Alexander, John J. 3,183,190.
  - Broadhead, Ronald L. 3,183,119.
  - Hirsch, Arthur G., and Van Strien. 3,183,248.
  - Richardson, Eugene E., and Brannen. 3,183,197.
  - Schoen, William, and Kelly. 3,183,280.
  - Udelhofen, John H. 3,183,069.
  - Udelhofen, John H. 3,183,070.
- **Standard Oil Co. (Ohio), The:** *See*—
  - Alford, Harvey E., and Veatch. 3,183,107.
- **Stanley Works, The:** *See*—
  - Armington, Donald T., and Dimmett. 3,182,586.
- **Staples, Alfred T.:** *See*—
  - Watkins, Willie R. 3,182,666.
- **Starck, Leon**, to Linotype G.m.b.H. Control arrangement for typesetting machines. 3,182,904 5–11–65, Cl. 234—5.
- **Starriett, Robin J.:** *See*—
  - Nason, Tucker E., and Starriett. 3,182,702.
- **Stearns, Walter V.**, ½ to Dayton R. Stemple, Jr. Refrigeration method for reducing the salt content of brine. 3,182,463, 5–11–65, Cl. 62—58.
- **Steel Improvement and Forge Co., The:** *See*—
  - Schwartz, Benno A., Jr. 3,183,176.
- **Steinmetz, Alfons:** *See*—
  - Scherer, Otto, Steinmetz, Kühn, Wetzel, and Grafen. 3,183,277.
- **Stelzer, William**, to Kelsey-Hayes Co. Vehicle brake device. 3,182,760, 5–11–65, Cl. 188—152.
- **Stemple, Dayton R., Jr.:** *See*—
  - Stearns, Walter V. 3,182,463.
- **Stenning, George P.:** *See*—
  - Craker, Noel D., Stenning, and Cotton. 3,183,392.
- **Stephens, Charles R., Jr.:** *See*—
  - Blackwood, Robert K., Rennhard, Beereboom, and Stephens. 3,183,267.
- **Stephens, Donald L.**, to Pacific Car and Foundry Co. Amphibious tracked vehicle. 3,182,626, 5–11–65, Cl. 115—1.
- **Sterling Drug Inc.:** *See*—
  - Zenttz, Bernard L. 3,183,235.
- **Stern, Robert L.:** *See*—
  - Du Rose, Arthur H., and Stern. 3,183,067.
- **Stevens, Wayne E.** Golfing aid. 3,182,401, 5–11–65, Cl. 33—46.
- **Stewart, Aubrey P., Jr.**, to Nodaway Valley Foods Inc. Steam injection heater. 3,182,975, 5–11–65, Cl. 261—34.
- **Still, Carl, Firma:** *See*—
  - Breitbach, Fritz, and Lorenz. 3,183,175.
- **Stock, Alvin L.**, to Westinghouse Electric Corp. Blow-out door for overpressure protection. 3,182,855, 5–11–65, Cl. 220—89.
- **Stockdale, Norman S.:** *See*—
  - Christiansen, Richard A., Stockdale, and Tashjian. 3,183,484.
- **Stoltzfus, Daniel B.:** *See*—
  - Beiler, Aaron P., and Stoltzfus. 3,182,782.
- **Stone, Dewey C., Jr.**, to Baker Oil Tools, Inc. Multiple zone selective flow control apparatus. 3,182,726, 5–11–65, Cl. 166—145.
- **Stone, Franz T.** Valve for an atomizing spray nozzle. 3,182,950, 5–11–65, Cl. 251—63.
- **Stonebraker, Louis V.:** *See*—
  - Gilson, James K., Higgins, Huff, and Stonebraker. 3,183,063.
- **Strand, Erling K.**, to Margaret C. L. Strand, and Patricia A. O'Hare. Hose clamp. 3,182,373, 5–11–65, Cl. 24—263.
- **Strand, Margaret C. L.:** *See*—
  - Strand, Erling K. 3,182,373.
- **Strandgren, Carl B.** Roller screw. 3,182,522, 5–11–65, Cl. 74—459.
- **Strassheim, L. F., Co.:** *See*—
  - McLean, Scott. 3,182,614.
- **Strauss, Howard J.**, to United States of America, Navy. Electronic time compression system. 3,183,505, 5–11–65, Cl. 343—17.1.
- **Streit, Rudolf**, to Autophon A.G. Circuit for providing sequences of pulses and intervals. 3,183,454, 5–11–65, Cl. 331—113
- **Strother, Claude Jr.**, and B. D. Macomber, to United States of America, Navy. Delay line pulse position modulation demodulator. 3,183,448, 5–11–65, Cl. 329—107.
- **Strup, Charles F., Jr.:** *See*—
  - Sedor, John, and Strup. 3,182,876.
- **Stulbach, Nathan.** Anti-glare shield for motor vehicle windshields. 3,183,033, 5–11–65, Cl. 296—97.
- **Suckfull, Fritz:** *See*—
  - Schundehutte, Karl-Heinz, Nickel, Schmidt, and Suckfull. 3,183,223.
- **Sugawara, Yujiro:** *See*—
  - Kuwata, Tsutomu, Sugawara, and Nakazawa. 3,183,194.
- **Sugino, Paul S.:** *See*—
  - Harris, Clyde W., Sugino, and Nieswander. 3,183,519.
- **Sumiki, Yusuke**, H. Umezawa, K. Fukunaga, H. Yonehara, H. Kubo, S. Fujita, S. Shirato, K. Takaga, M. Kato, S. Esumi, and T. Ono, to Zaidan-Hojin Nihon Kosei Bussbitsu Gakujyutsu Kyogikai and Kaken Kagaku Kabushiki Kaisha. Blasticidin-S addition products and their manufacturing process. 3,183,153, 5–11–65, Cl. 167—65.
- **Sumnter, Charles B., Jr.**, and J. T. MacIsaac, Jr., to Fieldcrest Mills, Inc. Apparatus and method for severing toweling and the like into individual lengths. 3,182,536, 5–11–65, Cl. 83—18.
- **Sun Oil Co.:** *See*—
  - Bennett, John D. 3,182,850.
  - Brillaud, Andre R. 3,183,169.
  - Guthrie, Jack A. 3,183,183.
  - Hardy, William C. 3,182,721.

- **Sun Oil Co.:** *See*—Continued
  - Mayes, Fred M. 3,182,502.
  - Mills, Ivor W., and Melchiore. 3,183,279.
- **Sunbrand Supply Co., Inc.:** *See*—
  - Frost, Walter W. 3,182,822.
- **Sund, William**, to Burndy Corp. Compression tool. 3,182,485, 5–11–65, Cl. 72—410.
- **Sundberg, Bertil J.**, to G. H. Tennant Co. Machine for making filter structures. 3,182,693, 5–11–65, Cl. 141—71.
- **Sundberg, Bertil J.**, to G. H. Tennant Co. Filter fabricating apparatus. 3,182,387, 5–11–65, Cl. 29—234.
- **Sundstrand Corp.:** *See*—
  - Ford, Arthur W. 3,183,431.
- **Superior Petticoat Co., Inc.:** *See*—
  - Sally, John. 3,182,619.
- **Superior Tube Co.:** *See*—
  - Hipszer, Thomas J., and Royle. 3,183,394.
- **Sutton, George W.:** *See*—
  - Hurwitz, Henry Jr., and Sutton. 3,183,380.
- **Swain, William H.**, to Electro-Mechanical Research, Inc. Automatically stabilized oscillator circuits. 3,183,455, 5–11–65, Cl. 332—18.
- **Swank, Richard E.** Machine for recording selections. 3,183,513, 5–11–65, Cl. 346—17.
- **Syak, Charles W.**, and N. A. DiMargio, to Trumbull Development Corp. Post for a bridge railing. 3,182,762, 5–11–65, Cl. 189—23.
- **Sykes, Langthorne P.:** *See*—
  - Myers, Jack A., and Sykes. 3,183,024.
- **Syntex Corp.:** *See*—
  - Crabbe, Pierre. 3,183,252.
- **System Analyzer Corp.:** *See*—
  - Ronk, Leroy B. 3,183,362.
- **Szekely, Ivan J.**, and H. W. Hind, to Barnes-Hind Pharmaceuticals, Inc. Treated polyvinyl alcohol for contact lens solution. 3,183,152, 5–11–65, Cl. 167—59.
- **TE Co., The:** *See*—
  - Harris, Clyde W., Sugino, and Neiswander. 3,183,519.
- **Takahata, Tsuneo**, and T. Utsunomiya, to Sony Corp. Tuner device for a radio or television receiving apparatus. 3,183,464, 5–11–65, Cl. 336—142.
- **Takaga, Kotaro:** *See*—
  - Sumiki, Yusuke, Umezawa, Fukunaga, Yonehara, Kubo, Fujita, Shirato, Takaga, Kato, Esumi, and Ono. 3,183,153.
- **Takamizawa, Akira**, to Shionagi & Co., Ltd. O,S-disubstituted thiol-type thiamines. 3,183,232, 5–11–65, Cl. 260—256.5.
- **Takata, Masaru:** *See*—
  - Yoshimura, Yasuo, and Takata. 3,183,203.
- **Tamny, Simon**, and D. B. Furlong, to Wayne Mfg. Co. Brush chipper safety control. 3,182,917, 5–11–65, Cl. 241—36.
- **Tanaka, Akira**, to General Motors Corp. Seat adjuster. 3,182,947, 5–11–65, Cl. 248—421.
- **Tanaka, Ikuzo:** *See*—
  - Shimeba, Jiro, Ozawa, Tanaka, Matsumura, and Kubota. 3,183,201.
- **Tann Corp.:** *See*—
  - Tann, David. 3,183,007.
- **Tann, David**, to Tann Corp. Seal employing oil impregnated wicking material and method of making. 3,183,007, 5–11–65, Cl. 277—1.
- **Tao, Yung:** *See*—
  - Charland, Telesphore L., and Tao. 3,182,391.
- **Tashjian, Harry J.:** *See*—
  - Christiansen, Richard A., Stockdale, and Tashjian. 3,183 484.
- **Taylor, Carl S.**, to Dura Corp. Apparatus for adjusting steering and wheel alignment. 3,182,405, 5–11–65, Cl. 83—203.2.
- **Taylor, Challen E.**, and R. G. Hall, to The Goodyear Tire & Rubber Co. Method for extruding. 3,183,288, 5–11–65, Cl. 264—130.
- **Taylor Electric Mfg. Co., Ltd.:** *See*—
  - Darlow, Brian S. 3,183,320.
- **Taylor, James A.**, to The American Agricultural Chemical Co. Method of producing phosphorus pentasulfide. 3,183,062, 5–11–65 Cl. 23—206.
- **Taylor, William E.**, to American Can Co. Container. 3,182,851, 5–11–65, Cl. 220—53.
- **Teichert, A., & Son, Inc.:** *See*—
  - Harris, James S., and Johnson. 3,182,859.
- **Teikoku Jinzo Kenshi Kabushiki Kaisha:** *See*—
  - Shimeba Jiro, Ozawa, Tanaka, Matsumura, and Kubota. 3 183,201.
- **Teleflex Inc.:** *See*—
  - Kompanek, Andrew J., Jr., and Phelan. 3,183,301.
- **Telefonaktiebolaget L M Ericsson:** *See*—
  - Jacobaeus, Anton C. 3,183,306.
- **Tengsater, Torsten N.:** *See*—
  - Goodell, John D., Nazali, and Tengsater. 3,182,813.
- **Tennant G. H., Co.:** *See*—
  - Sundberg, Bertil J. 3,182,387.
  - Sundberg, Bertil J. 3,182 693.
- **Tenney, William L.** Two stroke cycle crankcase scavenged internal combustion engine. 3,182,643, 5–11–65, Cl. 123—51.
- **Terteling, J. A., & Sons, Inc:** *See*—
  - Durston, Harry D., and Perry. 3 182,460.
- **Teufel, Ewald**, to Rieker & Co. Fasteners for ski boots. 3,182,866 5–11–65, Cl. 24—68.
- **Teves, Alfred Maschinen- und Armaturenfabrik K.G.:** *See*—
  - Hahm, Heinz G., and Ostwald. 3,182,754.
- **Texas Instruments Inc.:** *See*—
  - Bronson, Robert W., and Korbitz. 3,183,361.
  - Harrison Wesley V. 3,183 375.
  - Slonneger, Bruce K. 3,183 383.
- **Thiem, Gerhard G.**, to Gilbert & Barker Mfg. Co. Mixing valve. 3,182,677, 5–11–65, Cl. 137—100.
- **Thiokol Chemical Corp.:** *See*—
  - Bell, Harold S., Jr. 3,182,447.
  - Cohen, Murray S., Green, Karlan, and Mayes. 3,183,216.
  - Dvorak, Joseph J., Grafstein, and Fein. 3,183,272.
  - Fein, Marvin M. 3,183,244.
  - Kerney, Francis W., Gershon, and Zimmet. 3,182,449.
  - Rabe, George B. 3,182,448.
- **Thom, Wensel W.**, ½ to C. D. Jones. Split post railing assembly. 3,182,963, 5–11–65, Cl. 256—65.
- **Thomas & Betts Co., The:** *See*—
  - Burkert, Herbert G. 3,183,471.
  - Curtiss, Lawrence M. 3,183,297.
  - Lynch, Leslie S., Jr., Eldridge, and Schiller. 3,183,025.
- **Thomas, George L.**, to The B. F. Goodrich Co. High tensile strength, low density glass compositions. 3,183,104, 5–11–65, Cl. 106—50.
- **Thomas, Robert M.:** *See*—
  - Serniuk, George E., and Thomas. 3,183,217.
- **Thomas, William R.:** *See*—
  - Crile, Eugene E., Thomas, and Warmkessel. 3,182,818.
- **Thompson, James R.**, S. E. Hotchkiss, and L. C. Kleist, to The Magnavox Co. Card reproducing device. 3,182,549, 5–11–65, Cl. 88—24.
- **Thompson, John H.:** *See*—
  - Jones, Charles H., Thompson, and Douglas. 3,182,512.
- **Thompson Ramo Wooldridge Inc.:** *See*—
  - Konecani, Joseph R. 3,183,082.
  - Neilan, William E. 3,182,563.
- **Thorson, John R.**, to Davey Compressor Co. Twin rotor compressor with mating external teeth. 3,182,900, 5–11–65, Cl. 230—141.
- **Tierney, Hubert J.**, and Minnesota Mining & Mfg. Co. Reinforced resinous structural material. 3,183,142, 5–11–65, Cl. 161—58.
- **Tile Council of America, Inc.:** *See*—
  - Wagner, Herman B. 3,183,198.
- **Tinder, David V.**, and W. R. Carey, to Dura Corp. Power actuator with harmonic drive. 3,182,525, 5–11–65, Cl. 74—640.
- **Tipton, Earl W.**, to Westinghouse Electric Corp. Magnetic core structure with cooling passages therein. 3,183,461, 5–11–65, Cl. 336—60.
- **Titanium Metals Corp. of America:** *See*—
  - Dilling, Elmer D. 3,182,475.
- **Todd, Robert M.:** *See*—
  - Aler, Mary E., and Todd. 3,183,110.
- **Todoroff, Edward J.:** *See*—
  - Farmer, Stanley E., Weinert, and Todoroff. 3,182,837.
- **Toedtman, John A.:** *See*—
  - Wochner, Charles J., and Toedtman. 3,183,302.
- **Toone, Brian**, and A. M. Barham, to Rolls-Royce Ltd. Catalytic igniters for combustion equipment. 3,182,472, 5–11–65, Cl. 67—19.
- **Tourtelotte, Mills C.** Conveyor storing and separating device. 3,182,785, 5–11–65, Cl. 198—127.
- **Townsend, Frederick H.**, and L. G. Healy, to Westinghouse Electric Corp. Electron gun particle barrier formed by plurality of flexible radial sectors. 3,183,388, 5–11–65, Cl. 313—82.
- **Trachtenberg, Robert S.**, to Burndy Corp. Disconnecting clamp. 3,183,469, 5–11–65, Cl. 339—45.
- **Trader, Frederick W., Jr.:** *See*—
  - McLean, I. William, Jr., and Trader. 3,183,161.
- **Trampel, Kurt M.**, to International Business Machines Corp. Transistor logic circuits operable through feedback circuitry in nonsaturating manner. 3,183,370, 5–11–65, Cl. 307—88.5.
- **Trampel, Kurt M.**, to International Business Machines Corp. Nonsaturating transistor trigger circuits. 3,183,371, 5–11–65, Cl. 307—88.5.
- **Trautvetter, Werner**, to Dynamit Nobel Aktiengesellschaft. Process of preparing polyvinylchloride and mixed polymerizates of vinylchloride. 3,183,222, 5–11–65, Cl. 260—92.8.
- **Triax Co., The:** *See*—
  - Chasar, Anthony R. 3,182,823.
- **Trimble, John O.**, to The Budd Co. Spraying apparatus and method. 3,182,361, 5–11–65, Cl. 22—193.
- **Tripp, Gareth A.**, to Fairchild Camera and Instrument Corp. Method of forming a semiconductor. 3,183,129, 5–11–65, Cl. 148—186.
- **Trumbull Development Corp.:** *See*—
  - Syak, Charles W., and Di Margio. 3,182,762.
- **Trumpler, William E.**, to Dresser Industries, Inc. Turbine driven centrifugal compressor unit. 3,182,897, 5–11–65, Cl. 230—116.
- **Trusselle, William H.:** *See*—
  - Vergobbi, Robert W., Knobel, and Trusselle. 3,182,691.
- **Tschirf, Ludwig**, and F. Gärtner. Rockwell hardness testing apparatus. 3,182,491, 5–11–65, Cl. 73—83.
- **Tsujihata, Keiji**, and Y. Sawada, to Yawata Iron & Steel Co., Ltd. Air-tight sealing device for the top of a blast furnace. 3,182 983, 5–11–65, Cl. 266—27.
- **Tucker, James F:** *See*—
  - Winzeler, John W., and Tucker. 3,183,337.
- **Turley, Alfred:** *See*—
  - Hulme, John H., Hemmings, and Turley. 3,182,689.
- **Tuttle, Robert G.** Check-out regulator system for stores. 3 182 357, 5–11–65, Cl. 20—1.7.
- **Tyler, Hayward, & Co. Ltd:** *See*—
  - Ivanoff, Alexander. 3,182,970.
- **Udelhofen, John H.**, to Standard Oil Co. Chemical compounds and their use as rust and corrosion inhibitors. 3,183,069, 5–11–65, Cl. 44—71.
- **Udelhofen, John H.**, to Standard Oil Co. Rust inhibited oil containing aliphaticaminoalkylsuccinates. 3,183,070, 5–11–65, Cl. 44—71.
- **Uemura, Saburo**, and K. Nagase, to Sony Corp. (Sony Kabushikikaisha) Method and apparatus for wave form analysis. 3,183,437, 5–11–65, Cl. 324—77.

- Umezawa, Hamao: *See—*
  - Sumiki, Yusuke, Umezawa, Fukunaga, Yonehara, Kubo, Fujita, Shirato, Takaga, Kato, Esumi, and Ono. 3,183,153.
- Union Bag-Camp Paper Corp.: *See—*
  - Bonini, John H. 3,183,100.
- Union Carbide Corp.: *See—*
  - Bailey, Donald L., Black, and Dunham. 3,183,205.
  - Hartung, Homer A., and Borchert. 3,183,209.
  - Long, Hugh M., and Wilson. 3,182,462.
  - Reding, Frederick P. 3,183,283.
  - Schreiner, Heinz R. 3,183,171.
  - Welch, Frank J., and Paxton. 3,183,214.
- United-Can Inc.: *See—*
  - Seckerson, Clifford A. 3,182,941.
- United Kingdom Atomic Energy Authority: *See—*
  - Bradley, Norman. 3,183,167.
  - Cooke-Yarborough, Edmund H. 3,183,374.
  - Guild, James C., and Castle. 3,183,164.
- United Shoe Machinery Corp.: *See—*
  - Berrill, William H., Chaplin, and Pratt. 3,182,354.
  - Imhof, Herman A. 3,182,926.
- U.S. Industries, Inc.: *See—*
  - Goodell, John D., Nazall, and Tengsater. 3,182,813.
- United States of America
  - Agriculture: *See—*
    - Conner, Charles J. 3,183,118.
    - Gonzales, Elwood J., Welch, and Guthrie. 3,183,149.
    - Pryde, Everett H. 3,183,215.
    - Schultz, Thomas H., and Rockwell. 3,183,099.
  - Army: *See—*
    - Auer, Martin F. 3,183,434.
    - Carter, John L., and Reingold. 3,183,457.
    - Harris, Wilbur, and Day. 3,182,594.
    - Hassmann, Harry F. 3,182,595.
    - Hirsch, Max M. 3,183,438.
    - Kaye, Seymour M. 3,183,132.
    - Roach, Charles D. 3,182,741.
    - Rocha, John G. 3,182,555.
    - Rocha, John G. 3,182,556.
    - Rosenblatt, David H., and Broome. 3,183,250.
  - Atomic Energy Commission: *See—*
    - Claassen, Howard H., Selig, and Malm. 3,183,061.
    - Cowen, Richard G. 3,183,499.
    - Grader, Roderick J., and Nakada. 3,183,390.
    - Moses, Harry. 3,182.499.
    - Reisenauer, Andrew E., and Ames. 3,183,059.
    - Schweitzer, Donald G., Singer, and Gurinsky. 3,183,166.
  - National Aeronautics and Space Administration: *See—*
    - Holdere, Oscar C. 3,182,496.
  - Navy: *See—*
    - Barakauskas, Edward J. 3,182,554.
    - Castle, Alfred B. 3,183,512.
    - Clark, Chester A. 3,182,745.
    - Fletcher, Theodore F. 3,182,621.
    - Gilbert, Nathan. 3,182,984.
    - Kendall, James M., and Payne. 3,182,509.
    - Lehmann, Guenther W. 3,182,623.
    - Myers, Jack A., and Sykes. 3,183,024.
    - Price, Wilson T., and Brown. 3,182,987.
    - Randolph, Joseph P., Jr., Riblet, and Hamblen. 3,182,930.
    - Ricalzone, Lauro C. 3,183,477.
    - Sigel, David. 3,183,445.
    - Slawsky, Zaka I., and Raff. 3,183,478.
    - Strauss, Howard J. 3,183,505.
    - Strother, Claude, Jr., and Macomber. 3,183,448.
    - White, Joseph C., and Schuldiner. 3,183,122.
- United States Steel Corp.: *See—*
  - Illo, Joseph. 3,182,816.
- U.S. Vitamin & Pharmaceutical Corp.: *See—*
  - Shapiro, Seymour L., and Freedman. 3,183,230.
  - Shapiro, Seymour L. 3,183,230.
- Universal Oil Products Co.: *See—*
  - Bloch, Herman S. 3,183,233.
  - Levy, Joseph. 3,183,255.
  - Ruff, Donald E. 3,182,982.
  - Sparks, Allen K. 3,183,275.
- Universal-Cyclops Steel Corp.: *See—*
  - Harpster, Norman R. 3,183,080.
- Updaw, Harold J. Yieldable skipping device. 3,182,999, 5–11–65, Cl. 272—74.
- Updaw, Harold J. Skimming aerial projectile toy. 3,183,002, 5–11–65, Cl. 273—106.
- Upjohn Co., The: *See—*
  - Argoudelis, Alexander D., De Boer, Eble, and Herr. 3,183,154.
  - Bhuyan, Bijoy K., Kelly, and Smith. 3,183,157.
  - Camiener, Gerald W., Whitfield, and Wiley. 3,183,155.
  - Hunter, James H. 3,183,226.
  - Vavra, James J., and Bergy. 3,183,156.
- Utsunomiya, Tsuneo: *See—*
  - Takahata, Tsuneo, and Utsunomiya. 3,183,464.
- Valentino, Peter. Closures for clean-out openings in drain traps and for other purposes. 3,182,679, 5–11–65, Cl. 137—247.51.
- Van Asselt, Willem J.: *See—*
  - Evers, Johannes J. M., and Van Asselt. 3,183.270.
- Van Berkel, Petrus L. M., to de Staat der Nederlanden, ten deze vertegenwoordigd door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie. Self resetting counter circuit. 3,183,367, 5–11–65, Cl. 307—88.6.
- Van Blaricum, Jack E. Vise jaw construction. 3,182,990, 5–11–65, Cl. 269—153.
- Van Den Bos, Bernardus G., and J. Meltzer, to North American Philips Co., Inc. Method of protecting plants against arachnids with xanthates. 3,183,146, 5–11–65, Cl. 167—30.
- Van der Lely, C., N.V.: *See—*
  - Jonkers, Cornelius O., and Fockens. 3,182,454.
- Van der Stelt, Cornelis, to Koninklijke Pharmaceutische Fabrieken V/H Brocades Steeman en Pharmacia, N.V. 5-cyano-10,11-dihydro-5H-dibenzo[a,d]cycloheptene derivatives. 3,183,259, 5–11–65, Cl. 260—465.
- Van Lohuizen, Otto E., and G. de Vries, to Algemene Kunstzijde Unie N.V. Catalytic polymeriztaion of aldehydes using an alkali metal thiocyanate catalyst. 3,183,-213, 5–11–65, Cl. 260—67.
- Van der Sluis, Freerk A., to Nederlandsche Heide-Maatschappij. Process for the stabilisation of soil mixtures. 3,182,973, 5–11–65, Cl. 259—148.
- Van Rossem, Walter J. Mold forming device. 3,182,358, 5–11–65, Cl. 22—9.
- Van Santen, Johannes G., to North American Philips Co., Inc. Signal amplitude analyzer. 3,183,360, 5–11–65, Cl. 250—208.
- Van Strien, Richard E.: *See—*
  - Hirsch, Arthur G., and Van Strien. 3,183,248.
- Van Uitert, Le Grand G.: *See—*
  - Soden, Ralph R., and Van Uitert. 3,183,193.
- Van Vooren, Bernard J.: *See—*
  - Myers, Lloyd W., Rake, and Van Vooren. 3,182,438.
- Varian Associates: *See—*
  - Pantell, Richard H. 3,183,399.
  - Zitelli, Louis T. 3,183,402.
- Varju, Nicholas, to National Castings Co. Golf drive metering apparatus. 3,182,508, 5–11–65, Cl. 73—379.
- Vaterlaus, Bruno P.: *See—*
  - Kiss, Joseph, Spiegelberg, and Vaterlaus. 3,183,247.
- Vavra, James J., and M. E. Bergy, to The Upjohn Co. Antibiotic canarius and method of production. 3,183,156, 5–11–65, Cl. 167—65.
- Vazdikis, Janis A., to Riegel Paper Corp. Coating apparatus with improved doctor means. 3,182,632, 5–11–65, Cl. 118—104.
- Veatch, Franklin: *See—*
  - Alford, Harvey E., and Veatch. 3,183,107.
- Vecchio, Martino, to Edison. Process for the production of fluorinated organic compounds. 3,183,276, 5–11–65, Cl. 260—653.4.
- Velardo, John M.: *See—*
  - Foster, Allen A., Jr., and Velardo. 3,182,805.
- Veneziani, Italo: *See—*
  - Bartolini Salimbeni, Gherardo, and Veneziani. 3.182,735.
- Vergobbi, Robert W., M. Knobel, and W. H. Trusselle, to Pneumatic Scale Corp., Ltd. Container filling method and machine. 3,182,691, 5–11–65, Cl. 141—5.
- Vilcsek, Herbert: *See—*
  - Rochlitz, Fritz, and Vilcsek. 3,183,264.
- Viltrakis, Douglas V. Dispenser carton. 3,182,792, 5–11–65. Cl. 206—57.
- Vinal, Albert W., to International Business Machines Corp. Magnetic devices. 3,183,493, 5–11–65, Cl. 340—174.
- Vincent, Hector, Inc.: *See—*
  - Racicot, Donatien. 3,182,455.
- Virnot, Alain: *See—*
  - Gumuchian, Andre, and Virnot. 3,183,163.
- Vogel, Charles B., to Shell Oil Co. Well logging. 3,182,744, 5–11–65, Cl. 181—.5.
- Voigtlander A.G.: *See—*
  - Papke, Friedrich. 3,182,545.
  - Papke, Friedrich. 3 182,546.
  - Papke, Friedrich. 3,182,576.
- Vono Ltd.: *See—*
  - Hulme, John H., Hemmings, and Turley. 3,182,689.
- Von Poederoyen, Karl S., and W. G. Korff, to Western Engineering & Mfg. Co. Explosion and fire release ventilator. 3,182,581, 5–11–65, Cl. 98—86.
- Von Strandtmann, Maximilian, J. Shavel, Jr., and G. Bobowski, to Warner-Lambert Pharmaceutical Co. Acylphenylacylamido-1,3-propanediols and preparation therefor. 3,183.265, 5–11–65, Cl. 260—552.
- Von Tobel, Hans: *See—*
  - Benz, Jakob, Burkhard, Kaegi, and von Tobel. 3,183,224.
- Von Werder, Fritz, K. Brückner, K.-H. Bork, and H. Metz, to E. Merck Aktiengesellschaft. Novel 15-dehydro-halo-methyl-progesterones. 3,183,150, 5–11–65, Cl. 167—53.
- Von Wiesenthal, Peter: *See—*
  - Lee, Frank A., von Wiesenthal, and Wagner. 3,182.638.
- Vorie, Innokent N., to North American Aviation, Inc. Etching apparatus. 3,182,671, 5–11–65, Cl. 134—148.
- Voss, Josef, KG, Firma: *See—*
  - Wolter, Heinz. 3,182.473.
- Vrsecky, Anthony J., to Western Electric Co., Inc. Helixing lathe having automatically changeable chucks. 3,182,426, 5–11–65, Cl. 51—95.
- Výzkumný ústav energetický: *See—*
  - Anscherlik, Arnošt. 3,182,865.
- Wagner Electric Corp.: *See—*
  - Bueler, Richard C. 3.183,042.
  - Gold, Robert L. 3.183,040.
- Wagner, George L. Vehicular lifting yoke assembly. 3,182,-829, 5–11–65. Cl. 214—86.
- Wagner, Herman B., to Tile Council of America, Inc. Two-part adhesive bonding compositions comprising an epoxy resinous material and a poly-amido amine. 3,183,198, 5–11–65, Cl. 260—18.
- Wagner, Karl: *See—*
  - Jakob, Franz, and Wagner. 3,182,575.
- Wagner, Kenneth R.: *See—*
  - Lee, Frank A., von Wiesenthal, and Wagner. 3,182,638.
- Wagner, Richard C.: *See—*
  - Nutting, Robert G., Wagner, and Christensen. 3,182,-541.
- Wahli, W., AG.: *See—*
  - Wahli, Werner, and Rey. 3,182,908.
- Wahli, Werner, and H.-J. Rey, to W. Wahli AG. Control device. 3,182,908, 5–11–65, Cl. 235—132.
- Waite, James R. Bird feeder. 3,182,635, 5–11–65, Cl. 119—51.

- Wakefield Corp.: *See—*
  - Rue, Charles V., Fisher, and Heischman. 3,183,071.
- Wakeman, Alden H., and D. C. Roahen, to St. Regis Paper Co. Homogenizing valve control. 3,182,971, 5–11–65, Cl. 259—98.
- Waldrich, H. A., G.m.b.H.: *See—*
  - Klein, Arthur, and Enders. 3,182,429.
- Waldron, Jack T., to Sonoco Products Co. Refrigerating package. 3,182,884, 5–11–65, Cl. 229—14.
- Walford, Raymond J.: *See—*
  - Mackey, E Scudder, and Walford. 3,183,092.
- Walker, Arthur, to Holcroft & Co. Aluminum annealing furnace. 3,182,981, 5–11–65, Cl. 263—36.
- Walker Mfg. Co.: *See—*
  - Barosko, John M., and Krug. 3,182,867.
- Wallace & Tiernan Inc.: *See—*
  - Marks, Henry C., Joiner, and Glasgow. 3,183,057.
- Walworth, Bryant L., A. W. Lutz, and K. Wood, to American Cyanamid Co. Control of undesirable plant growth. 3,183,-074, 5–11–65, Cl. 71—2.5.
- Walworth, Bryant L., to American Cyanamid Co. Control of undesirable plant growth. 3,183,075, 5–11–65, Cl. 71—2.6.
- Ward, Betty M.: *See—*
  - McCrory, John F. 3,183,481.
- Ward, David J.: *See—*
  - McCrory, John F. 3,183,481.
- Ward, Lawrence B.: *See—*
  - Hornbostel, Lloyd, Jr., and Ward. 3,183,500.
- Ward, Raymond R. Garment hangers. 3,182,870, 5–11–65, Cl. 223—91.
- Warfel, Richard M., to Banbury Equipment Corp. Vacuum lifting device. 3,183,032, 5–11–65, Cl. 294—65.
- Warmkessel, Charles W.: *See—*
  - Crile, Eugene E., Thomas, and Warmkessel. 3,182,818.
- Warner, Harvey C.: *See—*
  - Culbertson, Robert D., McRae, and Warner. 3,182,845.
- Warner-Lambert Pharmaceutical Co.: *See—*
  - Von Strandtmann, Maximilian, Shavel, and Bobowski. 3,183,265.
- Wassermeyer, Jakob: *See—*
  - Rossmy, Gerd, and Wassermeyer. 3,183,254.
- Wasynczuk, Anatol, to Barnes & Reinecke, Inc. Generator. 3,183,387, 5–11–65, Cl. 310—156.
- Watanebe, Masami, and K. Shirai, to Yawata Chemical Industry Co., Ltd. Silica-vanadium oxide oxidation catalyst. 3,183,196, 5–11–65, Cl. 252—456.
- Watkins, Willie R., ½ to A. T. Staples. Hair coloring applicator. 3,182,666, 5–11–65, Cl. 132—9.
- Watson, Roy L., to Peterson Machine Tool, Inc. Chuck mounting. 3,183,012, 5–11–65, Cl. 279—6.
- Wayne Mfg. Co.: *See—*
  - Tamny, Simon, and Furlong. 3,182,917.
- Webb, James E. Radar ranging receiver. 3,183,506, 5–11–65, Cl. 343—17.2.
- Weeks, Charles B.: *See—*
  - Choate, Paul V., and Weeks. 3,182,553.
- Weimer, Charles L., and R. S. Garrett, to Westinghouse Electric Corp. Bus bar connecting means. 3,183,298, 5–11–65, Cl. 174—88.
- Weiner, Seymour: *See—*
  - Guarnieri, Robert J., and Weiner. 3,183,290.
- Weinert, Harry F.: *See—*
  - Farmer, Stanley E., Weinert, and Todoroff. 3,182,887.
- Weisenbach, Charles O., to The New York Air Brake Co. Hydrostatic transmission control system. 3,182,912, 5–11–65, Cl. 236—35.
- Weiss Paul: *See—*
  - Small, Samuel N. 3,182,678.
- Welch, Clark M.: *See—*
  - Gonzales, Elwood J., Welch, and Guthrie. 3.183.149.
- Welch, Frank J., and H. J. Paxton, Jr., to Union Carbide Corp. Flame-resistant polymers. 3,183,214, 5–11–65, Cl. 260—67.
- Wellerson Ralph, Jr.: *See—*
  - Singher, Heron O., and Wellerson. 3,183,159.
- Wells, Raymond, to Yale & Towne, Inc. Door control arm panic release. 3,182.348, 5–11–65, Cl 16—49.
- Welsh, Herbert F., to Sperry Rand Corp. Random access memory systems. 3,183,494, 5–11–65, Cl. 340—174.1.
- Wenczler & Heidenhain: *See—*
  - Zwick, Kurt. 3,182.403.
- Wenczler & Heidenhain, Fa.: *See—*
  - Hoffrogge, Christian. 3,182,375.
- Weniger, Norman J.: *See—*
  - Dorfman, Walter, and Weniger. 3,183,517.
- Werber, Frank X., and R. N. Chadha, to W. R. Grace & Co. Aluminum and mercuric chloride catalyst composition and process. 3,183,218, 5–11–65, Cl. 260—85.3.
- Westenskow, Carl E., to International Business Machines Corp. Positioning servosystems. 3,183,420, 5–11–65, Cl. 318—18.
- Western Electric Co., Inc.: *See—*
  - De Sante, Joseph J., and Schultz. 3,183,177.
  - Donville, David L., Lueft, and Zuch. 3,183,435.
  - Gilson, James K., Higgins, Huff, and Stonebraker. 3,183,-063.
  - Myers, Lloyd W., Rake, and Van Vooren. 3,182,438.
  - Palmer, Burtis E. 3,182.797.
  - Vrsecky, Anthony J. 3.182,426.
- Western Engineering & Mfg. Co.: *See—*
  - Von Poederoyen, Karl S., and Korff. 3,182,581.
- Westinghouse Electric Corp.: *See—*
  - Amlinger, Philipp R. 3,183,458.
  - Bennon, Saul. 3,183,460.
  - Boyer, John L., Albert, and Ross. 3,183,376.
  - Boylan, Donald A. 3 182,687.
  - Bricker, Samuel R. 3,182.411.
  - Brown, Francis X. 3,182,720.
  - Brown, Roy L. 3,183,462.

- Westinghouse Electric Corp.: *See—Continued*
  - Charland, Telesphore L., and Tao. 3,182,391.
  - Circle, Robert R. 3,183,416.
  - Creeger, Larry D., and Neff. 3,183,048.
  - Edwards, Andrew W. 3,183,467.
  - Filipowsky, Richard F. J. 3,183,442.
  - Foris, Victor G. 3,182,902.
  - France, Leonard L., Lewis, Ambrose, Ammon, and Richardson. 3,183,085.
  - Frink, Russell E., and Olsson. 3,183,382.
  - Goldstein Robert P. 3,183,496.
  - Hawkins, David M., and Dolphin. 3,183,427.
  - Herchenroeder, Louis W. 3,183,421.
  - Jensen, Arthur S., and Siedband. 3,183,400.
  - Jones, Charles H., Thompson, and Douglas. 3,182,512.
  - Keller, William A., and Willis. 3,183,408.
  - Lauer, Charles A. 3,183,369.
  - Lessmann, Gerald G., and Phebus. 3,183,066.
  - Moore, Harold R. 3,183,465.
  - Paterson, James E. 3 183,393.
  - Rackley, Carle E. 3,192.768.
  - Riemersma, Henry, and Satterthwaite. 3,183,413.
  - Rively, Clair M., and Michael. 3,183,395.
  - Sack, Edgar A., Jr. 3,183,452.
  - Schmidt, Warren J., and Salowe. 3,183,436.
  - Schonholzer, Emil T. 3,183.430.
  - Simmonds, William H. 3,182,688.
  - Smith, Alan D. 3,182,345.
  - Solomon, Benjamin E. 3,182,901.
  - Sonnemann, William K. 3,183,405.
  - Steam, John J. 3,183,422.
  - Stock, Alvin L. 3,182,855.
  - Tipton, Earl W. 3,183,461.
  - Townsend, Frederick H., and Healy. 3,183,388.
  - Weimer, Charles L., and Garrett. 3,183,298.
  - Wiseman, Woodrow W. 3,182,579.
  - Wright, Leonard L. 3,183,463.
- Weston Instruments, Inc.: *See—*
  - Phelan, William J., and MacPherson. 3,183,357.
  - Richman, Peter L. 3,183,446.
- Westran Corp.: *See—*
  - Dalton, Thomas B. 3,182,956.
  - Dalton Thomas B. 3,182,957.
- Wetzel, Walter: *See—*
  - Scherer, Otto, Steinmetz, Kuhn, Wetzel, and Grafen. 3 183.277.
- Weydanz, Wilhelm, W. Hubensack, and R. Ronnenberg. Hypodermic syringe with spring biassed piston. 3,182,660, 5–11–65. Cl. 128—218.
- Wheeler, Roy E., to General Electric Co. Electric switch with contact weld check means. 3,183,328, 5–11–65, Cl. 200—122.
- Whirlpool Corp.: *See—*
  - Hames, William A., Jr., Jungemann, and Sisk. 3,182,-899.
- Whitby, Clyde M., and R. R. Fontaine, to ACF Industries, Inc. Indicating and alarm system. 3,183,497, 5–11–65, Cl. 340—213.
- White, Donald L., to Bell Telephone Laboratories, Inc. Optical modulator employing reflection from piezoelectric-semiconductive material. 3 183,359 5–11–65, Cl. 250—199.
- White, Douglas F., to E. K. Cole, Ltd. Measurement of fluid density by detecting radiation scattered from selected portions along the primary beam path. 3,183,351, 5–11–65, Cl. 250—43.5.
- White, Joseph C., and S. Schuldiner, to United States of America, Navy. Fuel cell. 3,183,122, 5–11–65, Cl. 136—86.
- White Metal Rolling & Stamping Corp.: *See—*
  - Larson, Clayton E. 3,182,343.
- White, Wilfrid G., to The Eastern Co. Anchor construction. 3.182,625, 5–11–65, Cl. 114—208.
- Whiteway Mfg. Co.: *See—*
  - Spaulding, Joseph H., and Rodmaker. 3,183,346.
- Whitfield, George B., Jr.: *See—*
  - Camiener, Gerald W., Whitfield, and Wiley. 3,183,155.
- Whitmore, Charles H., T. C. Sebastian, and R. G. Winquist, to Continental Machines, Inc. Machine for cutting lengths of stock into pieces. 3,182,538, 5–11–65, Cl. 83—201.
- Whitney, Clyde R.: *See—*
  - Heydt, Gerald B., and Whitney. 3,183,084.
- Wicklund Harold P.: *See—*
  - Henry, William F., Scheer, and Wicklund. 3,183,518.
- Widegren, Lars H. Apparatus for indicating the effective operating time of working-machines. 3,182,440, 5–11–65, Cl. 58—145.
- Widell, George M., and C. D. Hawk, to The Bendix Corp. Means to insulate thrust vector interceptor surface. 3,182,-450, 5–11–65, Cl. 60—35.54.
- Wied, Otto J.: *See—*
  - Sprague, John L., and Wied. 3,182,376.
- Wiese, Herbert K., to Esso Research and Engineering Co. Diepoxides of butadiene cyclopentadiene codimers. 3,183,-249, 5–11–65, Cl. 260—348.
- Wigren, Alfred G. Drilling machine. 3,182,733, 5–11–65, Cl. 173—115.
- Wilcolator Co., The: *See—*
  - Dahlgren, John V. S. 3,183,329.
- Wiley, Paul F.: *See—*
  - Camiener, Gerald W., Whitfield, and Wiley. 3,183,155.
- Wilhelmi, Hans, and W. Neudert, to Holzwerke H. Wilhelmi, Fa. Sound absorbing micro-porous wall panel structures. 3,182,747, 5–11–65, Cl. 181—33.
- Wilhelmi Holzwerke H., Fa: *See—*
  - Wilhelmi, Hans, and Neudert. 3,182,747.
- Wilkinson Chutes Inc.: *See—*
  - Marton, Andrew. 3,182,903.
- Wilkinson, Harlen E., to American Can Co. Container with pull tab. 3,182,852, 5–11–65, Cl. 220—54.

Willey, Allen R., to American Can Co. Ferrous metal corrosion inhibitor. 3,182,853, 5–11–65, Cl. 220—64.

Williams, Lowdon R., Jr. Paper feeding and cutting machine. 3,182,539, 5–11–65, Cl. 83—209.

Williams, Willie. Bumper for baby walkers. 3,183,028, 5–11–65, Cl. 293—62.

Williamson, George M. Ring frame traverse device. 3,183,026, 5–11–65, Cl. 287—96.

Williamson, John R.: *See—*
  Grossnickle, Garold E., Elliott, and Williamson. 3,183,041.

Williamson, William R., to American Machine & Foundry Co. Sea water distillation method and apparatus to provide a superpure distillate. 3,183,174, 5–11–65, Cl. 202—75.

Williford, Oscar H., to Bell Telephone Laboratories Inc. Multicustomer private branch exchange. 3,183,307, 5–11–65, Cl. 179—7.

Willis, Thomas G.: *See—*
  Keller, William A., and Willis. 3,183,408.

Wilson, Farris H., Jr., to The Goodyear Tire & Rubber Co. Process for preparing N-phenethyl-N′-phenyl-phenylene diamines. 3,183,268, 5–11–65, Cl. 260—570.8.

Wilson, Ora E. Internal combustion engine. 3,182,645, 5–11–65, Cl. 123—76.

Wilson, Stanley L.: *See—*
  Long, Hugh M., and Wilson. 3,182,462.

Winker, James A., to Raven Industries, Inc. Simulated variable thickness balloon. 3,182,932, 5–11–65, Cl. 244—31.

Winquist, Russell G.: *See—*
  Whitmore, Charles H., Sebastian, and Winquist. 3,182,538.

Winslow, Charles A. Anchors. 3,182,624, 5–11–65, Cl. 114—208.

Winston, Adolph A., to General Foods Corp. Cleaning article and method of manufacture. 3,182,346, 5–11–65, Cl. 15—209.

Winzeler, John W., and J. F. Tucker, to Giannini Scientific Corp. Electrical plasma-jet spray torch and method. 3,183,337, 5–11–65, Cl. 219—76.

Wire Machinery Co.: *See—*
  Prutton, Howard D. 3,182,476.

Wirt, Leslie S., to The Garrett Corp. Helical vane for sound absorbing device and method of making said vane. 3,182,748, 5–11–65, Cl. 181—67.

Wischhoefer, William J. G. Vehicle arresting gear system. 3,182,935, 5–11–65, Cl. 244—110.

Wiseman, Woodrow W., to Westinghouse Electric Corp. Molded flexible louver. 3,182,579, 5–11–65, Cl. 98—40.

Wismer & Becker Contracting Engineers: *See—*
  Albrecht, Robert G. 3,182,814.

Witkowski, Henry J. Plastic heating device. 3,182,356, 5–11–65, Cl. 18—30.

Witten, Alvin E. Adjustable hanger device for sliding doors. 3,182,350, 5–11–65, Cl. 16—105.

Wochner, Charles J., and J. A. Toedtman, to Blackburn, Jasper Corp. Cover for an electrical connector. 3,183,302, 5–11–65, Cl. 174—138.

Wolf, Siegfried G.: *See—*
  Di Lella, Paul, and Wolf. 3,182,815.

Wolk, Ronald, to Hydrocarbon Research, Inc. Two stage hydrogenating process employing two different particle sizes. 3,183,178, 5–11–65, Cl. 208—58.

Wolk, Ronald H.: *See—*
  Schuman, Seymour C., Wolk, and Chervenak. 3,183,180.

Wolter, Heinz, to Josef Voss, KG, Firma. Locks. 3,182,473, 5–11–65, Cl. 70—149.

Wonder, Robert A., and W. D. Harris, to Ensine Corp. Sizing stacked tiles and equipment therefor. 3,182,560, 5–11–65, Cl. 90—15.

Wood, Gar, Industries, Inc.: *See—*
  Aske, Charles B., Jr. 3,183,038.
  Aske, Charles B., Jr. 3,183,039.

Wood, Kathryn: *See—*
  Walworth, Bryant L., Lutz, and Wood. 3,183,074.

Wood, Sherman L.: *See—*
  Rittenhouse, Howard E., and Wood. 3,182,504.

Woodall, Walter N., to Newport News Shipbuilding and Dry Dock Co. Welding fixture. 3,182,988, 5–11–65, Cl. 269—37.

Woodhall, Edwin S., to The Goodyear Tire & Rubber Co. Apparatus for calendering or sheeting deformable material. 3,182,587, 5–11–65, Cl. 100—47.

Woolslayer, Homer J., C. Jenkins, and C. D. Iddings, to Lee C. Moore Corp. Trailer running gear. 3,183,019, 5–11–65, Cl. 280—124.

Wortsman, Donald, to International Business Machines Corp. Hybrid arithmetic unit. 3,183,342, 5–11–65, Cl. 235—156.

Wragg, William R.: *See—*
  Lee, Glyn E., and Wragg. 3,183,243.

Wright, Add L. Lifting magnet having a corner less than 90 degrees. 3,183,417, 5–11–65, Cl. 317—164.

Wright, Leonard L., to Westinghouse Electric Corp. Low sound level electrical transformer. 3,183,463, 5–11–65, Cl. 336—96.

Wright, Walter V. Box for sheet material in a roll. 3,182,793 5–11–65, Cl. 206—58.

Wu, Yao Hua, and H. J. Rhodes, to Mead Johnson & Co. Hexahydroinedolo [3.2a] indolizine compounds. 3,183,237, 5–11–65, Cl. 260—295.

Wyser, Giulio, to Brevets Aero-Mechaniques S.A. Sighting systems for rifle grenades. 3,182,416, 5–11–65, Cl. 42—1.

Xerox Corp.: *See—*
  Carlson, Chester F. 3,182,591.
  Clark, Harold E., Gundlach, and Leevy. 3,182,573.

Yake, William H., to Armco Steel Corp. Panel for curtain walls. 3,182,764, 5–11–65, Cl. 189—34.

Yale & Towne, Inc.: *See—*
  Quayle, George F. 3,182,444.
  Wells, Raymond. 3,182,348.

Yanko, William H.: *See—*
  Gutzske, Mark E., and Yanko. 3,183,165.

Yasuda, Junichi, and Y. Kubota, to Sony Corp. Combined electrical element. 3,183,407, 5–11–65, Cl. 317—101.

Yawata Chemical Industry Co., Ltd.: *See—*
  Watanabe, Masami, and Shirai. 3,183,196.

Yawata Iron & Steel Co., Ltd.: *See—*
  Ohtake, Tadashi, and Matsukura. 3,183,078.
  Tsujihata, Keiji, and Sawada. 3,182,983.

Yeo, Alan A., C. L. Hicks, and R. T. L. Mowll, to The British Petroleum Co. Ltd. Prolongation of sieve capacity by controlled desulfurization. 3,183,182, 5–11–65, Cl. 208—212.

Yochelson, Saul B.: *See—*
  Batcher, Kenneth E., Greene, and Yochelson. 3,183,363.

Yonehara, Hiroshi: *See—*
  Sumiki, Yusuke, Umezawa, Fukunaga, Yonehara, Kubo, Fujita, Shirato, Takaga, Kato, Esumi, and Ono. 3,183,153.

Yoshimura, Yasuo, and M. Takata, to Kurashiki Rayon Co., Ltd. Compositions and shaped articles of a saponified ethylene-vinyl acetate copolymer and a glycol containing 3 to 4 carbon atoms. 3,183,203, 5–11–65, Cl. 260—33.4.

Yost, James M., to Allegheny Plastics, Inc. X-seal. 3,183,008, 5–11–65, Cl. 277—207.

Young, Sidney A., to The Hoover Co. Driving mechanism. 3,182,518, 5–11–65, Cl. 74—125.

Youngstown Steel Door Co.: *See—*
  Serio, Anthony W. 3,182,584.

Yura, Yasuo, to Sankyo Co., Ltd. New process for the preparation of 2-aminothiazole compounds. 3,183,240, 5–11–65, Cl. 260—306.8.

Yuska, Henry, J. E. Lynch, and H. Barry, to Interchemical Corp. Coating composition and coating metal therewith. 3,183,117, 5–11–65, Cl. 117—132.

Zabriskie, Charles. Container for mixing two fire extinguishing fluids during discharge. 3,182,728, 5–11–65, Cl. 169—32.

Zaidan Hojin Nihon Kagaku Seni Kenkyusho: *See—*
  Furukawa, Junji, and Saegusa. 3,183,210.

Zaidan Hojin Nihon Kosei Busshitsu Gakujyutsu Kyogi kai: *See—*
  Sumiki, Yusuke, Umezawa, Fukunaga, Yonehara, Kubo, Fujita, Shirato, Takaga, Kato, Esumi, and Ono. 3,183,153.

Zajac, Michael, to Buhr Machine Tool Co. Motorized machine tool way unit. 3,182,526, 5–11–65, Cl. 74—675.

Zallea Brothers, Inc.: *See—*
  Sayag, Andre. 3,183,022.

Zankl, Erich: *See—*
  Neumann, Wolfram, and Zankl. 3,183,109.

Zeiss, Carl: *See—*
  Piller, Horst. 3,182,551.

Zellerhoff, Bruno, to Koppers Co., Inc. Apparatus for transfer of a powdered or granular material from a space under low pressure into a space under high pressure. 3,182,825, 5–11–65, Cl. 214—17.

Zenith Radio Corp.: *See—*
  Ellett, Alexander. 3,183,509.
  Roschke, Erwin M. 3,183,444.

Zenitz, Bernard L., to Sterling Drug Inc. 1-[3-, 2-, and 1-indolyl-lower-alkanoyl]piperdines. 3,183,235, 5–11–65, Cl. 260—294.

Zilberfarb, Saul N., and E. M. Polter, to Sperry Rand Corp. Pure fluid velocity modulated amplifier. 3,182,675, 5–11–65, Cl. 137—81.5.

Ziberfarb, Saul N., to Sperry Rand Corp. Transducer. 3,182,686, 5–11–65, Cl. 138—45.

Zimmerman, Ernest R. Bait boxes. 3,182,419, 5–11–65, Cl. 43—55.

Zimmerman, John G., and R. D. Clark, to Bucyrus-Erie Co. Control for boom locking apparatus. 3,182,830, 5–11–65, Cl. 214—138.

Zimmet, Donald: *See—*
  Kerney, Francis W. 3,182,449.

Zink, John, Co.: *See—*
  Zink, John S., and Reed. 3,182,712.

Zink, John S., and R. D. Reed, to John Zink Co. Gaseous fuel burner for producing radiant heat. 3,182,712, 5–11–65 Cl. 158—116.

Zitelli, Louis T., to Varian Associates. Charged particle flow control apparatus with apertured cathode. 3,183,402, 5–11–65, Cl. 315—30.

Zitz, Joseph A.: *See—*
  Jones, Allen P., Jones, and Zitz. 3,182,924.

Zolnik, Charles R., to Sperry Rand Corp. Saturable multimode oscillator. 3,183,451, 5–11–65, Cl. 331—78.

Zuch, Arthur G.: *See—*
  Donville, David L., Lueft, and Zuch. 3,183,435.

Zurbuchen, Hazel M. Hand restraining device. 3,182,657, 5–11–65, Cl. 128—133.

Zurn Industries, Inc.: *See—*
  Shenk, Robert H. 3,182,567.

Zwick, Kurt, to Wenczler & Heidenhain. Slide rule. 3,182,408, 5–11–65, Cl. 83—143.

CLASSIFICATION OF PATENTS

ISSUED MAY 11, 1965

NOTE.—First number, class; second number, subclass; third number, patent number

3– 1 : 3,182,335
4–148 : 3,182,336
222 : 3,182,337
5–336 : 3,182,338
6– 11 : 3,182,339
8– 46 : 3,183,052
54.2 : 3,183,053
94.33: 3,183,054
116 : 3,183,055
116.2 : 3,183,056
9– 8 : 3,182,340
310 : 3,182,341
10– 7 : 3,182,342
13– 9 : 3,183,293
27 : 3,183,294
14– 72 : 3,182,343
15– 94 : 3,182,344
176 : 3,182,345
209 : 3,182,346
575 : 3,182,347
16– 49 : 3,182,348
52 : 3,182,349
105 : 3,182,350
130 : 3,182,351
18– 8 : 3,182,352
16 : 3,182,353
17 : 3,182,354
19 : 3,182,355
30 : 3,182,356
20– 1.7 : 3,182,357
21– 58 : 3,183,057
22– 9 : 3,182,358
73 : 3,182,359
84 : 3,182,360
193 : 3,182,361
203 : 3,182,362
215 : 3,182,363
23– 14 : Re.25,777
14.5 : 3,183,058
3,183,059
151 : 3,183,060
205 : 3,183,061
206 : 3,183,062
273 : 3,183,063
284 : 3,183,064
285 : 3,183,065
24– 20 : 3,182,364
30.5 : 3,182,365
68 : 3,182,366
73 : 3,182,367
86 : 3,182,368
92 : 3,182,369
116 : 3,182,370
135 : 3,182,371
230 : 3,182,372
263 : 3,182,373
25–131 : 3,182,374
29– 1 : 3,182,375
25.41: 3,182,376
91.1 : 3,182,377
125 : 3,182,378
148.4 : 3,182,379
155.5 : 3,182,381
155.55: 3,182,382
155.57: 3,182,383
3,182,384
157.3 : 3,182,380
193 : 3,183,066
194 : 3,183,067
205 : 3,182,385
212 : 3,182,386
234 : 3,182,387
267 : 3,182,388
283 : 3,182,389
420 : 3,182,390
420.5 : 3,182,391
421 : 3,182,392
428 : 3,182,393
460 : 3,182,394
498 : 3,182,395
30–168 : 3,182,396
301 : 3,182,397
33– 20 : 3,182,398
23 : 3,182,399
46 : 3,182,400
3,182,401
132 : 3,182,402
143 : 3,182,403
174 : 3,182,404
203.2 : 3,182,405
34– 39 : 3,182,406
35– 10.4 : 3,183,295
36– 7.6 : 3,182,407
34 : 3,182,408
42 : 3,182,409
37–179 : 3,182,410

38– 77 : 3,182,411
102.1 : 3,182,412
40– 10 : 3,182,413
125 : 3,182,414
130 : 3,182,415
42– 1 : 3,182,416
89 : 3,182,417
43– 15 : 3,182,418
55 : 3,182,419
44– 7 : 3,183,068
71 : 3,183,069
3,183,070
46– 12 : 3,182,420
17 : 3,182,421
84 : 3,182,422
50– 70 : 3,182,423
80 : 3,182,424
51– 8 : 3,182,425
95 : 3,182,426
105 : 3,182,427
118 : 3,182,428
134.5 : 3,182,429
298 : 3,183,071
53– 29 : 3,182,430
32 : 3,182,431
112 : 3,182,432
183 : 3,182,433
55– 32 : 3,182,434
162 : 3,182,435
387 : 3,182,436
56–328 : 3,182,437
57– 6 : 3,182,438
35 : 3,182,439
58–145 : 3,182,440
59– 7 : 3,182,441
3,182,442
60– 10.5 : 3,182,443
19 : 3,182,444
35.3 : 3,182,445
35.5 : 3,182,446
35.54: 3,182,450
35.55: 3,182,452
35.6 : 3,182,447
3,182,448
3,182,449
3,182,451
39.66: 3,182,453
53 : 3,182,454
3,182,455
54.5 : 3,182,456
3,182,457
3,182,458
61– 63 : 3,182,459
3,182,460
62– 13 : 3,182,461
55 : 3,182,462
58 : 3,182,463
135 : 3,182,464
137 : 3,182,465
256 : 3,182,466
3,182,467
353 : 3,182,468
467 : 3,182,469
64– 26 : 3,182,470
65–333 : 3,183,072
66– 35 : 3,182,471
67– 19 : 3,182,472
70–149 : 3,182,473
71– 1 : 3,183,073
2.5 : 3,183,074
2.6 : 3,183,075
2.7 : 3,183,076
72– 41 : 3,182,474
77 : 3,182,475
88 : 3,182,476
183 : 3,182,477
255 : 3,182,478
263 : 3,182,479
299 : 3,182,480
326 : 3,182,481
350 : 3,182,482
3,182,483
393 : 3,182,484
410 : 3,182,485
73– 16 : 3,182,486
19 : 3,182,487
37.5 : 3,182,488
67 : 3,182,489
67.8 : 3,182,490
83 : 3,182,491
88.5 : 3,182,492
95 : 3,182,493
101 : 3,182,494
141 : 3,182,495
147 : 3,182,496
149 : 3,182,497

73–178 : 3,182,498
189 : 3,182,499
207 : 3,182,501
209 : 3,182,500
223 : 3,182,502
229 : 3,182,503
231 : 3,182,504
307 : 3,182,505
343 : 3,182,506
362 : 3,182,507
379 : 3,182,508
393 : 3,182,509
438 : 3,182,510
477 : 3,182,511
505 : 3,182,512
514 : 3,182,513
74– 5 : 3,182,514
7 : 3,182,515
10.85: 3,182,516
61 : 3,182,517
125 : 3,182,518
191 : 3,182,519
421 : 3,182,520
424.8 : 3,182,521
459 : 3,182,522
.495 : 3,182,523
625 : 3,182,524
640 : 3,182,525
675 : 3,182,526
713 : 3,182,527
740 : 3,182,528
750 : 3,182,529
75– 10 : 3,183,077
49 : 3,183,078
122.5 : 3,183,079
125 : 3,183,080
128 : 3,183,081
134 : 3,183,082
168 : 3,183,083
171 : 3,183,084
174 : 3,183,085
222 : 3,183,086
76–107 : 3,182,530
77– 72 : 3,182,531
81– 9.5 : 3,182,532
82– 2.7 : 3,182,533
35 : 3,182,534
83– 8 : 3,182,535
18 : 3,182,536
88 : 3,182,537
201 : 3,182,538
209 : 3,182,539
346 : 3,182,540
3,182,541
453 : 3,182,542
573 : 3,182,543
84– 1.15: 3,183,296
85– 80 : 3,182,544
88– 1.5 : 3,182,545
3,182,546
24 : 3,182,547
3,182,548
3,182,549
3,182,550
39 : 3,182,551
96 : 3,182,552
89– 1.7 : 3,182,553
3,182,554
33 : 3,182,555
35 : 3,182,556
90– 1.6 : 3,182,557
3,182,558
13.4 : 3,182,559
15 : 3,182,560
91–364 : 3,182,561
391 : 3,182,562
401 : 3,182,563
421 : 3,182,564
92– 19 : 3,182,565
24 : 3,182,566
138 : 3,182,567
194 : 3,182,568
243 : 3,182,569
93– 12 : 3,182,570
55.1 : 3,182,571
94– 45 : 3,182,572
95– 1.7 : 3,182,573
4.5 : 3,182,574
10 : 3,182,575
42 : 3,182,576
50 : 3,182,577
77.5 : 3,182,578
96– 22 : 3,183,087
27 : 3,183,088
29 : 3,183,089
3,183,090

96– 48 : 3,183,091
83 : 3,183,092
91 : 3,183,093
92 : 3,183,094
100 : 3,183,095
98– 40 : 3,182,579
42 : 3,182,580
86 : 3,182,581
99– 77.1 : 3,183,096
107 : 3,183,097
136 : 3,183,098
140 : 3,183,099
171 : 3,183,100
3,183,101
186 : 3,183,102
204 : 3,183,103
235 : 3,182,582
260 : 3,182,583
284 : 3,182,584
340 : 3,182,585
100– 7 : 3,182,586
47 : 3,182,587
286 : 3,182,588
101– 40 : 3,182,589
248 : 3,182,590
426 : 3,182,591
102– 28 : 3,182,592
49 : 3,182,593
82 : 3,182,594
86.5 : 3,182,595
103– 2 : 3,182,596
44 : 3,182,597
46 : 3,182,598
50 : 3,182,599
125 : 3,182,600
150 : 3,182,601
152 : 3,182,602
105– 99 : 3,182,603
177 : 3,182,604
342 : 3,182,605
354 : 3,182,606
366 : 3,182,607
3,182,608
368 : 3,182,609
3,182,610
106– 50 : 3,183,104
90 : 3,183,105
103 : 3,183,106
110 : 3,183,107
153 : 3,183,108
252 : 3,183,109
287 : 3,183,110
299 : 3,183,111
316 : 3,183,112
107– 1 : 3,182,611
14 : 3,182,612
108– 91 : 3,182,613
118 : 3,182,614
131 : 3,182,615
112– 2 : 3,182,616
10 : 3,182,617
110 : 3,182,618
203 : 3,182,619
252 : 3,182,620
114– 16 : 3,182,621
3,182,622
3,182,623
208 : 3,182,624
3,182,625
115– 1 : 3,182,626
3,182,627
22.2 : 3,182,628
41 : 3,182,629
116– 70 : 3,182,630
115 : 3,182,631
117– 21 : 3,183,113
62.2 : 3,183,114
65.2 : 3,183,115
98 : 3,183,116
132 : 3,183,117
138.5 : 3,183,118
142 : 3,183,119
118–104 : 3,182,632
417 : 3,182,633
119– 23 : 3,182,634
51 : 3,182,635
120– 50 : 3,182,636
108 : 3,182,637
122–240 : 3,182,638
478 : 3,182,639
479 : 3,182,640
123– 8 : 3,182,641
41.35: 3,182,642
51 : 3,182,643
58 : 3,182,644
76 : 3,182,645

123–119 : 3,182,646
3,182,647
148 : 3,182,648
179 : 3,182,649
3,182,650
124– 24 : 3,182,651
126– 38 : 3,182,652
204 : 3,182,653
270 : 3,182,654
127– 50 : 3,182,665
128– 78 : 3,182,655
132 : 3,182,656
133 : 3,182,657
141 : 3,182,658
205 : 3,182,659
218 : 3,182,660
286 : 3,182,661
303 : 3,182,662
305 : 3,182,663
539 : 3,182,664
132– 9 : 3,182,666
32 : 3,182,667
134– 7 : 3,183,120
77 : 3,182,668
105 : 3,182,669
107 : 3,182,670
148 : 3,182,671
135– 5 : 3,182,672
46 : 3,182,673
136– 4 : 3,183,121
86 : 3,183,122
3,183,123
122 : 3,183,124
137– 81.5 : 3,182,674
3,182,675
3,182,676
100 : 3,182,677
102 : 3,182,678
247.51: 3,182,679
351 : 3,182,680
468 : 3,182,681
515.5 : 3,182,682
563 : 3,182,683
606 : 3,182,684
138– 30 : 3,182,685
45 : 3,182,686
140– 71.5 : 3,182,687
3,182,688
93 : 3,182,689
93.6 : 3,182,690
141– 5 : 3,182,691
25 : 3,182,692
71 : 3,182,693
321 : 3,182,694
143– 32 : 3,182,695
144–320 : 3,182,696
145– 50 : 3,182,697
146– 72 : 3,182,698
91 : 3,182,699
102 : 3,182,700
148– 6.2 : 3,183,125
12 : 3,183,126
31 : 3,183,127
186 : 3,183,128
3,183,129
188 : 3,183,130
189 : 3,183,131
149– 29 : 3,183,132
40 : 3,183,133
150– 28 : 3,182,701
151– 7 : 3,182,702
3,182,703
36 : 3,182,704
152– 12 : 3,182,705
211 : 3,182,706
156–117 : 3,183,134
126 : 3,183,135
202 : 3,183,136
309 : 3,183,137
364 : 3,183,138
575 : 3,183,139
158– 2 : 3,182,707
4 : 3,182,708
36.3 : 3,182,709
77 : 3,182,710
109 : 3,182,711
116 : 3,182,712
129 : 3,182,713
160– 24 : 3,182,714
161– 5 : 3,183,140
43 : 3,183,141
58 : 3,183,142
176 : 3,183,143
252 : 3,183,144
162– 47 : 3,183,145
165– 9 : 3,182,715

165– 12 : 3,182,716
47 : 3,182,717
60 : 3,182,718
111 : 3,182,719
158 : 3,182,720
166– 11 : 3,182,721
25 : 3,182,722
51 : 3,182,723
55.1 : 3,182,724
65 : 3,182,725
145 : 3,182,726
167– 30 : 3,183,146
3,183,147
33 : 3,183,148
38.7 : 3,183,149
53 : 3,183,150
55 : 3,183,151
59 : 3,183,152
65 : 3,183,153
3,183,154
3,183,155
3,183,156
3,183,157
3,183,158
74 : 3,183,159
77 : 3,183,160
78 : 3,183,161
169– 2 : 3,182,727
32 : 3,182,728
170–135.24: Re.25,776
172– 7 : 3,182,729
3,182,730
51 : 3,182,731
173– 57 : 3,182,732
115 : 3,182,733
174– 65 : 3,183,297
88 : 3,183,298
99 : 3,183,299
106 : 3,183,300
108 : 3,183,301
138 : 3,183,302
175– 14 : 3,182,734
50 : 3,182,735
413 : 3,182,736
176– 30 : 3,183,162
3,183,163
37 : 3,183,164
38 : 3,183,165
3,183,166
59 : 3,183,167
3,183,168
177– 45 : 3,182,737
120 : 3,182,738
178– 5.4 : Re.25,775
179– 1 : 3,183,303
3,183,304
3,183,305
2 : 3,183,306
7 : 3,183,307
18 : 3,183,308
35 : 3,183,309
100.2 : 3,183,310
100.41: 3,183,311
107 : 3,183,312
170.4 : 3,183,313
180– 7 : 3,182,739
3,182,740
9.5 : 3,182,741
14 : 3,182,742
181– .5 : 3,182,743
3,182,744
3,182,745
20 : 3,182,746
33 : 3,182,747
67 : 3,182,748
182–120 : 3,182,749
184– 55 : 3,182,750
187– 17 : 3,182,751
188– 26 : 3,182,752
73 : 3,182,753
3,182,754
3,182,755
76 : 3,182,756
3,182,757
77 : 3,182,758
86 : 3,182,759
152 : 3,182,760
189– 15 : 3,182,761
23 : 3,182,762
34 : 3,182,763
3,182,764
3,182,765
3,182,766
36 : 3,182,767
3,182,768
3,182,769

CLASSIFICATION OF PATENTS

189 – 36 : 3,182,770
3,182,771
37 : 3,182,772
82 : 3,182,773
192 – .02: 3,182,774
.092 3,182,778
3.2 : 3,182,775
18 : 3,182,776
56 : 3,182,777
193 – 32 : 3,182,779
194 – 9 : 3,182,780
3,182,781
195 – 28 : 3,183,169
30 : 3,183,170
80 : 3,183,172
81 : 3,183,171
103.5 : 3,183,173
198 – 7 : 3,182,782
3,182,783
99 : 3,182,784
127 : 3,182,785
131 : 3,182,786
192 : 3,182,787
3,182,788
200 – 1 : 3,183,314
5 : 3,183,315
11 : 3,183,316
18 : 3,183,317
32 : 3,183,318
47 : 3,183,319
50 – : 3,183,320
61.48: 3,183,321
83 : 3,183,322
84 : 3,183,323
87 : 3,183,324
116 : 3,183,325
120 : 3,183,326
121 : 3,183,327
122 : 3,183,328
140 : 3,183,329
150 : 3,183,330
3,183,331
153 : 3,183,332
159 : 3,183,333
166 : 3,183,334
170 : 3,183,335
202 – 75 : 3,183,174
144 : 3,183,175
204 – 212 : 3,183,176
213 : 3,183,177
206 – 42 : 3,182,789
45.19: 3,182,790
56 : 3,182,791
57 : 3,182,792
58 : 3,182,793
65 : 3,182,794
84 : 3,182,795
208 – 58 : 3,183,178
97 : 3,183,179
143 : 3,183,180
211 : 3,183,181
212 : 3,183,182
311 : 3,183,183
209 – 73 : 3,182,796
74 : 3,182,797
166 : 3,182,798
210 – 26 : 3,183,184
3,183,185
52 : 3,183,186
83 : 3,182,799
96 : 3,182,800
207 : 3,182,801
212 : 3,182,802
266 : 3,182,803
211 – 14 : 3,182,804
26 : 3,182,805
43 : 3,182,806
49 : 3,182,807
69 : 3,182,808
88 : 3,182,809
118 : 3,182,810
126 : 3,182,811
148 : 3,182,812
214 – 1 : 3,182,813
3,182,814
3,182,815
3,182,816
3,182,817
6 : 3,182,818
3,182,819
3,182,820
7 : 3,182,821
3,182,822
16.4 : 3,182,823
17 : 3,182,824
3,182,825
75 : 3,182,826
83.1 : 3,182,827
86 : 3,182,828
3,182,829
138 : 3,182,830
140 : 3,182,831
3,182,832

214 – 147 : 3,182,833
338 : 3,182,834
383 : 3,182,835
514 : 3,182,836
653 : 3,182,837
658 : 3,182,838
215 – 1 : 3,182,839
9 : 3,182,840
11 : 3,182,841
13 : 3,182,842
44 : 3,182,843
217 – 12 : 3,182,844
219 – 75 : 3,183,336
76 : 3,183,337
127 : 3,183,338
383 : 3,183,339
455 : 3,183,340
3,183,341
220 – 2.3 : 3,182,845
4 : 3,182,846
3,182,847
26 : 3,182,848
46 : 3,182,849
3,182,850
53 : 3,182,851
54 : 3,182,852
64 : 3,182,853
83 : 3,182,854
89 : 3,182,855
97 : 3,182,856
222 – 70 : 3,182,857
83 : 3,182,858
132 : 3,182,859
136 : 3,182,860
212 : 3,182,861
255 : 3,182,862
328 : 3,182,863
394 : 3,182,864
416 : 3,182,865
464 : 3,182,866
486 : 3,182,867
223 – 65 : 3,182,868
73 : 3,182,869
91 : 3,182,870
224 – 1 : 3,182,871
5 : 3,182,872
225 – 2 : 3,182,873
3 : 3,182,874
99 : 3,182,875
101 : 3,182,876
226 – 172 : 3,182,877
227 – 83 : 3,182,878
119 : 3,182,879
228 – 6 : 3,182,880
229 – 3.1 : 3,182,881
4.5 : 3,182,882
14 : 3,182,883
3,182,884
3,182,885
31 : 3,182,913
34 : 3,182,886
37 : 3,182,887
39 : 3,182,888
44 : 3,182,889
51 : 3,182,890
3,182,891
86 : 3,182,892
87 : 3,182,893
92.7 : 3,182,894
230 – 56 : 3,182,895
101 : 3,182,896
116 : 3,182,897
3,182,898
117 : 3,182,899
141 : 3,182,900
206 : 3,182,901
235 : 3,182,902
232 – 43.1 : 3,182,903
234 – 5 : 3,182,904
108 : 3,182,905
235 – 61 : 3,182,907
130 : 3,182,906
132 : 3,182,908
156 : 3,183,342
236 – 1 : 3,182,909
34 : 3,182,910
3,182,911
35 : 3,182,912
239 – 63 : 3,182,914
142 : 3,182,915
468 : 3,182,916
240 – 2 : 3,183,343
8.16: 3,183,344
9 : 3,183,345
25 : 3,183,346
46.23: 3,183,347
54 : 3,183,348
241 – 36 : 3,182,917
46 : 3,182,918
101 : 3,182,919
282 : 3,182,920
242 – 25 : 3,182,921
35.5 : 3,182,922

242 – 55 : 3,182,923
68.1 : 3,182,924
130 : 3,182,925
157 : 3,182,926
244 – 1 : 3,182,927
3,182,928
12 : 3,182,929
14 : 3,182,930
17.17: 3,182,931
31 : 3,182,932
77 : 3,182,933
103 : 3,182,934
110 : 3,182,935
246 – 169 : 3,183,349
3,183,350
248 – 44 : 3,182,936
45 : 3,182,937
63 : 3,182,938
73 : 3,182,939
74 : 3,182,940
3,182,941
107 : 3,182,942
210 : 3,182,943
226 : 3,182,944
242 : 3,182,945
291 : 3,182,946
421 : 3,182,947
249 – 18 : 3,182,948
60 : 3,182,949
250 – 43.5 : 3,183,351
49.5 : 3,183,352
71.5 : 3,183,353
3,183,354
83.3 : 3,183,355
84.5 : 3,183,356
103 : 3,183,357
108 : 3,183,358
199 : 3,183,359
208 : 3,183,360
239 : 3,183,361
251 – 63 : 3,182,950
85 : 3,182,951
148 : 3,182,952
175 : 3,182,953
203 : 3,182,954
252 – 41 : 3,183,187
49.5 : 3,183,188
3,183,189
59 : 3,183,190
105 : 3,183,191
188.3 : 3,183,192
301.5 : 3,183,193
317 : 3,183,194
428 : 3,183,195
456 : 3,183,196
253 – 39.1 : 3,182,955
254 – 86 : 3,182,956
3,182,957
89 : 3,182,958
93 : 3,182,959
134.7 : 3,182,960
175 : 3,182,961
186 : 3,182,962
256 – 65 : 3,182,963
259 – 1 : 3,182,964
4 : 3,182,965
3,182,966
3,182,967
9 : 3,182,968
25 : 3,182,969
95 : 3,182,970
98 : 3,182,971
107 : 3,182,972
148 : 3,182,973
260 – 17 : 3,183,197
18 : 3,183,198
28.5 : 3,183,199
29.4 : 3,183,200
31.2 : 3,183,201
32.6 : 3,183,202
33.4 : 3,183,203
33.6 : 3,183,204
37 : 3,183,205
3,183,206
41 : 3,183,207
3,183,208
46.5 : 3,183,209
67 : 3,183,210
3,183,211
3,183,212
3,183,213
3,183,214
75 : 3,183,215
83.5 : 3,183,216
85.5 : 3,183,217
3,183,218
86.1 : 3,183,219
88.2 : 3,183,220
92.8 : 3,183,222
145 : 3,183,223
146 : 3,183,224
167 : 3,183,225

260 – 211.5 : 3,183,226
239.5 : 3,183,227
239.55: 3,183,228
240 : 3,183,229
244 : 3,183,230
249.5 : 3,183,231
256.5 : 3,183,232
285.5 : 3,183,234
294 : 3,183,235
294.8 : 3,183,236
295 : 3,183,237
299 : 3,183,238
302 : 3,183,239
306.8 : 3,183,240
308 : 3,183,241
309.5 : 3,183,242
325 : 3,183,243
326.3 : 3,183,244
326.5 : 3,183,245
332.1 : 3,183,246
343.6 : 3,183,247
346.3 : 3,183,248
348 : 3,183,249
3,183,250
349 : 3,183,251
397.4 : 3,183,252
397.5 : 3,183,253
448.2 : 3,183,254
453 : 3,183,255
461 : 3,183,256
3,183,257
3,183,258
465 : 3,183,259
3,183,260
523 : 3,183,261
534 : 3,183,262
3,183,263
543 : 3,183,264
552 : 3,183,265
556 : 3,183,266
559 : 3,183,267
570.8 : 3,183,268
585 : 3,183,269
606 : 3,183,270
3,183,271
606.5 : 3,183,272
619 : 3,183,273
635 : 3,183,274
646 : 3,183,275
653.4 : 3,183,276
653.5 : 3,183,277
667 : 3,183,278
671 : 3,183,233
674 : 3,183,279
683.76: 3,183,280
837 : 3,183,281
856 : 3,183,282
887 : 3,183,221
897 : 3,183,283
261 – 20 : 3,182,974
34 : 3,182,975
63 : 3,182,976
112 : 3,182,977
124 : 3,182,978
263 – 33 : 3,182,979
3,182,980
36 : 3,182,981
264 – 28 : 3,183,284
45 : 3,183,285
3,183,286
118 : 3,183,287
130 : 3,183,288
220 : 3,183,289
259 : 3,183,290
322 : 3,183,291
335 : 3,183,292
266 – 3 : 3,182,982
27 : 3,182,983
34 : 3,182,984
3,182,985
267 – 1 : 3,182,986
64 : 3,182,987
269 – 37 : 3,182,988
81 : 3,182,989
153 : 3,182,990
270 – 73 : 3,182,991
271 – 3 : 3,182,992
47 : 3,182,993
49 : 3,182,994
64 : 3,182,995
68 : 3,182,996
71 : 3,182,997
74 : 3,182,998
272 – 74 : 3,182,999
273 – 26 : 3,183,000
43 : 3,183,001
106 : 3,183,002
130 : 3,183,003
274 – 1 : 3,183,004
10 : 3,183,005
275 – 8 : 3,183,006
277 – 1 : 3,183,007

277 – 207 : 3,183,008
208 : 3,183,009
235 : 3,183,010
237 : 3,183,011
279 – 6 : 3,183,012
280 – 3 : 3,183,013
6 : 3,183,014
6.1 : 3,183,015
3,183,016
34 : 3,183,017
104.5 : 3,183,018
124 : 3,183,019
208 : 3,183,020
285 – 5 : 3,183,021
93 : 3,183,022
156 : 3,183,023
330 : 3,183,024
287 – 78 : 3,183,025
96 : 3,183,026
292 – 40 : 3,183,027
302 : 3,183,029
303 : 3,183,030
293 – 62 : 3,183,028
294 – 19 : 3,183,031
65 : 3,183,032
296 – 97 : 3,183,033
297 – 239 : 3,183,034
281 : 3,183,035
440 : 3,183,036
298 – 38 : 3,183,037
301 – 37 : 3,183,038
3,183,039
303 – 6 : 3,183,040
49 : 3,183,041
52 : 3,183,042
307 – 38 : 3,183,362
88 : 3,183,363
88.5 : 3,183,364
3,183,365
3,183,366
3,183,367
3,183,368
3,183,369
3,183,370
3,183,371
3,183,372
3,183,373
3,183,374
106 : 3,183,375
107 : 3,183,376
113 : 3,183,377
308 – 1 : 3,183,043
8.2 : 3,183,044
15 : 3,183,045
19 : 3,183,046
22 : 3,183,047
160 : 3,183,048
310 – 8.7 : 3,183,378
11 : 3,183,379
3,183,380
3,183,381
17 : 3,183,382
68 : 3,183,383
90 : 3,183,384
103 : 3,183,385
149 : 3,183,386
156 : 3,183,387
312 – 221 : 3,183,049
270 : 3,183,050
313 – 82 : 3,183,388
93 : 3,183,389
95 : 3,183,390
181 : 3,183,391
188 : 3,183,392
218 : 3,183,393
270 : 3,183,394
271 : 3,183,395
355 : 3,183,396
314 – 71 : 3,183,397
315 – 3.5 : 3,183,398
4 : 3,183,399
11 : 3,183,400
27 : 3,183,401
30 : 3,183,402
111 : 3,183,403
135 : 3,183,404
316 – 3 : 3,183,051
317 – 27 : 3,183,405
99 : 3,183,406
101 : 3,183,407
104 : 3,183,408
119 : 3,183,409
123 : 3,183,410
3,183,411
3,183,412
3,183,413
138 : 3,183,414
141 : 3,183,415
148.5 : 3,183,416
164 : 3,183,417
192 : 3,183,418
242 : 3,183,419

318 – 18 : 3,183,420
28 : 3,183,421
52 : 3,183,422
203 : 3,183,423
207 : 3,183,424
227 : 3,183,425
302 : 3,183,426
350 : 3,183,427
439 : 3,183,428
321 – 18 : 3,183,429
47 : 3,183,430
322 – 32 : 3,183,431
323 – 66 : 3,183,432
89 : 3,183,433
324 – 14 : 3,183,434
51 : 3,183,435
69 : 3,183,436
77 : 3,183,437
106 : 3,183,438
122 : 3,183,439
158 : 3,183,440
325 – 13 : 3,183,441
40 : 3,183,442
178 : 3,183,443
392 : 3,183,444
328 – 134 : 3,183,445
151 : 3,183,446
177 : 3,183,447
329 – 107 : 3,183,448
142 : 3,183,449
330 – 9 : 3,183,450
331 – 78 : 3,183,451
107 : 3,183,452
108 : 3,183,453
113 : 3,183,454
332 – 18 : 3,183,455
29 : 3,183,456
333 – 10 : 3,183,457
22 : 3,183,458
98 : 3,183,459
336 – 57 : 3,183,460
60 : 3,183,461
84 : 3,183,462
96 : 3,183,463
142 : 3,183,464
187 : 3,183,465
192 : 3,183,466
223 : 3,183,467
339 – 45 : 3,183,468
3,183,469
82 : 3,183,470
95 : 3,183,471
97 : 3,183,472
143 : 3,183,473
187 : 3,183,474
188 : 3,183,475
242 : 3,183,476
340 – 2 : 3,183,477
3,183,478
26 : 3,183,479
27 : 3,183,480
52 : 3,183,481
146.1 : 3,183,482
3,183,483
146.2 : 3,183,484
147 : 3,183,485
166 : 3,183,486
3,183,487
172.5 : 3,183,488
3,183,489
173 : 3,183,490
173.1 : 3,183,491
174 : 3,183,492
3,183,493
174.1 : 3,183,494
3,183,495
196 : 3,183,496
213 : 3,183,497
253 : 3,183,498
258 : 3,183,499
269 : 3,183,500
296 : 3,183,501
347 : 3,183,502
378 : 3,183,503
343 – 7.5 : 3,183,504
17.1 : 3,183,505
17.2 : 3,183,506
106 : 3,183,507
176 : 3,183,508
225 : 3,183,509
719 : 3,183,510
771 : 3,183,511
346 – 7 : 3,183,512
17 : 3,183,513
25 3,183,514
34 3,183,515
74 : 3,183,516
3,183,517
76 : 3,183,518
351 – 17 : 3,183,519
352 – 178 : 3,183,520
221 : 3,183,521

CLASSIFICATION OF DESIGNS

D 7 – 7 : 201,070
D13 – 1 : 201,071
201,072
201,073
6 : 201,074
D14 – 3 : 201,075
201,076
D15 – 1 : 201,077
D20 – 4 : 201,078

D26 – 5 : 201,079
13 : 201,080
14 : 201,081
201,082
15 : 201,083
201,084
D33 – 2 : 201,085
14 : 201,086

D34 – 5 : 201,087
D41 – 1 : 201,088
D44 – 29 : 201,089
D45 – 1 : 201,090
D48 – 16 : 201,091
201,092
23 : 201,093
24 : 201,094

D48 – 31 : 201,095
D50 – 6 : 201,096
201,097
D52 – 2 : 201,098
201,099
6 : 201,100
D57 – 1 : 201,101
D58 – 2 : 201,102

D58 – 5 : 201,103
26 : 201,104
D59 – 2 : 201,105
D61 – 1 : 201,106
D70 – 1 : 201,107
D71 – 1 : 201,108
201,109
D73 – 1 : 201,110

D74 – 2 : 201,111
D80 – 8 : 201,112
D81 – 20 : 201,113
D87 – 3 : 201,114
5 : 201,115
D89 – 1 : 201,116
D90 – 20 : 201,117
201,118

CLASSIFICATION OF PLANTS

P. – 34 : 2,512
P. – 55 : 2,508
P. – 57 : 2,507
P. – 85 : 2,509
P. – 89 : 2,510
P. – 89 : 2,511

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

May 11, 1965 Volume 814 Number 2

TRADEMARKS

NOTICES

Decisions of the Commissioner of Patents

The 1964 Edition of the Decisions of the Commissioner of Patents has been released from the printer and is available from the Superintendent of Documents, Government Printing Office, Washington, D. C., 20402 ---------------Price $4.50

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 418,698 (TEFLON), E. I. du Pont de Nemours and Company, Synthetic resinous fluorine-containing polymers in the form of molding and extruding compositions, fabricated shapes—namely, sheets, rods, tubes, tape, and filaments, solutions, and emulsions; **Reg. No. 556,990**, same, Single ply polytetrafluoroethylene coated or impregnated glass fabrics and laminates thereof in wide or narrow rolls (tapes) or in sheets, for use generally in the industrial arts where high resistance to chemicals or solvents, or to high or low temperatures, or high anti-adhesive, or high anti-friction properties are desired; **Reg. No. 559,331**, same, Polytetrafluoroethylene coatings in the nature of paints and varnishes; **Reg. No. 567,121**, same, Single ply polyetetrafluoroethylene coated or impregnated glass fabrics and laminates thereof in wide or narrow rolls (tapes), or in sheets for use as electrical insulation; **Reg. No. 623,605**, same, Fibers and filaments in the nature of threads and yarns adapted to be used in making fabrics; **Reg. No. 676,166**, same, Films or sheets made from polymers of fluorinated hydrocarbons for use in packaging applications, in electrical and non-electrical insulation as protective liners for containers and equipment, in tapes, in machinery parts, in covering, coating, and packing substances, in hose and piping, and for general use in the industrial arts, **filed** Feb. 2, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–170–FW, *E. I. du Pont de Nemours & Company* v. *NMC Corporation et al.*

Reg. No. 527,590 (WT AND DESIGN), White Tower Management Corporation, Serving and dispensing food and beverages; **Reg. No. 557,475** (WHITE TOWER AND DESIGN), same, Coffee, hamburger sandwiches, and other sandwiches; **Reg. No. 558,371**, same, Serving and dispensing food and beverages in restaurants, **filed** Oct. 6, 1964, D.C.N.J. (Camden), Doc. 917–64, *White Tower Management Corp.* v. *Israel Roel Saul et al.* Consent decree; injunction issued Feb. 16, 1965.

Reg. No. 556,990. (See Reg. No. 418,698.)
Reg. No. 557,475. (See Reg. No. 527,590.)
Reg. No. 558,371. (See Reg. No. 527,590.)
Reg. No. 559,331. (See Reg. No. 527,590.)
Reg. No. 567,121. (See Reg. No. 418,698.)

CONDITION OF TRADEMARK APPLICATIONS AS OF MARCH 31, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	15, 573
Date of oldest new application	August 26, 1964
Date of oldest amended application	July 27, 1964

J. H. MERCHANT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application New	Oldest Application Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	8-26-64	8-5-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	9-1-64	7-27-64
Renewals (All Classes)	3-8-65	3-29-65
Sec. 12 (c) Publications (All Classes)	3-16-65	--------

Applications filed during the month of March 1965—2,676

Registrations Issued	275—No. 789,246 to No. 789,520
Renewals Issued	60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Reg. No. 612,590 (MICROTAPE), The Microcard Corporation, Microphotograph prints provided on an elongated strip, filed Dec. 30, 1963, D.C.N.J. (Newark), Doc. 1090–63, *Microcard Corporation v. Ferro Dynamics Corporation*. Consent judgment; injunction issued Feb. 17, 1965.

Reg. No. 612,984 (RANNEY METHOD), Ranney Method Water Supplies, Inc., Large capacity horizontal water collectors; **2,622,863**, Silitch and D'Audiffret, APPARATUS AND METHOD FOR THE COLLECTION OF WATER; **2,670,180**, L. Ranney, METHOD AND APPARATUS FOR ADVANCING SUBTERRANEAN PIPE; **2,740,476**, D'Audiffret and Reimund, METHOD AND APPARATUS FOR COLLECTING WATER; **2,756,020**, same, METHOD AND APPARATUS FOR PROJECTING PIPES TROUGH GROUND, filed Feb. 11, 1965, D.C., S.D. Ohio (Columbus), Doc. 7385, *Ranney Method Water Supplies, Inc. v. Aqua Ran Water Supplies, Inc. et al.*

Reg. No. 623,605. (See Reg. No. 418,698.)

Reg. No. 676,166. (See Reg. No. 418,698.)

International Convention for the Protection of Industrial Property

Adherence of Mauritania to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of the Islamic Republic of Mauritania to the Convention of Union of Paris for the Protection of Industrial Property, as last revised at Lisbon on October 31, 1958.

The note also confirms the membership of that State in the International Union of Paris for the Protection of Industrial Property.

(Signed) EDWARD J. BRENNER,
Apr. 7, 1965. *Commissioner of Patents.*

International Convention for the Protection of Industrial Property

Adherence of South Africa to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 17, 1965, of the Republic of South Africa to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Apr. 7, 1965. *Commissioner of Patents.*

International Convention for the Protection of Industrial Property

Adherence of Yugoslavia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of Yugoslavia to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Apr. 7, 1965. *Commissioner of Patents.*

Notice of Tentative Recordation of a Trade Name

[T.D. 56394]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., April 14, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946 and section 11.16, Customs Regulations:

"FANON-MASCO," the trade name used by Fanon Electronic Industries, Inc., a corporation organized under the laws of the State of New York, located and doing business at 439 Frelinghuysen Avenue, Newark, New Jersey. The trade name is associated with merchandise comprising electronic amplification, communication, recording, reproducing and signaling equipment and components thereof, manufactured in Japan.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after May 14, 1965, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after May 14, 1965, of any opposition proceeding.

Until 45 days after May 14, 1965, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

LESTER D. JOHNSON,
Acting Commissioner of Customs.

MARKS PUBLISHED FOR OPPOSITION

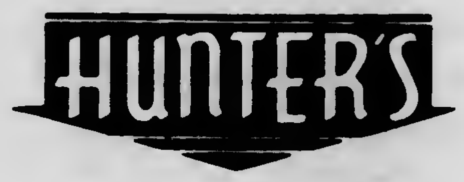
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 183,911. The Hunter Chemical Company, San Antonio, Tex. Filed Jan. 2, 1964.



Class 4—Abrasives and Polishing Materials

For Metal Polish and Floor Polishing Wax.

Class 6—Chemicals and Chemical Compositions

For Disinfectants, Insecticides, Fly Spray and Room Deodorants.

Class 52—Detergents and Soaps

For Chamois Cleaner, General Purpose Cleaning Preparations, Toilet Bowl Cleansers, Soap Powders, Glass and Dish Washing Compounds, Degreasers, Floor Sweeping Compounds, White Wall Tire Cleaners, and Wax Strippers.

First use 1945.

SN 188,138. Packard-Bell Electronics Corporation, Los Angeles, Calif. Filed Mar. 6, 1964.

ESPANIA

Class 21—Electrical Apparatus, Machines, and Supplies

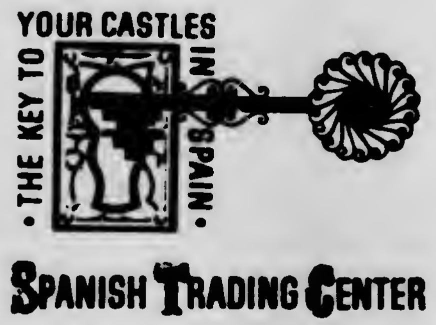
For Television.

Class 36—Musical Instruments and Supplies

For Stereophonic Hi-Fidelity Equipment.

First use Jan. 27, 1964.

SN 188,678. Spanish Trading Center, Inc., New York, N.Y. Filed Mar. 18, 1964.



Applicant disclaims "Spanish Trading Center" apart from the mark as shown.

Class 32—Furniture and Upholstery

For Living Room, Dining Room, Bed Room and Occasional Furniture; Cabinets; Chests and Desks; Consoles and Buffets; Occasional Tables; Cocktail Tables; Dining and Serving Tables; Chairs; Benches and Stools.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Wall Sconces, Wrought Iron Candlesticks, Chandeliers, Table and Garden Lanterns, Hanging Lanterns, Wall Torches and Lamps and Candalabra.

First use February 1960.

SN 190,077. Gemco Electric Company, Clawson, Mich. Filed Apr. 1, 1964.

GEMCO

Owner of Reg. No. 656,748.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Switches, Including Manually Operated, Mechanically Actuated Rotary, and Plugging Types; Timers; Amplifiers; Transducers; Terminal Blocks; Motor and Pump Controls; Magnetic Starters; Electric Equipment Enclosures and Cabinets, Including Explosion-Proof Types; Electric Welding Controls; Circuit Alarms in the Nature of Ground Contact Indicators; Numerical Control Units for Positionable Members and Control Systems; Photoelectric Equipment.

Class 26—Measuring and Scientific Appliances

For Vacuum Tube and Transistor Voltmeters; and Electric Metering Devices for Measuring Fluid Flow.

First use on or about Feb. 1, 1945.

SN 193,859. Grey-Wood Knitwear Industries, Inc., New York, N.Y. Filed May 13, 1964.

FOXWOOD

Owner of Reg. No. 630,097.

Class 39—Clothing

For Women's Clothing—Namely, Suits, Slacks, Sweaters, Dresses and Skirts.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Knitted Fabrics for Making Into Suits, Slacks, Dresses, Skirts, and the Like.

First use May 1, 1962.

SN 201,755. Sunbeam Corporation, Chicago, Ill. Filed Sept. 11, 1964.

SKYLARK

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Appliances—Namely, Electric Frying Pans, Electric Coffeemakers, Electric Can Openers, Electric Food Mixers, Electric Toasters, Electric Pressing Irons, Electric Waffle Bakers, Electric Broilers, Electric Water Kettles, Electric Cookers and Deep Fryers, Electric Egg Cookers, Electric Blankets, Electric Griddles, Electric Vacuum Cleaners, Electric Floor Polishing and Conditioning Machines, Electric Heaters and Electric Blenders, Disintegrators and Liquefiers and Parts Thereof.

Class 44—Dental, Medical, and Surgical Appliances

For Electric Hair Dryers.

First use July 28, 1964.

SN 201,657. Bucherer Company, A.G., Lucerne, Switzerland. Filed July 20, 1964.

BUCHERER

Owner of Swiss Reg. No. 200,092, dated Sept. 5, 1963.

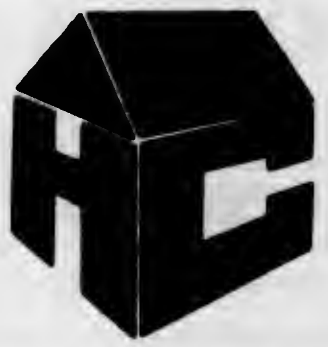
Class 27—Horological Instruments

For Watches, Watch Movements, Cases, Dials, and Parts Thereof.

Class 28—Jewelry and Precious-Metal Ware

For Watch Bracelets, Jewels, Precious Stones, and Jewelry of All Kinds.

SN 202,201. Home-Care Products, Inc., Jamaica, N.Y. Filed Sept. 21, 1964.



The mark consists of the letters HC and design.

Class 2—Receptacles

For Disposable Vacuum Cleaner Bags.

Class 21—Electrical Apparatus, Machines, and Supplies

For Vacuum Cleaner Accessories and Floor Polisher Accessories—Namely, Felt Buffer Pads, Steel Wool Pads, Lambs Wool Pads and Scrubbing and Polishing Brushes.

First use Sept. 10, 1964.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 195,621. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 518,546, 761,183, and others.
For Synthetic Resins and Synthetic Resinous Compositions for Use in the Industrial Arts.
First use on or prior to Oct. 31, 1955.

SN 204,961. Burgess Pigment Company, Sandersville, Ga. Filed Oct. 28, 1964.

OPTIWHITE

For Anhydrous Aluminum Silicate Clay.
First use Sept. 16, 1964.

Class 2—Receptacles

SN 70,000. Standard Paper Box Corporation, Los Angeles, Calif. Filed Mar. 20, 1959.

STAN-PAK

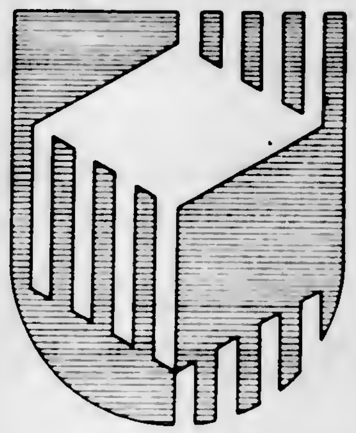
For Folding Paper Boxes or Cartons.
First use Oct. 27, 1942.

SN 186,578. Tuffy Products Co., d.b.a. National Production Co., Los Angeles, Calif. Filed Feb. 12, 1964.

AIR LOCK

For Protective Bags for Display, Storage and/or Transportation of Goods.
First use July 3, 1963.

SN 193,331. Champion Papers Inc., Hamilton, Ohio. Filed May 13, 1964.



The drawing is lined for blue but color is not claimed.
For Boxboard or Paperboard Boxes, Cartons, and Packages, and Blanks for Making the Same.
First use Feb. 26, 1964.

SN 203,064. Anchor Machine Company, Inc., Jackson, Mich. Filed Oct. 1, 1964.

ANCHORPAC

For Containers for Compacted Trash.
First use Apr. 7, 1962.

Class 4—Abrasives and Polishing Materials

SN 202,945. Nigrin-Werke Carl Gentner, Postfach, Germany. Filed Sept. 29, 1964.

Eri

Owner of German Reg. No. 637,441, dated Apr. 27, 1953.
For Waxing and Polishing Preparations for Shoes and Related Products.

SN 203,830. Simonds Abrasive Company, Philadelphia, Pa. Filed Oct. 12, 1964.

PENNSY

For Abrasive Products—Namely, Grinding Wheels and Abrasive Bricks, Sticks and Stones.
First use Sept. 25, 1964.

SN 203,972. S. C. Johnson & Son, Inc., Racine, Wis. Filed Oct. 14, 1964.

FUTURE

For Floor Polish With Cleaning Properties.
First use on or about Sept. 25, 1964.

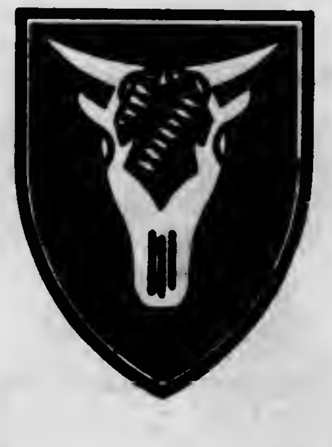
SN 204,273. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Oct. 19, 1964.

SCOTCH

Owner of Reg. No. 577,689.
For Coated Abrasives.
First use at least as early as Sept. 17, 1952.

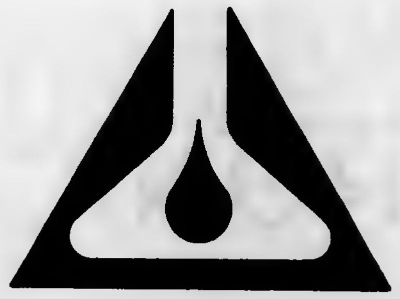
Class 6—Chemicals and Chemical Compositions

SN 189,538. Joh. A. Benckiser G.m.b.H., Chemische Fabrik, Ludwigshafen, Rhine, Germany. Filed Mar. 25, 1964.



Owner of German Reg. No. 498,832, dated Dec. 29, 1937.
For Chemical Compositions for Use in the Processing of Foods and for Preventing the Coagulation of Animal Blood.

SN 191,421. Magna Corporation, Anaheim, Calif. Filed Apr. 17, 1964.



For Corrosion Inhibitors and Wax Solvents—Namely, Aromatic Hydrocarbons, Surface Acting Agents Having a Detergent Effect, and Carbon Bisulfide for De-Waxing or Solubilizing the Precipitated or Accumulated Waxes in Petroleum Storage Tanks, Pumping Systems and Oil Well Bores.
First use May 28, 1962.

SN 197,644. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed July 10, 1964.

GRASP

For Antimicrobial Dust Control Oil, Especially Adapted for Application to Mops, Rags and Towels To Hold Dust.
First use June 4, 1964.

SN 203,771. Kilgannon Company, Houston, Tex. Filed Oct. 12, 1964.

KILCOLITE

For Desiccant.
First use Mar. 20, 1956.

SN 204,081. Nalco Chemical Company, Chicago, Ill. Filed Oct. 15, 1964.

NALCHELATE

For Boiler Water Chemical Additive To Inhibit Scale Formation.
First use May 4, 1964.

SN 204,156. Geigy Chemical Corporation, Ardsley, N.Y. Filed Oct. 16, 1964.

CRAWL-TOX

Owner of Reg. Nos. 164,491, 218,089, and others.
For Chemical Compound Used as an Ingredient of Insecticides.
First use Sept. 21, 1964.

SN 204,158. Geigy Chemical Corporation, Ardsley, N.Y. Filed Oct. 16, 1964.

OMNIX

Owner of Reg. No. 758,655.
For Chemical Compound Used as an Ingredient of Insecticides.
First use Sept. 21, 1964.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 195,485. Zenza Bronica Kogyo Kabushiki Kaisha, Itabushi-ku, Tokyo, Japan. Filed June 11, 1964.

Zenza BRONICA

Owner of U.S. Reg. No. 704,604.
For Lighters for Cigars and Cigarettes.
First use November 1961; in commerce March 1963.

SN 203,975. Larus & Brother Company, Richmond, Va. Filed Oct. 14, 1964.

JOHN ROLFE

"John Rolfe" is not the name of any known living individual. Owner of Reg. No. 744,650.
For Smokers' Pipes.
First use Aug. 27, 1964.

Class 12—Construction Materials

SN 185,471. Wilhelm Gail'sche Tonwerke KG. a. A., Giessen, Germany. Filed Jan. 27, 1964.

GAIL

For Ceramic Building Materials—Namely, Floor and Wall Tile, Plaquettes, Coves, Cove Skirtings, Window Sills, Scum Channels, and the Like.

First use at least as early as Oct. 5, 1962; in commerce Oct. 5, 1962.

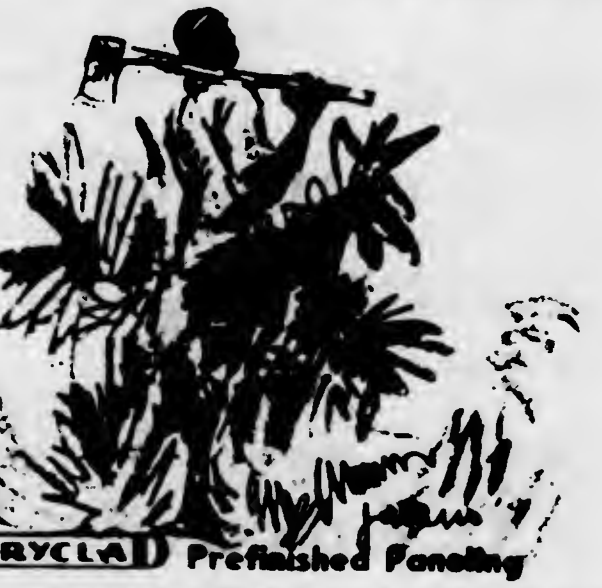
SN 187,272. Paolo Capoferri and Giuseppe Capoferri, d.b.a. Fulget dei Fratelli Capoferri, Bergamo, Italy. Filed Feb. 24, 1964.

SFEROGRANITO

Priority claimed under Sec. 44(d) on Italian application, filed Sept. 4, 1963; Reg. No. 163,377, dated Jan. 13, 1964.

For Granite Building Materials—Namely, Panels Consisting of Tiles for Walls, Ceilings and Floors; Tiles, Slabs, Slates and Tesserae for Floors, Walls and Ceilings.

SN 187,888. Pluswood Industries, Oshkosh, Wis. Filed Mar. 3, 1964.



The words "Prefinished Paneling" are disclaimed apart from the trademark as a whole. Owner of Reg. No. 723,753.

For Acrylic Lacquered Prefinished Plywood Made in Part of African Hardwood Veneers.

First use Dec. 23, 1963.

SN 188,545. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Mar. 12, 1964.

BIG SAVAGE

For Firebrick.
First use at least as early as May 1938.

SN 188,636. Industrial Maintenance, Inc., Seattle, Wash. Filed Mar. 13, 1964.

FLEXI-CRETE

For Cementitious Wall Coating Materials for Building.
First use Jan. 14, 1964.

SN 188,714. Bliss & Laughlin, Incorporated, Harvey, Ill. Filed Mar. 16, 1964.

AMES

Applicant's related company owns Reg. No. 766,179.

For Tape Used in Wallboard Construction, and Drywall Outlet Reinforcements.

First use Nov. 1, 1961.

SN 188,767. Kaiser Steel Corporation, Oakland, Calif. Filed Mar. 16, 1964.

K-BRIK

For Masonry Block.
First use at least as early as Dec. 31, 1963.

SN 192,736. Masonite Corporation, Chicago, Ill. Filed May 5, 1964.

WEATHERALL

For Construction Board, and More Specifically Hardboard Panels, for Various Construction Purposes.

First use on or about Feb. 21, 1963.

SN 195,622. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 513,546, 761,183, and others.
For Insulating Material and Concrete Reinforcing Bars.
First use on or prior to June 2, 1955, on insulating material.

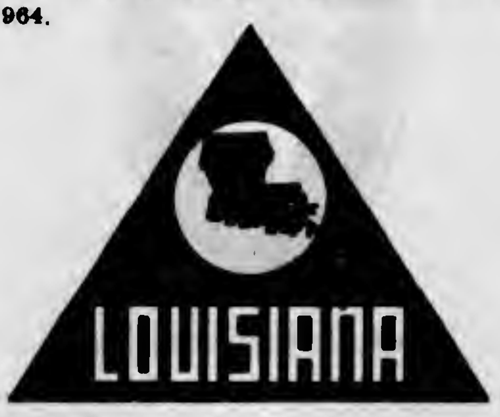
SN 195,791. Kafak Aktiebolag, Sundsvall, Sweden. Filed June 16, 1964.

GIBOGI

Owner of Swedish Reg. No. 101,278, dated Oct. 20, 1961.

For Structural Panels for Building Constructions, the Panels Consisting of a Composition of Wood Fibers, Plaster and Plastics.

SN 197,321. Oklahoma Cement Company, Dallas, Tex. Filed July 7, 1964.



The drawing is lined for blue but no claim is made to color. No registration rights are claimed for the word "Louisiana" or the outline of the State of Louisiana apart from the mark shown in the drawing, and applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof. Owner of Reg. No. 714,049.

For Portland and Masonry Cement.
First use Apr. 10, 1964.

SN 197,393. Edward Hines Lumber Co., Chicago, Ill. Filed July 8, 1964.

RED ARROW

For Lumber—Namely, Studs.
First use Sept. 1, 1962.

SN 197,395. Johns-Manville Corporation, New York, N.Y. Filed July 8, 1964.

CONCORD

For Decorative Ceiling Tile.
First use at least on or about May 29, 1964.

SN 199,659. Dansk Eternit-Fabrik A/S, Aalborg, Denmark. Filed Aug. 11, 1964.

CEMBRIT

Owner of Danish Reg. No. 122/1941, dated Feb. 15, 1941.

For Asbestos Fiber Cement and Asbestos Fiber Cement Tiles, Sheets, Pipes and Pipe Fittings, and the Like.

SN 200,395. Unistrut Corporation, Wayne, Mich. Filed Aug. 21, 1964.

UNISTRUT

Owner of Reg. Nos. 564,414, 758,671, and others.

For Structural Building and Framing Products, and Accessory Components Therefor—Namely, Rolled and Extruded Metal Sections, Trolley and Conveyor Assemblies and Parts, End Caps and Closure Strips for Channel and Tubing Members, Shelf Brackets, Beam Clamps, Concrete Inserts, Partition and Display Fittings and Mouldings, Ducts, and Door Jambs.

First use Sept. 6, 1940.

SN 201,258. Central Air Conditioning Co., Inc., d.b.a. Thermal Blok Co., Wichita, Kans. Filed Sept. 3, 1964.

BLOK

The drawing is lined to indicate only a contrasting color, but no claim is made to color as part of the mark.

For Prefabricated Pipe Insulating Raceways of Foamed Plastic Formed in Mating or Complemental Halves.

First use May 26, 1964.

SN 201,435. Holmes Foundry Limited, Sarnia, Ontario, Canada. Filed Sept. 8, 1964.

UNIBLOK

Owner of Canadian Reg. No. 114,339, dated June 5, 1959.

For High Temperature Thermal Insulating Block for Use in Boilers, Tanks, Back-Up Insulations, Behind Refractories and Heat Vessels of Various Descriptions and Also for Wall and Roof Insulation in Buildings and Ships.

SN 203,311. Ling-Temco-Vought, Inc., Dallas, Tex. Filed Oct. 5, 1964.

METALITE

For Adhesively Bonded Laminated Panels Comprising Metal Sheets and a Low-Density Core.

First use Jan. 6, 1944.

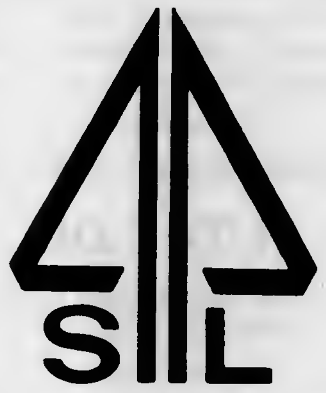
SN 203,787. Mineralite Limited, Croydon, England. Filed Oct. 12, 1964.

MINERALITE

For Non-Metallic Minerals Composition for In Situ Surfacing and Finishing of Building Walls.

First use October 1958; in commerce October 1963.

SN 204,202. Stimson Lumber Company, Forest Grove, Oreg. Filed Oct. 16, 1964.



For Lumber.
First use July 1, 1964.

SN 204,746. B.B.B. Manufacturing Company, Burbank, Calif. Filed Oct. 26, 1964.

JIGTIME

For Prefit Precision Door Frames.
First use June 24, 1959.

SN 204,797. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Oct. 26, 1964.

HI-RAM

For Refractory Ramming Mix.
First use at least as early as Feb. 29, 1956.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 179,082. Essex Wire Corporation, Fort Wayne, Ind. Filed Oct. 15, 1963.

GRIP-TITE

For Fittings for Hose.
First use July 31, 1963.

SN 192,793. Cook Valve Company, Inc., Erin, Tenn. Filed May 6, 1964.

COOK

For Valves.
First use January 1963.

SN 193,550. Glenn J. Johnson, Powell, Wyo. Filed May 15, 1964.

JOHNSON'S ARTIFICIAL SPRING

For Stock Watering Tank Devices.
First use Apr. 28, 1964.

SN 195,623. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 513,546, 761,183, and others.

For Relief Valves, Safety Valves and Regulating Valves for Controlling Pressure Direction and Volume of Flow of Fluids or Gasses, and Parts of Said Valves for Replacement and Repair; Lavatories, Sinks, Washtubs, and Bathroom Fixtures; Plumbing Fixtures; and Shower Receptors and Enclosures, Fence Posts and Sign Posts.

First use on or prior to Feb. 8, 1956, on relief valves, safety valves, and regulating valves.

SN 198,166. The Hale Company, Tulsa, Okla. Filed July 20, 1964.

AUTO-LOK

For Handles for Industrial Butterfly Valves.
First use July 11, 1964.

SN 200,396. Unistrut Corporation, Wayne, Mich. Filed Aug. 21, 1964.

UNISTRUT

Owner of Reg. No. 564,414, 758,671, and others.

For Building and Framing Accessory and Installation Components—Namely, Nuts, Bolts, Screws, Washers, Studs, Hinges, Springs, Spring Clips, Pipe Couplings, Pipe Clamps, Pipe Rollers, Pipe Hangers, Fender Hooks, Conveyor and Trolley Rollers, Clamps, Brackets, Tubing Clips, and Conduit and Pipe Risers.

First use September 1940.

SN 206,036. Gustav Eric Valdemar Benson, Malmo, Sweden. Filed Nov. 12, 1964.

PERPEDOS

Owner of Swedish Reg. No. 109,742, dated May 15, 1964.
For Dosaging Apparatus and Plastic and Glass Containers.

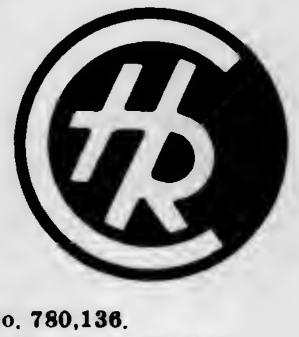
SN 206,282. Newton Insert Co., Los Angeles, Calif. Filed Nov. 16, 1964.

FIXERTS

For Threaded Inserts and Studs To Be Connected Into a Carrier Part and to Which Other Threaded Elements Can Be Attached.

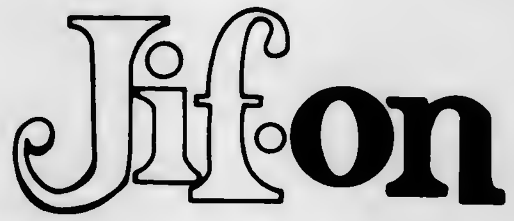
First use Aug. 12, 1964.

SN 206,538. Halkey-Roberts Corporation, Paramus, N.J. Filed Nov. 19, 1964.



Owner of Reg. No. 780,136.
For Fluid Valves and Parts Thereof.
First use on or about Oct. 15, 1946.

SN 206,623. Ideal Tubular Corporation, Brooklyn, N.Y. Filed Nov. 20, 1964.



For Sink Strainers.
First use Nov. 5, 1964.

SN 206,909. American Chain & Cable Company, Inc., Bridgeport, Conn. Filed Nov. 25, 1964.

TRI-LOC

Owner of Reg. No. 656,311.
For Wire Rope Assemblies and Fittings Therefor.
First use Oct. 30, 1964.

SN 210,001. Drilling Specialties Company, Bartlesville, Okla. Filed Jan. 15, 1965.

DRISCON

For Pipe Conduit and Couplings Therefor.
First use Dec. 8, 1964.

Class 14 — Metals and Metal Castings and Forgings

SN 195,624. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

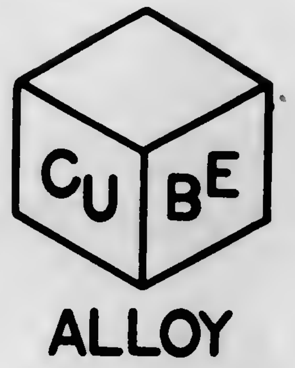
BORG-WARNER

Owner of Reg. Nos. 513,546, 761,183, and others.

For Ingots, Plate and Sheet Steel; Porcelain Enamel Steel; Formed and Deep Drawn Steel Vehicle Stampings, Including Implement Seats, and Discs for Vehicle Wheels; Merchant Bars Including Round, Square, Flat, Angle and Special Sections; and Structural Steel Tubing.

First use on or prior to Jan. 4, 1956, on ingots, plate and sheet steel.

SN 199,826. Handy & Harman, New York, N.Y. Filed Aug. 13, 1964.

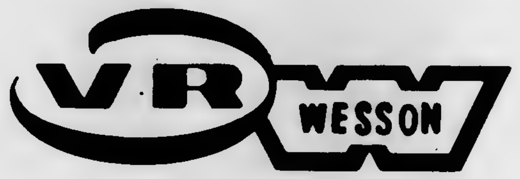


The word "Alloy" is disclaimed apart from the mark as shown and insofar as the symbols "Cu" and "Be" represent the symbols for "copper" and "beryllium," respectively, they are disclaimed apart from the mark as shown.

For Dispersion Hardened Alloys of Copper and Beryllium Oxide.

First use July 29, 1964.

SN 206,148. Fansteel Metallurgical Corporation, North Chicago, Ill. Filed Nov. 13, 1964.



Owner of Reg. Nos. 426,277; 762,259, and others.

For Alloys of Refractory Metals and Carbides of Refractory Metals in the Form of Blanks, Inserts, Strips, Rods, Bars, Tubes, Discs, Grips and Balls in Stock Form and Special Shapes Made to User's Specification.

First use on or about Jan. 10, 1964; Apr. 1, 1942, as to "VR"; Aug. 7, 1933, as to "Wesson"; Mar. 15, 1961, as to "W."

SN 206,150. Fansteel Metallurgical Corporation, North Chicago, Ill. Filed Nov. 13, 1964.

VR/WESSON

Owner of Reg. Nos. 426,277, 670,907, and others.

For Alloys of Refractory Metals and Carbides of Refractory Metals in the Form of Strips, Blanks, Inserts, Rods, Bars, Tubes, Discs, Grips and Balls in Stock Form and Special Shapes Made to User's Specification.

First use on or about Jan. 10, 1964; Apr. 1, 1942, as to "VR"; Aug. 7, 1933, as to "Wesson."

SN 209,232. The Beryllium Corporation, Reading, Pa. Filed Jan. 4, 1965.

BERYLCO MULTIGAGE STRIP

Applicant disclaims the word "Strip" apart from the mark shown. Owner of Reg. Nos. 528,333, 775,629, and others.

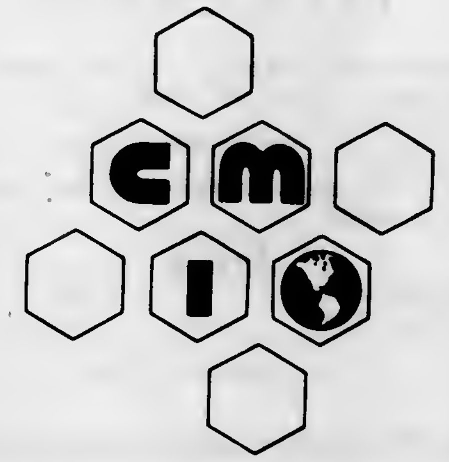
For Metallic Strip.
First use Oct. 19, 1964.

SN 210,314. The International Nickel Company, Inc., New York, N.Y. Filed Jan. 21, 1965.

STERLING

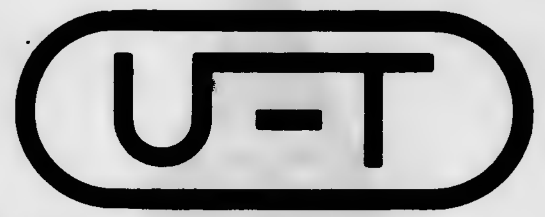
For Nickel.
First use Dec. 14, 1964.

SN 210,536. Chemical Milling International Corporation, El Segundo, Calif. Filed Jan. 25, 1965.



For Chemical Etched Metals and Metal Alloys and Castings.
First use June 29, 1959.

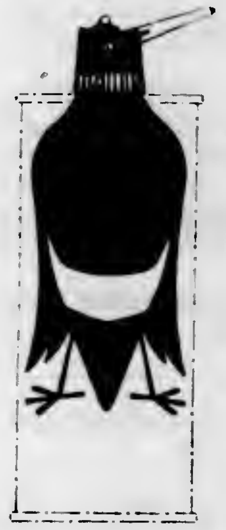
SN 210,840. Unitcast Corporation, Toledo, Ohio. Filed Jan. 19, 1965.



For Miscellaneous Steel Castings.
First use Mar. 12, 1928.

Class 15 — Oils and Greases

SN 193,296. Ronson Corporation, Woodbridge, N.J. Filed May 12, 1964.



The mark comprises a fanciful bird design, where the head and beak portion comprise the top and spout of the container, and where the body portion appears on the front of the container. Applicant disclaims the representation of the container.

For General Purpose Household Lubricants.
First use May 2, 1963.

SN 205,367. Stewart-Warner Corporation, Chicago, Ill. Filed Nov. 2, 1964.

P.C.V.

For Gasoline Additive for Cleaning Carburetors.
First use Oct. 16, 1964.

SN 208,122. Scott Chemical Corporation, Burbank, Calif. Filed Dec. 14, 1964.

BLUE CHEER

For Liquid Parting Compound for Die Casting.
First use on or about Nov. 28, 1964.

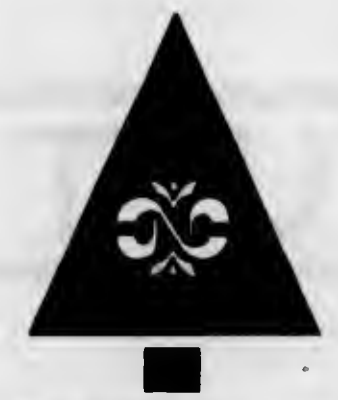
SN 208,145. Travaco Laboratories, Inc., Chelsea, Mass. Filed Dec. 14, 1964.

GLY

For Spray Lubricant.
First use Oct. 7, 1963.

Class 16—Protective and Decorative Coatings

SN 172,889. J. J. Newberry Co., New York, N.Y. Filed July 11, 1963.



NEWCREST

For Decorator Paints in Aerosol Containers for Foliage, Wreaths, Wood, Metal and Other Surfaces, and Artificial Snowflakes Applied by Aerosol Spraying.
First use June 20, 1963.

SN 175,459. Wallace A. Beaton, d.b.a. Walrick Company, Seattle, Wash. Filed Aug. 21, 1963.

PENTA VAR

For Wood Preservative Coating Material.
First use June 1959.

SN 184,080. Butler Manufacturing Company, Kansas City, Mo. Filed Jan. 6, 1964.

#5 BUTLER UNI-LUSTR

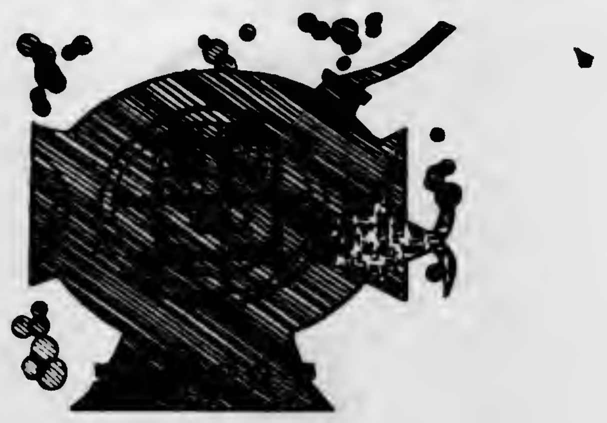
Owner of Reg. Nos. 716,746, 761,853, and others.
For Factory Applied Finish for Stainless Steel Tanks Sold Only in Trailer Tank Vehicles.
First use Nov. 14, 1963.

SN 184,081. Butler Manufacturing Company, Kansas City, Mo. Filed Jan. 6, 1964.

UNI-LUSTR

For Factory Applied Finish for Stainless Steel Tanks Sold Only in Trailer Tank Vehicles.
First use Nov. 14, 1963.

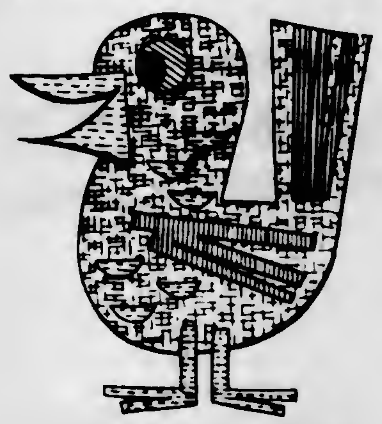
SN 185,384. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



SEA GREEN

The drawing is lined for the colors green and yellow. No registration rights are claimed for the words "Sea Green" apart from the mark shown, but applicant waives none of its common law rights in the mark or any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

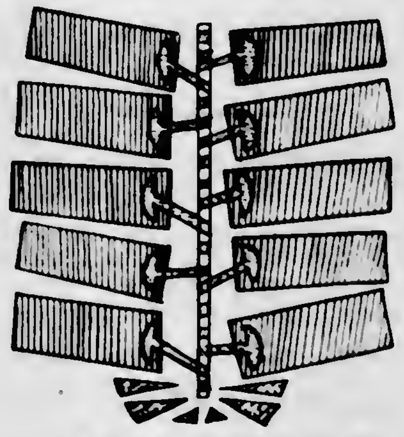
SN 185,390. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



YELLOW BIRD

The drawing is lined for the colors gray, green, yellow, and pink. No registration rights are claimed for the words "Yellow Bird" apart from the mark shown, but applicant waives none of its common law rights in the mark shown or any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

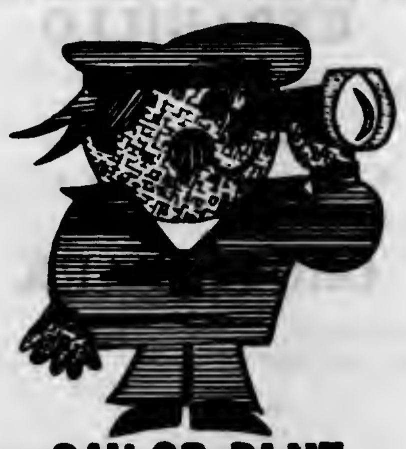
SN 185,391. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



FIRECRACKER RED

The drawing is lined for the colors red, orange, and gray. No registration rights are claimed for the words "Firecracker Red" apart from the mark shown, but applicant waives none of its common law rights in the mark shown or any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

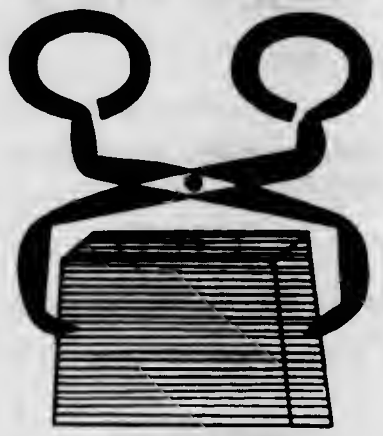
SN 185,392. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



SAILOR BLUE

The drawing is lined for the colors red, orange, gray, brown, and blue. No registration rights are claimed for the words "Sailor Blue" apart from the mark shown, but applicant waives none of its common law rights in the mark shown or any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

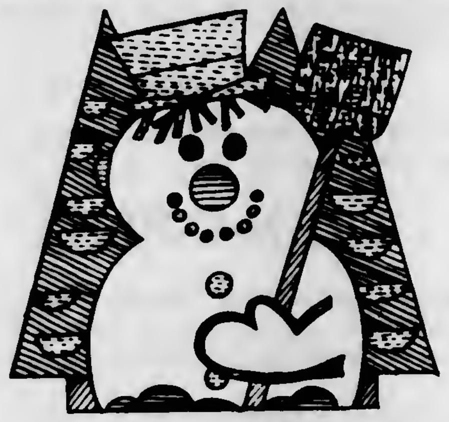
SN 185,396. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



ICE BLUE

The drawing is lined for the color blue. No registration rights are claimed for the words "Ice Blue" apart from the mark, but applicant waives none of its common law rights in the mark or any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

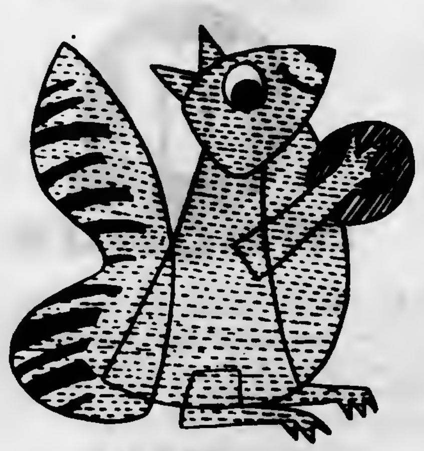
SN 185,397. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



SNOW WHITE

The drawing is lined for the colors gray, green, brown, blue, and yellow. No registration rights are claimed for the words "Snow White" apart from the mark shown, but applicant waives none of its common law rights in the mark shown or any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

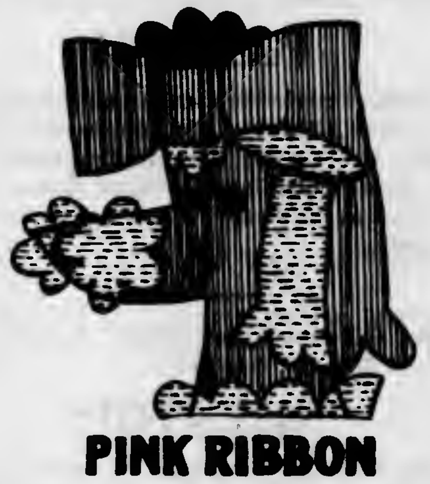
SN 185,401. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



SQUIRREL GRAY

The drawing is lined for the colors gray and brown. No registration rights are claimed for the words "Squirrel Gray" apart from the mark shown, but applicant waives none of its common law rights in the mark or any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

SN 189,889. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Mar. 30, 1964.



PINK RIBBON

The drawing is lined for the colors pink and gray. No registration rights are claimed for the words "Pink Ribbon" apart from the mark shown, but applicant waives none of its common law rights in the mark or any feature thereof.
For Spray Paint.
First use Jan. 2, 1963.

SN 191,567. Kohler-McLister Paint Co., Denver, Colo. Filed Apr. 20, 1964.

KOMAC

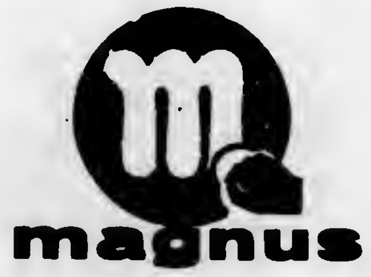
For All Kinds of Paints, Varnishes, Lacquers, Enamels, and Primers for Interior and Exterior Masonry and Wood Surfaces, Stain for Exterior and Interior Wood Surfaces and a Sealer and Stain for Wood Surfaces.
First use on or about Jan. 1, 1911, on paints.

SN 193,267. Dorr Sales & Engineering Co. Inc., Milwaukee, Wis. Filed May 12, 1964.

DORR⊕COAT

The word "Coat" is disclaimed apart from the mark as shown. Owner of Reg. No. 747,560.
For Plastic Coating for Printerslotter Cylinders.
First use Jan. 5, 1961.

SN 194,402. Magnus Chemical Company, Inc., Garwood, N.J. Filed May 27, 1964.



Owner of Reg. Nos. 175,886, 667,202, and others.

For Protective and Decorative Coatings in the Nature of Organic Preparations Such as Paints, Primers, Varnishes and Clear Protective Coatings.

First use Nov. 21, 1952.

SN 195,625. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 513,546, 761,183, and others.

For Resins for Paints, Enamels, Lacquers; and Coating Materials for Waterproofing Fabrics and Paper Materials.

First use on or prior to Oct. 28, 1955.

SN 197,944. Copeland Laboratories Limited, Rexdale, Toronto, Ontario, Canada. Filed July 16, 1964.

PANSLIP

Priority claimed under Sec. 44(d) on Canadian application filed Jan. 18, 1964; Reg. No. 136,659, dated July 27, 1964.

For Coating Preparation for the Treatment of Metal and Metallic Surfaces—Namely, a Silicone Spray Coating To Be Applied to Cooking Utensils To Prevent Food From Sticking to Such Utensils.

SN 199,665. Gillespie-Rogers-Pyatt Company, Inc., New York, N.Y. Filed Aug. 11, 1964.

GILSTOP

For Coating Products—Namely, Waterproofing Compounds in the Nature of a Paint for Interior and Exterior Application to Masonry, Concrete, and Like Surfaces; Interior and Exterior Paints, Cealing and Decorative Compound in the Nature of a Paint, for Interior and Exterior Application to Masonry, Concrete, and Like Surfaces, and Thinners.

First use Nov. 27, 1963, on waterproofing compound.

SN 201,504. Acme Visible Records, Inc., Crozet, Va. Filed Sept. 9, 1964.

ACMELOID

Owner of Reg. Nos. 342,738 and 435,709.

For Transparent Plastic Coating Composition Applied After Indexing To Protect Visible Record Cards.

First use on or about Apr. 22, 1948.

Class 17—Tobacco Products

SN 192,052. P. R. Mallory & Co., Inc., Indianapolis, Ind. Filed Apr. 27, 1964.

KLEAR-PUF

For Cigarette Filters in the Form of a Cylinder Sold Coupled to One Extremity of a Cigarette, Said Cigarette Filter Being Formed of a Charged Capacitor and Fibrous Material Such as Silicate Base Paper and/or Charcoal Base Paper.

First use on or about Apr. 20, 1964.

SN 197,384. General Cigar Co., Inc., New York, N.Y. Filed July 8, 1964.

CABARILLO

For Cigars.

First use June 9, 1964.

SN 206,181. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Nov. 18, 1964.

GROVE PARK

For Smoking Tobacco.

First use Oct. 13, 1964.

SN 206,182. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Nov. 18, 1964.

MADEIRA

For Smoking Tobacco.

First use Oct. 13, 1964.

SN 206,195. United States Tobacco Company, New York, N.Y. Filed Nov. 13, 1964.

GOOD LUCK

For Snuff.

First use Feb. 2, 1960.

SN 206,673. Zigarettenfabrik Haus Neuerburg K.G., Cologne, Germany. Filed Nov. 20, 1964.

CIRO

Owner of German Reg. No. 628,166, dated Oct. 13, 1952.

For Cigarettes.

First use on or about Apr. 19, 1963; in commerce Aug. 26, 1964.

Class 18—Medicines and Pharmaceutical Preparations

SN 203,962. John B. Gerdes, d.b.a. 20th Century Chemical Co., Loyal, Wis. Filed Oct. 14, 1964.

CATTLE-LAC

For Vitamin Supplement for Dairy Cattle and Calves.

First use January 1960.

SN 203,998. Warren-Teed Pharmaceuticals Inc., East Detroit, Mich. Filed Oct. 14, 1964.

TREN-C-PLEX

For Medicines and Pharmaceuticals—Namely, a Vitamin-Mineral Supplement.

First use on or about Dec. 1, 1963.

SN 203,999. Warren-Teed Pharmaceuticals Inc., East Detroit, Mich. Filed Oct. 14, 1964.

CODA-SURP

For Medicines and Pharmaceuticals—Namely, a Medicinal Agent To Relieve Coughing.

First use on or about Dec. 1, 1959.

SN 204,103. Stanley Drug Products, Inc., Portland, Oreg. Filed Oct. 15, 1964.

ACNODYNE

For Medicinal Preparation for Treatment of Acne and Skin Blemishes.

First use Oct. 8, 1964.

SN 204,487. Olin Mathieson Chemical Corporation, New York, N.Y. Filed Oct. 21, 1964.

GESTOP

For Progestogen-Estrogen Preparation.

First use Sept. 1, 1964.

SN 204,750. Bell-Craig Inc., New York, N.Y. Filed Oct. 26, 1964.

BARODENSE

For Barium Sulfate Contrast Medium for X-Ray Diagnosis of the Colon.

First use Oct. 6, 1964.

SN 205,612. The R-P Company, Inc., Tulsa, Okla. Filed Nov. 5, 1964.

GELLOCIDE

For Preparation for Use as a Contraceptive for Women and for Treatment of Vaginal Disorders.

First use Aug. 1, 1964.

SN 205,856. Sandoz, Inc., Hanover, N.J. Filed Nov. 9, 1964.

Owner of Reg. No. 737,456.

LIDANAR

For Tranquilizer.

First use Oct. 23, 1964.

SN 205,900. Whitmoyer Laboratories, Inc., Myerstown, Pa. Filed Nov. 9, 1964.

A-V 25

For Veterinary Pharmaceutical Preparation Containing Antibiotics and Vitamin Mix for Poultry and Live Stock.

First use on or about Dec. 17, 1957.

SN 205,901. Whitmoyer Laboratories, Inc., Myerstown, Pa. Filed Nov. 9, 1964.

RO-CON

For Vitamin Trace Mineral Supplement and Stomachic for Chicken and Turkey Flocks.

First use on or about Mar. 9, 1950.

SN 205,902. Whitmoyer Laboratories, Inc., Myerstown, Pa. Filed Nov. 9, 1964.

WHITSYN

For Veterinary Preparation for the Control of Outbreaks of Coccidiosis in Chicken and Turkey Flocks.

First use on or about Nov. 30, 1954.

SN 205,903. Whitmoyer Laboratories, Inc., Myerstown, Pa. Filed Nov. 9, 1964.

TRI-SULFA-LYTE

For Veterinary Pharmaceutical Preparation for Use in Poultry and Cattle Feed or Drinking Water.

First use on or about Mar. 8, 1963.

SN 206,602. Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany. Filed Nov. 20, 1964.

DULCODOS

For Laxative.

First use Oct. 10, 1964; in commerce Oct. 10, 1964.

SN 206,603. Boehringer Ingelheim G.m.b.H., Ingelheim, am Rhine, Germany. Filed Nov. 20, 1964.

DULGENTIL

For Laxative.

First use Oct. 10, 1964; in commerce Oct. 10, 1964.

SN 206,678. American Home Products Corporation, New York, N.Y. Filed Nov. 23, 1964.

APISATE

Owner of Reg. No. 564,442.

For Appetite Suppressant.

First use Aug. 31, 1964.

SN 206,681. Animal Nutritional Service Co., Inc., Madison, Wis. Filed Nov. 23, 1964.

SOL-U-PLEX

For Livestock Food Supplement Consisting Essentially of Vitamins, Minerals and a Drug Ingredient.

First use Sept. 21, 1964.

SN 206,849. First Texas Pharmaceuticals, Inc., Dallas, Tex. Filed Nov. 24, 1964.

SODIZOLE

Owner of Reg. No. 603,837.

For Sulfisoxazole in Tablet and Emulsion Form for Urinary Tract Infections.

First use Nov. 5, 1964; June 1, 1945, in hyphenated form.

SN 206,874. Nordisk Insulinlaboratorium, Gentofte, Denmark. Filed Nov. 24, 1964.

INITARD

Owner of Danish Reg. No. 4–1964, dated Jan. 4, 1964.

For Insulin.

SN 207,141. Merck & Co., Inc., Rahway, N.J. Filed Nov. 27, 1964.

S.Q.-PROSTREP

Owner of Reg. Nos. 599,563 and 621,691.

For Medicated Feed Supplement for Poultry.

First use on or about July 3, 1964.

SN 207,195. Carter Products, Inc., New York, N.Y. Filed Dec. 1, 1964.

ANNUL

Owner of Reg. Nos. 768,353 and 772,939.

For Pharmaceutical Preparation—Namely, a Perineal Cleanser and Healing Agent.

First use Sept. 16, 1964.

SN 207,229. Premier Malt Products, Inc., Milwaukee, Wis. Filed Dec. 1, 1964.

NUTRI-BEST

For Vitamin and Mineral Feed Additive.

First use Sept. 10, 1964.

SN 207,693. American Home Products Corporation, New York, N.Y. Filed Dec. 8, 1964.

KITAMYCIN

For Antibiotic Preparation.
First use Nov. 25, 1964.

SN 208,504. Trent Pharmaceuticals, Inc., New York, N.Y. Filed Dec. 18, 1964.

UVARINE

For Pharmaceutical Preparation—Namely, a Urinary Antibacterial.
First use Dec. 11, 1964.

SN 208,949. Menley & James Laboratories, Ltd., Philadelphia, Pa. Filed Dec. 28, 1964.

DURAC 8

For Analgesic Preparation.
First use Sept. 16, 1964.

SN 209,224. American Home Products Corporation, New York, N.Y. Filed Jan. 4, 1965.

ENCEPHALOID

For Vaccine for Use in Veterinary Medicine.
First use Dec. 18, 1964.

Class 19—Vehicles

SN 182,031. Boles Aero, Inc., Sun Valley, Calif. Filed Nov. 29, 1963.

NONPAREIL

For House Trailers.
First use July 19, 1963.

SN 184,947. Aluma King, Inc., Hialeah, Fla., by change of name from Miami Screen Co., Inc., Hialeah, Fla. Filed Jan. 20, 1964.

ROLL-A-ROOM

For House Trailers.
First use Apr. 11, 1963.

SN 187,631. Anthony P. Turso, Elkhart, Ind. Filed Feb. 27, 1964.

ANTON

For Travel Trailers.
First use Feb. 10, 1964.

SN 195,626. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 513,546, 761,183, and others.
For Power and Manually Actuated Brakes for Vehicles; Vehicle Radiators; Seat Belt Retractors, Vehicle Seat Belts and Buckles; Disc Wheels for Vehicles; Automobile Springs; Steering Column Mechanisms; Vehicle Hitches; and Bumper Assemblies.
First use on or prior to June 15, 1945, on vehicle radiators.

SN 199,736. General Motors Corporation, Detroit, Mich. Filed Aug. 12, 1964.

CAPRICE

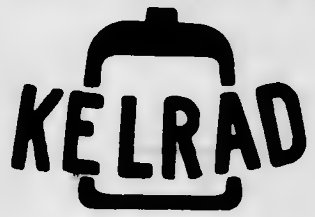
For Automobiles.
First use July 27, 1964.

SN 199,989. General American Transportation Corporation, Chicago, Ill. Filed Aug. 17, 1964.

PRESSURE-SLIDE

For Railroad Cars.
First use July 28, 1964.

SN 200,576. James E. Kelty, d.b.a. Kelty Radiator Company, Vinton, Iowa. Filed Aug. 25, 1964.



No claim is made to the representation of a radiator apart from the mark as shown.
For Vehicle Radiators.
First use 1955.

SN 204,147. E-Z Enterprises, Inc., Detroit, Mich. Filed Oct. 16, 1964.

HIDE AWAY

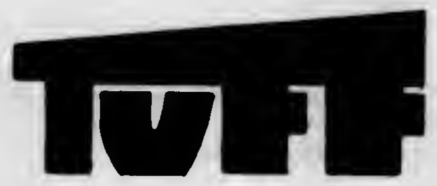
For House and Camping Trailers.
First use on or about June 12, 1964.

SN 204,224. Arnold, Schwinn & Co., Chicago, Ill. Filed Oct. 19, 1964.

"CANDY"

For Bicycles.
First use Sept. 25, 1964.

SN 204,318. Tuff Products, Inc., Rockford, Ill. Filed Oct. 19, 1964.



For Shoe Scraper Ribs With Recessed Floor Pans for Floors of Automotive Vehicles for Refuse From Shoes.
First use Sept. 22, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 168,789. Yardney Electric Corp., New York, N.Y. Filed May 13, 1963.

SYLPAC

For Electrochemical Cells and Batteries.
First use on or about May 9, 1960.

SN 168,790. Yardney Electric Corp., New York, N.Y. Filed May 13, 1963.

SYLPAC

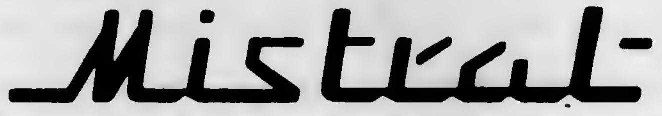
For Electrochemical Cells and Batteries.
First use on or about May 9, 1960.

SN 172,172. Eico Electronic Instrument Co. Inc., Long Island City, N.Y. Filed July 1, 1963.

CLASSIC SERIES

The word "Series" is disclaimed apart from the mark as used. Owner of Reg. Nos. 558,243 and 737,119.
For High Fidelity and Stereophonic Components—Namely, Amplifiers, Tuners, Speaker Systems, and Radios.
First use Oct. 11, 1962.

SN 178,841. Josef Wagner, d.b.a. Ing Josef Wagner, Friedrichshafen-Fischbach, Germany. Filed Oct. 11, 1963.



For Armature Spray Guns for Cleaning Fluid, Paint Spraying and Other Industrial Uses.
First use June 1960; in commerce June 1960.

SN 184,122. Ultra Dynamics Corporation, Brooklyn, N.Y. Filed Dec. 31, 1963.

ELENITE

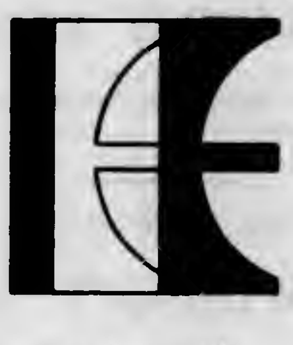
For Ultraviolet Ray Equipment, Ray Emission Lamps, Electrically Monitored Liquid Purification and Sterilising Apparatuses and Systems for the Purification of Water and Other Liquids.
First use about 1938.

SN 184,465. Golay-Buchel et Cie, S.A., Lausanne, Switzerland. Filed Jan. 13, 1964.

ACOMEL

Priority claimed under Sec. 44(d) on Swiss Reg. No. 198,929, dated July 11, 1963.
For Electrical Apparatus—Namely, Electrical Motors Having Electronic Switch-Control.

SN 184,927. Industrial Electronic Engineers, Inc., Hollywood, Calif. Filed Jan. 20, 1964.



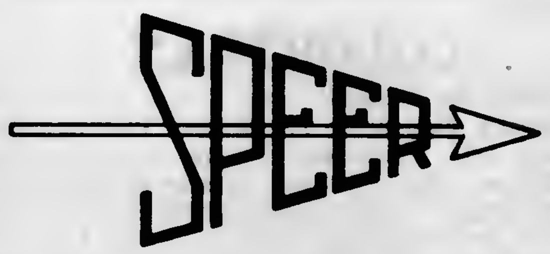
The mark consists of the letters IEE.
For Alphanumeric Display Units.
First use June 1, 1962.

SN 185,865. Chemelex, Inc., Mineola, N.Y. Filed Feb. 3, 1964.

CELLOTHERM

For Electrically Conductive Sheeting Material Used Primarily for Heating Purposes.
First use September 1958.

SN 190,571. Air Reduction Company, Incorporated, New York, N.Y. Filed Apr. 8, 1964.



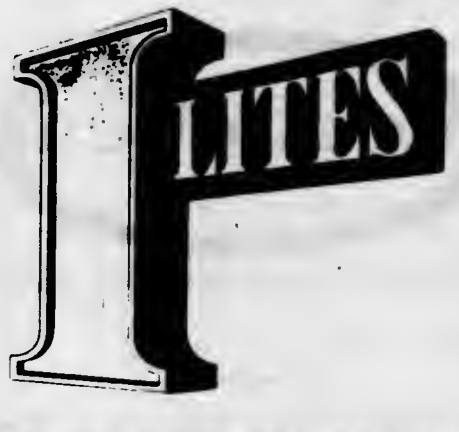
Owner of Reg. Nos. 379,691, 582,011, and others.
For Carbon Resistors and Cutting Electrodes.
First use in or about December 1957 on carbon resistors.

SN 192,832. Keller Research Corporation, Detroit, Mich. Filed May 6, 1964.

HIEGER

For Ignition Parts—Namely, Dual Point Conversion Kits for Distributors and Distributor Rubbing Block Lubricators.
First use Apr. 9, 1954.

SN 193,914. American Atomics Corporation, Tucson, Ariz. Filed May 21, 1964.



For Self-Luminous, Radioisotope Powered Light Sources for Use in Signs and Like Applications.
First use Apr. 6, 1964.

SN 194,161. Easco Products, Inc., Ann Arbor, Mich. Filed May 25, 1964.

LO-E-RODE

For Electrodes for Electrical Discharge Machines.
First use Dec. 5, 1960.

SN 195,627. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 513,546, 761,183, and others.
For Electric Motors; Power Supplies; Static Inverters; Frequency Changers; Alternators; Pressure Switches; Electric Water Heaters; Electric Ranges; Switches; Metal Cabinets for Electronic Apparatus; and Vehicle Ignition and Electrical Systems and Parts Thereof for Replacement and Repair.
First use on or prior to Oct. 28, 1955, on electric water heaters.

SN 196,127. Electronic Engineering Company of California, Santa Ana, Calif. Filed June 22, 1964.

MultiCircuit

Owner of Reg. Nos. 714,837, 751,663, and others.
For Unitised Multiple Purpose Electronic Circuits.
First use June 12, 1964.

SN 197,086. Colortran Industries, Burbank, Calif. Filed July 6, 1964.

COLORTRAN

Owner of Reg. No. 480,398.

For Lighting Equipment for Motion Picture, Television and Graphic Arts Industries—Namely, Lighting Standards, Spring Clamps, Pole Adapters, Brackets, Lamp Carriers, Lighting Housings, Weather-Proof and Explosion-Proof Lighting Housings, Reflectors, Incandescent Lamps, Feeder Cables, Riser Cables, Adapter Cables, Extension Cords, Junction Boxes, Control Boxes for Lighting Equipment, Dimmers, Power Regulators, Power Supplies, Heat Filters, Color Filters, Scrims, Barndoors, Diffusion Lenses, Filter Frames, and Cases.

First use Oct. 15, 1945.

SN 198,068. P. R. Mallory & Co., Inc., Indianapolis, Ind. Filed July 17, 1964.

DURACELL

For Mercury and Manganese Batteries; Other Than for Heavy Duty Storage Batteries.

First use on or about May 4, 1964.

SN 198,249. Acoustica Associates, Inc., Los Angeles, Calif. Filed July 21, 1964.

acoustica

For High Fidelity Loudspeakers and Radio Receiver-Amplifiers.

First use May 14, 1964.

SN 199,074. Kimberly-Clark Corporation, Neenah, Wis. Filed Aug. 3, 1964.

KIMSTAT

For Electrostatic Copy Paper.
First use July 17, 1964.

SN 202,718. Tensor Corporation, Brooklyn, N.Y. Filed Sept. 25, 1964.

tensor

Owner of Reg. Nos. 734,840 and 760,328.

For Electrical Lamps and Accessories Therefor, Including Extension Cords, Extension Arms, Magnifier Arms, Clamps, Shelf and Wall Brackets, Floor Stands, Carrying Cases, Beam Limiting Tubes and Spotlights.

First use June 2, 1964.

SN 202,719. Topps International, Inc., Brooklyn, N.Y. Filed Sept. 25, 1964.

"MR. TRANSISTOR"

The word "Transistor" is disclaimed apart from the mark as shown, without waiving any common law rights therein.

For Portable Transistor Radios; Transistor High Fidelity Sets and Transistor Amplifiers.

First use July 1, 1964.

SN 206,615. Elox Corporation of Michigan, Troy, Mich. Filed Nov. 20, 1964.

PERMATRONIC

For Electrical Power Supplies for Machining Conductive Metal Workpieces by the Process of Electrical Discharge Machining.

First use on or about Nov. 4, 1964.

SN 208,285. Stevens-Lee Co., Minneapolis, Minn. Filed Dec. 16, 1964.

TRI-KING

For Power Driven and Electrically Actuated Advertising Signs.

First use July 2, 1964.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 167,549. The International Silver Company, Meriden, Conn. Filed Apr. 25, 1963.

ELITE

For Stainless Steel Flatware—Namely, Knives, Forks and Spoons.

First use March 1954.

SN 174,791. Harsco Corporation, Harrisburg, Pa., assignee of Plant City Steel Corporation, Plant City, Fla. Filed Aug. 9, 1963.

WATCO

Owner of Reg. No. 677,887.

For Concrete Batch Plants and Conveyors and Allied Equipment.

First use January 1960.

SN 191,504. Bryant Engineering Company, Port Huron, Mich. Filed Apr. 20, 1964.

KOMPOST KING

For Shredding, Chopping, and Grinding Machine.
First use Apr. 2, 1964.

SN 192,291. Jaco Mfg. Co., Berea, Ohio. Filed Apr. 29, 1964.

TWINJECTOR

For Injection Molding Apparatus.
First use Oct. 22, 1963.

SN 192,787. J. P. Burroughs & Sons, Inc., Saginaw, Mich. Filed May 6, 1964.

ROSS

For Heavy Duty Crimper Mills, Cracker Mills, Crimping and Flaking Mills, Roller Mills, Jet Steamers for Preparing Grains, Bucket Elevators, Supersteamers for Preparing Grains, Coolers for Grains, Feeds and Pellets, Mixers and Screen Scalpers.

First use 1937.

SN 193,016. Paul Kobler, d.b.a. Kobler Shaver Co., Lynbrook, N.Y. Filed May 8, 1964.

VIBRO-MATIC

For Shaver.
First use Apr. 15, 1964.

SN 194,589. The Fafnir Bearing Company, New Britain, Conn. Filed June 1, 1964.

FAFLON

Owner of Reg. Nos. 104,534 and 122,136.
For Bearings.
First use Mar. 18, 1964.

SN 195,628. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 518,546, 761,183, and others.

For Vehicle and Industrial Clutches and Parts; Power Take-Off Assemblies; Torque Control Mechanisms; Gear Reduction Assemblies; Vehicle Transmission Systems; Universal Joints; Drive Shaft Assemblies; Timing Belts; Flexible Couplings; Propeller Shafts; Torque Converters; Bearings; Gear Boxes; Gears; Clutch Discs; Clutch Facings; Chain and Sprocket Drive Mechanisms; Clutch Springs; Overdrive and Synchroniser Units for Transmissions and Industrial Uses; Power Drive Mechanisms; Differentials; Mechanical Transfer Drives for Vehicles and Machinery; Control Units for Transmissions; Fluid Drive Systems; Brakes and Brake Assemblies for Industrial Machinery; Carburetors and Parts; Superchargers; Compressors; Timing Gear Mechanisms; Timing Chains; Cylinder Heads; Torsional Vibration Dampers; Valve Stem Oil Deflectors; Agricultural Implements and Machinery; Shovels; Spades; Hand Operated Scoops; Discs for Agricultural Machines and Implements Including Plow Discs, Harrow Discs, Seeder Discs, Coulter Blades, Pressed Steel Implement Wheels and Tapered Discs for Wheels; Plows and Plowshares, Mold Boards and Coulters; Harrows, Rakes; Seeders, Hoes; Hand Saws; Power Saws; Saw Chain; Saw Blades; Files; Rasps; Machine Tools; Vehicle Washers; Mechanical Seals; Lapping Machines; Springs; Hydraulic Drive Mechanisms; Hydraulic Motors; Hydraulic Cylinders; Hydraulic and Pneumatic Apparatus for Aircraft and Guided Missiles; Hydraulic Couplings and Fluid Drive Wheels for Drive Wheel Transmissions; Hydraulic Accumulators; Pumps; Vacuum Pumps; Centrifugal and Turbine Pumps for Agriculture, Municipal Water Supply, Utilities, Petroleum, Chemical Cryogenic and Nuclear Applications and General Industry; Oil Well Tools and Products—Namely, Hooks, Links, Gas Separators, Elevator Tongs, Casing Tongs, Well Cementing and Acidising Equipment; Axial Flow Fans; Garbage Disposal Units; Dishwashers; Oil Coolers; and Operators' Seats for Farm Vehicles.

First use on or prior to July 1, 1928, on vehicle and industrial clutches and parts.

SN 196,412. Acu-Melt Corporation, Newton Lower Falls, Mass. Filed June 25, 1964.

MINI-MELT

For Machinery for Applying Hot-Melt Adhesive to Surfaces.
First use in or about September 1963.

SN 196,666. The Hettrick Manufacturing Company, Statesville, N.C. Filed June 29, 1964.

"Unibrac"

For Tractor Mounted Umbrella and Support Assemblies.
First use during 1955.

SN 200,775. National Forge Company, Irvine, Pa. Filed Aug. 27, 1964.

NF

The drawing is lined for red. Owner of Reg. No. 410,471.

For Isostatic Presses and High Pressure Systems for Forming Objects by Direct Application of High Pressure Liquid or Gaseous Fluid Thereto.

First use Jan. 1, 1963.

SN 201,901. Harold Wandscheer, Sioux Center, Iowa. Filed Sept. 14, 1964.

SNO-RID

For Snow Plow Attachment Device.
First use Nov. 20, 1963.

SN 202,019. Detrex Chemical Industries, Inc., Detroit, Mich. Filed Sept. 16, 1964.

ECON-O-TRI

Owner of Reg. No. 763,854.
For Solvent Recovery Units.
First use Aug. 24, 1964.

SN 203,065. Anchor Machine Company, Inc., Jackson, Mich. Filed Oct. 1, 1964.

ANCHORPAC

For Compacting Units for Refuse Material.
First use Apr. 7, 1962.

SN 203,762. William C. N. Hopkins, d.b.a. Ampico Accessories, Palo Alto, Calif. Filed Oct. 12, 1964.

GO MATIC

For Change-Speed Devices and Parts Therefor.
First use July 15, 1964.

SN 204,573. Houdaille Industries, Inc., Buffalo, N.Y. Filed Oct. 22, 1964.

MH

Owner of Reg. No. 767,073.
For Multiple Boxes for Punching Machines.
First use Aug. 7, 1958.

SN 204,732. Aircraft Armaments, Inc., Cockeysville, Md. Filed Oct. 26, 1964.

LO-HED

Owner of Reg. No. 181,750.

For Materials Handling Equipment—Namely, Hoists, Trolley Tractors, Car Pullers and Capstans, Winches, and Operator Control Cabs for Trolley Hoists.

First use Apr. 25, 1963; 1922 as to "Lo-Hed."

SN 205,241. Bata Shoe Company of Canada Limited, Batawa, Ontario, Canada. Filed Nov. 2, 1964.

HYTEX

Owner of Canadian Reg. No. 131,809, dated July 12, 1963.

For Hydraulic Cutting Machines for Use in Conjunction With Clicker Type Dies.

SN 206,057. Mechanical Excavators, Inc., Los Angeles, Calif. Filed Nov. 12, 1964.

MX

For Earth Moving Equipment.
First use June 12, 1964.

SN 206,149. Fansteel Metallurgical Corporation, North Chicago, Ill. Filed Nov. 13, 1964.

VR W

Owner of Reg. Nos. 426,277, 762,259, and others.

For Cutting Blade Inserts for Tools for Working, Cutting, Forming or Shaping Other Metals and Materials.

First use on or about Jan. 10, 1964; Apr. 1, 1942, as to "VR"; Mar. 15, 1961, as to "W."

SN 206,151. Fansteel Metallurgical Corporation, North Chicago, Ill. Filed Nov. 13, 1964.

VR/WESSON

Owner of Reg. Nos. 426,277, 670,907, and others.

For Tools and Parts of Tools for Working and Cutting Metal and Other Materials—Namely, Lathe Turning and Forming Tools, Shaping and Milling Tools, Milling Cutters, Threading Tools, End and Side Cutting Tools, Boring Tools, Pulley Grooving Tools, Cut-Off Tools, Roller Turner Tools, Reamers, Scrapers, Masonry Drills, Tipped End Mills, Grooving and Milling Cutter Blades, Scribes and Prick Punches, Percussive Drilling Tools, Mining Tools, Wire Drawing Dies, Extrusion and Heading Dies and Punches, Spot Facers, Counterbores, Countersinks, Holders, Pilots, Centers, Core Drills, Grinding Machines, Vises, Cemented Carbide Blanks and Inserts for Cutting Tools, Boring Tools, Arbors, Tool Locks and Planes, Tool Holders and Replacement Parts for Tool Holders.

First use on or about Jan. 10, 1964; Apr. 1, 1942, as to "VR"; Aug. 7, 1933, as to "Wesson."

SN 206,152. Fansteel Metallurgical Corporation, North Chicago, Ill. Filed Nov. 13, 1964.

VR WESSON

Owner of Reg. Nos. 426,277, 762,259, and others.

For Tools and Parts of Tools for Working and Cutting Metal and Other Materials—Namely, Lathe Turning and Forming Tools, Shaping and Milling Tools, Milling Cutters, Threading Tools, End and Side Cutting Tools, Boring Tools, Pulley Grooving Tools, Cut-Off Tools, Roller Turner Tools, Reamers, Scrapers, Masonry Drills, Tipped End Mills, Grooving and Milling Cutter Blades, Scribes and Prick Punches, Percussive Drilling Tools, Mining Tools, Wire Drawing Dies, Extrusion and Heading Dies and Punches, Spot Facers, Counterbores, Countersinks, Holders, Pilots, Centers, Core Drills, Grinding Machines, Vises, Cemented Carbide Blanks and Inserts for Cutting Tools, Boring Tools, Arbors, Tool Locks and Planes, Tool Holders and Replacement Parts for Tool Holders.

First use on or about Jan. 10, 1964; Apr. 1, 1942, as to "VR"; Aug. 7, 1933, as to "Wesson"; Mar. 15, 1961, as to "W."

SN 206,258. Hill-Rockford Co., Rockford, Ill. Filed Nov. 16, 1964.

SPIN-IMPACT

For Pneumatic Riveters.
First use Dec. 1, 1962.

SN 206,405. Auto-Swage Products, Inc., Shelton, Conn. Filed Nov. 18, 1964.

A auto-swage

For Beaded Chain and Fittings Therefor, Radio Tube Base Pins, Fluorescent Lamp Pins, and Miscellaneous Other Pins.

First use Mar. 1, 1963; 1952 as to "Auto-Swage."

SN 206,575. Stars Cylinders, Inc., Harvey, Ill. Filed Nov. 19, 1964.

STARZ

For Air and Hydraulic Cylinders.
First use July 1, 1964.

SN 206,894. Standard Engineering Co., Inc., Fort Dodge, Iowa. Filed Nov. 24, 1964.

Stan-hoist

For Farm Equipment—Namely, a Crop Cutting and Shredding Device, Farm Wagons Including Both Boxes and Running Gear, Material Loading Elevators, Tractor Mounted Loaders, and an Earth Conditioning Implement.

First use 1948 on material loading elevators.

SN 208,649. Peter Willems, Lucerne, Switzerland. Filed Dec. 21, 1964.

MICROTRON

Owner of Swiss Reg. No. 165,461, dated June 19, 1957.

For Machines and Apparatus and Parts Thereof for Dispersing, Mixing and Homogenising.

SN 208,796. Aluminum Housewares Company, Inc., St. Louis, Mo. Filed Dec. 24, 1964.

LECTRO SLICE

For Electric Carving Knives.
First use Dec. 4, 1964.

Class 24 — Laundry Appliances and Machines

SN 195,629. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 513,546, 761,183, and others.

For Laundry Equipment—Namely, Washing Machines and Dryers; Coin Operated and Commercial Laundry and Dry Cleaning Equipment, Consisting of Washers, Dryers, Dry Cleaning Machines, Extractors, Filter Sludge Reclaimers, Solvent Reclaimers, Pressers and Parts Thereof for Replacement and Repair.

First use on or prior to Oct. 8, 1955, on washing machines.

Class 25 — Locks and Safes

SN 188,871. Independent Lock Company, Fitchburg, Mass. Filed Mar. 17, 1964.

1001EN

For Key Blanks.
First use at least as early as Jan. 14, 1946.

SN 188,872. Independent Lock Company, Fitchburg, Mass. Filed Mar. 17, 1964.

R1001EN

For Key Blanks.
First use at least as early as Nov. 8, 1944.

SN 188,873. Independent Lock Company, Fitchburg, Mass. Filed Mar. 17, 1964.

1011P

For Key Blanks.
First use at least as early as Mar. 19, 1946.

SN 188,874. Independent Lock Company, Fitchburg, Mass. Filed Mar. 17, 1964.

01010

For Key Blanks.
First use at least as early as Sept. 11, 1945.

SN 188,875. Independent Lock Company, Fitchburg, Mass. Filed Mar. 17, 1964.

01122A

For Key Blanks.
First use at least as early as Jan. 9, 1945.

Class 26 — Measuring and Scientific Appliances

SN 148,318. Matsushita Electric Industrial Co., Ltd., Kitakawachi-gun, Osaka, Japan. Filed July 3, 1962.

NATIONAL

Priority claimed on Japanese applications filed Jan. 24, 1962; Reg. No. 626,790, dated Oct. 17, 1963, and Reg. No. 651,587, dated Sept. 3, 1964. Owner of U.S. Reg. No. 698,974.

For Electric Testers, Electric Measuring Apparatus, Photo Flash Lamps, Voltage Balancers and Time Switches.

SN 178,966. August Sauter K.G., Ebingen, Wuerttemberg, Germany. Filed July 29, 1963.

TOPPAN

Owner of German Reg. No. 765,508, dated Sept. 17, 1962; and U.S. Reg. No. 729,422.

For Scales With Dish on Top.

First use Feb. 29, 1960; in commerce Feb. 29, 1960.

SN 191,070. Optische Werke G. Rodenstock, Munich, Germany. Filed Apr. 14, 1964.

Imagon

Owner of German Reg. No. 468,578, dated May 4, 1934.

For Photographic Lenses and Cameras, Prelenses, Lens-Holders, Projection and Cine-Objectives, Projectors and Enlarging Cameras, Field Glasses, Opera Glasses, Spectacles, Folders, and Range Finders.

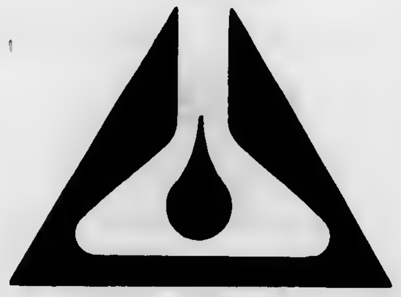
SN 191,086. Société d'Exploitation des Etablissements Lamy Jeune Fils S.A.R.L., Mores, Jura, France. Filed Apr. 14, 1964.

STOPSOL

Owner of French Reg. No. 140,489, dated Feb. 27, 1960 (Lons-Le-Saunier); Natl. Inst. No. 140,491.

For Spectacles, Optical Lens, Anti-Dazzle Spectacles, Safety Goggles, Spectacle Frames, and Spectacle Cases.

SN 191,422. Magna Corporation, Anaheim, Calif. Filed Apr. 17, 1964.



For Oxymeters and Corrosometers, Instruments for Rapid Measurement of Dissolved or Gaseous Oxygen and for Establishing Standards for Measuring Corrosion, Respectively.

First use Aug. 31, 1962.

SN 191,910. Coach's Sporting Goods Corporation, Marion, Ind. Filed Apr. 24, 1964.

ISO SCALE

Applicant disclaims the word "Scale" apart from the mark as shown. Owner of Reg. No. 761,598.

For Tension Measuring Devices for Recording Exact Force Exerted in Isometric Exercises.

First use Jan. 6, 1964.

SN 194,727. Paul S. Heitman, d.b.a. Gem-Mounts and Gem-Masks Co., New York, N.Y. Filed June 2, 1964.

GEM-MOUNTS

For Photographic Slide Mounts (Cardboard).

First use Jan. 1, 1950.

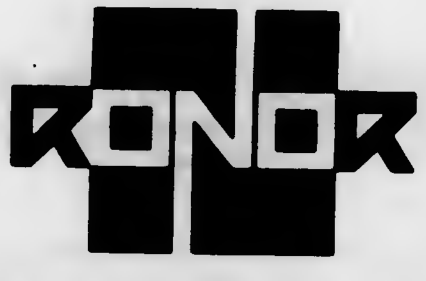
SN 194,728. Paul S. Heitman, d.b.a. Gem-Mounts and Gem-Masks Co., New York, N.Y. Filed June 2, 1964.

GEM-MASKS

For Photographic Slide Masks (Paper).

First use Jan. 1, 1951.

SN 200,207. Ronor S.A., Berne, Switzerland. Filed Aug. 19, 1964.



Owner of Swiss Reg. No. 201,133, dated Nov. 20, 1963.

For Connectors Made of Glass, Being Articles of Scientific Apparatus for Laboratory Use.

SN 201,549. Production Equipment Inc., Rochelle Park, N.J. Filed Sept. 9, 1964.

VERSACOUNT

For Tablet and Capsule Measuring Devices.

First use July 20, 1964.

SN 202,281. The Lufkin Rule Company, Saginaw, Mich. Filed Sept. 21, 1964.

MEZURLOK

Owner of Reg. No. 778,753.

For Measuring Tapes—Namely, Tape Rules.

First use Aug. 14, 1964.

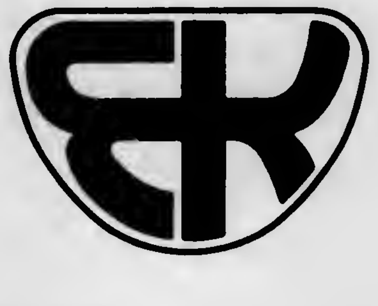
SN 203,415. Meter-All Mfg. Co., Inc., Dallas, Tex. Filed Oct. 6, 1964.

COLLEC-TROL

For Devices for Counting the Number of Coins Deposited in Coin Operated Devices and for Printing the Total Thereof.

First use Apr. 17, 1964.

SN 203,951. Eye Kraft Optical, Inc., St. Cloud, Minn. Filed Oct. 14, 1964.



For Ophthalmic Lenses.

First use April 1963.

SN 204,575. Hudson Photographic Industries, Inc., Irvington-on-Hudson, N.Y. Filed Oct. 22, 1964.

10 SQUARE

For Photo Viewer.

First use on or about Oct. 2, 1962.

SN 204,644. Dubois Plastic Products, Inc., Buffalo, N.Y. Filed Oct. 23, 1964.

DU BO LITE

For Sun Glasses, Goggles and Parts Therefor—Namely, Frames and Lenses.

First use on or about Jan. 1, 1949.

SN 205,009. E. O. Schweitzer Manufacturing Co., Inc., Northbrook, Ill. Filed Oct. 28, 1964.

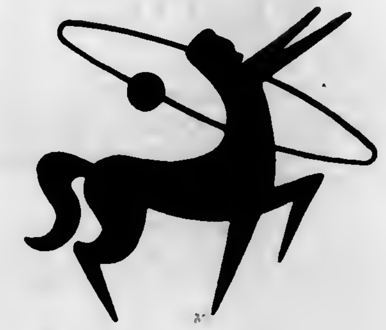
LINAM

Owner of Reg. No. 559,618.

For Fault Indicators for Indicating the Occurrence of a Fault in an Electric Circuit.

First use on or about Oct. 14, 1964.

SN 205,063. Kiron Incorporated, San Diego, Calif. Filed Oct. 29, 1964.



For Electronic Blood Flowmeter.

First use December 1963.

Class 27 — Horological Instruments

SN 178,105. Erismann-Schinz S.A., La Neuveville (Bern), Switzerland. Filed July 16, 1963.

TRISHOCK

Priority claimed under Sec. (44d) on Swiss Reg. No. 199,556, dated May 14, 1963.

For Watches and Clocks and Parts Thereof.

SN 208,248. Hamilton Watch Company, Lancaster, Pa. Filed Dec. 16, 1964.

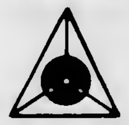
VANTAGE

Owner of Reg. No. 734,892.

For Clocks.

First use Apr. 3, 1959.

SN 210,356. Sydney W. Prague, Bay St. Louis, Miss. Filed Jan. 21, 1965.



JEWELMONT

For Jeweled Lever Watches.

First use June 1, 1962.

SN 210,449. Lucien Piccard Watch Corp., New York, N.Y. Filed Jan. 22, 1965.

GILTRON

For Watches.

First use Nov. 16, 1964.

Class 28 — Jewelry and Precious-Metal Ware

SN 193,410. S. Rudofker's Sons, Inc., Philadelphia, Pa. Filed May 13, 1964.

AFTER SIX

Owner of Reg. Nos. 362,116, 519,448, and 519,450.

For Jewelry—Namely, Cuff-Links, Shirt Studs, and Collar Buttons.

First use as early as 1958.

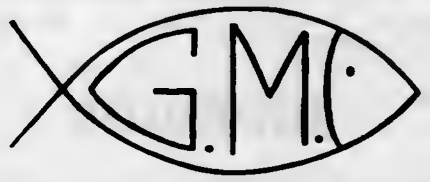
SN 204,443. Julius Aronow, d.b.a. Aronow Jewelry Co., New York, N.Y. Filed Oct. 21, 1964.

ARJ

For 14K Gold Bangle, Flexible Rope and Hollow Wire Bracelets, Earrings, Necklaces and Finger Rings.

First use Sept. 15, 1964.

SN 208,071. Gold Medal Jewelry, Inc., New York, N.Y. Filed Dec. 14, 1964.



For Jewelry.

First use January 1963.

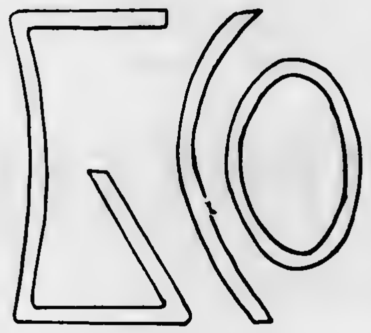
SN 210,450. Lucien Piccard Watch Corp., New York, N.Y. Filed Jan. 22, 1965.

GILTRON

For Jewelry—Namely, Rings, Cuff Links, Tie Bars, Tie Clips, Tie Tacks, Pins, Brooches, Bracelets and Necklaces.

First use Nov. 16, 1964.

SN 211,016. Artistor Jewelry Inc., New York, N.Y. Filed Feb. 1, 1965.



For Jewelry.

First use Aug. 1, 1964.

Class 29 — Brooms, Brushes, and Dusters

SN 209,902. American Wiper and Waste Mills, d.b.a. The Nu-Towel Company, Kansas City, Mo. Filed Jan. 14, 1965.

NU-SHAMS

For Synthetic Chamois Cloths.

First use Apr. 8, 1964.

Class 30 — Crockery, Earthenware, and Porcelain

SN 186,228. Block China Company, New York, N.Y. Filed Feb. 7, 1964.

LIBERTY HALL

For Earthenware, Ironstone, Semi-Vitrified China, Vitrified China, Chinaware and Porcelain Items—Namely, Plates, Platters, Cups, Saucers, Dishes, Coffee Pots, Tea Pots, Creamers, Sugars, Water Pitchers, Milk Jugs, Sauce Boats, Mustard Pots, Marmalade and Jelly Jars, Egg Cups, Salad Bowls, Cookie Jars, Soup Bowls, Tureens, Casseroles, Chafing Dishes, Relish Dishes, Vegetable Dishes, Canisters and Ceramic Gift Ware.

First use Jan. 1, 1964.

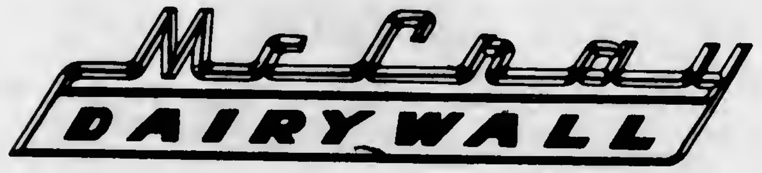
Class 31 — Filters and Refrigerators

SN 157,263. Superior Products Manufacturing Company, d.b.a. Superior Products Mfg. Co., Minneapolis, Minn. Filed Nov. 14, 1962.

SUPERIOR

For Refrigerating and Cooling Cabinets for Beer and Parts Thereof.
First use Jan. 1, 1950.

SN 166,023. McCray Refrigerator Company, Inc., Kendallville, Ind. Filed Apr. 8, 1963.



Owner of Reg. Nos. 52,105, 570,548, and others.
For Refrigerated Display Cases.
First use Aug. 10, 1962; 1890 as to "McCray"; August 1962 as to "Dairy Wall."

SN 178,835. The Trane Company, La Crosse, Wis. Filed Oct. 11, 1963.

UNIPRESSURE

For Refrigeration Circuit Controls and Parts Thereof.
First use on or about July 12, 1961.

SN 178,865. The Bendix Corporation, Detroit, Mich. Filed Oct. 14, 1963.

POROPLATE

For Filters and Demulsifiers, and Parts Therefor for Purifying Fluids.
First use Aug. 6, 1963.

SN 181,429. Union Tank Car Company, Chicago, Ill. Filed Nov. 18, 1963.

CONTRAFLUX

For Equipment Employing a Movable Bed of Granules To Treat a Continuously Flowing Liquid.
First use Oct. 7, 1963.

SN 181,792. Pall Corporation, Glen Cove, N.Y. Filed Nov. 22, 1963.

SCREENSERT

For Mesh Filters and Mesh Filter Assemblies.
First use July 12, 1963.

SN 183,706. Seits-Werke G.m.b.H., Bad Kreusnach, Germany. Filed Dec. 27, 1963.

KOMET

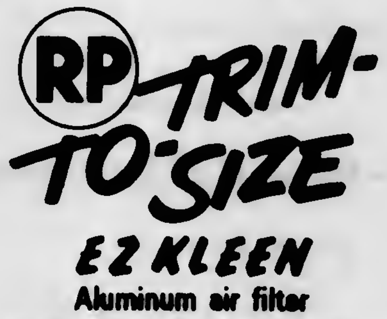
Owner of German Reg. No. 355,278, dated Aug. 3, 1926.
For Filters and Filtering Materials.

SN 190,646. W. E. Stone & Co., Inc., Seattle, Wash. Filed Apr. 8, 1964.

WESCOLD

For Refrigeration Equipment—Namely, Evaporative Condensers, Brine Spray Unit Coolers, Water Defrost Unit Coolers, Hot Gas Defrost Unit Coolers, Brewery Unit Coolers, Freezing Tunnels, Portable Sea Water Chilling Plants.
First use January 1951.

SN 192,945. Research Products Corporation, Madison, Wis. Filed May 7, 1964.



Applicant disclaims the terms "EZ KLEEN," "Trim to Size" and "Aluminum Air Filter" apart from the mark as shown, without waiver of, prejudice to, or effect on its common law rights now existing or hereafter arising in said disclaimed matter. Owner of Reg. Nos. 390,640, 619,925, and 744,487.
For Air Filter Panels.
First use Apr. 24, 1964; Sept. 24, 1957 in a different form.

SN 195,630. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 513,546, 761,183, and others.
For Refrigerating Equipment for Domestic and Industrial Use—Namely, Ice Making Machinery, Freezers, and Refrigerators.
First use on or prior to Oct. 13, 1955, on refrigerators.

Class 32 — Furniture and Upholstery

SN 195,631. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 513,546, 761,183, and others.
For Cabinets and Parts—Namely, Cabinet Frames, Panels, Drawers, Doors and Case and Cradle Sides; Tables; Chairs; Bar Stools; Outdoor Furniture; Hospital Room Cabinets; Chests and Dressers.
First use on or prior to Mar. 10, 1957, on chairs and tables.

SN 197,527. American Furniture Novelty Co., Chicago, Ill. Filed July 10, 1964.

AMERICAN OF CHICAGO

For Furniture—Namely, Dressers, Cabinets, Chests, Commodes, Seating Furniture, Tables, Table Tops and Pedestals, Benches, Stands, Headboards, and Mirrors.
First use on or about June 1, 1959.

SN 203,465. Badenia Calculators Limited, London, England. Filed Oct. 7, 1964.

BUREAUCRAT

Owner of British Reg. No. B857,755, dated Dec. 12, 1963.
For Furniture for Use in the Office and in the Home.

SN 204,817. Natser Corporation, d.b.a. Acco Products, Ogdensburg, N.Y. Filed Oct. 26, 1964.

ACCOLATERAL

Owner of Reg. No. 155,996.
For Filing Cabinets.
First use Sept. 30, 1964.

SN 204,997. New York Feather Co., Inc., Brooklyn, N.Y. Filed Oct. 28, 1964.

OLD FASHIONED

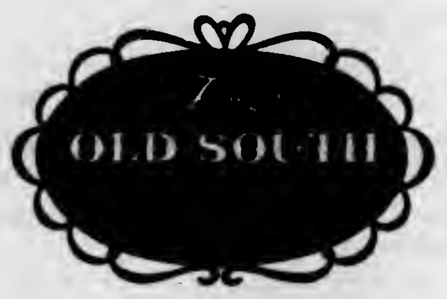
For Pillows and Cushions.
First use December 1955.

SN 204,998. New York Feather Co., Inc., Brooklyn, N.Y. Filed Oct. 28, 1964.

TAN-O-FILL

For Pillows and Cushions.
First use March 1962.

SN 205,596. Moultrie Manufacturing Company, Moultrie, Ga. Filed Nov. 5, 1964.



For Lawn Furniture and Accessories.
First use Nov. 20, 1963.

Class 33 — Glassware

SN 199,850. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Aug. 13, 1964.

HERCULITE

Owner of Reg. No. 409,791.
For Glass and Glass Products—Namely, Flat Glass, Bent and/or Shaped Glass and Curved Glass Such as Glass Spheres.
First use at least as early as October 1934.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 180,601. Mullins Manufacturing Corporation, Salem, Ohio. Filed Nov. 6, 1963.

YOUNGSTOWN KITCHENS

Owner of Reg. Nos. 587,782, 602,954, and 608,492.
For Gas and Electric Built-In Ranges, and Vent Hoods.
First use June 24, 1963.

SN 195,632. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 513,546, 761,183, and others.
For Heat Exchangers for Central Air Conditioning Systems, Cooking Ranges, Water Heaters, Air Conditioners (Central and Room), Humidifiers, Dehumidifiers, Furnaces, Gas and Oil Conversion Burners.
First use on or prior to Oct. 28, 1955, on cooking ranges.

SN 202,640. The Strong-Scott Manufacturing Company, Minneapolis, Minn. Filed Sept. 24, 1964.

SOLIDAIRE

For Apparatus for Treating Solids, as for Example, Heating, Drying, Cooling, Contacting With Gases and the Like.
First use on about Nov. 1, 1963.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 204,528. United States Rubber Company, New York, N.Y. Filed Oct. 21, 1964.

SNOW BEAR

For Pneumatic Tires.
First use Sept. 18, 1964.

Class 36 — Musical Instruments and Supplies

SN 155,038. Ad Lib Records, Inc., New York, N.Y. Filed Oct. 12, 1962.

LENOX

For Phonograph Records and Albums.
First use Sept. 24, 1962.

SN 195,378. Dictaphone Corporation, Bridgeport, Conn. Filed June 11, 1964.

SECRETAIRE

For Electrically-Operated Sound Record Reproducing Machines—Namely, Machines for Use in Transcribing Dictation and Parts and Supplies for Such Machines.
First use June 1963.

Class 37 — Paper and Stationery

SN 186,325. The Birge Company, Inc., Buffalo, N.Y. Filed Feb. 10, 1964.

AMERICAN TRADITION COLLECTION

No claim is made to the word "Collection" apart from the mark as shown.
For Wallpaper and Wallpaper Sample Books.
First use on or about Dec. 15, 1963.

SN 191,927. Graham Paper Company, St. Louis, Mo. Filed Apr. 24, 1964.

FOREST PARK

For Toilet Tissue.
First use on about June 1925.

SN 198,704. Francis Beltrami, d.b.a. Editions Quo Vadis-Au Beau Plastique, Marseille (Bouches-du-Rhone), France. Filed Nov. 30, 1964.

NOTOR

Owner of French Reg. No. 44,559, dated Mar. 25, 1960 (Marseille); Natl. Inst. No. 143,088.

For Office Stationery, Diaries, Notebooks, and Partially Printed Business Forms.

SN 199,114. Safeway Stores, Incorporated, Oakland, Calif. Filed Aug. 3, 1964.

TRULY FINE

Owner of Reg. Nos. 676,365 and 697,856.

For Facial and Bathroom Tissue.

First use Dec. 14, 1962.

SN 199,308. The Parker Pen Company, Janesville, Wis. Filed Aug. 5, 1964.

75

Owner of Reg. No. 774,142.

For Fountain Pens and Parts and Accessories Therefor, Ball Point Pens, Mechanical Pencils and Pen and Pencil Desk Sets.

First use Jan. 3, 1964.

SN 199,421. Venus Pen & Pencil Corporation, New York, N.Y. Filed Aug. 6, 1964.

MAGIC-TEXTURE

For Coloring Sets Including Pencils and Coloring Sheets.

First use June 30, 1964.

SN 199,422. Venus Pen & Pencil Corporation, New York, N.Y. Filed Aug. 6, 1964.

MAGIC-PATTERN

For Coloring Sets Including Pencils and Coloring Sheets.

First use July 10, 1964.

SN 204,066. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed Oct. 15, 1964.

E-Z KLEN

Owner of Reg. Nos. 227,085, 725,467, and others.

For Paper Towels, Paper Napkins, Facial Tissue, and Toilet Tissue.

First use Sept. 24, 1964.

SN 204,067. Gulf States Paper Corporation, Tuscaloosa, Ala. Filed Oct. 15, 1964.

E-Z DRI

Owner of Reg. Nos. 227,085, 725,467, and others.

For Paper Towels, Paper Napkins, Facial Tissue, and Toilet Tissue.

First use Sept. 24, 1964.

SN 204,346. The Birge Company, Inc., Buffalo, N.Y. Filed Oct. 20, 1964.

VINYL-ROYAL

For Wallpaper.

First use on or about June 1, 1964.

SN 204,956. Broadway Pen Corp., Long Island City, N.Y. Filed Oct. 28, 1964.

TELSTAR

For Ball Point Pens, Fountain Pens, Mechanical Pencils, and Supplies and Parts Therefor.

First use Sept. 10, 1962.

SN 205,022. Westab Inc., Dayton, Ohio. Filed Oct. 28, 1964.

MAXINE

For Packaged Stationery, Including Writing Paper and Correspondence Envelopes.

First use at least as early as Jan. 14, 1960.

SN 205,256. Curtis 1000 Inc., St. Paul, Minn. Filed Nov. 2, 1964.

DEPOSITEL

For Banking Envelopes.

First use Dec. 3, 1963.

SN 205,609. The Procter & Gamble Company, Cincinnati, Ohio. Filed Nov. 5, 1964.

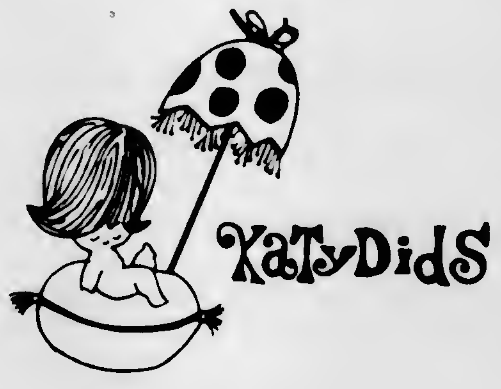
BOUNTY

For Paper Towels, Paper Napkins, Toilet and Facial Tissues.

First use Aug. 28, 1964.

Class 38 — Prints and Publications

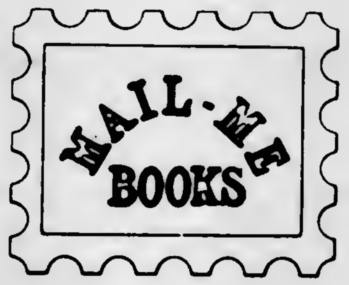
SN 204,871. American Greetings Corporation, Cleveland, Ohio. Filed Oct. 27, 1964.



For Greeting Cards.

First use Oct. 16, 1964.

SN 205,002. Random House, Inc., New York, N.Y. Filed Oct. 28, 1964.

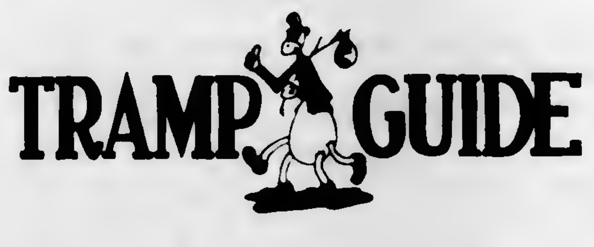


Applicant disclaims exclusive right to the word "Books" apart from the mark as shown.

For Books Published From Time to Time in Series.

First use Sept. 18, 1964.

SN 211,406. Ancient and Honorable Royal Order of Fraternity, Loyalty & Economy, Port Allen, La. Filed Jan. 27, 1965.



For Trade Union Newspaper.

First use 1959.

Class 39 — Clothing

SN 129,807. Sarong, Inc., Dover, Del. Filed Oct. 12, 1961.

No claim is made to the word "Spandex" apart from the mark as shown. Owner of Reg. No. 737,198.

SPANDEX-PLUS

For Elastic Fabric Made Into Foundation Garments.

First use Oct. 6, 1961.

SN 156,251. Southampton Sportswear Corporation, Cleveland, Ohio. Filed Oct. 30, 1962.

SOUTHAMPTON

For Men's, Women's, and Children's Sweaters, Cloth and Leather Jackets, Sport Coats, Dress Shirts, Sport Shirts, Knit Shirts, Sweater Shirts, T-Shirts, Sweat Shirts, Slacks, Walking Shorts, Swimwear, Gym Trunks, and Pajamas.

First use on or about Jan. 1, 1951.

SN 156,540. E. T. Wright & Co. Inc., Rockland, Mass. Filed Nov. 2, 1962.

PRO-SHOP EXCLUSIVES

For Golf Shoes.

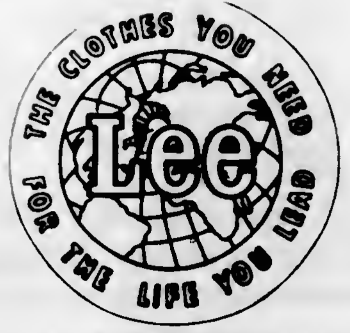
First use August 1960.

SN 158,989. Modern Shoe Company, St. Louis, Mo. Filed Dec. 12, 1962.

For Men's Shoes.

First use Sept. 24, 1962.

SN 159,406. The H. D. Lee Company, Incorporated, Kansas City, Mo. Filed Dec. 19, 1962.


THE CLOTHES YOU NEED FOR THE LIFE YOU LEAD
Lee

Owner of Reg. Nos. 130,792, 430,729, and others.

For Pants, Slacks, Jeans, Jackets, Outer Shirts and Shorts, Overalls, One-Piece Work Suits, Work or Utility Uniforms, and Service or Shop Coats.

First use Mar. 7, 1962, on pants; June 16, 1919, as to "Lee."

SN 164,146. Marlene Industries Corp., New York, N.Y. Filed Mar. 7, 1963.

JOAN KENLEY

The name "Joan Kenley" is not the name of any particular living individual.

For Ladies' Skirts, Shorts, Slacks, and Blouses.

First use Dec. 3, 1962.

SN 165,452. Piedmont Shirt Company, Greenville, S.C. Filed Mar. 26, 1963.

NEX-SIZER

For Men's and Boys' Shirts, Pajamas, Jackets, Coats, and Trousers.

First use Mar. 14, 1963.

SN 167,496. Sarong, Inc., Dover, Del. Filed Apr. 23, 1963.

TOWEL TEST

For Foundation Garments Including Girdles.

First use Oct. 25, 1962.

SN 168,961. Sarong, Inc., Dover, Del. Filed May 15, 1963

The portrait on the drawing is a representation of "Ingrid Werner" whose consent is of record.

For Foundation Garments Including Girdles.

First use Oct. 25, 1962.

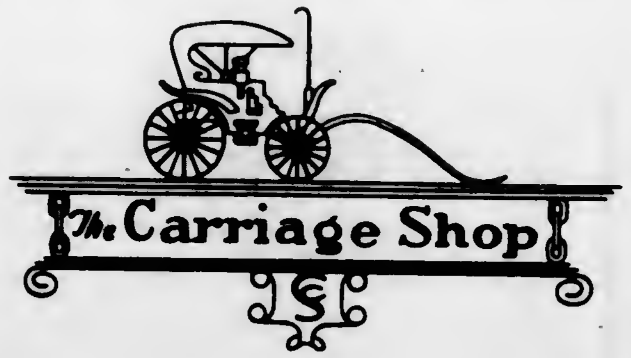
SN 173,821. Cluett, Peabody & Co., Inc., New York, N.Y. Filed July 26, 1963.

PAR-LON

For Knitted Shirts.

First use May 17, 1963.

SN 179,112. The Carriage Shop, Inc., Dallas, Tex. Filed Oct. 16, 1963.



For Ladies' Dresses, Blouses, Coats, Sweaters, Skirts, Jackets, Shorts, and Slacks.

First use on or about Nov. 1, 1954, on dresses.

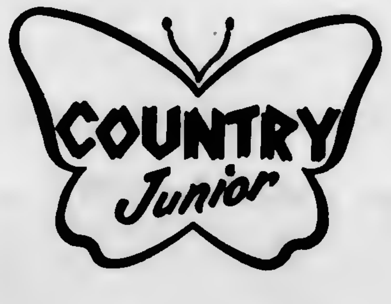
SN 180,684. Seidler Cravats Inc., New York, N.Y. Filed Nov. 7, 1963.

The stippling and lining in the drawing are for shading only.

For Men's Neckties and Sport Shirts.

First use Oct. 9, 1963.

SN 184,607. Country Miss, Inc., Bangor, Pa. Filed Jan. 15, 1964.



No claim is made to the word "Junior" apart from the mark as shown. Owner of Reg. No. 766,410.

For Dresses.

First use Nov. 21, 1963.

SN 189,417. Allied Stores Corporation, d.b.a. The Bon Marche, Seattle, Wash. Filed Mar. 24, 1964.

CHICKIES

For Footwear.

First use Dec. 16, 1963.

SN 189,632. Stevie Togs, Inc., Lenexa, Kans. Filed Mar. 25, 1964.

STEVIE TOGS

The word "Togs" is disclaimed apart from the mark as shown.

For Boys Wearing Apparel—Namely, Jackets, Pants, Shirts, and Jumpers.

First use on or about May 1, 1950.

SN 189,690. Dunstar Sportswear, Inc., New York, N.Y. Filed Mar. 26, 1964.

DUNSTAR

For Men's and Boys' Wearing Apparel—Namely, Dress and Sport Shirts.

First use Feb. 17, 1964.

SN 190,133. Wembley, Inc., New Orleans, La. Filed Apr. 1, 1964.

SANTAVELLI

For Neckwear.

First use Jan. 25, 1964.

SN 190,182. Isod, Ltd., New York, N.Y. Filed Apr. 2, 1964.

IFFY

For Men's and Women's Raincoats.

First use Mar. 2, 1964.

SN 190,183. Isod, Ltd., New York, N.Y. Filed Apr. 2, 1964.

THE IFFY COAT

The term "Coat" is disclaimed apart from the mark as shown.

For Men's and Women's Raincoats.

First use Mar. 2, 1964.

SN 190,367. David E. Gottlieb, Inc., New York, N.Y. Filed Apr. 6, 1964.

MYSTIQUE

For Women's Dresses, Suits, Blouses, and Ensembles.

First use Jan. 28, 1964.

SN 190,663. Tidykins, Inc., New York, N.Y. Filed Apr. 8, 1964.

CHILL-GARD

Owner of Reg. No. 407,369.

For Infant's or Child's Sleeping Garment.

First use Jan. 22, 1941.

SN 191,222. Sylray Underwear Company, Orwigsburg, Pa. Filed Apr. 15, 1964.

SYLRAY

Owner of Reg. Nos. 232,551 and 588,426.

For Ladies', Children's, and Men's Sleepwear, Underwear, Robes, Wrappers, Dusters, and Peignoirs and Lingerie.

First use Jan. 1, 1925.

SN 193,059. TSE Corporation, New York, N.Y. Filed May 8, 1964.

SILKY

For Raincoats.

First use Aug. 30, 1963.

SN 194,244. School Supply Company, Larchmont, N.Y. Filed May 25, 1964.

SCHOLARS

For Clothing—Namely, Uniforms.

First use Mar. 1, 1964.

SN 194,410. Moran Shoe Company, Carlyle, Ill. Filed May 27, 1964.

The word "Sneaks" is disclaimed apart from the composite form of the mark.

For Infants' and Children's Sneakers.

First use Jan. 30, 1964.

SN 195,514. Chadbourn Gotham, Inc., Charlotte, N.C. Filed June 12, 1964.

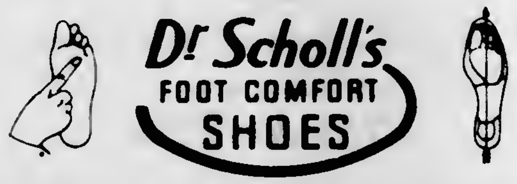
Owner of Reg. Nos. 614,472 and 625,916.

For Ladies' Hosiery.

First use Feb. 23, 1962.

Subj. to intf. with SN 197,957.

SN 196,201. The Scholl Mfg. Co., Inc., Chicago, Ill. Filed June 22, 1964.



The word "Shoes" is disclaimed apart from the mark as shown.

Owner of Reg. Nos. 200,374, 528,934, and others.

For Shoes Made of Leather or Fabric or of Combinations Thereof.

First use 1924.

SN 196,585. Angelica Uniform Company, St. Louis, Mo. Filed June 29, 1964.

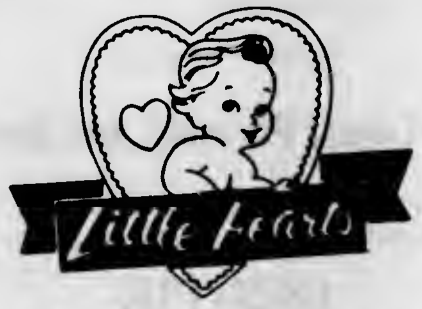
SUPERCRON

Owner of Reg. Nos. 774,873 and 744,874.

For Uniforms Made From Fabrics Containing Natural Yarns, Synthetic Yarns, and Combinations Thereof.

First use on or about Mar. 1, 1964.

SN 197,430. Rosefsky Bros., Inc., Worcester, Mass. Filed July 8, 1964.



For Children's Shoes, Dresses, Sweaters, Underwear, Playsuits, Sleepers, and Hosiery.

First use September 1963.

SN 197,438. Ernst Strauss, Inc., Los Angeles, Calif. Filed July 8, 1964.

SUIVANTE

The term "Suivante" is a French word meaning "following."

For Women's Clothing, Specifically, Women's Suits.

First use June 18, 1964.

SN 197,450. United Sheeplined Clothing Company, Inc., New York, N.Y. Filed July 8, 1964.

SKUA

For Coats and Jackets for Men and Young Men, and Women and Young Women.

First use May 14, 1964.

SN 197,701. Gladstone-Arcuni, Incorporated, New York, N.Y. Filed July 13, 1964.

The name "Diane Carter" is fanciful. Applicant disclaims the word "Original" apart from the mark as shown.

For Dresses.

First use September 1958.

SN 197,957. Munsingwear, Inc., Minneapolis, Minn. Filed July 16, 1964.

MISSY-X

For Garter Belts, Girdles, and Brassieres.

First use Apr. 30, 1954.

Subj. to intf. with SN 195,514.

SN 198,282. The H. D. Lee Company, Incorporated, Kansas City, Mo. Filed July 21, 1964.

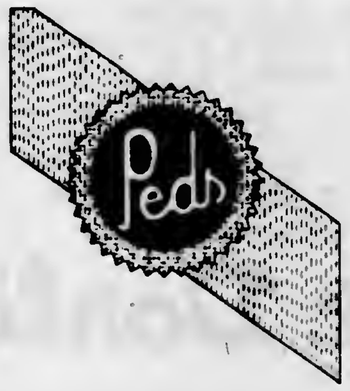
LETTERMAN CORDS

The term "Cords" is disclaimed apart from the mark as shown.

For Corduroy Trousers.

First use on or about July 1, 1934.

SN 199,218. Richard Paul, Inc., Wilmington, Del. Filed Aug. 4, 1964.



The drawing is lined for the colors gold and purple.

Owner of Reg. Nos. 589,643 and 779,492.

For Foot Covers.

First use on or about Jan. 10, 1964.

SN 200,184. Harper Hosiery Mills, Inc., New York, N.Y. Filed Aug. 19, 1964.

CATHY CARTER

The mark is not the name of any known individual.
For Hosiery.
First use Mar. 10, 1964.

SN 200,185. Harper Hosiery Mills, Inc., New York, N.Y. Filed Aug. 19, 1964.

HATTIE HARPER

The mark is not the name of any known individual.
For Hosiery.
First use Mar. 10, 1964.

SN 200,186. Harper Hosiery Mills, Inc., New York, N.Y. Filed Aug. 19, 1964.

ANN ADAMS

The mark is not the name of any known individual.
For Hosiery.
First use Mar. 10, 1964.

SN 201,288. Henson-Kickernick, Inc., Greenville, Tex. Filed Sept. 4, 1964.

FOND DE ROBE

The word "Robe" is disclaimed apart from the mark as shown.
For Women's Slips.
First use Jan. 1, 1963.

SN 201,448. Lewel Manufacturing Co., Inc., New York, N.Y. Filed Sept. 8, 1964.

LEWELLA

Owner of Reg. No. 378,041.
For Garter Belts and Waist Cinchers.
First use January 1934.

SN 203,085. W. T. Grant Company, New York, N.Y. Filed Oct. 1, 1964.

GRANT CREST

Owner of Reg. Nos. 612,676, 622,841, and 774,177.
For Men's Shirts, Slacks, and Sport Jackets.
First use Aug. 6, 1964; at least as early as 1928 as to "Grant" for men's shirts.

SN 203,789. National Association of Supermarket Apparel Distributors, New York, N.Y. Filed Oct. 12, 1964.

Pat Darling

The mark "Pat Darling" is fanciful.
For Ladies' Outer and Under Wear—Namely, Stockings, Hose, Shorts, Blouses, and Brassieres.
First use in or about December 1961.

SN 203,976. Leonora Inc., New York, N.Y. Filed Oct. 14, 1964.

LEONORA

Owner of Reg. No. 661,408.
For Lingerie—Namely, Sleeping Gowns, Slips, Panties, Pyjamas, Bed Jackets, Coat Sets, and Negligees.
First use February 1919.

SN 204,046. Caron Spinning Company, Rochelle, Ill. Filed Oct. 15, 1964.

TIGI

For Sweaters.
First use May 25, 1964.

SN 204,267. Lawrence of London Ltd., New York, N.Y. Filed Oct. 19, 1964.

"Bluster Buffers"

For Ladies' Rainwear.
First use Apr. 10, 1964.

SN 204,897. Leslie Fay, Inc., New York, N.Y. Filed Oct. 27, 1964.

RICELLO

For Knitted Fabric Made up Into Costumes and Dresses.
First use Oct. 9, 1964.

SN 205,851. S.A. des Chaussures "Sirius," Romans, Drome, France. Filed Nov. 9, 1964.

ROYALTOS

Priority claimed under Sec. 44(d) on French Reg. No. 3,319, dated June 24, 1964 (Drome); Natl. Inst. No. 280,951.
For Shoes.

SN 206,419. Cluett, Peabody & Co., Inc., New York, N.Y. Filed Nov. 18, 1964.

BOLD NEW BREED

For Sweaters, Shorts, Shirts, Swimwear, and Jackets.
First use Nov. 11, 1964.
Subj. to intf. with SN 210,362.

SN 210,362. Revere Knitting Mills, Inc., Wakefield, Mass. Filed Jan. 21, 1965.

YOUNG BREED

For Men's and Boys' Sweaters.
First use June 1, 1964.
Subj. to intf. with SN 206,419.

Class 41 — Canes, Parasols, and Umbrellas

SN 205,784. George F. Detlor, d.b.a. Res-Tik, Tulsa, Okla. Filed Nov. 9, 1964.

RES-TIK

For Cane (Walking Stick).
First use June 20, 1964.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 185,357. Carolyn Chenilles, Inc., New York, N.Y. Filed Jan. 27, 1964.

CELLULAIRE

For Blankets.
First use Dec. 15, 1962.

SN 186,094. Dolly Madison, Inc., New York, N.Y. Filed Feb. 5, 1964.

DOLLY MADISON

Owner of Reg. No. 678,157.
For Pillow Cases, Pillow Protectors, Furniture Throws, Comforter and Blanket Covers, Mattress Covers, Bedspreads, and Draperies.
First use Feb. 1, 1937.

SN 188,080. Crompton & Knowles-Malimo, Inc., Worcester, Mass. Filed Mar. 6, 1964.

MALIPOL

For Textile Pile Fabrics in the Piece.
First use Feb. 10, 1964.

SN 188,596. Westwood Textile Manufacturing, Inc., Southbridge, Mass. Filed Mar. 12, 1964.

CREPE LARGO

The word "Crepe" is disclaimed apart from the mark as shown.
For Crepe Textile Fabrics, Particularly Woolen Fabrics.
First use Dec. 19, 1962.

SN 195,080. Einiger Mills, Inc., New York, N.Y. Filed June 8, 1964.

SABELOOR

EINIGER

Owner of Reg. No. 649,791.
For Piece Goods, Comprising a Mixture of Wool and Sable Fibers.
First use Jan. 17, 1963.

SN 195,138. Patchogue-Plymouth Company, New York, N.Y. (joint venture), assignee of Patchogue-Plymouth Corporation, Scarsdale, N.Y. Filed June 8, 1964.

POLY BAC

For Woven Backings for Rugs, Carpets, and the Like.
First use May 18, 1964.

SN 196,247. Chatham Manufacturing Company, Elkin, N.C. Filed June 23, 1964.

BUNNYDOWN

For Baby Quilts.
First use Dec. 15, 1956; Apr. 1, 1944, on related goods.

SN 198,002. Triton Fabrics, Inc., New York, N.Y. Filed July 16, 1964.

GOLDMINE

For Textile Fabrics, Composed of Cotton, Wool, Synthetics, and Combinations Thereof.
First use Jan. 6, 1961.

SN 200,803. Waumbec Mills Incorporated, New York, N.Y. Filed Aug. 27, 1964.

HULLY GULLY

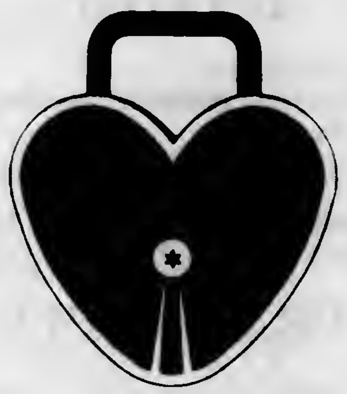
For Woven Fabrics for Making Ladies' and Girls' Wearing Apparel, Such as, Shifts, Dresses, Skirts, Blouses, and Pants.
First use Aug. 2, 1964.

SN 200,997. Albany Felt Company, Albany, N.Y. Filed Sept. 1, 1964.

ULTRA WEAVE

Applicant disclaims the word "Weave" apart from the mark as shown.
For Papermaker Felts.
First use on or about July 28, 1964.

SN 201,292. Lock-Lined, Inc., New York, N.Y. Filed Sept. 4, 1964.



Owner of Reg. No. 750,614.
For Laminated Fabric for Use in Conjunction With the Fabrication of Clothing Such as Dresses, Suits, Blouses, and the Like; and for the Fabrication of Upholstery, Slip Covers, Draperies, or the Like.
First use Feb. 6, 1962.

SN 205,659. California Hand Prints, Incorporated, Hermosa Beach, Calif. Filed Nov. 6, 1964.

WILSHIRE
house

For Tablecloths, Beach Towels, Kitchen Towels, Aprons, Dish Cloths, Pot Holders, Bath Towels, Hand Towels, Washcloths, and Place Mats.
First use Sept. 22, 1964.

SN 206,316. Union Carbide Corporation, New York, N.Y. Filed Nov. 16, 1964.

VILEAU

For Plastic Fabric for Use in Furniture and Upholstery.
First use on or about Sept. 14, 1964.

SN 206,817. Union Carbide Corporation, New York, N.Y. Filed Nov. 16, 1964.

UNION
CARBIDE

For Plastic Fabric for Use in Furniture and Upholstery.
First use on or about Sept. 14, 1964.

SN 206,881. J. P. Stevens & Co., Inc., New York, N.Y. Filed Nov. 17, 1964.

TEMPGARD

For Glass Fabric Finished With a Heat Resistant Finish.
First use Oct. 26, 1964.

SN 206,882. J. P. Stevens & Co., Inc., New York, N.Y. Filed Nov. 17, 1964.

ASTROSIL

Owner of Reg. No. 750,237.
For High Temperature Resistant Glass Fabric.
First use Oct. 26, 1964.

SN 206,520. Crompton Company, New York, N.Y. Filed Nov. 19, 1964.

CRAB APPLE

For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers, and Blends Thereof.
First use Oct. 21, 1964.

SN 206,522. Crompton Company, New York, N.Y. Filed Nov. 19, 1964.

HI DOLLY

For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers, and Blends Thereof.
First use Oct. 22, 1964.

SN 206,789. Sol Mintz, Chicago, Ill. Filed Nov. 23, 1964.

ROYALTY HOUSE

For Rugs and Carpets.
First use Oct. 23, 1964.

Class 43 — Thread and Yarn

SN 184,418. American Enka Corporation, Enka, N.C. Filed Jan. 13, 1964.

CREPESET

For Synthetic Yarn and Thread.
First use Jan. 7, 1964.

SN 205,849. Roselon Yarns, Inc., Philadelphia, Pa. Filed Nov. 9, 1964.

ROSELO

Owner of Reg. No. 652,465.
For Yarns.
First use Oct. 23, 1964.

Class 44 — Dental, Medical, and Surgical Appliances

SN 184,134. Milton Calig, d.b.a. The M. Calig Company, Los Angeles, Calif. Filed Jan. 7, 1964.

CALITONE

For Electronic Products—Namely, Hearing Aids for Personal Wear; Portable Hearing Aids for Attachment to Telephones, Radios or Television Receivers; Component Parts for Such Hearing Aids; and Hearing Aid Batteries.
First use Dec. 23, 1957, on hearing aids and batteries.

SN 191,564. Kimberly-Clark Corporation, Neenah, Wis. Filed Apr. 20, 1964.

FORMITA

For Sanitary Napkins, Sanitary Tampons, and Belts and Holders for Sanitary Napkins.
First use Apr. 7, 1964.

SN 191,636. Whaledent, Inc., Brooklyn, N.Y. Filed Apr. 20, 1964.

SMS

For Components for a Non-Parallel, Horizontal, Pin Splinting Technique for Splinting Teeth, Comprising Positioning Pins, Socket Wrenches, Acrylic Head Screws, Internally Threaded Sleeves With Positioning Pins, Tempered Steel Threaded Screws and Positioning Pins for Pouring Master Cast.
First use Jan. 31, 1964.

SN 191,637. Whaledent, Inc., Brooklyn, N.Y. Filed Apr. 20, 1964.

SPLINT-MATE

For Components for a Non-Parallel, Horizontal, Pin Splinting Technique for Splinting Teeth, Comprising Positioning Pins, Socket Wrenches, Acrylic Head Screws, Internally Threaded Sleeves With Positioning Pins, Tempered Steel Threaded Screws and Positioning Pins for Pouring Master Cast.
First use Jan. 31, 1964.

SN 191,777. Demetrie C. Siampaus, d.b.a. Ko-Rekt, Omaha, Nebr. Filed Apr. 22, 1964.

KO-REKT

For Instrument To Engage the Gums To Squeeze Out Pyorrhea.
First use Apr. 15, 1950.

SN 195,683. Borg-Warner Corporation, Chicago, Ill. Filed June 15, 1964.

BORG-WARNER

Owner of Reg. Nos. 513,546, 761,183, and others.
For Hospital Beds; and Hospital Equipment for Controlled Atmosphere Therapy.
First use on or prior to Mar. 16, 1961, on hospital beds.

SN 196,879. Medco Products Co., Inc., Tulsa, Okla. Filed July 1, 1964.

MEDCO

Owner of Reg. Nos. 579,679 and 733,146.
For Electrical Equipment in the Medical Field for Diagnostic and Therapeutic Purposes for Use in Connection With the Body, and for a Water Soluble Coupling Lotion for Use in Connection With the Electrical Equipment.
First use Oct. 1, 1949.

SN 201,639. Aldic Company, Racine, Wis. Filed Sept. 11, 1964.

TWIST-O-FILE

For Manicuring Devices—Namely, a Nail Cleaner and File.
First use June 5, 1964.

SN 201,955. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Sept. 15, 1964.

RESTON

For Self-Adhering Foam Pad Useful for the Treatment and Prevention of Decubitus Ulcers.
First use Aug. 28, 1964.

SN 206,483. Surgident, Ltd., Los Angeles, Calif. Filed Nov. 18, 1964.

SURGIDENT

Owner of Reg. No. 681,561.
For Dental Impression Materials, Dental Cement, Inlay Impression Materials, Dental Impression Waxes, Control Solution Compound for Dental Impression Storage Bath, Denture Model Duplicating Compound, Mixing Pads for Dental Paste Materials, Dental Inlay Syringe and Dental Splash Pans.
First use on or about Jan. 1, 1936.

SN 206,664. Swissedent International, Los Angeles, Calif. Filed Nov. 20, 1964.

CENTRIMATIC

For Artificial Teeth and Dentures Made From Artificial Teeth.
First use Oct. 9, 1964.

SN 207,067. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Nov. 27, 1964.

ADDENT

For Dental Restorative Materials.
First use Nov. 13, 1964.

SN 207,068. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Nov. 27, 1964.

3M

Owner of Reg. Nos. 409,726 and 776,698.
For Dental Restorative Materials.
First use Nov. 13, 1964.

SN 207,363. Bingham F. Burner, Arlington, Va. Filed Dec. 3, 1964.

PAIN AID

For Articles in the Form of Bands, Strips and Shield, in Rolls, Sheets and the Like, Which May Be Plain or Carry an Adhesive and Which May or May Not Carry or Have Attached Thereto an Electric Current Conducting Means, and Which Articles Function in Whole or in Part as Electrostatic Shields When Placed Over a Body Wound To Reduce Pain and Irritation Produced by Static Electricity.
First use Nov. 13, 1964.

Class 46 — Foods and Ingredients of Foods

SN 203,843. Joseph C. Ulick, d.b.a. Londonderry Farms Ltd., Beverly Hills, Calif. Filed Oct. 12, 1964.

MELE KOI

The Hawaiian word "Mele" is translated to mean "song," "rejoicing," or "singing of a song"; the Hawaiian word "Koi" is translated to mean "fine," "shrill" or "sharp."
For Flavoring Additive Containing Coconut for Beverages and Foods.
First use Mar. 2, 1964.

SN 203,888. R.G.B. Laboratories, Inc., Kansas City, Mo. Filed Oct. 13, 1964.

PITCHER PRIDE

For Cream Substitute Containing Essentially Water, Hydrogenated Vegetable Oil, Corn Syrup Solids, Sodium Caseinate, Carrageenan, Sodium Citrate, Disodium Phosphate, Salt, Mono- and Di-glycerides of the Fat Forming Acids (Except Lauric), Polysorbate 60, Sorbitan Monostearate, Lecithin, Artificial Flavor and Artificial Color, But Containing no Milk or Milk Products.
First use Aug. 19, 1964.

SN 206,564. Milk Research, Inc., Fond du Lac, Wis. Filed Nov. 19, 1964.

NUTRONI

For Nonfat Milk Macaroni and Nonfat Milk Spaghetti.
First use Nov. 13, 1964.

SN 206,929. The Epicures' Club, Union, N.J. Filed Nov. 25, 1964.

Partycordials

Owner of Reg. No. 653,876.
For Cakes.
First use Sept. 28, 1964.

SN 207,924. Veterinary Sales Associates, Inc., Westwood, Kans. Filed Dec. 10, 1964.

VSA

For Iodine Feed Supplement Used in Correcting Nutritional Deficiencies Where the Use of Iodine Is Indicated.
First use Sept. 11, 1964.

SN 208,612. George Pessano, d.b.a. Hyde-Pessano Co., San Bruno, Calif. Filed Dec. 21, 1964.

FRU-TEEZ

The drawing is lined for red.
For Candy.
First use Sept. 21, 1964.

SN 208,615. Pewter Pot Muffin House, Inc., Arlington, Mass. Filed Dec. 21, 1964.

PEWTER POT

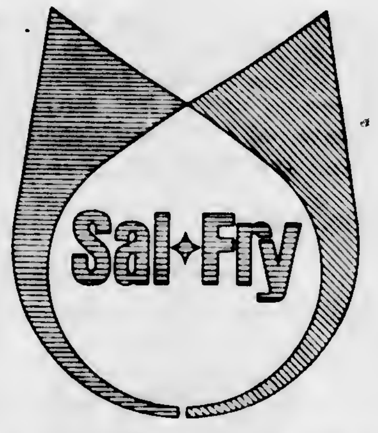
For Bakery Products—Namely, Muffins.
First use Oct. 20, 1964.

SN 208,690. Mars Limited, Slough, England. Filed Dec. 22, 1964.

TUNES

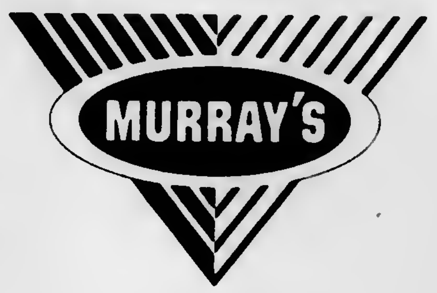
Owner of British Reg. Nos. 749,199 and 789,307, dated Dec. 19, 1955, and Apr. 7, 1959, respectively.
For Candy.

SN 208,718. Arkansas Grain Corporation, Stuttgart, Ark. Filed Dec. 28, 1964.



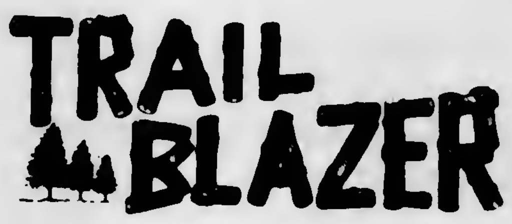
The drawing is lined for the colors blue and green.
For Salad and Cooking Oil.
First use Dec. 5, 1964.

SN 208,834. Murray Biscuit Company, Augusta, Ga. Filed Dec. 24, 1964.



For Bakery Products—Namely, Biscuits, Crackers, Cake, and Pies.
First use Sept. 1, 1964.

SN 209,215. Martha White Mills, Inc., Nashville, Tenn. Filed Dec. 31, 1964.



For Dog Food.
First use Nov. 13, 1964.

Class 50—Merchandise Not Otherwise Classified

SN 170,087. Mrs. John S. Meyer, d.b.a. Prudent Products, St. Louis, Mo. Filed May 31, 1963.

PRUDENCE

For Devices Having Straws or the Like Which Can Be Removed and Used To Test Whether Cakes and Like Products Are Done.
First use Mar. 20, 1963.

SN 205,292. The Hopp Press, Inc., New York, N.Y. Filed Nov. 2, 1964.

CLEARVIEW GUIDE

The word "Guide" is disclaimed apart from the mark as shown.
For Adjustable Store Directory Sign and Parts Therefor.
First use on or about Oct. 15, 1963.

SN 208,352. Fairchild Camera and Instrument Corporation, Syosset, N.Y. Filed Dec. 17, 1964.

LINE-A-PLATE

For Printing Plates.
First use November 1963.

SN 212,153. Synthetic Fabrics, Incorporated, Springfield, Mass. Filed Feb. 16, 1965.

BeautyFast

For Pressure Sensitive Self-Adhering Decorative Plastic Cover Flexible Material of the Smooth Surface Type for Surfaces Such as Walls, Counters, Desks, Floors and the Like in the Form of Rolls.
First use Feb. 2, 1965.

Class 51—Cosmetics and Toilet Preparations

SN 203,752. Paul B. Elder Company, Bryan, Ohio. Filed Oct. 12, 1964.

RVP-2

For Ointment for Human Use Containing a Protectant From the Sun's Rays and an Aliphatic Alcohol and Flavone Type Compound for Extending the Protective Properties Thereof.
First use July 20, 1964.

SN 203,817. R.T.V. Sales, Inc., New York, N.Y. Filed Oct. 12, 1964.

white Ice

For Toothpaste.
First use Aug. 14, 1964.

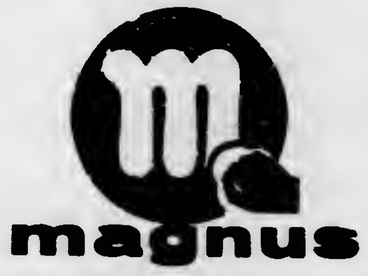
SN 206,004. Helene Curtis Industries, Inc., Chicago, Ill. Filed Nov. 12, 1964.

BLUE ICE

For Homogenized Creme Bleach for Use on the Hair.
First use on or about Sept. 11, 1963.
Subj. to intf. with SN 202,622.

Class 52—Detergents and Soaps

SN 194,400. Magnus Chemical Company, Inc., Garwood, N.J. Filed May 27, 1964.



Owner of Reg. Nos. 175,886, 667,202, and others.
For Solvent Detergent Cleaners, Surfactants, Synthetic Detergents, Soap Mixtures for Detergent Purposes, Alkaline Detergent Cleaners, and Acid Detergent Cleaners.
First use Jan. 3, 1952.

SN 203,939. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 14, 1964.

STAY

For Toilet Soap.
First use Sept. 2, 1964.

SN 204,757. Anthony F. Cacchillo, d.b.a. Old Chap Company, West Orange, N.J. Filed Oct. 26, 1964.

OLD CHAP

For Dry Shampoo and Grooming Powder for Dogs and Cats.
First use July 30, 1964.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 198,991. Young Americans for Freedom, Inc., Washington, D.C. Filed July 31, 1964.

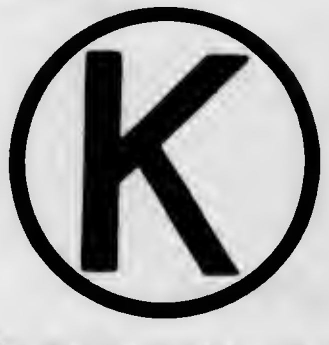
YOUNG AMERICANS FOR FREEDOM

For Indicating Membership in Applicant Organization.
First use on or about Oct. 1, 1960.

CERTIFICATION MARKS

Class A — Goods

SN 207,290. George Goldstein, d.b.a. O.K. Laboratories, New York, N.Y. Filed Dec. 2, 1964.



The mark certifies that the foods and the ingredients thereof, as well as the mode and manner of manufacture, handling and packaging, and the wrappings, and other containing materials, meet all the requirements of the Mosaic Code and biblical requirements, so as to qualify them for orthodox Jewish consumption and use, and thus of Kosher quality.

For Foods and Ingredients of Foods, Other Than Cured or Salted Meats.

First use Oct. 1, 1936.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

789,246. RUNNING WR (DESIGN). Winthrop Rockefeller, d.b.a. Winrock Farms. SN 179,982. Pub. 2–23–65. Filed 10–28–63.

789,247. UCARSIL. Union Carbide Corporation. SN 191,724. Pub. 2–23–65. Filed 4–21–64.

789,248. IDOL. J. E. Ohlsens Enke. SN 191,790. Pub. 2–23–65. Filed 4–22–64.

789,249. VELTAN. Proctor Ellison Company. SN 192,428. Pub. 2–23–65. Filed 4–30–64.

789,250. BERGENITE. Garfield Williamson, Inc., d.b.a. Town & Country Prod. SN 193,242. Pub. 2–23–65. Filed 5–11–64.

789,251. HOMESTEAD COAL AND DESIGN. Peabody Coal Company. SN 193,401. Pub. 2–23–65. Filed 5–13–64.

789,252. CASTALDO. F. E. Knight, Inc. SN 193,556. Pub. 2–23–65. Filed 5–15–64.

789,253. CORAM. Corning Glass Works. SN 193,941. Pub. 2–23–65. Filed 5–21–64.

789,254. NALTEX. Nalle Plastics, Inc. SN 193,977. Pub. 2–23–65. Filed 5–21–64.

789,255. SETON. Seton Leather Company. SN 194,321. Pub. 2–23–65. Filed 5–26–64.

789,256. UCAR. Union Carbide Corporation. SN 194,539. Pub. 2–23–65. Filed 5–28–64.

789,257. FLEXMESH. Barrday Limited. SN 194,547. Pub. 2–23–65. Filed 4–17–64.

789,258. THORO TUF. The Dayton Tire & Rubber Company. SN 195,210. Pub. 2–23–65. Filed 6–9–64.

789,259. NATIONAL AND DESIGN. Union Carbide Corporation. SN 197,446. Pub. 2–23–65. Filed 7–8–64.

789,260. HARCO AND DESIGN. The Harco Orchards & Poultry Farms, Inc. SN 198,046. Pub. 2–23–65. Filed 7–17–64.

789,261. TIMELITE. Peterlite Products Limited. SN 198,872. Pub. 2–23–65. Filed 7–30–64.

789,262. DELASORBS. E. I. du Pont de Nemours and Company. SN 199,040. Pub. 2–23–65. Filed 8–3–64.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

789,263. FASHION CLASS. Seward Luggage Manufacturing Company, Incorporated. SN 201,553. Pub. 2–23–65. Filed 9–9–64.

Class 4 — Abrasives and Polishing Materials

789,264. CHEMTROL. Precision Finishing, Inc. SN 190,968. Pub. 2–23–65. Filed 4–13–64.

789,265. THE QUALITY LINE AND DESIGN. Texaco Inc. MULTIPLE CLASS (Classes 4, 6, 15, and 52). SN 194,930. Pub. 2–23–65. Filed 6–4–64.

Class 5 — Adhesives

789,266. FORM-A-GASKET NO. 1. Permatex Company, Inc. SN 187,955. Pub. 2–23–65. Filed 8–4–64.

Class 6 — Chemicals and Chemical Compositions

789,265. (See Class 4 for this trademark.)

789,267. CARUS MN "28." Carus Chemical Company, Inc. SN 162,817. Pub. 2–23–65. Filed 2–15–63.

789,268. BRICON. American Home Products Corporation. SN 182,557. Pub. 2–23–65. Filed 12–9–63.

789,269. DIVERSEAL. The Diversey Corporation. SN 183,319. Pub. 2–23–65. Filed 12–20–63.

789,270. STAINDARE. Metro-Atlantic, Inc. SN 183,852. Pub. 2–23–65. Filed 12–31–63.

789,271. DERM-O-SCENT. Fritzsche Brothers, Inc. SN 187,574. Pub. 2–23–65. Filed 2–27–64.

789,272. BISHOPEL. Checkmate Chemicals, Inc. SN 189,434. Pub. 2–23–65. Filed 3–24–64.

789,273. PAWN. Checkmate Chemicals, Inc. SN 189,439. Pub. 2–23–65. Filed 3–24–64.

789,274. TRIPLE KILL. Micro Chemical Company, Inc. SN 190,098. Pub. 2–23–65. Filed 4–1–64.

789,275. LUSTRA AID. Heatbath Corporation. SN 190,261. Pub. 2–23–65. Filed 4–3–64.

789,276. PARCO. Hooker Chemical Corporation. SN 190,379. Pub. 2–23–65. Filed 4–6–64.

789,277. BAYLUSCIDE. Farbenfabriken Bayer Aktiengesellschaft. SN 192,382. Pub. 2–23–65. Filed 4–30–64.

789,278. KIL-BALM. Truman P. Cotnam, d.b.a. Kil-Balm Co. SN 192,572. Pub. 2–23–65. Filed 5–4–64.

789,279. G AND DESIGN. The Drackett Company. SN 194,284. Pub. 2–23–65. Filed 5–26–64.

789,280. ECHOSONIC. Parker Laboratories, Inc. SN 194,512. Pub. 2–23–65. Filed 5–28–64.

789,281. CONCEPT. Hysan Products Company. SN 194,802. Pub. 2–23–65. Filed 6–3–64.

789,282. GLAZD. Vulcan Materials Company, d.b.a. Frontier Chemical Company. SN 195,260. Pub. 2–23–65. Filed 6–9–64.

789,283. HETENEDIOL. Hooker Chemical Corporation. SN 195,413. Pub. 2–23–65. Filed 6–11–64.

789,284. HETDIOL. Hooker Chemical Corporation. SN 195,414. Pub. 2–23–65. Filed 6–11–64.

789,285. CALO-CLOR AND DESIGN. Mallinckrodt Chemical Works. SN 196,685. Pub. 2–23–65. Filed 6–29–64.

789,286. AZAK. Hercules Powder Company. SN 196,783. Pub. 2–23–65. Filed 6–30–64.

789,287. PREFAR. Stauffer Chemical Company. SN 196,820. Pub. 2–23–65. Filed 6–30–64.

789,288. ORDRAM. Stauffer Chemical Company. SN 196,915. Pub. 2–23–65. Filed 7–1–64.

789,289. ZEX. Plymouth Cordage Company. SN 197,040. Pub. 2–23–65. Filed 7–3–64.

789,290. CONFIRMAGEN. Ortho Pharmaceutical Corporation. SN 197,419. Pub. 2–23–65. Filed 7–8–64.

789,291. WARPATH. Sterling Drug Inc. SN 197,920. Pub. 2–23–65. Filed 7–15–64.

789,292. PLASTISCAT IV. Thiokol Chemical Corporation. SN 197,921. Pub. 2–23–65. Filed 7–15–64.

789,293. V–25. Stauffer Chemical Company. SN 200,671. Pub. 2–23–65. Filed 8–26–64.

Class 10 — Fertilizers

789,294. SKELGRO AND DESIGN. Skelly Oil Company. SN 200,983. Pub. 2–23–65. Filed 8–31–64.

Class 12 — Construction Materials

789,295. FIBRON. National Bagasse Products Corporation. SN 154,912. Pub. 9–3–63. Filed 10–10–62.

789,296. HY-FIL. Hysol Corporation. SN 192,178. Pub. 2–23–65. Filed 4–28–64.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

789,297. ROCKETIP. Henry K. Dannelly and James I. Gillespie (joint owners), d.b.a. Diamond Drill & Pin Co. SN 122,919. Pub. 3–3–64. Filed 6–27–61.

789,298. FRY-O-MATIC. Wood B. Hedgepeth. SN 131,483. Pub. 2–2–65. Filed 11–7–61.

789,299. PERMAJUST. Federal Screw Works. SN 187,098. Pub. 2–23–65. Filed 2–20–64.

789,300. DRILIT. Screw and Bolt Corporation of America. SN 187,618. Pub. 2–23–65. Filed 2–27–64.

789,301. TRU-FIT. Essex Wire Corporation, d.b.a. Precision Fittings, Inc. SN 193,460. Pub. 2–23–65. Filed 5–14–64.

Class 15 — Oils and Greases

789,265. (See Class 4 for this trademark.)

789,302. DEEP ROCK. Kerr-McGee Oil Industries, Inc. SN 187,931. Pub. 2–23–65. Filed 3–4–64.

789,303. BIO-ATF. Bayou State Oil Corporation. SN 202,671. Pub. 2–23–65. Filed 9–25–64.

Class 16 — Protective and Decorative Coatings

789,304. UNIVAL RMC AND DESIGN. Unival Corporation. SN 197,522. Pub. 2–23–65. Filed 7–9–64.

Class 18 — Medicines and Pharmaceutical Preparations

789,305. EFFERGESIC. Bristol-Myers Company, by merger from Grove Laboratories Incorporated. SN 166,007. Pub. 11–19–63. Filed 4–3–63.

789,306. DESENSATOL. Lingner-Werke G.m.b.H. SN 174,254. Pub. 2–23–65. Filed 8–1–63.

789,307. PLUS. Plus Products. MULTIPLE CLASS (Classes 18 and 46). SN 183,787. Pub. 2–23–65. Filed 12–30–63.

789,308. TYL-PHEN. C-Tex Carter Co. SN 190,868. Pub. 2–23–65. Filed 4–13–64.

789,309. AFRIN. Schering Corporation. SN 191,218. Pub. 2–23–65. Filed 4–15–64.

789,310. SULREDOX. Olin Mathieson Chemical Corporation. SN 191,941. Pub. 2–23–65. Filed 4–24–64.

789,311. PLAX. Dermik Pharmacal Co., Inc. SN 192,801. Pub. 2–23–65. Filed 5–6–64.

789,312. PARA CON AND DESIGN. Lamkin Brothers, Inc. SN 193,474. Pub. 2–23–65. Filed 5–14–64.

789,313. WIDE-EYE AND DESIGN. Southwestern Drug Corporation, d.b.a. Red Arrow Laboratories. SN 194,328. Pub. 2–23–65. Filed 5–26–64.

789,314. AZMATE. Southwestern Drug Corporation, d.b.a. Brooke Laboratories. SN 194,329. Pub. 2–23–65. Filed 5–26–64.

789,315. NEO-ARISTOVET. American Cyanamid Company. SN 194,853. Pub. 2–23–65. Filed 6–4–64.

789,316. CHOOM EE'S. Vitamin Council Incorporated, d.b.a. Professional Dietary Quotas Company. SN 196,998. Pub. 2–23–65. Filed 7–2–64.

789,317. DURAVALS. Drug Guild Co-Operative, Inc. SN 197,946. Pub. 2–23–65. Filed 7–16–64.

789,318. ORION CYCLE AND DESIGN. Orion Pharmacal Co. SN 198,656. Pub. 2–23–65. Filed 7–28–64.

789,319. HYBEC FORTE. Boyle & Company. SN 199,264. Pub. 2–23–65. Filed 8–5–64.

789,320. STRITEN. Aktiebolaget Astra, Apotekarnes Kemiska Fabriker. SN 199,782. Pub. 2–23–65. Filed 8–13–64.

789,321. QUENAMOX. American Cyanamid Company. SN 203,062. Pub. 2–23–65. Filed 10–1–64.

789,322. VIVACTIL. Merck & Co., Inc. SN 203,106. Pub. 2–23–65. Filed 10–1–64.

789,323. FLURESS. Barnes Hind Laboratories. SN 203,731. Pub. 2–23–65. Filed 10–12–64.

789,324. CODUREX. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company. SN 203,819. Pub. 2–23–65. Filed 10–12–64.

789,325. PRE-CODUREX. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company. SN 203,820. Pub. 2–23–65. Filed 10–12–64.

Class 21 — Electrical Apparatus, Machines, and Supplies

789,326. GS. Baird-Atomic, Inc. SN 183,950. Pub. 2–23–65. Filed 1–3–64.

789,327. VILLAGE PARK. American Hardware Supply Company. SN 201,348. Pub. 2–23–65. Filed 9–8–64.

Class 22 — Games, Toys, and Sporting Goods

789,328. PEDCO AND DESIGN. Walter H. Means and Associates. SN 165,348. Pub. 2–23–65. Filed 3–25–63.

789,329. MEMORY LANE. Center for the Gifted Child Inc. SN 184,189. Pub. 2–23–65. Filed 1–7–64.

789,330. BABY "BUTTONS." P. and M. Doll Company, Inc. SN 185,527. Pub. 2–23–65. Filed 1–28–64.

789,331. ORBET-O. Pleasant Toy Corporation, Inc. SN 188,578. Pub. 2–23–65. Filed 3–12–64.

789,332. CRACKERS. Mattel, Inc. SN 188,647. Pub. 2–23–65. Filed 3–13–64.

789,333. DEXTRA. Accurate Systems, Inc. SN 190,316. Pub. 2–23–65. Filed 4–6–64.

789,334. CAT-NIPPER AND DESIGN. Items Incorporated. SN 191,557. Pub. 2–23–65. Filed 4–20–64.

789,335. NAISMITH MEMORIAL HALL OF FAME AND DESIGN. Naismith Memorial Basketball Hall of Fame Inc. SN 192,124. Pub. 2–23–65. Filed 4–8–64.

789,336. THRIFT. American Publishing Corporation. SN 192,129. Pub. 2–23–65. Filed 4–24–64.

789,337. MAKAHA. Richard L. Stevenson, d.b.a. R. L. Stevenson & Associates. SN 192,227. Pub. 2–23–65. Filed 4–28–64.

789,338. GLADIATOR. Crisloid Plastics Inc. SN 192,795. Pub. 2–23–65. Filed 5–6–64.

789,339. M–P. Northwestern Golf Company. SN 193,397. Pub. 2–23–65. Filed 5–13–64.

789,340. HAT IN THE RING. Paul A. Theis and Donald M. Zahn (partnership). SN 193,424. Pub. 2–23–65. Filed 5–13–64.

789,341. MOOSELOOK. Anna M. Greene, d.b.a. J. A. Greene. SN 193,548. Pub. 2–23–65. Filed 5–15–64.

789,342. GOLF-KNICKS. Jack M. Kenmore. SN 193,554. Pub. 2–23–65. Filed 5–15–64.

789,343. FILL 'N THRILL. Peoria Plastic Company. SN 193,694. Pub. 2–23–65. Filed 5–18–64.

789,344. ROMAN X. The Selchow & Richter Company. SN 195,554. Pub. 2–23–65. Filed 6–12–64.

789,345. KARATE. The Selchow & Richter Company. SN 195,555. Pub. 2–23–65. Filed 6–12–64.

789,346. DAVY JONES. Cortland Industries, Inc. SN 195,655. Pub. 2–23–65. Filed 6–15–64.

789,347. TRAIL-PACK. Longfellow Corporation. SN 195,685. Pub. 2–23–65. Filed 6–15–64.

789,348. LINDY LOONYS AND DESIGN. Lindberg Products, Incorporated. SN 195,949. Pub. 2–23–65. Filed 6–18–64.

789,349. CAVALIER. Pacific Game Company, Inc. SN 195,958. Pub. 2–23–65. Filed 6–18–64.

789,350. SEA TOT. Gentex Corporation. SN 196,519. Pub. 2–23–65. Filed 6–26–64.

789,351. WHIZ-EEE. Monarch Associates, Inc. SN 196,973. Pub. 2–23–65. Filed 7–2–64.

789,352. AMY. Fab-Lu, Ltd. SN 197,104. Pub. 2–23–65. Filed 7–6–64.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

789,353. VISTA. Sunbeam Corporation. SN 136,507. Pub. 4–30–63. Filed 1–24–62.

789,354. SNO-WONDER. Lambert Incorporated. SN 159,073. Pub. 6–25–63. Filed 12–13–62.

789,355. WTM. William D. Fagan, d.b.a. WTM Service Equipment. SN 166,629. Pub. 2–23–65. Filed 4–12–63.

789,356. MF. Millers Falls Company. SN 175,777. Pub. 7–21–64. Filed 8–26–63.

Class 26 — Measuring and Scientific Appliances

789,357. ITEK PLATEMASTER AND DESIGN. Itek Corporation, assignee of Photostat Corporation. SN 160,129. Pub. 3–17–64. Filed 1–3–63.

Class 27 — Horological Instruments

789,358. JECO. Jeco Co., Ltd. SN 196,676. Pub. 2–23–65. Filed 6–29–64.

789,359. NATIONAL AND DESIGN. Matsushita Electric Industrial Co., Ltd. SN 197,599. Pub. 2–23–65. Filed 7–10–64.

Class 28 — Jewelry and Precious-Metal Ware

789,360. GOLD WREATH DESIGN WITH D IN CENTER. Henry Dankner & Sons Jewelry Mfg. Co., Inc. SN 144,360. Pub. 1–15–63. Filed 5–11–62.

Class 31 — Filters and Refrigerators

789,361. FERROSAND CR. Hungerford & Terry, Inc. SN 195,667. Pub. 2–23–65. Filed 6–15–64.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

789,362. U.S. ROYAL 833. United States Rubber Company. SN 190,670. Pub. 2–23–65. Filed 4–8–64.

Class 37 — Paper and Stationery

789,363. AIA. The American Institute of Architects. SN 193,610. Pub. 2–23–65. Filed 5–18–64.

Class 38 — Prints and Publications

789,364. 'TEEN. Teen Publications, Inc. SN 142,376. Pub. 6–25–63. Filed 4–16–62.

789,365. MD AND DESIGN. Medical Data Services, Inc. SN 181,167. Pub. 2–23–65. Filed 11–14–63.

789,366. SOUND SCOPE. Shure Brothers Incorporated. SN 195,455. Pub. 2–23–65. Filed 6–11–64.

789,367. MASTEREPORT AND DESIGN. Al Milton. SN 196,795. Pub. 2–23–65. Filed 6–30–64.

789,368. FOR YOUR P.G. Norcross, Inc. SN 199,913. Pub. 2–23–65. Filed 8–14–64.

789,369. INTER/TRADE. Inter/Trade Incorporated. SN 200,259. Pub. 2–23–65. Filed 8–20–64.

789,370. EDUCATION AGE. Minnesota Mining and Manufacturing Company. SN 201,188. Pub. 2–23–65. Filed 9–2–64.

789,371. CONNCHORD. C. G. Conn, Ltd. SN 201,926. Pub. 2–23–65. Filed 9–15–64.

789,372. CRACKY AND DESIGN. Golden Press, Inc. SN 202,926. Pub. 2–23–65. Filed 9–29–64.

Class 39 — Clothing

789,373. SPANDEX-CEL. Sarong, Inc. SN 128,684. Pub. 6–26–62. Filed 9–26–61.

789,374. THE MADISON SHOP. Barney's Clothes, Inc. SN 138,381. Pub. 2–5–63. Filed 2–21–62.

Class 40 — Fancy Goods, Furnishings, and Notions

789,375. EMBASSY AND DESIGN. F. W. Woolworth Co. SN 202,339. Pub. 2–23–65. Filed 9–21–64.

789,376. R AND DESIGN. The Reddy Company, Inc. SN 203,030. Pub. 2–23–65. Filed 9–30–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

789,377. BELA RAFFIA. Maison Knits, Inc. SN 181,553. Pub. 2–23–65. Filed 11–20–63.

Class 44 — Dental, Medical, and Surgical Appliances

789,378. ULTRA SAUNA. Vico Products. SN 197,799. Pub. 2-2-65. Filed 7-13-64.

Class 45 — Soft Drinks and Carbonated Waters

789,379. JUS-TREAT. Colonial Stores Incorporated. SN 176,074. Pub. 2-23-65. Filed 8-30-63.

Class 46 — Foods and Ingredients of Foods

789,307. (See Class 18 for this trademark.)

789,380. PYSBE AND DESIGN. Pesquerias y Secaderos de Bacalao de Espana, S.A. SN 134,668. Pub. 2-23-65. Filed 12-26-61.

789,381. BIRD JOY. Best Feeds & Farm Supplies, Inc. SN 135,752. Pub. 2-23-65. Filed 1-15-62.

789,382. VILLAGE INN. Village Inn Gourmet Foods, Inc. SN 145,983. Pub. 4-30-63. Filed 6-1-62.

789,383. OLD ORIGINAL BOOKBINDER'S. Bookbinder's Restaurant, Inc., d.b.a. Old Original Bookbinder's. SN 162,529. Pub. 2-23-65. Filed 2-12-63.

789,384. AVI AND DESIGN. Arkansas Valley Industries, Inc. SN 174,070. Pub. 2-16-65. Filed 7-31-63.

789,385. GOLD CROWN. Giffen, Inc. SN 174,761. Pub. 1-14-64. Filed 8-9-63.

789,386. BONNIE BAKER. Piggly Wiggly Operators' Warehouse, Inc. SN 183,857. Pub. 2-23-65. Filed 12-31-63.

789,387. SHARPS AND DESIGN. Edward Sharp & Sons Limited. SN 185,081. Pub. 2-23-65. Filed 1-21-64.

789,388. DINE. Petfoods Limited. SN 187,427. Pub. 2-23-65. Filed 2-25-64.

789,389. VIVA! Sakata Ranches, Inc., d.b.a. T. and M. Farms. SN 189,211. Pub. 2-23-65. Filed 3-20-64.

789,390. BONNIE BAKER AND DESIGN. Piggly Wiggly Operators' Warehouse, Inc. SN 190,589. Pub. 2-23-65. Filed 4-7-64.

789,391. FOSTEX. Dirigo Sales Corporation. SN 190,899. Pub. 2-23-65. Filed 4-13-64.

789,392. INDIAN HEAD (DESIGN). The Rath Packing Company. SN 190,971. Pub. 2-23-65. Filed 4-13-64.

789,393. TRIPLE J AND DESIGN. Transmundo Company, Inc. SN 191,631. Pub. 2-23-65. Filed 4-20-64.

789,394. PEPPER TOPPERS. Abner Michaud, d.b.a. A. Michaud Co. SN 191,699. Pub. 2-23-65. Filed 4-21-64.

789,395. GOOFY ANIMALS. Atlas Biscuit Corporation. SN 193,919. Pub. 2-23-65. Filed 5-21-64.

789,396. S AND DESIGN. Stange Co., by change of name from Wm. J. Stange Co. SN 193,994. Pub. 2-23-65. Filed 5-21-64.

789,397. AIRLINE. Airline Foods Corporation. SN 194,111. Pub. 2-23-65. Filed 5-25-64.

789,398. DIET DELIGHT. California Canners and Growers, d.b.a. Richmond-Chase Company. SN 194,127. Pub. 2-23-65. Filed 5-25-64.

789,399. REPRESENTATION OF A FEMALE CHEF. A. Giurlani & Bro. SN 194,173. Pub. 2-23-65. Filed 5-25-64.

789,400. DUET. Rema Foods, Inc. SN 194,657. Pub. 2-23-65. Filed 6-1-64.

789,401. HIGH-C. The Coca-Cola Company. SN 194,778. Pub. 2-23-65. Filed 6-3-64.

789,402. COMBINAISE. Recipe Foods, Inc. (New York corporation), by merger and change of name from Recipe Foods, Inc. (Maryland corporation). SN 195,152. Pub. 12-29-64. Filed 6-8-64.

789,403. YE OLDE ENGLISH. American Bakeries Company. SN 195,196. Pub. 2-23-65. Filed 6-9-64.

789,404. DULANY. Dulany Foods Inc. SN 195,382. Pub. 2-23-65. Filed 6-11-64.

789,405. PRI·YUM. Best'O Distributors, Inc., d.b.a. Best'O Inc. SN 195,504. Pub. 2-23-65. Filed 6-12-64.

789,406. COFFEE HANSE. Hanan Products Company, Inc. SN 195,664. Pub. 2-23-65. Filed 6-15-64.

789,407. DEERWOOD. UBC Distributors Incorporated. SN 195,743. Pub. 2-23-65. Filed 6-15-64.

789,408. STELLA D'ORO AND DESIGN. Stella d'Oro Biscuit Company, Inc. SN 195,821. Pub. 2-23-65. Filed 6-16-64.

789,409. STELLA D'ORO AND DESIGN. Stella d'Oro Biscuit Company, Inc. SN 195,822. Pub. 2-23-65. Filed 6-16-64.

789,410. STELLA D'ORO AND DESIGN. Stella d'Oro Biscuit Company, Inc. SN 195,823. Pub. 2-23-65. Filed 6-16-64.

789,411. McKEE. McKee Baking Company. SN 195,878. Pub. 2-23-65. Filed 6-17-64.

789,412. PASTRY CHEF. National Biscuit Company. SN 196,182. Pub. 2-23-65. Filed 6-22-64.

789,413. TIME-OUT. The Chunky Corporation. SN 196,501. Pub. 2-23-65. Filed 6-26-64.

789,414. CHAR-O-SNAPS. Dean W. Carlson, d.b.a. Terry Lee Products. SN 197,076. Pub. 2-23-65. Filed 7-6-64.

789,415. EDIMATE. Hudson National, Inc., by change of name from Hudson Vitamin Products, Inc. SN 197,292. Pub. 2-23-65. Filed 7-7-64.

789,416. GELMATE. Hudson National, Inc., by change of name from Hudson Vitamin Products, Inc. SN 197,293. Pub. 2-23-65. Filed 7-7-64.

789,417. FRENCH LADY. Milani Foods, Inc. SN 198,487. Pub. 2-23-65. Filed 7-24-64.

789,418. CINADENT. Automatic Canteen Company of America. SN 198,700. Pub. 2-23-65. Filed 7-29-64.

789,419. GEORGIA GOLD. Cherokee Products Company. SN 199,174. Pub. 2-23-65. Filed 8-4-64.

789,420. ROYAL GARDEN. North Pacific Canners & Packers, Inc. SN 199,305. Pub. 2-23-65. Filed 8-5-64.

789,421. BEE GEE. B.G. Shrimp Sales Co., Inc. SN 199,409. Pub. 2-23-65. Filed 8-6-64.

789,422. MAIGRELAIT SKIMMY AND DESIGN. Anco Food Products (1961) Inc. SN 199,437. Pub. 2-23-65. Filed 8-7-64.

789,423. ANFROM AND DESIGN. Anco Food Products (1961) Inc. SN 199,438. Pub. 2-23-65. Filed 8-7-64.

789,424. ANFROM. Anco Food Products (1961) Inc. SN 199,439. Pub. 2-23-65. Filed 8-7-64.

789,425. HONEY BEE. G. W. Hume Company. SN 199,470. Pub. 2-23-65. Filed 8-7-64.

789,426. SIX-TEEN. Stiefvaters', Incorporated, d.b.a. Stiefvaters'. SN 199,509. Pub. 2-23-65. Filed 8-7-64.

789,427. P-NUTTIEST! Derby Foods, Inc. SN 199,712. Pub. 2-23-65. Filed 7-31-64.

789,428. ECONOMADE. Flavor Corporation of America. SN 199,896. Pub. 2-23-65. Filed 8-14-64.

789,429. SUNSHINE COFFEE AND DESIGN. L.D.G. Corporation of Miami. SN 200,526. Pub. 2-23-65. Filed 8-24-64.

789,430. HAPPY. Dubuque Packing Company. SN 200,558. Pub. 2-23-65. Filed 8-25-64.

789,431. BAKO-VAN. McCormick & Company, Incorporated. SN 200,653. Pub. 2-23-65. Filed 8-26-64.

789,432. TATA. Tata Incorporated. SN 200,676. Pub. 2-23-65. Filed 8-26-64.

789,433. BONNIE BAKER. Piggly Wiggly Operators' Ware-House, Inc. SN 200,782. Pub. 2-23-65. Filed 8-27-64.

789,434. JET-SOL. Sunkist Growers, Inc. SN 201,892. Pub. 2-23-65. Filed 9-14-64.

789,435. "HEART OF THE MAPLES" AND DESIGN. Harold Tyler, d.b.a. Harold Tyler Maple Farms. SN 201,898. Pub. 2-23-65. Filed 9-14-64.

789,436. FANCIFUL DESIGN OF THE LETTER A. G. H. Anderson Company. SN 201,914. Pub. 2-23-65. Filed 9-15-64.

789,437. NIFTY. Nifty Foods Corp., d.b.a. Lustig Foods. SN 201,959. Pub. 2-23-65. Filed 9-15-64.

789,438. MARIO AND DESIGN. Mario Saikhon. SN 202,317. Pub. 2-23-65. Filed 9-21-64.

789,439. PRAISE. Carnation Company. SN 202,415. Pub. 2-23-65. Filed 9-23-64.

Class 47 — Wines

789,440. RAMROD. Schenley Distillers, Inc., d.b.a. Weston Winery. SN 198,498. Pub. 2-23-65. Filed 7-24-64.

Class 49 — Distilled Alcoholic Liquors

789,441. SHIP (DESIGN). Berry Bros. & Rudd Limited. SN 186,687. Pub. 2-23-65. Filed 2-14-64.

789,442. OLD McCALL'S AND DESIGN. Montebello Liquors, Incorporated, d.b.a. Baltimore Liquor Company. SN 191,201. Pub. 2-23-65. Filed 4-15-64.

789,443. PUBLICKER. Continental Distilling Corporation. SN 193,856. Pub. 2-23-65. Filed 5-20-64.

789,444. KILTARIE. Continental Distilling Corporation, d.b.a. Inver House Distillers, Limited. SN 195,649. Pub. 2-23-65. Filed 6-15-64.

Class 50 — Merchandise Not Otherwise Classified

789,445. HI-DRYER. Glendola R. Whipple, d.b.a. Gwenn Industries. SN 153,440. Pub. 2-23-65. Filed 9-18-62.

789,446. FLEX-O-FLONG. Wood Flong Corporation. SN 176,599. Pub. 2-23-65. Filed 9-9-63.

789,447. MORGEN AND DESIGN. Morgen Manufacturing Co. SN 176,742. Pub. 2-23-65. Filed 9-11-63.

789,448. SHOCK GUARD. Shock Guard. SN 177,298. Pub. 2-23-65. Filed 9-18-63.

789,449. AQUA-LOCK. Major Pool Equipment Corporation. SN 189,714. Pub. 2-23-65. Filed 3-26-64.

789,450. IMPERIAL AND DESIGN. Spiegel Industries Corp. SN 202,389. Pub. 2-23-65. Filed 9-22-64.

789,451. CLOSET VALET. Smith-Lerner Industries, Inc. SN 204,299. Pub. 2-23-65. Filed 10-19-64.

789,452. MR. BONES. Superior Plastics Inc. SN 204,418. Pub. 2-23-65. Filed 10-20-64.

789,453. EYE-STOPPER. The Hopp Press, Inc. SN 204,473. Pub. 2-23-65. Filed 10-21-64.

Class 51 — Cosmetics and Toilet Preparations

789,454. FLORAL DESIGN. Johann Maria Farina, Inc., assignee of Johann Maria Farina Gegenuber dem Julichs-Platz. SN 137,237. Pub. 2-23-65. Filed 2-5-62.

789,455. GLISSANDO. Richard Hudnut. SN 182,620. Pub. 2-23-65. Filed 12-9-63.

789,456. JOANETTE. Borun Bros., d.b.a. Joanette Parfumerie. SN 183,664. Pub. 2-23-65. Filed 12-27-63.

789,457. BEAUTY BRIEFS. Viviane Woodard Corporation. SN 185,177. Pub. 2-23-65. Filed 1-22-64.

789,458. BLUE CARNATION. Roger & Gallet, S.A. SN 187,435. Pub. 2-23-65. Filed 2-25-64.

789,459. RINSEDENT. Edward P. Cressler, d.b.a. Cressler Products Company. SN 188,203. Pub. 2-23-65. Filed 3-9-64.

789,460. GOLD 'N JADE. Countess Laboratories, Inc. SN 191,512. Pub. 2-23-65. Filed 4-20-64.

789,461. INSTANT BEAUTY. Chas. Pfizer & Co., Inc. SN 193,208. Pub. 2-23-65. Filed 5-11-64.

789,462. ONDINETTE. Suzanne Thierry Parfums, Inc. SN 193,907. Pub. 2-23-65. Filed 5-20-64.

789,463. GLOVELY. Louis Bender, d.b.a. Elbee Co. SN 193,921. Pub. 2-23-65. Filed 5-21-64.

789,464. NEGASOL. Lydia O'Leary, Inc. SN 194,197. Pub. 2-23-65. Filed 5-25-64.

789,465. SINGING IN THE RAIN. H. Goodman & Sons, Inc. SN 194,881. Pub. 2-23-65. Filed 6-4-64.

789,466. CHEETAH. Finn Birger Christensen. SN 194,976. Pub. 2-23-65. Filed 6-5-64.

789,467. DEORMED. The Purdue Frederick Company. SN 195,448. Pub. 2-23-65. Filed 6-11-64.

789,468. 4-A. Avon Products, Inc. SN 198,702. Pub. 2-23-65. Filed 7-29-64.

789,469. IV-A. Avon Products, Inc. SN 198,703. Pub. 2-23-65. Filed 7-29-64.

Class 52 — Detergents and Soaps

789,265. (See Class 4 for this trademark.)

789,470. SAFETY-VU. Speco, Inc. SN 177,558. Pub. 2-23-65. Filed 9-23-63.

789,471. OCTAGON. Colgate-Palmolive Company. SN 183,963. Pub. 2-23-65. Filed 1-3-64.

789,472. S-P-D-E NO. 33. Birko Chemical Corporation. SN 191,120. Pub. 2-23-65. Filed 4-15-64.

789,473. MT5. Jack L. Lieberman, d.b.a. J. Lewis Beauty Supply Co. SN 192,408. Pub. 2-23-65. Filed 4-30-64.

789,474. CESCO INC. AND DESIGN. Chemical Cleaning & Equipment Service, Inc. SN 192,893. Pub. 2-23-65. Filed 5-7-64.

789,475. CUSTOM TONE. Samuel Bonat & Bro., Inc. SN 195,506. Pub. 2-23-65. Filed 6-12-64.

789,476. LADY BROOKE. Cameo, Inc. SN 196,348. Pub. 2-23-65. Filed 6-24-64.

789,477. ALCOLAB. Alconox, Inc. SN 197,807. Pub. 2-23-65. Filed 7-14-64.

789,478. M-E-2. United Chemicals, Inc. SN 198,248. Pub. 2-23-65. Filed 7-20-64.

789,479. NU SPARKLE. Coastal Chemical Company, Incorporated. SN 198,332. Pub. 2-23-65. Filed 7-22-64.

789,480. GOLD BRICK. John H. Breck, Inc. SN 199,014. Pub. 2-23-65. Filed 8-3-64.

789,481. SIR JOHN. C-Z Chemical Co., Inc. SN 199,024. Pub. 2-23-65. Filed 8-3-64.

Service Marks

Class 100 — Miscellaneous

789,482. CAPS ETC. AND DESIGN. ITT Cannon Electric Inc., assignee of Cannon Electric Company. SN 159,203. Pub. 2-23-65. Filed 12-17-62.

789,483. GUARD YOUR CREDIT AS A SACRED TRUST ETC. AND DESIGN. International Consumer Credit Association. SN 172,591. Pub. 2-23-65. Filed 7-8-63.

789,484. INTERNATIONAL CONSUMER CREDIT ASSN. ETC. AND DESIGN. International Consumer Credit Association. SN 172,592. Pub. 2-23-65. Filed 7-8-63.

789,485. IITRI. IIT Research Institute. SN 188,364. Pub. 12-8-64. Filed 3-10-64.

789,486. ARF. A.R.F. Products, Inc. SN 194,560. Pub. 2-23-65. Filed 6-1-64.

Class 101 — Advertising and Business

789,487. B-MEN ETC. AND DESIGN. Badger Bearing Company. SN 153,240. Pub. 2-23-65. Filed 9-13-62.

789,488. STIVERS LIFESAVERS ETC. AND DESIGN. Stivers Office Service. SN 167,769. Pub. 2-23-65. Filed 4-29-63.

789,489. PANORAMA FOR PROGRESS AND DESIGN. American Apparel Manufacturers Association, Inc. SN 170,152. Pub. 2-23-65. Filed 6-3-63.

789,490. PM AND DESIGN. Promotion Management Inc. SN 170,491. Pub. 2-23-65. Filed 6-6-63.

789,491. A AND DESIGN. Monroe International, Inc., assignee of Tel-Atlas, Inc. SN 179,477. Pub. 2-23-65. Filed 10-21-63.

789,492. WOODWARD & LOTHROP. Woodward & Lothrop, Incorporated. SN 180,347. Pub. 2-23-65. Filed 11-1-63.

789,493. PK AND DESIGN. Poster Products, Inc. SN 185,932. Pub. 2-23-65. Filed 2-3-64.

789,494. IASI SHOW. International Automotive Service Industries Show (joint venture). SN 189,199. Pub. 2-23-65. Filed 3-20-64.

789,495. LADY BALTIMORE AND DESIGN. Lady Baltimore Office Services, Inc. SN 189,903. Pub. 2-23-65. Filed 3-30-64.

Class 102 — Insurance and Financial

789,496. ON. The Ohio National Life Insurance Company. SN 178,474. Pub. 2-23-65. Filed 10-7-63.

789,497. GAINS AND DESIGN. Great American Insurance Company. SN 189,289. Pub. 2-23-65. Filed 3-23-64.

Class 103 — Construction and Repair

789,498. SANFIX. Halliburton Company. SN 170,061. Pub. 2-23-65. Filed 5-31-63.

789,499. VALUE CENTER ETC. AND DESIGN. James Adam Stewart Co. SN 190,660. Pub. 2-23-65. Filed 4-8-64.

Class 107 — Education and Entertainment

789,500. UNITED STATES COMBINED TRAINING ASSOCIATION AND DESIGN. United States Combined Training Association. SN 166,330. COLLECTIVE MARK. Pub. 2-23-65. Filed 4-8-63.

789,501. "BLACKOUTS." Claster Enterprises, Inc. SN 172,154. Pub. 2-23-65. Filed 7-1-63.

789,502. PINE CREST. Pine Crest Preparatory School, Inc. SN 182,891. Pub. 2-23-65. Filed 12-12-63.

789,503. PINE CREST ETC. AND DESIGN. Pine Crest Preparatory School, Inc. SN 182,892. Pub. 2-23-65. Filed 12-12-63.

789,504. BUSINESS TODAY. The Pulitzer Publishing Company, d.b.a. Radio Station KSD. SN 189,937. Pub. 2-23-65. Filed 3-30-64.

789,505. ECHOES OF ITALY. Nino Bellassai. SN 191,113. Pub. 2-23-65. Filed 4-15-64.

789,506. ESCUTCHEON (DESIGN). United States Olympic Association, d.b.a. the United States Olympic Committee. SN 192,535. Pub. 2-23-65. Filed 5-1-64.

789,507. DAREDEVIL HALL OF FAME. Niagara Falls Museum Limited. SN 195,132. Pub. 2-23-65. Filed 6-8-64.

Collective Membership Marks

Class 200

789,508. PICTURE OF TWO DOGS. National Capital Field Trial Club Inc. SN 153,195. Pub. 2-23-65. Filed 9-14-62.

789,509. DELTA COLLEGE 1961 AND DESIGN. The Trustees of Delta College. SN 178,836. Pub. 2-23-65. Filed 10-11-63.

789,510. AIPG ETC. AND DESIGN. American Institute of Professional Geologists. SN 192,253. Pub. 2-23-65. Filed 4-29-64.

789,511. NADA ETC. AND DESIGN. National Automobile Dealers Association. SN 194,064. Pub. 2-23-65. Filed 5-22-64.

789,512. ALPHA DELTA THETA. Alpha Delta Theta. SN 198,804. Pub. 2-23-65. Filed 7-30-64.

789,513. ALPHA DELTA THETA AND DESIGN. Alpha Delta Theta. SN 198,806. Pub. 2-23-65. Filed 7-30-64.

Certification Marks

Class A — Goods

789,514. DORTMUNDER. Verband Dortmunder Bierbrauer. SN 144,217. Pub. 2-23-65. Filed 4-24-62.

789,515. U.S. RICE INCORPORATED AND DESIGN. U.S. Rice Export Development Association. SN 165,556. Pub. 2-16-65. Filed 3-8-63.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 32 — Furniture and Upholstery

789,516. Frank Tommasini, Malverne, N.Y. SN 139,444. Filed P.R. 3-8-62; Am. S.R. 3-16-65.

CUSTOMCRAFT

For Kitchen Cabinets.
First use Jan 1, 1962.

789,517. Sure-Fit Products Company, Bethlehem, Pa. SN 177,730. Filed 3-19-65.

KANTSLIP

For Ready Made Slip Covers for Upholstered Furniture, Upholstery-Coveralls, Upholstery Throws and Floor-Throws.
First use Aug. 12, 1963.

789,518. Texstar Plastics, Grand Prairie, Tex. SN 188,301. Filed P.R. 3-6-64; Am. S.R. 3-12-65.

Floor Show

For Transparent Chair Mats.
First use Feb. 24, 1964.

Class 39 — Clothing

789,519. Dormeuil Freres Societe Anonyme, Paris, France. SN 170,013. Filed P.R. 5-27-63; Am. S.R. 5-7-64.

DORMEUIL

Owner of French Reg. No. 445,158, dated July 29, 1954 (Paris); Natl. Inst. No. 40,797.

For Suits, Trousers, Coats for Men, Women, and Children, Costumes, Skirts and Dresses All for Women and Children.

Class 50 — Merchandise Not Otherwise Classified

789,520. Airline Textile Mfg. Co., Des Moines, Iowa. SN 164,105. Filed P.R. 3-7-63; Am. S.R. 12-30-64.

Bikini Kit

For Kit, Comprising a Beach Bag Filled With a Swim Suit and Sunglasses.
First use Jan. 3, 1963.

TRADEMARK REGISTRATIONS RENEWED

25,989. BULL'S HEAD. Cl. 46. 2-5-1895.
26,342. NIAGARA. Cl. 26. 4-2-1895.
26,355. BULL'S HEAD AND DESIGN. Cl. 46. 4-9-1895.
44,639. CALUMET AND DESIGN. Cl. 46. 7-18-05.
45,039. DE WITT'S CARBOLIZED WITCH HAZEL SALVE. Cl. 18. 8-1-05.
45,170. MAN ZAN. Cl. 18. 8-8-05.
45,281. DE WITT'S LITTLE EARLY RISERS AND DESIGN. Cl. 18. 8-8-05.
45,473. KODOL. Cl. 18. 8-22-05.
195,437. PURE GOLD AND DESIGN. Cl. 46. 2-24-25.
195,475. HIS MASTER'S VOICE AND DESIGN. Cl. 21. 2-24-25.
195,749. GARTSIDE'S IRON RUST SOAP AND DESIGN. Cl. 52. 3-3-25.
196,387. ABADIE. Cl. 8. 3-17-25.
196,428. LIN-TEX AND DESIGN. Cl. 26. 3-17-25.
196,455. NATIONAL. Cl. 21. 3-17-25.
196,514. SILVERTIP. Cl. 21. 3-17-25.
196,744. UNITAL. Cl. 52. 3-24-25.
196,862. KOLDSUDS. Cl. 52. 3-31-25.
196,920. OPAL. Cl. 42. 3-31-25.
197,673. FAIRWAY. Cl. 46. [illegible]-21-25.
197,934. RED BALL BRAND AND DESIGN. Cl. 46. 4-28-25.
199,157. H AND DESIGN. Cl. 2. 6-2-25.
199,908. XPERT. Cl. [illegible] 6-23-25.
200,014. LADY BALTIMORE. Cl. 42. 6-23-25.
202,791. FANCIFUL FIGURE MADE FROM NUTS, SCREWS, BOLTS, ETC. Cl. 13. 9-1-25.
410,552. RED CREST. Cl. 18. 12-5-44.
411,152. MERLON. Cl. 1. 1-2-45.
411,187. TANNOY. Cl. 21. 1-9-45.
411,257. AKIMBO. Cl. 51. 1-9-45.
411,427. HAPPI-TIME AND DESIGN. Cl. 22. 1-16-45.
412,563. PENETRAY AND DESIGN. Cl. 21. 3-13-45.
412,701. DURO TEST. Cl. 21. 3-20-45.
412,731. PORILOFF. Cl. 46. 3-20-45.
412,777. NO 125. Cl. 45. 3-27-45.
412,932. UNION. Cl. 46. 4-3-45.
412,938. O-S. Cl. 52. 4-3-45.
412,968. M AND DESIGN. Cl. 2. 4-3-45.
412,987. CYMA. Cl. 27. 4-3-45.
413,020. SLYDE AND DESIGN. Cl. 51. 4-3-45.
413,026. NORM. Cl. 52. 4-3-45.
413,571. ALCO-BOR. Cl. 18. 5-1-45.
413,679. MICRO-GROUND. Cl. 40. 5-8-45.
413,692. EAGLE. Cl. 40. 5-8-45.
413,784. ELCO "22" GEAR SAFETY AND DESIGN. Cl. 15. 5-15-45.
413,792. GEAR SAFETY NO. 26 ELCO. Cl. 15. 5-15-45.
414,291. CAMLOC AND DESIGN. Cl. 23. 6-5-45.
414,334. VAN-SAL AND DESIGN. Cl. 46. 6-5-45.
414,468. ALACAN. Cl. 15. 6-12-45.
414,469. APASOL. Cl. 6. 6-12-45.
414,470. ORATOL. Cl. 6. 6-12-45.
414,471. SELLOGEN. Cl. 6. 6-12-45.
415,227. TEMPOGRAPH. Cl. 27. 7-31-45.
415,476. LUSTRE-CREME. Cl. 52. 7-7-45.
415,656. DURIDINE. Cl. 15. 8-14-45.
415,785. MARINE EXT. D.F.P.A. Cl. 12. 8-14-45.
415,916. EDRISAL. Cl. 18. 8-21-45.
415,946. MATCH MAKER COLORS. Cl. 16. 8-21-45.
415,991. MERCURY. Cl. 26. 8-21-45.
415,994. TRUVAL. Cl. 39. 8-21-45.
416,304. WELLA END-GRIPS. Cl. 40. 9-4-45.
416,409. HELIOS. Cl. 26. 9-11-45.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Mar. 24, 1959

675,774. KRISP KOOLED. Cl. 2.
675,762. REDI-SET. Cl. 1.
675,777. RAYMOND'S AND DESIGN. Cl. 2.
675,779. VACOOLER. Cl. 2.
675,782. LUMEX. Cl. 4.
675,790. WM WILSON MARTIN AND DESIGN. Cl. 6.
675,791. RICOLIT. Cl. 6.
675,793. ELECTROTOUCH. Cl. 6.
675,797. LEPAGES'. Cl. 6.
675,798. TERRAFLOR. Cl. 6.
675,799. MACROBASEAROMES. Cl. 6.
675,800. MACROBASE. Cl. 6.
675,802. CHLOROBLOC. Cl. 6.
675,807. ALURIT. Cl. 6.
675,813. SANTOCOOL. Cl. 6.
675,818. PETTI-STIFF. Cl. 6.
675,828. CLO-SOFT. Cl. 6.
675,832. VIMAR. Cl. 6.
675,835. STALKYD. Cl. 6.
675,842. JB. Cl. 6.
675,845. DAYLON. Cl. 7.

675,846. NYBRED. Cl. 7.
675,854. AMERIDOR. Cl. 12.
675,855. DB DAVID BRADLEY. Cl. 12.
675,860. CLARITONE. Cl. 12.
675,865. VETERAN. Cl. 13.
675,874. NUT-EZE. Cl. 15.
675,883. AD-VIS. Cl. 16.
675,890. FLO-RATION. Cl. 18.
675,894. CONTROL 24. Cl. 18.
675,907. HEALTHBANK. Cl. 18.
675,911. VITAPOPS. Cl. 18.
675,912. GASTROBAMAT. Cl. 18.
675,914. VIT-O-ZEST. Cl. 18.
675,915. PAS-TEBAMIN. Cl. 18.
675,916. DEXAPRO. Cl. 18.
675,917. MUTRANUL. Cl. 18.
675,922. GASTRIPON. Cl. 18.
675,923. GLYDONN. Cl. 18.
675,924. CINAPATE. Cl. 18.
675,925. MYOFERRIN. Cl. 18.
675,929. MASOGIN. Cl. 18.
675,930. NEUROSTERON. Cl. 18.
675,934. MISSILE-TOW. Cl. 19.
675,937. WIZARD. Cl. 19.
675,943. CIRCUS-TIME. Cl. 22.
675,946. RED-HED. Cl. 22.
675,953. NORA. Cl. 23.
675,957. LANCO LIKWIFIER. Cl. 23.
675,967. KUT-IT. Cl. 23.
675,972. FLYING SCOTT. Cl. 23.
675,973. STELLAR AND DESIGN. Cl. 23.
675,974. SEA GULL. Cl. 23.
675,991. RALEIGH. Cl. 27.
675,993. CHARLES DENNING. Cl. 27.
675,997. POCKA-CHIEF. Cl. 28.
675,998. POCKA-CHIEF HOLDER. Cl. 28.
675,999. SUNGLO. Cl. 28.
676,000. RING O'DEVOTION. Cl. 28.
676,003. BOYVILLE. Cl. 28.
676,006. SAUTEUR. Cl. 28.
676,008. MISTER PICKWICK AND DESIGN. Cl. 28.
676,014. PATRICIAN. Cl. 32.
676,015. PORT-A-RACK. Cl. 32.
676,020. WEATHERPUMP. Cl. 34.
676,024. RILFLEX. Cl. 35.
676,025. LEONEX. Cl. 35.
676,034. DP (DESIGN). Cl. 37.
676,037. THE WOOD-WORKER AND VENEERS AND PLYWOOD. Cl. 38.
676,042. THE HOUSE OF BOUFFANTS GABRIELLE. Cl. 39.
676,046. SUN-SPOTS. Cl. 39.
676,059. RESINOVA. Cl. 42.
676,062. PIMANETTE. Cl. 42.
676,064. DIACOUSTIC FABRICS. Cl. 42.
676,066. JOHNSON'S. Cl. 44.
676,072. TRIMOBILE. Cl. 44.
676,077. SUMMA LAETITIA M AND DESIGN. Cl. 46.
676,085. CITRAFOS. Cl. 46.
676,091. MOUNTAIN RIDGE. Cl. 46.
676,095. FORVITAN. Cl. 46.
676,096. BLYTHE MESA. Cl. 46.
676,098. MAN RIDING UNICYCLE AND PECO. Cl. 46.
676,119. OUTLINE OF INSTRUMENT OF ERATOSTHENES ENCLOSING AIRPLANE. Cl. 100.
676,122. RECTANGULAR SPECTRUM-LIKE DESIGN. Cl. 101.
676,126. LEECO SYSTEM. Cl. 102.
676,128. Y WITHIN A CIRCLE. Cl. 103.
676,133. CAT. Cl. 105.
676,137. TELL THE WORLD. Cl. 107.
676,140. THEATER TRAINS AND PLANES WITH DESIGN. Cl. 107.
676,143. TESTED AND APPROVED FOR GOOD VALUE ETC. AND DESIGN. Cl. A.
676,153. GOLD FROSTED. Cl. 51.

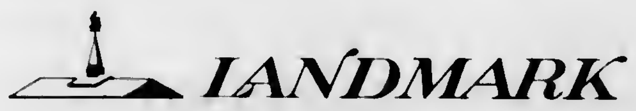
Section 18

413,504. KING AND DESIGN. Cl. 3. 4–24–45.
416,732. E-RAT-I-CATOR. Cl. 6. 9–25–45.
433,418. PREEN. Cl. 4. 10–14–47.
435,589. WESTERN SKIING. Cl. 38. 12–30–47.
438,363. METALLOY. Cl. 50. 4–13–48.
504,382. KING IN CROWN (DESIGN). Cl. 3. 11–30–48.
752,118. STOMIL. Cl. 35. 7–2–63.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

199,303. SLIMFIT. Cl. 39. 6–9–25. B. Altman & Co., New York, N.Y. Amended: In the statement, column 1, lines 10 and 11, "combining skirt, corset cover, and" is deleted and *namely*, is inserted.

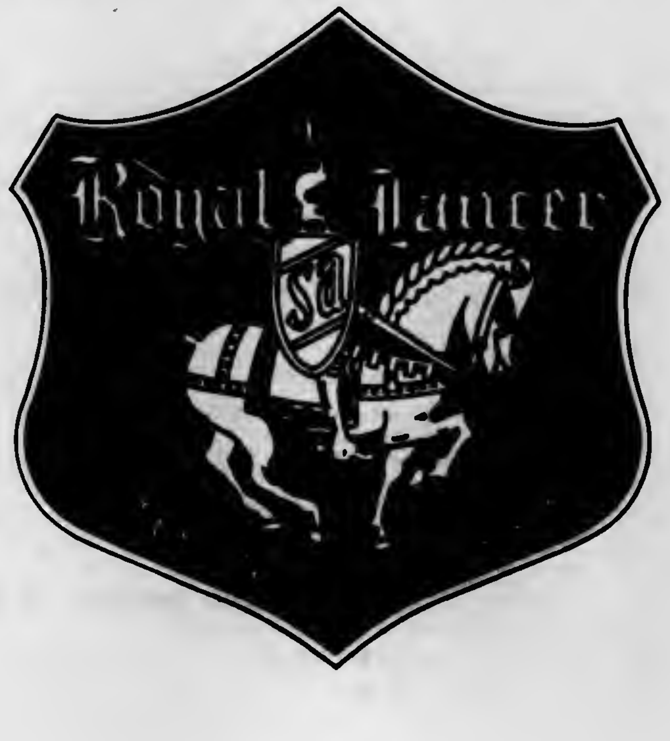
679,637. LANDMARK AND DESIGN. Cl. 38. 6–2–59. Howard D. Johnson Company, Wollaston, Mass. Amended to appear:



680,625. 6·12 AND DESIGN. Cl. 6. 6–23–59. Union Carbide Corporation, New York, N.Y. Amended to appear:

6·12

686,900. ROYAL LANCER STERLING SILVER AND DESIGN. Cl. 33. 10–20–59. Distinguished Gift Manufacturers, Inc., Waterloo, Iowa. Amended to appear:



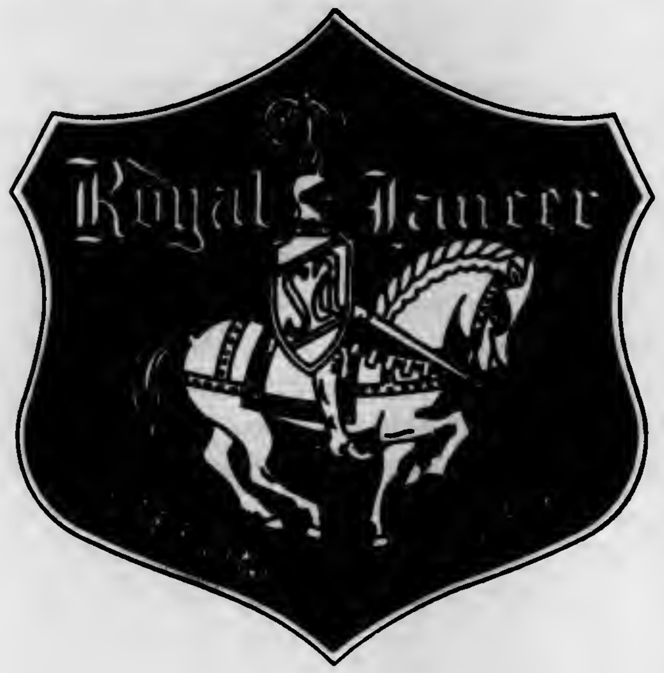
687,746. VACSAC. Cl. 2. 11–10–59. U.S. Industrial Dust Bag Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "U.S. Dust Bag Corp." should be deleted and *U.S. Industrial Dust Bag Inc.* should be inserted.

691,493. VARCO. Cl. 12. 1–19–60. R. G. Varner Steel Products, Inc., Varco Steel, Inc., Pine Bluff, Ark. Amended: In the statement, column 1, line 1, after "Inc.", *now by change of name Varco Steel, Inc.* is inserted.

693,500. BARROWS. Cl. 28. 2–23–60. H. F. Barrows Co., North Attleboro, Mass. Amended to appear:

BARROWS

696,054. ROYAL LANCER STERLING SILVER AND DESIGN. Cl. 28. 4–12–60. Distinguished Gift Manufacturers, Inc., Waterloo, Iowa. Amended to appear:



733,315. LEPTOSPIROL. Cl. 18. 6–26–62. Cutter Laboratories, Inc., Berkeley, Calif. Corrected: In the statement, column 1, line 1, after "Laboratories", *Inc.* should be inserted.

745,961. EYE TRIM AND DESIGN. Cl. 51. 2–26–63. Elizabeth Kent Cosmetics, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, after "Kent" *Cosmetics* should be inserted.

753,347. "QUIKSERT." Cl. 37. 7–23–63. The J. C. Hall Company, Pawtucket, R.I. Corrected: In the statement, column 1, line 1, "Co., Inc." should be deleted and *Company* should be inserted.

778,198. BLUE STAR AND DESIGN. Cl. 37. 10–6–64. Roy J. Tillotson, doing business as Old Town Stamp Shop, Roy J. Tillotson, doing business as Blue Star, Batavia, N.Y. Amended: In the statement, column 1, line 1, "Old Town Stamp Shop" is deleted and *Blue Star* is inserted.

779,422. PUSH-PULLER. Cl. 28. 11–3–64. Owatonna Tool Company, Owatonna, Minn. Corrected: In the statement, column 2, line 5, "Mar. 2, 1964" both occurrences, should be deleted and *in the year 1940* should be inserted.

785,836. GLASSTRAN. Cl. 18. 3–2–65. The F. E. Myers & Bro. Co., Ashland, Ohio. Corrected: In the statement, column 2, line 2, "1960" should be deleted and *1964* should be inserted.

786,564. FOUR-TIE. Cl. 21. 3–9–65. Channel Master Corporation, Ellenville, N.Y. Corrected: In the heading, "Principal" should be deleted and *Supplemental* should be inserted.

786,594. DISPLAY CORPORATION OF AMERICA. Cl. 101. 3–9–65. Display Corporation of America, Philadelphia, Pa. Corrected: In the heading, "Principal" should be deleted and *Supplemental* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

568,776. DERI-DEL. Cl. 45. Kathryn C. Spielmann, assignor to Deri-del Inc. 1–6–53. New Cert. Sec. 7(c) to Deri-Del of Md., Inc., Clearbrook, Va.

653,868. SURPRIZE. Cl. 56. The Battle Creek Food Company. 10–29–57. New Cert. Sec. 7(c) to The Pillsbury Company, Minneapolis, Minn.

768,937. SNAPWRAP. Cl. 2. Spur Prints, Inc. 5–5–64. New Cert. Sec. 7(c) to Mercer & Stephens Advertising, Inc., Fort Worth, Tex.

774,715. KEM-KLEEN. Cl. 52. The Chemical Cleaning Products Company. 8–4–64. New Cert. Sec. 7(c) to Kem Kleen Inc., Washington, D.C.

778,740. NSKK. Cl. 23. Nippon Seiko Kabushiki Kaisha. 10–20–64. New Cert. Sec. 7(c) to Nippon Seiko Bearing Company, Laurence Harbor, N.J.

INDEX OF REGISTRANTS

MAY 11, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A.R.F. Products, Inc., Raton, N. Mex. 789,486, pub. 2–23–65. Cl. 100.
A and S Co., Chicago, Ill. 413,571, ren. 5–11–65. Cl. 18.
Accurate Systems, Inc., Costa Mesa, Calif. 789,333, pub. 2–23–65. Cl. 22.
Airline Foods Corp., Westfield, N.Y. 789,397, pub. 2–23–65. Cl. 46.
Airline Textile Mfg. Co., Des Moines, Iowa. 789,520. Cl. 50.
Aktiebolaget Astra, Apotekarnes Kemiska Fabriker, Sodertalje, Sweden. 789,320, pub. 2–23–65. Cl. 18.
Alconox, Inc., New York, N.Y. 789,477, pub. 2–23–65. Cl. 52.
Alpha Delta Theta, Milwaukee, Wis. 789,512–13, pub. 2–23–65. Cl. 200.
Altman, B., & Co., New York, N.Y. 199,303. Am. 7(d). Cl. 39.
Amchem Products, Inc. : *See—*
  American Chemical Paint Co.
American Apparel Manufacturers Association, Inc., Washington, D.C. 789,489, pub. 2–23–65. Cl. 101.
American Bakeries Co., Chicago, Ill. 789,403, pub. 2–23–65. Cl. 46.
American Chemical Paint Co., to Amchem Products, Inc., Ambler, Pa. 415,656, ren. 5–11–65. Cl. 15.
American Cyanamid Co., Wayne, N.J. 789,315, pub. 2–23–65. Cl. 18.
American Cyanamid Co., Wayne, N.J. 789,321, pub. 2–23–65. Cl. 18.
American Hardware Supply Co., East Butler, Pa. 789,327, pub. 2–23–65. Cl. 21.
American Home Products Corp., New York, N.Y. 789,268, pub. 2–23–65. Cl. 6.
American Institute of Architects, The, Washington, D.C. 789,363, pub. 2–23–65. Cl. 37.
American Institute of Professional Geologists, Golden, Colo. 789,510, pub. 2–23–65. Cl. 200.
American Oil & Supply Co., Newark, N.J. 414,468, ren. 5–11–65. Cl. 15.
American Plywood Association : *See—*
  Douglas Fir Plywood Association.
American Publishing Corp., Waltham, Mass. 789,336, pub. 2–23–65. Cl. 22.
Ameridor Corp., Brooklyn, N.Y. 675,854, canc. Cl. 12.
Anco Food Products (1961) Inc., Montreal, Quebec, Canada. 789,422–4, pub. 2–23–65. Cl. 46.
Anderson, G. H., Co., San Juan Bautista, Calif. 789,436, pub. 2–23–65. Cl. 46.
An Drue Laboratories, Inc. : *See—*
  Babbitt, B. T., Inc.
Anne, Loehnert, Lyndhurst, N.J. 675,997–8, canc. Cl. 28.
Arkansas Valley Industries, Inc., Dardanelle, Ark. 789,384, pub. 2–16–65. Cl. 46.
Astra Trading Corp., New York, N.Y. 675,973, canc. Cl. 23.
Atlas Biscuit Corp., New York, N.Y. 789,395, pub. 2–23–65. Cl. 46.
Automatic Canteen Co. of America, Chicago, Ill. 789,418, pub. 2–23–65. Cl. 46.
Avon Products, Inc., New York, N.Y. 789,468–9, pub. 2–23–65. Cl. 51.
Babbitt. B. T., Inc., New York, N.Y., from An Drue Laboratories. Inc., Baltimore, Md. 675,911, canc. Cl. 18.
Badger Bearing Co., Milwaukee, Wis. 789,487, pub. 2–23–65. Cl. 101.
Baird-Atomic, Inc., Cambridge, Mass. 789,326, pub. 3–23–65. Cl. 21.
Baldwin-Hill Co., Trenton, N.J. 675,860, canc. Cl. 12.
Baltimore Liquor Co. : *See—*
  Montebello Liquors, Inc.
Bancroft, Joseph, & Sons Co., Wilmington, Del. 675,842, canc. Cl. 6.
Barnes Hind Laboratories, Sunnyvale, Calif. 789,323, pub. 2–23–65. Cl. 18.
Barney's Clothes, Inc., New York, N.Y. 789,374, pub. 2–5–63. Cl. 39.
Barrday Ltd., Galt, Ontario, Canada. 789,257, pub. 2–23–65. Cl. 1.
Barrows, H. F., Co., North Attleboro, Mass. 693,500. Am. 7(d). Cl. 28.
Bates. C. J., & Son, to C. J. Bates & Son, Inc., Chester, Conn. 413,679, ren. 5–11–65. Cl. 40.
Bates. C. J., & Son. Inc. : *See—*
  Bates, C. J., & Son.
Battle Creek Food Co., The, to The Pillsbury Co., Minneapolis, Minn. 653,868. new cert. Cl. 56.
Bayou State Oil Corp., Shreveport, La. 789,303, pub. 2–23–65. Cl. 15.
Bellassai, Nino, Norwalk, Conn. 789,505, pub. 2–23–65. Cl. 107.
Bender, Louis, d.b.a. Elbee Co., Westfield, N.J. 789,463, pub. 2–23–65. Cl. 51.
Berry Bros. & Rudd Ltd., London, England. 789,441, pub. 2–23–65. Cl. 49.
Best Feeds & Farm Supplies, Inc., Oakdale, Pa. 789,381, pub. 2–23–65. Cl. 46.
Best'O Distributors, Inc., d.b.a. Best'O Inc., Hollywood, Calif. 789,405, pub. 2–23–65. Cl. 46.
Best'O Inc. : *See—*
  Best'O Distributors, Inc.
Bibb Mfg. Co. : *See—*
  Miller, Daniel, Co.
Birko Chemical Corp., Denver, Colo. 789,472, pub. 2–23–65. Cl. 52.
Blue Star : *See—*
  Tillotson, Roy J.
Bonat, Samuel, & Bros., Inc., West Paterson, N.J. 789,475, pub. 2–23–65. Cl. 52.
Bookbinder's Restaurant, Inc., d.b.a. Old Original Bookbinder's, Philadelphia, Pa. 789,388, pub. 2–23–65. Cl. 46.
Borden Co., The : *See—*
  Columbus-Union Oil Cloth Co., The.
Borun Bros., d.b.a. Joanette Parfumerie, Los Angeles, Calif. 789,456, pub. 2–23–65. Cl. 51.
Bouchard, Mack, & Son, to Bouchard Potato Co., Inc., Caribou, Maine. 197,934, ren. 5–11–65. Cl. 46.
Bouchard Potato Co., Inc. : *See—*
  Bouchard, Mack, & Son.
Boyle & Co., Bell Gardens, Calif. 789,319, pub. 2–23–65. Cl. 18.
Breck, John H., Inc., Springfield, Mass. 789,480, pub. 2–23–65. Cl. 52.
Brett Lithographing Co., Long Island City, N.Y. 676,122, canc. Cl. 101.
Brimson Electric Co., Inc., Coral Gables, Fla. 675,974, canc. Cl. 23.
Bristol-Myers Corp., New York, N.Y., from Grove Laboratories Inc., St. Louis, Mo. 789,305, pub. 11–19–63. Cl. 18.
British Drug Houses, Ltd., The, London, England. 675,930, canc. Cl. 18.
Brooke Laboratories : *See—*
  Southwestern Drug Corp.
Buffalo Meter Co., to Buffalo Meter Co., Inc., Buffalo, N.Y. 26,342, ren. 5–11–65. Cl. 26.
Buffalo Meter Co., Inc. : *See—*
  Buffalo Meter Co.
Bush Bros., Olean, N.Y. 676,015, canc. Cl. 32.
C-Z Chemical Co., Inc., Beloit, Wis. 789,481, pub. 2–23–65. Cl. 52.
Calcades Corp., San Jose, Calif. 675,762, canc. Cl. 1.
California Aerosol Co., Los Angeles, Calif. 675,818, canc. Cl. 6.
California Canners and Growers, d.b.a. Richmond-Chase Co., San Francisco, Calif. 789,398, pub. 2–23–65. Cl. 46.
Caltex Distributors, Inc., Los Angeles, Calif. 675,916, canc. Cl. 18.
Calumet Baking Powder Co., Chicago, Ill., to General Foods Corp., White Plains, N.Y. 44,639. ren. 5–11–65. Cl. 46.
Cameo, Inc., Toledo, Ohio. 789,476, pub. 2–23–65. Cl. 52.
Camloc Fastener Corp., New York, N.Y. 414,291, ren. 5–11–65. Cl. 23.
Cannon Electric Co. : *See—*
  Itt Cannon Electric Inc.
Capco Chemical Corp., Providence, R.I. 675,798, canc. Cl. 6.
Carlisle Chemical Works, Inc., Reading, Ohio. 675,883, canc. Cl. 16.
Carlson, Dean W., d.b.a. Terry Lee Products, St. Paul, Minn. 789,414, pub. 2–23–65. Cl. 46.
Carnation Co., Los Angeles, Calif. 789,439, pub. 2–23–65. Cl. 46.
Carrier Corp., Syracuse, N.Y. 676,020, canc. Cl. 34.
Carus Chemical Co., Inc., La Salle, Ill. 789,267, pub. 2–23–65. Cl. 6.
Center For The Gifted Child, Inc., San Francisco, Calif. 789,329, pub. 2–23–65. Cl. 22.
Channel Master Corp., Ellenville, N.Y. 786,564, cor. Cl. 21.
Charles of the Ritz, Inc., to Lanvin-Charles of the Ritz, Inc., New York, N.Y. 411,257, ren. 5–11–65. Cl. 51.
Checkmate Chemicals, Inc., Greenville, S.C. 789,272–3, pub. 2–23–65. Cl. 6.
Chemical Cleaning & Equipment Service, Inc., Maplewood, La. 789,474, pub. 2–23–65. Cl. 52.
Chemical Cleaning Products Co., The, to Kem Kleen Inc., Washington, D.C. 774,715, new cert. Cl. 52.
Cherokee Products Co., Haddock, Ga. 789,419, pub. 2–23–65. Cl. 46.
Chicago Pharmacal Co., Chicago. Ill. 675,917, canc. Cl. 18.
Choumas, James, d.b.a. J.C. Produce Co., Los Angeles, Calif. 676,096, canc. Cl. 46.
Christensen, Finn B., Copenhagen, Denmark. 789,466, pub. 2–23–65. Cl. 51.
Chunky Corp., The, Brooklyn, N.Y. 789,413, pub. 2–23–65. Cl. 46.
Cincinnati Varnish Co., Inc., The, to Foy-Johnston, Inc., Cincinnati, Ohio. 415,946, ren. 5–11–65. Cl. 16.
Claster Enterprises, Inc., Baltimore, Md. 789,501, pub. 2–23–65. Cl. 107.
Coastal Chemical Co., Inc., Savannah, Ga. 789,479, pub. 2–23–65. Cl. 52.
Coca-Cola Co., The, Atlanta, Ga. 789,401, pub. 2–23–65. Cl. 46.
Colgate-Palmolive Co. : *See—*
  Daumitt, Kay.
Colgate-Palmolive Co., New York, N.Y. 789,471, pub. 2–23–65. Cl. 52.
Colman, J. & J., London, to Reckitt & Colman (Overseas), Ltd., Hull, England. 25,989, ren. 5–11–65. Cl. 46.

Colonial Stores, Inc., Norfolk, Va. 789,379, pub. 2–23–65. Cl. 45.
Columbus-Union Oil Cloth Co., The, Columbus, Ohio, to The Borden Co., New York, N.Y. 196,428, ren. 5–11–65. Cl. 20.
Conn, C. G., Ltd., Elkhart, Ind. 789,371, pub. 2–23–65. Cl. 38.
Continental Distilling Corp., Philadelphia, Pa. 789,443, pub. 2–23–65. Cl. 49.
Continental Distilling Corp., d.b.a. Inver House Distillers, Ltd., Philadelphia, Pa. 789,444, pub. 2–23–65. Cl. 49.
Corning Glass Works, Corning, N.Y. 789,253, pub. 2–23–65. Cl. 1.
Corporate Air Transport, Inc., Flushing, N.Y. 676,133, canc. Cl. 105.
Cortland Industries, Inc., Cortland, N.Y. 789,346, pub. 2–23–65. Cl. 22.
Cotnam, Truman P., d.b.a. Kil-Balm Co., Butler, Wis. 789,278, pub. 2–23–65. Cl. 6.
Countess Laboratories, Inc., Long Beach, Calif. 789,460, pub. 2–23–65. Cl. 51.
Cowan, Harrison J., d.b.a. Personal Luxuries Co., to Personal Luxuries, Inc., New York, N.Y. 413,026, ren. 5–11–65. Cl. 52.
Cressler, Edward P., d.b.a. Cressler Products Co., Newton, Kans. 789,459, pub. 2–23–65. Cl. 51.
Cressler Products Co.: *See—*
Cressler, Edward P.
Crisloid Plastics, Inc., Providence, R.I. 789,338, pub. 2–23–65. Cl. 22.
Crookes Laboratories Ltd., The, London, England. 675,925, canc. Cl. 18.
C-Tex Carter Co., Denver, Colo. 789,308, pub. 2–23–65. Cl. 18.
Cutter Laboratories, Inc., Berkeley, Calif. 733,315, cor. Cl. 18.
Cwi, Leon, d.b.a. Laboratory Products Co., Chicago, Ill. 675,914, canc. Cl. 18.
Dankener, Henry, & Sons Jewelry Mfg. Co., Inc., New York, N.Y. 789,360, pub. 1–15–63. Cl. 28.
Dannelly, Henry K., and James I. Gillespie, d.b.a. Diamond Drill & Pin Co., Dallas, Tex. 789,297, pub. 3–3–64. Cl. 13.
Data Products Inc., The, Hartford, Conn. 676,034, canc. Cl. 37.
Daumitt, Kay, Chicago, Ill., to Colgate-Palmolive Co., New York, N.Y. 415,476, ren. 5–11–65. Cl. 52.
Dayton Rubber Co., The, Dayton, Ohio. 675,845–6, canc. Cl. 7.
Dayton Tire & Rubber Co., The, Akron, Ohio. 789,258, pub. 2–23–65. Cl. 1.
Dazian's, Inc., New York, N.Y. 676,064, canc. Cl. 42.
Denning, Charles, Ltd., Sag Harbor, N.Y. 675,998, canc. Cl. 27.
Derby Foods, Inc., Chicago, Ill. 789,427, pub. 2–23–65. Cl. 46.
Deri-del Inc.: *See—*
Spielmann, Kathryn C.
Deri-Del of Md., Inc.: *See—*
Spielmann, Kathryn C.
Dermik Pharmacal Co., Inc., Syosset, N.Y. 789,311, pub. 2–23–65. Cl. 18.
Des Moines Wholesale Grocer Co., Des Moines, Iowa, to Fairway Foods, Inc., St. Paul, Minn. 197,673, ren. 5–11–65. Cl. 46.
De Witt, E. C., & Co., to E. C. De Witt & Co., Inc., Chicago, Ill. 45,039, ren. 5–11–65. Cl. 18.
De Witt, E. C., & Co., to E. C. De Witt & Co., Inc., Chicago, Ill. 45,281, ren. 5–11–65. Cl. 18.
De Witt, E. C., & Co., to E. C. De Witt & Co., Inc., Chicago, Ill. 45,478, ren. 5–11–65 Cl. 18.
De Witt, E. C., & Co., Inc.: *See—*
De Witt, E. C., & Co.
Pineule Medicine Co.
Diamond Drill & Pin Co.: *See—*
Dannelly, Henry K., and James I. Gillespie.
Dirigo Sales Corp., Boston, Mass. 789,391, pub. 2–23–65. Cl. 46.
Display Corp. of America, Philadelphia, Pa. 786,594, cor. Cl. 101.
Distinguished Gift Manufacturers, Inc., Waterloo, Iowa. 686,900. Am. 7(d). Cl. 33.
Distinguished Gift Manufacturers, Inc., Waterloo, Iowa. 696,054. Am. 7(d). Cl. 28.
Diversey Corp., The, Chicago, Ill. 789,269, pub. 2–23–65. Cl. 6.
Dormeuil Freres Societe Anonyme, Paris, France. 789,519. Cl. 39.
Douglas Fir Plywood Association, to American Plywood Association, Tacoma, Wash. 415,785, ren. 5–11–65. Cl. 12.
Drackett Co., The, Cincinnati, Ohio. 789,279, pub. 2–23–65. Cl. 6.
Drug Guild Co-Operative, Inc., Brooklyn, N.Y. 789,317, pub. 2–23–65. Cl. 18.
Dubuque Packing Co., Dubuque, Iowa. 789,430, pub. 2–23–65. Cl. 46.
Dulany Foods, Inc., Fruitland, Md. 789,404, pub. 2–23–65. Cl. 46.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 789,262, pub. 2–23–65. Cl. 1.
Duro-Test Corp., North Bergen, N.J. 412,701, ren. 5–11–65. Cl. 21.
Egyesuelt Gyogyaser es Tapaszergyar, Budapest, Hungary. 675,912, canc. Cl. 18.
Egyesuelt Gyogyaser es Tapaszergyar, Budapest, Hungary. 675,922, canc. Cl. 18.
Elbee Co.: *See—*
Bender, Louis.
Elco Corp., The: *See—*
Elco Grease and Oil Co., The.
Elco Lubricant Corp., The.
Elco Grease and Oil Co., The, to The Elco Corp., Cleveland, Ohio. 413,784, ren. 5–11–65. Cl. 15.
Elco Lubricant Corp., The, to The Elco Corp., Cleveland, Ohio. 413,792, ren. 5–11–65. Cl. 15.
Elekal, Societe Anonyme, Paris, France. 675,802, canc. Cl. 6.
Ellison, Proctor Co., Boston, Mass. 789,249, pub. 2–23–65. Cl. 1.
Enke, J. E. Ohlsens, Tastrup, Denmark. 789,248, pub. 2–23–65. Cl. 1.
Essex Wire Corp., d.b.a. Precision Fittings, Inc., Fort Wayne, Ind. 789,301, pub. 2–23–65. Cl. 13.
Fab-Lu, Ltd., New York, N.Y. 789,352, pub. 2–23–65. Cl. 22.
Fagan, William D., d.b.a. WTM Service Equipment, Oak Lawn, Ill. 789,355, pub. 2–23–65. Cl. 28.
Fairway Foods, Inc.: *See—*
Des Moines Wholesale Grocer Co.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 789,277, pub. 2–23–65. Cl. 6.
Farina, Johann Maria, Gegenuber dem Julichs-Platz: *See—*
Farina, Johann Maria, Inc.
Farina, Johann Maria, Inc., New York, N.Y., from Johann Maria Farina Gegenuber dem Julichs-Platz, Cologne, (Rhine), Germany. 789,454, pub. 2–23–65. Cl. 51.
Federal Screw Works, Detroit, Mich. 789,299, pub. 2–23–65. Cl. 13.
Fibreboard Paper Products Corp., San Francisco, Calif. 675,774, canc. Cl. 2.
Fisher, Carl, d.b.a. Carl Fisher & Co., Madison Heights, Mich. 675,890, canc. Cl. 18.
Fisher, Carl, & Co.: *See—*
Fisher, Carl.
Flavor Corp. of America, Northbrook, Ill. 789,428, pub. 2–23–65. Cl. 46.
Fortuna Foundations, Inc., New York, N.Y. 676,046, canc. Cl. 39.
Fountain, Guy R., Ltd., to Tannoy Ltd., London, England. 411,187, ren. 5–11–65. Cl. 21.
Foy-Johnston, Inc.: *See—*
Cincinnati Varnish Co., Inc., The.
Fritzsche Brothers, Inc., New York, N.Y. 789,271, pub. 2–23–65. Cl. 6.
Frontier Chemical: *See—*
Valcan Materials Co.
Gabrielle Fashions, Inc., New York, N.Y. 676,042, canc. Cl. 39.
Gartside's Iron Rust Soap Co., Philadelphia, Pa. 195,749, ren. 5–11–65. Cl. 52.
General Foods Corp.: *See—*
Calumet Baking Powder Co.
General Motors Corp., Detroit, Mich. 675,874, canc. Cl. 15.
Gentex Corp., New York, N.Y. 789,350, pub. 2–23–65. Cl. 22.
Giffen, Inc., Huron, Calif. 789,385, pub. 1–14–64. Cl. 46.
Giurlani, A., & Bro., San Francisco, Calif. 789,399, pub. 2–23–65. Cl. 46.
Golden Press, Inc., New York, N.Y. 789,372, pub. 2–23–65. Cl. 38.
Goodman, H., & Sons, Inc., New York, N.Y. 789,465, pub. 2–23–65. Cl. 51.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 675,832, canc. Cl. 6.
Gordon, Joseph M., New York, N.Y. 438,363, canc. Cl. 50.
Gould, Gerald H.: *See—*
Ratner, Walter.
Grant Co., The: *See—*
Ratner, Walter.
Great American Insurance Co., New York, N.Y. 789,497, pub. 2–23–65. Cl. 102.
Greene, J. A.: *See—*
Greene, Anna M.
Greene, Anna M., d.b.a. J. A. Greene, Sutton, Mass. 789,341, pub. 2–23–65. Cl. 22.
Grove Laboratories Inc.: *See—*
Bristol-Myers Corp.
Gwenn Industries: *See—*
Whipple, Glendola R.
Hagan Chemicals & Controls, Inc., Pittsburgh, Pa. 676,085, canc. Cl. 46.
Haines, Louis H., d.b.a. Patrician File Co., Marianna, Ark. 676,014, canc. Cl. 32.
Hall, J. C., Co., The, Pawtucket, R.I. 753,347, cor. Cl. 37.
Halliburton Co., Duncan, Okla. 789,498, pub. 2–23–65. Cl. 103.
Hanan Products Co., Inc., Hicksville, N.Y. 789,406, pub. 2–23–65. Cl. 46.
Harco Orchards & Poultry Farms, Inc., The, South Easton, Mass. 789,260, pub. 2–23–65. Cl. 1.
Healthbank, Inc., St. Petersburg, Fla. 675,907, canc. Cl. 18.
Heatbath Corp., Springfield, Mass. 789,275, pub. 2–23–65. Cl. 6.
Heberlein & Co. A.G., Wattwil, Switzerland. 196,920, ren. 5–11–65. Cl. 42.
Hedgepeth, Wood B., Atlanta, Ga. 789,298, pub. 2–2–65. Cl. 18.
Hercules Powder Co., Wilmington, Del. 789,286, pub. 2–23–65. Cl. 6.
Hooker Chemical Corp., Niagara Falls, N.Y. 789,276, pub. 2–23–65. Cl. 6.
Hooker Chemical Corp., Niagara Falls, N.Y. 789,283–4, pub. 2–23–65. Cl. 6.
Hopp Press, Inc., The, New York, N.Y. 789,453, pub. 2–23–65. Cl. 50.
Hudnut, Richard, Morris Plains, N.J. 789,455, pub. 2–23–65. Cl. 51.
Hudson National, Inc., from Hudson Vitamin Products, Inc., New York, N.Y. 789,415–16, pub. 2–23–65. Cl. 46.
Hudson Vitamin Products, Inc.: *See—*
Hudson National, Inc.
Hume, G. W., Co., Turlock, Calif. 789,425, pub. 2–23–65. Cl. 46.
Hungerford & Terry, Inc., Clayton, N.J. 789,361, pub. 2–23–65. Cl. 31.

Hyland Bag Co.: *See—*
Hyland, Richard C.
Hyland, Richard C., d.b.a. Hyland Bag Co., to Pacific Diamond H Bag Co., San Francisco, Calif. 199,157, ren. 5–11–65. Cl. 2.
Hysan Products Co., Chicago, Ill. 789,281, pub. 2–23–65. Cl. 6.
Hysol Corp., Olean, N.Y. 789,296, pub. 2–23–65. Cl. 12.
ITT Cannon Electric Inc., from Cannon Electric Co., Los Angeles, Calif. 789,482, pub. 2–23–65. Cl. 100.
ITT Research Institute, Chicago, Ill. 789,485, pub. 12–8–64. Cl. 100.
International Automotive Service Industries Show, Chicago, Ill. 789,494, pub. 2–23–65. Cl. 101.
International Consumer Credit Association, St. Louis, Mo. 789,483–4, pub. 2–23–65. Cl. 100.
Inter/Trade Inc., Philadelphia, Pa. 789,369, pub. 2–23–65. Cl. 38.
Inver House Distillers, Ltd.: *See—*
Continental Distilling Corp.
Itek Corp., Lexington, Mass., from Photostat Corp., Rochester, N.Y. 789,357, pub. 3–17–64. Cl. 26.
Items, Inc., St. Louis, Mo. 789,334, pub. 2–23–65. Cl. 22.
J.C. Produce Co.: *See—*
Choumas, James.
Jeco Co., Ltd., Meguro-ku, Tokyo, Japan. 789,358, pub. 2–23–65. Cl. 27.
Johnson, Howard D., Co., Wollaston, Mass. 679,637. Am. 7(d). Cl. 38.
Johnson & Johnson, New Brunswick, N.J. 676,066, canc. Cl. 44.
Johnson & Johnson, New Brunswick, N.J., from Le Page's, Inc., Gloucester, Mass. 675,797, canc. Cl. 6.
Kay Enterprises, Inc., Hazel Park, Mich. 675,967, canc. Cl. 23.
Kem Kleen Inc.: *See—*
Chemical Cleaning Products Co., The.
Kenmore, Jack M., Bethel Park, Pa. 789,342, pub. 2–23–65. Cl. 22.
Kent, Elizabeth, Cosmetics, Inc., New York, N.Y. 745,961, cor. Cl. 51.
Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla. 789,302, pub. 2–23–65. Cl. 15.
Keuffel & Esser Co., Hoboken, N.J. 415,991, ren. 5–11–65. Cl. 26.
Keuffel & Esser Co., Hoboken, N.J. 416,409, ren. 5–11–65. Cl. 26.
Kil-Balm Co.: *See—*
Cotnam, Truman P.
King, Charles L., New York, N.Y. 418,504, canc. Cl. 3.
King, Charles L., New York, N.Y. 504,882, canc. Cl. 3.
Knight, F. E., Inc., New York, N.Y. 789,252, pub. 2–23–65. Cl. 1.
Kohnstamm, H., & Co., Inc., New York, N.Y. 196,744, ren. 5–11–65. Cl. 52.
Kohnstamm, H., & Co., Inc., New York, N.Y. 196,862, ren. 5–11–65. Cl. 52.
Korlis (N.J.) Ltd., Englewood, N.J. 752,118, canc. Cl. 35.
L.D.G. Corp. of Miami, Miami, Fla. 789,429, pub. 2–23–65. Cl. 46.
Laboratory Products Co.: *See—*
Cwi, Leon.
Lady Baltimore Office Services, Inc., Baltimore, Md. 789,495, pub. 2–23–65. Cl. 101.
Lambert, Inc., Dayton, Ohio. 789,354, pub. 5–25–63. Cl. 28.
Lamkin Brothers, Inc., Brownwood, Tex. 789,312, pub. 2–23–65. Cl. 18.
Lanco Products Corp., New York, N.Y. 675,957, canc. Cl. 28.
Lanvin-Charles of the Ritz, Inc.: *See—*
Charles of the Ritz, Inc.
Lee County Land & Title Co., Miami Beach, Fla. 676,126, canc. Cl. 102.
Lee, Terry, Products: *See—*
Carlson, Dean W.
Le Page's, Inc.: *See—*
Johnson & Johnson.
Leru, Inc., New York, N.Y. 675,999, canc. Cl. 28.
Lewis, J., Beauty: *See—*
Lieberman, Jack L.
Lieberman, Jack L., d.b.a. J. Lewis Beauty, Philadelphia, Pa. 789,473, pub. 2–23–65. Cl. 52.
Lindberg Products, Inc., Skokie, Ill. 789,348, pub. 2–23–65. Cl. 22.
Lingner-Werke G.m.b.H., Dusseldorf, Germany. 789,306, pub. 2–23–65. Cl. 18.
Longfellow Corp., Fraser, Mich. 789,347, pub. 2–23–65. Cl. 22.
Louis Aisenstein & Bros., Inc., New York, N.Y. 675,991, canc. Cl. 27.
Lustig Foods: *See—*
Nifty Foods Corp.
Mahoney, S. H., Extract Co., Chicago, Ill. 414,334, ren. 5–11–65. Cl. 46.
Maison Knits, Inc., New York, N.Y. 789,377, pub. 2–23–65. Cl. 42.
Major Pool Equipment Corp., South Kearny, N.J. 789,449, pub. 2–23–65. Cl. 50.
Mallinckrodt Chemical Works, St. Louis, Mo. 789,285, pub. 2–23–65. Cl. 6.
Marison Co., The, South Elgin, Ill. 412,969, ren. 5–11–65. Cl. 2.
Massimiliano Noberasco, Milan, Italy. 676,059, canc. Cl. 42.
Matsushita Electric Industrial Co., Ltd., Kitakawachi-gun, Osaka, Japan. 789,359, pub. 2–23–65. Cl. 27.
Mattel, Inc., Hawthorne, Calif. 789,332, pub. 2–23–65. Cl. 22.
Means, Walter H., and Associates, Atlanta, Ga. 789,328, pub. 2–23–65. Cl. 22.
Medical Data Services, Inc., Darien, Conn. 789,365, pub. 2–23–65. Cl. 38.
Mercer & Stephens Advertising, Inc.: *See—*
Spur Prints, Inc.
Merck & Co., Inc., Rahway, N.J. 789,322, pub. 2–23–65. Cl. 18.
Metro-Atlantic, Inc., Centredale, R.I. 789,270, pub. 2–23–65 Cl. 6.
Michaud, A., Co.: *See—*
Michaud, Abner.
Michaud, Abner, d.b.a. A. Michaud Co., Philadelphia, Pa. 789,394, pub. 2–23–65. Cl. 46.
Micro Chemical Co., Inc., Winnsboro, La. 789,274, pub. 2–23–65. Cl. 6.
Milani Foods, Inc., Los Angeles, Calif. 789,417, pub. 2–23–65. Cl. 46.
Miller, Daniel, Co., Baltimore, Md., to Bibb Mfg. Co., Macon, Ga. 200,014, ren. 5–11–65. Cl. 42.
Millers Falls Co., Greenfield, Mass. 789,356, pub. 7–21–64. Cl. 28.
Milton, Al, Chicago, Ill. 789,367, pub. 2–23–54. Cl. 38.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 789,370, pub. 2–23–65. Cl. 38.
Mister Pickwick, Inc., Chicago, Ill. 676,008, canc. Cl. 28.
Mobay Chemical Co.: *See—*
Monsanto Chemical Co.
Monarch Associates, Inc., St. Albans, N.Y. 789,351, pub. 2–23–65. Cl. 22.
Monroe International, Inc., Orange, N.J., from Tel-Atlas, Inc., Los Angeles, Calif. 789,491, pub. 2–23–65. Cl. 101.
Monsanto Chemical Co., St. Louis, Mo. 675,813, canc. Cl. 6.
Monsanto Chemical Co., St. Louis, Mo., to Mobay Chemical Co., Pittsburgh, Pa. 411,182, ren. 5–11–65. Cl. 1.
Montebello Liquors, Inc., d.b.a. Baltimore Liquor Co., Baltimore, Md. 789,442, pub. 2–23–65. Cl. 49.
Morgen Mfg. Co., Yankton, S. Dak. 789,447, pub. 2–23–65 Cl. 50.
Motta, S.p.A.: *See—*
Motta S.p.A. per l'Industria Dolciaria e Alimentare.
Motta S.p.A. per l'Industria Dolciaria e Alimentare, also d.b.a. Motta, S.p.A., Milan, Italy. 676,077, canc. Cl. 46.
Movado Watch Agency, Inc., New York, N.Y. 415,227, ren. 5–11–65. Cl. 27.
Mutual Orange Distributors, to Pure Gold, Inc., Redlands, Calif. 195,437, ren. 5–11–65. Cl. 46.
Myers, F. E., & Bro. Co., The, Ashland, Ohio. 785,836, cor. Cl. 13.
McCormick & Co., Inc., Baltimore, Md. 789,431, pub. 2–23–65. Cl. 46.
McCulloch Corp., Minneapolis, Minn. 675,972, canc. Cl. 23.
McGarvey-Atwood Coffee Co., Minneapolis, Minn. 676,091, canc. Cl. 46.
McKee Baking Co., Collegedale, Tenn. 789,411, pub. 2–23–65. Cl. 46.
Naismith Memorial Basketball Hall of Fame, Inc., Springfield, Mass. 789,335, pub. 2–23–65. Cl. 22.
Nalle Plastics, Inc., Austin, Tex. 789,254, pub. 2–23–65. Cl. 1.
National Association of Hosiery Manufacturers, Inc., New York, N.Y. 676,143, canc. Cl. A.
National Automobile Dealers Association, Washington, D.C. 789,511, pub. 2–23–65. Cl. 200.
National Bagasse Products Corp., New Orleans, La. 789,295, pub. 9–3–63. Cl. 12.
National Biscuit Co., New York, N.Y. 789,412, pub. 2–23–65. Cl. 46.
National Capital Field Trial Club Inc., Bethesda, Md. 789,508, pub. 2–23–65. Cl. 200.
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 196,455, ren. 5–11–65. Cl. 21.
National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 196,514, ren. 5–11–65. Cl. 21.
National Research and Development Corp., Atlanta, Ga. 675,793, canc. Cl. 6.
Necchi Societa Per Azioni, Pavia, Italy. 675,958, canc. Cl. 28.
Niagara Falls Museum Ltd., Niagara Falls, Ontario, Canada. 789,507, pub. 2–23–65. Cl. 107.
Nifty Foods Corp., d.b.a. Lustig Foods, Brockport, N.Y. 789,437, pub. 2–23–65. Cl. 46.
Nippon Seiko Bearing Co.: *See—*
Nippon Seiko Kabushiki Kaisha.
Nippon Seiko Kabushiki Kaisha, to Nippon Seiko Bearing Co., Laurence Harbor, N.J. 778,740, new cert. Cl. 28.
Nopco Chemical Co.: *See—*
Wolf, Jacques, & Co.
Norcross, Inc., New York, N.Y. 789,368, pub. 2–23–65. Cl. 38.
North Pacific Canners & Packers, Inc., Portland, Oreg. 789,420, pub. 2–23–65. Cl. 46.
Northwestern Golf Co., Chicago, Ill. 789,339, pub. 2–23–65. Cl. 22.
Ohio National Life Insurance Co., The, Cincinnati, Ohio. 789,496, pub. 2–23–65. Cl. 102.
Old Original Bookbinder's: *See—*
Bookbinder's Restaurant, Inc.
Old Town Stamp Shop: *See—*
Tillotson, Roy J.
O'Leary, Lydia, Inc., New York, N.Y. 789,464, pub. 2–23–65. Cl. 51.
Olin Mathieson Chemical Corp.: *See—*
Western Cartridge Co.
Olin Mathieson Chemical Corp., New York, N.Y. 789,310, pub. 2–23–65. Cl. 18.
Orion Pharmacal Co., Baldwin, N.Y. 789,318, pub. 2–23–65. Cl. 18.
Ormont Drug & Chemical Co. Inc., Englewood, N.J. 413,020, ren. 5–11–65. Cl. 51.
Ortho Pharmaceutical Corp., Raritan, N.J. 789,290, pub. 2–23–65. Cl. 6.
Owatonna Tool Co., Owatonna, Minn. 779,422, cor. Cl. 28.
P. and M. Doll Co., Inc., New York, N.Y. 789,330, pub. 2–23–65. Cl. 22.

Pacific Diamond H Bag Co.: *See—*
Hyland, Richard C.
Pacific Game Co., Inc., North Hollywood, Calif. 789,349, pub. 2-23-65. Cl. 22.
Parfumerie, Joanette: *See—*
Borun Bros.
Parker Laboratories, Inc., Irvington, N.J. 789,280, pub. 2-23-65. Cl. 6.
Patrician File Co.: *See—*
Haines, Louis H.
Pawtucket Mfg. Co., Pawtucket, R.I. 202,791, ren. 5-11-65. Cl. 18.
Peabody Coal Co., St. Louis, Mo. 789,251, pub. 2-23-65. Cl. 1.
Pecheur Lozenge Co., Inc., Brooklyn, N.Y. 676,098, canc. Cl. 46.
Penetray Corp.: *See—*
Verd-A-Ray Corp.
Peoria Plastic Co., Peoria, Ill. 789,343, pub. 2-23-65. Cl. 22.
Permatex Co., Inc., Brooklyn, N.Y. 789,266, pub. 2-23-65. Cl. 5.
Personal Luxuries Co.: *See—*
Cowan, Harrison J.
Personal Luxuries, Inc.: *See—*
Cowan, Harrison J.
Pesquerias y Secaderos de Bacalao de Espana, S.A., San Sebastian, Spain. 789,380, pub. 2-23-65. Cl. 46.
Peterlite Products, Ltd., London, England 789,261, pub. 2-23-65. Cl. 1.
Petfoods Ltd., Melton Mowbray, England. 789,388, pub. 2-23-65. Cl. 46.
Pfizer, Chas., & Co., Inc., New York, N.Y. 789,461, pub. 2-23-65. Cl. 51.
Pharmaco, Inc., Kenilworth, N.J. 675,894, canc. Cl. 18.
Photostat Corp.: *See—*
Itek Corp.
Photronix, Inc., Columbus, Ohio. 676,119, canc. Cl. 100.
Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. 789,386, pub. 2-23-65. Cl. 46.
Piggly Wiggly Operators' Warehouse, Inc., Shreveport, La. 789,433, pub. 2-23-65. Cl. 46.
Pillsbury Co., The: *See—*
Battle Creek Food Co., The.
Pine Crest Preparatory School, Inc., Fort Lauderdale, Fla. 789,502, pub. 2-23-65. Cl. 107.
Pine Crest Preparatory School, Inc., Fort Lauderdale, Fla. 789,503, pub. 2-23-65. Cl. 107.
Pineule Medicine Co., to E. C. De Witt & Co., Inc., Chicago, Ill. 45,170, ren. 5-11-65. Cl. 18.
Pleasant Toy Corp., Inc., Revere, Mass. 789,331, pub. 2-23-65. Cl. 22.
Plus Products, Los Angeles, Calif. 789,307, pub. 2-23-65. Multiple Class (Classes 18 and 46).
Plymouth Cordage Co., Plymouth, Mass. 789,289, pub. 2-23-65. Cl. 6.
Pohoryles & Co., to Purepak Foods, Inc., New York, N.Y. 412,731, ren. 5-11-65. Cl. 46.
Poster Products, Inc., Chicago, Ill. 789,493, pub. 2-23-65. Cl. 101.
Precision Finishing, Inc., Sellersville, Pa. 789,264, pub. 2-23-65. Cl. 4.
Precision Fittings, Inc.: *See—*
Essex Wire Corp.
Preen Products, Minneapolis, Minn. 433,418, canc. Cl. 4.
Professional Dietary Quotas Co.: *See—*
Vitamin Council Inc.
Promotion Management Inc., San Francisco, Calif. 789,490, pub. 2-23-65. Cl. 101.
Pulitzer Publishing Co., The, d.b.a. Radio Station KSD, St. Louis, Mo. 789,504, pub. 2-23-65. Cl. 107.
Purdue Frederick Co., The, New York, N.Y. 675,915, canc. Cl. 18.
Purdue Frederick Co., The, Yonkers, N.Y. 789,467, pub. 2-23-65. Cl. 51.
Pure Gold, Inc.: *See—*
Mutual Orange Distributors.
Purepak Foods, Inc.: *See—*
Pohoryles & Co.
Quality Chemical Products Co., Chicago, Ill. 675,828, canc. Cl. 6.
Radio Corp. of America: *See—*
Victor Talking Machine Co.
Radio Station KSD: *See—*
Pulitzer Publishing Co., The.
Rath Packing Co., The, Waterloo, Iowa. 789,392, pub. 2-23-65. Cl. 46.
Ratner, Walter, d.b.a. The Grant Co., Chicago, Ill., from Gerald H. Gould, North Miami, Fla. 676,072, canc. Cl. 44.
Recipe Food, Inc., from Recipe Foods, Inc., Baltimore, Md. 789,402, pub. 12-29-64. Cl. 46.
Red Arrow Laboratories: *See—*
Southwestern Drug Corp.
Red Cross Chemical Works, Chicago, Ill. 410,552, ren. 5-11-65. Cl. 18.
Reddy Co., Inc., The, Montpelier, Vt. 789,376, pub. 2-23-65. Cl. 40.
Rema Foods, Inc., New York, N.Y. 789,400, pub. 2-23-65. Cl. 46.
Renoir of California, Inc., Los Angeles, Calif. 676,006, canc. Cl. 28.
Revlon, Inc., New York, N.Y. 676,158, canc. Cl. 51.
Rexall Drug and Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 789,324-5, pub. 2-23-65. Cl. 18.
Rexall Drug Co.: *See—*
Rexall Drug and Chemical Co.
Richmond-Chase Co.: *See—*
California Canners and Growers.
Rings O'Devotion, Inc., New York, N.Y. 676,000, canc. Cl. 28.
Rockefeller, Winthrop, d.b.a. Winrock Farms, Morrilton, Ark. 789,246, pub. 2-23-65. Cl. 1.
Roger & Gallet, S.A., Paris, France. 789,458, pub. 2-23-65. Cl. 51.
Rubber Improvement Ltd., Wellingborough, England. 676,024-5, canc. Cl. 35.
Saikhon, Mario, El Centro, Calif. 789,438, pub. 2-23-65. Cl. 46.
St. Regis Paper Co., New York, N.Y. 675,835, canc. Cl. 6.
Sakata Ranches, Inc., d.b.a. T. and M. Farms, Watsonville, Calif. 789,389, pub. 2-23-65. Cl. 46.
San-Ott Laboratories, Brooklyn, N.Y. 675,923-4, canc. Cl. 18.
Sarong, Inc., Dover, Del. 789,373, pub. 6-26-62. Cl. 39.
Schaper Mfg. Co., Inc., Minneapolis, Minn. 675,948, canc. Cl. 22.
Schenley Distillers, Inc., d.b.a. Weston Winery, New York, N.Y. 789,440, pub. 2-23-65. Cl. 47.
Schering Corp., Bloomfield, N.J. 789,309, pub. 2-23-65. Cl. 18.
Schmidt, R. L., Comb Case Co.: *See—*
Schmidt, Raymond L.
Schmidt, Raymond L., d.b.a. R. L. Schmidt Comb Case Co., Bakersfield, Calif. 675,777, canc. Cl. 2.
Screw and Bolt Corp. of America, Pittsburgh, Pa. 789,300, pub. 2-23-65. Cl. 13.
Sears, Roebuck and Co., Chicago, Ill. 411,427, ren. 5-11-65. Cl. 22.
Sears, Roebuck and Co., Chicago, Ill. 675,855, canc. Cl. 12.
Sears, Roebuck and Co., Chicago, Ill. 676,003, canc. Cl. 28.
Selchow & Richter Co., The, Bay Shore, N.Y. 789,344-5, pub. 2-23-65. Cl. 22.
Seton Leather Co., Newark, N.J. 789,255, pub. 2-23-65. Cl. 1.
Seward Luggage Mfg. Co., Inc., Petersburg, Va. 789,263, pub. 2-23-65. Cl. 3.
Shaff Laboratories, Brooklyn, N.Y. 416,732, canc. Cl. 6.
Sharp, Edward, & Sons Ltd., Kent, England. 789,387, pub. 2-23-65. Cl. 46.
Shock Guard, Long Beach, Calif. 789,448, pub. 2-23-65. Cl. 50.
Show Tours Inc., New York, N.Y. 676,140, canc. Cl. 107.
Shure Brothers, Inc., Evanston, Ill. 789,366, pub. 2-23-65. Cl. 38.
Simpson, Wm., Sons & Co., Inc., New York, N.Y. 676,062, canc. Cl. 42.
Skelly Oil Co., Kansas City, Mo. 789,294, pub. 2-23-65. Cl. 10.
Smith, Kline & French Laboratories, Philadelphia, Pa. 415,916, ren. 5-11-65. Cl. 18.
Smith-Lerner Industries, Inc., Phoenix, Ariz. 789,451, pub. 2-23-65. Cl. 50
Societe Anonyme Des Papiers Abadie, Paris, France. 196,337, ren. 5-11-65. Cl. 8
Smith, S. H., Co., The, Indianapolis, Ind. 676,037, canc. Cl. 38.
Sobol, Max, d.b.a. Somac Laboratories, Newark, N.J. 675,929, canc. Cl. 18
Somac Laboratories: *See—*
Max Sobol.
Southwestern Drug Corp., d.b.a. Red Arrow Laboratories, Dallas, Tex. 789,313-14, pub. 2-23-65. Cl. 18.
Speco, Inc., Oklahoma City, Okla. 789,470, pub. 2-23-65. Cl. 52.
Spiegel Industries Corp., Teaneck, N.J. 789,450, pub. 2-23-65. Cl. 50.
Spielmann, Kathryn C., to Deri-del Inc., to Deri-Del of Md., Inc., Clearbrook, Va. 568,778, new cert. Cl. 45.
Spur Prints Inc., to Mercer & Stephens Advertising, Inc., Fort Worth, Tex. 768,937, new cert. Cl. 2
Standard Brands Inc., New York, N.Y. 676,095, canc. Cl. 48.
Stange Co., from Wm. J. Stange Co., Chicago, Ill. 789,396, pub. 2-23-65. Cl. 46.
Stange, Wm. J., Co.: *See—*
Stange Co.
Star Pin Co., The, Shelton, Conn. 413,692, ren. 5-11-65. Cl. 40
Stauffer Chemical Co., New York, N.Y. 789,287-8, pub. 2-23-65. Cl. 6.
Stauffer Chemical Co., New York, N.Y. 789,293, pub. 2-23-65. Cl. 6.
Stella d'Oro Biscuit Co., Inc., New York, N.Y. 789,408, pub. 2-23-65. Cl. 46.
Stella d'Oro Biscuit Co., Inc., New York, N.Y. 789,409-10, pub. 2-23-65. Cl. 46.
Sterling Drug Inc., New York, N.Y. 789,291, pub. 2-23-65. Cl. 6.
Stevenson, R. L., & Associates: *See—*
Stevenson, Richard L.
Stevenson, Richard L., d.b.a. R. L. Stevenson & Associates, Santa Monica, Calif. 789,337, pub. 2-23-65. Cl. 22.
Stewart, James Adam, Co., Carnegie, Pa. 789,499, pub. 2-23-65. Cl. 103.
Stiefvaters': *See—*
Stiefvaters' Inc.
Stiefvaters' Inc., d.b.a. Stiefvaters', San Francisco, Calif. 789,426, pub. 2-23-65. Cl. 46.
Stivers Office Service, Chicago, Ill. 789,488, pub. 2-23-65. Cl. 101.
Storer Broadcasting Co., Miami Beach, Fla. 676,137, canc. Cl. 107.
Suddeutsche Isolatorenwerke G.m.b.H., Freiburg im Breisgau, Germany. 675,791, canc. Cl. 6.
Sunbeam Corp., Chicago, Ill. 789,353, pub. 4-30-63. Cl. 23.
Sunkist Growers, Inc., Los Angeles, Calif. 789,434, pub. 2-23-65. Cl. 46.
Superior Plastics, Inc., Chicago, Ill. 789,452, pub. 2-23-65. Cl. 50.

Sure-Fit Products Co., Bethlehem, Pa. 789,517. Cl. 32.
T. and M. Farms: *See—*
Sakata Ranches, Inc.
Tannoy Ltd.: *See—*
Fountain, Guy R., Ltd.
Tata Inc., New York, N.Y. 789,432, pub. 2-23-65. Cl. 46.
Tavannes Watch Co. Inc., New York, N.Y., to Tavannes Watch Co. S.A., Tavannes, Switzerland. 412,987, ren. 5-11-65. Cl. 27.
Tavannes Watch Co. S.A.: *See—*
Tavannes Watch Co. Inc.
Taylor Electric, Inc., Detroit, Mich. 675,946, canc. Cl. 22.
Teen Publications, Inc., Los Angeles, Calif. 789,364, pub. 6-25-63. Cl. 38.
Tel-Atlas, Inc.: *See—*
Monroe International Inc.
Texaco, Inc., New York, N.Y. 789,265, pub. 2-23-65. Multiple Class (Classes 4, 6, 15, and 52).
Texstar Plastics, Grand Prairie, Tex. 789,518. Cl. 32.
Theis, Paul A., and Donald M. Zohn, Washington, D.C. 789,340, pub. 2-23-65. Cl. 22.
Thierry, Suzanne, Parfums, Inc., Miami, Fla. 789,462, pub. 2-23-65. Cl. 51.
Thiokol Chemical Corp., Bristol, Pa. 789,292, pub. 2-23-65. Cl. 6.
Tholand, Inc., New York, N.Y. 675,807, canc. Cl. 6
Tillotson, Roy J., d.b.a. Old Town Stamp Shop, and Blue Star, Batavia, N.Y. 778,198, cor. Cl. 37.
Tommasini, Frank, Malverne, N.Y. 789,516. Cl. 32.
Town & Country Prod.: *See—*
Williamson, Garfield, Inc.
Transmundo Co., Inc., New York, N.Y. 789,393, pub. 2-23-65. Cl. 46
Trustees of Delta College, The, University Center, Mich. 789,509, pub. 2-23-65. Cl. 200
Truval Mfg., Inc., to Truval Shirt Co., Inc., New York, N.Y. 415,994, ren. 5-12-65. Cl. 39
Truval Shirt Co., Inc.: *See—*
Truval Mfg., Inc.
Tyler, Harold, d.b.a. Harold Tyler Maple Farms, Westford, N.Y. 789,435, pub. 2-23-65. Cl. 46
Tyler, Harold, Maple Farms: *See—*
Tyler, Harold.
UBC Distributors Inc., Chicago, Ill. 789,407, pub. 2-23-65. Cl. 46.
Union Carbide Corp.: *See—*
National Carbon Co., Inc.
Union Carbide Corp., New York, N.Y. 680,625. Am. 7(d). Cl. 6.
Union Carbide Corp., New York, N.Y. 789,217, pub. 2-23-65. Cl. 1.
Union Carbide Corp., New York, N.Y. 789,256, pub. 2-23-65. Cl. 1
Union Carbide Corp., New York, N.Y. 789,259, pub. 2-23-65. Cl. 1.
Union Starch & Refining Co., Inc.: *See—*
Union Starch & Refining Co.
Union Starch & Refining Co., to Union Starch & Refining Co., Inc., Columbus, Ind. 412,777, ren. 5-11-65. Cl. 45
Union Starch & Refining Co., to Union Starch & Refining Co., Inc., Columbus, Ind. 412,932, ren. 5-11-65. Cl. 48.
United Chemicals, Inc., Salt Lake City, Utah. 789,478, pub. 2-23-65. Cl. 52.
United States Combined Training Association, New Brunswick, N.J. 789,500, pub. 2-23-65. Cl. 107.
U.S. Industrial Dust Bag Inc., New York, N.Y. 687,746, cor. Cl. 2
United States Olympic Association, d.b.a. The United States Olympic Committee, New York, N.Y. 789,506, pub. 2-23-65. Cl. 107.
United States Olympic Committee: *See—*
United States Olympic Association.
U.S. Rice Export Development Association, Washington, D.C. 789,515, pub. 2-16-65. Cl. A.
United States Rubber Co., New York, N.Y. 789,362, pub. 2-23-65. Cl. 35.
Unival Corp., Scarsdale, N.Y. 789,304, pub. 2-23-65. Cl. 16.
Universal Lumner Co., d.b.a. Universal Target Co., Los Angeles, Calif. 675,934, canc. Cl. 19.
Universal Target Co.: *See—*
Universal Lumner Co.
Vacooler Co., Elyria, Ohio. 675,779, canc. Cl. 2.
Varco Steel, Inc.: *See—*
Varner, R. G., Steel Products, Inc.
Varner, R. G., Steel Products, Inc. Varco Steel, Inc., Pine Bluff, Ark. 691,493. Am. 7(d). Cl. 12.
Verband Dortmunder Bierbrauer, Dortmund, Germany. 789,514, pub. 2-23-65. Cl. A.
Verd-A-Ray Corp., to Penetray Corp., Toledo, Ohio. 412,563, ren. 5-11-65. Cl. 21.
Verley, Albert, & Co., Linden, N.J. 675,799-800, canc. Cl. 6.
Veteran Enterprises, Inc., Burbank, Calif. 675,865, canc. Cl. 13.
Vico Products, Montebello, Calif. 789,378, pub. 2-2-65. Cl. 44.
Victor Talking Machine Co., Camden, N.J., to Radio Corp. of America, New York, N.Y. 195,475, ren. 5-11-65. Cl. 21.
Village Inn Gourmet Foods, Inc., Geneva, Ill. 789,382, pub. 4-30-63. Cl. 46.
Vitamin Council Inc., d.b.a. Professional Dietary Quotas Co., St. Paul, Minn. 789,316, pub. 2-23-65. Cl. 18.
Vulcan Materials Co., d.b.a. Frontier Chemical Co., Wichita, Kans. 789,282, pub. 2-23-65. Cl. 6.
WTM Service Equipment: *See—*
Fagan, William D.
Wella Corp., The, New York, N.Y. 416,304, ren. 5-11-65. Cl. 40.
Western Auto Supply Co., Kansas City, Mo. 675,937, canc. Cl. 19.
Western Cartridge Co., Wilmington, Del., and East Alton, Ill., to Olin Mathieson Chemical Corp., New York, N.Y. 199,903, ren. 5-11-65. Cl. 9.
Western Skiing, Inc., Los Angeles, Calif. 435,589, canc. Cl. 38.
Weston Winery: *See—*
Schenley Distillers, Inc.
Whipple, Glendola R., d.b.a. Gwenn Industries, Cleveland, Ohio. 789,445, pub. 2-23-65. Cl. 50.
Williamson, Garfield, Inc., d.b.a. Town & Country Prod., Jersey City, N.J. 789,250, pub. 2-23-65. Cl. 1.
Wilson & Co., Inc., Chicago, Ill. 675,790, canc. Cl. 6.
Winrock Farms: *See—*
Rockefeller, Winthrop.
Wolf, Jacques, & Co., Clifton, N.J., to Napco Chemical Co., Newark, N.J. 414,469-71, ren. 5-11-65. Cl. 6.
Wood Flong Corp., Hoosick Falls, N.Y. 789,446, pub. 2-23-65. Cl. 50.
Woodard Viviane Corp., Panorama, Calif. 789,457, pub. 2-23-65. Cl. 51.
Woodward & Lothrop, Inc., Washington, D.C. 789,492, pub. 2-23-65. Cl. 101.
Woolworth, F. W., Co., New York, N.Y. 789,375, pub. 2-23-65. Cl. 40.
Wyandotte Chemicals Corp., Wyandotte, Mich. 412,938, ren. 5-11-65. Cl. 52.
Wyandotte Chemicals Corp., Wyandotte, Mich. 675,782, canc. Cl. 4.
Younger, Don, Inc., San Francisco, Calif. 676,128, canc. Cl. 103.

U.S. GOVERNMENT PRINTING OFFICE : 1965

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
May 18, 1965 Volume 814 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of April 1965

Examiner affirmed	261
Examiner affirmed in part	46
Examiner reversed	95
Total	402

Decisions of the Commissioner of Patents

The 1964 Edition of the Decisions of the Commissioner of Patents has been released from the printer and is available from the Superintendent of Documents, Government Printing Office, Washington, D. C., 20402 Price $4.50

Notice of Tentative Recordation of a Trade Name

[T.D. 56394]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., April 14, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946 and section 11.16, Customs Regulations:

> "FANON-MASCO," the trade name used by Fanon Electronic Industries, Inc., a corporation organised under the laws of the State of New York, located and doing business at 439 Frelinghuysen Avenue, Newark, New Jersey. The trade name is associated with merchandise comprising electronic amplification, communication, recording, reproducing and signaling equipment and components thereof, manufactured in Japan.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after May 14, 1965, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after May 14, 1965, of any opposition proceeding.

Until 45 days after May 14, 1965, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

LESTER D. JOHNSON,
Acting Commissioner of Customs.

International Convention for the Protection of Industrial Property

Adherence of Mauritania to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of the Islamic Republic of Mauritania to the Convention of Union of Paris for the Protection of Industrial Property, as last revised at Lisbon on October 31, 1958.

The note also confirms the membership of that State in the International Union of Paris for the Protection of Industrial Property.

(Signed) EDWARD J. BRENNER,
Apr. 7, 1965. *Commissioner of Patents.*

International Convention for the Protection of Industrial Property

Adherence of South Africa to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 17, 1965, of the Republic of South Africa to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Apr. 7, 1965. *Commissioner of Patents.*

International Convention for the Protection of Industrial Property

Adherence of Yugoslavia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of Yugoslavia to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Apr. 7, 1965. *Commissioner of Patents.*

Disclaimer

2,842,568.—*Josef E. Herz* and *Josef Fried*, New Brunswick, N.J. SYNTHESIS OF STEROIDS. Patent dated July 8, 1958. Disclaimer filed Mar. 5, 1965, by the assignee, *Olin Mathieson Chemical Corporation.*

Hereby enters this disclaimer to claims 1, 2 and 14 of said patent.

New Applications Received During March 1965

Patents	8708
Designs	547
Plant Patents	5
Reissues	19
Total	9279

Issue—May 18, 1965

Patents	1234	No. 3,183,522 to	No. 3,184,755, incl.
Designs	53	No. 201,119 to	No. 201,171, incl.
Plant Patents	4	No. 2,513 to	No. 2,516, incl.
Reissues	7	No. 25,778 to	No. 25,784, incl.
Total	1298		

Reminder—Automatic Furnishing of References

Letters authorizing automatic furnishing of references are not honored if received *after* the prosecution has been closed by:

Final Rejection
Allowance (or Patenting)
Ex Parte Quayle Action
Abandonment

Effective May 17, 1965, such letters will not be returned.

R. A. WAHL,
Superintendent, Patent Examining Corps.

Concur:
C. A. KALK,
Director of Administration.
April 16, 1965.

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 2,831,629, G. E. Giacchino, COMPRESSOR APPARATUS, decided May 8, 1962, Interference No. 92,357, claim 1.

Patent No. 2,915,122, D. S. Huise, FRACTURING PROCESS WITH SUPERIMPOSED CYCLIC PRESSURE, decided July 30, 1964, Interference No. 92,867, claims 1, 2, 3, 4 and 6.

Patent No. 2,927,047, F. Schülde, W. Sommer and D. Schleede, PROCESS OF APPLYING A COATING OF AN ATACTIC POLYMER OF POLYPROPYLENE TO A POLYETHYLENE OR POLYPROPYLENE SURFACE, decided Dec. 23, 1964, Interference No. 91,692, claims 1, 3 and 5.

Patent No. 2,929,259, J. H. Chamberlain, CONTROL CIRCUIT, decided Oct. 21, 1964, Interference No. 93,945, claim 3.

Patent No. 2,930,999, J. G. van Santen and H. J. M. Joormann, PHOTO-CONDUCTIVE DEVICE AND METHOD OF MANUFACTURING THE SAME, decided June 3, 1964, Interference No. 93,831, claim 1.

Patent No. 2,965,757, P. W. Martin, R. W. Pringle and K. I. Roulston, SPECTRAL ANALYSIS OF MATERIALS, decided Apr. 1, 1965, Interference No. 93,279, claims 3, 23 and 24.

Patent No. 2,967,985, W. Shockley and R. N. Noyce, TRANSISTOR STRUCTURE, decided Dec. 3, 1964, Interference No. 92,124, claims 1 and 2.

Patent No. 2,968,288, E. B. Hilker, W. H. Cowles, G. B. Stroh and R. S. Fleming, FORCE BALANCE SYSTEM, decided Dec. 4, 1964, Interference No. 92,294, claims 1, 2, 3, 4, 7, 8, 9 and 10.

Patent No. 2,969,919, P. Kornberg, BASE FOR SUPPORTING A MINIATURE RAILROAD TRACK AFFORDING POWER OUTLETS THEREALONG, decided Mar. 30, 1965, Interference No. 93,785, claims 1, 2 and 3.

Patent No. 2,998,329, R. C. Sovish and F. L. Saunders, MODIFICATION OF CELLULOSIC ARTICLES, decided Apr. 21, 1964, Interference No. 93,422, claims 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13 and 14.

Patent No. 3,004,174, H. A. Seidman, FOUR PHASE CLOCK, decided July 15, 1963, Interference No. 93,381, claim 17.

Patent No. 3,017,752, R. A. Findlay, DESALTING SEA WATER, decided Oct. 8, 1963, Interference No. 93,237, claim 6.

Patent No. 3,057,222, E. W. Almquist, Jr., SHIFTING MECHANISM, decided Jan. 21, 1965, Interference No. 93,725, claim 6.

Patent No. 3,065,845, P. G. Le Clerc, METHOD AND APPARATUS FOR THE MEASUREMENT OF A FLUX OF NEUTRONS, decided Jan. 18, 1965, Interference No. 93,418, claims 3, 5, 6, 7 and 11.

Patent No. 3,070,283, L. D. Hall, VACUUM PUMP, decided Mar. 30, 1965, Interference No. 94,511, claims 1, 2, 3, 5, 6, 7, 8, 9 and 10.

Patent No. 3,093,295, E. Kugler, DRAWSTRING BAG, decided Apr. 7, 1965, Interference No. 93,993, claims 1 and 3.

Patent No. 3,093,295, E. Kugler, DRAWSTRING BAG, decided Apr. 7, 1965, Interference No. 93,994, claim 2.

Erratum

In the OFFICIAL GAZETTE, issue of Jan. 19, 1965, vol. 810, p. 587, under the heading "Adverse Decisions in Interferences," Patent No. 2,957,990, second column, line 8, strike out "1 and".

This erratum supersedes the previous erratum published in the OFFICIAL GAZETTE of Mar. 30, 1965, vol. 812, p. 1297.

Geographical Index of Residence of Inventors

This issue of the OFFICIAL GAZETTE contains an index of the residence of inventors represented in the patents announced herein. It includes only inventors who at the time of application filing resided in a State or Territory of the United States, the Commonwealth of Puerto Rico, or the Canal Zone or who were members of the U.S. Armed Services. When there are two or more inventors, the index entry is based on the residence of the inventor whose name appears first in the patent application. Information for the index is obtained from the residence entry shown on the oath or declaration accompanying the application for patent.

The index consists of lists of patent numbers grouped by major geographical areas. With this information, users may find in the body of the OFFICIAL GAZETTE the names, locations, and subjects of invention of inventors representing the respective areas.

Future issues of the OFFICIAL GAZETTE will contain a like index. Communications concerning its use and value are invited.

May 3, 1965.

Adjudicated Patents

(D.C. Ill.) Armstrong Patent No. 1,941,066 (250—8), for RADIO SIGNALLING SYSTEM. Claims 8, 9 and 10 *Held* valid and infringed. *Armstrong* v. *Motorola, Inc.*, 230 F. Supp. 337; — USPQ —.

(D.C. Ill.) Armstrong Patent No. 1,941,069 (250—2), for RADIOSIGNALING. Claims 1 and 2 *Held* valid and infringed. *Id.*

(D.C. Md.) Collison Patent No. 2,494,229 (128—92), for BONE SURGERY. Claims 1 through 3 *Held* invalid. *Collison Surgical Engineering Co.* v. *Murray-Baumgartner Surgical Instrument Co.*, 230 F. Supp. 572; 145 USPQ 1.

(D.C. Ill.) Armstrong Reissue Patent No. 21,660 (250—6), for RATIO DETECTOR. Claims 1, 2, 4 and 6 *Held* valid and infringed. *Armstrong* v. *Motorola, Inc.*, 230 F. Supp. 337; — USPQ —.

(D.C.N.C.) Rice Reissue Patent No. 25,360 (2—224), for COMBINATION STOCKINGS AND PANTY. Claim 1 *Held* not infringed. *Morpul, Inc.* v. *Glen Raven Knitting Mill, Inc.*, 238 F. Supp. 520; 144 USPQ 460.

Practice Re: Technical Rejections

In the interest of reducing the number of technical rejections and expediting the prosecution of applications the following changes will be instituted effective June 1, 1965:

1. The inclusion of a negative limitation shall not, in itself, be considered a sufficient basis for objection to or rejection of a claim. However, if such a limitation renders the claim unduly broad or indefinite or otherwise results in a failure to point out the invention in the manner contemplated by 35 U.S.C. 112, an appropriate rejection should be made.

2. When materials recited in a claim are so related as to constitute a proper Markush group, they may be recited either in the conventional manner heretofore permitted, or alternatively. For example, if ". . . wherein R is a material selected from the group consisting of A, B, C and D" is a proper limitation then ". . . wherein R is A, B, C or D" shall also be considered proper.

3. The use of Markush claims of diminishing scope shall not, in itself, be considered a sufficient basis for objection to or rejection of claims. However, if such a practice renders the claims indefinite or if it results in undue multiplicity, an appropriate rejection shall be made. This change does not in any way affect the substantive law governing the treatment of Markush claims. The foregoing practice with respect to Markush claims of diminishing scope will be effective on an experimental basis until December 1, 1965, and, if it proves satisfactory, will then be adopted permanently.

EDWARD J. BRENNER,
Commissioner.

Apr. 30, 1965.

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF APRIL 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 3-58
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	10-31-62	9-15-58
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	9-23-58
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	5-14-59
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Supervisory Examiner Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-11-62	12-22-58
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	7-20-62	6-24-59
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	1-14-59
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	1- 5-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	4-12-60
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	4-15-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	12-28-59
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	5-16-57
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	1- 5-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner Optics; Radiant Energy; Measuring.	9-10-62	2-11-59
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner Conductors; Switches; Miscellaneous.	1-24-63	3-23-60

Total number of pending applications (excluding Designs)	198,445
Total number of Design applications pending	5,230
Total number of applications awaiting action (excluding Designs)	141,516
Total number of Design applications awaiting action	1,911
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	May 16, 1957

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during May 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents	Numbers 2,440,671 to 2,442,329, inclusive
Plant Patents	Numbers 797 to 798, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, (Acting) Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6- 3-63	12- 1-60
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	3- 1-63	1-23-61
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	10-26-62	9-26-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	2- 5-63	9-29-59
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	2-16-60
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	12-19-62	8-11-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	3- 4-63	6- 7-60
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	4- 8-63	9-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	7-29-63	4-26-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	10-22-59
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-23-63	6-23-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	4-25-63	11-15-60
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner Printing; Typewriters; Stationery; Material Treatment.	7-17-62	12-31-58
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—A. RUEGG, Acting Supervisory Examiner Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	3-22-63	9-27-61
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner Industrial Arts; Household, Personal and Fine Arts.	5-19-64	3-26-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

In re Robert E. Farish, Jr.

No. 7311. Decided February 11, 1965

[52 CCPA —; 340 F.2d 980; 144 USPQ 439]

1. Patentability—Particular Subject Matter—"Warning Lights for Vehicle."

The decision of the Board of Appeals, refusing the claims in an application entitled "Warning Light for Vehicles" as unpatentable over the prior art, is affirmed.

Appeal from the Patent Office. Serial No. 11,171.

AFFIRMED.

A. Harry Crowell, D. Paul Weaver for appellant.

Clarence W. Moore (*Fred W. Sherling* of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, and Rich, Martin, Smith, and Almond, Jr., *Associate Judges*

Rich, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of all claims, 1–5, in application Serial No. 11,171, filed February 26, 1960, for "Warning Light for Vehicles."

The invention is an auxiliary back-up light on the roof of a vehicle such as an automobile, the position providing greater height and visibility than is afforded by the conventional location of back-up lights at the rear of the vehicle. Claim 1 reads as follows:

> 1. An auxiliary reverse gear actuated back up warning light for vehicles having a back-up light switch and a battery, comprising a light housing positioned on the top of the vehicle adjacent the rear window, a warning light in said housing, and a connection from said warning light to said battery through said back-up switch whereby said light is actuated when the vehicle is put in reverse.

Claim 2 recites a "flasher" to impart an intermittent action to the warning light, claim 3 adds an interior "indicator light," claim 4 adds an interior "manual switch," and claim 5 recites that the light housing is "amber colored."

The references relied on are:

Smith (British), 761,727, November 21, 1956.
Slater, 2,866,175, December 28, 1958.
Hallman, 2,205,169, June 18, 1940.

Smith discloses a safety reversing signal for motor vehicles which comprises a bright blue light fitted in such position on the roof of the vehicle as to serve as a warning signal to anyone who may be near the vehicle. The light is controlled from the gear lever when placed in reverse, or from the dashboard.

Slater discloses a vehicle signal system which combines back-up lights, turn signals and a park signal. The back-up lights may be actuated by "a combined dashboard mounted hand lightning and/or reverse gear lighting back-up signal switch." The turn signals are connected through a conventional *blinker* mechanism. In backing up, the combination of "Park," blinking directional and back-up signals indicates what the signalling vehicle is about to do.

Hallman discloses a signal light housing mounted on top of an automobile and having three portions indicating stops, right turns and left turns. One portion is amber colored. The patentee says that "suitable switch and tell tale means are necessary and should be located adjacent the driver's seat."

The Board and the Examiner found claim 1 to be fully met by the patent to Smith saying, "the introductory clause * * * stating that the appellant's back-up light is an 'auxiliary' warning light has no patentable significance but in any event the use of multiple light signals is common practice, as evidenced by the use of dual stop signals on automobiles." The Board further said:

> We further note that auxiliary signal lights designed to be used in conjunction with the usual stop-lights, operated jointly with the vehicle brakes, were a common item of commerce available at most of the chain stores specializing in the direct sale of automobile accessories to the driving public. These auxiliary stop-lights were arranged in the rear window of the vehicle to enhance the visibility of the signal. We view this arrangement, of which we take judicial notice, to make obvious the conjoint use of both the conventional back-up lights and the signal light of the British patent for one who chooses to provide a greater visibility of a signal light.

Claim 2 was held to add only obvious structure to that of claim 1 since it was believed to be "well known that emphasis can be given to any signal light by flashing" with a device as shown, for example, in Slater.

Claim 3 was held to add obvious structure to that of claim 2 in that it recites only the "normal or expected function" of a tell-tale light as in Hallman.

Claim 4 was held to add obvious structure to that of claim 3 since Smith discloses the control of the back-up light by either the reverse gear mechanism or the manual switch. To provide both was believed to be "merely following the usual practice of shunting an automatic switch with a manual switch as is the case of the manual and door operated switches for the dome light of the automobile."

The amber color of the back-up light, as set forth in claim 5 was held to be without "patentable merit" in view of the Hallman patent.

[1] We agree with the Board's decision as above set forth in all respects and it is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE FRANK A. RICE AND ELIAS W. WILSON

No. 7253. Decided February 18, 1965

[52 CCPA —; 341 F.2d 309; 144 USPQ 476]

1. CLAIM—CONSTRUCTION OF CLAIMS—WORDS AND PHRASES—"TANK" AND "TUBE."

   "Appellants * * * urge certain differences between their device described as a 'tank' and the Société device which is termed a 'tube.' We take these differences as merely verbal."

2. PATENTABILITY—OBVIOUSNESS—OBVIOUS MATTER OF DESIGN CHOICE.

   In considering the patentability of claims to an air cleaner having a collection chamber radially spaced inside the walls of the main air chamber over a reference disclosing the collection chamber outside those walls, *Held* that "* * * appellants have pointed to no results traceable to this feature which would indicate that it is other than an obvious matter of design choice."

3. SAME—COMBINATION—OBVIOUSNESS—ABSENCE OF UNEXPECTED RESULT.

   "We are satisfied that the cap and venturi elements emphasized by appellants are obvious additions which are taught by the Schutz and Altgelt references to be useful as a matter of choice in the combination. No unexpected

   result stems from their use in the combination; the combination works as expected."

4. SAME—PARTICULAR SUBJECT MATTER—"AIR CLEANER."

   The refusal of the claims in an application entitled "Air Cleaner," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 816,556.

AFFIRMED.

William T. Sevald for appellant.

Clarence W. Moore (*Jere W. Sears* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

The question the court must answer in this appeal is whether appellants' novel air cleaner, as represented by claims 1, 2 and 3 of their application Serial No. 816,556, entitled "Air Cleaner," filed on May 28, 1959, is an obvious variation of the devices of the prior art. No claims stand allowed in the application, which is stated to be a continuation-in-part of application Serial No. 698,474, filed November 25, 1957, for an "air cleaner device."

The centrifugal air cleaner appellants disclose is useful on internal combustion engines or air-compressors, particularly under very dusty conditions. The air cleaner is of simple construction and is "self cleaning" in operation. Reference to the accompanying figures of the application will aid in an understanding of the structure and operation of the device:

FIG. 1

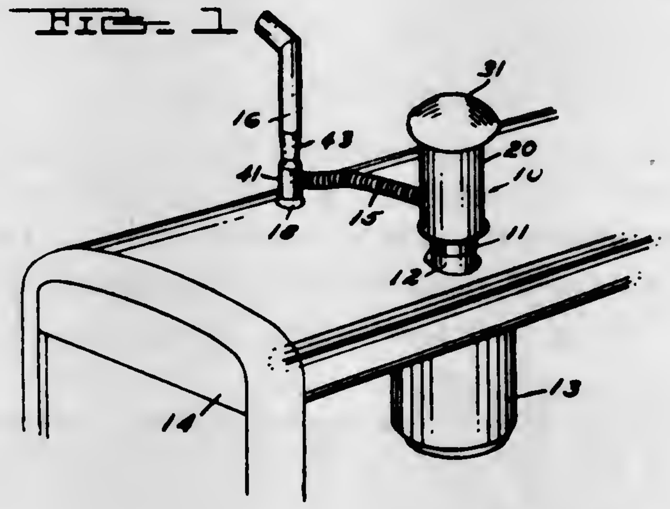


FIG. 2

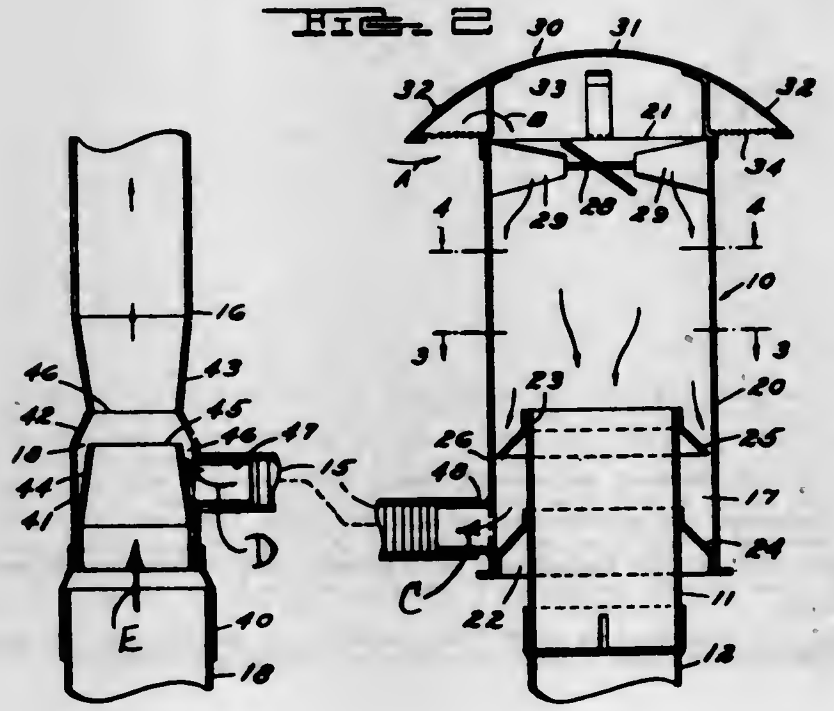


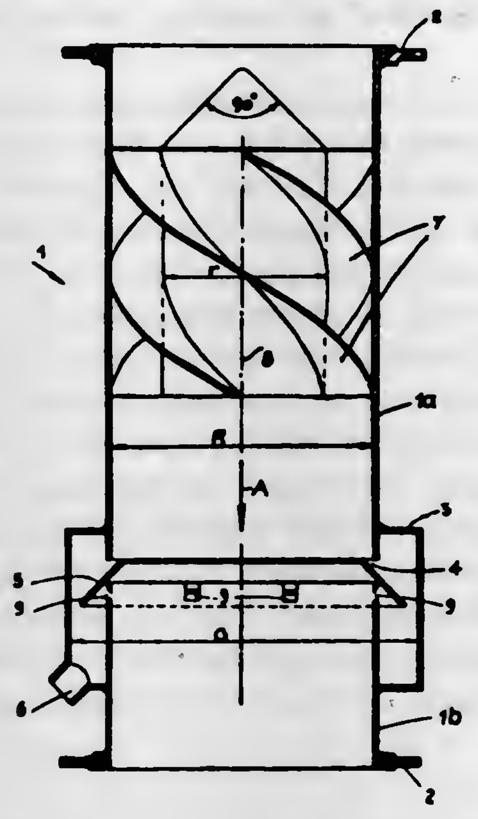
FIGURE 1 shows the air cleaner consisting of separator portion 10 mounted on the air intake of an internal combustion engine such as that of a tractor, with a hose 15 connected to a vacuum developing portion or venturi 16 mounted on the engine exhaust. Cross section views of those two portions of the device are seen on the right and left of FIGURE 2. In operation, when the engine is running, air is drawn into the cleaner via cap 30 following the path indicated by arrows A and B. The air flows over inclined vanes 29 which impart a "spiral swirling motion" to it. As the air is drawn downward in its spinning path, entrained dirt is centrifugally thrown toward the outer wall 20 of the "tank" or can-shaped separator portion of the air cleaner. The dirt and some air enters collecting chamber 17 by passing through the space 26 between the wall 20 and baffle 25, while relatively clean air enters carburetor air intake 12 via tube 11. The air-entrained dirt passes out of chamber 17 into hose 15 as indicated by the arrow we have labeled C. The air and dirt is drawn out by the action of the venturi or vacuum developing device 16. Exhaust gases exit from the engine as shown by the arrow we have labeled E. As the gases pass through the tapered section 44 they draw the dust laden air from hose 15 as shown by the arrow we label D.

There is no question that the cleaner is operable and has achieved some degree of commercial success. However, it is our view that the appellants' claimed air cleaner[1] is an obvious variation of the following references:

Schutz, 1,496,908, June 10, 1924.
Altgelt, 2,033,368, March 10, 1936.
Société (French), 1,106,384, December 19, 1955.

The Altgelt reference is relied on to show a cap used on the intake of a tractor air cleaner. The reference is used only in conjunction with the rejection of claim 2, the sole claim calling for a cap.

The major reference, Société, describes "fluid separators operating by centrifugal force," to be used particularly for the separation of moisture from steam. The detailed description will be by way of reference to the drawing therein:



The drawing shows a tubular separator section or "connection" 1 which is the same size as the steam line to which it is connected by employing flanges 2 at either end. Helical fins 7 are mounted within the tubular section. Moist gases or steam flow downwardly in the direction of arrow A, while the helical surfaces produce "a rotation of the gas or steam current." A larger annular casing 3 is spaced around a slot 4 and funnel-shaped surface 5 and together define a collection chamber. Société states:

> * * * The liquid droplets contained in the current thus precipitate on the helical surfaces and on the inner wall of the connection, then flow downward over the funnel-shaped surface of the circular slot into the annular casing, from which they may be extracted at any time. * * *
>
> * * * The upper edge of funnel 5 penetrates into connection 1 only to the extent sufficient so that the fluid flowing from the inner wall of the connection and on helical surfaces 7 must be trapped by the funnel and diverted through circular slot 4 in casing 3. * * *

A valve "or usual condensate extraction device" is provided at outlet 6 to tap off the moisture that has been separated.

Schutz is directed to a "suction air cleaner" used for "eliminating dust from the air before it enters the carburetors of internal combustion engines," and which is "non-clogging in operation." The suction air cleaner of Schutz clearly is a centrifugal type cleaner, the dust laden air being caused to "whirl with high velocity" by tangential inlet projections or fins and the engine suction. The dust is ejected at the bottom of a downward path by use of a venturi, while the clean air is directed upwardly to the engine intake by a conical baffle. As we view the rejection of the Examiner and the decision of the Board, the Schutz reference was used for two purposes. First, to show the exhaust driven "Venturi tube" or vacuum developing device, and second, to show the concept of such a venturi device in combination with an air cleaner as the means by which dust is ejected.

Claims 1 and 3 were rejected by the Examiner as "unpatentable

---

[1] Claim 1 is typical of the three claims on appeal:

1. A self cleaning air cleaner device for removing foreign particles from air such as dust and dirt particularly suitable for internal combustion engines comprising a tank having cyclindrical [sic] side walls constituting an air-swirling chamber having an upper air inlet end and a lower air outlet end, an air outlet tube leading through said tank lower end having an inner end located at a point above said tank lower end; said tube being concentrically disposed in said tank in spaced relationship to said tank side walls; a bottom closure plate between said tank and said tube supporting said tube relative to said tank; said tube having an outer end for attachment to the air intake of an air consuming device and an inner end for receiving air from said tank; a frusto-conicle [sic] baffle plate on said tube adjacent said tube inner end and above said tank air outlet end; said baffle member having an outer peripheral edge in spaced relationship to said tank side walls; said baffle leading axially downwardly and radially outwardly from said tube; a center-block plate concentrically disposed within said tank adjacent its upper end preventing air flowing directly into the axial center area on an angle relative to the axis of said tank and overlapped relative to one another of said tank, vanes located between said plate and said tank side walls and disposed on an angle relative to the axis of said tank and overlapped relative to one another to prevent air traveling axially therethrough and to cause the air traveling therebetween to define a spiral path; the cumulative cross-sectional area between said vanes being slightly more than the cross-sectional area of said tube; the spiral path of air traveling between vanes and said tube inner end developing centrifugal force in said air so that heavier particles move radially outwardly in their travel with the air so as to locate the particles adjacent said tank walls radially outwardly of said tube; the air entering the inner end of said tube leaving said tank internal area spaced radially inwardly from the sidewalls of said tank so as to avoid the particles radially adjacent said tank sidewalls; the particles falling between said baffle plate and said tank walls: a bottom closure between said tube and said tank adjacent said tank lower end forming a particle chamber above said closure plate between said tank and tube below said baffle plate; a vent pipe leading through said tank wall to said chamber for particle evacuation, a hose connected to said vent pipe, and a vacuum developing mechanism connected to said hose; said mechanism drawing the particle laden radially outer air in said tank radially beyond said tube between said baffle and tank walls so as to draw off same thereby preventing it entering said tube for transfer to the air consuming device.

Claim 2 is dependent on claim 1 and additionally specifies the cap, while claim 3, similarly dependent on claim 1, details the vacuum developing mechanism over Société in view of Schutz," while claim 2 was so rejected "further in view of Altgelt," and the Board affirmed. Since the differences in the claimed structure and that of the references are readily apparent, we take "unpatentable over" as meaning obvious within the meaning of 35 U.S.C. 103.

As will be apparent from their arguments discussed below, appellants seem to misconstrue the rejection. The *differences* in the separator portion of the structure claimed, as compared to that of Société, were deemed obvious by the Examiner and the Board, and we agree, while the *combination* of the separator portion with venturi and cap, and their use on internal combustion engines at normal air pressures are equally obvious to those in the art as shown by Schutz and Altgelt. With regard to the *differences*, the examiner and Board are not combining the references by modifying the structure of Société by reference to structure shown in Altgelt or Schutz. With regard to the *combination*, it is evident that centrifugal separation operates on the differences in density between the carrier gas and the solid or liquid particles to be separated. The references thus cannot be said to be from non-analogous arts and thereby not combinable. We shall discuss these two aspects of the rejection separately below.

I. The Differences

Appellants' major contention concerning the differences in their structure as compared to Société appears best summarized by the argument that:

> The applicants deny that the Societe patent may be combined with the Schutz patent as alleged by the Patent Office. The applicants contend that the modifitions made by the Patent Office are based on the applicant's invention. Neither the Societe patent nor the Schutz patent singly or in combination suggest their combination nor does either patent suggest taking the Societe patent out of a steam pressure line and connecting two low pressure devices to one end and exposing the other end to atmospheric pressure. These charges [sic: changes?] by the Patent Office are certainly not *obvious* to one having *ordinary* skill in the art based on the Societe and Schutz patents. Of course these charges [sic: changes?] are obvious in view of the applicants' invention. This [,] however, is improper and the applicants therefore object.

[1] Appellants, in supporting that position, urge certain differences between their device described as a "tank" and the Société device which is termed a "tube." We take these differences as merely verbal.

Appellants also point to various internal structural modifications that must be made in Société in order to overcome the claimed differences. While we have considered all the arguments, we will discuss only the major ones here.

Appellants point to the fact that the claimed collection chamber is radially spaced inside the walls of the main air chamber while that of Société is outside. This difference is not convincing since Société discloses:

> * * * The diameters of known fluid separators operating by centrifugal force are generally considerably greater than the diameter of the pipe through which gases or vapors actually flow. * * *

[2] Further, appellants have pointed to no results traceable to this feature which would indicate that it is other than an obvious matter of design choice.

Much discussion has been had by appellants and the Examiner about the effect of the claim limitation:

> * * * the cumulative cross-sectional area between said vanes being slightly more than the cross sectional area of said tube; * * *

After careful analysis and discussion of flow paths, air pressure and velocity, the Examiner concluded that this limitation:

> * * * is therefore not found to patentably distinguish since even if it is assumed to state dimensional relationship different from Societe, it does not produce any different effect or result. * * *

The gist of appellants' response is that:

> In fluid systems the relationships of size and the positions of baffles are critical. The Patent Office has not shown that they are not critical.

We fail to see how such a general allegation in a brief can rebut the relationships between flow paths, air pressure and velocity stated by the Examiner to be the same herein as in Société. The Examiner analyzed, with reference to the well-known Bernoulli principle,[2] the effect structural differences might have on the operation of appellants' device as compared to that of Société. Appellants do not challenge the statements as being incorrect, but assert that a reference by the Examiner to the Bernoulli principle alone is not proper here. It was perhaps the best means available to the Examiner of explaining the reasons for his conclusion of obviousness, and since unrebutted by factual evidence of any critical relationship in position or size, or of any difference in effect or result, we think the position of the Examiner to be sound. Appellants have failed to show that the change in the vanes, the use of an inner rather than outer collection chamber and the use of a smaller output tube, for example, as compared to Société, result in a difference in function or give unexpected results. Such changes in design of the various features are no more than obvious variations consistent with the principles known in that art.

II. The Combination

We see little merit in the objections to the combination of Altgelt, as showing the cap, and Schutz, as showing the venturi tube, with Société. As the Board noted:

> * * * Inclusion of a cap over the air inlet is urged by the Examiner to be no more than an additive feature of well known structure and purpose in such combinations as taught by Altgelt.

Although appellants contend the Board erred in stating: "Appellants have presented no arguments indicating that these features are of particular significance to the particular separator structure shown," the present arguments are not well taken in view of appellants' reply brief before the Board which stated: "Admittedly the cap is shown in Altgelt and a suction [a venturi tube] shown in Schutz." Appellants now urge that:

> * * * the cap necessitates that the air travels radially into the top of the tank and prevents air from directly axially entering the top of the tank.
>
> As to the vacuum inducing device at the dirt outlet, the structure claimed is very efficient and not shown in the prior art.

That description of what the cap does describes precisely what the cap in the air cleaner of Altgelt does. Contrary to appellants' contention, the vacuum inducing device *is* shown in the prior art.

We grant that Schutz does use his venturi in an alternative fashion, i.e., the exhaust and dust laden air inputs are reversed. The Examiner in his answer pointed this out but stated:

> * * * Insofar as the operation of the aspirator is concerned it is immaterial which arrangement is used. All that is required is that the inlet for dirt laden gases be adjacent the throat (low pressure zone) of the venturi.

---

[2] Bernoulli's principle is defined as: "'*Less pressure where the flow is faster.*'" Rogers, Physics for the Inquiring Mind, Princeton Univ. Press (1960), p. 160.

We agree, and also note that Schutz teaches his arrangement to be a six to ten-fold improvement over the suction available by the very arrangement which appellants use.

[3] We are satisfied that the cap and venturi elements emphasized by appellants are obvious additions which are taught by the Schutz and Altgelt references to be useful as a matter of choice in the combination. No unexpected result stems from their use in the combination; the combination works as expected.

Our view of this controversy is not changed by the many variations in the argument that the structure is *novel*. [4] In view of the above we affirm the decision of the Board of Appeals.

AFFIRMED.

SMITH, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE LAURANCE F. VAN MATER AND KENNETH E. CAMPBELL

No. 7256. Decided February 11, 1965

[52 CCPA —; 341 F.2d 117; 144 USPQ 421]

1. PATENTABILITY—REFERENCES—SUGGESTION TO PERSON OF ORDINARY SKILL IN THE ART.

"It is axiomatic, we believe, that a patent is a good reference not only for what it discloses by way of direct anticipation but also for what it suggests to a person of ordinary skill in the art."

2. SAME—PARTICULAR SUBJECT MATTER—"MANUFACTURE OF METAL BAND SAWS AND THE LIKE INCLUDING BLANKS AND ALLOYS THEREFOR."

The refusal of certain claims in an application entitled "Manufacture of Metal Band Saws and the Like Including Blanks and Alloys Therefor," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 622,169.

AFFIRMED.

Rowland V. Patrick for appellants.

Clarence W. Moore (*S. Wm. Cochran* of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the divided decision of the Patent Office Board of Appeals affirming the rejection of claims 27 and 39 in application Serial No. 622,169, filed November 14, 1956, for "Manufacture of Metal Band Saws and the Like Including Blanks and Alloys Therefor." No claims stand allowed, but the Examiner's rejection of method claim 40 was reversed by the Board.

The invention relates to a bandsaw or hacksaw blade and to the method of making same, herein referred to simply as the "saw." The saw has two principal zones or regions, a cutting edge composed of high-speed tool steel and a backing zone composed of a steel of the same composition as high-speed tool steel except for substantially lesser amounts of carbon. This differential composition of the cutting edge and of the backing zone allows the attainment of a fully hardened cutting edge and a tough, unhardened backing zone even though a uniform heat treatment and quenching of the whole saw blade strip is carried out because the carbon content of the backing zone is sufficiently less than that of the cutting edge so as not to be hardened to a state of brittleness.

Appellants obtain the differential composition of the strip from which their saw is to be made by starting with a steel strip having a homogeneous composition identical to high-speed tool steel except for having a lesser amount of carbon. They then transform only the cutting edge of the strip into high-speed tool steel by selective carburization. The teeth are cut and the entire strip is finally heat treated and quenched, thereby obtaining a differential hardness between the two zones.

Claim 27 reads as follows:

> 27. A metal band saw, hack saw or the like comprising an integral strip structure of low-carbon carburizing grade high speed tool steel of calculated reduced carbon content in the melt as contrasted with standard high-speed tool steels including a cutting-edge working zone of full hardness of the order 64 to 66 Rockwell C and a backing zone of less than file hardness and as represented by an average hardness value of about 45 Rockwell C, wherein the working zone is defined by a preferentially carburized longitudinal edge portion of the strip and with the carbon contents of said zones so mutually correlated and controlled as to initial content in the melt and as to carburizing solely of the working zone that said final hardnesses are had in a single one-temperature high heat treating operation common to the entirety of the structure, and wherein the less-hard backing zone contains the roots and gullet bottoms of the saw teeth.

The references relied upon by the Examiner are:

Neill, 907,167, December 22, 1908.

Strauss, 1,537,381, May 12, 1925.

Tool Steels, pages 494 to 501, edited by Gill. Published in 1944 by the American Society for Metals.

The sole issue before us is the propriety of a rejection predicated on 35 U.S.C. 103, the Examiner and Board having found the appealed claims to be unpatentable over Neill in view of Strauss and Gill.

Neill discloses a method of producing saws with a high carbon cutting edge and a low carbon backing which can be heat treated in one operation to obtain a saw blade of greater durability and reliability. He obtains the desired difference in carbon content between cutting edge and backing by casting an ingot of two steels, one of which is cast upon the other, the two steels being integrally welded together and remaining so throughout subsequent operations. The material is rolled to gauge and the strip is slit to obtain the blade. The teeth are cut along one edge and the blade is then heat treated in a single operation to obtain a saw blade having a hardened working edge with a tough and durable backing. The patentee says:

> By the use of this process a much higher carbon steel may be provided for the edge of the saw than could safely be used where the steel is of the same carbon content throughout * * *.

Strauss discloses a method for producing a cutting or milling tool broadly by selecting a material of low carbon content and then "cementing" (hereinafter called carburizing since it is admitted by appellants that the two terms mean the same in this art) the cutting edge and finally uniformly heating and quenching the steel to obtain a hardened cutting edge and a backing which is tough and ductile. This reference is the United States counterpart of an application filed in Germany on March 28, 1919, and portions of the translated version are somewhat ambiguous. Since an understanding of this reference is essential to deciding the issue presented, the pertinent portion thereof is set out below:

> The method consists in making the said tools of an alloy of iron—not capable of being hardened per se—comprising from 0.1 to 0.2% of carbon and 8 to 14%

> of chromium, then cementing them at the cutting edge in the customary manner, and finally subjecting the tools so made to the usual tempering process by first heating and then quenching them. (It has been found expedient to add nickel to the alloy in a proportion of from 0.2 to 2%.)
>
> In the case of tools manufactured in accordance with the above-described method, it is only the cemented cutting edge which becomes glass-hardened whereas the adjoining layers of the steel obtain a gradually decreasing degree of hardness and great toughness, with the result that the cutting edge will be rendered specially capable of taking up the shocks created when working, without breaking off or snapping. This advantage will particularly also then be achieved on the entire tool being uniformly heated and then quenched as an entirety. The improved method is therefore specially suitable for such kinds of tools which, as, for example, milling cutters and face and side cutters, can only be hardened by being uniformly heated and thereupon quenched as entirety. For, in this case, tools of this type if made of common tool steel or of high speed tool steel, would not only become glass-hardened at the cutting edges but in an objectionable manner all over.

The Gill publication (textbook) discloses, in a section entitled "Effect of Alloying Elements in High Speed Steel," that a lowering of carbon content produces a tool steel which is more ductile and tough than steels of higher carbon content. Gill discloses that high speed steel can be carburized and that such carburized part is of higher hardness upon quenching than the uncarburized part, which is relatively soft.

The position of the Examiner, affirmed by the Board, was that the secondary references show that cutting tools *in general* are made of high-speed tool steel when a durable cutting edge is desired and, that being true, the selection of high-speed tool steel *for the cutting edge* of the Neill saw, i.e., a saw having a hardened working edge and a tough and durable backing, would be an obvious application of the known hardening properties of this steel. The Board also said:

> We further share the view of the Examiner that one wishing to make the Neill sawteeth of modern high speed tool steel *would be directed* by the Strauss patent to fabricate the saw first of a homogeneous material of a composition equal to the composition of the ultimate cutting edge, high speed tool steel, less sufficient carbon so as to make the steel not hardenable to the degree that it would become brittle on an overall hardening treatment and to thereafter raise the carbon content of the cutting surfaces only by selective carburizing. [Our emphasis.]

In regard to the last paragraph of the Strauss disclosure quoted above, the Board said:

> We do not consider the Strauss process to be applicable only to the particular tool steel alloys specified in the patent but is a procedure generally applicable to any steel in which the hardenability is a function of the carbon content and is capable of selective carburization. These characteristics of high speed tool steel are well known as is evident by the Gill publication.
>
> The fact that Strauss describes * * * an overall hardening characteristic of tools made wholly of high speed tool steels that are uniformly heated and quenched does not indicate to us any inapplicability of his disclosed process either to other tool steels than the one disclosed or to high speed tool steels in particular. Instead we gather that these undesired hardening characteristics would be found not because of the steel used but because the tool is made entirely of the same highly hardenable material and because uniform hardening of the whole tool is practiced.

According to appellants, their main quarrel with the decision of the majority of the Board was the conclusion that one would be directed by Strauss to carburize only the tooth edge portion of a high-speed tool steel having an initially deficient carbon content and which

was prepared from a homogeneous material. It is appellants' view that—

> * * * Strauss directs one to use his cementing only in tools made with a material *which is not hardenable per se* in order to accomplish a result that cannot be accomplished with hardenable high speed tool steel.

We do not understand the Strauss disclosure to be so restricted. The patent says that the improved method is *especially suitable* for cutting tools which "can only be hardened by being uniformly heated and thereupon quenched as [an] entirety." Immediately following this passage, Strauss says, "For, in this case, tools of this type if made of common tool steel or of high speed tool steel, would not only become glass-hardened at the cutting edges but in an objectionable manner all over." We construe this to mean simply that, *prior to Strauss's invention*, cutting tools made of high-speed tool steel would become glass-hardened all over if uniformly heated and quenched as an entirety, but that now, by virtue of the Strauss invention, the very desirable feature of uniform heating and quenching as an entirety in the manufacture of such cutting tools could be employed *without* resulting in a tool which is glass-hardened all over. This would be accomplished, according to Strauss, by starting with a material of low carbon content, carburizing a portion thereof, and heating and quenching the entire material.

We therefore agree with the Board that the Strauss process is not limited to the particular tool steel alloys specified in the patent (see first two paragraphs of Strauss disclosure quoted above), but "is a procedure generally applicable to any steel in which the hardenability is a function of the carbon content and is capable of selective carburization." [1] It is axiomatic, we believe, that a patent is a good reference not only for what it discloses by way of direct anticipation but also for what it suggests to a person of ordinary skill in the art. *In re Lundberg et al.*, 39 CCPA 971, 197 F.2d 336, 94 USPQ 73.

In summary, it is our view that, notwithstanding the fact that the particular materials used by Strauss might "be recognized as not having either the necessary fatigue resistance or red hardness for saw use," as appellants contend, it does not follow that Strauss leads away from the invention here on appeal. To the contrary, the Strauss disclosure as a whole is believed to direct one of ordinary skill in this art toward the manufacture of bandsaws having a tooth edge portion carburized to a high-speed tool steel carbon content and a backing zone homogeneous therewith in alloy content other than carbon.

In regard to the Gill publication, appellants call attention to the following passage which, they contend, was not given adequate consideration by the Examiner and the Board:

> Carburization is never recommended for cutting tools such as drills, reamers and taps for the increased carbon content will include brittleness in the edges of these tools and result in early failure.

Our response to this contention is two-fold. First, the passage is taken out of context, as indicated by noting even the next preceding sentence which says that "*Carburization* of high speed steel * * * may be advantageous where the resistance to abrasion is of great importance, as encountered in such tools as wearing plates and certain classes of blanking dies." The Gill publication is really directed to, and was used by the Examiner for, a disclosure of the *properties* of alloys and the effect thereon of varying the content of certain elements, such as carbon; it is not directed to the *application* of these alloys to particular tools. However, insofar as certain cutting tools are mentioned, we believe one interested in producing bandsaws would not be directed away from the concept of carburizing a homogeneous strip low in carbon because Gill tells him that certain outstanding properties, which this person would be seeking, could be obtained thereby. Secondly, as aptly stated by the Solicitor, the warnings mentioned in the above-quoted excerpt from Gill would serve to reinforce the Strauss suggestion that the alloy selected should have a reduced amount of carbon initially and that only the required amount of carbon be added in the portions *where needed.* Obviously, the entire tool cannot be free of a high carbon content. In short, the noted statements by Gill advising against using the usual high carbon tool steel alloy in certain types of tools could well lead toward, rather than away from, the use of a modified low carbon alloy in bandsaws.

[2] For the reasons set forth above, the decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,721,148, R. R. Reading, SPRAY DEVICE FOR RETREADING TIRES AND THE LIKE USES; **3,026,045,** same, SPRAY DEVICE, **filed** Nov. 4, 1964, D.C., W.D. Ky. (Louisville), Doc. 4903, *Retreading Process Co.* v. *George B. Edwards et al.* Cause dismissed Nov. 23, 1964.

2,761,347, J. R. McKee, Jr., FASTENER AND COMPOSITION SEALING WASHER HAVING A DEFLECTABLE LIP, **filed** Dec. 16, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c2258, *Townsend Company et al.* v. *M.S.L. Industries et al.* Judgment holding patent invalid; complaint dismissed Nov. 19, 1964.

2,763,070, J. B. McCormick, PLASTIC MOLDED ANATOMICAL MODEL AND METHOD OF MOLDING PLASTIC ARTICLES, **filed** Nov. 27, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1986, *Denoyer-Geppert Company* v. *Nystrom Biological Model Co.*

2,767,297, C. F. Benson, RADIANT ENERGY OVEN, **filed** Nov. 13, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1910, *Charles F. Benson* v. *Sylvan Stainless Products, Inc. and Stewart In-Frared, Inc.* Consent decree as to defendant Sylvan Stainless Products, Inc. only—patent held valid and infringed by defendant, Sylvan Stainless Products, Inc.; said defendant enjoined Jan. 27, 1965.

2,777,926, M. E. Bourns, VARIABLE RESISTOR; **2,882,375,** M. E. Bourns et al., VARIABLE RESISTOR CONSTRUCTIONS; **2,935,716,** M. E. Bourns, VARIABLE RESISTOR CONSTRUCTION, **filed** May 8, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–624–HW, *Bourns, Inc. et al.* v. *Atohm Electronics.* Stipulation and order of dismissal without prejudice Nov. 30, 1964.

2,785,810, V. J. Kneib, BALE LOADING MACHINE; **2,960,264,** same, **filed** Nov. 25, 1964, D.C., E.D.N.C. (Elizabeth City), Doc. 506, *Vincent J. Kneib et al.* v. *Dorf Corporation.*

2,882,375. (See 2,777,926.)

2,960,264. (See 2,785,810.)

2,935,716. (See 2,777,926.)

3,026,045. (See 2,721,148.)

3,106,517, J. A. Fingland, DISTRIBUTION BOX, **filed** Dec. 30, 1964, D.C., N.D. Calif. (San Francisco), Doc. 43156, *Jack A. Fingland* v. *Layton Manufacturing Co., Inc. et al.*

3,114,342, Sporck and Sassen, METAL WORKING; **3,143,377,** Bulgrin and MacKusick, WHEEL DISKS AND DISK WHEEL ASSEMBLIES, **filed** Dec. 11, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–822, *The Lodge and Shipley Company* v. *The Firestone Tire and Rubber Company.*

3,117,496, H. L. Dobrikin, SAFETY BRAKE CHAMBER, **filed** Dec. 30, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c2180, *Berg Mfg. & Sales Co.* v. *International Harvester Co. et al.* Same, **filed** Mar. 29, 1965, D.C., E.D. Mich. (Detroit), Doc. 26716, *Rockwell-Standard Corporation* v. *Berg Manufacturing & Sales Co.*

3,119,501, J. H. Lemelson, AUTOMATIC WAREHOUSING SYSTEM; **3,139,994,** A. R. Chasar, MECHANICAL LOAD HANDLING, TRANSFER AND STORAGE EQUIPMENT, **filed** Dec. 1, 1964, D.C., W.D.N.Y. (Buffalo), Doc. 11,210, *The Triax Company* v. *Hartman Metal Fabricators, Inc.*

3,121,582, D. L. Gass, UNIVERSAL BUMPERETTE ASSEMBLY, **filed** Dec. 1, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1996, *David L. Gass et al.* v. *Montgomery Ward & Co.* Same, **filed** Feb. 10, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c205, *David L. Gass et al.* v. *Superior Industries, Inc. et al.*

3,126,786, R. H. Appeldorn, OVERHEAD PROJECTION SYSTEM, **filed** Dec. 8, 1964, D.C., W.D.N.Y. (Buffalo), Doc. 11,216, *Minnesota Mining and Manufacturing Company* v. *American Optical Company.*

3,127,245, T. E. Robertson, APPARATUS AND METHOD FOR PRODUCTION OF CARBON BLACK, **filed** Dec. 18, 1964, D.C., N.D. Okla. (Tulsa), Doc. 6108, *International Carbon, Inc.* v. *General Colloidal Carbon, Inc.*

3,132,190, J. Engalitcheff, Jr., HEAT EXCHANGE APPARATUS, **filed** Dec. 2, 1964, D.C.N.J. (Newark), Doc. 1073–64, *Baltimore Aircoil Company, Inc.* v. *Blaser Corporation.*

3,139,994. (See 3,119,501.)

3,143,377. (See 3,114,342.)

3,149,549, N. D. Schroth, ADAPTER FOR SECURING ACCESSORIES TO A CAMERA, **filed** Dec. 4, 1964, D.C., E.D. Wis. (Milwaukee), Doc. 64–C–346, *Normy, Inc.* v. *Keystone Nut and Ferrule Company.*

3,157,311, B. Bronfman, MEANS FOR SUPPLYING BUTTONS TO A SEWING POINT, **filed** Dec. 22, 1964, D.C., S.D.N.Y., Doc. 64/3934, *Rent-Aid Systems, Inc.* v. *Trio Button Company, Inc. et al.*

3,160,844, W. H. McLellan, HIGH OUTPUT ELECTRICAL STRAIN TRANSDUCERS, **filed** Dec. 23, 1964, D.C., S.D.N.Y., Doc. 64/3970, *Mattel, Inc.* v. *Louis Marx & Co., Inc.*

3,162,976, Beebe and Suchowski, DOLL, TOY FIGURE AND THE LIKE WITH AN ADJUSTABLE LOCK OF HAIR, **filed** Dec. 31, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–1252, *American Character, Inc.* v. *Sunshine Doll Co.*

Re. 24,126 (of 2,725,986), H. E. Marvel, WATER-FUEL SEPARATOR, **filed** Feb. 7, 1961, D.C., N.D. Calif. (San Francisco), Doc. 39722, *Bowser, Inc.* v. *Filters, Inc.* Consent judgment July 18, 1961—counterclaims dismissed June 13, 1962—appealed, appeal dismissed before docketing in Court of Appeals Nov. 4, 1964.

REISSUES

MAY 18, 1965

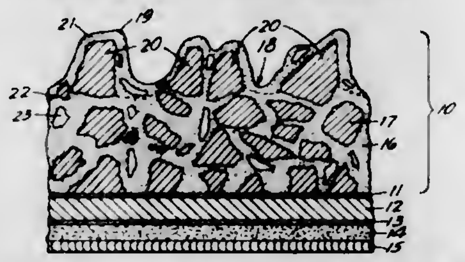
Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

25,778
NON-SLIP STRUCTURES

Leonard J. La Bore, St. Paul, and Eugene J. Dupre, St. Paul Park, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Original No. 3,030,251, dated Apr. 17, 1962, Ser. No. 797,200, Mar. 4, 1959. Application for reissue May 7, 1962, Ser. No. 193,371

10 Claims. (Cl. 161—116)



1. A unitary water-resistant sheet article, [having a] *the back surface of which is free of a backing support member, and flat so as to be suitable for continuous adhesive anchorage to a flat substrate, said article consisting essentially of a* flexible long-wearing non-molded non-abrasive anti-slip irregularly-protuberated exposed surface layer which wears unevenly and maintains an anti-slip character even after prolonged wear and even when coated with a thin mobile film after prolonged wear, said layer being further characterized by being deformable under foot pressure and providing increased resistance to slippage as it is deformed under foot pressure, as well as by providing carpet-like comfort when walked upon, said irregularly-protuberated layer comprising an essentially-continuous, flexible, readily-deformable, *tough, non-tacky* in-situ-cured, rubbery adhesive underlying matrix within which a multitude of discrete flexible resilient non-adhesive particles of a size range between approximately 10 and 100 mesh are randomly distributed and bonded, the protuberances of said irregularly-protuberated layer being non-molded smooth-surfaced projections consisting of particles of the aforesaid type in the size range of 10–60 mesh bonded to said underlying matrix and coated on their projecting surfaces with a flexible, readily-deformable, tough, *non-tacky* in-situ-cured, adhesive coversize of matrix integral with said underlying matrix, the integral matrix of said irregularly-protuberated layer being at least about two times more wear-resistant than the discrete particles therein, whereby said layer exhibits uneven wear characteristics, [and] the volume ratio of said discrete particles to the solids material of said integral matrix being between 3:1 and 0.2:1, *the total over-all thickness of said irregularly-protuberated layer being not in excess of 100 mils and the calculated volume of material in said irregularly-protuberated layer being not in excess of 0.075 cubic inch per square inch of the surface of said layer.*

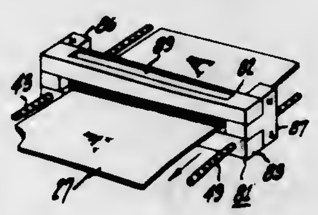
25,779
ELECTROSTATIC PRINTING

Edward C. Giaimo, Jr., Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Original No. 2,984,163, dated May 16, 1961, Ser. No. 365,152, June 30, 1953. Application for reissue Aug. 16, 1962, Ser. No. 218,221

14 Claims. (Cl. 95—1.7)

1. Electrostatic printing apparatus comprising means for supporting a member presenting a record receiving surface means for charging said surface, means to cause said charging means to traverse said surface, means for projecting a light image on said surface whereby to produce a latent electrostatic charge image on said surface, a magnetic structure comprising a magnetized polar member extending laterally of said surface, means to produce relative movement between said surface and said magnetized polar member to cause said polar member to traverse said surface, and means to maintain a quantity of developer mix having magnetic properties in contact with said polar member whereby said polar member is provided with brush-like streamers of said mix, said polar member being located with respect to the record receiving surface of said first named member so that said streamers contact said record receiving surface.

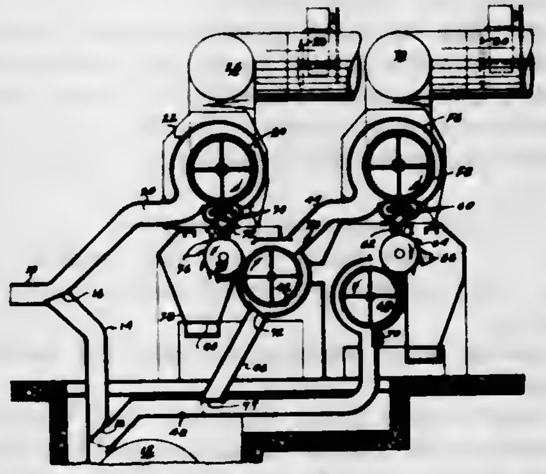


25,780
LINT COTTON CLEANER WITH BY-PASS

Eugene H. Brooks, Sherman, Tex., assignor to Continental Gin Company, Birmingham, Ala., a corporation of Delaware

Original No. 3,024,499, dated Mar. 13, 1962, Ser. No. 6,524, Feb. 3, 1960. Application for reissue Oct. 11, 1962, Ser. No. 230,798

14 Claims. (Cl. 19—203)



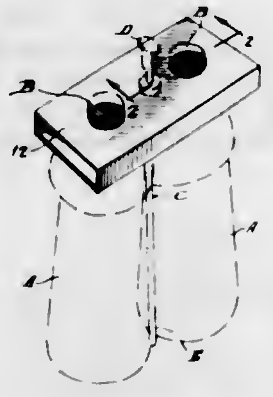
1. In an arrangement for cleaning fibers such as lint cotton; a first cleaner having a doffing brush for the discharge of the fiber cleaned in the first cleaner, a flue for receiving cleaned fiber, a second cleaner having an inlet, ducts leading from spaced points about the periphery of said doffing brush to said flue and to the inlet of said second cleaner, respectively, and a valve at the brush end of each of said duct, each valve being movable between duct open and duct closed positions and each valve in its duct open position having an edge disposed closely adjacent the periphery of the said brush so as to serve as a cut-off to remove fiber therefrom.

25,781
PREMIUM HOLDING PACKAGE

David Akeireb, P.O. Box 1861, Station B, Montreal, Quebec, Canada

Original No. 3,139,981, dated July 7, 1964, Ser. No. 213,475, July 30, 1962. Application for reissue July 7, 1964, Ser. No. 391,824

2 Claims. (Cl. 206—47)



1. A combination display package for a fluid container and dispenser comprising:
- at least one container having a restricted neck;
- a sealing cap secured to said neck;
- a dispenser for connection to said container;
- said dispenser comprising a lower stem portion, an intermediate cap, and an upper protruding top portion;
- said stem and top portions having a cross-section less than the cross-section of said intermediate cap on said dispenser; and
- a relatively shallow, [open-ended] box-like, package-forming element including a bottom, top and intermediate panel, a first side panel connecting said top and intermediate panels and a second side panel connecting said top and bottom panels;
- said package-forming element being mounted on said container and dispenser and normally preventing removal of said dispenser without substantial dismantling of said package;
- said bottom panel, top and intermediate panels including transverse, aligned apertures surrounding said dispenser and said container;
- the apertures surrounding said dispenser including an aperture in the bottom panel surrounding said lower stem portion, an aperture in the intermediate panel surrounding said intermediate cap, and an aperture in the top panel surrounding the upper protruding portion;
- said dispenser surrounding apertures in said bottom and top panels being of an area smaller than said dispenser cap and preventing longitudinal movement thereof;
- said bottom panel engaging beneath said container and dispenser caps;
- said intermediate panel receiving said container and dispenser caps therethrough, and said top panel overlying and preventing longitudinal movement of said dispenser cap.

25,782
ABSORPTION REFRIGERATION APPARATUS

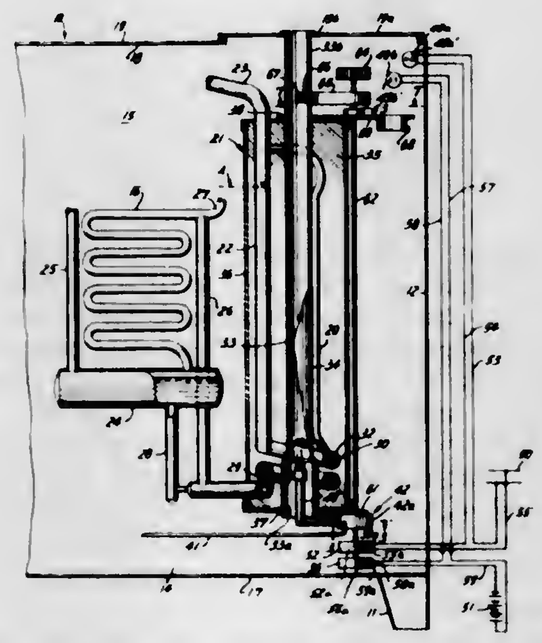
Gunnar Axel Grubb, Bromma, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden

Original No. 3,093,978, dated June 18, 1963, Ser. No. 134,760, Aug. 29, 1961. Application for reissue June 12, 1964, Ser. No. 386,470

Claims priority, application Sweden Sept. 22, 1960

12 Claims. (Cl. 62—236)

12. In combination with a refrigerating system of the type alternatively employing gas and electricity as power sources and in which cooling is effected by a refrigeration unit having a heat receiving part, of a gas burner heating element operable to maintain a flame burning in the atmosphere for producing combustion gases at an elevated temperature and capable of functioning to heat the heat receiving part by heat derived from said combustion gases substantially at said elevated temperature, means for supplying gas energy in the form of a combustible gas to said burner heating element including a valve having a valve element movable at will to positions opening and closing the supply of gas to said burner heating element, electrical heating means capable of functioning to heat the heat receiving part, means for conducting electrical energy to said electrical heating means, and mechanism adapted to selectively connect either one of said energy means to its associated heating element whenever both electricity and gas are available as sources of power for the refrigeration system, said last-mentioned mechanism comprising electric switch means which is connected to said electrical conducting means and includes a part shiftable responsive to movement of said movable valve element, said electric switch means opening upon shifting of said part thereof responsive to movement of said movable valve element to a position opening said valve to prevent flow of electrical energy to said electrical heating means, and said electric switch means closing upon shifting of said part thereof responsive to movement of said movable valve element to a position closing said valve to allow flow of electrical energy to said elecrtical heating means.



25,783
DRIVE MECHANISM FOR A BICYCLE OR THE LIKE

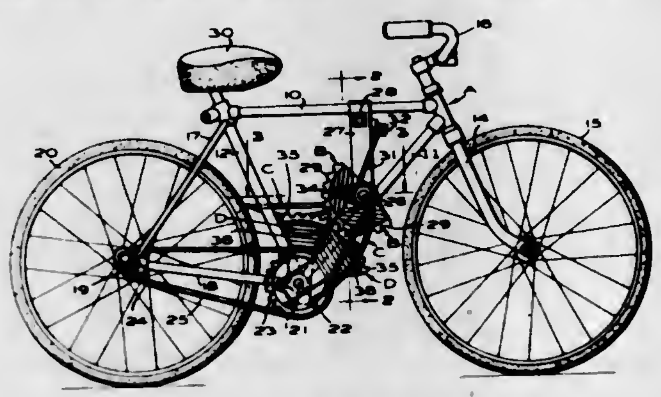
Timothy Tung Jen Young, 1211 Olive St., San Carlos, Calif.

Original No. 3,083,985. dated Apr. 2, 1963, Ser. No. 191,172, Apr. 30, 1962. Application for reissue May 18, 1964, Ser. No. 380,725

5 Claims. (Cl. 280—258)

1. The combination with a bicycle, or the like, having a supporting frame provided with a transverse bearing tube, a drive sprocket fixed thereto, a ground-engaging wheel a drive shaft journalled in this bearing tube and having provided with a driven sprocket, and a chain trained over the drive and driven sprockets so that rotation of the drive [sprockets] *sprocket* will actuate the driven sprocket to propel the bicycle, or the like, of a drive mechanism comprising:
- (a) an attachment shaft mounted on the supporting frame to extend transversely thereof;

- (b) a pair of drive levers swingably disposed on the transverse attachment shaft, one on the right side of the supporting frame and the other on the left side thereof, and each drive lever being formed with a segmental gear;
- (c) a pair of foot rests, one being disposed on each side of the supporting frame, and each foot rest being secured to an adjacent drive lever, whereby each foot rest may be depressed to impart a corresponding swinging movement to its respective drive lever;
- (d) means interconnecting the drive levers so that when one is depressed the other will be elevated and vice versa;
- (e) a pair of driven levers mounted on the drive shaft of the bearing tube, one on the right side of the supporting frame and the other on the left side thereof, and these driven levers being journalled for turning relative to the drive shaft of the bearing tube;



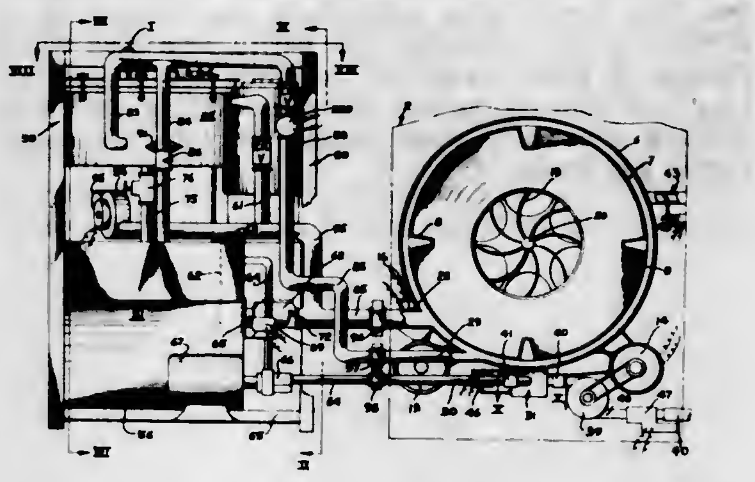
- (f) each driven lever having a segmental gear meshing with the segmental gear of the drive lever on the same side of the supporting frame, whereby the driven levers may be swung by the drive levers;
- (g) a pair of ratchet wheels fixed to the drive shaft of the bearing tube, one on each side of the supporting frame, with the ratchet wheels being disposed adjacent to the driven levers;
- (h) and a pair of spring-pressed pawls, each being carried by one of the driven levers and operatively engaging with an adjacent ratchet wheel to turn the drive shaft of the bearing tube and thereby propel the bicycle, or the like, through the instrumentality of the sprockets and chain, when the driven levers are swung in one direction by the drive levers;
- (i) the transverse attachment shaft and the drive levers being arranged [at an elevation above and] in front of the drive shaft of the bearing tube, with the foot rests extending rearwardly from the transverse attachment shaft.

25,784
COMBINATION LAUNDRY AND DRY CLEANER APPARATUS

James D. Robbins, Spring Lake, and Richard A. Curtis, Lowell, Mich., assignors, by direct and mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

Original No. 2,932,961, dated Apr. 19, 1960, Ser. No. 808,083, Apr. 22, 1959. Application for reissue Apr. 12, 1962, Ser. No. 190,518

26 Claims. (Cl. 68—4)



23. A combined home washing and dry cleaning mechanism comprising a housed motor driven rotary washer and drying tub having a tub drain means; inlet means for supplying a fluid cleaning medium to said tub; motor pump means for removing fluid cleaning medium from said tub; solenoid controlled valve means for supplying wash water to said tub inlet means to form a water base fluid cleaning medium; a dry cleaning solvent supply means; motor driven solvent pump means for supplying dry cleaning solvent to said tub inlet means to form a solvent base fluid cleaning medium; a solenoid operated routing valve connected to said tub drain means and having a first discharge outlet and a second discharge outlet connected to said dry cleaning solvent supply means; a motor driven tub drive mechanism for driving said tub selectively at washing and rinsing speed and spin drying speed; and control circuitry including selector switch means, a timer motor, a time control switch and solenoid controlled shifter mechanism for said motor driven tub drive mechanism for selectively energizing said solenoid controlled valve means or energizing said motor drive solvent pump means and said solenoid operated routing valve whereby cycling soak, wash, spray rinse, deep rinse, drying and tub draining operations may be selectively efected utilizing water and dry cleaning fluid.

PLANT PATENTS

GRANTED MAY 18, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,513
BLUEGRASS PLANT

Ross Hans Rasmussen, Hooper, Nebr.

Filed July 23, 1963, Ser. No. 297,167

1 Claim. (Cl. Plt.—88)

A new and distinct variety of bluegrass plant substantially as herein disclosed and described, characterized by its ability to produce a plant of dense, close foliage with unusual ability to withstand adverse weather conditions, having leaves of relatively fine texture, and a deep root system contributing to a firm, hard soil surface which minimizes disease infestation and makes the turf suitable for hard use areas such as football fields, golf fairways and lawns on which there is heavy traffic and which, because of the close and dense growth of the plant, is able to withstand close cutting without damage to normal growth.

2,514
BOUGAINVILLEA PLANT

Ted Green, Honolulu, Hawaii, assignor to Friends of Foster Garden, Inc., Honolulu, Hawaii

Filed Nov. 27, 1963, Ser. No. 326,647

1 Claim. (Cl. Plt.—54)

A new and distinct variety of Bougainvillea plant, characterized as to novelty by the tripling of the bracts, substantially as shown and described.

2,515
APRICOT TREE

Frederic W. Anderson, Merced, Calif., assignor to Kim Bros., doing business as Reedley Nursery, Reedley, Calif., a copartnership

Filed Feb. 28, 1964, Ser. No. 348,310

1 Claim. (Cl. Plt.—39)

A new and distinct variety of apricot tree, as illustrated and described, which is a regular and very productive bearer of small to medium size, globose to slightly oblong fruit having excellent shipping and keeping qualities; said variety being particularly characterized as to novelty, by early ripening fruit having firm flesh which remains in good marketable condition for a relatively long time both on the tree and after picking; such fruit ripening about one week earlier than the Newcastle, Derby, and Pomo.

2,516
BOUGAINVILLEA PLANT

Jack H. Champion, P.O. Box 35, Sanitarium, Calif.

Filed Sept. 26, 1963, Ser. No. 311,928

1 Claim. (Cl. Plt.—54)

A new and distinct variety of Bougainvillea plant, substantially as herein shown and described, characterized particularly as to novelty by its unique and consistent habit of growth, producing a combination of flowering heads having bracts of all white, all magenta-rose, and mixed white and magenta-rose color all growing at random on the same plant and at the same time.

PATENTS

GRANTED MAY 18, 1965

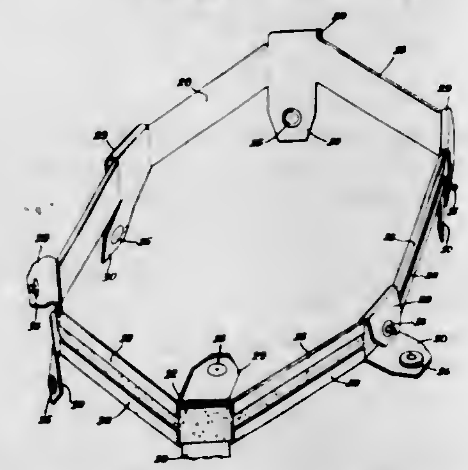
GENERAL AND MECHANICAL

3,183,522
HELMET SUPPORTING STRUCTURE

John K. Groot, Evanston, Ill., assignor to Wilson Athletic Goods Mfg. Co., Inc., River Grove, Ill., a corporation of Delaware

Filed Aug. 20, 1962, Ser. No. 218,020

2 Claims. (Cl. 2—6)



1. In a supporting structure adapted for use in protective helmets having an outer helmet shell, the combination of internal supporting means adapted for securement to the interior of the shell and including an inner supporting band having portions spaced from the shell and adapted to encompass the head of a wearer, a readily changeable inner size determining band of predetermined thickness and which comprises a strip of relatively soft and flexible material having opposite ends thereof secured together to form a closed loop of preselected width adapted to engage and fit snugly on a wearer having a predetermined head size, a plurality of pairs of tabs integral with said strip and spaced apart peripherally of the loop at distances conforming to the positions at which said head encompassing band is spaced from the shell, the tabs of said pairs being in opposed relationship to one another laterally of the strip and having releasable and engageable fastening elements thereon and being of lengths such that they embrace said inner supporting band at positions in which it is spaced from the shell to hold said strip against the surface of the inner supporting band which faces inwardly of the loop to provide for a snug fit with a wearer's head, an inner filler strip of flexible material of predetermined thickness and substantially coextensive with the outer surface of said loop, said filler strip being bonded to the outer surface of said size determining band and having a width approximately equal to the distance between adjacent ends of said pairs of tabs, and said size determining band having marginal extensions thereon between the spaced tabs which are folded over and bonded to said inner filler strip.

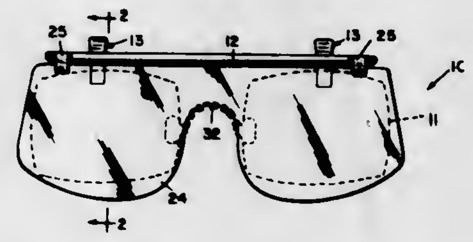
3,183,523
EYE SHADES

Robert H. C. Harrison, 400 Canadian Bank of Commerce Bldg., 309 8th Ave. W., Calgary, Alberta, Canada

Filed May 14, 1962, Ser. No. 194,264

3 Claims. (Cl. 2—13)

1. In an adjustable eye shade, the combination of a transverse supporting bar, first and second pairs of rotatably connected hinge members having a common hinge axis parallel to said bar, the hinge members in the first pair being carried at a fixed spaced apart distance by the end portions of the bar, and an elongated and normally flat shade panel having the hinge members in the second pair provided on the end portions thereof, said panel being formed from resiliently flexible material and the spacing of the second pair of hinge members on the panel being lesser when the panel is flexed than when it is flat, the second pair of hinge members being slidable longitudinally relative to the first pair of hinge members and being separable therefrom by flexing of said panel so that the spacing of the second pair of hinge members is lesser than the fixed spacing of the first pair of hinge members.

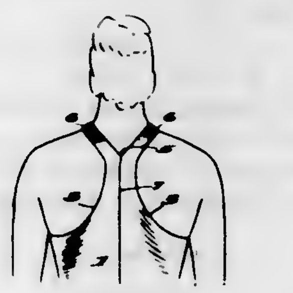


3,183,524
GIRL'S SWIMMING SUIT FOR COMPETITION AND RACING

John L. Hart, 2011 Washington, Iowa Falls, Iowa

Filed June 3, 1963, Ser. No. 284,946

2 Claims. (Cl. 2—67)

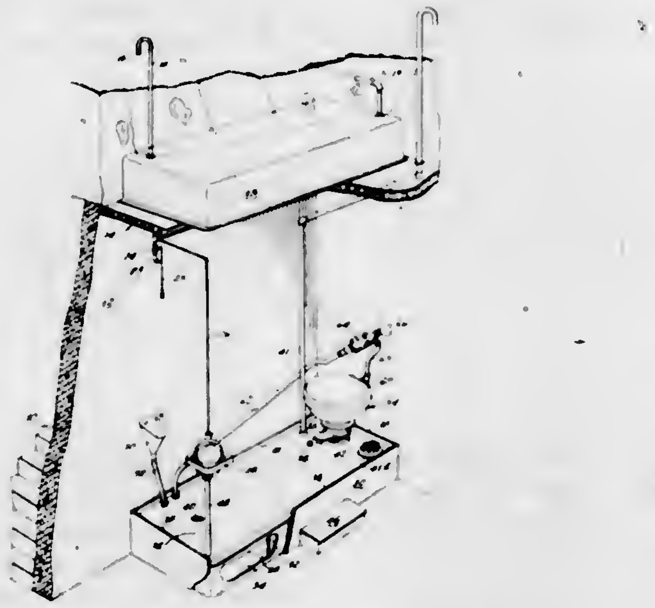


1. A swimming suit for racing comprising a waist portion and an upper body portion adapted to cover the thorax and having a high front adapted to extend substantially to a wearer's clavicle, and a back portion extending upwardly to a point close to the upper end of said front portion, whereby the upper edge of the back portion is at least as high as the third dorsal vertebra of a wearer, said upper body portion providing armholes at the sides and narrow straps at opposite sides of the neck opening extending parallelly between said front for location at the clavicle and said back and close to the neck of a wearer, the edges of said armholes comprising arcuate cutouts extending from said narrow straps rearwardly and downwardly and thence forwardly and upwardly and merging with the front portion of said narrow straps,

the lowermost portion of said cutouts being adapted to extend a substantial distance beneath the armpits of a wearer so as to leave bare the major width of the shoulders and entire shoulder blade area and the armpit areas and area over the teres major muscles of a wearer.

3,183,525
METHOD AND MEANS FOR OPERATING A TOILET IN A FALLOUT SHELTER

Robert F. O'Brien, Monterey Park, and Kenneth A. Milette, La Puente, Calif., assignors to Mission-West Manufacturing Company, Los Angeles, Calif., a corporation of Delaware
Filed Oct. 4, 1961, Ser. No. 142,923
13 Claims. (Cl. 4—1)



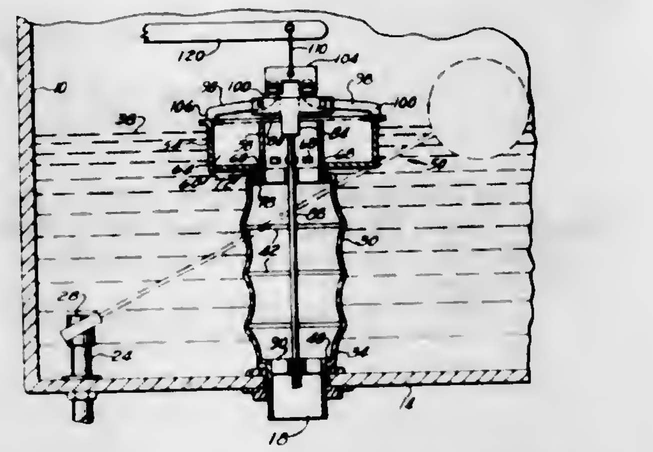
1. In a fallout shelter or the like, having a reservoir containing potable fresh water, at least one outlet to dispense the water, a toilet bowl, and a closed sewage receptacle connected to the toilet bowl outlet, means to flush the toilet bowl with low consumption of the fresh water, comprising:

(*a*) a waste container completely isolated from the sewage receptacle;
(*b*) means to drain the excess dispensed water into said container; and
(*c*) means to withdraw water from the waste container for flushing the toilet bowl,
(*d*) said withdrawing means including a manually operable pump to inject the water into the toilet bowl under pressure to minimize the quantity of water required for the flushing operation.

3,183,526
TANK FLUSHING APPARATUS

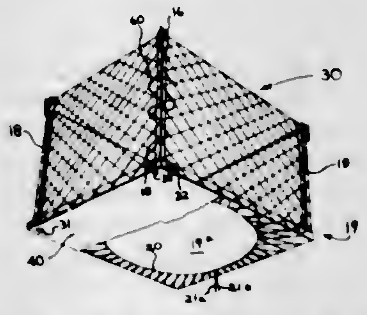
Maurice Aaron, 16 Hamlin Road, Highland Park, N.J.
Filed Oct. 30, 1963, Ser. No. 320,195
11 Claims. (Cl. 4—47)

1. Apparatus for flushing a fluid-containing tank which includes a fluid outlet pipe, said apparatus comprising
a vertically elongated tube positioned in said tank having an open lower end adapted to be secured to said fluid outlet pipe and rising vertically therefrom,
said tube also having an upper open end adapted to be normally positioned above the level of fluid in said tank,
said tube being of a flexible material so that it can be collapsed and expanded in accordion fashion,
said tube being adapted to be collapsed when it is desired to empty said tank by allowing the fluid in the tank to escape from the tank through said tube, said tube being vertically expanded and raised when it is desired to fill and retain fluid in the tank,
a fluid container at the upper end of said tube,
said fluid container including a plurality of apertures which provide fluid communication between the container and the tube so that fluid remaining in the container, while the tube is collapsed and after the tank has been emptied, is free to flow through said apertures into the tube and into the outlet pipe whereby the container is emptied and its buoyancy is restored and it and the tube can be raised to their vertical expanded position when the tank is once again filled with fluid.



3,183,527
ENCLOSURE

David V. Turner, Lakeside, Ohio (R.R. 1, Box 374P, Forest Park Estates, Port Clinton, Ohio)
Filed Mar. 18, 1964, Ser. No. 352,887
11 Claims. (Cl. 5—98)

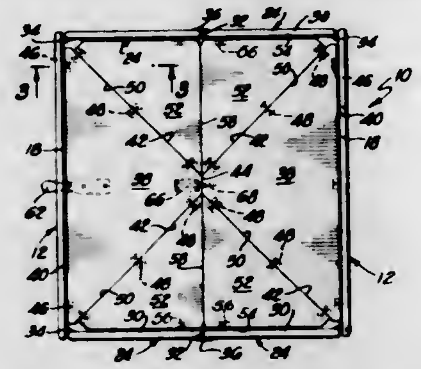


1. An article of manufacture for converting a legged table to an enclosure, said article comprising a generally cylindrical member formed of flexible material, said member having at least one open end, a plurality of elements secured about the open end of said member, said elements being located for engaging the ends of said legs, said article telescopically receiving said table with said elements engaging said ends of said legs with the cylindrical flexible material defining a fence-like enclosure when the table is located in inverted relationship and means for holding said flexible material in tension.

3,183,528
FOLDING PLAYPEN

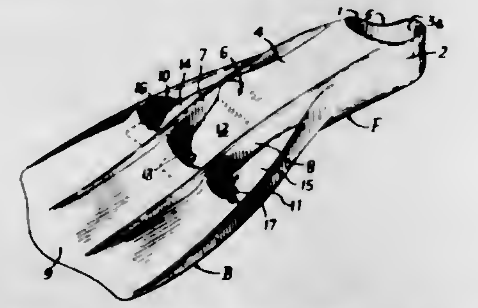
Robert V. Jacobs, Los Angeles, and Max L. Siegel, Santa Monica, Calif., assignors to Baby Line Furniture Corp., Los Angeles, Calif., a corporation of California
Filed Sept. 28, 1961, Ser. No. 141,329
1 Claim. (Cl. 5—99)

In a folding play yard having in an unfolded position a pair of opposite end wall members, a pair of connecting folding side wall members hingedly pivoted between said end wall members, a center floor member adjacent each end wall member and hingedly pivoted to its adjacent end wall member, and a side floor member adjacent each side of each of said center floor members and hingedly pivoted thereto at adjacent edges, each of said side floor members being hingedly pivoted to the adjacent part of its adjacent folding side wall member so that said folding side wall members and said center and side floor members are simultaneously foldable, one by the movement of the other, the improvement which comprises:
hinge means at each of said hingedly pivoted adjacent members, said hinge means being rigid axially of said hinge means and being rigidly secured to said adjacent members, said hinge means connecting each of said end wall members and adjacent side wall members to said center floor member and to said side floor members and said hinge means connecting said center floor members to said side floor members being in such position that all of said hinge means have axes which are located in the same plane when said floor members are in the same plane;
said hinge means connecting one of said side wall members to said adjacent side floor member, said hinge means connecting said adjacent side floor member to said adjacent center floor member, said hinge means connecting said adjacent center floor member to said adjacent end wall member and said hinge means connecting said adjacent end wall member to said adjacent side wall member being in such positions that the axes thereof intersect at a common point.



3,183,529
SWIMMER'S FOOT-FIN WITH THRUST-ACCELERATING DEVICE

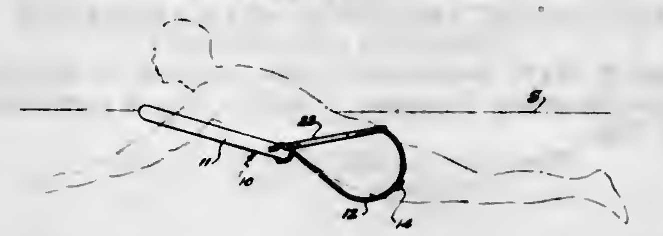
Georges Beuchat, 129 Rue Jean Mermoz, Marseille, France
Filed Mar. 16, 1964, Ser. No. 352,184
4 Claims. (Cl. 9—309)



1. A swimmer's foot-fin comprising a hollow foot portion open at the heel end to receive the user's ankle, and a blade portion extending from the toe end of the foot portion, said blade portion being formed as a whole of resiliently flexible material, said blade portion including a plurality of transversely-spaced longitudinal ribs, said blade comprising a first lower blade portion forming a forward continuation of the foot portion and defining with upwardly projecting portions of said ribs a plurality of first longitudinal channels open to the upper side of the fin, and a second staggered upper blade commencing at a point spaced above and intermediate the ends of said channels and extending forwardly to a point forward of said channels, said second blade defining with downwardly projecting portions of said ribs on the lower surface a plurality of second longitudinal channels open to the lower side of the fin.

3,183,530
SWIMMER'S SAFETY BUOY AND FLOAT

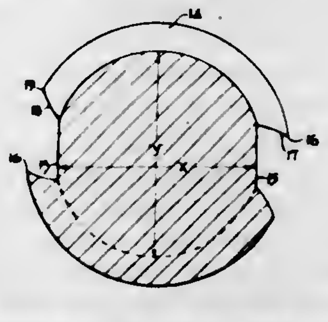
Barney B. Girden, 36 W. 76th St., New York 23, N.Y.
Filed Dec. 17, 1963, Ser. No. 332,336
20 Claims. (Cl. 9—311)



1. A swimmer's float comprising a substantially flat buoyant member having large surface areas at the opposite sides thereof; and a saddle member extending from the center of one end of said buoyant member and held in an operative position lying in a plane perpendicular to the planes of said large surface areas, said saddle member defining at least one arcuate recess which, when said saddle member is in said operative position, opens generally toward said buoyant member at one of said sides of the latter so that a swimmer can straddle said saddle member at said recess and thereby be maintained in engagement with the float while lying on said buoyant member and being supported by the latter, said saddle member being non-buoyant and thereby causing said buoyant member to float in an erect position with said one end lowermost and with major portions of said surface areas out of the water upon release of the float from a swimmer, so that the float then also constitutes a readily visible safety buoy.

3,183,531
METHOD OF FORMING A SCREW WITH CUTTING EDGES

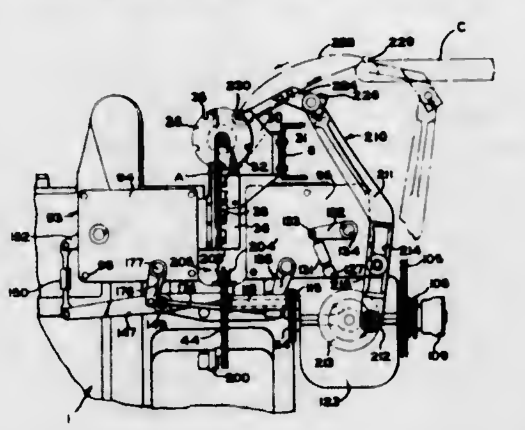
Arthur J. McKewan, Birmingham, England, assignor to G.K.N. Screw & Fasteners Limited, a company of Great Britain
Filed Sept. 26, 1962, Ser. No. 226,356
Claims priority, application Great Britain, Oct. 4, 1961, 35,712/61
1 Claim. (Cl. 10—10)



Method of making a screw having cutting edges to remove paint from an internal thread with which the screw is engaged, comprising pressing upon a straight elongated metal blank, initially of circular cross-section, in a controlled manner to form two flats at diametrically opposed positions at one end of the blank and separated by a distance which is less than the core diameter of the final threaded screw, by displacing the metal of the blank at these positions so as to cause it to flow away from said positions and form, at this end of the blank, a substantially oval cross-section which has, at the ends of its major diameter, portions of displaced metal which project radially beyond the initial circular cross-section of the blank and which have an excess of metal required to form a thread of full depth at such positions, and then rolling a thread upon the blank including said end of substantially oval cross-section to produce at said end two diametrically opposed portions of thread of full depth equal to the depth of thread on the remaining portion of the screw and two diametrically opposed grooves each of which has a cutting edge along its leading edge.

3,183,532
AUTOMATIC TRANSFER MECHANISM FOR FORGING MACHINES

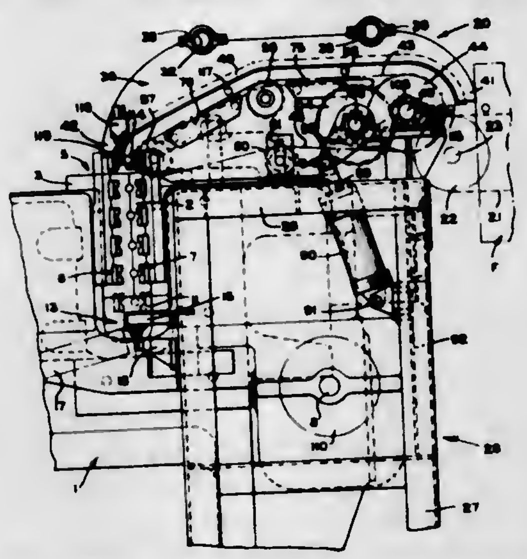
Albert R. Kull, Beachwood, Ohio, assignor to the Ajax Manufacturing Company, Euclid, Ohio, a corporation of Ohio
Filed Mar. 2, 1960, Ser. No. 12,439
18 Claims. (Cl. 10—12)



1. In an upsetting forging machine having a stationary gripping die, a horizontally reciprocable gripping die adapted to be reciprocated into and out of cooperative work gripping relationship to said stationary die, support means spaced from such gripping dies operative to help support and thus prevent sagging of an elongated cylindrical workpiece gripped by such gripping dies, and a third die horizontally reciprocable in a direction normal to such reciprocation of said reciprocable gripping die to engage and upset an end portion of such elongated cylindrical workpiece thus gripped by said gripping dies; work feed and transfer means comprising a stock loading arm having spaced workpiece supporting finger means thereon disposed above said gripping dies operative directly to deliver individual cylindrical blanks from a position remote from such machine to such machine, said arm being mounted for oscillation about a fulcrum mounted on such machine; a pair of spaced dealing discs having aligned equally peripherally spaced notches therein for receiving such blanks from said finger means, said dealing discs being mounted on an index shaft directly above the parting line of said gripping dies, said index shaft being rotatably mounted on such machine; a plurality of pairs of vertically spaced substantially parallel opposed stock gripping fingers having spaced stock engaging portions mounted on such machine rearwardly of said gripping dies and operative directly to receive such stock from said dealing discs and move such stock through said gripping dies when separated to position such stock successively in a plurality of vertically spaced pairs of opposed die cavities in the respective work engaging faces of such gripping dies, such pairs of cavities being vertically spaced distances equal to the vertical distance separating said opposed stock engaging fingers, such support means providing support for such stock when gripped in each of such pairs of opposed die cavities; drive means substantially directly vertically to reciprocate said gripping fingers in unison successively to position such stock in such opposed die cavities as aforesaid; drive means laterally to separate said gripping fingers; drive means laterally to close said gripping fingers, such closing and separating of said gripping fingers occurring alternately with a vertical reciprocatory stroke of said fingers in unison; drive means to impart a unidirectional intermittent rotary movement to said index shaft; and drive means to oscillate said stock loading arm about said fulcrum, all said drive means being driven in synchronism with such header die thereby to effect a continuous automatic operation of such forging machine.

3,183,533
STOCK FEED MECHANISM FOR FORGING MACHINES

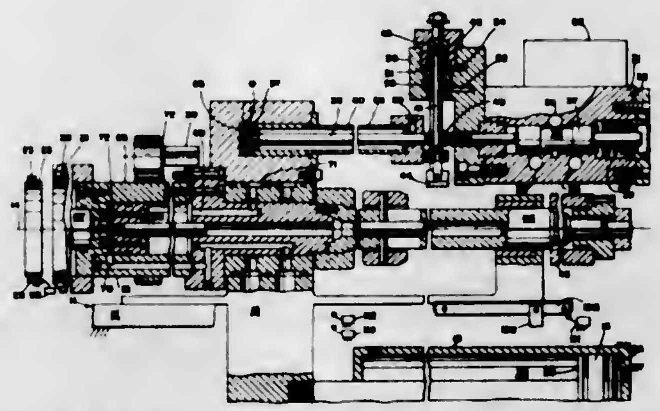
Albert R. Kull, Beachwood, Ohio, assignor to The Ajax Manufacturing Company, Euclid, Ohio, a corporation of Ohio
Filed June 1, 1960, Ser. No. 33,215
11 Claims. (Cl. 10—12)



1. In a forging machine of the type having a stationary gripping die, a movable gripping die and a reciprocable header die; an endless conveyor stock feed mechanism adapted to transfer such stock from a furnace to said machine to feed stock downwardly from the top of said machine; and means to hold such stock on said conveyor directly above the parting line of said gripping dies whereby such stock can be gauged by said header die, said endless conveyor stock feed mechanism being mounted above said machine to feed such stock directly horizontally from a furnace to said machine, said feed mechanism being dirven unidirectionally intermittently in timed relation to said machine.

3,183,534
HYDRAULIC FEED MECHANISM WITH MEANS TO CONTROL SAME

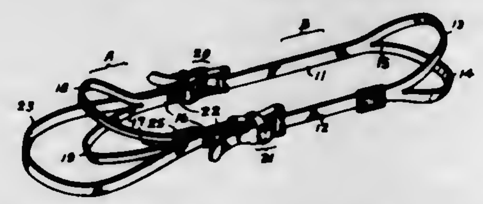
Harry W. Brown, Sr., Willowick, Ohio, assignor to The National Acme Company, a corporation of Ohio
Filed Sept. 12, 1961, Ser. No. 137,624
10 Claims. (Cl. 10—105)



1. A machine comprising, in combination, a frame having an axis, a slide movable parallel to said axis on said frame, a hydraulic piston and cylinder, a source of hydraulic pressure, means connecting said piston and cylinder to establish axial movement of said slide, a control valve having a spool in a body, means connecting said control valve to said pressure source and to said hydraulic piston and cylinder to control relative movement of same, a master thread and a cooperable stylus, means connecting said valve spool and body for relative movement in accordance with the relative longitudinal movement of said stylus and master thread, means connecting said valve spool and body for relative movement in accordance with the axial movement of said slide on said frame, hydraulic means to relatively laterally move said stylus and master thread into engagement, means to relatively rotate said master and stylus to effect relative longitudinal movement of said stylus and master thread to relatively move said valve spool and valve body in a first direction and thus move said slide in a first direction in direct accordance with said master thread, means to control said hydraulic means to relatively laterally separate said stylus and master thread, and hydraulic power means to relatively move said valve spool and body in said first direction to rapidly traverse said slide in said first direction independent of said master thread.

3,183,535
BOOT CARRYING AND WARP PREVENTING DEVICE

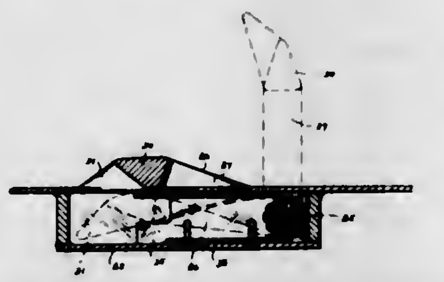
Robert R. McAusland, 1115 McGilvra Blvd. E., Seattle 2, Wash.
Filed Apr. 19, 1963, Ser. No. 274,250
4 Claims. (Cl. 12—120.5)



1. Boot carrying and warp preventing means comprising two pliable side straps adapted to be positioned longitudinally alongside of the sole portions of two boots which are disposed with their sole portions in registration and contact with each other; two pliable draw straps connected between said side straps at each end of the side straps, the two draw straps of each pair being adapted to extend outwardly from the side straps in planes divergent from each other and each draw strap being adapted to extend around and engage a terminal portion of a boot when the boot carrying device is applied to boots; tensioning means interposed in at least one of said side straps providing tensioning adjustment between the two sets of draw straps; and a pliable loop shaped hand-hold member having its ends connected with the side straps and draw straps at one end of the boot carrying device, said hand-hold member extending outwardly beyond the adjacent draw straps.

3,183,536
PORTABLE DOCK PLATE PLATFORM

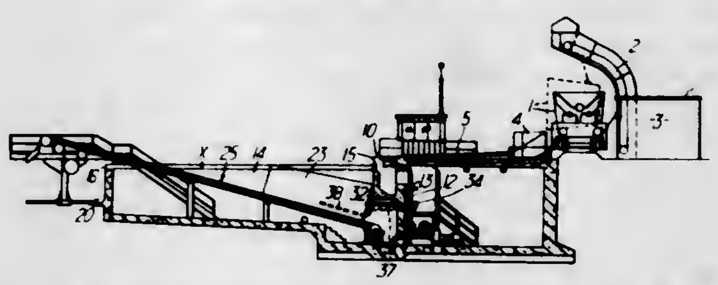
Wayne B. Noland, Avon Lake, Iowa, assignor to Woodford Manufacturing Company, Des Moines, Iowa, a corporation of Iowa
Filed June 5, 1961, Ser. No. 114,915
4 Claims. (Cl. 14—72)



1. In a dock plate, a plate member having approach sections at opposite ends and an opening therebetween, a bail member in said opening having a center portion extending transversely of said plate member with an integral leg portion at either end, the free end of each leg portion hinged to said plate member along an axis extending transversely of said plate member at a level below the upper surface of the plate member, said bail member capable of swinging into and out of the opening in said plate member, yieldable means normally holding said bail member with said center portion out of said opening above the top surface of said plate member.

3,183,537
APPARATUS FOR USE IN THE GRANULATION OF IRON

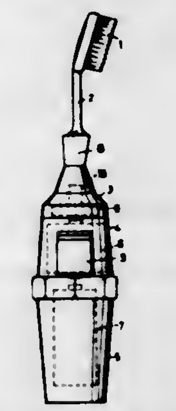
Hardy Eric Storr, 21 Penfold Drive, Great Billing, Northampton, England
Original application Aug. 16, 1961, Ser. No. 131,801. Divided and this application Oct. 2, 1963, Ser. No. 313,396
4 Claims. (Cl. 18—2.7)



1. Apparatus for use in converting molten iron to granules of smoothly contoured or rounded or globular shape comprising a conduit for directing a stream of molten iron through the atmosphere, a plurality of nozzles arranged below said conduit to direct jets of high-temperature water on to the molten iron stream and thereby create a shower of hot iron particles and water, a vessel for high-temperature water into which the shower falls and through which the hot iron particles sink, a collecting hopper in the vessel, and a conveyor extending from the hopper outlet, the hopper serving to direct the sinking particles on to the conveyor which serves to carry the particles from the vessel, wherein a supply pipe for cooling water is connected to the hopper at a level spaced below that of the high-temperature water in the vessel, and is adapted to discharge the cooling water into the hopper across the downward path of the particles through the hopper, so that the particles sink through, successively, a layer of high-temperature water and a layer of cooling water.

3,183,538
PORTABLE ELECTRIC TOILET APPARATUS

Otto Hübner, Gruntal 33, Munich 27, Germany
Filed Nov. 23, 1962, Ser. No. 239,441
Claims priority, application Germany, Apr. 28, 1962, H 45,624; Sept. 29, 1962, H 47,042
15 Claims. (Cl. 15—22)

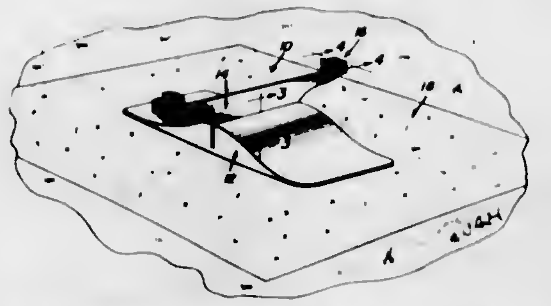


1. An electric portable toilet apparatus, comprising a tubular case, a current source disposed in said case, a motor energizable by said current source, fixedly mounted in said case and having a rotary shaft extending in the axial direction of said case, a vibrator disc comprising eccentrically mounted weights located at one end of said

case and adapted to be detachably mounted on said shaft for rotation therewith, first detachable means mountable at said one end of said case for connecting exchangeable vibratory cosmetic instruments with said case, and second detachable means mountable at said one end of said case for connecting exchangeable rotary cosmetic instruments directly with said rotary shaft after removal of said vibrator disc and said first detachable means.

3,183,539
SHOE CLEANER

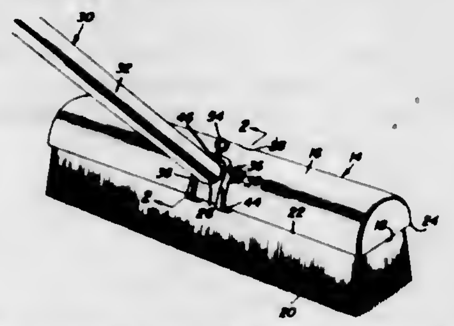
Paul C. Hutton, 6 Old Farm Road, Bellair,
Charlottesville, Va.
Filed June 21, 1963, Ser. No. 289,663
10 Claims. (Cl. 15—112)



1. A shoe cleaner for adhesive attachment to a rigid supporting surface, consisting of an enlarged substantially planar base formed of a relatively hard shock-absorbing rubber-like material, the major portion of the lower face of said base being closely conformable to the supporting surface, and a vertically orientated elongated flat scraper blade positioned transversely of said base and being rigidly affixed thereto, said blade presenting an elongated straight upper edge for contact with a shoe being directed thereacross, said upper edge being located a substantial distance above the highest point of the base so as to allow for turning of the shoe, thus achieving a full scraping of the bottom thereof, said base projecting a substantial distance beyond both sides of the blade along the path which would be assumed by the above mentioned shoe being directed across the blade edge.

3,183,540
BRUSH HEAD AND HANDLE LOCK

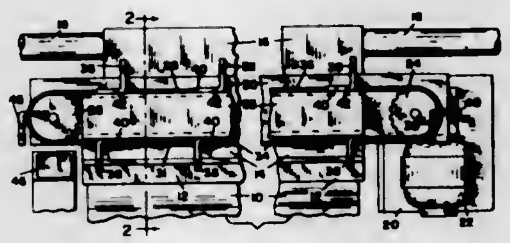
Joseph J. McCrink, 16 Moore Terrace, West Orange, N.J.
Filed Nov. 1, 1962, Ser. No. 234,739
6 Claims. (Cl. 15—145)



1. For use in conjunction with a heavy duty type push-pull broom of a type which has a block-like head which is semicylindrical with a convex side facing upwardly, wherein said head is provided intermediate its ends and on at least one side with a screw-threaded socket receiving the screw-threaded attachable and detachable end of an elongated push-pull handle; a handle reinforcing and securing bracket comprising a onepiece member which is horseshoe-shaped and embodies a bight portion and leg portions, the leg portions having free ends and said ends being laterally bent, the legs being circular in cross-section and the laterally bent ends being flattened to provide hooked grips, said leg portions being longitudinally bowed and in opposite spaced-apart relationship and said bight portion being flattened and provided with a screw-threaded hole, and a setscrew having a shank threaded into said hole.

3,183,541
BROKE AND FUZZ REMOVER FOR DOCTORS

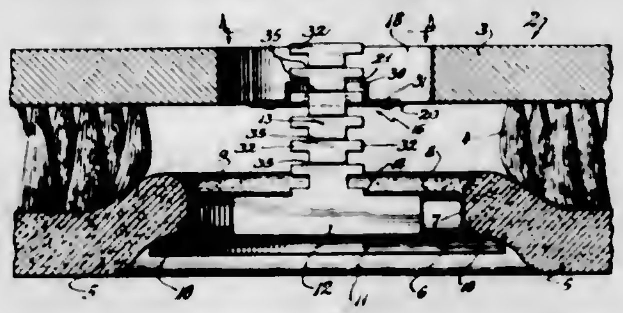
Francis Henry Goyette, Auburn, Mass., assignor to Lodding Engineering Corporation, Auburn, Mass., a corporation of Massachusetts
Filed Dec. 14, 1962, Ser. No. 244,789
3 Claims. (Cl. 15—246)



1. A fuzz and broke remover for a doctor blade having a supporting doctor back comprising a driven member adjacent one end of the blade, an endless element arranged on an inclined plane and driven by the member along the blade, means for driving the driver member, a series of pivoted fingers arranged on axes substantially perpendicular to the plane of the endless element and spaced along the endless element, said fingers being closely adjacent to and in the area of the doctor blade so that they ride across the doctor blade unidirectionally from one end to the other to remove broke and fuzz from the blade, and means to receive the broke and fuzz adjacent the end thereof, each finger comprising a long portion and a shorter portion at right angles thereto, and including a guide rail, said guide rail extending between the sprockets and being engaged by the shorter portion of the finger maintaining the longer portion of the finger in right angular relationship with respect to the guide rail, the guide rail being parallel to the working edge of the doctor blade, and suction means for deposition of the broke and fuzz in the receiving means.

3,183,542
FLOOR PAD HOLDER

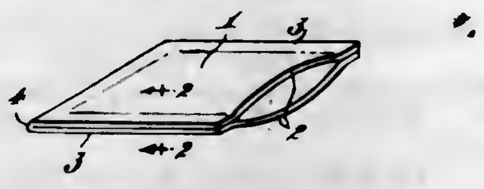
Archie Anders, Chicago, Ill., assignor to James H. Rhodes & Company, a corporation of Illinois
Filed Mar. 30, 1964, Ser. No. 355,871
7 Claims. (Cl. 15—246)



4. An adaptor for attaching an annular pad to an annular-shaped brush secured to a floor maintenance machine having a base and bristles extending from one face thereof comprising a locking plate for clamping the pad against the brush bristles, a fastener plate assembly adapted to be rigidly mounted to a central portion of the brush, a T-shaped fastener having a leg portion adapted to extend through an opening defined by said locking plate and a central opening defined by said fastener plate, the leg of said fastener defining an outwardly extending finger portion, said fastener plate assembly including locking means adapted to cooperate with the finger portion of the fastener whereby the pad holder can acommodate brushes of varying thicknesses.

3,183,543
DISPOSABLE SANITARY WASHING ENVELOPE

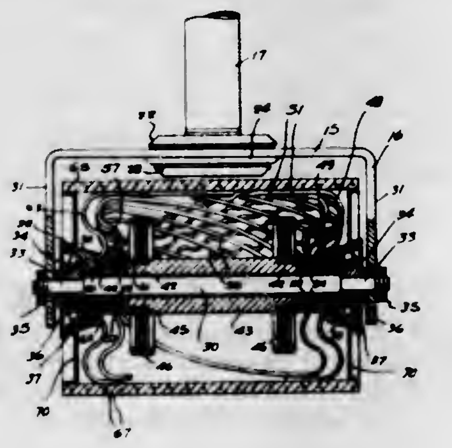
Gurdon S. Worcester, High St., Gloucester, Mass.
Filed Oct. 23, 1963, Ser. No. 318,294
5 Claims. (Cl. 15—509)



2. A sanitary washing mitten comprising two plies of sheet material joined by a bond at one or more of their edges to form an envelope open at one end to receive a user's hand, each said ply comprising a zone of a slowly soluble material at least temporarily impervious to water, whereby the user's hand is protected from external liquids for a predetermined period after water is applied to the envelope, whereafter said slowly soluble material softens and permits disposal of the mitten in a sewage system.

3,183,544
YIELDABLE CASTER

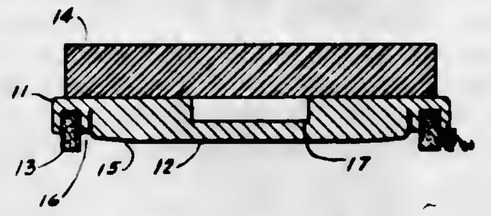
Theodore L. Bailey, New York, N.Y.
(529 County Line Road, Radnor, Pa.)
Filed Dec. 7, 1962, Ser. No. 242,955
6 Claims. (Cl. 16—18)



6. A caster comprising a yoke, a vertical shank journaled to the bight portion of said yoke, a transverse shaft of substantial length secured to the side arms of said yoke, sleeve means journaled on said shaft, a generally cylindrical resilient wire mesh basket secured on said sleeve means and extending axially for a substantial portion of the length of said sleeve means, said wire mesh basket comprising a first closed resilient wire member formed with diagonally extending loops having inwardly extending sinuously curved end portions anchored in opposite end portions of said sleeve means, and a second closed resilient wire member inside the first resilient wire member formed with diagonally extending loops underlying and crossing the loops of the first wire member at substantial angles thereto at the periphery of the wire basket, the loops of said second closed resilient wire member having inwardly extending sinuously curved end portions anchored in said opposite end portions of the sleeve means, the side elements of the loops of at least one of said closed resilient wire members being sinuously curved, a resilient deformable outer tread shell secured on said sleeve means surrounding and resiliently engaging said wire mesh basket, a plurality of spaced rigid supporting disc members mounted on said sleeve means inside said wire mesh basket, at least two of said disc members being located inwardly adjacent the respective ends of said wire basket, and respective resilient cover discs secured around said sleeve means in the opposite end portions of said resilient deformable tread shell.

3,183,545
EASY SLIDE CASTER

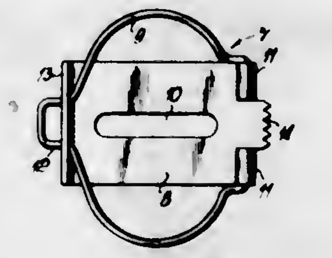
Eric Victor Bergstrom, Byram Shore Road, Byram, Conn.
Filed June 29, 1961, Ser. No. 120,751
3 Claims. (Cl. 16—42)



1. A caster comprising a rigid structural base member having an upper and a lower side, a uniform coating placed on a major portion of the central surface of the lower side of said base member, said coating being of a resinous material having a coefficient of friction of less than 0.10, expressed against steel, said lower side of said base member also having a compressible felt ring mounted thereon, said ring and the surface of said coating lying in the same plane when said ring is compressed, and said ring extending out of said plane when a force is not exerted thereon, said felt ring completely surrounding said coating and acting as a floor wiping means to prevent an accumulation of friction producing particles on the surface of said coating.

3,183,546
HOLDING DEVICE

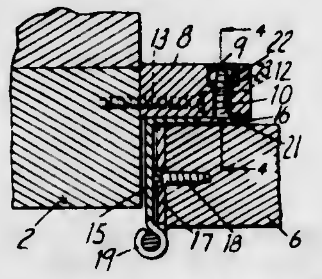
Wilhelm Heller, Solingen-Ohligs, and Manfred Herbrich, Tefenthal, Germany, assignors to Julius Schmidt, Remscheid-Dorfmuhle, Germany, a firm
Filed Feb. 9, 1962, Ser. No. 172,337
Claims priority, application Germany, Feb. 13, 1961,
Sch 29,227
7 Claims. (Cl. 16—94)



1. In a holding device for securing a carrier rail for a curtain or the like, in combination, a substantially flat carrying member adapted to be fixed to a building structure and having a circumferential edge; a holding member in the form of a bow-shaped spring wire arranged substantially in a plane having its ends secured to said carrying member and having at least one substantially U-shaped locking portion intermediate said ends, said holding member being mounted on said carrying member in a normally expanded working position with said U-shaped portion projecting laterally beyond the edge of said carrying member to one side of the latter and in a plane parallel to that of said carrying member, said U-shaped portion in said expanded working position being adapted to extend into a notch of a carrier rail, and said locking member being resiliently compressible to a position in which said U-shaped portion is transversely displaced in the plane of said wire for withdrawing said portion substantially from beyond said edge; and a substantially rigid locking nose integrally formed with said carrying member and projecting from said carrier member to the side opposite said one side substantially in the plane of said holding member and cooperating with said U-shaped portion of said spring wire in the working position of the latter for holding a carrier rail by engaging into a notch of the latter located opposite to that engaged by said U-shaped portion.

3,183,547
HINGE AND CLOSURE ASSEMBLIES FOR WINDOWS AND THE LIKE

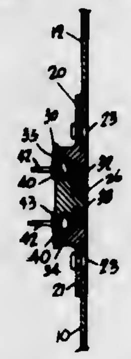
Jack Bury, Benton Harbor, Mich., assignor to Kaywood Corporation, Benton Harbor, Mich.
Filed Mar. 26, 1962, Ser. No. 182,228
11 Claims. (Cl. 16—129)



10. A support for a window closure or the like comprising a supporting rail adapted to be positioned on the side or on the face of a window casing member and having a longitudinally extending groove on the inner side thereof and having longitudinally extending slots therein opening to said groove, a hinge comprising articulated leaf members, one leaf member having a laterally projecting attaching arm disposed on the side of the rail opposite said groove and in overlapping relation to said slots therein and having transverse slots therein vertically spaced to correspond to the spacing of the slots in the rail, the other leaf member being adapted for attachment to a supported member, a nut element fittingly disposed in said groove, and attaching screws disposed through said slots in said hinge member and said rail and having threaded engagement with said nut element.

3,183,548
DUAL PINTLE FLUSH MOUNTING HINGE

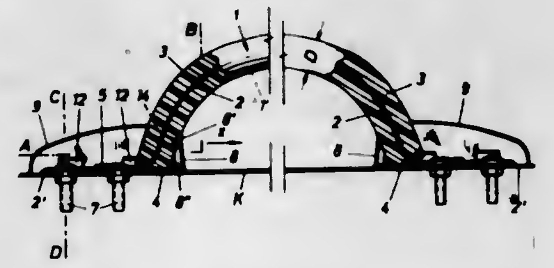
Eugene R. Speakman, Fullerton, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Sept. 24, 1962, Ser. No. 225,785
4 Claims. (Cl. 16—163)



3. A hinge for pivotally connecting a movable object to a fixed structure, said hinge comprising, in combination:
first and second elongated hinge members;
alternately interdisposed lugs integrally disposed from each of said hinge members, said first hinge members comprising a pair of elongated hinge members individually adapted for attachment to said movable object and to said fixed structure, said lugs having a pair of spaced aligned openings therethrough;
elongated hinge pins disposed in each of said aligned openings and having axes lying in a common plane;
an elongated sealing portion disposed integrally from each of said first hinge members, said sealing portion extending substantially parallel to said hinge pins and positioned remotely outwardly therefrom; and
laterally extending portions disposed integrally from said second hinge member and in a plane substantially parallel to said plane containing said axes of said pins, said sealing portions contacting surfaces of said laterally extending portions only when a surface of said movable object is positioned substantially coextensive with a complementary surface of said fixed structure to provide a seal against passage of air through said hinge.

3,183,549
HOLDER GRIP, PARTICULARLY FOR MOTOR VEHICLES

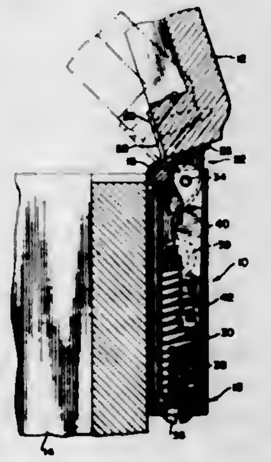
Willi Hammesfahr, Solingen-Wald, Germany, assignor to Gebr. Happich G.m.b.H., Wuppertal-Elberfeld, Germany
Filed Jan. 7, 1963, Ser. No. 249,729
Claims priority, application Germany, Jan. 12, 1962, H 44,592; Feb. 24, 1962, H 44,996
12 Claims. (Cl. 16—125)



11. A holder grip arrangement comprising in combination: an attachment base plate, a flexible grip yoke having a steel strip core with bores provided adjacent its ends and a resilient synthetic plastic envelope enveloping said steel strip core except at its bored ends, the latter contacting said base plate with their bores registering with corresponding bores in said base plate, said base plate having lateral turn ups and said steel strip core having corresponding lateral recesses engaged by said turn ups, and attachment means penetrating through said registering bores and connecting said steel strip core with said base plate.

3,183,550
COUNTERBALANCE HINGE

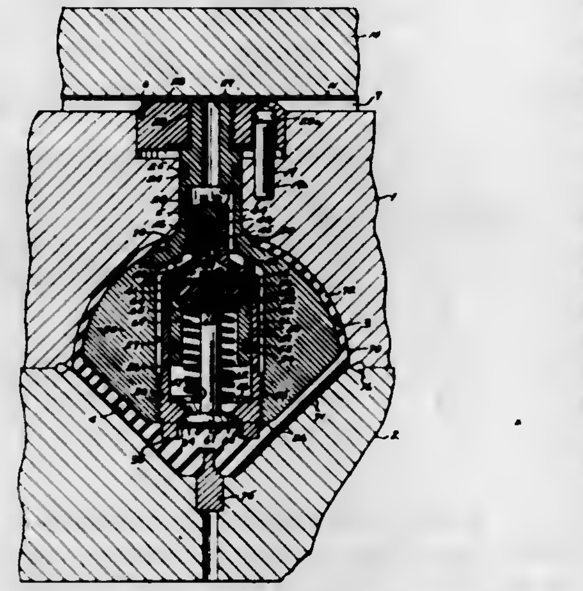
Malcolm T. Phelps, Jamestown, N.Y., assignor to Weber-Knapp Company, Jamestown, N.Y.
Filed Oct. 21, 1963, Ser. No. 317,733
8 Claims. (Cl. 16—190)



7. A hinge assembly adapted to mount a closure member on a cabinet for movement between closed and open extreme positions relative thereto, said hinge assembly including a pair of bracket members, means pivotally connecting said bracket members, and brake means for exerting forces opposing movement of a closure member which are of different intensities dependent upon relative positioning between closure member and cabinet, said brake means including link means pivotally connected to one of said bracket members, a brake member connected to said link means and engaging the other bracket member, and abutment means for causing said brake member to move at different rates relative to said other bracket member.

3,183,551
AIR-OPERATED STRIPPER FOR MOLDS

Walter Delmar Johnson, 2502 Noble Road, Cleveland, Ohio
Filed Apr. 14, 1961, Ser. No. 102,970
12 Claims. (Cl. 18—2)



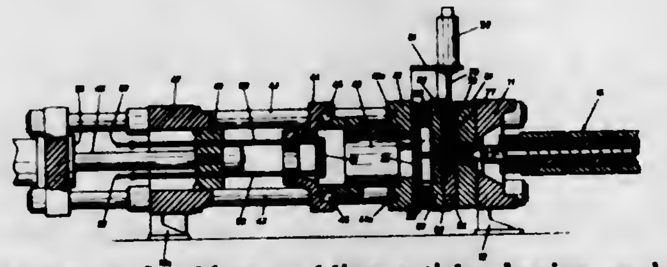
1. In a stripping device for ejecting a molded article from a mold core, means providing a passage through a mold core; a poppet valve disposed in said passage having a head normally closing said passage; said head having a valve stem and a piston-like member on the distal end of said stem; a normally open sleeve valve carried adjacent and movable relative to said piston-like member between said head and said piston member; means defining a first chamber over said piston member and means defining a second chamber between said sleeve valve and said head, both said chambers being fluid connected with said passage; said sleeve valve being movable in said second chamber to close the fluid connection to said second chamber; means optionally supplying pressure fluid to said passage and pressurizing said chambers whereby said poppet valve is initially partially opened to eject an article from said core while said sleeve valve remains open due to the pressure in said second chamber after which said sleeve valve closes as said poppet valve fully opens and effects a pressure drop in said second chamber.

ERRATUM

For Class 18—2.7 see:
Patent No. 3,183,537

3,183,552
PLASTIC MOLDING APPARATUS

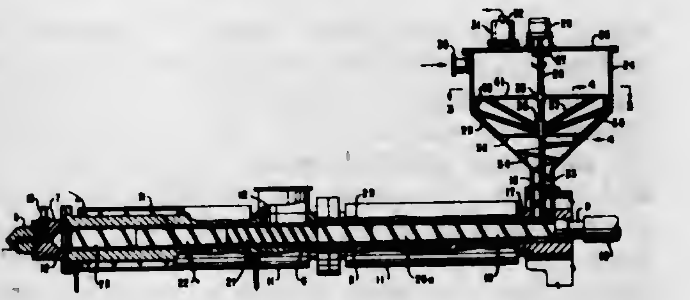
Francis Farkas, Willowdale, Ontario, Canada, assignor to Canada Lighter & Plastics Limited, Willowdale, Ontario, Canada
Filed Jan. 25, 1963, Ser. No. 253,964
10 Claims. (Cl. 18—5)



1. Apparatus for blow molding articles having necks comprising; a first block and a second block mounted in an opposed spaced apart parallel relationship; said first block including at least a first blow mold and a second blank mold, mounted therein in a spaced apart relationship, said blank mold and said blow mold each comprising separable sections biased to project in open positions outward of said block and slidable into closed positions flush with said block, said second block having mounted thereon first and second fixed plungers, one individual to each of said molds and registrable therewith, a plurality of pairs of separable neck mold sections, one pair surrounding each of said plungers, each of said neck mold sections being slidable into and out of open and closed positions adjacent the outermost extremity of said plungers, and adjacent the near face of said second block respectively, means for moving said first and second blocks into a face to face abutting engagement with said plungers registered with their opposed mold sections; switch means responsive to said engagement; means actuated by said switch means for injecting plastic into said blank mold to produce a blank; and means actuated by said switch for simultaneously introducing air into a blank in said blow mold to produce one of said articles; and means for aligning said first and second plungers with said second and first molds respectively on said first block after separation of said blocks.

3,183,553
CRAMMER FEEDER FOR EXTRUDER

Ernest R. Slater, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 10, 1961, Ser. No. 151,467
3 Claims. (Cl. 18—12)



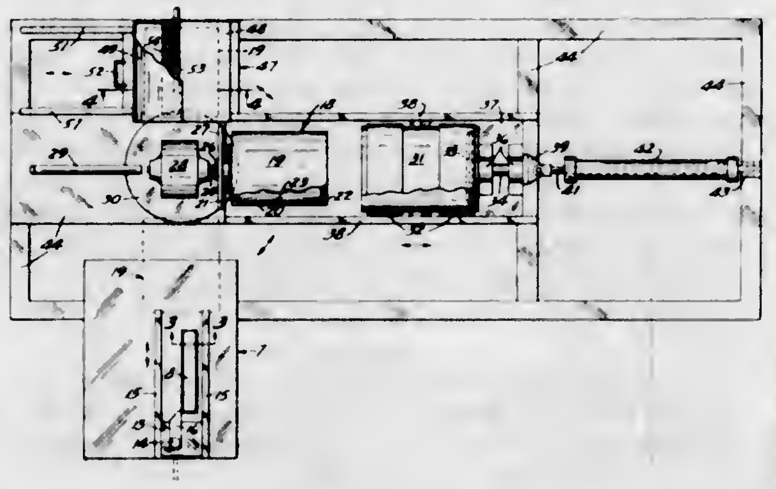
1. A crammer feeder for feeding powdered solid materials under pressure to the barrel of an extruder and to mix said materials before movement to said barrel, said feeder comprising:
(*a*) a feed hopper having a bottom carrying a tubular discharge spout adapted to be connected to said extruder barrel,
(*b*) an auger within said spout having threads for forcing powder downwards from the hopper and having a drive shaft extending upwards through the hopper, and
(*c*) mixing blades on and rotatable with said shaft extending radially outwardly therefrom near to the said bottom so as to sweep at least a part thereof, said blades having narrow widths to leave larger circumferentially contiguous open spaces and being inclined with respect to the vertical radial plane through the shaft in a direction opposite to said threads to lift said powdered materials during rotation of the shaft in a direction in which the auger forces powder downwards and effect mixing of said materials within the hopper.

3,183,554
MOLDING APPARATUS

Glendon R. Brandt, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original application Oct. 31, 1961, Ser. No. 148,974. Divided and this application Apr. 9, 1963, Ser. No. 277,065
3 Claims. (Cl. 18—26)

1. Molding apparatus which comprises in combination (*a*) a pivotable base plate, (*b*) a motor attached to said pivotable base plate, (*c*) a hollow cylindrical molding

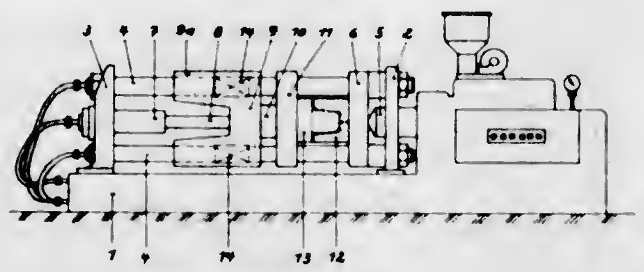
drum having one closed end and one open end, (*d*) a rotatable shaft axially connecting said molding drum and said motor, (*e*) an oven having one closed end and one open end and of such size to fit over said molding drum, (*f*) a rotatable end plate adapted to fit contiguously with said open end of said molding drum and positioned inside of and attached to the closed end of said oven, (*g*) a track axially aligned with said molding drum, (*h*) means for moving said oven along said track to pass over said molding drum and engage said end plate with the open end of said molding drum to form an enclosed molding cylinder, (*i*) a triangular cross-sectional trough having an adjustable elongated opening in the bottom thereof and adapted to be inserted within said hollow molding drum, (*j*) automatic vibrating means attached to one end of said trough, (*k*) means for moving said trough inside of said molding drum when said motor and molding drum are pivoted on said pivotable base plate to an axially aligned position with said trough, (*l*) and means for cooling said molding drum.



3,183,555

LOCKING MEANS FOR THE MOLD CLOSING PLATE OF INJECTION MOLDING MACHINES

Werner Siegel, Langenfeld, Rhineland, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany
Filed June 20, 1962, Ser. No. 203,775
6 Claims. (Cl. 18—30)

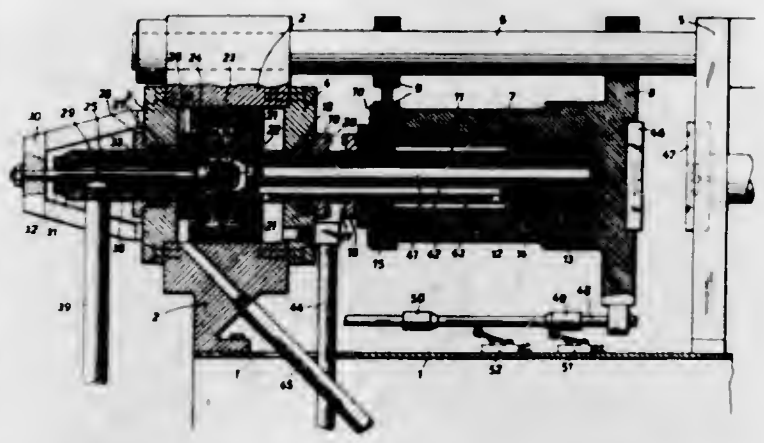


1. An injection molding machine, comprising: a machine frame, guiding columns mounted on the machine frame, a mold-closing plate slidable along the guiding columns, an ejector mold member carried by the slidable mold-closing plate, a fixed mold-clamping plate, a charging mold member carried by the fixed mold-clamping plate, at least one hydraulic pressure pad capable of pushing the ejector mold member against the charging mold member, clamping bushes of highly elastic metal formed with fluid tight spaces interposed between the slidable mold-closing plate and the guiding columns, and means including ducts for forcing fluid under pressure into the said fluidtight spaces to deform said bushes and thereby lock the mold-closing plate in any position on the guiding columns.

3,183,556

HYDRAULIC PRESS

Hans Stüdli, Sr., Winterthur-Hard, Switzerland
Filed Aug. 27, 1963, Ser. No. 304,858
Claims priority, application Switzerland, Sept. 11, 1962, 10,730/62
5 Claims. (Cl. 18—30)

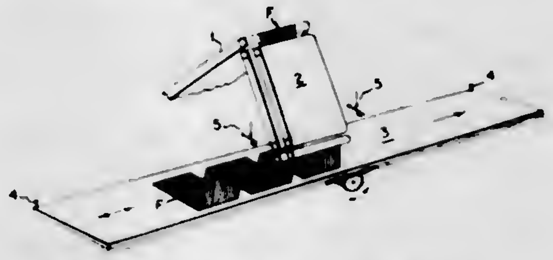


1. A fluid pressure press, particularly a mold clamping press for injector molding machines, comprising a frame, a first fluid pressure unit having a movable pressure applying first cylinder secured to a movable mold part for movement toward a fixed mold part, a first piston in said cylinder and a first pressure chamber between said first piston and said first cylinder for connection to a pressure fluid supply and acting to move said first cylinder, said first pressure unit generating the rapid feed motion of said cylinder, a second fluid pressure unit having a stationary second cylinder, a second piston movable therein, and a second pressure chamber between said second piston and said second cylinders for connection to a fluid pressure supply to move said second piston, said second pressure chamber being of greater effective diameter than said first pressure chamber, the two fluid pressure units being mounted in series by a connection fixing the first piston to the second piston, and means for shutting off access of pressure fluid to said first pressure chamber upon actuation of said second pressure unit whereby to increase the fluid pressure acting on said movable first cylinder towards the end of its stroke.

3,183,557

CROSSLAPPING METHOD AND APPARATUS

Joseph Lee Hollowell, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 20, 1961, Ser. No. 160,803
8 Claims. (Cl. 19—163)

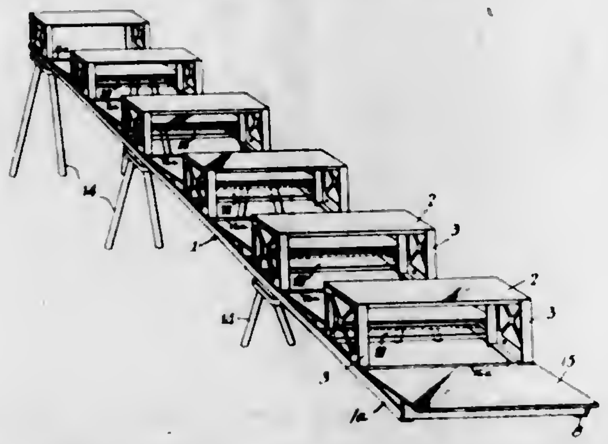


4. A crosslapping apparatus comprising:
(*a*) a crosslapper head;
(*b*) means to feed a web to the crosslapper head:
(*c*) a collecting conveyor to receive said web from said head;
(*d*) means to reciprocate said head at substantially right angles to said conveyor;
(*e*) means to repeatedly reciprocate said conveyor at substantially right angles to the motion of the crosslapper head and over a uniform pre-set distance to collect said web; and
(*f*) means to synchronize the motions of said crosslapper head and said collecting conveyor so that the web is deposited on the conveyor in a uniform zig-zag pattern.

3,183,558

SEATS

Bernard Cronin, 1 Hillview Crescent, Orpington, England
Filed Jan. 3, 1961, Ser. No. 80,088
Claims priority, application Great Britain, Jan. 4, 1960, 28/60
7 Claims. (Cl. 20—1.126)



1. A portable seating assembly comprising a rectangular frame having inwardly facing L-shaped side members and having series of spaced cross members connecting the side members; a series of seat units each comprising a seating surface and foldable leg members hingedly secured thereto at each side; said seat units and foldable leg members being located within alternate spaces between the cross members; releasable means on the side members within the alternate spaces between the cross members securing the lower ends of the leg members to the frame side members when the leg members are normally extended; and a like series of footboards within the remaining spaces pivotally secured at their rear ends to the cross members at the fronts of their related seat members; said footboards having foldable supports at their front ends engaging when extended the cross member at the rear of the next adjacent seat to maintain the footboard substantially horizontal when the frame is inclined at a predetermined angle to the horizontal.

3,183,559

COMBINED SELF-LOCKING SASH BALANCE AND SASH GUIDE DEVICE

Gordon W. Love, 962 Abbey Road, Birmingham, Mich.
Filed Feb. 6, 1963, Ser. No. 256,632
2 Claims. (Cl. 20—52.2)

1. A self-locking removable double-hung sliding sash window construction comprising

a window frame having parallel opposite side members each of which contains a pair of laterally-spaced elongated parallel-sided outer and inner grooves disposed parallel to one another with the grooves of each pair aligned with the corresponding grooves of the pair in the opposite side member,

upper and lower window sashes disposed in spaced parallel relationship within said window frame and having side rails with parallel-sided grooves therein aligned with said outer and inner grooves respectively,

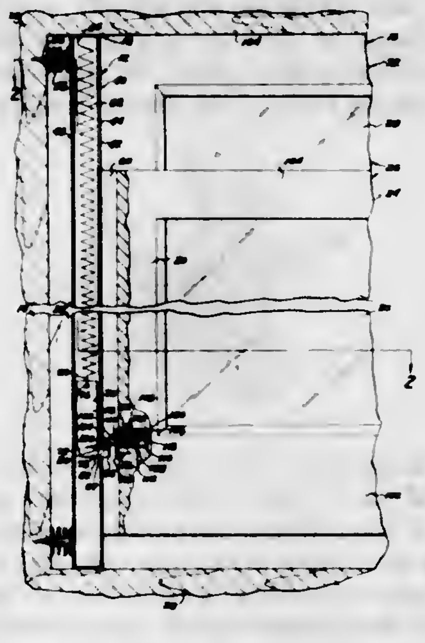
an elongated parallel-sided tubular sash balance lock casing seated partly within and partly projecting externally from each of said frame side member grooves into said sash side rail grooves in relatively-slidable guiding engagement therewith,

each sash balance lock casing having an elongated slot therein facing its respective sash side rail and also having therein an elongated sash balancing spring anchored at one end thereto,

a sash balance lock disposed within each casing and connected to the other end of its respective sash balancing spring,

said lock including a casing-gripping element releasably lockingly engaging its respective casing and a lock-operating member operatively connected to its respective casing-gripping element and projecting therefrom through its respective casing slot into the path of travel of its respective sash,

said lock being responsive to the engagement of said lock-operating member by its respective sash for release from locking engagement with its respective casing and responsive to the disengagement of said lock-operating member from its respective sash for applying said lock to said casing,



fasteners securing said casing to their respective frame side members and retaining said casings partially within their respective grooves,

the casings in one of said frame side members being mounted for sliding motion independently of one another within and transversely of their respective grooves,

and compression springs engaging said relatively slidably mounted casings within their respective grooves and urging said slidably mounted casings into relatively slidable guiding engagement with their respective sashes within the respective sash side rail guide grooves thereof, whereby the identical casings serve both for sash guidance and for holding said sash balance locks while the slidably-mounted casings are movable independently of one another within their respective grooves so as to self-alignedly adjust themselves to warping and other differing dimensional characteristics of said sashes.

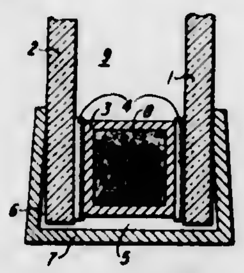
3,183,560

INTERMEDIATE FRAME FOR DOUBLE GLASS PANELS

Edgard Brichard, Jumet, Belgium, assignor to S.A. Glaverbel, Brussels, Belgium, a company of Belgium
Filed Dec. 12, 1961, Ser. No. 158,845
Claims priority, application Belgium, Dec. 19, 1960, 475,857, Patent 598,320
3 Claims. (Cl. 20—56.5)

1. A double glass panel unit composed of two sheets of glass connected together in spaced parellel relation by sealing means providing an air tight chamber between such glass sheets, said sealing means including a rectilineal frame sandwiched between said glass sheets and constituted of four separate completely tubular frame members composed of metallic material and having abut-

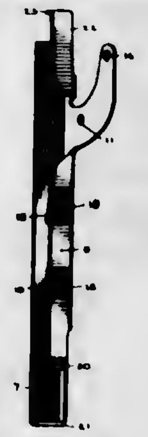
ting beveled ends, each of said tubular frame members being rectangular in cross-section and having two parallel side walls provided with plane exterior surfaces disposed in opposed relation to the inner surfaces of the associated side edge portions of the glass sheets, and having two transverse walls extending across the space between such glass sheets, a right angled member wholly enclosed by and joining the abutting beveled ends of two of said frame members at each corner of said frame, each of said right angled members being constituted of metallic material and substantially completely filling the spaces defined by the associated end portions of the frame members enclosing the same, and each of said right angled members having continuous right angular exterior wall surfaces of widths approximating the widths of and substantially conforming in configuration to the associated interior surfaces of the walls of said frame members and being located closely adjacent to such interior surfaces so that the corners of said right angled members substantially close the transverse joint formed by the abutting ends of the frame members, metal solder material completely filling the spaces between the outer surfaces of said right angled members and the interior surfaces of said frame members, and in the joints between the abutting ends of the side and transverse walls of said frame members, said solder material forming a continuous and uninterrupted bond between the metallic materials of said frame members and right angled members and across said joints, and consolidating said members into a unitary hollow rectangular frame which is fluid tight throughout substantially the entire areas of the walls of said frame, the soldering material in the joints between the side walls of said frame members being substantially flush with the exterior surfaces of such side walls, and two rectangular bands of adhesive material bonding together in fluid tight relation the exterior surfaces of the side walls of said unitary frame and of the solder material in the joints therebetween to said inner surfaces of the side edge portions of the glass sheets, said frame, solder material and said bands of adhesive providing a continuous fluid tight seal entirely around the chamber formed by said glass sheets and frame.



3,183,561
WIDE JALOUSIE END CLIP

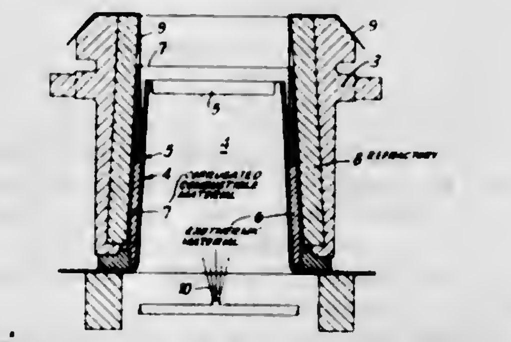
Paul J. Spicer, 729 NW. 7th Terrace,
Fort Lauderdale, Fla.
Filed July 18, 1963, Ser. No. 295,896
2 Claims. (Cl. 20—62)

1. A jalousie window device of the character wherein a plurality of relatively wide glass panels are mounted in a window frame in a horizontally pivoted manner to swing in a horizontal arcuate path to and from an overlapping engagement, end clips for engagement with the ends of the panels, the end clips being formed in right and left hand shapes, each of the clips being stamped to form an elongated metallic body of U-shape transversely, the clips having a flat base wall that is bent at a right angle to form an outer flange and also bent to a right angle to form a spaced inner flange, the outer flange at its lower end being bent inwardly to form a lower stop for a glass panel, the flat base adjacent its upper end terminating in a forwardly inclined yieldable tongue having a forwardly extending lip portion that engages the top marginal edge of the panel when the panel is seated upon the stop, the base adjacent its upper portion being extended to form an arcuate crank arm that is parallel to and in the same plane as the base, the crank arm being pivotally connected to a fixed frame member of the window and pivotally connected to an operator bar, the inner flange having a plurality of L-shaped cuts forming a plurality of free ended tongues spaced from each other and spaced from opposite ends of said inner flange and being yieldable and biased toward the inner side of the glass panel for direct contact therewith when the panel is inserted between the flanges, the terminal end of the inner flange being transversely twisted whereby the glass panel is forced to lie against the forward flange, the tongues formed from the inner flange creating a rubbing action of the tongues upon the adjacent metal from which the tongues have been cut and whereby to additionally retard the flexing of the tongues when the glass panel is disposed within the channel.



3,183,562
PRODUCTION OF INGOTS AND CASTINGS

Roy Spencer Moore, Cronulla, New South Wales, Australia, assignor to Foseco International Limited, Nechells, Birmingham, England, a British company
Filed June 27, 1962, Ser. No. 205,800
Claims priority, application Great Britain, July 5, 1961, 24,297/61
9 Claims. (Cl. 22—1)



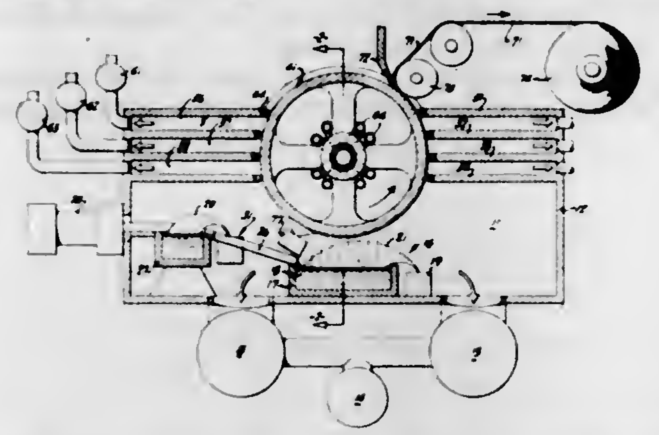
1: A method for the production of lined mould heads, head boxes and the like used for casting metals which comprises applying to a lining of heat-insulating refractory material present therein a layer of corrugated combustible material having its corrugations facing inwards and applying a layer of mouldable exothermic composition to the said corrugated surface.

3,183,563
APPARATUS FOR CONTINUOUS FOIL PRODUCTION BY VAPOR DEPOSITION

Hugh R. Smith, Jr., Piedmont, Calif., assignor to Temescal Metallurgical Corporation, Berkeley, Calif., a corporation of California
Filed June 5, 1962, Ser. No. 200,157
5 Claims. (Cl. 22—57.3)

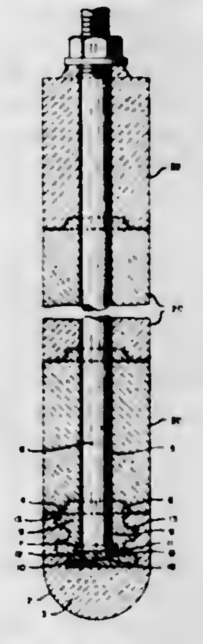
4. An apparatus for the continuous manufacture of a thin foil comprising, a housing defining a main chamber,

a rotatable drum mounted in said housing so that the periphery of said drum forms a portion of a wall of said chamber, a plurality of vacuum sealing chambers disposed about the periphery of said drum immediately outside said housing, means to evacuate said main vacuum chamber to a high vacuum and means to evacuate said sealing chambers to provide progressively increased vacuum to the surface of said drum as said surface approaches said main vacuum chamber, a crucible within said chamber for receiving coating material to be vaporized, first electron beam heating means within said chamber adjacent said crucible for vaporizing the material in said crucible, said first electron beam heating means including focusing means for focusing the electron beam onto the surface of the material in said crucible for vaporization thereof, second electron beam heating means within said chamber adjacent said drum, said second electron beam heating means including focusing means for focusing the electron beam onto the surface of said drum for heating the surface of said drum prior to the deposition of the coating material thereon in order to control the adhesion of the coating to the surface of the drum, and means for removing the coating directly from the surface of the drum in the form of a continuous unsupported foil web.



3,183,564
STOPPER FOR A LADLE OR SIMILAR RECEPTACLE

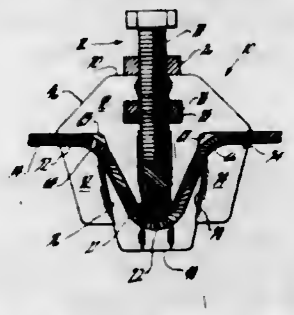
Crawford B. Murton, Churchill Borough, Pa., assignor to Vesuvius Crucible Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Dec. 14, 1962, Ser. No. 244,761
5 Claims. (Cl. 22—85)



5. A stopper for a ladle or similar receptacle comprising a stopper head having a well extending downwardly thereinto, the wall of the well having downwardly facing shoulder means, a stopper rod having a lateral projection at its bottom inserted downwardly into the well and attaching means embracing the bottom of the stopper rod, the attaching means comprising a plurality of sections assembled about the bottom of the stopper rod and having opposed straight meeting faces, such sections when so assembled providing a radially outwardly extending groove fitting about the lateral projection at the bottom of the stopper rod and thereby predeterminedly relatively positioning the sections axially of the stopper rod, the sections having external means which when the sections are thus assembled and predeterminedly relatively positioned axially of the stopper rod underlie said shoulder means whereby to fasten the rod to the head.

3,183,565
CABLE SHORTENER

Ernest I. Schwarz, Middletown, Conn., assignor to The Eis Automotive Corporation, Middletown, Conn., a corporation of Connecticut
Filed Nov. 14, 1963, Ser. No. 323,682
2 Claims. (Cl. 24—71.1)



1. A device for shortening the effective length of a cable that may have its ends secured, said device comprising a housing having a front wall and a generally similar rear wall spaced rearwardly therefrom, said housing being adapted to receive a segment of the cable between said front and rear walls, lower portions of these walls adjacent the side edges thereof being engaged and being elongated vertically and defining arcuate corners at the top thereof so that the segment of the cable received in the housing initially extends generally horizontally across and between the walls and over the arcuate corners at the engaged side edge portions thereof, screw means detachably mounted on said housing for generally vertical movement downwardly between said walls, and a cable engaging element rotatably retained at the lower end of said screw means for downward movement between said walls in response to rotation of said screw means and adapted to bear against one side only of the cable and to displace the segment thereof downwardly inside the housing and between the engaged side edge portions and between said front and rear walls.

3,183,566
CLAMP FOR SECURING HAWSERS AND THE LIKE

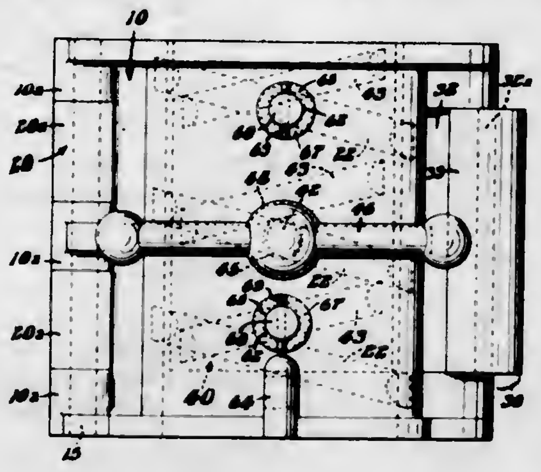
George W. Yep, 8123 Frankford Ave., Philadelphia, Pa.
Filed Nov. 12, 1963, Ser. No. 322,748
3 Claims. (Cl. 24—125)

1. A clamp designed to hold hawsers or the like, said clamp comprising

a pair of hemi-cylindrical body members pivotally joined together along one side in an axial direction, each of said members having an axial length at least as great as the arcuate length,
hinge means pivotally joining said members and extending substantially the entire axial length of the members,
latch means for connecting the free sides of the members, said latch means having an axial length at least as great as one-half of the axial length of the members,
a hemi-cylindrical hawser tensioning member mounting adjacent one body member for movement within

the area defined by the inner surfaces of the pair of body members, and

means for progressively advancing the tensioning member away from the one supporting body member and

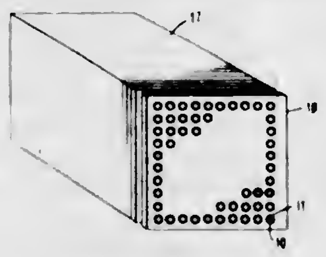


into contact with the hawser whereby the hawser is securely clamped between the tensioning member and the opposing inner surface of the supporting member.

3,183,567
MANUFACTURING MAGNETIC STORAGE MATRICES

Jacob Riseman, Poughkeepsie, Joseph G. Christ, Lagrangeville, and Raymond F. Sankuer, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Mar. 31, 1961, Ser. No. 99,739
1 Claim. (Cl. 29—155.5)



A method of manufacturing magnetic storage matrices which include a plurality of thin magnetic film storage elements arranged in a unitary array comprising the steps of preparing a plurality of elongated tubular thin magnetic film elements by depositing thin magnetic films upon the circumferential surfaces of a plurality of cylindrical non-metallic and non-magnetic substrate members each of which has at least one axial aperture therethrough, said film being applied while each of said members is subjected to a magnetic field by a current carrying wire threaded through the aperture therein, securing the film carrying substrate members in spaced-apart relation in a coordinate array of rows and columns with their longitudinal axes parallel to one another, molding a non-magnetic insulating compound around said film carrying members, solidifying said compound to form a block having said film carrying members encapsulated therein, and dividing the block at least once along a plane perpendicular to the longitudinal axes of said elements.

3,183,568
CANOPY RELEASE

John A. Gaylord, San Rafael, Calif., assignor to H. Koch & Sons, Corte Madera, Calif., a corporation of California

Filed Sept. 17, 1962, Ser. No. 224,102
12 Claims. (Cl. 24—230)

1. A canopy release comprising:

(*a*) a female strap connector frame,

(*b*) a male strap connector frame,

(*c*) keeper pockets in the female frame,

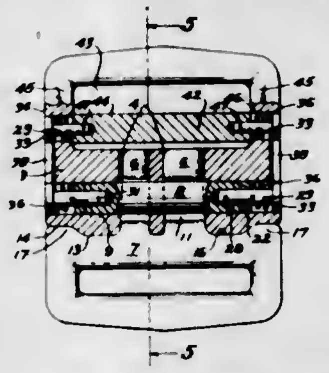
(*d*) connector prongs extended from the male frame and fitting into said keeper pockets,

(*e*) a rocking shaft journalled in said female connector frame and intersecting said keeper pockets,

(*f*) portions of said shaft registering with said keeper pockets being recessed to permit the insertion and removal of said prongs,

(*g*) portions of said prongs registering with said pockets being recessed to be engaged by said shaft when said shaft is turned to move the recessed shaft portions out of said pockets and the unrecessed portions of the shaft into said pockets for interlocking with the recessed portions of said prongs,

(*h*) the said connector prongs being of different configuration and said keeper pockets and said shaft recesses being correspondingly of different configurations so as to pre-determine the position of the insertion of the connector prongs so that the recesses in said recessed portions of said connector prongs face the rocking shaft for engagement by said rocking shaft,



(*i*) manipulable means for rocking said rocking shaft to disengage the shaft from the recesses in said prongs,

(*j*) said manipulable means including a handle bar generally parallel with said rocking shaft,

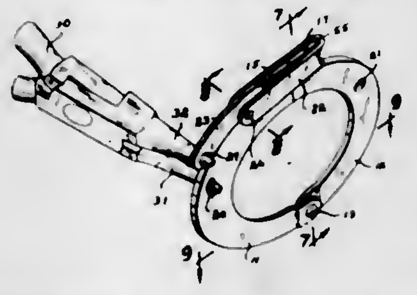
(*k*) arms extended from said handle bar and connected to said shaft for rocking said shaft as the handle bar is moved relatively to said female strap connector frame,

(*l*) releasable means engageable with said handle bar to hold said handle bar in an initial position interlocking said shaft with said connector prongs.

3,183,569
CLAMP MEANS

William G. Webb and Milton C. Engman, Des Moines, Iowa, assignors to Engman Manufacturing Company, Des Moines, Iowa, a corporation of Iowa

Filed Apr. 19, 1962, Ser. No. 188,808
3 Claims. (Cl. 24—270)



1. In a clamp means, comprising, in combination,

(*a*) a first curved jaw,

(*b*) a second curved jaw,

(*c*) means for pivoting one end of one jaw to one end of the other jaw,

(*d*) a projection on the free end of said first jaw,

(*e*) a projection on the free end of said second jaw,

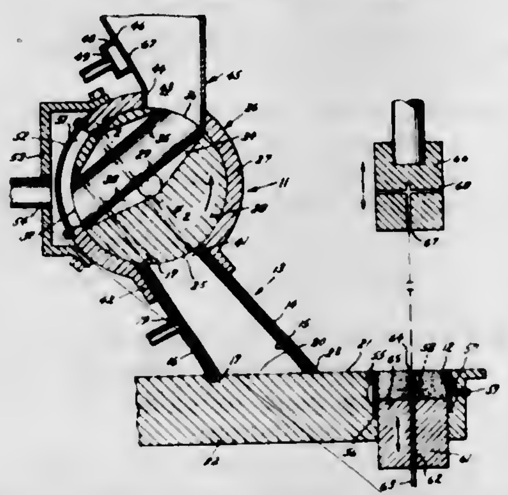
(*f*) a U-shaped strap member detachably embracing one of said projections, and

(*g*) a cam lever pivoted to said U-shaped strap member contacting said other projection, said other projection adapted to be selectively embraced by said U-shaped strap and said one projection engaged by said cam lever;

(*h*) said cam lever having a hole adjacent its outer free end and said jaws each having a hole extending through it, said hole in said one jaw and said hole in said cam lever being adjacent each other when said lever is in engagement with said other projection, and said other projection adapted to be selectively embraced by said U-shaped strap and said one projection engaged by said cam lever with said hole in said other of said jaws and said holes in said cam lever being adjacent each other, said hole being of such a size to receive the jaws of a pliers type tool to facilitate closing the clamp.

3,183,570
COMPACTING EQUIPMENT

Clarence W. Vogt, Weston, Conn.
(Box 232, Westport, Conn.)
Filed Mar. 21, 1960, Ser. No. 16,543
12 Claims. (Cl. 25—90)



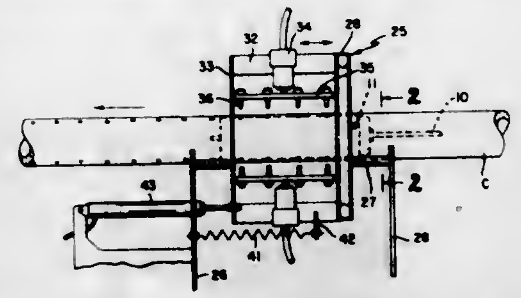
1. Filling equipment for comminuted material comprising a mold having a cavity therein, said cavity having a peripheral wall, a floor and a mouth, a filter member of porous material defining said wall of said cavity, means to apply pressure against the contents of said cavity in direction substantially parallel to said wall thereof, means to apply a source of gas under superatmospheric pressure through said filter member to apply lateral pressure against the contents of said cavity, means to discontinue application of said lateral pressure and substantially simultaneously discontinue said pressure parallel to said wall of the cavity and means forming part of the cavity to thereupon effect removal of the contents of said cavity.

3,183,571
PERFORATING MACHINE FOR CLAY DRAIN TILE

John D. Schmunk and Hall E. Gilliland, Findlay, Ohio, assignors to The Hancock Brick and Tile Company, Findlay, Ohio, a corporation of Ohio

Filed May 3, 1963, Ser. No. 277,846
3 Claims. (Cl. 25—105)

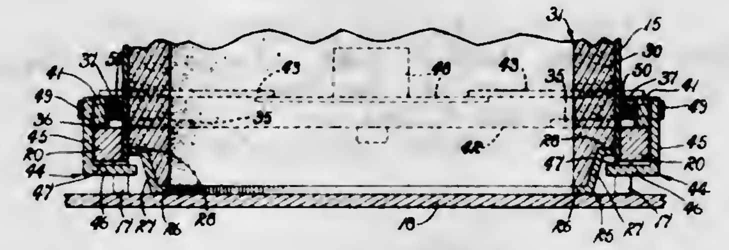
1. A machine for perforating a continuous tubular column of plastic material as it advances from the extruder, said machine comprising an elongate tubular mandrel adapted to fit within the plastic column, a stationary rod within the plastic column along which the mandrel travels, a cushioning covering for said mandrel, a mandrel actuating spring mounted on said stationary rod and engaging said mandrel so as to be compressed upon movement of said mandrel with said plastic column, a rectilinearly movable dolly on the outside of the plastic column, a mounting for the dolly enabling to and fro shifting movement thereof in a plane parallel to the advancing movement of the plastic column, perforating punches on the dolly, means to actuate said punches so that they extend through the walls of the column and against the cushioning covering for the mandrel, whereby both the dolly and mandrel are thus connected and advance along with the plastic column, said actuating means retracting said punches from the mandrel and plastic column after a predetermined interval thereby to enable the spring to return the mandrel to its starting position, and means for returning the dolly to its starting position after retraction of said punches.



3,183,572
HOLDER FOR PIPE FORMING DEVICE

Robert A. Fritz, Fresno, Calif., assignor to Fresno Valves, Inc., Fresno, Calif., a corporation of California

Filed Sept. 23, 1963, Ser. No. 310,627
7 Claims. (Cl. 25—126)



1. A holder, for constraining casting material within a cylindrical pipe forming jacket having a plurality of circumferentially spaced legs rested upon a support surface with the jacket disposed in substantially upright attitude for receiving such material in pipe forming relation and said jacket being adapted to be elevationally positioned with respect to said support surface, comprising a circular flanged member adapted to rest on such a support surface to support said pipe of material within the jacket, and carriage means transversely slidably mounted for rectilinear movement on the jacket having opposed lift means extended inwardly of the jacket between said legs in spaced relation beneath said flanged member when the jacket is rested upon the support surface in position subsequently to engage the flanged member during elevational movement of the jacket relative to the support surface in supporting relation to said flanged member and to said pipe.

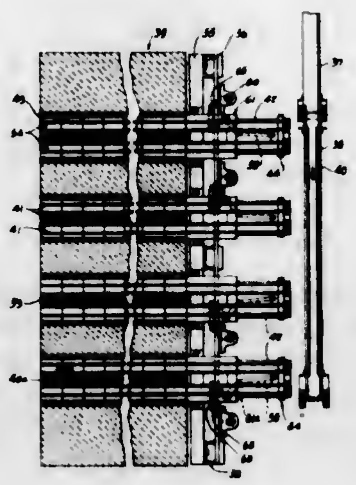
3,183,573
APPARATUS FOR MAKING CERAMIC BODIES AND CERAMIC COMPOSITION FOR USE THEREWITH

Richard B. Alexander, Anderson, Ind., assignor to National Tile & Manufacturing Co., Anderson, Ind.

Filed July 26, 1960, Ser. No. 45,502
8 Claims. (Cl. 25—142)

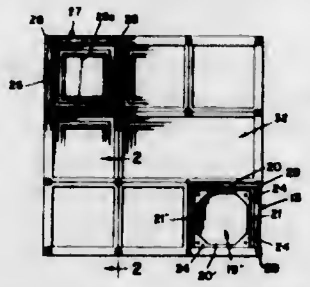
1. A kiln of the class described made of high temperature refractory material and having a plurality of tunnels extending from end to end therethrough, and a pair of guides extending through each of said tunnels and arranged to engage and support tile units thereon in guiding relation thereto for sliding movement therealong, each guide including a metal section inserted through one or more ceramic sleeve sections, said tunnels sloping down-

wardly from their entrance ends to their exit ends to provide a natural draft of air therethrough from the exit ends of said tunnels to the entrance ends thereof, and means for pushing a plurality of tile units in edge to edge engagement along said guides through said tunnels, means comprising a collector plate located adjacent said tunnels at the exit end of the kiln and arranged to receive tile units so pushed through said tunnels, and means for pushing such bodies on said collector plate therealong.



3,183,574
URN AND FRAME CONSTRUCTION

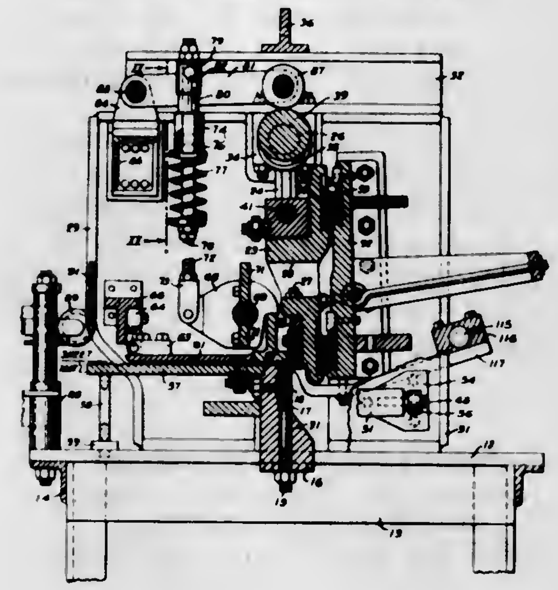
Fred F. Diem, Oakland, Calif., assignor to M. Greenberg's Sons, Inc., San Francisco, Calif.
Filed June 5, 1961, Ser. No. 114,768
3 Claims. (Cl. 27—1)



3. An urn and frame construction for the interment of cremated remains comprising, in combination, a supporting frame, said frame comprising a plurality of pairs of horizontal bars, a plurality of vertical spacers, each pair of horizontal bars being fixed at a preselected vertical distance from another pair of horizontal bars by said spacers, and a plurality of spaced apart flat urn supporting members joining the horizontal bars in each pair, said members lying flush with the top of the bars joined thereby, a plurality of urns for cremated remains, each of said urns comprising a receptacle having an open end and at least one flat surface, a cover plate for said open end, and means for fixing said cover plate to said receptacle to seal said open end, each of said urns being disposed on one of said urn supporting members with said flat surface lying flush against said urn supporting member and with the center line of each of said urns lying in approximately the same vertical plane as the center line of the supporting member on which it is disposed, the receptacle of each of said urns having a half width less than the half distance between the center line of the urn supporting member on which it is disposed and the center line of the horizontally adjacent urn supporting members, the receptacle of each of said urns having a height less than the preselected vertical distance between said pairs of horizontal bars.

3,183,575
METAL EXPANDING MACHINE

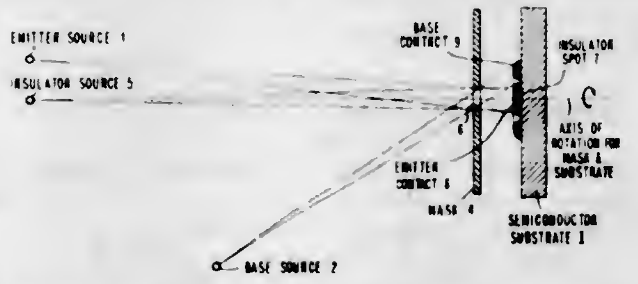
Ray C. Skeel, Santa Barbara, Calif., assignor of fifty percent to Robert A. Baker
Filed Feb. 20, 1961, Ser. No. 90,425
10 Claims. (Cl. 29—6.2)



1. A metal expanding machine comprising:
(*a*) a stationary cutter bar;
(*b*) a movable cutter blade that reciprocates in a plane toward and away from the cutter bar and oscillates in said plane lengthwise of the bar;
(*c*) a bearing plate having a fixed position with respect to the cutter bar and positioned in a plane parallel to said bar and parallel to said plane of movement of the blade;
(*d*) resilient means for holding the movable cutter blade away from said fixed cutter bar and against the fixed bearing plate to guide the blade during reciprocation and oscillation;
(*e*) and, means for reciprocating the cutter blade toward and away from the cutter bar and oscillating the blade on alternate reciprocations, whereby said cutter blade will shear sheet material disposed between it and the bar.

3,183,576
METHOD OF MAKING TRANSISTOR STRUCTURES

Frederick H. Dill, Putnam Valley, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 26, 1962, Ser. No. 205,368
11 Claims. (Cl. 29—25.3)

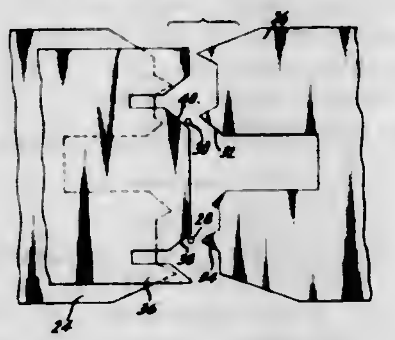


9. The process of fabricating a semiconductor structure wherein emitter and base contacts are formed on a surface of a semiconductor substrate by evaporating emitter and base source materials through an aperture in a mask situated adjacent said substrate and wherein said substrate-mask combination are rotated together, comprising the steps of:
first depositing insulator material from an insulator source located near the axis of rotation of said mask-substrate combination so as to deposit an insulator spot on the surface of said substrate;

depositing an emitter contact from an emitter source which is positioned slightly off the axis from the position of said insulator source so that the depositing emitter contact is formed to overlay completely the previously-deposited insulator spot and to contact the surface of said semiconductor substrate;
thereafter depositing insulator material from a source which is positioned further off the axis than the emitter source, thereby to partly overlay said deposited emitter contact and to make actual contact with said surface in a restricted portion which effectively determines the spacing between the finally-formed emitter and base of said semiconductor structure; and
depositing a base contact from a source positioned further off-axis than said last-named insulator source so as to partly overlay said previously-deposited insulator and to make actual contact with the surface of said substrate in another restricted portion.

3,183,577
APPARATUS FOR ASSEMBLING AN ELECTRON TUBE CAGE

Paul Russell Smith, Whippany, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 1, 1960, Ser. No. 40,421
1 Claim. (Cl. 29—25.19)

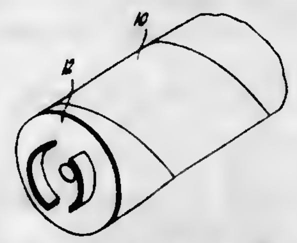


Apparatus for orienting electrodes having supporting elements whose lengths are different from each other comprising:
means for supporting the supporting elements of said electrodes in substantially parallel relation with each other,
a first plate having a formed edge for engaging and guiding the longest support elements only of said electrodes to a preliminary position,
means for moving said first plate into engagement with said longest supporting elements,
second and third plate elements on opposite sides of said supporting elements and having formed edges to guide all of said supporting elements to a final position, and
means for moving said second and third plate elements towards one another and into engagement with all of said supporting elements at a position between said electrode supporting means and said first plate,
said first plate being spaced from said second and third plate elements a distance such that said first plate element engages said longest supporting elements beyond the ends of the others of said supporting elements.

3,183,578
DAMPENING ROLL COVER AND FABRIC THEREFOR

William J. Kennedy, Jr., Wrentham, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Sept. 26, 1962, Ser. No. 226,386
13 Claims. (Cl. 29—120)

6. A disposable dampening roll cover comprising a relatively rigid water-resistant cylindrical core adhesively united to a felted mixture of absorbent fibers and polyvinyl alcohol fibers, said polyvinyl alcohol fibers being fused together and said absorbent fibers being dispersed through and in intimate contact with said polyvinyl alcohol fibers.

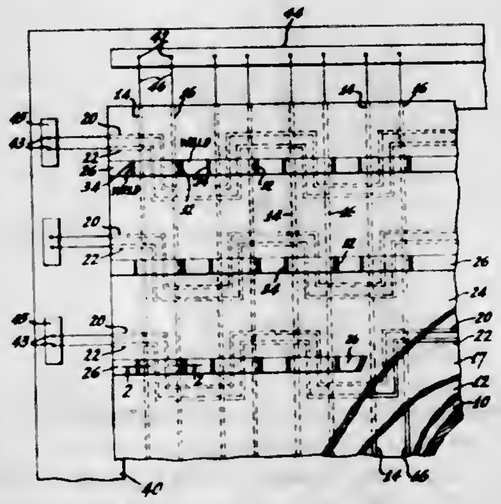


ERRATUM

For Class 29—155.5 see:
Patent No. 3,183,567

3,183,579
MAGNETIC MEMORY

George R. Briggs, Princeton, and Rabah Shahbender, Berlin, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed May 31, 1960, Ser. No. 33,021
12 Claims. (Cl. 29—155.5)



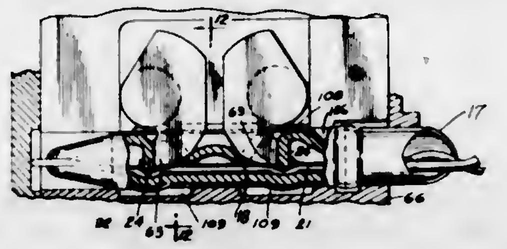
11. A method of making a memory comprising the steps of applying an insulator on a sheet of magnetic material; forming at least a single conductive lead on the insulator; applying a second insulator over the conductive lead and insulator so as to insulate the lead; placing an element formed of sheet magnetic material which has the same magnetic properties as the first-mentioned magnetic material over the insulated conductive lead; melting restricted areas of the magnetic material to form permanent magnetic connections between the element and the sheet of magnetic material in such manner that a continuous, closed path is formed through which the lead passes; and annealing the memory thus made in order to improve the magnetic properties of the sheet and element of magnetic material.

3,183,580
METHOD AND APPARATUS FOR MAKING AN ELECTRICAL CONNECTION

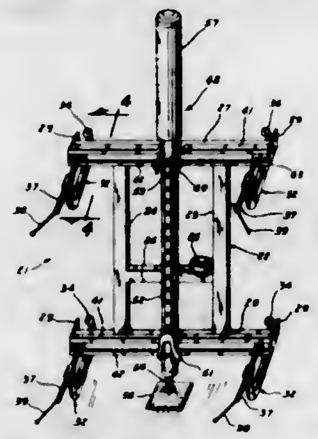
Eugene H. Souter, 2020 Sherman Ave., Evanston, Ill.
Filed Nov. 30, 1959, Ser. No. 856,130
12 Claims. (Cl. 29—155.55)

1. The method of making an electrical splice including forming an assembly by placing insulated wires in a conductive sleeve within a plastic insulating jacket, having recovery characteristics, moving the assembly and a pair of fingers relatively toward one another to cause the fingers to penetrate the jacket and indent the sleeve, and moving the fingers arcuately away from one another shearing tongues from the sleeve, wiping the tongues

along the wires, thereby scraping insulation and oxide therefrom, and force-tucking the tongues between the wires and the sleeve, stretching the sleeve elastically so that it permanently holds the tongues under compression and pressed against the wires, and removing the fingers from the assembly, permitting the jacket to substantially close the holes through which the fingers penetrated.



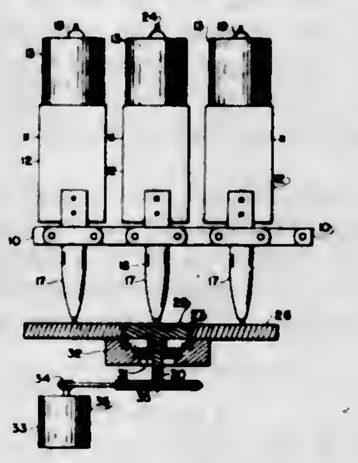
3,183,581
LEVELING DEVICE
Glenn F. Lister, Waterloo, Iowa, assignor to Lister Concrete Products and Ornamental Iron, Waterloo, Iowa, a corporation of Iowa
Filed Dec. 21, 1962, Ser. No. 246,574
2 Claims. (Cl. 29—200)



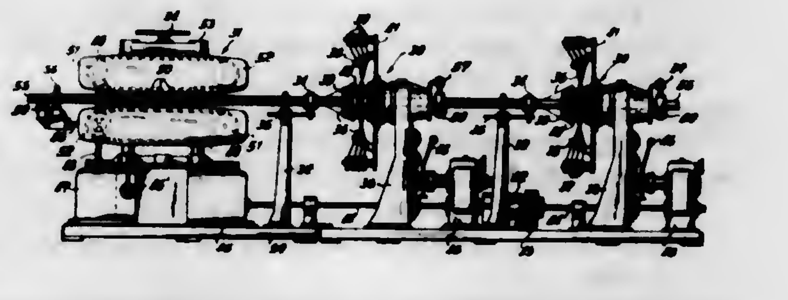
1. An apparatus for positioning a structural beam between spaced members comprising:
- (*a*) frame means having longitudinal spaced projections for aligning said frame means in a longitudinal extended position on said beam,
- (*b*) gauge means secured to said frame means for indicating a level and plumb position thereof,
- (*c*) clamp means mounted on said frame means and operable to secure the frame means to the beam in said longitudinal aligned position,
- (*d*) guide means forming a part of said frame means for mounting said clamp means for movement transversely of said frame means, and
- (*e*) jack means secured to and positioned longitudinally of said frame means with one end adapted to engage one of said spaced members, said jack means being operable to move the frame means and beam against the other of said spaced members.

3,183,582
PEN ASSEMBLY DEVICE
Earl Birkett, West Hempstead, N.Y.
(392 W. Broadway, New York 12, N.Y.)
Filed Feb. 10, 1964, Ser. No. 343,658
1 Claim. (Cl. 29—200)

A cartridge aligning and assembling device for use with a ball point pen assembly machine having pen holding elements containing a vertical bore, intermittently advanced support means to which said pen holding elements are attached, and a slide plate disposed below the path of said pen holding elements, each of said pen holding elements receiving a ball point pen assembly having a cartridge and a ball point pen cap containing a push rod actuator having a bore to receive and to be telescoped and assembled over a cartridge to be aligned therewith; said cartridge aligning and assembly device comprising a rotatably mounted circular plate, said slide plate containing a circular aperture slightly larger than said circular plate within which said circular plate is disposed flush with said slide plate, and means rotating said circular plate, said circular plate containing a central depression and spiral grooves extending outward from the central depression in the direction of rotation of said circular plate, said spiral grooves being adapted to align a cartridge resting thereon with the bore of a push rod actuator and to allow the cartridge to enter said bore so that said bore is telescoped and assembled over the cartridge.

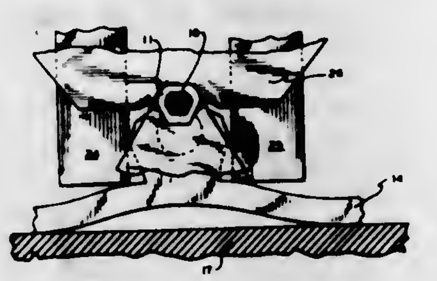


3,183,583
MACHINE FOR PRODUCING ARMOURED HOSES, PARTICULARLY HIGH-PRESSURE HOSES
Max Ostermann, Wuppertal-Barmen, Germany, assignor to W. & M. Ostermann, Wuppertal-Barmen, Germany, a firm
Filed Mar. 12, 1962, Ser. No. 179,069
Claims priority, application Germany, Mar. 14, 1961,
O 7,947
20 Claims. (Cl. 29—202.5)



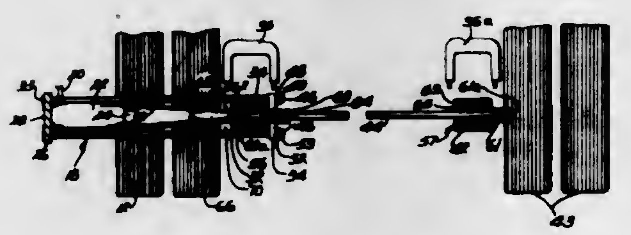
1. A machine for producing armored hose, particularly high pressure hose the armoring of which consists of continuous windings of permanently deformed strands comprising, a combination, an extractor for non-rotatingly guiding and extracting a hose to be armored; at least one rotatable means for winding the strands around said hose; deforming means associated with said rotatable means for permanently deforming said strands before the application thereof to the hose, said deforming means including at least two ring-shaped deforming members coaxially arranged with the hose spaced from each other and having each an annular deforming portion engaging said strands, said annular deforming portions of said two ring-shaped deforming members having respectively diameters differing from each other; and adjustable mounting means mounting said ring-shaped deforming members for adjusting the spacing between the same so that the degree of deformation of said strands may be changed.

3,183,584
DEVICE FOR SECURING CONNECTORS TO CONDUCTORS
David J. Crimmins, Nutley, N.J., assignor, by mesne assignments, to The Thomas & Betts Co., a corporation of New Jersey
Filed Dec. 26, 1961, Ser. No. 163,962
8 Claims. (Cl. 29—203)



1. A device for securing a connector disposed in the holder of an elongated strip to a conductor placed therein, comprising a base member, an upstanding finger thereon, supporting the connector and the holder strip in spaced relation to the base, means movable relative to and engaging the strip at spaced points straddling the holder, moving the strip downwardly toward the base and releasing the connector therefrom, and means movable against the connector, compressing the connector on the conductor therein simultaneously with said releasing.

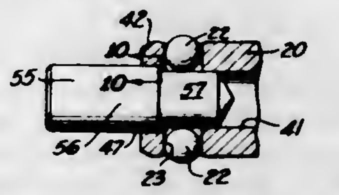
3,183,585
METHOD FOR REPLACING BUSHINGS
William A. West, San Fernando, Calif.
(10219 Oro Vista, Sunland, Calif.)
Filed Dec. 31, 1962, Ser. No. 248,404
3 Claims. (Cl. 29—401)



1. A method of replacing the center bushings in the equalizing beams of trucks having tandem wheels, one set of said wheels being connected to the rear ends of said beams, the other set of said wheels being connected to the front ends of said beams, said beams having center bushings connecting the beams to the springs of said truck, said center bushings including capped metal cores, metal outer members and intermediate resilient layers connecting said cores and said outer members together, a cross tube mounted between said beams and having its ends mounted in said cores, said cross tube being retained in position by said caps, said method comprising the steps of:

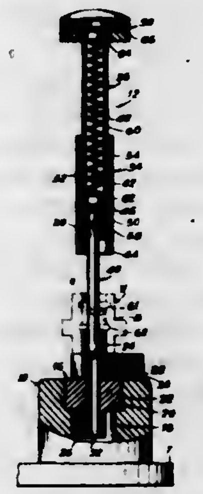
disconnecting said bushings from said springs;
applying a first force to the capped core of one of said bushings to push both of said capped cores and said cross tube out of said beams as a unit;
applying a second force to the metal outer member of said one bushing to push it out of one of said beams;
installing a first new bushing in said one beam; applying a force to the outer metal member of said other bushing to push it out of the other beam;
inserting said cross tube through said other beam into said first new bushing; and
installing a second new bushing in said other beam with the core of said second new bushing encompassing said cross tube.

3,183,586
METHOD OF MAKING FASTENING DEVICES
Gose B. Sellers, Brentwood, Calif., assignor, by mesne assignments, to Aerpat A.G., Glarus, Switzerland, a corporation of Switzerland
Original application Apr. 28, 1959, Ser. No. 809,371. Divided and this application Mar. 4, 1964, Ser. No. 349,202
5 Claims. (Cl. 29—441)



1. A method of manufacturing a fastening device of the character described including: forming a hollow barrel with an enlarged head at the upper end thereof and an enlarged internal counterbore in the lower end thereof thereby providing an internal shoulder facing said lower end; radially perforating said barrel next adjacent said internal shoulder providing a radial opening through the wall of said barrel and to provide a thin upstanding wall segment intermediate said shoulder and said radial opening; deforming the outer wall of said barrel adjacent said opening to provide a partial obstruction over said opening; inserting a ball in said opening; deforming a portion of said thin upstanding wall between said internal shoulder and said opening providing a lip partially obstructing said opening, whereby said ball is permanently retained within said opening and adapted to move inwardly and outwardly between positions partially projecting into said hollow barrel and partially projecting laterally outward of said barrel, respectively.

3,183,587
ASSEMBLY METHOD
Raymond C. Baskell, Trumbull, Conn., assignor to Jenkins Bros., Bridgeport, Conn.
Original application May 16, 1961, Ser. No. 110,387, now Patent No. 3,149,413, dated Sept. 22, 1964. Divided and this application Oct. 22, 1962, Ser. No. 233,999
2 Claims. (Cl. 29—451)



1. A method for positioning a resilient toroid in an annular groove encircling a bore in a workpiece at a determinable depth within the latter, the diameter of the toroid being larger than the diameter of the bore of the workpiece, said method comprising supporting the workpiece, inserting a stop in said bore from one end thereof to the extent of said depth, forcing said toroid into and through said bore from the other end thereof to the extent of abutting said stop such that the toroid is flattened in the plane of the groove, allowing said toroid to expand into said groove, and removing the stop from the bore.

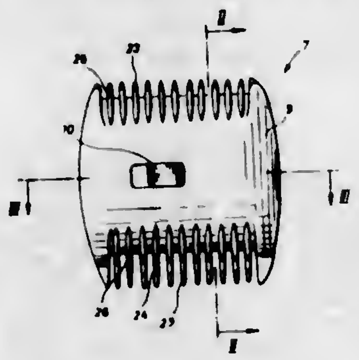
3,183,588
PRODUCTION OF ALLOY-CLAD ARTICLES

Matéi Mathieu Constantin Pruna, Paris, France, assignor of one-half to Fonderies de Nogent Lafeuille & Cie, Oise, France, a company of France
No Drawing. Filed Mar. 19, 1962, Ser. No. 180,813
Claims priority, application France, Mar. 25, 1961, 856,819
3 Claims. (Cl. 29—529)

1. Process for the production of a shaped alloy-clad article having a copper-containing core which comprises the steps of (*a*) applying a metal selected from the group consisting of aluminium, iron-aluminium alloys, and iron-aluminium alloys containing at least one alloying element selected from the group consisting of manganese, nickel, silicon, titanium, zirconium, tantalum and vanadium, mixed with an activating agent selected from the group consisting of aluminium and magnesium chlorides to an oxide-free, copper surface of a shaped copper-containing article, (*b*) heating the said article in a non-oxidizing atmosphere to 950° to 1020° C. so as to cause the aluminium to diffuse into the copper, and (*c*) removing mechanically the surface film on those surfaces into which aluminium has diffused and exposing the layer of aluminium bronze produced.

3,183,589
BLADE COMB HAIR TRIMMER HAVING TOOTH STRUCTURE PERMITTING VARIABLE DEPTH OF CUT

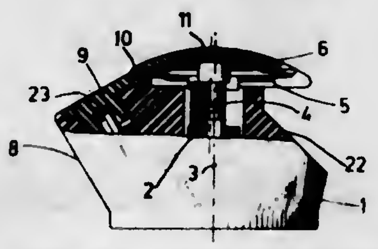
Zoltán Szabó, Drosselstrasse 15, Zurich, Switzerland
Filed July 12, 1962, Ser. No. 209,377
2 Claims. (Cl. 30—30)



1. Hair cutting apparatus comprising a pair of opposed plates, each of said plates having a row of teeth extending from its opposite sides, opposed teeth of the plates lying in superposed relationship, means on one plate for positioning a blade with the cutting edges thereof extending between the teeth at each of the opposed sides of the plates, means securing the other plate into face-to-face relationship with said one plate, the teeth of one plate separated from the opposed teeth of the other by an edge portion of said blade positioned therebetween, one of said plates having a row of teeth of substantially greater length than the teeth of any other rows, the opposed row of teeth of the other plate being of a length barely to extend beyond the edge of the blade, said longest row of teeth having an outer portion inclined toward the plane of the blade and having cam means on the tip portion projecting beyond the plane of said blade, whereby the cutting depth is longest with said cam means held against the skin and is slightly shorter with the inclined outer portion held against the skin, the teeth at the opposite side of one of the plates being substantially shorter than said longest row of teeth, and the opposed teeth of the other plate barely extending beyond the edge of the blade, whereby the apparatus may be held with the substantially shorter teeth engaging the skin for a shorter cutting depth than that resulting from the previously described positions, and whereby with the shortest teeth of such side held against the skin, shaving may be accomplished.

3,183,590
COVER PLATE FOR ELECTRIC HAIR-CLIPPING DEVICE

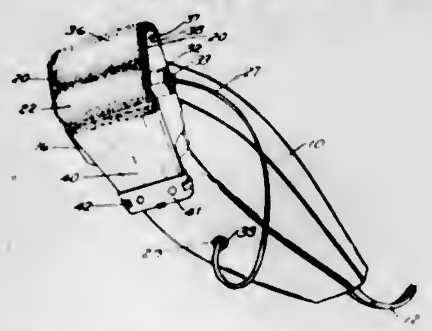
Gerrit Starre and Willem Witziers, Drachten, Netherlands, assignors, to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 11, 1963, Ser. No. 329,848
Claims priority, application Netherlands, Dec. 17, 1962, 286,856
2 Claims. (Cl. 30—90)



1. A cover plate for an electric hair-clipping device to be used with an oscillating-type blade assembly and having an outwardly curved upper surface and a linear front edge, opposite edges of said cover plate on either side of said blade assembly having forwardly projecting portions, each of the latter having an outer edge curvature continuing laterally of said blade assembly and terminating in rounded points, and said linear front edge of said cover plate being located transversely of the plane of said forwardly projecting portions and between but set back from said rounded points.

3,183,591
BRUSH ATTACHMENT FOR HAIR CLIPPER

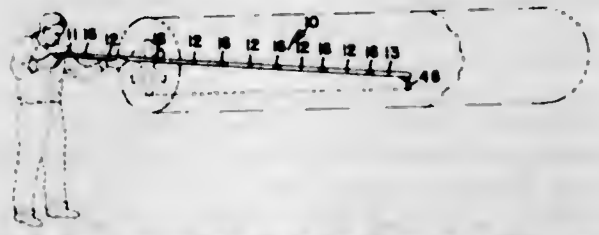
Francis A. Dumont, 163 Cornell St., Cranston, R.I.
Filed Mar. 20, 1963, Ser. No. 266,563
4 Claims. (Cl. 30—123)



1. A removable attachment for a power hair clipper having a fixed cutting plate comprising a body plate, resilient flanges extending therefrom shaped and spaced to slidably receive and frictionally grip said cutting plate as slid thereto hold the attachment in position, and a flat brush secured on said body plate and a cylindrical brush rotatably mounted in said spaced flanges.

3,183,592
TOOL FOR REMOVING DEFECTS FROM THE PROPELLANT GRAIN OF A SOLID PROPELLANT ROCKET MOTOR

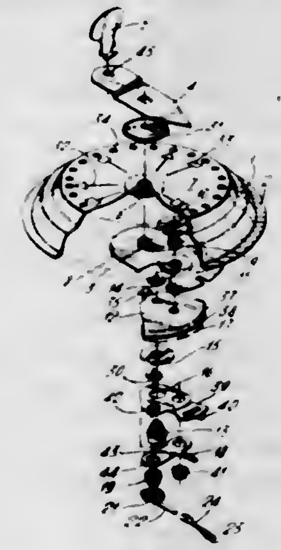
Thomas J. Manning, Jr., Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 13, 1964, Ser. No. 337,249
1 Claim. (Cl. 30—169)



A tool for removing defects from a solid propellant grain comprising a plurality of inter-connected tubular sections having a handle control section at one end and a cutting head section at the opposite end, a control lever pivotally mounted in said handle control section, a cutting head pivotally mounted in said cutting head section, a cutting knife mounted in said cuting head, a socket on the free end of said handle control section receiving one end of the next adjacent tubular section, the free end of said next adjacent tubular section having a socket thereon receiving the free end of said cutting head section to connect said handle control section, said cutting head section and said next adjacent tubular section in inter-connected relation to each other, a spring latch having a dog on one end secured to each of said sockets so that, when said tubular sections are in inter-connected relation to each other, the dog on said spring latch will enter an opening provided in the next adjacent tubular section to retain said tubular sections in rigid relation to each other, sectional means including a rod in each of said tubular sections having an internally-threaded socket on one end and an externally-threaded portion on the opposite end, said threaded portions being received in said internally-threaded sockets to inter-connect said sectional means together in rigid relation to each other, a first serpentine-shaped control rod having one end thereof pivotally connected to said control lever and the opposite end thereof rigidly connected to one end of said sectional means, a second serpentine-shaped control rod having one end thereof pivotally connected to said cutting head and the opposite end thereof rigidly connected to the opposite end of said sectional means, said sectional means and said serpentine-shaped control rods connecting said control lever to said cutting head so that manual operation of said control lever will actuate said cutting head to reciprocate said cutting knife in arcuate relation to the longitudinal axis of said tool, and a plastic sleeve having draw strings in the opposite ends thereof secured to and covering said cutting head section to prevent contamination of said cutting head by the solid propellant grain.

3,183,593
DRAWING INSTRUMENTS

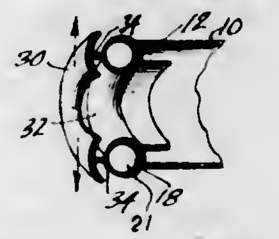
Tom Bowen, Hove, England, assignor to S. Smith & Sons (England) Limited, London, England
Filed Mar. 28, 1963, Ser. No. 268,812
Claims priority, application Great Britain, Mar. 28, 1962, 11,974/62
8 Claims. (Cl. 33—27)



2. A drawing instrument for drawing decorative patterns comprising a supporting member marked on one side with markings and defining therein a central hole and adapted to be held against a plane surface on which a decorative pattern is to be drawn, a first shaft which passes through the hole, a combined pointer and handle for rotating the first shaft and disposed on the side of the supporting member which is marked to permit variable alignment of said point with the markings as said first shaft is rotated, a first plate rigidly attached to the first shaft and disposed on the side of the supporting member which is not marked, a second plate disposed in a plane paralled to that of the first plate and mounted for rotation about an axis parallel to but spaced from the axis of the first shaft, a second shaft carried by the second plate for rotation about its own axis which is parallel to but displaced from the axis of rotation of said second plate, a third plate carried by the second shaft and disposed in plane parallel to those of the first and second plates, the angular position of the third plate about the axis of the second shaft being adjustable between first and second extreme angular positions, a third shaft carried by the third plate for rotation about its own axis which is parallel to but displaced from the axis of the second shaft, first spur gear means which cause the second plate to rotate about its axis of rotation when the handle and the first plate are rotated about the axis of the first shaft, second spur gear means which cause the second shaft to rotate about its axis when the second plate is rotated about its axis of rotation, third spur gear means which cause the third shaft to rotate about its axis when the second shaft is rotated about its axis, and a drawing implement which is carried by the third shaft and engages the surface at a point distant from the axis of the third shaft when the supporting member is held against the surface.

3,183,594
SCOPE EYE PROTECTOR

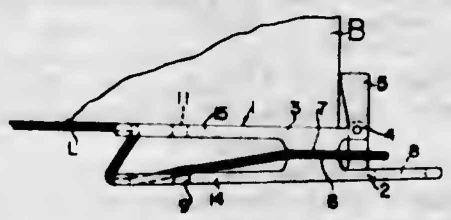
Daniel J. Panunzi, 625 Thomas St., Eynon, Pa.
Filed Feb. 18, 1963, Ser. No. 259,124
1 Claim. (Cl. 33—50)



A telescope protection device of the character indicated, comprising a flexible hollow cylinder open at both ends, one end having a peripheral turned-in portion defining a lip, and a circular ring consisting of a hollow flexible tube, the two ends of which are joined together, said tube being secured to said lip and being filled with foam rubber, further including an additional flexible hollow cylinder open at both ends, one end of said additional cylinder being secured to said ring, and a disc having a central aperture and secured to the other end of said additional cylinder.

3,183,595
MASON'S LINE HOLDER

Matt U. Jopperi, 1626 Ohio Ave., Ashtabula, Ohio
Filed Apr. 13, 1961, Ser. No. 102,720
3 Claims. (Cl. 33—85)

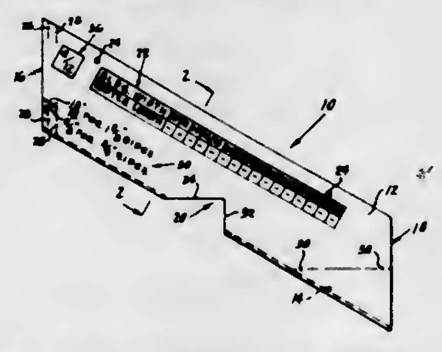


3. A line holder comprising a pair of links pivotally connected together adjacent one end thereof, said links being formed with opposed gripping surfaces between the ends thereof and with spaced apart line guide portions adjacent the other end arranged so that a line passing under and over the respective spaced apart portions of said links

and between such gripping surfaces is gripped between the latter by tension on the line tending to draw such spaced apart portions toward each other, each link at said line guide portion having a transversely open L-shaped slot for passing of the line as aforesaid, each transversely open L-shaped slot comprising a transverse portion open at one edge and a longitudinal portion terminating in grooves of a depth corresponding to the thickness of the line, the longitudinal portions of each L-shaped slot in said links being horizontally opposed to each other, and the transverse portions of each L-shaped slot extending in opposite directions from the longitudinal portions in the respective links.

3,183,596
TEMPLATE

Earnest B. Shaw, 1309 E. Seminole, McAlester, Okla.
Filed Apr. 23, 1964, Ser. No. 362,130
4 Claims. (Cl. 33—90)

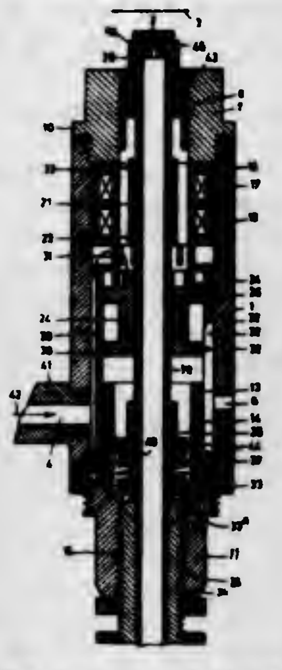


1. A template comprising
(1) a planar face plate element having a pair of parallel longitudinal straight side edges, and a pair of parallel transverse straight end edges, the pairs of edges being oblique to each other, at an angle which is complementary to the angle of use of the rafter,
(2) a longitudinal edge of said plate element intermediate the end edges having means to provide a two edged cut out portion with a first cut out edge parallel to an end edge of said face plate, and a second cut out edge intersecting the first cut out edge at right angles, each cut out edge terminating at an intersection with said longitudinal side edge of said planar face plate and dividing said longitudinal edge into two portions,
(3) and coplanar flanges disposed in the same direction perpendicularly away from the face plate element at each portion of said longitudinal side edge, each flange terminating at said cut out by a straight marking edge perpendicular to said longitudinal side edge of said face plate element, whereby cuts made from the intersection of said first and second cut out edges and said marking edge of each portion defines seats for the top of a vertical side wall which is perpendicular in plan to said rafter.

3,183,597
ELECTROMAGNETIC THICKNESS GAUGE

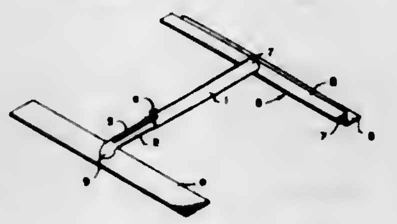
Kenneth James Stuart Donaldson, Barton-on-Sea, New Milton, and Eric Clifford Guy, Totton, Southampton, England, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 27, 1960, Ser. No. 25,121
Claims priority, application Great Britain, May 11, 1959, 16,066/59
4 Claims. (Cl. 33—169)

1. A thickness gauge for measuring the thickness of articles held between said thickness gauge and a head surface comprising a holder, a gauge pin journalled therein, means for moving said gauge pin into and out of measuring position, electro-magnetic means, a ferrite cylinder on said gauge pin adjacent to said electro-magnetic means co-acting with the latter whereby the magnitude of the electric current varies with the axial position of said pin relative to said holder, said means for moving said gauge pin towards said head surface being a spring, and a supply of gas under pressure fed to said holder, said supply of gas being adapted to displace said gauge pin axially within said holder and against the action of said spring out of measuring position and in a direction away from said head surface, said gauge pin is moved back slowly into the measuring position towards said head surface by a gradual decrease in pressure of the supplied gas in conjunction with the action of said spring.



3,183,598
GAUGE FOR TILE CUTTING

Charles Parr, 10242 105 St., Edmonton, Alberta, Canada
Filed Nov. 8, 1962, Ser. No. 236,299
1 Claim. (Cl. 33—174)



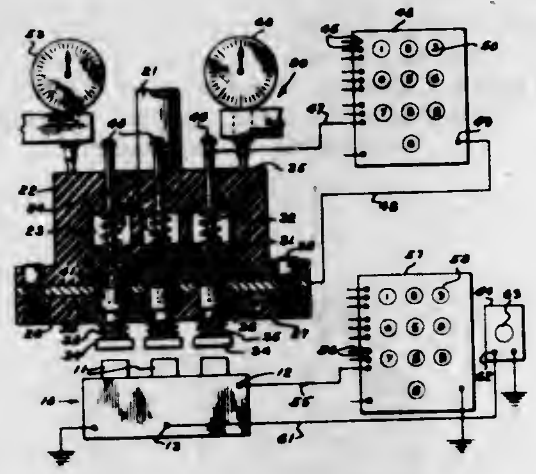
In a gauge for marking a cutting line on tiles when laying tile of known dimensions on a surface, such gauge having a telescoping handle member and means to secure the member in an adjusted position, a marking straight edge fixed substantially centrally at one end of the handle member and an abutting straight edge substantially centrally at the opposite end of the handle member, such abutting straight edge consisting of a shelf to which the end of the handle member is attached, a substantially vertical wall extending downwardly from the shelf and a foot projecting from the lower edge of the wall member and away from the shelf, such foot being of a thickness capable of insertion between the lower edge of the base board and a floor surface on which the tile is to be laid and whose area is the only contact of the abutting straight edge with the surface on which the tile is to be laid.

3,183,599
APPARATUS FOR TESTING A PLURALITY OF ASSOCIATED DEVICES

Charles R. Byrd and Dan H. Walston, Indianapolis, Ind., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 31, 1962, Ser. No. 248,359
8 Claims. (Cl. 33—174)

1. Apparatus for simultaneously testing a unit consisting of a plurality of associated push button switches

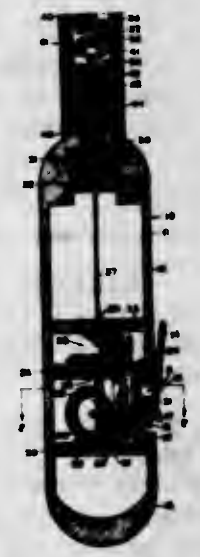
projecting to random heights above a surface of the unit to determine the order in which the buttons are depressed toward the surface of the unit which comprises:
a gaging head movable relatively toward and away from the push buttons;
a plurality of members individually mounted within said gaging head, each of said members being arranged for concurrent engagement with a corresponding one of the push buttons as said gaging head is moved toward push buttons, and each of said members being yieldable for dispacement with respect to said gaging head in response to the pressure of the engaged push button thereagainst;



means mounted within said gaging head in a normal spaced apart relationship with respect to each of said members for individually engaging the associated member to terminate the displacement of said member with respect to said gaging head such that further movement of said gaging head toward the push buttons causes depression of the push button associated with said individual member; and
means responsive to the individual engagement of said members with said engaging means for indicating the order in which the respective push buttons are depressed by said associated members.

3,183,600
CALIPER SURVEYING INSTRUMENT

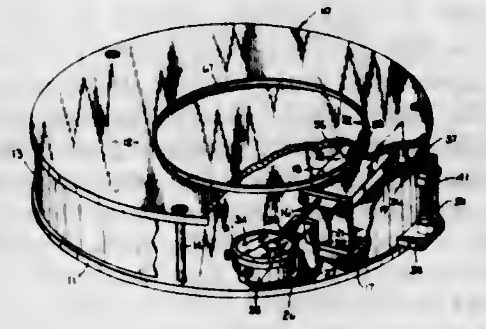
Robert W. Jay, Linch, Wyo., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed June 20, 1960, Ser. No. 37,187
10 Claims. (Cl. 33—178)



1. An apparatus for logging the diameter of a bore hole comprising: a housing having an upper and lower end adapted to be lowered into a well bore; a central shaft rotatably mounted therein; a plurality of caliper arms; shaft means pivotally mounting each of said caliper arms to said housing at its lower end, said caliper arms extending toward the upper end of said housing when in normal use; means coupling each shaft means to said central shaft; and recording means connected to said central shaft and responsive to movement of said central shaft, whereby a variation in the well bore diameter is communicated by said caliper arms to said recording means through said central shaft.

3,183,601
GAUGE

Raymond W. Niles, Lakewood, Calif., assignor, by mesne assignments, to Walter E. Heller & Company (Inc.)
Filed Oct. 19, 1962, Ser. No. 231,695
9 Claims. (Cl. 33—179)



2. A gauge for measuring the internal or external diameters of objects, comprising:
a platen having a surface for supporting the object to be measured, said platen having an elongated slot therethrough;
a first mounting means stationarily mounted on said platen and projecting above said surface;
a platform supported adjacent the underside of said platen for movement substantially parallel therewith in a direction toward and away from said first mounting means;
a second mounting means mounted on said platform, said second mounting means projecting upwardly through said slot, the upper end of said second mounting means being adjacent and opposed to said first mounting means and being movable with said platform and along said slot toward and away from said first mounting means;
an indicator and operating means for said indicator, said operating means being responsive to movement of said platform so that movement of said mounting means toward and away from each other effects operation of said indicator;
a flexible tape connected at its ends to both said mounting means and arranged in the form of a loop having an opening between said mounting means;
and means for moving said platform with respect to said platen.

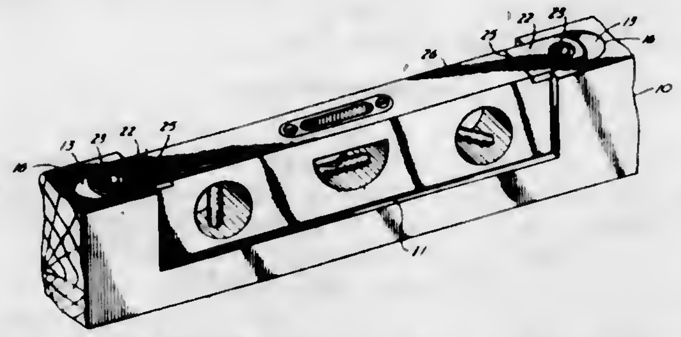
3,183,602
COMBINATION POCKET AND CARPENTER'S LEVEL

Dean E. Updyke, Warriors Mark, Pa.
Filed Jan. 24, 1963, Ser. No. 253,717
5 Claims. (Cl. 33—207)

1. A combination level comprising:
(*a*) an elongated member having a flat bottom surface and a relatively large notch cut therein extending downwardly from its upper surface, the lower face of said notch being parallel to said bottom surface and the vertical end walls of said notch each having a vertically extending recess formed therein, the upper surface having longitudinally extending guideways formed therein with closed end portions for restricting movement therewithin, said guideways

disposed adjacent said vertically extending recesses with a bore extending downwardly within each of said guideways;

(*b*) a resiliently urged detent disposed in each of said bores and extending upwardly within said guideways;

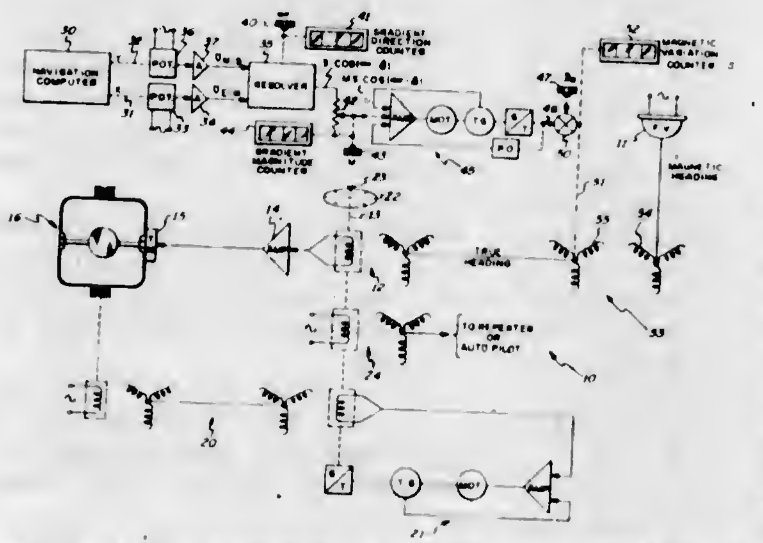


(*c*) a pair of latch plates, slidable in said guideways from a first position cooperatively extending over said detents and into said large notches thereby closing the upper ends of said recesses, to a second position cooperatively extending over said detents and abutting said closed end portions of said guideways leaving said recesses open at their upper ends;

(*d*) and a pocket-type spirit level disposed in said relatively large notch of said elongated member and adapted to lie between said vertically extending recesses so that said latch plates lock said spirit level into operative engagement with said elongated member.

3,183,603
CONVERSION APPARATUS AND METHOD FOR MAGNETIC COMPASS SYSTEMS

Herbert A. Trenchard, Hyattsville, Md., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed June 25, 1962, Ser. No. 205,004
8 Claims. (Cl. 33—224)


30
NAVIGATION COMPUTER
POT
POT
RESOLVER
GRADIENT DIRECTION COUNTER
MAGNETIC VARIATION COUNTER
MAGNETIC HEADING
TO REPEATER OR AUTO PILOT
20
21
10

4. Conversion apparatus for magnetic compass systems for navigable craft comprising:

(1) means responsive to the earth's magnetic field for providing a signal representative of the magnetic heading of said craft,

(2) means for providing a signal representative of the magnetic variation and meridian convergence with respect to a predetermined coordinate system at a predetermined position of said craft,

(3) means for establishing a reference representative of the direction of the gradient with respect to distance of the earth's magnetic variation and meridian convergence,

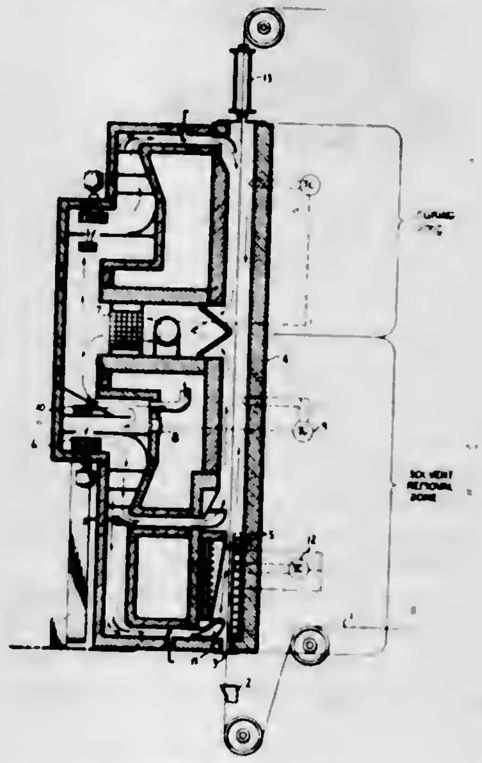
(4) means responsive to the movement of said craft from said predetermined position and to said gradient direction reference for providing a signal representative of the component of the distance traveled by said craft in the direction of maximum rate of change of said magnetic variation and meridian convergence,

(5) means for providing a signal representative of the magnitude of said gradient,

(6) and means responsive to all of said signals for providing a composite signal representative of the present heading of the craft with respect to said predetermined coordinate system corrected for magnetic variation and meridian convergence at the present position of said craft.

3,183,604
APPARATUS AND PROCESS FOR REMOVING SOLVENTS FROM COATINGS ON METAL

John D. Stauffer, Shelbyville, Ind., assignor to General Electric Company, a corporation of New York
Filed Dec. 27, 1961, Ser. No. 162,324
3 Claims. (Cl. 34—18)

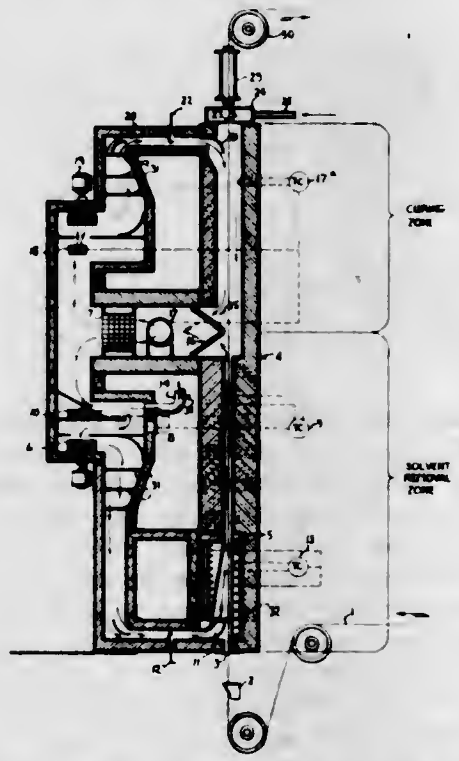


1. A process for the removal of a solvent from an enamel coating on a continuously moving strip of material comprising the application of radiant and convection heat to each portion of the strip simultaneously and immediately upon the initiation of the solvent removal process with the convection heat being provided by a preheated stream of gas flowing parallel to the path of the strip and in the direction of the strip movement and with the radiant heating being applied on opposite sides of said moving strip, and circulating said gas at a velocity that is greater than the velocity of the strip, the relative velocity of said gas with respect to said strip being not greater than 500 feet per minute.

3,183,605
APPARATUS FOR COATING METALS

Donald D. Argue and John D. Stauffer, Shelbyville, Ind., assignors to General Electric Company, a corporation of New York
Filed Dec. 27, 1961, Ser. No. 162,446
7 Claims. (Cl. 34—68)

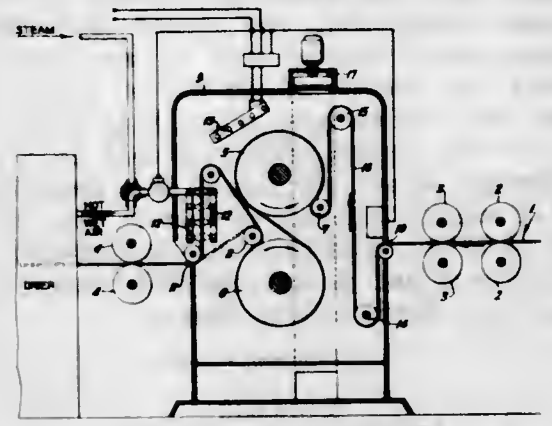
1. A recirculating oven comprising a housing, means in the housing providing an elongated treating chamber for guiding the flow of gas and for receiving coated metal passing therethrough, an entrance opening at one end of said chamber for the entry of said coated metal, an exit opening at the other end of said chamber for the discharge of said coated metal, said treating chamber comprising a solvent removal zone and a curing zone, said treating chamber including a first gas inlet opening near the entrance opening and including also a second gas inlet opening near the exit opening, a first gas circulating means communicating with said first gas inlet opening and causing gas to flow through said solvent removal zone concurrently with the movement of the coated material, a second gas circulating means communicating with said second gas inlet opening and causing gas to flow through said curing zone in an opposing direction, means for mixing the gasses from said curing zone and solvent removal zone, heater means for heating the gasses from said mixing means and discharging said gasses into at least the inlet of said second gas circulating means, radiant heating means positioned in the solvent removal zone adjacent the gas inlet opening of the treating chamber, a first means for controlling the temperature of the gas flowing in the solvent removal zone within predetermined limits, a second means for controlling the temperature of the gas flowing in the curing zone within predetermined limits, said gas passing through the curing zone being maintained at a higher temperature than the gas flowing through the solvent removal zone, means for controlling the quantity of gas supplied to said first gas inlet opening, and means for controlling the quantity of gas supplied to said second gas opening.



3,183,606
DEVICE IN PRESS-ROLL SECTIONS FOR DEWATERING CELLULOSE PULP WEBS

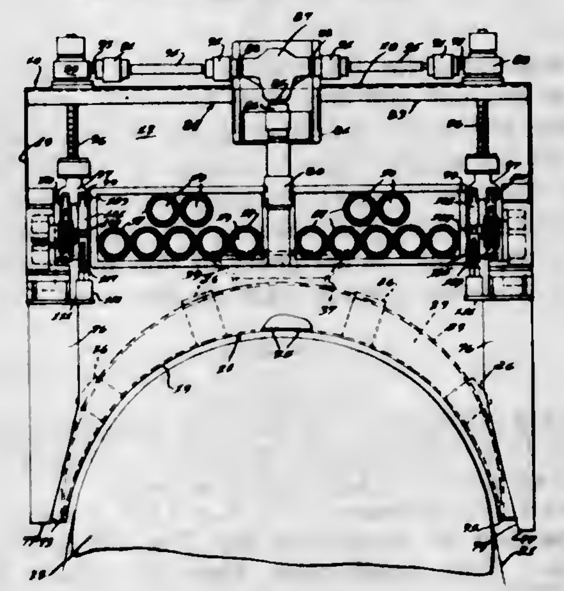
Rune Gustafsson, Stockholm, and Sven Wellmar, Bromma, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Oct. 19, 1960, Ser. No. 63,635
Claims priority, application Sweden, Oct. 21, 1959, 9,804/59
2 Claims. (Cl. 34—70)

1. In a press-roll section for dewatering a web of pulp material, comprising in combination, a plurality of sets of press rolls and a dryer arranged downstream of the last set of press rolls through which the web passes, a closed casing arranged between the last sets of press rolls ahead of the dryer and through which the web passes, web contact heating means and temperature and humidity control means within said closed casing for heating said web by direct heat application while restricting evaporation of moisture therefrom, whereby to maintain a saturated ambient atmosphere about the web in said closed casing at the temperature to which it is raised by said contact heating means, said contact heating means comprising a heating cylinder means around which the web passes, and said temperature and humidity control means within said casing comprising pressure spray nozzles which direct hot moist gaseous fluid into the casing to maintain a hot saturated ambient atmosphere within said casing, said pressure spray nozzles being located downstream of said heating cylinder means and arranged to direct the hot moist gaseous fluid against the web after it has been heated by said heating cylinder means.



3,183,607
DRYING HOOD WITH MOVABLE PLENUM CONSTRUCTION

Edward D. Beachler, Beloit, Wis., assignor to Beloit Iron Works, Beloit, Wis., a corporation of Wisconsin
Filed Nov. 9, 1961, Ser. No. 151,330
6 Claims. (Cl. 34—122)



1. In a drier for drying traveling fibrous webs in the making of paper and in combination with

- a drying cylinder having a web trained thereabout,
- a hood extending along and partially about said drying cylinder and spaced thereabove,
- a plenum within said hood having closed ends with a top wall and an arcuate bottom wall generally conforming to said drying cylinder,
- air impingement orifices in the bottom wall of said plenum,
- exhaust passageways extending through said bottom wall and said top wall of the plenum and communicating with the interior of said hood,
- an air inlet in said hood through which air is passed into said hood,
- an air outlet leading from said hood,
- an air supply duct means adapted to be adjustably positioned in registration with said air inlet for affording communication between said air inlet, said air supply duct means and said plenum, said air supply

duct means being fixed to said plenum for movement therewith,

means for sealing said air supply duct means to said air inlet,

means for raising said plenum and air supply duct means relative to said hood to afford access to the drying cylinder and web trained thereabout, said sealing means between said air inlet and said air supply duct means moving out of sealing engagement with said air inlet to said hood upon the raising of said plenum relative to said hood and the movement of said air supply duct means partially out of registry with said air inlet to effect the direction of air into said hood out through said exhaust passageways and to scavenge said exhaust passageways from debris lodging therein.

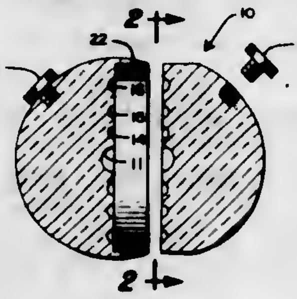
3,183,608

MOLECULAR MODEL

Russell R. B. Jierree, 3723 27th Ave. S., Minneapolis, Minn.; Lillian E. Jierree, special administratrix of said Russell R. B. Jierree, deceased

Filed Aug. 10, 1962, Ser. No. 216,124

6 Claims. (Cl. 35—18)



1. Apparatus for illustrating models of atoms, molecules or the like, said apparatus including an outer spherical shell, concentric retaining means disposed within said shell for retaining representations of orbital electrons, means disposed substantially concentrically therewith for representing an atomic nucleus, and means arranged to be received along the periphery of said spherical shell for representing the valence state of the atom being represented.

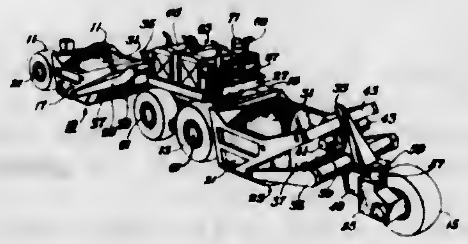
3,183,609

EARTH WORKING SCRAPER HAVING POWER MEANS DISPOSED BETWEEN FRONT AND REAR LOAD CARRYING BOWLS

Robert G. LeTourneau, P.O. Box 2307, Longview, Tex.

Continuation of application Ser. No. 140,555, Sept. 25, 1961. This application Mar. 6, 1964, Ser. No. 351,273

2 Claims. (Cl. 37—127)



1. A self-propelled, self-loading and self-unloading earth working machine comprising a front axle, an intermediate axle, and a rear axle, a single electric motor driven wheel mounted on said front axle, powered means for steering said front axle, four electric motor driven wheels in tandem pairs on walking beams supported by said intermediate axle, two electric motor driven wheels mounted on said rear axle, a first load carrying scraper bowl unit between and supported by said front axle and said intermediate axle, a second load carrying scraper bowl unit between and supported by said intermediate axle and said rear axle, and a power plant for generating electric power supported on said intermediate axle.

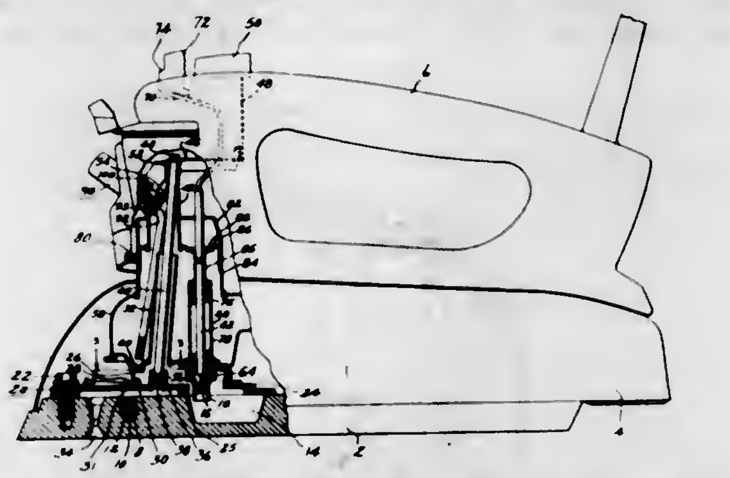
3,183,610

STEAM AND LIQUID SPRAY IRON

Frank E. Finlayson and Alfred G. Swenson, Ontario, Calif., assignors to General Electric Company, a corporation of New York

Filed Nov. 27, 1962, Ser. No. 240,257

8 Claims. (Cl. 38—77)



1. A steam and liquid spray iron comprising a closed liquid reservoir, a flash steam generator positioned to receive water from said reservoir, a steam discharge passage for freely ducting steam at low pressure from said generator to the ironing surface of said iron, a liquid sprayer including a steam tube in communication with said steam generator and a liquid tube in communication with the liquid in said reservoir with both the steam and the liquid tubes discharging at a common spray orifice, a steam valve for closing said steam discharge passage, normally closed valve means for said liquid sprayer, and a single manually movable external control member for first closing said steam valve to increase steam pressure within said reservoir and then open said liquid sprayer valve means.

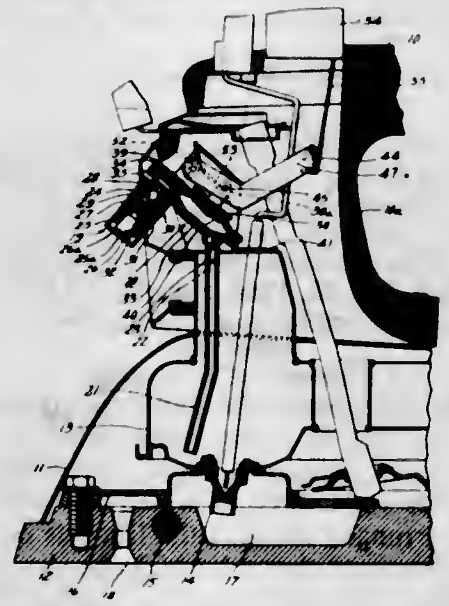
3,183,611

MANUAL SPRAY IRON

Alfred G. Swenson, Ontario, Calif., assignor to General Electric Company, a corporation of New York

Filed Mar. 22, 1963, Ser. No. 267,217

8 Claims. (Cl. 38—77)



1. In a steam iron:

(*a*) an electrically heated soleplate;

(*b*) a water reservoir overlying said soleplate for supplying water thereto for generation of steam;

(*c*) a handle for gripping said iron including a hollow front handle support extending upwardly from said reservoir;

(*d*) a sprayer means mounted on said handle support;

(*e*) a diaphragm pump mounted within said handle support above said reservoir, said pump including an outlet connected to said sprayer means;

(*f*) an inlet tube for said pump extending from said pump into said reservoir;

(*g*) a check valve within said inlet tube adjacent said pump and above said reservoir; and

(*h*) manually operable means for actuating said pump to effect spraying of water from said sprayer means.

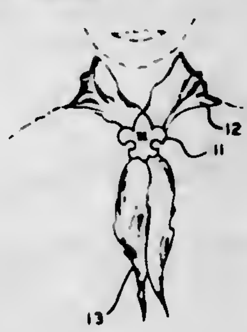
3,183,612

INTERCHANGEABLE TAB NECKERCHIEF SLIDE

Theodore H. Romaine, 83 Center Ave., Little Falls, N.J.

Filed Jan. 25, 1962, Ser. No. 168,731

5 Claims. (Cl. 40—1.5)



1. An interchangeable tab neckerchief holder comprising a transparent front emblem portion, an intermediate pocketed portion secured to the rear surface thereof and opening to interchangeably receive an identifying tab for viewing through said front portion, and a neckerchief slide portion projecting from the rear surface of said pocketed portion and having an opening extending from the bottom in the direction of pocketed portion opening for receiving and frictionally holding the ends of a neckerchief, whereby when in use the slide portion cooperates with the pocketed portion for holding it in upwardly opening position to safely house the tab for convenient viewing, without danger of unintentional removal.

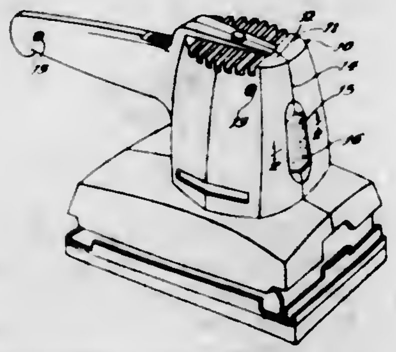
3,183,613

NAMEPLATE MOUNTING ARRANGEMENT

John F. Rojc, Glen Ellyn, and Grover P. Holther, Chicago, Ill., assignors to Portable Electric Tools, Inc., a corporation of Illinois

Filed Mar. 12, 1962, Ser. No. 178,838

5 Claims. (Cl. 40—10)



1. An article comprising: a casing including a pair of casing halves removably joined together along parting surfaces, said casing having a recess spanning said parting surfaces, said recess being defined by a substantially continuous peripheral side having opposed slots on opposite sides of the parting surfaces and opening toward each other, and a concave base extending laterally from said parting surfaces and between said sides, each of said slots facing in a direction generally toward said parting surfaces, and the concavity in said base having its maximum depth generally coextensive with said parting surfaces, and a nameplate received in said recess, said nameplate having opposite side edges tightly received, one in each of said slots, for firmly securing the nameplate to the casing.

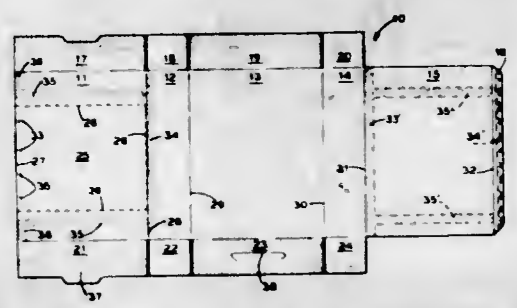
3,183,614

CONTAINER

Richard E. Loderhose, 84—25 Radnor St., Jamaica Estates, N.Y.

Filed Apr. 24, 1962, Ser. No. 189,810

2 Claims. (Cl. 40—312)



1. A blank for a multi-walled container comprising an outer front panel, a first side wall, a rear wall, a second side wall, a backing wall, and an elongated flap all integrally connected in series along crease lines, the outer front panel, rear wall and backing wall being of the same width and height; flaps on each of the front panel, first side wall, rear wall, and second side wall and adhesive means on the flaps of the front panel, rear wall, and elongated flap for adhering the panels to form a container; said front panel being provided with parallel perforations across the full width thereof, a perforation connecting said parallel perforations to form a removable coupon, and a glue line adjacent to and surrounding the perforations whereby on assembly to form a container the backing wall and front panel are adhered along the glue lines surrounding the perforations.

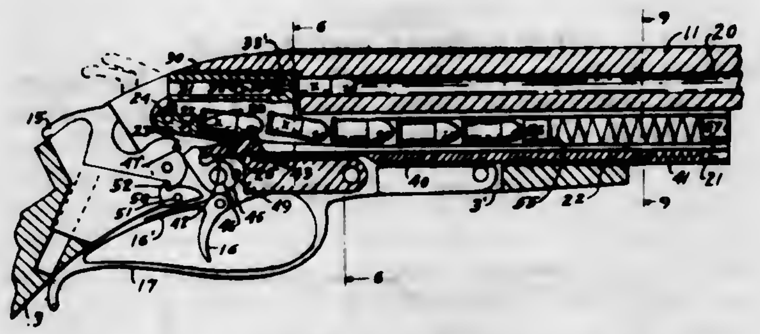
3,183,615

SLIDE BARREL LEVER ACTION RIFLE AND THE LIKE

Richard V. Hirsch, 839 E. 4500 South, Ogden, Utah

Filed Nov. 8, 1963, Ser. No. 322,359

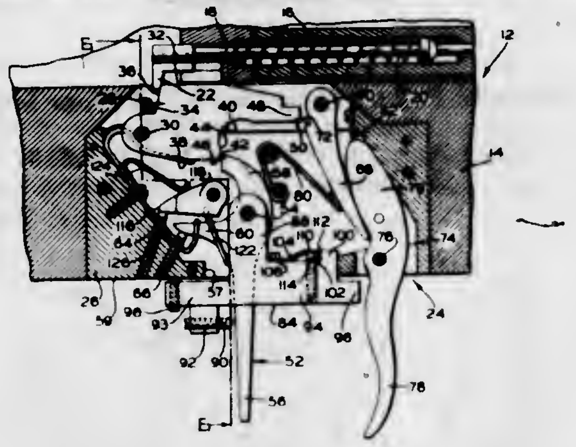
7 Claims. (Cl. 42—11)



1. In a rifle and the like, a stock including a shoulderpiece, a forearm means including a barrel, and an intermediate cartridge receiver means, the barrel having a bore and mounted upon the receiver means in a manner that it can be rolled to and fro longitudinally of the rifle within certain predetermined limits, and lever means for shifting the barrel forwardly for rejection of the casing of a fired cartridge and for charging a new cartridge into firing position upon rearward movement of the barrel, said stock having a plunger, a tang extending rearwardly of the receiver means provided with a plurality of notches adapted to receive the plunger so that the rifle can be changed in length.

3,183,616
SELECTIVE ONE AND TWO-STAGE TRIGGER MECHANISM FOR FIREARMS

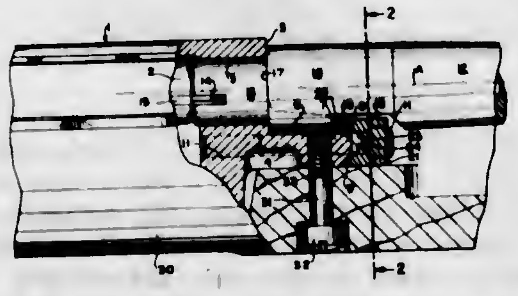
Warren L. Gandy, St. Petersburg, Fla., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 6, 1964, Ser. No. 402,040
8 Claims. (Cl. 42—69)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a firearm having a receiver with a bolt disposed therein for longitudinal reciprocation, a firing pin slidingly mounted in the bolt for displacement between a cocked and a striking position, a firing pin spring for biasing said firing pin to the striking position, and a trigger mechanism mounted in the receiver for engageable control of said firing pin, said trigger mechanism including a housing, a primary sear mounted for pivotal displacement between a searing position and a release position, cooperating means on said primary sear and said firing pin disposed for engagement when said primary sear is in the searing position for blocking displacement of said firing pin from the cocked position and for transferring the bias of said firing pin spring to said primary sear for displacement thereof to the release position, a trigger pivotal between a normal and a firing position, an integral arm on said trigger disposed for releasably blocking displacement of said primary sear to the release position when said trigger is in the normal position, means for adjusting the amount of displacement required of said trigger to release said primary sear, a trigger actuated secondary sear, and means for selectively transferring control of said primary sear from said arm to said secondary sear.

3,183,617
GUN BARREL MOUNTING

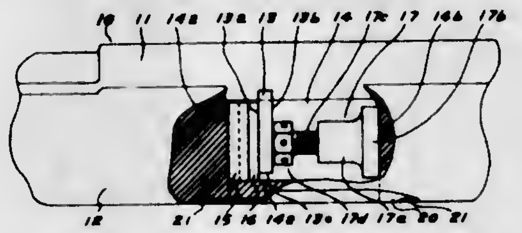
William B. Ruger and Harry H. Sefried II, Southport, Conn., assignors to Sturm, Ruger and Company, Inc., Southport, Conn., a corporation of Connecticut
Filed Mar. 30, 1964, Ser. No. 355,545
7 Claims. (Cl. 42—75)



1. The improved receiver and barrel combination for guns which comprises a hole in the receiver of circular cross-section, a forward face on the receiver exterior of the hole, a forward extension on the receiver having a support surface below the longitudinal axis of said hole which is concentric with the hole, a barrel having a chamber-end making a snug fit in said hole, a shoulder on the barrel which engages the forward face, a bearing surface on the barrel forward of the shoulder which engages the support surface on the extension, a transverse slot in the barrel providing a sloping engaging surface, and a locking block mounted on the extension, screw means for securing the locking block on the extension and in bearing contact with the sloping surface, said locking block coating with the sloping surface and extension to hold the shoulder in contact with the forward face and to hold the support surface of the barrel in contact with the support surface on the extension.

3,183,618
RECOIL AND STABILIZING MECHANISM FOR A RIFLE

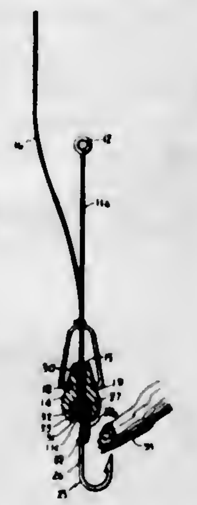
Lloyd J. Flewellen, 1427 E. Sandalwood, San Antonio, Tex.
Filed June 11, 1964, Ser. No. 374,465
3 Claims. (Cl. 42—75)



2. A recoil and stabilizing mechanism for a rifle consisting of a barrel, a downwardly depending recoil lug secured to said barrel and a stock comprising an essentially rectangular recess in said stock in proximity to said recoil lug, said recess including first and second ends, first and second adjustable mating elements positioned in said recess between said first end and said recoil lug, said first adjustable mating element including a concave surface and the corresponding portion on said second adjustable mating element being convex, and adjustable means in said recess bearing against said second end and said recoil lug.

3,183,619
FISHING EQUIPMENT

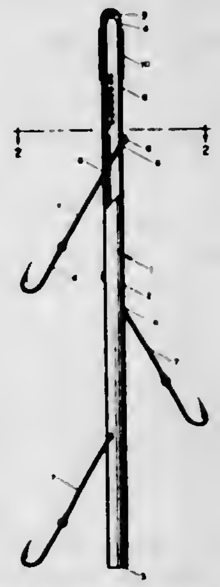
Harry R. Walden, 215 Henry St., Dallas, Tex.
Filed Dec. 19, 1962, Ser. No. 245,898
6 Claims. (Cl. 43—17.2)



4. A fish hook retriever including: a slide member; a mass slidably mounted on said slide member, said slide member having means at its upper end for limiting upward movement of said mass on said slide member; means for securing a fishing line to said mass, said slide member having an upper slide portion on which said mass is slidable, a portion of said slide member extending in a direction parallel to the longitudinal axis of said upper slide portion and offset therefrom, an angularly extending connector portion connecting the upper end of said offset portion to the lower end of said upper slide portion; and a hook portion extending from the lower end of said offset portion in a plane perpendicular to said axis whereby a fish hook having a shank with an eye at its upper end may be secured to said slide member with its upper eye disposed about said angularly extending connector portion and its shank disposed in said hook portion whereby downward movement of said mass is stopped by engagement thereof with the upper end of a hook secured to said slide member, said mass having a downwardly opening recess at its lower end providing an annular downwardly facing stop shoulder and a vertically extending annular surface, the eye of the hook being receivable in said recess whereby lateral movement of the eye of the hook on the connector portion is limited by said annular surface when the mass is in its lowermost position on said slide member.

3,183,620
FISHING TACKLE DEVICE

Emil J. Dockal, 8606 Kellett, Houston 28, Tex.
Filed May 19, 1964, Ser. No. 368,633
4 Claims. (Cl. 43—42.74)

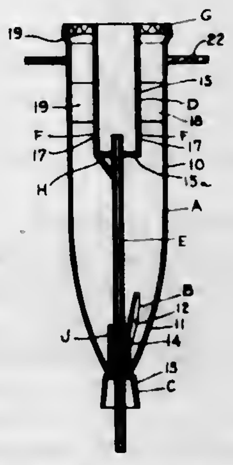


1. A fishing tackle device comprising an elongate, hollow body member open at its lower end and closed at its upper end, means at its upper end for attachment to the end of a fishing line, the said body having pairs of holes therethrough disposed longitudinally along said member, a flexible leader extending through each pair of said holes and secured to said body, a fishing hook secured to the other end of said leader, the upper portion of the hollow body member having a plurality of openings therethrough, an annular sleeve frictionally engaging the outer surface of said body member and slidable thereon to cover at least a portion of said openings whereby varying amounts of air may be trapped in the upper portion of said hollow body member when the said device is immersed in water.

3,183,621
DEVICE FOR BLOWING A LARGE BUBBLE CONTAINING A PLURALITY OF SMALL BUBBLES

Charles S. Allen, Jr., 36 Wedgewood Drive, Greenville, S.C.
Filed Oct. 31, 1961, Ser. No. 148,880
1 Claim. (Cl. 46—6)

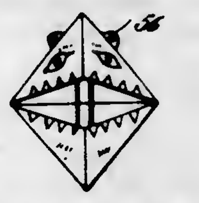
A bubble blower including a relatively large tubular member open at both ends, said large tubular member having an opening therein between the open ends, one end of the large tubular member having an open mouthpiece, a relatively small tubular housing open at one end thereof remote from the mouthpiece carried within said relatively large tubular member, said small tubular housing having an opening in its wall intermediate its ends, and a tubular member of substantially smaller cross-section than the small tubular housing communicating with and extending from said small tubular housing to said mouthpiece, the outer surface of said small tubular member being spaced from the inner surface of the mouthpiece so that air may be caused to be admitted into the large tubular member without admitting air to the small tubular member, whereby air blown into the mouthpiece



causes additional air to be drawn through the opening in the large tubular member between the ends thereof to blow a large bubble at the open end of the large tubular member opposite the mouthpiece, and whereby additional air is drawn in through the opening in the small tubular housing and small bubbles may be blown inside the large bubble.

3,183,622
NOVELTY FOLDING DEVICE

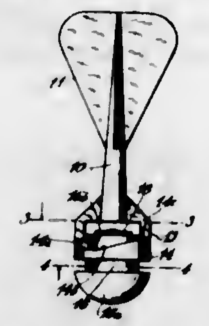
Ernest Frankl, Middleboro, Mass., assignor to Winthrop-Atkins Co., Inc., Middleboro, Mass., a corporation of Massachusetts
Filed Nov. 2, 1962, Ser. No. 235,044
21 Claims. (Cl. 46—154)



15. The method of making a pop-up structure, comprising, providing a two-ply blank with the plies face-to-face, each ply consisting of four triangular faces hinged along adjacent edges with their apices at a common point and with the bases of the two intermediate faces forming an exterior angle and the sides of the two end faces forming an interior angle, and with slots at the hinges between each of the adjacent end and intermediate faces, inserting the end portions of a limp elastic band through the slots, refolding the plies to dispose the intermediate and end faces of each ply in engagement with each other so that the intermediate faces now become the end faces and the end faces now become the intermediate faces thereby stretching the elastic band and while the band is stretched joining portions of the edges of the end faces.

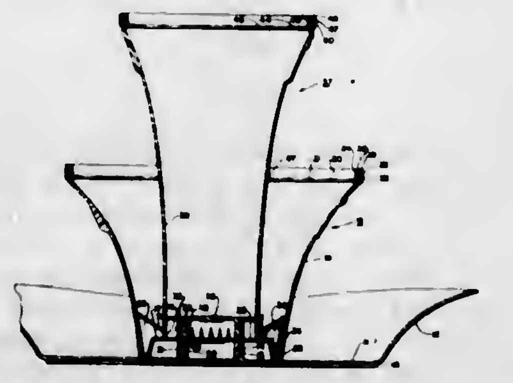
19. A structure comprised of two flat plies disposed face to face, said plies being coextensive and of identical configuration, each ply comprising end and intermediate triangles connected edge-to-edge with their apices at a common point, with the bases of the end triangles in spaced parallel relation, with the bases of the intermediate triangles forming an exterior angle, and with the sides of the end triangles forming an interior angle, means connecting the end triangles of the two plies to each other along their bases and means connecting the intermediate triangles of the two plies along their bases forming obtuse angles.

3,183,623
TOY BOMBS
Eugene Callen, 1425 N. 1st Ave., Maywood, Ill.
Filed May 13, 1963, Ser. No. 279,861
3 Claims. (Cl. 46—200)



1. A toy bomb designed to detonate when dropped on a hard surface, comprising an upper member formed of a slightly yieldable material and made with a bottom recess defining a surrounding wall, opposite portions of the wall being formed with top cams inclined in opposite directions, said wall having a pair of vertical grooves at the lower ends of the cams and opening on said recess, a hammer for said member and insertible upwardly into said recess to receive a firing cap, and a pair of side studs carried by the hammer in positions to be alined with said grooves when the hammer is inserted as stated, the sides of the grooves yielding momentarily during the passage of the studs and returning to a normal spacing locking the studs against return passage through the grooves, and the rotation of the hammer with the studs toward the other ends of the cams serving to raise the hammer and clamp the firing cap to said member preparatory to dropping the bomb as stated.

3,183,624
FLORAL ARRANGER
James B. Swett, Barrington, R.I., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Aug. 9, 1963, Ser. No. 301,078
2 Claims. (Cl. 47—41.11)



1. A floral arranger comprising:

(*a*) a tray having a substantially flat base with an upstanding peripheral rim;

(*b*) a large vase having a base with an integral upstanding peripheral side wall terminating in an upper edge;

(*c*) connecting means on the tray base and large vase base to releasably connect the tray and base together;

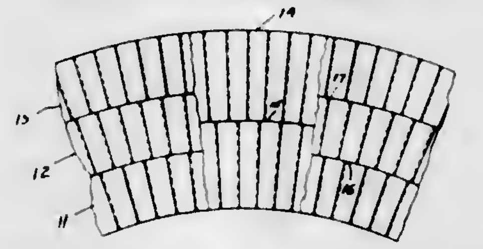
(*d*) a grill releasably connected to the upper edge of the large vase, and having a central opening;

(*e*) a second vase having a base with an integral upstanding peripheral side wall terminating in an upper edge, the base of the second vase being positioned wholly within the large vase and the side wall of the second vase being positioned in the opening of said grill;

(*f*) connecting means on the large vase base and the second vase base to releasably connect the vase together;

(*g*) a second grill releasably connected to the upper edge of the second vase; wherein both of said connecting means include a pair of concentric sleeves fitting inside each other, one of said sleeves being affixed to one of the bases being connected and the other sleeve being affixed to the other of the bases being connected, the outside sleeve having an undercut portion located below its upper edge and extending radially outward; the inside sleeve having a ridge being constructed to snap into said undercut portion when the sleeves are positioned inside each other to releasably connect the bases together.

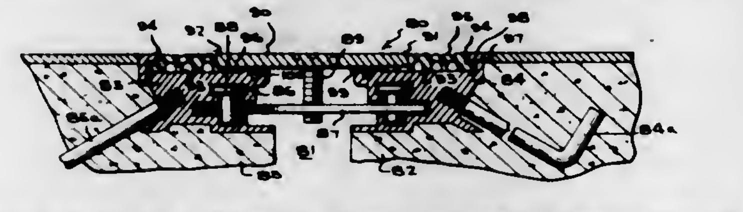
3,183,625
REFRACTORY FURNACE LININGS
Albert B. Agnew, Philipsburg, Pa., assignor of thirty-three and one-third percent to William B. Jaspert, Upper St. Clair Township, Pa.
Filed June 23, 1961, Ser. No. 119,199
1 Claim. (Cl. 50—157)



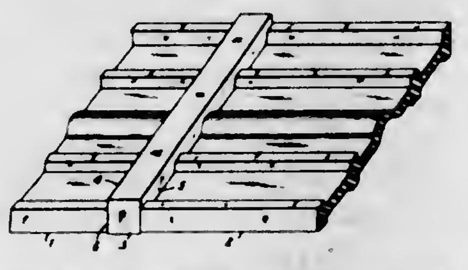
An annular wall for blast furnaces comprising a plurality of superimposed courses each formed by a plurality of horizontally contiguous rings of wedge-shaped refractory brick all of the same shape and length in a single course and having different lengths in alternate vertical courses, said brick having parallel top and bottom faces, and opposed end faces, and opposed flat longitudinally diverging side faces extending perpendicular to said top and bottom faces, the end faces of the brick in said horizontally contiguous rings forming annular peripheral joints, and said brick having interacting tongues and grooves in the center of the opposite longitudinal flat diverging side faces of the wedge, said tongues and grooves having parallel angular faces at their sides and being of the same width throughout their length with the tongues and grooves of the brick in each ring disposed in interlocked engagement with adjacent brick in such ring forming interlocking joints, and with rings of bricks of different lengths forming a multiple ring wall, the tongues of the bricks in any one ring being on the same side extending in the same direction and being on the opposite side extending in the opposite direction in all rings adjacent thereto and superposed courses of said wedge-shaped bricks being laid with their interlocking joints staggered in alternate vertical courses to the height of the wall desired, the wedge-shaped refractory brick of horizontally contiguous rings being laid with substantially all of their interlocking joints staggered, the brick in alternate vertical courses having their annular peripheral joints staggered in relation to the annular peripheral joints of the brick in adjacent vertical courses.

3,183,626
EXPANSION JOINT COVER ASSEMBLY
Dale A. Schmitt, Oklahoma City, Okla., assignor to Metalines, Incorporated, Oklahoma City, Okla., a corporation of Oklahoma
Filed Mar. 5, 1964, Ser. No. 350,149
13 Claims. (Cl. 50—205)

11. An expansion joint cover assembly for building wall sections disposed in spaced relation having an elongated expansion joint therebetween, comprising an elongated cover plate adapted to be retained in covering relation to the joint in substantial parallelism with the plane of the outer surface of one of the wall sections, said cover plate having parallel opposite lateral edge portions, a pair of parallel, elongated flanking mounting members adapted to be mounted on corresponding exposed surfaces of the adjoining wall sections adjacent the joint in lapped relation with said cover plate, said mounting members each including a rigid body portion having a lower inwardly opening guide channel paralleling the length of the joint and an upper rabbet bounded by a bearing surface and a shoulder perpendicular thereto for receiving the edge portions of said cover plate and accommodating relative movement of the same in the plane of the cover plate and in angular, tilting relation thereto with said edge portions continuously lapping said bearing surface throughout the range of relative spanwise movement of said wall sections normally occurring due to temperature variations, a plurality of angularly movable centering straps pivotally secured at their midregion to said cover plate and having terminal slide members in said guide channels coupling the centering straps with said mounting members to continuously position said cover plate in substantially centered relation relative to said mounting members during relative spanwise movement of said wall sections, and flexible, resiliently compressible filler block members filling the space within the rabbet of each of said mounting members between said shoulders and the adjacent edges of said cover plate.



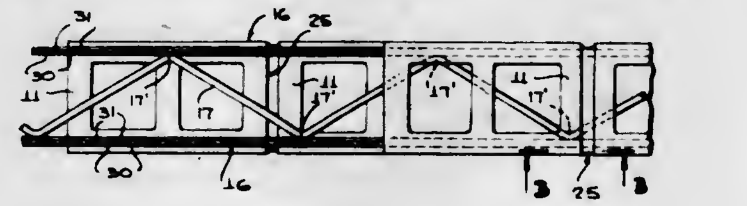
3,183,627
TRANSVERSE WATERSTOP CONNECTION
Harry Lawrence Rice, deceased, late of New York, N.Y., by Helen Rice, administratrix, New York, N.Y., assignor to Rubber and Plastics Compound Co., Inc., New York, N.Y.
Filed Oct. 30, 1962, Ser. No. 235,600
1 Claim. (Cl. 50—346)



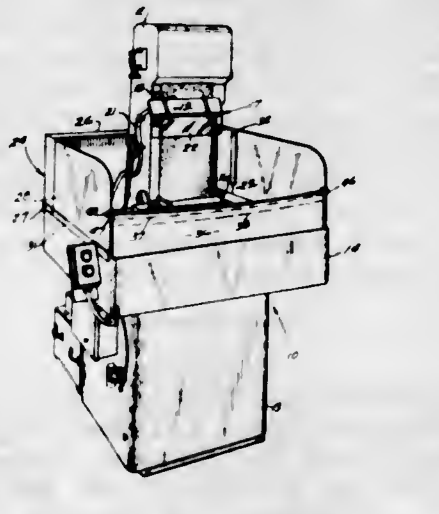
An extruded strip of plastic waterproof composition for bridging a joint between construction members, said strip having protruding ribs longitudinally on the front and back surfaces thereof, a cross rib laterally across said longitudinal ribs, said cross rib being of a plastic material having a lower melting point and plasticity than that of the composition of said longitudinal strip, and said cross rib being of a greater height than the height of said longitudinal ribs.

3,183,628
MASONRY WALL REINFORCING MEANS
William G. Smith, Ringgold, Ga., assignor to Lox-All Sales Corporation, Chattanooga, Tenn., a corporation of Tennessee
Filed Oct. 12, 1962, Ser. No. 230,153
1 Claim. (Cl. 50—492)

Masonary wall reinforcing means comprising a pair of side rods disposed in spaced substantially parallel relationship with one another and being of similar construction connecting means connected between said rods for retaining the rods in operative relationship relative to one another, said connecting means and rods lying substantially in a plane and being rigidly attached to one another so as to provide a rigid structure, each of said rods being embossed to define a plurality of bosses and ribs thereon, each rod having a first plurality of spaced bosses disposed on one side thereof with a second plurality of spaced bosses on the opposite side thereof, said rods being substantially cylindrical in configuration with the embossed portions thereof extending radially outwardly thereof, each of said bosses extending through an arc of less than 180 degrees, each of said ribs extending in a longitudinal direction relative to the length of the respective rod, the outer surfaces of said embossed portions and said ribs defining a portion of a cylindrical surface which is concentric with the cylindrical surface of said rods, each of said ribs extending between adjacent end portions of a pair of bosses, said bosses having a maximum dimension at the end portions thereof and a minimum dimension at an intermediate portion thereof, said ribs extending longitudinally of the associated rods a distance substantially less than the associated end portion of the bosses, and adjacent bosses being disposed on opposite sides of the rod and in staggered relationship with one another such that adjacent bosses are spaced longitudinally along the rod from one another with a rib interposed therebetween so that no portion of any boss is disposed at a diametrically opposite portion of the rod from another boss, said connecting means being rigidly secured to the inner surface of each of said rods at a point substantially midway between two adjacent inwardly extending bosses formed on each rod.



3,183,629
SPLASH CURTAIN FOR BELT GRINDER
Robert Ver Meulen, Kalamazoo, Mich., assignor to Hammond Machinery Builders, Inc., Kalamazoo, Mich., a corporation of Michigan
Filed May 22, 1963, Ser. No. 282,271
6 Claims. (Cl. 51—135)



1. A belt-type grinding machine comprising:

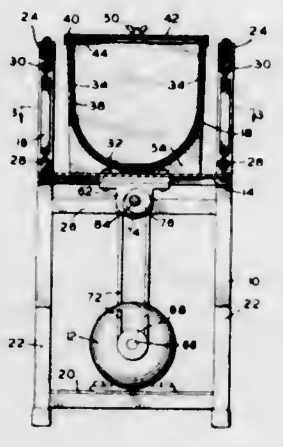
a substantially vertically arranged, movable, abrasive belt;

a work support located in front of a course of said belt;

a splash curtain and means supporting said splash curtain with its upper edge suspended in front of said work support and extending laterally with respect to said course of said belt, the zone above said splash curtain being unobstructed so that workpieces can be placed on said work support between said splash curtain and said course of said belt; and

yieldable means on said upper edge of said splash curtain whereby an operator may rest his arms thereon without discomfort.

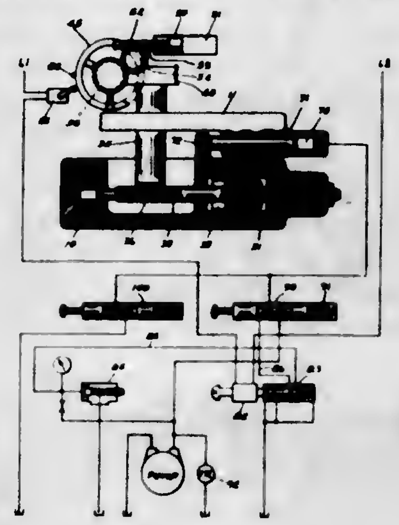
3,183,630
ROCK POLISHING MACHINE
Royal K. Wright, 9900 W. 44th Ave., Wheatridge, Colo.
Filed Nov. 4, 1963, Ser. No. 321,090
6 Claims. (Cl. 51—163)



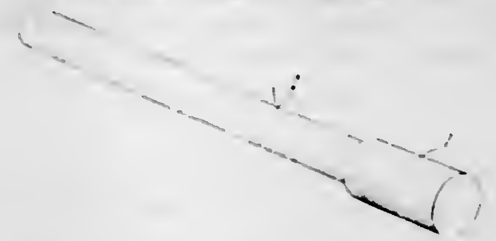
1. A polishing machine for rocks and the like comprising, an upstanding frame including a base and four uprights arranged at the corners of a rectangle, a motor having a double-ended drive shaft mounted on the base, a first pair of pulleys mounted on opposite ends of the motor drive shaft, tension springs having their upper ends attached to each of the uprights in position to hang downwardly therefrom inside the frame, a platform resiliently suspended from the lower ends of the springs for translatory movement between the uprights in spaced parallel relation above the base, a driven shaft journalled for rotation on the underside of the platform in spaced parallel relation above the drive shaft, a second pair of pulleys fastened at opposite ends of the driven shaft in vertically-aligned relation to the first pair thereof, a rock-holding vessel mounted atop the platform for translatory movement therewith, at least one eccentric weight carried by the driven shaft adapted upon rotation of the latter to impart vibratory motion to the platform and associated rock-holding vessel, and belts operatively connecting the vertically-aligned pulleys on the drive and driven shafts, said belts being of a length adapted to pre-load the springs, said belts and springs cooperating to limit the vibratory movement imparted to the platform and vessel to substantially vertical planar motion in a plane normal to the axis of rotation of the driven shaft.

3,183,631
PRECISION FEED FOR MACHINE TOOLS
Ralph E. Price and Charles E. Tolbert, Waynesboro, Pa., assignors to Landis Tool Company, Waynesboro, Pa.
Filed Feb. 21, 1963, Ser. No. 260,248
14 Claims. (Cl. 51—165)

1. In a feed control mechanism for a machine tool having a bed, a tool support slidably mounted on said bed, a work support, a cutting tool mounted on said tool support, feeding means for advancing and retracting said tool support relative to said work support including a feed screw, a piston and cylinder attached to said tool support, a positive stop in the path of said piston, a supply of fluid under pressure connected to said cylinder, means to advance said feeding means while said tool support is held against movement by said positive stop and the pressure in said cylinder, and means to connect said cylinder with a lower pressure.

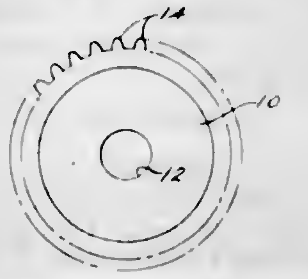


3,183,632
GRINDING TOOL
Harold W. Ferchland, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 9, 1962, Ser. No. 208,304
4 Claims. (Cl. 51—206)



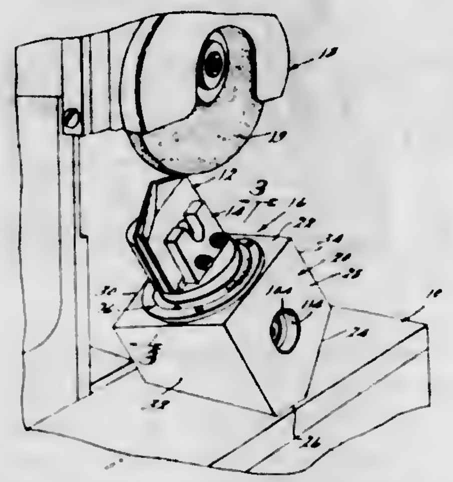
1. A grinding tool for making a close tolerance cylindrical bore in metal parts and adapted for high speed rotation and longitudinal movement within said bore, said grinding tool comprising a cylindrical shaped ceramic working portion of relatively large diameter having a relatively coarse porous grinding structure and an elongated ceramic shaft portion of relatively small cross-sectional area having a fine grain non-porous structure with a high modulus of elasticity extending from said working portion.

3,183,633
POLYURETHANE GEAR FINISHING TOOL
John W. Decker, Southfield, Mich., assignor to Michigan Tool Company, Detroit, Mich., a corporation of Delaware
Filed Oct. 24, 1963, Ser. No. 318,559
3 Claims. (Cl. 51—206)



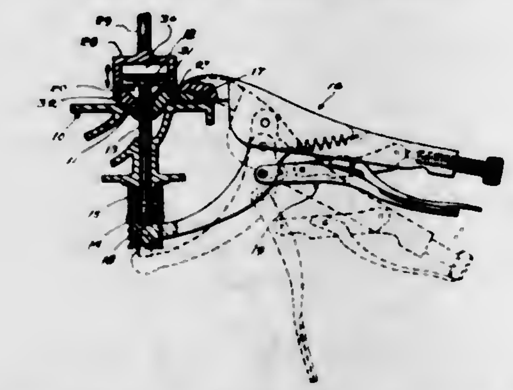
1. An abrasive gear-shaped finishing tool comprising a cylindrical body having a plurality of tooth elements therearound at least the surfaces of which are comprised of an abrasive matrix comprising a polyurethane resin bonding agent and a plurality of abrasive grains tenaciously bonded therein, said bonding agent comprising the reaction product between tolylene diisocyanate and a polyhydroxy ether resin having a molecular weight ranging about 1000 up to about 1500, said bonding agent present in an amount ranging from about 20% to about 80% by weight of said abrasive matrix.

3,183,634
FIXTURE FOR GRINDING SPADE DRILLS OR THE LIKE
Allen N. Sweeny, Grosse Pointe, Mich., assignor to De Vlieg Machine Company, Royal Oak, Mich., a corporation of Michigan
Filed May 9, 1963, Ser. No. 279,119
19 Claims. (Cl. 51—220)



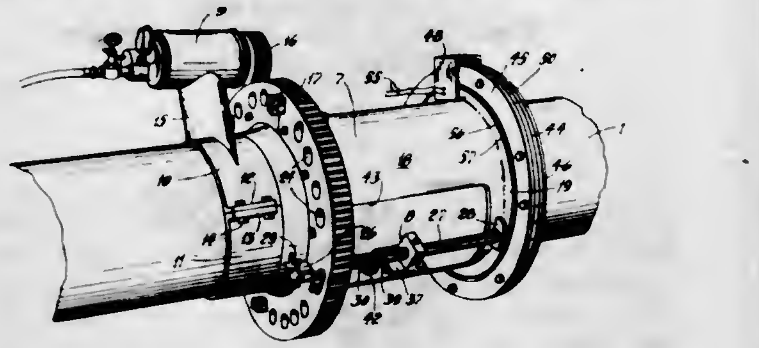
1. A grinding fixture for duplicating the geometry of a spade drill so that surfaces thereon can be ground by using a plain surface grinder for all grinding operations comprising a tumble block having a plurality of surfaces, means supported by said block for pivoting the drill relative thereto, means for locating the drill in a predetermined angular relationship with said block in which one of the surfaces on the drill is parallel to one of said surfaces on said block including means for indexing the drill a predetermined angle relative to said block in which another of the surfaces on the drill is parallel to said one of said surfaces on said block, and means for releasably holding the drill against movement relative to said block when the drill is located in said predetermined angular relationship with said block.

3,183,635
VALVE GRINDING APPARATUS AND GRINDING ELEMENTS THEREFOR
Vassilios K. Spirounis, 11 Rich St., Mattapan, Mass.
Filed Jan. 15, 1962, Ser. No. 166,037
10 Claims. (Cl. 51—241)



1. A grinding device for use with a driver in grinding a valve seat and the valve therefor when said valve is held in an open position, said device comprising, in combination, a holder for attachment to said driver and a grinding element including complemental sections each including an arcuate portion, said portions, when said sections are mated, defining an axial guide for the valve stem, said element having upper and lower, frusto-conic grinding faces, said element being detachably attached to said holder and said element sections being held against relative movement.

3,183,636
SHAFT GRINDING AND RESURFACING
Kendal R. Kelley, 220 W. 107th St., New York, N.Y., and Reginald Milheiser, 34—21 62nd St., Woodside, N.Y.
Filed Mar. 30, 1964, Ser. No. 355,978
4 Claims. (Cl. 51—241)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. Apparatus for resurfacing a selected axially extending annular area of a shaft while said shaft is stationary, which comprises:

a split cylindrical shell surrounding said shaft and having integral radial flanges at opposite ends thereof, one of said flanges being a thrust flange,

arcuate bearing shoes in opposite end portions of said shell bearing directly on said shaft for rotatably supporting said shell on said shaft in accurately centered relationship to said shaft,

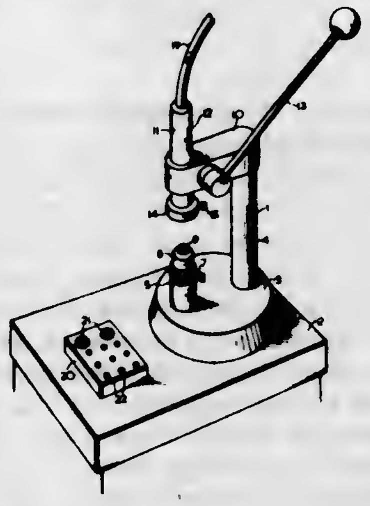
stationary thrust bearing assembly means releasably engaging said thrust flange at one end of said shell to restrain said shell against displacement in either axial direction,

said thrust bearing assembly means including:

an annular shaft clamp member releasably affixed to said shaft having a laterally extending outer annular portion,

said outer portion having inwardly opening radial recess for confining therein, against axial movement, an outer portion of said thrust flange at one end of said shell.

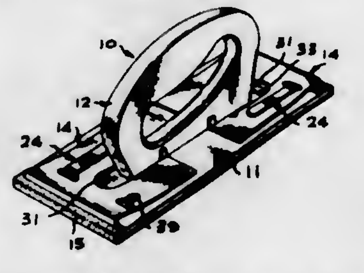
3,183,637
MANUFACTURE OF CORNEAL LENSES
Penrhyn Francis Thomas, Sydney, New South Wales, Australia, assignor to Corneal Lens Corporation Pty. Limited, Sydney, New South Wales, Australia, a company of Australia
Filed Oct. 29, 1962, Ser. No. 233,716
2 Claims. (Cl. 51—284)



1. A method of mounting a corneal lens on a lens support said method consisting of the steps of placing

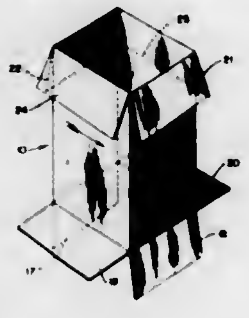
the lens in a lens holder, relatively aligning the lens support and the lens holder, covering the face of the lens support with a mounting compound, bringing the lens support into close proximity with the lens holder, and applying air pressure directly to the surface of the lens on the side opposite to said lens support to blow said lens on to said support.

3,183,638
SANDER HAVING RELEASABLE CLIP
Alma A. Hutchins, 1302 E. Colorado Blvd., Pasadena, Calif.
Filed Apr. 1, 1963, Ser. No. 269,400
12 Claims. (Cl. 51—386)



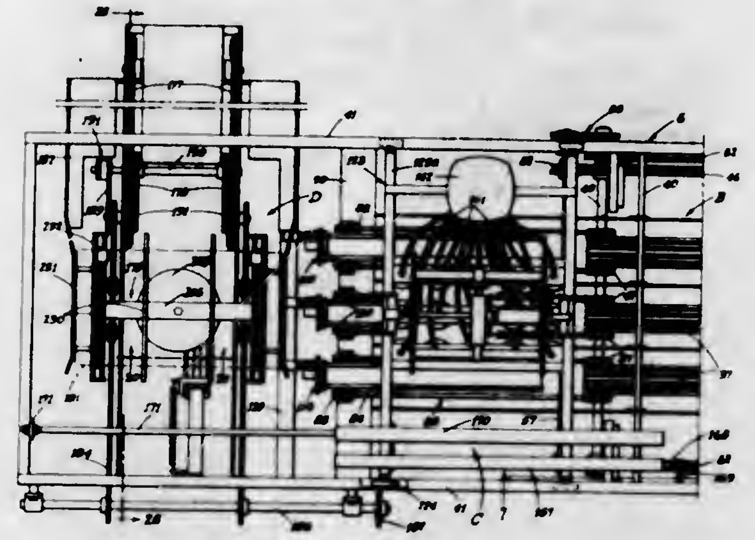
2. A sander comprising a carrier body to which an abrasive sheet is to be secured and adapted to function as a backing member for the sheet during a sanding operation, and a releasable clip carried by said body for detachably securing an end of said sheet thereto, said clip including a spring part made of sheet-form spring material, a handle secured to said body for manipulating it during a sanding operation, said spring part having a first portion clamped between said handle and said body, said spring part having a second portion which is movable relative to the body and is yieldingly urged by the resilience of said spring material in a direction to releasably clamp said abrasive sheet against detachment, and operating means for actuating said second portion of said spring part between active and released positions.

3,183,639
PACKAGING APPARATUS
James B. Rodman, Burlington, N.J., assignor to Weyerhaeuser Company, Tacoma, Wash., a Washington corporation
Filed Aug. 26, 1960, Ser. No. 52,287
23 Claims. (Cl. 53—75)



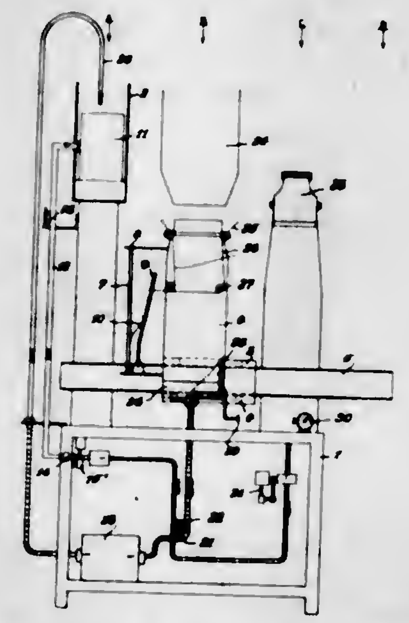
1. An apparatus for processing containers having upper flaps, comprising a conveyor for supporting the filled container, a carriage confronting the conveyor and adjustable between first and second terminal positions toward and away from the conveyor, respectively, to cooperate with containers of different heights travelling therepast, upper flap treating mechanism on the carriage, means to adjust the carriage to and to maintain it at its first terminal position when there is no container passing through the apparatus, and means responsive to the entry of a container into the apparatus to control the carriage-adjusting means to adjust the carriage toward the conveyor to a position appropriate for the treating of the upper flap of the container by the mechanism on the carriage and to maintain the carriage at such position.

3,183,640
CANTALOUPE PACKING MACHINE
Minor Eugene Gee, Sanger, and Charles Louis Seagraves, Fresno, Calif., assignors to General Box Distributors, San Francisco, Calif., a corporation of California
Filed May 29, 1962, Ser. No. 198,590
28 Claims. (Cl. 53—78)



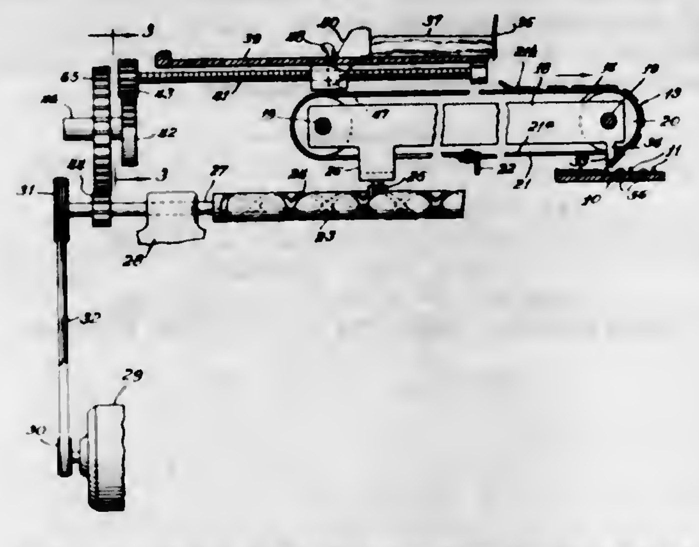
6. In a machine for packing melons into a shipping box, means to form a single-layer pattern of melons for transfer to such box comprising a conveyor onto the rear end of which melons are fed in succession to form a row, a horizontally yieldable stop associated with the conveyor to engage the foremost melon of the row, means to halt the feeding of the melons when a predetermined number of melons have been so fed, a melon-row support beyond the stop, and means to engage the rearmost melon of the completed row on the conveyor so as to advance the entire row horizontally pass the stop and onto the support; the machine including a unit to engage the pattern of melons onto the support and transfer the same to the box.

3,183,641
SEMI-AUTOMATIC APPARATUS FOR THE OPENING, FILLING AND SEALING OF BAGS
Joseph Boone, Vedrin, Belgium, assignor to Marius Berghgracht, Gent, Belgium
Filed Nov. 20, 1961, Ser. No. 153,505
Claims priority, application France, Nov. 21, 1960, 844,937
8 Claims. (Cl. 53—190)



1. In a semiautomatic machine for the feeding, filling and sealing of solid or liquid materials in bags, the combination comprising a guideway, a mobile carriage mounted for alternative movement along said guideway, a rigid jig and having an upper open end and intended to receive a bag, the jig being supported by said carriage and having spaced double walls surrounding an inner open space having a transverse section substantially corresponding to that of an opened bag, the inner walls of said jig having perforations, a handle secured to said jig for displacing the latter by an operator along said guideway successively to a plurality of separate work stations, a flexible pipe connecting the space between said double walls to a vacuum source, and a control element mounted on said handle to be actuated by the operator for each application of the vacuum to said space.

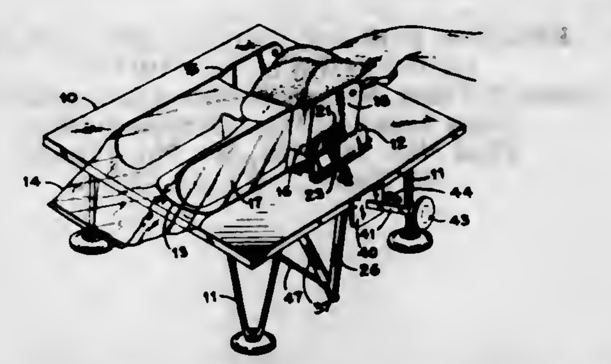
3,183,642
FOOD PACKAGING MACHINE
John M. Tindall, 522 Greenleaf Ave., Wilmette, Ill.
Filed Sept. 28, 1962, Ser. No. 226,881
11 Claims. (Cl. 53—251)



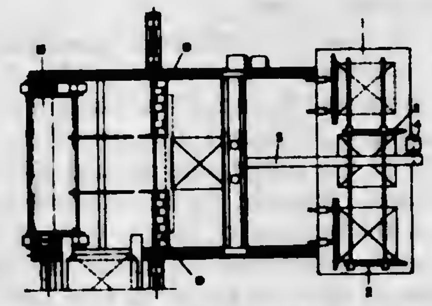
1. In a food slice packaging machine for the packaging of discrete food slices capable of sticking to a supporting surface, a horizontal platform adapted to support a plurality of longitudinally-extending parallel webs of sheet material thereon, a reciprocable carriage movable horizontally and transversely relative to said platform between an advanced position over said platform and a retracted position to one side of said platform, said carriage being provided with a belt extending horizontally and transversely with respect to said platform and carried by a pair of rollers and having their rotation axes extending parallel with reference to said platform, means rotating said belt upon said rollers as said carriage is advanced so that the lower stretch of said belt remains substantially stationary with respect to said platform, means for dispensing food slices at a preselected rate upon the upper stretch of said belt as said carriage is moved between retracted and advanced positions, and stripping means provided by said carriage and movable therewith for peeling food slices from the lower stretch of said belt as said carriage moves from its retracted to its advanced position, whereby, food slices are peeled and transferred from the lower stretch of said belt while said lower stretch is stationary relative to said platform.

3,183,643
PRODUCE BAGGING APPARATUS
Julius R. Carlo, 5749 Don Drive, Norfolk, Va.
Filed Nov. 19, 1962, Ser. No. 238,809
3 Claims. (Cl. 53—261)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A produce bagging device for opening an empty bag and supporting same when it is filled comprising an elevated platform, a superstructure secured to said platform having parallel side members and a flat top surface, an elongated bag and produce supporting tongue integral with and projecting from said top surface, an elongated bag opening wing piovtally secured to each of said side members for movement to a lowered bag receiving position in which said wings substantially overlie said tongue thereby enabling a bag to be placed over said wings and said tongue, and to raise bag opening position in which said wings are substantially perpendicular to said tongue to enable the produce to be placed on the tongue in the bag, said wings being substantially coextensive in length with said tongue and said top surface of said superstructure, and operating means to move said wings to the lowered bag receiving position and to the raised bag opening position.



3,183,644
PACKING MACHINE
Hendrikus Willem Elfers, Rothem-Meerssen, Netherlands, assignor to Koninklijke Nederlandsche Papierfabriek N.V., Maastricht, Netherlands, a corporation of the Netherlands
Filed Sept. 7, 1961, Ser. No. 136,517
Claims priority, application Netherlands, Sept. 10, 1960, 255,802
9 Claims. (Cl. 53—389)

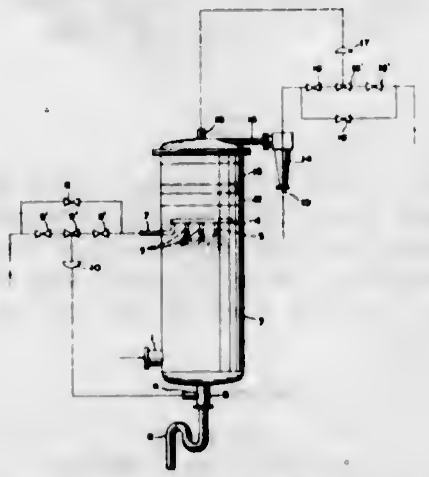


1. A packaging machine for packing successive stacks of paper sheets in sheet wrapping material, comprising a frame, two table portions mounted on said frame spaced from each other to define a slit between them, said table portions having substantially horizontally extending stack supporting surfaces thereon and being connected to each other for movement back and forth along said frame, guide means mounted in said slit for guiding a web of wrapping material through said slit, clamping means fixed relative to said frame and positioned at a point adjacent said slit when said table portions are at one end of the back and forth movement, said clamping means being adapted to clamp the edge of a web of wrapping material and hold it while said table portions are moved, cutting means at least part of which is positioned above said table portions adjacent said slit when said table portions are at the other end of the back and forth movement and adapted to cut the web of wrapping material, and an arresting means movable up and down above the table portions at a point adjacent said cutting means, whereby when said table portions are at one end of the back and forth movement and the end of a web of wrapping material is guided through said slit and clamped in said clamping means and a stack of paper sheets is positioned on the table portion between said slit and said arresting means and is held fixed relative to the frame by said arresting means, and said table portions are moved until the slit is adjacent said arresting means at the other end of the back and forth movement, the web of wrapping material is drawn

through said slit and laid along the table portion between the moving slit and the clamping means beneath the stack of sheets and the last mentioned table portion is moved beneath said stack of sheets.

3,183,645
PROCESS FOR DEODORIZATION OF AN ODIFEROUS ATMOSPHERE

Aaron J. Teller, Shaker Heights, Ohio, assignor to Mass Transfer, Inc., Cleveland, Ohio
Filed Nov. 10, 1961, Ser. No. 151,584
10 Claims. (Cl. 55—20)

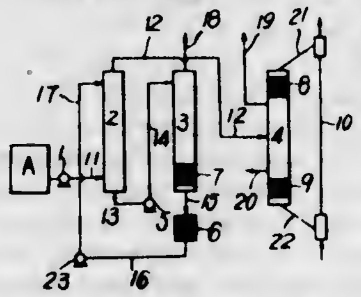


1. A process for deodorizing an odiferous atmosphere comprising the steps of

- (*a*) passing said odiferous atmosphere into a spray zone wherein said atmosphere comes into intimate contact with a water spray;
- (*b*) passing said atmosphere from said spray zone through a demisting means adapted to remove entrained liquid therefrom;
- (*c*) passing the resultant demisted atmosphere through a bed of adsorbent material capable of adsorbing odiferous material from said atmosphere;
- (*d*) maintaining a decreased pressure of 0.5–14 inches of mercury at the outlet side of said adsorbent bed, said decreased pressure being effected by a steam aspirator with the rate of steam flow to said steam aspirator being controlled automatically according to the pressure of the exit gas from said adsorbent bed; and
- (*e*) automatically adjusting the rate of water flow to said spray according to the temperature of the exit water from said spray zone.

3,183,646
METHOD OF SEPARATION OF ACETYLENE AND ETHYLENE FROM A GASEOUS MIXTURE

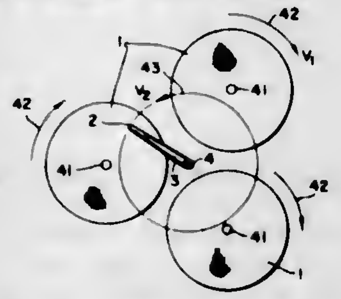
Kinichi Nishioka and Yukiyoshi Kan, Kurashiki, Japan, assignors to Kurashi Rayon Company Limited, Kurashiki, Japan, a corporation of Japan
Filed Oct. 2, 1961, Ser. No. 142,081
Claims priority, application Japan, Oct. 14, 1960, 35/41,216
1 Claim. (Cl. 55—51)



A method of recovering acetylene and ethylene from a gaseous mixture obtained by the decomposition of hydrocarbons at temperatures above 1000° C. and containing minor amounts of butadyne, diacetylene, methyl acetylene, and vinyl acetylene, as impurities, which method comprises contacting said gaseous mixture first in an absorption zone at a temperature of 0° C. to 30° C. with an absorbent liquid selected from the group consisting of dimethyl formamide, dimethyl acetamide, dimethyl sulfoxide, n-methyl pyrrolidone and j-butyrolactone and absorbing substantially all of the acetylene and said impurities in said absorbent liquid, removing from said absorption zone said absorbent liquid with said absorbed impurities and absorbed acetylene to a desorption zone and heating said absorbent liquid at a temperature sufficient to recover acetylene, passing the residual unabsorbed gases containing ethylene from said absorption zone at a temperature of 0° to 30° C. through a hypersorber, contacting therein said residual gases with a moving solid adsorbent in an adsorption zone and preferentially adsorbing ethlyene on said adsorbent, moving asid adsorbent containing adsorbed ethylene to a desorption zone, heating said adsorbent in said desorption zone to a temperature sufficient to desorb ethylene thereby desorbing ethylene therefrom, and recovering said ethylene.

3,183,647
CLEANING FILTER SURFACES

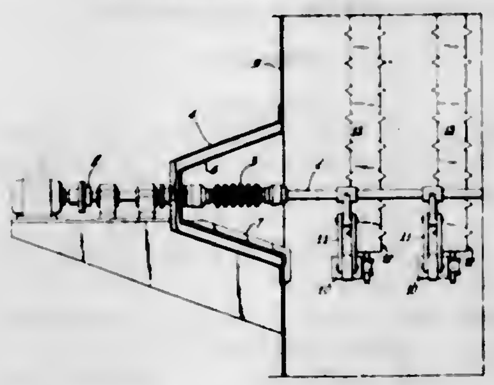
Franz Lang, Merzbergstrasse 4, Lisberg, Upper Hesse, Germany
Filed Apr. 29, 1960, Ser. No. 25,751
Claims priority, application Austria, Mar. 18, 1960, A 2,089/60
9 Claims. (Cl. 55—96)



1. The method of cleaning circular planar filter surfaces; comprising arranging said surfaces in spaced relation in a common plane, causing each surface to rotate about its center point, and rotating a suction nozzle through complete cycles of rotation so that it scans a part of all the filter surfaces during each cycle of rotation.

3,183,648
ARRANGEMENT IN RAPPING MECHANISMS FOR EMISSION ELECTRODES IN ELECTRICAL PRECIPITATORS

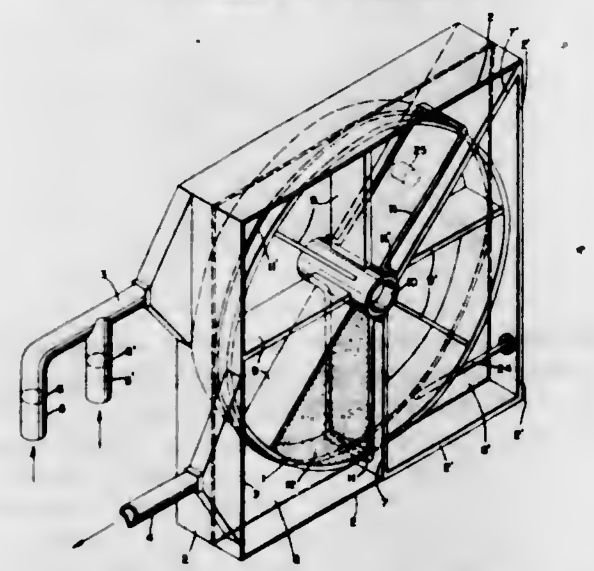
Sebastian Lagerdahl, Johanneshov, Sweden, assignor to Aktiebolaget Svenska Fläktfabriken, Stockholm, Sweden
Filed Oct. 15, 1962, Ser. No. 230,561
Claims priority, application Sweden, Oct. 27, 1961, 10,726/61
2 Claims. (Cl. 55—112)



1. In an electrical precipitator, including a side wall having an opening therein, a rapping mechanism for cleaning emission electrodes in said electrical precipitator, said rapping mechanism comprising a rotatable shaft extending into said precipitator through said opening, at least one hammer connected to said rotatable shaft in said precipitator for striking said emission electrodes upon rotation of said shaft, driving means outside said precipitator for rotating said shaft, an intermediate insulating shaft connecting said driving means to said shaft, an outer casing enclosing said insulating shaft and closing said opening to prevent dust leakage out of said precipitator, an inner casing having substantially the shape of an open ended truncated cone diverging towards the interior of said precipitator and connected to and rotating with said driving means, said inner casing being located within said outer casing, and a scraping iron mounted on said precipitator in scraping engagement with the inner surface of said inner casing thereby preventing dust accumulation on said inner surface upon rotation of said shaft, said inner casing positioned with its open end adjacent said opening whereby dust removed by said iron falls into said precipitator.

3,183,649
STEPWISE ROTARY ADSORBER INCLUDING INFLATABLE SEAL

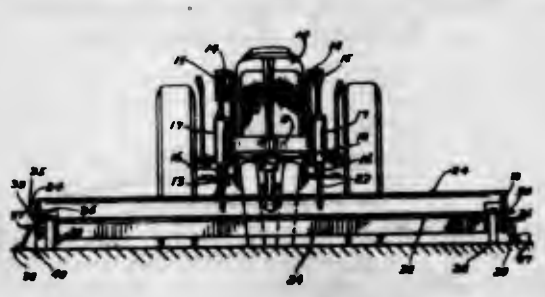
Aaron J. Teller, Shaker Heights, Ohio, assignor to Mass Transfer, Inc., Cleveland Heights, Ohio, a corporation of Ohio
Filed Aug. 29, 1961, Ser. No. 134,765
11 Claims. (Cl. 55—179)



1. A system for the recovery of vapor from an atmosphere containing said vapor comprising an adsorbing chamber having an atmosphere inlet means and an atmosphere outlet means, a desorption chamber having steam inlet means and steam outlet means, a bed of adsorbing material, a movable means positioned in said adsorption chamber adapted to support said bed of adsorbing material thereon and simultaneously permitting passage of an atmospheric gas through said supported adsorbing material and adapted to be transported from said adsorption chamber into said desorbing chamber, a supporting means positioned in said desorption chamber adapted to support a bed of adsorbing material while simultaneously permitting passage of steam therethrough and also adapted to be transported from said desorption chamber into said adsorption chamber, inflatable and deflatable means including an inflatable and deflatable toroidal tubing adapted when inflated to prevent passage of atmosphere between said adsorption chamber and said desorption chamber and adapted when deflated to permit movement of said bed supporting means to and from said adsorption and desorbing chambers, and transporting means for effecting the transfer of said bed of said adsorbing material from said adsorption chamber to said desorption chamber, and a transporting means for transferring said bed of adsorbing material in said desorption chamber to said adsorption chamber.

3,183,650
VEGETATION CUTTING APPARATUS

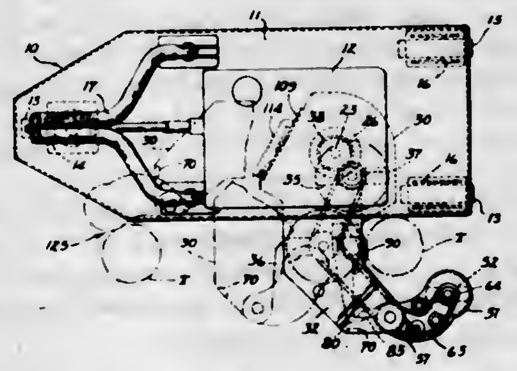
Edmund A. Ferris, Chippewa Falls, Wis., assignor to Bros Incorporated, Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 25, 1963, Ser. No. 275,659
4 Claims. (Cl. 56—25)



1. Apparatus for cutting vegetation, comprising in combination: a source of electrical energy exhibiting vegetation severing potential and current characteristics; a conductor; means supporting said conductor for movable engagement with vegetation to be cut; and circuit means connecting said source of electrical energy intermediate said conductor and the ground in which vegetation to be cut is growing whereby the electrically energized conductor cuts the vegetation and thereafter the rooted portion of the cut vegetation is capable of continued growth.

3,183,651
MOWING APPARATUS

Harry H. Hoefler, 6237 Magnolia Drive, Mentor, Ohio
Filed May 22, 1963, Ser. No. 282,326
13 Claims. (Cl. 56—25.4)



1. Cutting apparatus for cutting around obstacles such as posts, trees and the like, said apparatus comprising:

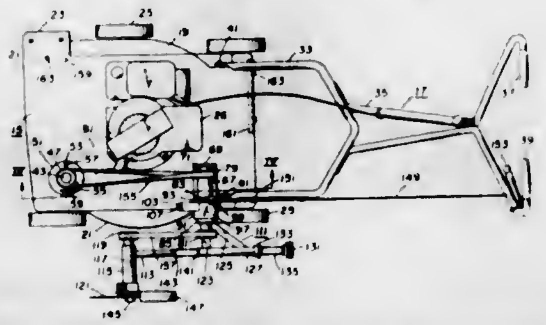
- (*a*) a wheel supported frame,
- (*b*) a motor mounted on said frame,
- (*c*) a first cutting member carried below said frame,
- (*d*) a second cutting member having a normal position spaced beyond one side of said frame in which said second cutting member is engageable with the far side of an obstacle encountered during forward movement of said apparatus,
- (*e*) linkage means connecting said second cutting member to said frame for horizontal swinging movement about a plurality of spaced, vertical axes from its normal position to a second, rearward position while in engagement with the far side of the obstacle,
- (*f*) drive means connecting said motor to said first and second cutting members,
- (*g*) selectively engageable means operatively connecting said motor to said linkage means in the second position of said second cutting member to return it to said normal position while in engagement with the rear side of the obstacle; and,

(*h*) means interconnecting said linkage means and releasably locking it against swinging movement said means locking said linkage means being re- when said cutting member is in its normal position, leasable when the object is engaged between said second cutting member and said frame.

3,183,652

LAWN MOWING AND TRIMMING APPARATUS

John T. Pratt, 511 Tierney Road, Fort Worth, Tex.
Filed Nov. 25, 1964, Ser. No. 415,853
6 Claims. (Cl. 56—25.4)



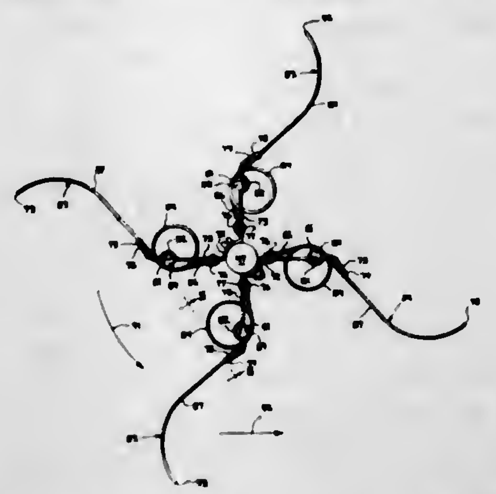
1. The combination with a powered lawn mower having a chassis and a power source of a driven lawn trimmer apparatus comprising: a first tubular member fixedly mounted to said chassis with the longitudinal axis of said tubular member disposed perpendicularly to the vertical longitudinal plane of said mower; a second tubular member rotatably mounted on said first tubular member; means fixed to said first tubular member and coacting with said second tubular member for maintaining said second tubular member in a predetermined position with respect to said first tubular member; a third tubular member slidably mounted on said second tubular member; means coacting with said second and third tubular members for securing and maintaining said third tubular member in a selected fixed position with respect to said second tubular member; a trimmer blade shaft; a trimmer blade mounted to said shaft for rotation therewith; support means for said trimmer blade shaft disposed with said shaft journaled in a portion of said support means with the axis of said shaft parallel to and spaced laterally from said longitudinal axis of said first tubular member; linkage means connected to said third tubular member and said trimmer blade shaft support means and maintaining same in relative fixed positions; and drive means interposed between said power source and said blade shaft and including a driving shaft journaled in and passing through said first tubular member.

3,183,653

POWER DRIVEN LAWN SWEEPER

Harold J. Cromwell, 840 Longfellow Road, Anderson, Ind.
Filed June 1, 1962, Ser. No. 199,429
10 Claims. (Cl. 56—27)

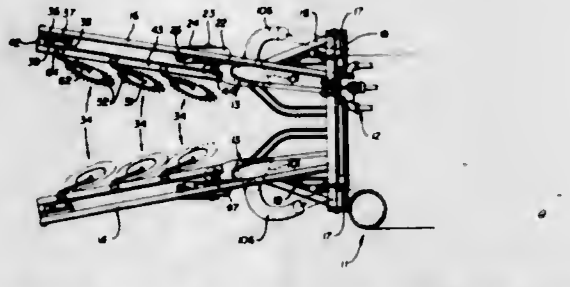
1. In a lawn sweeping machine having
a frame,
a motor on said frame, and
ground wheels supporting said frame,
a sweeper rotor mounted to said frame for rotation thereon and coupled to said motor and driven thereby and including: a shaft, an elongate support bracket with an outwardly extending portion, said bracket being secured to said shaft and having openings in said portion spaced along the length thereof, and spring tines having coils with portions thereof passing through said openings and legs extending outwardly from one side of said bracket, with each tine terminating at a point outward from the bracket, each of said coils disposed in said openings with the longitudinal axis of said coils substantially parallel to said bracket, and retaining means passing through said coil on the opposite side of said bracket from the tine extension for supporting said tine on said bracket.



3,183,654

APPARATUS FOR RECOVERING COTTON WHICH HAS FALLEN TO THE GROUND

Russell E. Jordan, 285 W. I St., Brawley, Calif., and Clyde L. Taylor, 1545 S. Chinowith Road, Visalia, Calif.
Filed Oct. 9, 1962, Ser. No. 229,383
13 Claims. (Cl. 56—28)



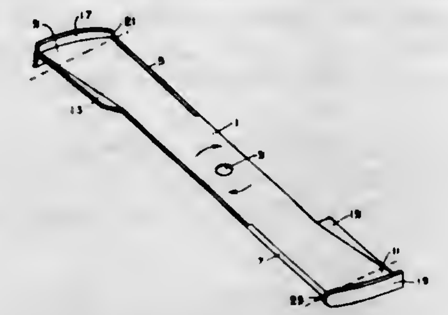
10. In apparatus for recovering cotton which has fallen to the ground for use on a cotton picker having a vertically adjustable picker mechanism, a pair of arms pivotally connected to the picker mechanism, means supporting the outer ends of the arms in a predetermined relationship with respect to the ground being traversed, a plurality of substantially planar wheel-like pickup members, means mounting a plurality of said pickup members on each of said arms permitting independent rotation of each of said pickup members with respect to each other, said arms being inclined outwardly from the path of travel of the vehicle, said rotatable pickup members being inclined outwardly in a lateral direction with respect to the path of travel of the cotton picker and also being inclined from the vertical, said members upon advancement of the cotton picker rotating and engaging cotton bolls upon the ground and kicking them rearwardly and inwardly into a row into the path of travel of the picker mechanism, and means for adjusting the vertical position of said pickup members with respect to said arms.

3,183,655

ROTARY BAR-TYPE MOWER BLADE HAVING A SAFETY DEFLECTOR

Henry F. Dunlap, Dallas, and Loyd R. Kern, Irving, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 18, 1963, Ser. No. 309,827
4 Claims. (Cl. 56—295)

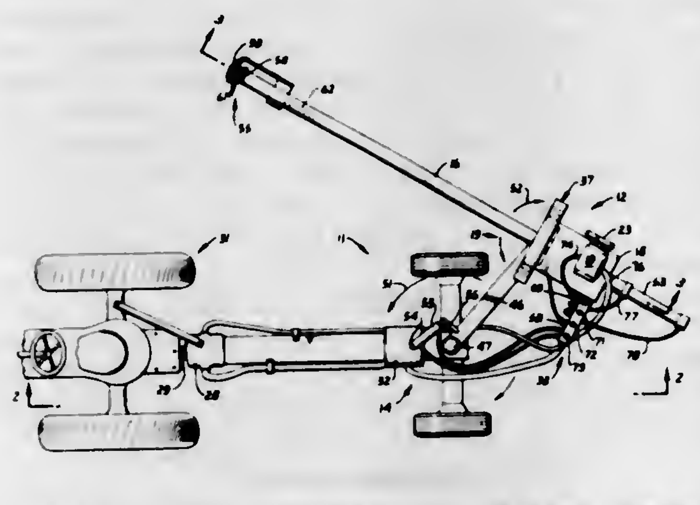
1. An improved cutter for rotary mowers adapted to rotate in a substantially horizontal plane about a vertically-disposed shaft comprising a flat, bar-type blade adapted for mounting at its mid-point on said shaft and having at least a portion of its forward edges, with respect to the direction of rotation of said blade, formed as cutting edges, and noncutting shoe elements formed on the outermost ends of said blade, generally perpendicular to said blade, said shoe elements having a blunt forward end and having a maximum vertical dimension greater than the thickness of said blade, a part of each of said shoe elements positioned in said horizontal plane and extending beyond the outer extremities of said cutting edges, said part being aligned with the cutting edge on that portion of said blade where said part is located.



3,183,656

HYDRAULIC TREE SHAKER APPARATUS

Robert M. Shipley, Jr., Cloverdale, Calif., assignor of one-half to Norman C. De Laittre
Filed Oct. 2, 1962, Ser. No. 227,894
9 Claims. (Cl. 56—328)



1. A self-contained hydraulic tree shaking apparatus mounted on a mobile unit comprising an oscillating unit, a hydraulic motor carried on said oscillating unit, mounting means carried on the mobile for supporting said oscillating unit for free horizontal movement, a boom journaled for axial movement through said oscillating unit, drive means in operative connection with said hydraulic motor for reciprocating the boom with respect to said oscillating unit, clamping means mounted on the boom for gripping a tree to be shaken including a fixed clamping plate and a movable clamping plate, said movable clamping plate being held on a shaft extending over a major portion of the boom and adapted to effect clamping on the tree upon relative axial movement of the shaft and the boom, a hydraulic cylinder mounted on the boom at one end thereof for providing axial movement to said shaft, a pump for supplying hydraulic fluid under pressure to the hydraulic motor and the hydraulic cylinder, a first set of hydraulic lines in communication with said pump and the hydraulic motor, control means in said first set of hydraulic lines for controlling the hydraulic motor, a second set of hydraulic lines in communication with said pump and said hydraulic cylinder, and control means in said second set of hydraulic lines for controlling the operation of the hydraulic cylinder, said control means in said first and second set of hydraulic lines being mounted in close proximity to each other.

3,183,657

CREPE FABRICS

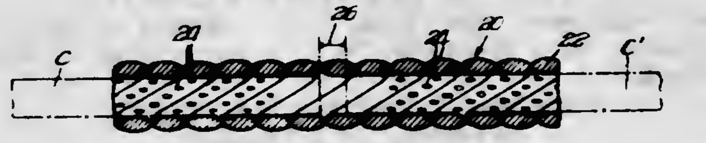
Jacques Corbiere, Lyon, France, assignor to Societe Rhodiaceta, Paris, France, a French body corporate
No Drawing. Filed May 18, 1961, Ser. No. 110,874
Claims priority, application France, May 20, 1960, 827,801; May 23, 1961, Patent 1,265,369
7 Claims. (Cl. 57—140)

1. A crepe fabric comprising crepe yarns of an at least partly acetalised polyvinyl alcohol whose chain comprises at least 50% in number of —CH_2—CHOH— units sufficient of which are acetalised to make said polyvinyl alcohol insoluble in water at 100° C., said yarns having a crepe twist of at least 1000 turns per metre and being composed of fibres which, in their untwisted state, shrink by less than 5% in water.

3,183,658

PREFORMED HELICAL APPLIANCE FOR LINEAR BODIES

Thomas F. Peterson, deceased, late of Shaker Heights, Ohio, by John D. Drinko, 1956 Union Commerce Bldg., and Central National Bank of Cleveland, 123 Prospect Ave. SW., both of Cleveland, Ohio, co-executors
Filed Nov. 20, 1962, Ser. No. 239,414
14 Claims. (Cl. 57—145)

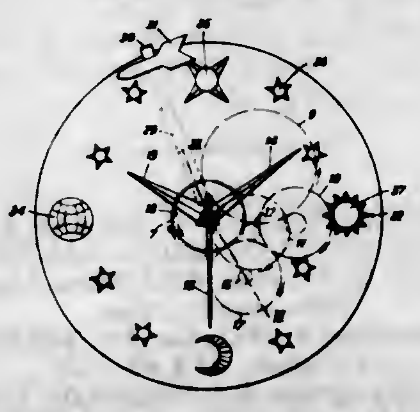


1. An appliance for use in conjunction with linear bodies such as electrical conductors, cables and the like comprising a plurality of helically formed elements, said helically formed elements being of a mutually conforming and sufficiently open internal diameter and pitch length to permit application to a linear body from the side without exceeding their elastic limit, said helical elements being coextensive to at least partially enclose said linear body, each of said elements being knurled along longitudinally spaced portions of its length and having unknurled portion intermediate said spaced portions with the knurling being only on those portions in contact with a linear body.

3,183,659

WATCH WITH A SWEEP SECOND HAND AND RUNNING-INDICATOR MEANS

Marius Etienne, Bienne, Switzerland, assignor to Montres Octo S.A., Bienne, Berne, Switzerland, a company limited by shares
Filed Apr. 4, 1963, Ser. No. 270,716
Claims priority, application Switzerland, Apr. 9, 1962, 4,299/62
1 Claim. (Cl. 58—152)



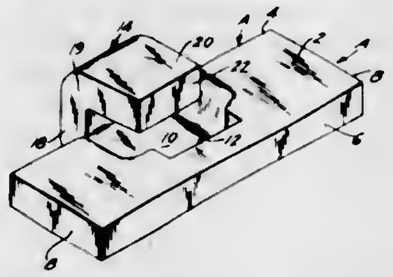
A watch comprising: a movement with a frame, a sweep second shaft journalled in the center of said frame and driven by said movement at a speed of one revolution per minute, an hour wheel having a pipe coaxial to the sweep second shaft and a cylindrical bearing surface on said frame in the central portion thereof, said bearing surface extending around said pipe coaxially thereto; a circular dial carrying figures and having a central portion fixed to a portion of said frame located within said cylindrical bearing surface, the remaining dial portion thereby being axially spaced apart from said frame so as to form a free flat space therebetween; a casing enclosing said movement and said dial and having an opening concentric to said dial and with a diameter somewhat greater than that of the dial thus forming around the dial a narrow annular free space between the casing and the dial; a glass fixed to said casing and covering said opening, said glass having an outer rim portion masking said annular free space, a sweep second hand secured to said sweep second shaft; and an extra indicating member comprising a wheel mounted for rotation on said cylindrical bearing surface, a thin arm fixed to said wheel and extending radially through said free flat space and having a free end bent over the dial periphery thereby passing through said annular free space, and an index fixed to said free end and being farther remote from the dial center than said figures, said extra indicating member being driven counterclockwise by said movement at a speed substantially equal to that of the sweep second hand.

3,183,660

LINKAGE OF LIMITED FLEXIBILITY

Emil Rodriguez, New York, N.Y., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York

Filed Mar. 7, 1962, Ser. No. 178,063
16 Claims. (Cl. 59—82)



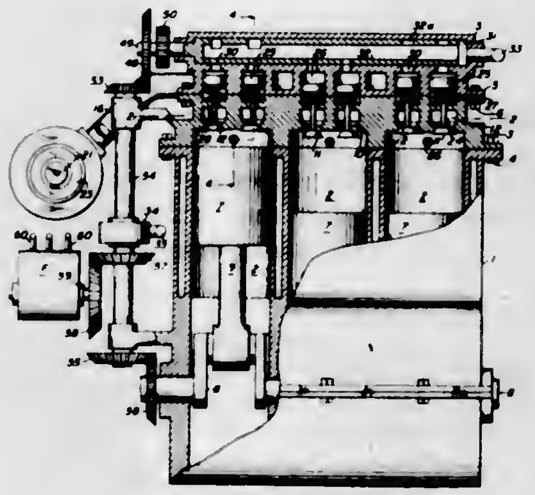
1. A linkage of limited flexibility comprising a plurality of links, each link comprising a base with front, rear and side edges, said links being arranged substantially in the same plane with the front edge of each link facing the rear edge of the next succeeding link, a portion of the base of each link which extends rearwardly from the front edge of the link base and terminates short of the rear edge of the link base being depressed below and outwardly from the body of said base, a tongue extending forwardly from said depressed portion, said base having a slot of a size that said tongue can pass therethrough, said slot being located immediately adjacent the rear part of said depressed portion, the tongue of a given link being interlocked with the next succeeding link by being bent up through the slot in said next succeeding link and reversely bent over the upper surface of said next succeeding link.

3,183,661

AIR AND FUEL CHARGING MEANS FOR FOUR-CYCLE ENGINES OF MONO-VALVE TYPE

Adolphe C. Peterson, 4623 Bruce Ave. S., Minneapolis, Minn.

Filed Nov. 8, 1961, Ser. No. 150,956
10 Claims. (Cl. 60—13)



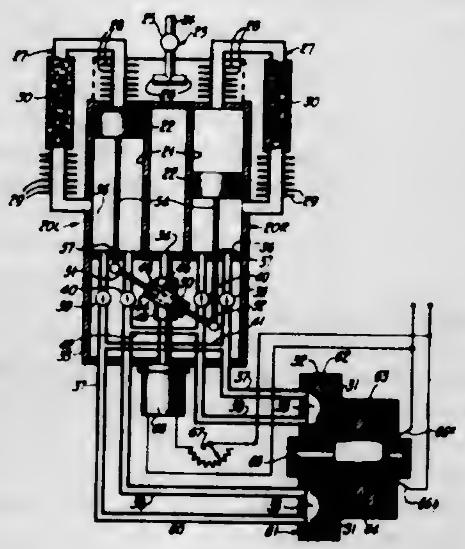
4. In charging means for combustion engines: combustion cylinders and cooperating reciprocating pistons at least one in each cylinder: flow passages each in association with one cylinder and adjacent thereto for flow of gaseous fluid therethrough; ports one in the head end of each cylinder providing passage between the flow passages associated and the combustion cylinder for flow either way from one to the other; valves one for each said port and means in operative interconnection with the pistons in their reciprocation to procure cyclic actuation of the valves in coordination with reciprocation of the pistons to open each said port valve from its associated port in one phase during which there may be in sequence exhaust flow from the cylinder through said port to said flow passage in the exhaust stroke and subsequent flow of air from said flow passage to the associated cylinder in an induction stroke and to close said port valve on said port in an alternate phase during which there may be in sequence compression and expansion in said associated cylinder; an air compressing means inducting air from atmosphere and discharging air to entrance ends of said flow passages; a discharge means from the discharge ends of said flow passages; means to relatively reduce port opening or increase port opening in the phases during which there may be flow between any flow passage and its associated cylinder through an associated port; means to deliver fuel to each of said cylinders during phases of the cycles of charging and combustion in a cylinder; gaseous fluid driven motor means receiving gaseous fluid from said discharge means and actuably interconnected with said air compressing means to drive it; the said motor means and said air compressing means effecting maintenance of pressure in said flow passages above that of atmospheric pressure of ambient air.

3,183,662

HEAT ENGINE

Theodore Y. Korsgren, Sr., 350 Willow Road, Barrington, Ill.

Filed Feb. 18, 1963, Ser. No. 259,198
12 Claims. (Cl. 60—24)



1. A heat engine comprising a pair of chambers containing a working fluid, each of said chambers having

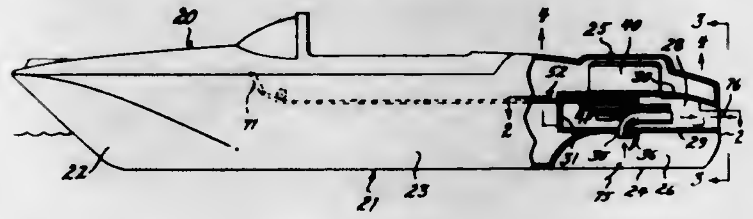
opposite ends maintained at high and low temperatures, respectively; a fluid displacer in each chamber reciprocally movable to displace said fluid between said opposite ends; means for reciprocating said displacers in selected phase relation with each other; and means for directly controlling the reciprocation of said displacers at selectively adjustable rates of reciprocation independently of the output of the engine.

3,183,663

PROPULSION DEVICE

Albert P. Sfredda, Bethlehem, Pa., assignor of fifty percent to George W. Downs, Norristown, Pa.

Filed Feb. 5, 1962, Ser. No. 171,215
6 Claims. (Cl. 60—35.5)



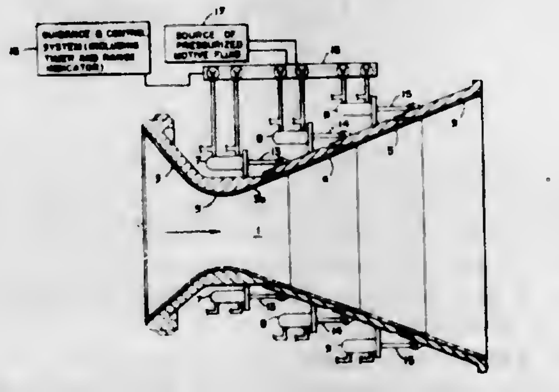
3. In combination, a vehicle body, a fluid-discharge conduit mounted in said body for rotation about an axis generally normal to the flow of fluid in said discharge conduit, drive means in said body for rotating said discharge conduit, a fluid-feed conduit communicating with said discharge conduit in the region of said axis for feeding fluid to said discharge conduit, said feed conduit having an inlet for communication with a fluid supply, a valve in said fluid-discharge conduit, a cam mounted in said body, and a follower connected to said valve and movable with said discharge conduit in operative relation with said cam for opening and closing the latter, to thereby control and direct the reaction thrust of the discharged fluid.

3,183,664

VARIABLE-AREA ROCKET NOZZLE

Louis V. Divone, Washington, D.C., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Jan. 28, 1963, Ser. No. 254,528
5 Claims. (Cl. 60—35.6)



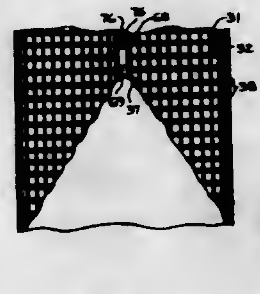
1. A variable area rocket nozzle comprising; a convergent portion, a throat portion and a divergent portion, said divergent portion having axially movable cone sections, and actuating means including at least one separate actuator attached to each of said cone sections and fixed to an adjacent structure so as to render said actuating means capable of independently moving from one to all of said cone sections from an extended to a retracted position, and when more than one of said cone sections are moved from an extended to a retracted position, to be capable of moving said moved cone sections relative to each other.

3,183,665

ROCKET GRAIN AND METHOD OF CONSTRUCTING SAME

Wells A. Webb, Berkeley, Calif., assignor to Hexcel Products Inc., Berkeley, Calif., a corporation of California

Original application Apr. 7, 1959, Ser. No. 804,847, now Patent No. 3,130,672, dated Apr. 28, 1964. Divided and this application Nov. 19, 1962, Ser. No. 260,088
22 Claims. (Cl. 60—35.6)



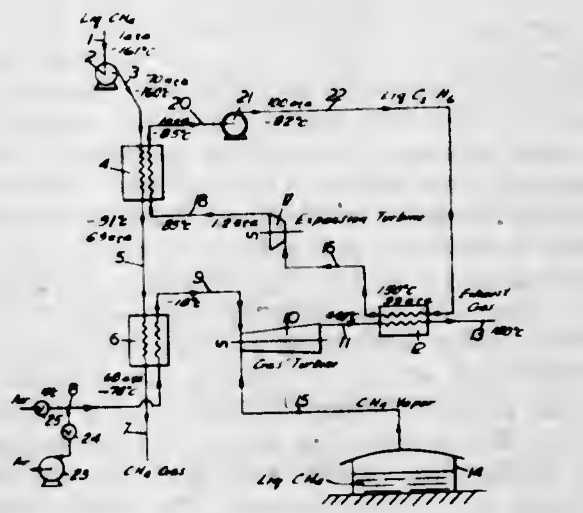
7. In a rocket structure the combination of: a casing; a rocket grain within said casing; said rocket grain formed of a plurality of stacked sandwich members; each sandwich member being formed of a cellular core with substantially flat skins covering the two broad faces of said cores and sealing the cellular areas formed by the cores; first ones of said sandwich members being completely filled with an oxidant filler; second ones of said sandwich members being filled with a fuel filler; an ignition tube axially aligned with the longitudinal axis of said casing and disposed substantially normal to the broad faces of the skin of said sandwich members; and means to regulate the burning of the grain.

3,183,666

METHOD OF GASIFYING A LIQUID GAS WHILE PRODUCING MECHANICAL ENERGY

Robert Glover Jackson, Hornchurch, England, assignor to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company

Filed Feb. 28, 1963, Ser. No. 261,587
Claims priority, application Great Britain, May 2, 1962, 16,869/62
7 Claims. (Cl. 60—38)

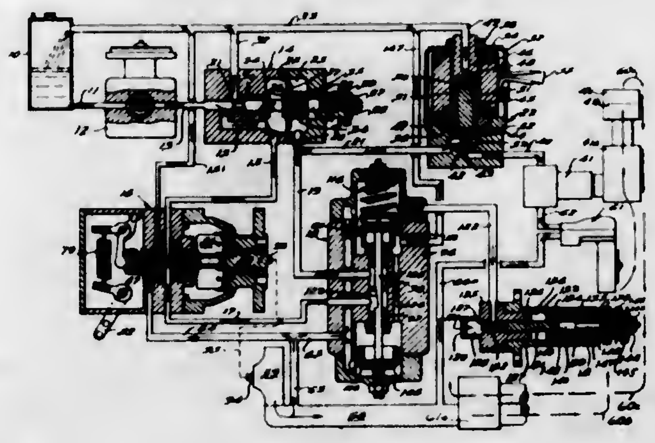


1. A method of gasifying a liquefied gas while producing mechanical energy which comprises passing the liquefied gas in indirect heat exchange with a heat transfer medium which circulates in a closed cycle and which medium is passed in indirect heat exchange with the exhaust gases from an internal combustion engine, and thereafter passing said liquefied gas in indirect heat exchange with air to be fed into said internal combustion engine, whereby the liquefied gas is gasified.

3,183,667
FUEL CONTROL SYSTEM FOR A GAS TURBINE ENGINE

Alexander Chadwick, Farmington, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Nov. 5, 1962, Ser. No. 235,442
3 Claims. (Cl. 60—39.28)



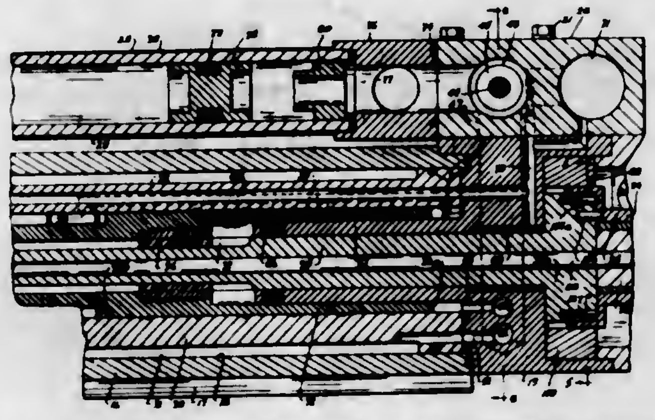
1. In a gas turbine engine, a regenerator, a combustion chamber, an engine operated air compressor, air conduit means for supplying pressurized combustion supporting air through said regenerator from said compressor to said combustion chamber, fuel conduit means for connecting said combustion chamber with a source of pressurized fuel, fuel metering means comprising first and second metering valves arranged in series in said fuel conduit means for metering the fuel flow therethrough, pressure regulating means for maintaining a substantially constant fuel pressure drop across said fuel metering means, means for maintaining steady state operation of said compressor at a predetermined speed comprising throttle means connected with said first metering valve and responsive to compressor speed for opening said first metering valve when said compressor is operating at less than said predetermined speed and for throttling said first metering valve to maintain substantially said steady state operation of said compressor at said speed, means for controlling the rate of acceleration of said compressor to said steady state operation including first and second pressure responsive means operable on said second metering valve means in opposition to each other, said air conduit means also connecting said compressor at a location upstream of said regenerator with said first and second pressure responsive means for pressure actuation thereof, said first pressure actuated means being operable on said second metering valve means to increase said fuel flow with increasing pressure, said second pressure actuated means being operable on said second metering valve means to decrease said fuel flow with increasing pressure, restricting means for restricting the connection between said conduit means and second pressure responsive means, adjustable vent means for venting the pressure from said second pressure responsive means at a location downstream of said restricting means, and means responsive to the temperature of the inlet gases to said combustion chamber at a location between the latter and said regenerator for restricting said adjustable vent means with increasing temperature.

3,183,668
PERCUSSION TYPE ROCK DRILLS

William E. Johnson and Jerry R. Lairson, St. Petersburg, Fla., assignors to Hydra-Might Company, St. Petersburg, Fla.

Filed Nov. 30, 1959, Ser. No. 856,080
14 Claims. (Cl. 60—51)

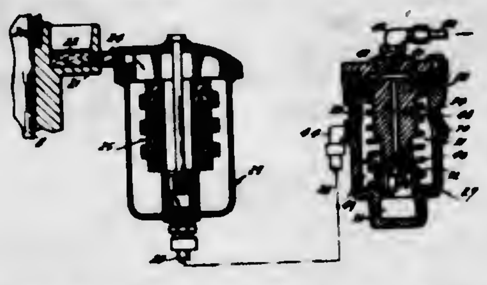
1. In a hydraulic percussion type rock drill, the combination of an elongated body having a power cylinder therein, a hammer and piston member reciprocable in said power cylinder and adapted to impact against a drill rod at one end of said body, valve means for directing liquid under pressure into said power cylinder for reciprocating said member, said valve means comprising a valve body including a cylindrical valve chamber having a pair of outlet ports communicating respectively with said power cylinder on opposite sides of said piston member, a spool valve reciprocating in said valve chamber and comprising a valve rod, a pair of valve members mounted on said rod intermediate its ends and coacting with the respective ports, closure plugs for the ends of said valve chamber each having an axial recess to snugly receive one end of the valve rod, and means responsive to the reciprocation of said piston member for actuating said valve means, said means comprising a pair of inlet jets formed in the end plugs of the valve chamber and communicating with said spool valve on opposite sides of said piston member.



3,183,669
APPARATUS FOR CONTROLLING, SCAVENGING AND RECLAIMING WASTE HYDRAULIC FLUID

George E. McGuire, Thiensville, Wis., assignor to Systems, Inc., Cedarburg, Wis., a corporation of Wisconsin

Filed May 2, 1962, Ser. No. 191,934
8 Claims. (Cl. 60—52)



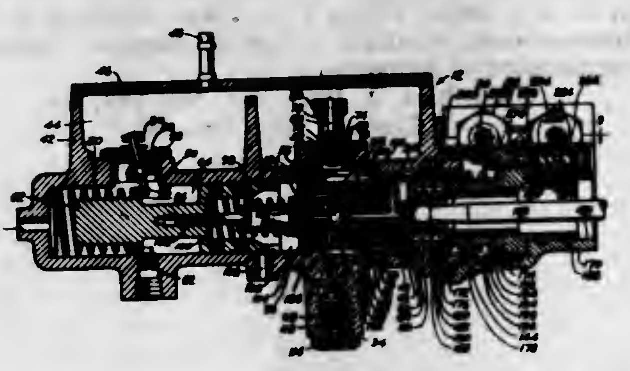
1. Apparatus for reclaiming waste hydraulic fluid in a hydraulic system which includes a hydraulic piston and a main pump for supplying hydraulic fluid under pressure to said piston, said apparatus comprising:

(*a*) a first pressure fluid line from the main pump to the hydraulic piston,
(*b*) a scavenger pump,
(*c*) a second pressure fluid line from the main pump to the scavenger pump,
(*d*) a waste fluid line from the said hydraulic piston to the scavenger pump,
(*e*) a first chamber within said pump to collect waste fluid when the second pressure fluid line is depressurized,
(*f*) a second chamber within said pump and exposed to said second pressure fluid line,
(*g*) a waste fluid duct from the first chamber to one of said pressure fluid lines,
(*h*) a force multiplying ram within said scavenger pump and having a large piston face exposed to said second chamber and a small piston face exposed to said first chamber to discharge collected waste fluid in said first chamber through said waste fluid duct to said one pressure fluid line and against the pressure of said main pump when the second pressure fluid line is pressurized.

3,183,670
POWER BRAKE MEANS

Harold B. Schultz, Keith H. Fulmer, and Paul P. Tuszynski, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Oct. 3, 1963, Ser. No. 313,679
9 Claims. (Cl. 60—54.5)



1. In a split braking system for a vehicle having a fluid pressurizing system, a combined master cylinder and power control valve comprising:

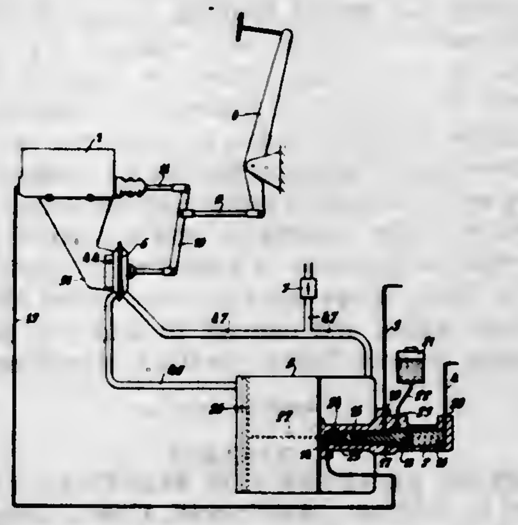
(1) a housing having a bore therein with a fluid inlet port, at least two fluid pressure delivery ports and a reservoir port;
(2) a first piston slidably mounted in said bore adjacent the rear of said bore;
(3) a second piston slidably mounted in said bore to the front thereof ahead of said first piston, said second piston being operatively connected to said first piston;
(4) a control valve operatively connected to said first piston to control passage of a fluid through passages in said first piston and out to one of said fluid pressure delivery ports, while simultaneously moving said second piston to deliver fluid from the other of said fluid pressure delivery ports; and
(5) means operatively connected to said valve and said first piston to permit opening of said valve first and movement of said second piston after said valve has been fully opened and further force is applied to said means.

3,183,671
FLUID PRESSURE BRAKING SYSTEMS

Leslie C. Chouings, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England

Filed Mar. 6, 1963, Ser. No. 263,198
Claims priority, application Great Britain, Mar. 8, 1962, 9,028/62
2 Claims. (Cl. 60—54.5)

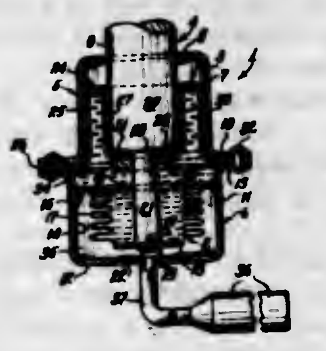
1. A fluid pressure braking system for vehicles comprising a first and a second master cylinder, said second master cylinder having two spaced separate outlets forming first and second hydraulic circuits for applying fluid pressure to two separate sets of brakes, an hydraulic line connecting said first and second cylinders to each other for supplying fluid pressure directly to said first circuit, a first piston in said second cylinder disposed between said spaced outlets for supplying fluid pressure indirectly to said second circuit, a fluid pressure operated servo device operatively connected to said second master cylinder to assist brake operation, servo device valve operatively connected to said servo device for operation thereof, a bracket secured to said first master cylinder and supporting said valve, a movable operating rod member extending into said first master cylinder, a movable operating member extending into said valve, a lever connected at its opposite ends to said rod member and valve operating member, a connecting rod secured to said lever for movement thereof to operate said first master cylinder and valve, and pedal means operatively connected to said connecting rod for positive and joint operation of said first cylinder and valve.



3,183,672
PRESSURE RESPONSIVE DEVICE WITH OVERPRESSURE PROTECTION

David L. Morgan, Shelton, Conn., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed June 3, 1964, Ser. No. 372,201
14 Claims. (Cl. 60—54.5)



1. In a pressure responsive actuator having overpressure protection for the flexible wall members thereof, the combination comprising:

an actuating member;
support means mounting said actuating member for bidirectional limited movement along a predetermined path;
first flexible wall means including
  a peripheral portion fixed to said support means, and
  a portion to which operating pressure is to be applied;
second flexible wall means having a central portion and a peripheral portion
  said central portion of said second flexible wall means being connected to said actuating member for movement therewith;
  said peripheral portion of said second flexible wall means being carried by said support means;
said first and second flexible wall means coacting to define a fluid-tight chamber, said chamber being filled with an incompressible fluid;
application of operating pressure to said first flexible wall means causing conjoint movement of said first flexible wall means, and said actuating member in one direction along said path;

said second flexible wall means distorting, during such conjoint movement, to allow displacement of said incompressible fluid to accommodate the movement of said first flexible wall means; and

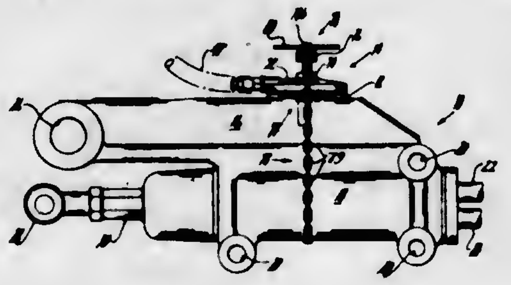
retaining wall means forming a part of said pressure responsive actuator and engaged by said second flexible wall means, when the latter is distorted, to limit the amount of distortion to which said second flexible wall means can be subjected in response to movement of said first flexible wall means by operating pressure above a predetermined value;

whereby further movement and distortion of said first flexible wall means is prevented by said incompressible fluid, at operating pressure above said predetermined value, and damage to said first flexible wall means by such higher pressure is prevented.

3,183,673
CLOSURE ADAPTER FOR MASTER CYLINDER

Maurice L. Schwarz, Middletown, Conn., assignor to The Eis Automotive Corporation, Middletown, Conn., a corporation of Connecticut

Filed Mar. 11, 1964, Ser. No. 351,099
10 Claims. (Cl. 60—54.6)

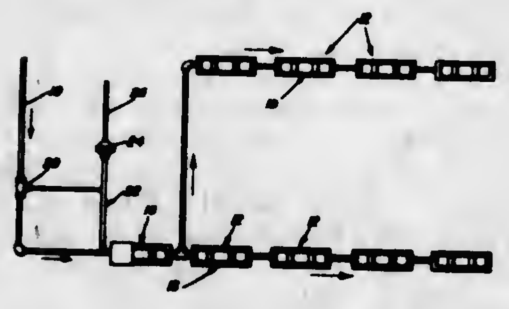


1. A closure for the filler port in a brake master cylinder, said closure comprising rigid a cover member having a passageway therethrough, means for connecting one end of said passageway to a source of hydraulic fluid under pressure, a resilient sealing member defining a plurality of cylindrical plugs at the lower side thereof, an upper side of said sealing member adapted to sealingly engage the lower side of said cover, said cylindrical plugs being axially stepped so that the smallest diameter plug extends downwardly beyond the next larger diameter plug, said sealing member defining a generally axially extending passageway communicating with the lower end of said cover passageway, and clamping means carried by said cover member for releasably securing said closure to a master cylinder with one of said plugs sealingly inserted in the filler port of said master cylinder.

3,183,674
SUB-SURFACE IRRIGATION SYSTEM

George B. Boschen, 675 Mandalay Ave., Clearwater Beach, Fla.

Filed Nov. 14, 1961, Ser. No. 152,249
7 Claims. (Cl. 61—13)

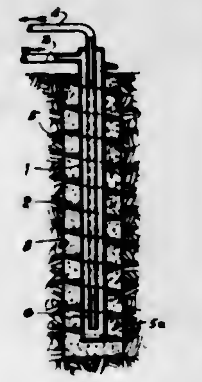


1. A sub-surface irrigation system comprising a source of water, a sub-surface irrigation conduit connected to said source, a series of spaced sub-surface irrigation units each directly connected to said irrigation conduit, each irrigation unit comprising a container having water impervious bottom, side and end walls and an open top and having disposed within said container and carried thereby an upstanding web, a capillary slot opening at the top surface of said web and extending downwardly through said web and communicating with said irrigation conduit, transverse channels in the top of said web communicating with said slot.

3,183,675
METHOD OF FREEZING AN EARTH FORMATION

Carl E. Schroeder, Ponca City, Okla., assignor to Conch International Methane Limited, Nassau, Bahamas, a corporation of Bahamas

Filed Nov. 2, 1961, Ser. No. 149,744
2 Claims. (Cl. 61—36)



1. Method of freezing a moist earth formation comprising the following steps:

(*a*) excavating a cylindrical hole in the surface of the earth;

(*b*) inserting into said hole a cooling tube having a helical heat-conducting fin fixed to the outer surface of the tube, said fin winding around said tube along the length from the inserted end thereof and having a slightly lesser outer diameter than said hole, said tube being positioned with its other end projecting from said hole;

(*c*) backfilling the space between the wall of said hole and the outer wall of said tube with loose water-permeable backfill material by adding said backfill material at the top of the hole and rotating said tube in a direction such that the spaces between the windings of the helical fin are filled by the backfill material;

(*d*) circulating a refrigerant through said cooling tube to freeze the moist earth in the vicinity of the tube.

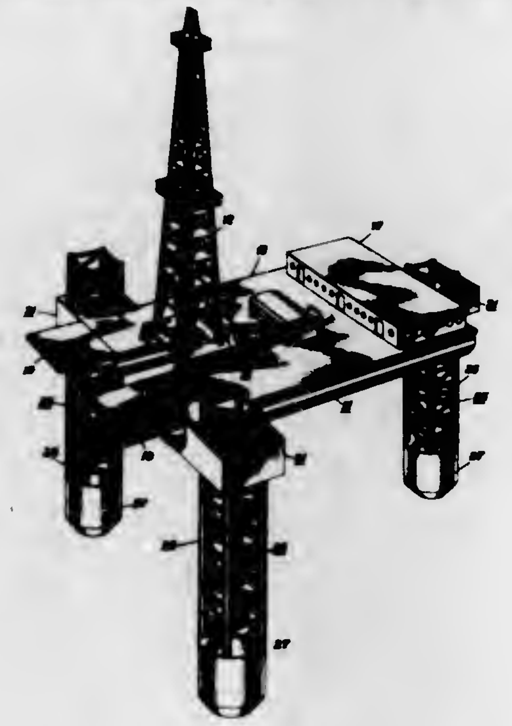
3,183,676
MOBILE SEA PLATFORM

Robert G. LeTourneau, P.O. Box 2307, Longview, Tex.

Filed Oct. 20, 1960, Ser. No. 63,928
2 Claims. (Cl. 61—46.5)

1. A plurality of spud wells carried by a vessel hull, a spud in each spud well, each said spud comprising a tower structure including a plurality of interconnected vertical columns, a rack carried by each column longitudinally thereof, a plurality of gear reduction units fixed to each well adjacent each said rack, said gear reduction units each having an output pinion in mesh with said rack, and an input pinion, an electric motor fixed to each said gear reduction unit and driving said input pinion, an electrical control system providing for selective application of power simultaneously to all of the electric

motors associated with each particular spud, an electromagnetic friction brake associated with each said motor,

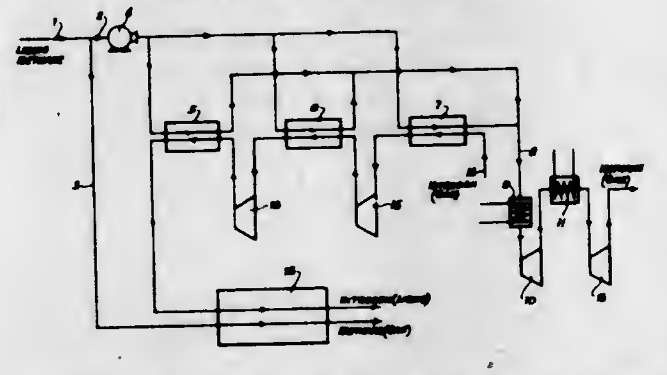


and means for energizing said brake to release same only when said motor is energized.

3,183,677
LIQUEFACTION OF NITROGEN IN REGASIFICATION OF LIQUID METHANE

Hadi Hashemi-Tafreshi, London, England, assignor to Conch International Methane Limited, Nassau, Bahamas, a corporation of Bahama

Filed June 16, 1960, Ser. No. 36,643
13 Claims. (Cl. 62—9)



1. A method of producing liquid nitrogen in the course of the regasification of liquid methane which comprises

(*a*) cooling gaseous nitrogen by indirect heat exchange with compressed liquid methane to produce compressed gaseous methane,

(*b*) compressing the cold gaseous nitrogen from step (*a*),

(*c*) condensing the cold compressed gaseous nitrogen from step (*b*) by indirect heat exchange with liquid methane to produce compressed liquid nitrogen and gaseous methane, and

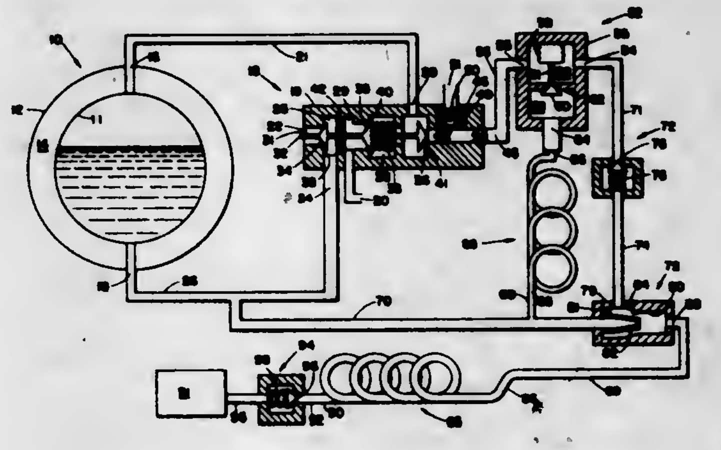
(*d*) additionally heating the compressed gaseous methane from step (*a*) to further raise its temperature and expanding it to produce energy.

3,183,678
LIQUID TO GAS CONVERSION SYSTEM

Norman F. Hosford, Davenport, Iowa, assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware

Filed Apr. 29, 1963, Ser. No. 276,287
3 Claims. (Cl. 62—52)

1. An improved liquid to gas conversion system of the economy type comprising, a liquid storage vessel having a liquid port and a gas port, supply line means in fluid communication with said liquid port for withdrawing liquid from said storage container at a rate commensurate with a gaseous demand, a gas line in fluid communication with said gas port, venturi-injector means in

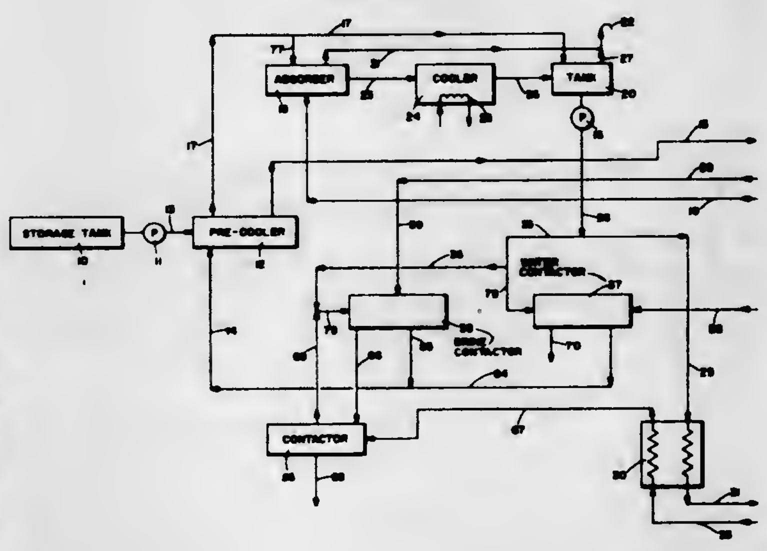


fluid communication with said supply line means and said gas line for directing the flow of gas from said gas supply line above a predetermined pressure, valve means for restricting the reverse flow of fluid from said venturi-injector means to said gas port.

3,183,679
REMOVING REFRIGERANT CONTAMINANTS AND DISSOLVED GASES IN A FRACTIONAL CRYSTALLIZATION PROCESS

John W. Mohlman, Woodland Hills, and Noah S. Davis, Northridge, Calif., assignors, by mesne assignments, to Struthers Scientific and International Corporation

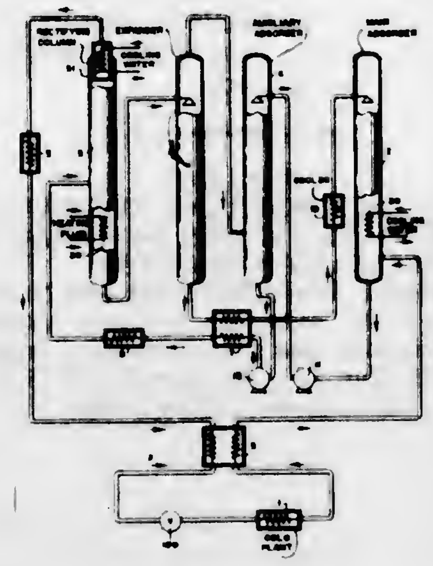
Filed Mar. 23, 1961, Ser. No. 97,935
14 Claims. (Cl. 62—58)



1. In a process for separating less concentrated solution from a solution of intermediate concentration containing dissolved gases by (1) freezing said solution of intermediate concentration in direct contact with a vaporizable liquid refrigerant to form (*a*) refrigerant vapors, (*b*) solids comprising said less concentrated solution and (*c*) more concentrated residual solution, (2) comprising said refrigerant vapor, (3) separating said solids from said more concentrated residual solution, (4) melting said solids in direct contact with said compressed refrigerant vapor to form said less concentrated solution and cold liquid refrigerant, and (5) recirculating said cold liquid refrigerant to step (1), in which process said refrigerant becomes contaminated with said dissolved gases and said solutions become contaminated with said refrigerant in

steps (1) and (4), the improvement which comprises (A) absorbing a portion only of said refrigerant in a liquid of relatively low vapor pressure in which said refrigerant is soluble and in which said gases are comparatively insoluble to form a refrigerant-liquid mixture free of said gases, (B) separately contacting said residual solution and said less concentrated solution with a portion of said low vapor pressure liquid to extract said refrigerant and form additional liquid-refrigerant mixture and (C) distilling a portion of said liquid-refrigerant mixture from steps (A) and (B) to separate said low vapor pressure liquid from said refrigerant.

3,183,680
ABSORPTION REFRIGERATING SYSTEM
Walter Billi, Milan, Italy, assignor to Montecatini Società Generale per l'Industria Mineraria e Chimica, Milan, Italy, a corporation of Italy
Filed Oct. 26, 1962, Ser. No. 233,281
Claims priority, application Italy, Oct. 30, 1961, 19,398/61
6 Claims. (Cl. 62—112)



1. An absorption refrigeration process, employing an absorbing liquid and a refrigerant fluid, which comprises the steps of:

(*a*) commingling a first quantity of vaporous refrigerant fluid with the absorbing liquid so that the vaporous refrigerant fluid is absorbed by the absorbing liquid to form a weak intermediate solution,

(*b*) simultaneously removing at least part of the heat of absorption from the absorbing liquid by indirect heat exchange of the absorbing liquid with a cold medium,

(*c*) commingling a second quantity of the vaporous refrigerant fluid with said weak intermediate solution so that said second quantity of vaporous refrigerant fluid is absorbed by said weak intermediate solution to form a stronger intermediate solution,

(*d*) heating said stronger intermediate solution to rectify the same by stripping part of the absorbed refrigerant fluid as a vapor therefrom at a specific pressure and separating the same from a remaining weak liquor,

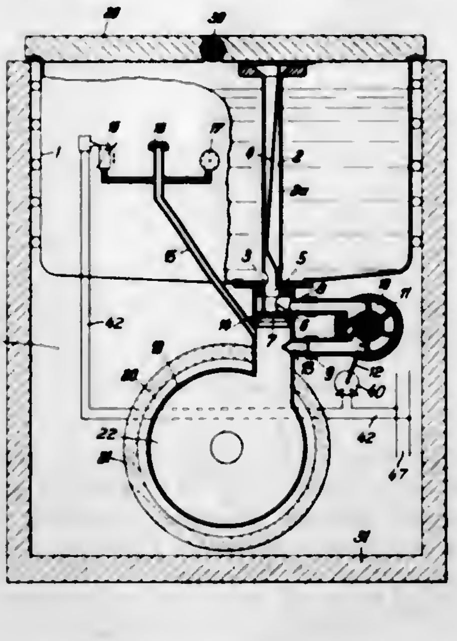
(*e*) condensing said stripped vaporous refrigerant fluid to a liquid refrigerant fluid,

(*f*) vaporizing said first quantity of vaporous refrigerant fluid from said liquid refrigerant fluid,

(*g*) expanding said weak liquor to vaporize said second quantity of vaporous refrigerant fluid therefrom at a pressure below said specific pressure and separating the same from a remainder constituting the absorbing liquid,

(*h*) cooling the absorbing liquid by heat exchange with said stronger intermediate solution, and repeating the foregoing steps.

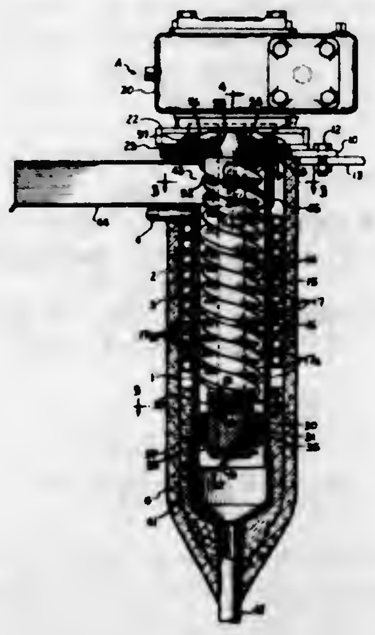
3,183,681
FOOD ICE FREEZER FOR DISPENSING FOOD ICE IN PORTIONS OUT OF A FREEZING CONTAINER KEPT UNDER PRESSURE
Hans Georg Lutz, Hans-Hacker Strasse 9, Kulmbach, Germany and Waldemar G. Menzel, Haus Nr. 163, Burghaig uber Kulmbach, Germany
Filed Oct. 10, 1962, Ser. No. 229,668
Claims priority, application Germany, Oct. 13, 1961, G 33,326
6 Claims. (Cl. 62—135)



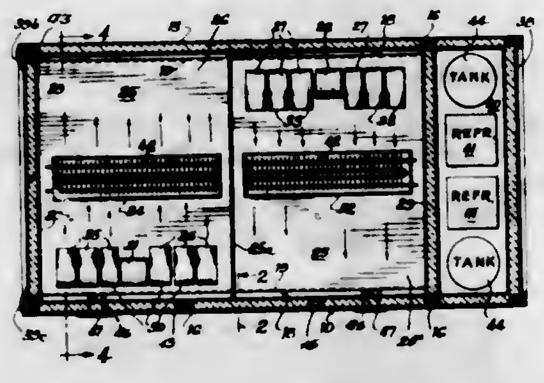
1. Food ice freezer for dispensing food ice in portions directly to the consumer, comprising a freezing container operable under raised atmospheric pressure, a supply container for air and food ice mix, channel means connected between said supply container and said freezing container, said channel means having a first and a second aperture, a sealing disk disposed between said apertures and a one-way valve in said second aperture, a displacement pump connected to said channel means and including pump drive means, said pump having a suction portion connected to said first aperture and an output portion connected to said second aperture and being operative to supply said freezing container with a mixture of air and food ice mix through said one-way valve, and automatically operative control means responsive to the air pressure in said freezing container to start said pump when the air pressure falls below a minimum value and to stop said pump when the air pressure exceeds a maximum value.

3,183,682
ICE FLAKE MAKING MACHINE
Armando F. Conto, Chicago, Ill., assignor to Freez-King Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 7, 1962, Ser. No. 171,770
7 Claims. (Cl. 62—298)

7. An ice making machine comprising a straight tube having an upper discharge end and a lower end, means connected to the tube and forming a water supply inlet to the interior of the tube, refrigeration means surrounding the tube for freezing water inside of the tube, a conveyor rotatable within the tube and having a screw for removing ice from the inside surface of the tube and delivering said ice toward said discharge end, said conveyor having a drive shaft extending outwardly of the upper end of the tube for operative connection to a source of power, releasable means above the screw for mounting the conveyor in assembled relationship within the tube, bearing means for rotatably supporting the lower end of the conveyor, and cooperating means on the bearing means and conveyor for removing the bearing means with the conveyor when the mounting means is released and the conveyor is withdrawn through the upper end of the tube.

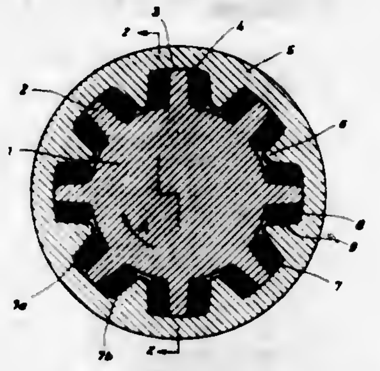


3,183,683
STORAGE UNIT FOR PERISHABLE MATERIALS
Alexander L. Reiter, St. Joseph, and Marvin A. Fuller, Benton Harbor, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Oct. 17, 1963, Ser. No. 316,991
7 Claims. (Cl. 62—411)



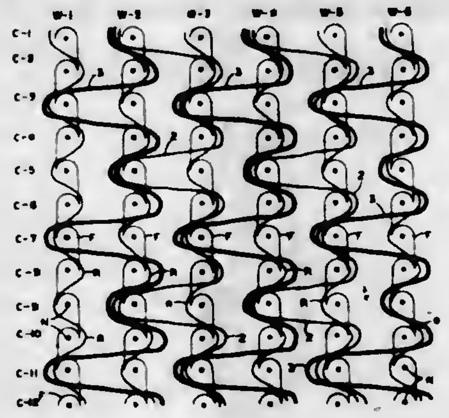
1. A storage unit for perishable animal and plant materials, comprising: wall means forming an enclosure having a storage space for said materials including side, bottom and top wall means, said storage space having an initial atmosphere; inlet means to said space for introducing a storage atmosphere into said space; outlet means from said space separated from said inlet means to cause said introduced storage atmosphere to sweep a portion of said initial atmosphere from said space and out the outlet means; means for sealing said inlet means and outlet means to provide a substantially confined atmosphere within said storage space; conduit means adjacent and substantially coextensive with said side, bottom and top wall means having an inlet thereto from said space and an outlet therefrom to said space to circulate said substantially confined atmosphere through said space by way of said conduit means; and fluid flow means in said conduit means to thusly circulate said substantially confined atmosphere.

3,183,684
SPLINE SHAFT CONNECTIONS
Willi Zeidler, Dusseldorf, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany
Filed Jan. 22, 1962, Ser. No. 167,544
Claims priority, application Germany, Jan. 31, 1961, R 29,565
4 Claims. (Cl. 64—23)



1. A telescopic shaft connection capable of axial movement comprising a shaft having a plurality of spaced external splines projecting therefrom forming spaces between adjacent splines, a sleeve having a plurality of spaced internal splines, each projecting inwardly in a space between adjacent splines on the shaft with clearance on each side of the splines, and elastic rolling members, one in each space adjacent splines of both the shaft and the sleeve and forming rolling members when axial movement takes place and each arranged along the side surfaces of the splines of the shaft and sleeve to permit axial movement of the shaft and sleeve, each external spline of the shaft being in contact with a bottom surface between two adjacent splines of the sleeve with a clearance of the end of each spline of the sleeve in the space between adjacent splines of the shaft.

3,183,685
RASCHEL LOOP NET
Robert F. Riehl, 1295 Pennington Road, West Englewood, N.J.
Filed Oct. 3, 1962, Ser. No. 228,145
3 Claims. (Cl. 66—193)



1. A Raschel net loop knit lace having the appearance of a loop net formed on a Levers lace machine and characterized in that the loop net cannot be pulled apart, said lace comprising a series of first interconnected reinforced loops along respective adjacent wales; a series of second loops along respective alternate wales, with second loops spaced by a preset number of courses extending laterally from each respective alternate wale to the same adjacent intermediate wale to connect the latter to the respective alternate wale; and a series of third loops along the respective intermediate wales, with third loops spaced by a preset number of courses extending laterally from each intermediate wale to the same adjacent alternate wale to connect the latter to the respective intermediate wale.

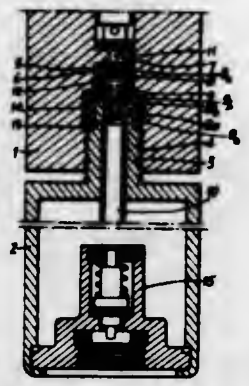
3,183,686
PRESSURE REDUCER FOR LIQUEFIED GAS CONTAINERS

Lucien François Simon Tissot-Dupont, Paris, France, assignor to S. T. Dupont, Paris, France, a French limited-liability company

Filed Mar. 27, 1962, Ser. No. 182,763

Claims priority, application, France, July 1, 1961, 866,712

5 Claims. (Cl. 67—7.1)



1. In a lighter, the combination of a container for liquefied gas, a cap enclosing an expansion chamber communicating with the inside of the container and provided at its end remote from the container with a transverse surface and with an opening in the latter for the outlet of the gas, a filtering cake fitted inside the expansion chamber over said transverse surface, the passage of gas through said cake being throttled and reduced gradually to zero upon compression, an intermediate member carried by the cap and engaging the surface of the cake opposed to said transverse bearing surface, a threaded connection between the cap and the container adapted upon relative rotation of the cap with reference to the container to shift the latter in axial direction relative to the cap and cooperating with the intermediate member to shift said member in the same direction relative to the cake to compress the latter to a varying extent.

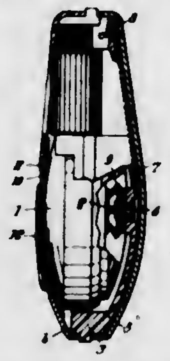
3,183,687
GAS LIGHTERS

Marcel Quercia, Paris, France, assignor to Flaminaire Marcel Quercia, Paris, France, a society of France

Filed June 25, 1962, Ser. No. 204,825

Claims priority, application France, June 29, 1961, 866,505

18 Claims. (Cl. 67—7.1)



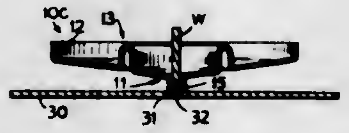
13. In a lighter using compressed gas as a fuel, in combination, a gas reservoir having in a first direction a dimension considerably smaller than in a second direction normal to said first direction; a housing at least partly enclosing said gas reservoir and having in said first direction also a dimension considerably smaller than in said second direction and the dimensions of said housing being slightly greater than that of said reservoir, said reservoir being movable in said housing in said first direction; valve means communicating with the interior of said reservoir and having an operating member movable between a valve opening and a valve closing position during movement of said reservoir in said first direction; a burner carried by said housing; passage means connecting said valve means with said burner for supplying the latter with gaseous fuel when said valve means are open; igniting means for igniting the gaseous fuel leaving said burner; and means cooperating with said gas reservoir and operable from the exterior of said housing for moving said reservoir in said first direction so as to move said operating member of said valve means between said positions thereof.

3,183,688
BUOYANT ILLUMINATING DEVICE

Milton D. Sobelson, 1964 Springfield Ave., Maplewood, N.J.

Filed Aug. 22, 1963, Ser. No. 303,857

13 Claims. (Cl. 67—51)



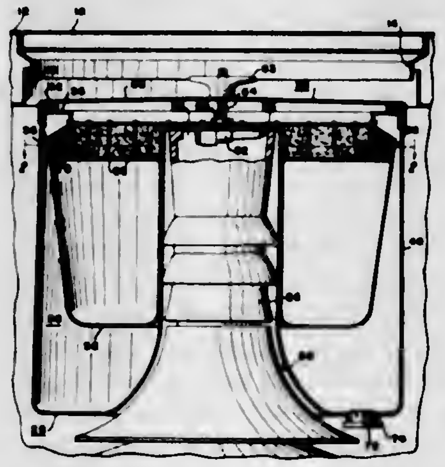
1. An illuminating device of unitary construction comprising in combination a wick and a thin walled body of light transmitting, oil impervious material for floating on the surface of a body of combustible fluid, said thin walled body comprising a central well portion and a walled buoyancy imparting portion surrounding said well portion, and wall means separating said buoyancy imparting portion from said well portion, said well portion comprising a bottom wall, said bottom wall including at least one tubulation depending therefrom and in communication with said well portion, said tubulation being closed at the lower end thereof with said wick mounted therein in an upstanding position with the upper portion of said wick projecting above the bottom wall of said well portion, the bottom wall of said well portion being formed with at least one opening for admitting fluid from said body of fluid into said well portion for impregnating said mounted wick.

3,183,689
DRY CLEANING ATTACHMENT FOR CLOTHES WASHER

James W. Jacobs, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 12, 1963, Ser. No. 272,717

11 Claims. (Cl. 68—23)



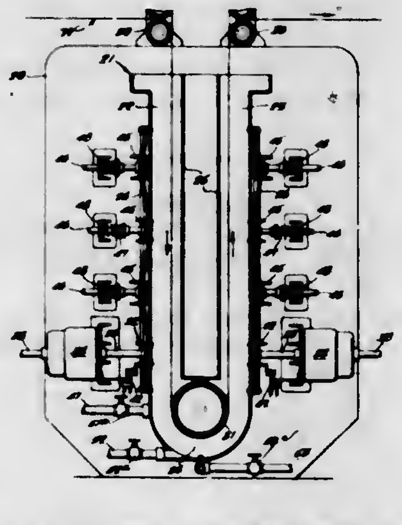
11. A clothes cleaning attachment adapted to be operatively associated with a mechanism for vertically reciprocating and spinning the attachment comprising, a first cylindrical basket and a second cylindrical basket located concentrically within said first basket, said second basket adapted to carry clothes and a fluid to be circulated through the clothes during vertical reciprocation of the attachment, means for passing fluid from said second basket into said first basket during spinning of the attachment, said first basket storing the fluid independently of said second basket following spinning of the attachment.

3,183,690
APPARATUS FOR TREATING WEB MATERIALS IN FLUIDS

Kurt Zimmerli, Langhorne, Pa., assignor to Butterworth Manufacturing Company, White Plains, N.Y., a corporation of New York

Filed July 9, 1963, Ser. No. 293,650

4 Claims. (Cl. 68—179)



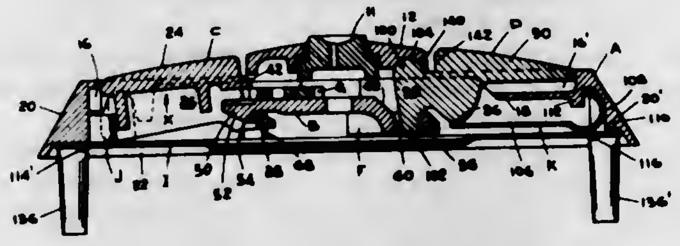
1. Apparatus for treating travelling web material, comprising in combination, spaced walls forming a narrow channel through which the web passes in a fluid filling the channel, at least one of the walls having a movable power pulse generating area movable inward and outward, a power motor moving said pulse generating area inward and outward periodically, at least one fluid operated yieldable area spaced at a distance from said pulse generating area, and resilient means backing said yieldable area and adapted to yield when fluid pressure is applied to said yieldable area by the action of said pulse generating area.

3,183,691
LATCHING AND LOCKING DEVICES

Charles S. Gehrie, Montclair, N.J., assignor to Presto Lock Co., Inc., Garfield, N.J., a corporation of New York

Filed Feb. 20, 1963, Ser. No. 259,879

15 Claims. (Cl. 70—70)



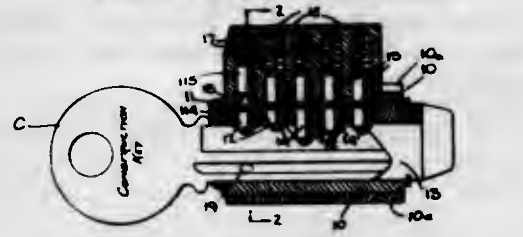
1. A latching device comprising a housing having a pair of spaced openings extending through the top wall thereof, a latch-releasing member and a latch-closing member positioned in the housing in spaced relationship, said members each having a portion thereof exposed in said spaced housing openings, a latch member positioned in the housing intermediate the latch-releasing and latch-closing members, the latch-releasing and latch-closing members each being spring biased and pivotally mounted in the housing and cooperatively related to the latch member whereby depression of the exposed portion of the latch-releasing member causes the latch member to be retracted to unlatched position and the latch-closing member to be rotated so that the exposed portion thereof is turned to open condition, rotation of the exposed portion of the latch-closing member back to closed condition causing the latch member to be moved to latched position where the latch member is releasably held by the latch-releasing member.

3,183,692
CONSTRUCTION LOCK CYLINDER

Mathias M. Check, Strafford, Pa., assignor, by meme assignments, to Yale & Towne, Inc., New York, N.Y., a company of Ohio

Continuation of application Ser. No. 137,767, Sept. 13, 1961. This application Aug. 28, 1963, Ser. No. 305,233

5 Claims. (Cl. 70—383)



1. In a combination of the class described, a lock cylinder, a key plug rotatable in said cylinder, a series of driver chambers in said cylinder aligned with a series of tumbler bores in said key plug as is standard in pin tumbler locks, a regulation driver, a small driver under the regulation driver and a tumbler positioned under the small driver within one aligned driver chamber and tumbler bore, there being drivers and tumblers in the remaining driver chambers and tumbler bores, and said cylinder having an opening into which the small driver drops by gravity to be thereafter stored by gravity and rendered irretrievable when the key plug is rotated into a particular position carrying with it the tumbler and the small driver after the aligning of the upper contour of the small driver with the parting line between the key plug and cylinder by a key or the like while tumblers and drivers in the remaining chambers and bores are held in release position relatively to said parting line.

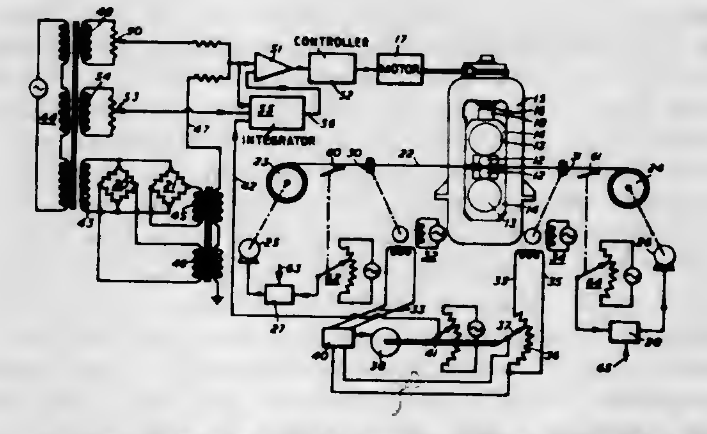
3,183,693
CONTROL SYSTEM FOR TEMPER ROLLING MILLS

Raymond Bernard Sims, Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, England

Filed Nov. 29, 1960, Ser. No. 72,514

Claims priority, application Great Britain, Nov. 30, 1959, 40,574/59

2 Claims. (Cl. 72—19)



1. A control system for a temper rolling mill for strip comprising:

means for adjusting the roll separation,

means responsive to the rolling load in the mill,

control means controlling the adjusting means and controlled by the load-responsive means to maintain the rolling load substantially constant,

means responsive to variations in the proportional elongation produced in the strip by the mill, monitor means controlled by the said means responsive to variations in the proportional elongation and giving a signal dependent on variations in the proportional elongation of long-term duration compared with the duration of variations in the rolling load, and

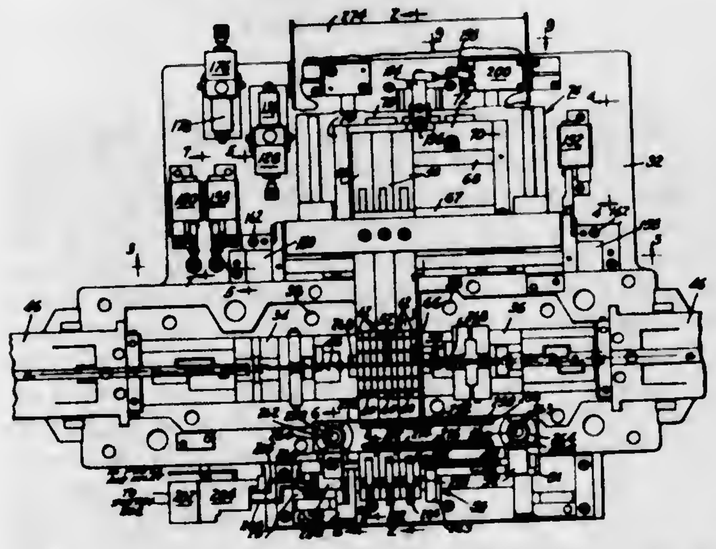
means responsive to said signal for modifying the operation of said control means should the said signal indicate variation in the proportional reduction, to cause the proportional reduction to be maintained substantially constant.

3,183,694
ASSEMBLY MECHANISM

Fred R. Fischer and Eugene J. Zilkowski, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Sept. 8, 1961, Ser. No. 136,891

5 Claims. (Cl. 72—22)



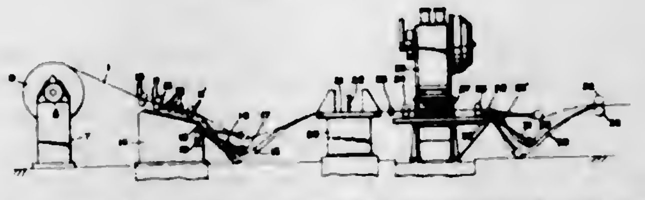
1. Automatically operable feed mechanism for use with a stamping press having spaced apart die means fixedly secured to a lower base and cooperating spaced apart die means fixedly secured to a movable ram for stamping two separate members which are adapted to be connected by a cable or the like, the combination of a two part movable frame mounted between said spaced apart die means associated with said lower base and arranged to move horizontally and vertically transversely to the longitudinal axis of said die means, a plurality of vertically extending horizontally spaced fixed first plate members provided with a plurality of spaced apart cable receiving recesses in the upper surfaces thereof between loading and discharge ends thereof, said plurality of first plate members being fixedly secured to the lower base of the press, a vertically extending movable second plate member interposed between adjacent first plate members and provided with a plurality of spaced cable receiving recesses in the upper surface thereof, said two part movable frame having a first part arranged to move horizontally and a second part slidably mounted on said first part for vertical movement relative thereto, first motor means responsive to movement of the ram for controlling the vertical movement of said second part independently of said first part, second motor means responsive to movement of said second part for controlling the movement of said first part, horizontally extending resiliently supported plate means engageable with the upper surfaces of said first and second plate members, cable guide means for supplying one cable at a time to the cable receiving recesses at the loading end of said first plate members, lever means adapted to move into and out of engagement with said first plate members for clamping said supplied cable in position in the recesses, third motor means responsive to movement of said first part for controlling the operation of said lever means to effect said clamping operation, said second plate member being fixedly secured to said first part and actuated vertically thereby such that said supplied cable is engaged by the recesses in said second plate members and displaced vertically away from said first plate members against the resistance of said resiliently supported plate means, said second part being operative to actuate said first part and thus the second plate members carried thereby horizontally to advance said cable to the next series of recesses in said first plate members whereupon said first part is actuated vertically out of engagement with said cable and said cable is retained by said recesses in said first plate members and held in position therein by said resiliently supported plate means, said cable being advanced to a position in alignment with said longitudinal axis whereby the opposite ends of said cable engage their respective stamped members as said first part moves vertically out of engagement with said cable and are fixedly secured thereto by a final stamping operation.

3,183,695
APPARATUS AND PROCESS FOR PRODUCING PERFORATED, CORRUGATED, SPIRAL, LOCK-SEAM PIPE

Frederic M. Darner, Shaker Heights, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed July 31, 1961, Ser. No. 128,082

10 Claims. (Cl. 72—49)



1. Apparatus for producing perforated, corrugated, spirally-wrapped, lock-seamed pipe comprising:

(*a*) a sheet advancing means adapted to advance a long thin level sheet of relatively narrow width at a controlled rate;

(*b*) a first looping means arranged to receive said sheet and adapted to loop said sheet when the subsequent flow of said sheet is delayed;

(*c*) a punching means arranged to receive said sheet from said first looping means and adapted to stop momentarily the passage of said sheet therethrough, and during said stop to punch a predesigned pattern of perforations therein, thereafter to advance said sheet a prescribed length therethrough, and to repeat said stopping, punching and advancing operations continuously thereafter;

(*d*) a second loop control means connected to control the looping of said sheet subsequent to the passage of said sheet through said punching means;

(*e*) a driving means arranged to receive said sheet from said second loop control means and adapted to impart to said sheet a constant rate of speed after passage through said punching means;

(*f*) corrugating equipment arranged to receive said sheet from said driving means and adapted to produce corrugations in said sheet running parallel to the linear axis of said sheet;

(*g*) edge-turning means arranged to receive said sheet from said corrugating equipment and adapted to turn one linear edge of said sheet in an upward direction and the opposite edge of said sheet in a downward direction;

(*h*) a spiral-wrapping means arranged to receive said sheet from said edge-turning means comprising a mandrel adapted for adjustment to an appropriate angle with the direction of flow of said sheet, thereby to give a desired diameter to the sheet wrapped spirally thereon, and means for holding said sheet tightly around said mandrel during said spiral-wrapping operation and fitting said turned edges into interlocking relationship;

(*i*) a lock-seaming means arranged to receive said sheet from said spiral-wrapping means and adapted to further bend said interlocked linear edges to form a tight seam of said bent edges; and

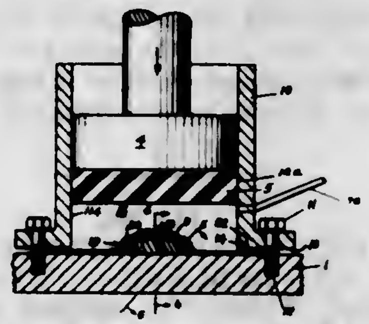
(*j*) a means for advancing finished pipe away from said spiral-wrapping and lock-seaming means.

3,183,696
PROCESS FOR FORMING MASKS AND STENCILS

Robert B. Way, 1503 Chelsea Ave., and Carl D. Hersey, 3107 Marvin Ave., both of Erie, Pa.

Filed June 2, 1958, Ser. No. 739,255

9 Claims. (Cl. 72—57)



1. A method for forming a stencil to strictly conform to the contour of the surface of a hollow article of manufacture having concave and convex areas on one side thereof and comprising providing a supporting surface, filling said hollow of said article with a rigid material, disposing a sheet of a relatively thin, ductile material of a type which stiffens and develops resiliency when it is cold worked over the opposite side of said article from the side where said rigid material is disposed, forcing a resilient deformable member into engagement with said deformable material whereby said deformable material is cold worked and stiffens and develops a resiliency which tends to return it to the shape of said surface if it becomes dented or bent whereby it is deformed to conform generally to the contour of said concave and said convex surfaces of said article with edges of said deformable material extending outwardly beyond the edges of said article and into engagement with said supporting surface, removing some of said sheet material to form openings in said formed stencil over predetermined areas of said article, moving said resilient member from engagement with said article, disposing a cylinder around said article with one end of said cylinder in engagement with said edges of said rigid material, providing sealing means between the end of said cylinder and the edges of said rigid material, clamping said cylinder into engagement with said supporting surface, filling said cylinder above said stencil with a material having the properties of a fluid, disposing a piston in said cylinder, and applying a force to said cylinder to compress said fluid like material on said stencil whereby said stencil material is forced into conformance with the contours of said article.

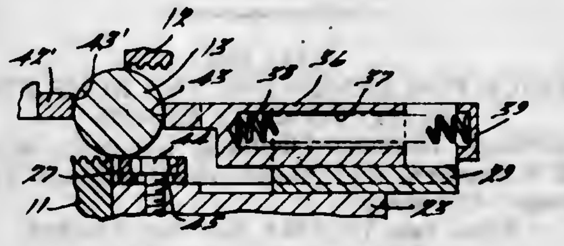
3,183,697
LOCATING FIXTURE

Willard B. McCardell, Royal Oak, Mich., assignor to Michigan Tool Company, Detroit, Mich., a corporation of Delaware

Filed Jan. 2, 1962, Ser. No. 163,667

10 Claims. (Cl. 72—88)

4. In a locating fixture for use in conjunction with first and second oppositely movable tools simultaneously engageable with spaced portions of a cylindrical workpiece, first and second fixture elements movable with said first and second tools respectively and simultaneously engageable with opposite sides of the workpiece, separate spring means urging said first and second elements respectively against the workpiece, and means responsive to movement of said tools into initial engagement with the workpiece for causing withdrawal of said first and second elements from the workpiece.

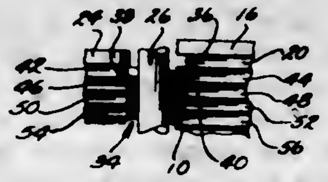


3,183,698
COILING ROLL FOR WIRE COILING MACHINE

Stephen A. Platt, 1100 Fulton St., Grand Haven, Mich.

Filed Jan. 29, 1962, Ser. No. 169,228

6 Claims. (Cl. 72—145)



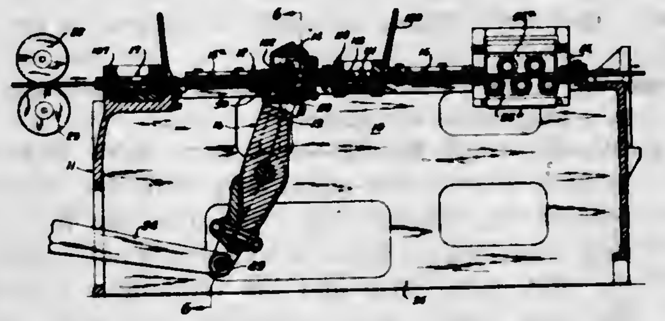
1. In a wire coiling machine having a pair of rotatable heads disposed on opposite sides of a mandrel and each carrying a coiling roll, the improvement comprising: said coiling rolls having shallow annular grooves formed therein on centers generally equal to the spacing between the centers of adjacent convolutions of the coil to be produced by said machine, and one of said rolls having an annular, initial bending and guide groove formed therein being the lead groove on said one roll, said guide groove being substantially deeper than said shallow grooves to initiate coil formation and also feed the coil into such shallow grooves for further coil formation to the final coil form and sustained axial movement of the final coil along the mandrel.

3,183,699
WIRE DRAWING APPARATUS

William A. Ehlert, South Euclid, Ohio, assignor to The Ajax Manufacturing Company, Euclid, Ohio, a corporation of Ohio

Filed Oct. 20, 1961, Ser. No. 146,626

17 Claims. (Cl. 72—161)

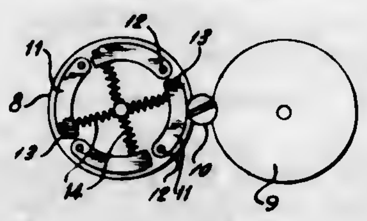


1. In wire drawing apparatus; a frame means; first and second slide means movable relative to said frame means and relative to each other along a wire to be drawn; a drawing die carried by said second slide means for movement through successive drawing strokes along said wire; grip means on said frame means for gripping and holding the wire during said drawing strokes of the die; actuating means on said frame means and effective on said first slide means for imparting successive movements to said first slide in the direction of the drawing stroke; said second slide means being engageable by said first slide means and actuatable thereby during the successive movements of

said first slide in the direction of the drawing stroke for producing the successive drawing strokes of said drawing die.

3,183,700
DEVICE FOR REMOVING THE BURR FROM SLOTTED BOLT HEADS

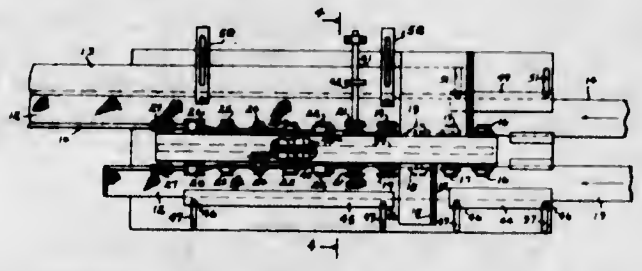
Hans Kettner, Tambach-Dietharz, Germany, assignor to VEB Schrauben- und Nietewerke Tambach, Tambach-Dietharz, Germany
Filed July 19, 1961, Ser. No. 126,848
5 Claims. (Cl. 72—71)



5. A combined burr removing device and threading machine comprising at least two spaced apart rotatable dies forming thread rolling means adapted to rotate a bolt placed therebetween by its shank, and burr removing means pivotally mounted on one of said dies adapted to engage the head of said bolt; said burr removing means including at least one arcuate member peripherally arranged with respect to its mounting die.

3,183,701
METHOD FOR SECURING A FLEXIBLE STRIP TO METAL STRIPS

William A. Cain, Jr., Birmingham, Ala., assignor to Elgen Manufacturing Corp., a corporation of New York
Filed Mar. 1, 1961, Ser. No. 92,683
6 Claims. (Cl. 72—181)



1. A method for producing an elongated strip-like product composed of a relatively flexible strip having a pair of opposite edge portions each securely engaged to a respective marginal portion of one of a pair of relatively rigid metal strips, said method comprising the steps of:

moving a first of said pair of metal strips along a path in a lengthwise direction;

positioning said flexible strip in a first disposition relative to said first metal strip with one edge portion of the flexible strip lying atop the first metal strip and located adjacent one marginal portion of the first metal strip and the remaining portion of the first metal strip extending widthwise underneath the flexible strip;

moving said positioned flexible strip along said path with said first metal strip;

deforming said one marginal portion of the first metal strip onto the adjacent edge portion of the flexible strip and securely engaging said portions of the two strips as they move along a first portion of said path;

looping said engaged strips through a second portion of said path and then moving them along a third path portion parallel to said first path portion;

changing the relative disposition of the first metal strip and the flexible strip, during movement thereof along the second path portion, to a second disposition in which the unengaged portions of the first metal strip and the flexible strip extend widthwise in respective non-overlapping directions from the engaged portions thereof;

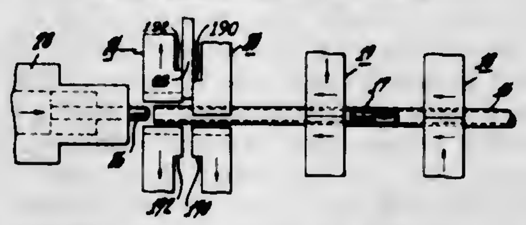
moving a second of said pair of metal strips along a path parallel to said third portion of the path followed by said first metal strip and flexible strip;

positioning said flexible strip, moving along its third path portion, relative to the second metal strip with the other edge portion of the flexible strip lying atop the second metal strip and located adjacent one marginal portion of the second metal strip and the remaining portion of the second metal strip extending widthwise underneath the flexible strip;

and deforming said one marginal portion of the second metal strip onto the adjacent edge portion of the flexible strip and securely engaging said portions of the two strips as they move along their respective paths.

3,183,702
METHOD OF AND APPARATUS FOR CUTTING AND DEBURRING TUBES

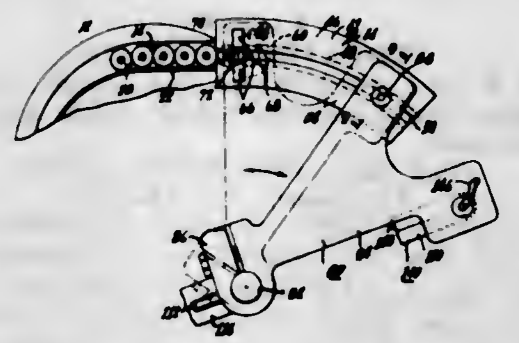
Adam H. Zittell, Wayne, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 21, 1960, Ser. No. 70,854
19 Claims. (Cl. 72—294)



3. The method of forming a deburred length of tubing from a continuous thin-walled tube with the aid of a floating mandrel in said tube, said floating mandrel slidably fitting within said tube so as to provide support therefor, said method comprising inserting a second mandrel into said tube, said second mandrel slidably fitting within said tube so as to provide support therefor, and thereby pushing said floating mandrel back into said tube, retracting said second mandrel, whereby a short section of tubing remains between said mandrels, cutting out said section of tubing, whereby a length of tubing remains on said second mandrel, advancing said second mandrel with respect to said length of tubing to the point where the advancing end of said second mandrel extends beyond the end of said length of tubing and rotating said mandrel with respect to said tubing.

3,183,703
ELECTRON TUBE PARTS HANDLING APPARATUS

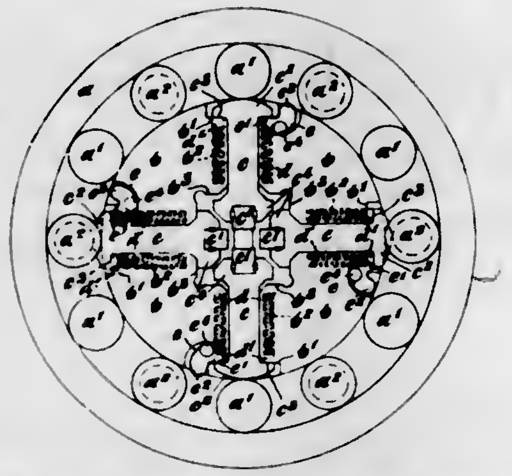
Adam Fischer, Jr., Maplewood, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 25, 1961, Ser. No. 134,068
10 Claims. (Cl. 72—386)



1. Apparatus for transferring an annular flange and sizing the hole therethrough comprising a guide track member having a partially closed groove along a surface thereof and having a sizing position along the length of said groove, a pair of pins fixed for movement together with parallel axes, means for moving said pins axially into said groove and laterally of said axis along said groove, one of said pins moving from a first position along said track to said sizing position while the other of said pins moves from said sizing position to a position beyond said track, a sizing tool at said sizing position, and means to move said sizing tool through said groove and into the hole in a flange at said sizing position.

3,183,704
ROTARY SWAGING AND FORGING MACHINES

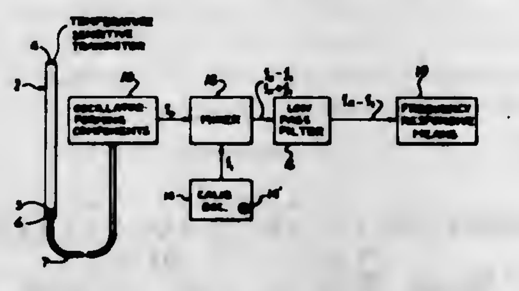
Samuel Smith, Elmdon, England, assignor to Stevens & Bullivant Limited, Birmingham, England, a British company
Filed Mar. 29, 1963, Ser. No. 268,984
1 Claim. (Cl. 72—402)



A rotary swaging and forging machine comprising in combination a flywheel carrying circumferentially disposed rollers rotatably driven on a stationary head carrying radially slidable hammer blocks, said hammer blocks having a flanged head, said rollers being arranged to engage said flanged heads for actuating the hammer blocks to an inward position, a cam of the bell crank type rockable in relation to the stationary head of the machine, one arm of the cam being adapted to co-operate with the underside of the flanged head of the hammer block and the other arm adapted to enter the path of the rollers for its displacement thereby to positively return the hammer block to an outward position.

3,183,705
TEMPERATURE OR PRESSURE MEASURING APPARATUS

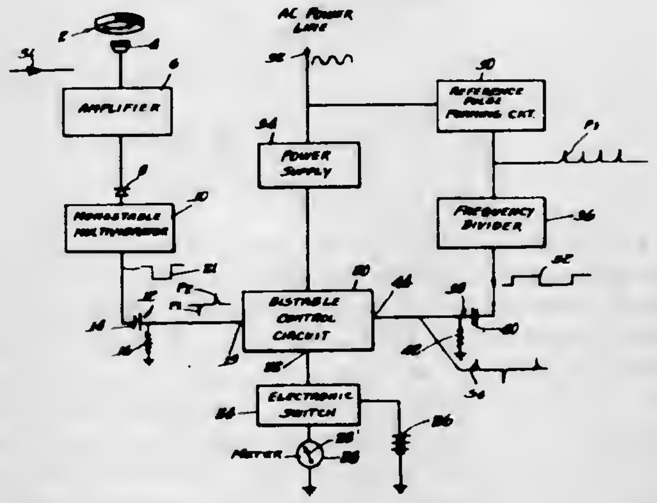
Walter Welkowitz, Nixon, N.J., assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Filed July 6, 1961, Ser. No. 122,305
1 Claim. (Cl. 73—1)



In a method of measuring the value of the temperature of a given environment through use of an oscillator circuit including a temperature responsive transistor device which varies the frequency of the osci lator circuit output with variation in the magnitude of the condition, and wherein the frequency-temperature curves for different transistor devices are such that there is a constant frequency difference over a first given range of temperatures including as a part thereof a second range of temperatures with which the circuit is to be used, the improvement comprising: subjecting the transistor device to a reference temperature within said first given range but beyond said second range of temperatures, then mixing the resultant output of said oscillator at the reference temperature with the output of an adjustable frequency source adjusted to provide a zero beat frequency, then placing the transistor device in the unknown temperature condition to be measured while maintaining the presence of the output of said adjustable frequency source which produced the zero beat frequency, and then measuring the difference beat frequency produced by the latter environmental condition, whereby consistent results are obtained which are independent of the particular transistor device, utilized in the osci lator circuit.

3,183,706
WATCH TESTING APPARATUS

Lynn E. Ellison, 476 Golf Road, Crystal Lake, Ill.
Filed Mar. 23, 1962, Ser. No. 181,885
4 Claims. (Cl. 73—6)



3. Watch testing apparatus for comparing the beat frequency of a watch movement with that of a reference frequency: said apparatus comprising: a microphone and an amplifier coupled thereto for detecting the beat of a watch movement and providing amplified beat indicating control signals corresponding to the beats of the watch movement under test, said beat indicating signals comprising a series of spaced signal units each comprising a series of contiguous pulsations representing the vibrations of one beat of the watch movement, means responsive to the first of the pulsations in each of said signal units for generating a square pulse of greater duration than the longest expected signal unit, differentiating means for differentiating said square pulse and providing a single narrow beat indicating control pulse coinciding with the leading edge of each square pulse, means providing a source of reference control pulses at a fixed predetermined pulse repetition rate, the ratio of the frequency of one of the reference control pulses and the desired beat frequency of the watch movement to the other of same being a whole number, an electrical measuring device responsive to the amplitude of the electrical signal coupled thereto, a source of electrical energy for said device, switch means for coupling and uncoupling said source of electrical energy to and from said measuring device, and switch operating means for operating said switch means to couple said source of electrical energy to said measuring device each time one of said beat indicating and reference control pulses occur, and for operating said switch means to decouple said source of electrical signals from said measuring device each time the other control pulses occur, a constant indication of

said measuring device indicating a correct beat rate of said watch movement and a fluctuating indication of said measuring device indicating an imperfect beat rate of said watch movement.

3,183,707

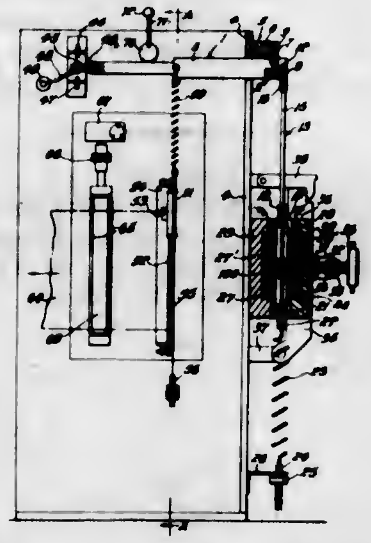
STIFFNESS-DETERMINING DEVICE

William Arthur Gurney, Castle Bromwich, and Arthur James Stubbs, Solihull, England, assignors to Dunlop Rubber Company Limited, a British company

Filed Dec. 1, 1961, Ser. No. 156,384

Claims priority, application Great Britain, Dec. 20, 1960, 43,681/60

11 Claims. (Cl. 73—15.6)



11. A device for following the vulcanization of a sample of a rubber composition as it is vulcanized which comprises a framework, a beam member, a pivot provided on said framework on which the beam member is pivotally mounted adjacent one end, a first spring connected to said beam member intermediate its other end and the pivot, means to alternately elongate and relax said spring to oscillate said beam member, stop means to limit the amplitude of movement of the beam member, a substantially inextensible strip pivotally connected at one end to the end of the beam member adjacent the pivot, a clamp secured to said framework and located on each side of the strip for clamping a sample of rubber composition in contact with both sides of the strip, means to heat the rubber composition to effect vulcanization thereof, a second spring connected at one end to the other end of the strip and secured at its other end to the framework so as to act in opposition to the first spring, an electrically-conductive support for electro-sensitive paper, an electroconductive stylus mounted on a carriage secured for movement with said first spring to traverse said paper, and an electrical circuit incorporating said stop means and said stylus energized when said beam member is not in contact with said stop means to record a line on said paper whereby a line of increasing length up to a maximum is obtained when said rubber composition is heated to effect vulcanization.

3,183,708

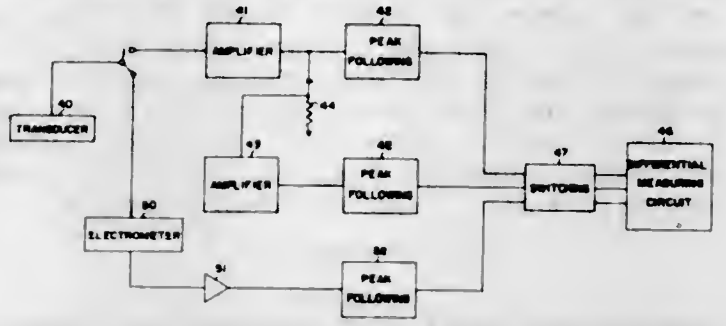
METHOD AND APPARATUS FOR METERING PRESSURE PHENOMENA IN INTERNAL COMBUSTION ENGINES

Douglas G. Roddick, Lafayette, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 12, 1961, Ser. No. 144,706

2 Claims. (Cl. 73—35)

2. An apparatus for measuring detonation within a cylinder of an internal combustion engine, said apparatus comprising: transducer means disposed in the cylinder to produce an output signal related to the pressures within the cylinder; said transducer being coupled to a first circuit means, said first circuit means being disposed to determine the first derivative of the output signal of said transducer; a second circuit means coupled to said first circuit means and disposed to determine the second derivative of the output signal of the transducer means; said first and second circuit means being coupled to a difference determining circuit to determine the difference between said first and second derivatives.



3,183,709

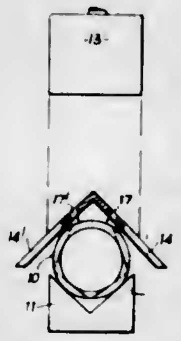
ULTRASONIC TESTING OF MATERIAL

Alexander Bryce Calder Rankin, Ernest Frederick French, and Harold William Taylor, all of Barkingside, England, assignors to Kelvin & Hughes Limited, Glasgow, Scotland, a British company

Filed Apr. 7, 1960, Ser. No. 20,673

Claims priority, application Great Britain, Apr. 8, 1959, 11,898/59; Feb. 22, 1960, 6,198/60

6 Claims. (Cl. 73—67.5)



1. Apparatus for the ultrasonic testing by reflecting of an ultrasonic beam, of material in the form of elongated members of circular cross-section, comprising means for supporting said material, a transducer means for generating ultrasonic waves and beam-forming means disposed between said transducer and said material and directing a beam of said waves upon said material, the axis of said beam being inclined at an acute angle to the normal to the part of the surface of said material impinged upon by said beam so that the material is vibrated substantially in a single preselected mode representing at least ninety percent of the effective ultrasonic energy received by the material under test wherein said beam forming means comprise two apertured members, said apertures being disposed symmetrically on opposite sides of a plane containing the axis of the material under test and the centre of the wave-emitting face of the transducer, the axes of the beams of ultrasonic energy emerging from the apertures or passages being inclined at an acute angle to the normals to the parts of the surface of the material upon which the beams impinge.

3,183,710

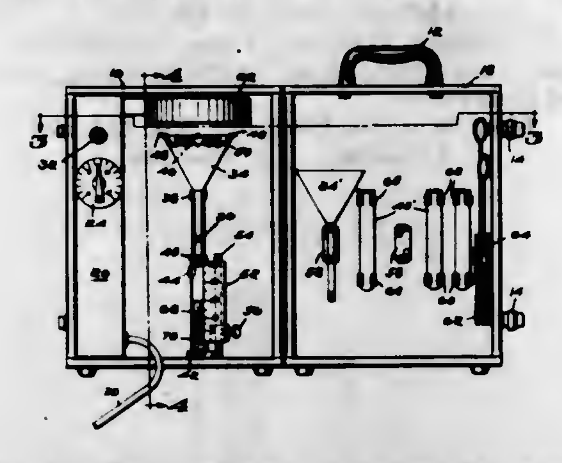
METHOD FOR DETERMINING FAT CONTENT IN GROUND MEAT

Carl F. Spang, Wellesley, Mass., assignor, by mesne assignments, to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio

Filed July 28, 1960, Ser. No. 45,935

1 Claim. (Cl. 73—76)

A method of determining the fat content of ground meat comprising the steps of obtaining a predetermined mass of the ground meat to be tested, forming such predetermined mass of the meat into a patty having a hole through its center, subjecting said patty to heat under atmospheric pressure conditions for a predetermined time and at a sufficient temperature to melt the fat in said patty to a liquid state, supporting said patty during heating thereof in a position wherein the major portion of the bottom of the patty is free of contact with supporting structure to afford drainage of melted fat away from the patty, collecting the melted fat in a container of predetermined cross section supported to receive all liquids drained from said patty including the melted fat, and measuring the height of the column of fat in said container collected over other liquids removed from the patty to determine the quantity of the fat and thus determine the percentage of fat in the original predetermined mass.



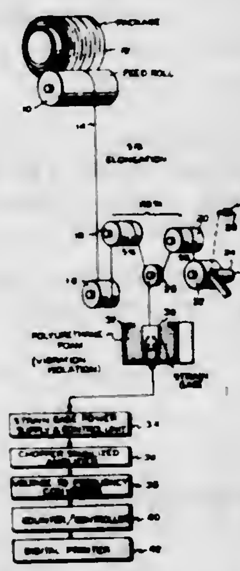
3,183,711

APPARATUS FOR CONTINUOUSLY MEASURING DENIER AND DENIER VARIABILITY OF A SUBSTANTIALLY CONSTANT ELASTIC MODULUS ELASTOMERIC YARN

William Lankford Duncan, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed June 13, 1962, Ser. No. 202,174

3 Claims. (Cl. 73—160)



1. An apparatus for continuously sensing and indicating the denier of a moving elastic yarn line of substantially constant elastic modulus, said apparatus comprising in combination a first means for engaging and advancing an elastic yarn line from a supply point to a first zone while in a condition of substantially zero yarn tension, a second means engaging the yarn line for advancing said yarn line through said first zone while elongating the yarn line without slippage a given constant amount between about 5% and about 10%, a third means engaging said yarn line for advancing said yarn line from said first zone through a second zone while additionally elongating the yarn line without slippage a given constant amount between about 25% and about 70%, a fourth means engaging said yarn line for advancing said yarn line from said second zone through a third zone while additionally elongating the yarn line without slippage a given constant amount between about 2.5% and about 10%, a fifth means for removing said yarn line from said third zone, and a sixth means cooperating said yarn line in said second zone for continuously measuring and indicating the denier of said yarn line, said sixth means comprising a unit engaging and deflecting said yarn line, in said second zone, from its normal path a given amount with a given force, said unit constructed and arranged to detect variations in the force required to maintain the yarn line in the deflected path, said unit producing a signal corresponding to variations in force, said unit cooperating with an indicating means such that said signal actuates said indicating means to indicate continuously variations in denier of said yarn line.

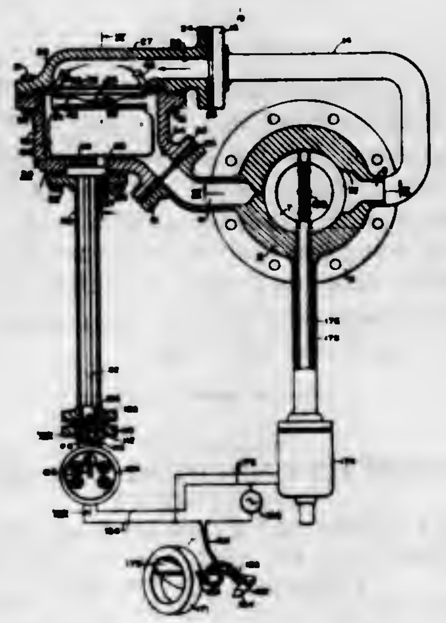
3,183,712

FLOWMETER

Wilbur W. Stevenson, 1125 Lancaster, Pittsburgh 18, Pa.

Filed July 30, 1962, Ser. No. 213,192

14 Claims. (Cl. 73—203)



2. In a fluid meter for measuring accurately the flow of a fluid in a conduit, in combination, an orifice in the conduit, a first pipe at the upstream face of the orifice to convey a portion of the fluid to a meter and a second pipe at the downstream face of the orifice to return the portion of the fluid to the conduit, a differential pressure existing between the two pipes, the meter comprising a rotor having a plurality of substantially circular pins, nozzle means for directing the fluid from the first pipe against the circular pins to cause rotation of the rotor in proportion to the differential pressure of the fluid, means actuated by the rotor for integrating the revolutions of the rotor, an even number of movable vanes attached to the rotor, an uneven number of a plurality of fixed vanes disposed closely adjacent to but spaced from the movable vanes, and means for holding a liquid about both the movable and fixed vanes whereby to dampen the motion of the rotor.

3,183,713

FLOWMETER

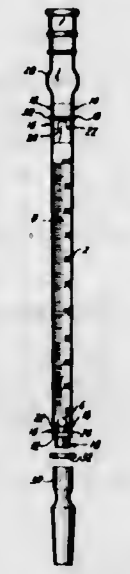
Roger Gilmont, Douglaston, N.Y., assignor to Roger Gilmont Instruments, Inc., Great Neck, N.Y., a corporation of New York

Filed Mar. 28, 1962, Ser. No. 183,238

3 Claims. (Cl. 73—209)

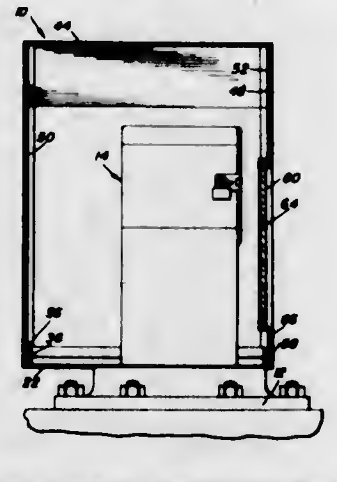
1. A flowmeter comprising a rigid tube open at both ends and having a tapered bore communicating with said end openings, a float in said bore and slidable therealong.

a plug having a first portion received in an end of said tube, a second portion extending out from said tube, and a passage therethrough communicating with said bore, said second portion being wider than said bore and having a surface engaging the end surface of said tube, said first plug portion sealingly engaging the interior of said bore and the inner end of said first plug portion having parts adapted to engage said float and act as stops therefor, said plug having openings between said parts, said openings communicating between said bore and said plug passage, a rigid connector having a passage therethrough, said connector being received over and sealingly engaging said second plug portion, the external dimension of said second plug portion being less than the external dimension of the corresponding tube end, and a sealing ring extending around said second plug portion and compressed between said tube end and said connector.



3,183,714
PROTECTIVE HOUSING FOR METER EQUIPMENT

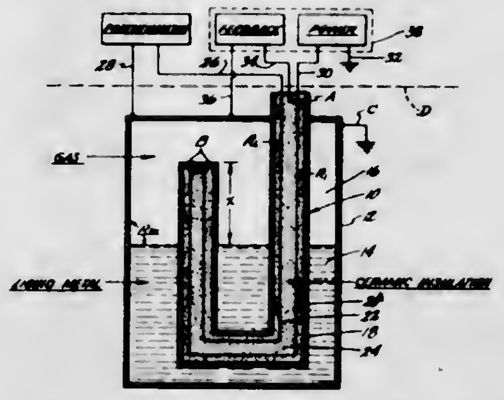
Frank J. Fisher, 412 Evans St., Evansville, Wyo.
Filed Mar. 16, 1962, Ser. No. 180,246
8 Claims. (Cl. 73—273)



1. A protective housing assembly for a meter reading device adapted to be mounted on a meter from which a meter shaft projects and on which meter the reading device is mounted by fasteners adjacent to a valve assembly, comprising, base means having aligning apertures therein for loosely receiving said meter shaft and valve assembly therethrough and mounting apertures through which said fasteners extend to secure said meter reading device to the meter above the base means, a folded panel assembly, said base means including peripheral guide means for guidingly receiving said folded panel assembly in enclosing relation to the meter reading device and said valve assembly, spaced panels connected to said folded panel assembly to form a rigid enclosure therewith, said spaced panels and the folded panel assembly having bottom edges forming an open bottom of the enclosure and folded sealing means formed on said bottom edges of said spaced panels for abutment with and fastening to said guide means to close the open bottom of the enclosure by the base means.

3,183,715
LIQUID METAL PROBE

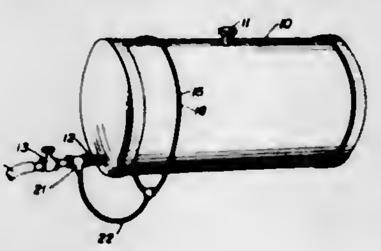
Robert R. Holmes, Hamden, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 10, 1962, Ser. No. 222,263
8 Claims. (Cl. 73—304)



1. Apparatus for gauging the level of an electrically conducting liquid including a J probe, means for supporting said probe with the shorter leg traversing the surface of the liquid, said probe comprising a metal tube open at the upper end of its longer leg above the surface of the liquid and having a metal closure for the end of its shorter leg, said tube being free of welds in the portion immersed in the liquid, a pair of leads extended through the open end of said tube and electrically connected to said end closure, means for insulating said leads from said tube and from each other throughout the length of the tube, means including one of said leads for passing a constant D.-C. current through the portion of said shorter leg which is above the liquid surface, and means including the other lead of said pair for indicating the voltage developed by the passage of said current through said portion as a measure of liquid level.

3,183,716
FLUID LEVEL INDICATOR

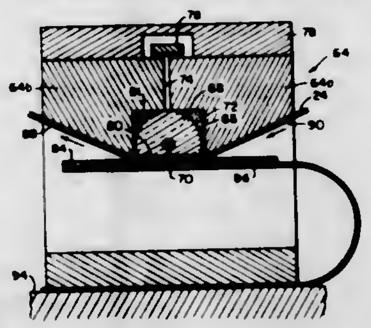
Newton E. Lyon, Strasburg, Colo., assignor to Lyon Useful Device Company, Strasburg, Colo., a corporation of Colorado
Filed Nov. 13, 1962, Ser. No. 237,227
1 Claim. (Cl. 73—323)



A fluid level indicator for horizontally-positioned cylindrical tanks, of the type provided with a discharge pipe to discharge fluid from a low level at one extremity of said tank, comprising: a length of transparent plastic tubing having a length in excess of the circumference of said tank; a T-fitting connecting the extremities of said tubing into a closed loop adapted to loosely surround and be supported by said tank in a vertical plane; a movable float positioned in said tubing at each side of said tank; an air bleed hole formed in said tubing intermediate its extremities; a flexible tubing having one extremity connected to said T-fitting; and means for coupling the other extremity of said flexible tubing to the discharge conduit of said tank.

3,183,717
RECORDING THERMOGRAPH

Edward C. Brainard II, Marion, Mass., assignor to Braincon Corporation, Marion, Mass., a corporation of Massachusetts
Filed Oct. 9, 1962, Ser. No. 229,357
6 Claims. (Cl. 73—343.5)

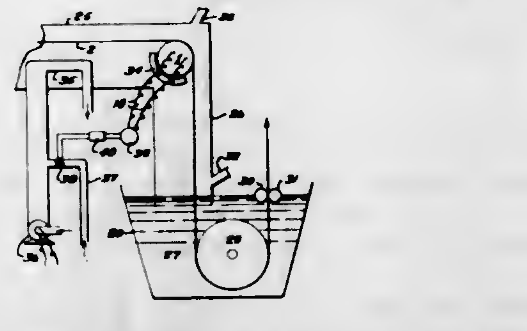


5. A recording thermograph comprising in combination a thermometer, said thermometer including a bulb portion and a stem portion, said bulb portion having a cavity formed therein and said stem having a capillary formed therein, the capillary in said stem being internally connected to said cavity; an opaque fluid contained in said cavity and said capillary, said stem being formed of transparent material, the cross section of said stem having a flat portion along one segment of the perimeter, the remaining perimeter segment having a constant radius of curvature, said capillary being closely adjacent the flat side thereof; means forming a surface coated with a light emitting material forming a light source; means forming a narrow slit between said light source and the surface of said stem; a light sensitive film; means positioning a portion of said light sensitive film against the flat surface of said stem; means supporting said coated surface substantially parallel to the flat side of said stem but on the opposite side thereof whereby light from said source impinges on the curved surface of said stem, said means including an exposing head havnig first walls on said head for receiving said coated surface, second walls on said head defining a channel for receiving said thermometer, third walls on said head defining said slit, and having means for mounting said thermometer in said channel, said walls defining said channel for receiving said thermometer terminating substantially in the plane of said flat surface on said thermometer whereby said film may be positioned against said flat surface by said means for positioning a portion of said film thereagainst, and means for causing relative motion at predetermined times between said film and the combination of said light source, slit and thermometer.

3,183,718
MEASUREMENT OF TEMPERATURE OF CONTINUOUS STRIPS

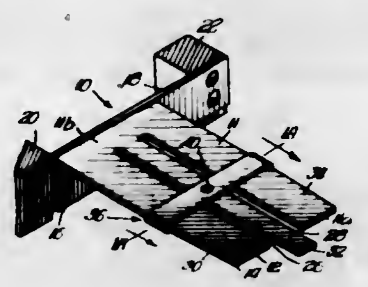
Paul E. Schnedler, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Mar. 2, 1960, Ser. No. 12,325
8 Claims. (Cl. 73—351)

1. In a device for the purpose described, a roll over which a strip of material may be passed with the said strip conforming to a substantial portion of the circumference of the said roll, a series of thermocouples spaced peripherally about said roll in such position as to be in controlling thermal contact with such strip, a commutating switch comprising an element rotating with said roll and bearing segments to which leads from said several thermocouples are attached, and a stationary member bearing contacts coacting with said segments and connected to a measuring device, the placement of said segments on said first mentioned element, and the circular extent of said segments, being such that said measuring device will be placed in electrical contact with each thermocouple during the latter portion only of the travel of such thermocouple with said strip, there being a substantial portion of said travel during which each such thermocouple may assume a temperature controlled by the temperature of said strip without being in electrical connection with said measuring device.



3,183,719
TEMPERATURE SENSING DEVICE

Robert J. Norman, Chicago, and Ernest J. Duchek, Evanston, Ill., assignors to The Powers Regulator Company, Skokie, Ill., a corporation of Illinois
Filed June 22, 1962, Ser. No. 204,357
15 Claims. (Cl. 73—362.4)



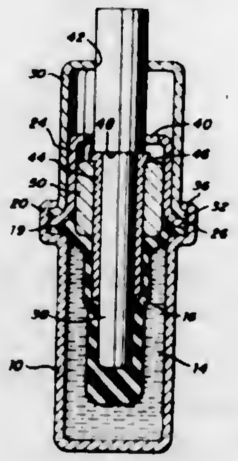
4. A temperature sensing device comprising a temperature sensitive blade having first and second ends, said blade having at least one slot extending from said first end toward said second end to form at least two sections, means for mounting said blade adjacent said second end, and means for interlocking said sections at selected distances from said second end, said means for interlocking being slidable intermediate said first end and said second end.

3,183,720
ACTUATOR APPARATUS

William Edwin Baker, Needham, Mass., assignor to Standard-Thomson Corporation, Waltham, Mass., a corporation of Delaware
Filed Apr. 4, 1962, Ser. No. 185,136
4 Claims. (Cl. 73—368.3)

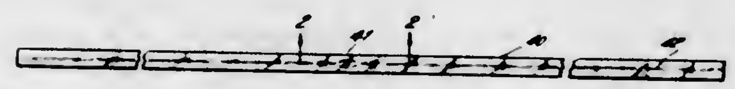
1. Motor apparatus comprising:
a fluid tight container,
an elastomeric body within the container and having a flange portion secured thereto, the elastomeric body having a cavity therein,
pressure applicator material within the container and exterior of the elastomeric body,
guide means attached to the container,
an actuator rod having a portion wtihin the cavity of the elastomeric body and extending therefrom through said guide means, the actuator rod having an abutment shoulder,
a first actuator sleeve, the first actuator sleeve slidably encompassing the actuator rod and having a portion

thereof within the cavity of the elastomeric body, the first actuator sleeve being engageable with the abutment shoulder of the actuator rod, the first actuator sleeve having a cross-sectional area greater than the cross-sectional area of the actuator rod, the first actuator sleeve also being abuttingly engageable with said guide means which thus limits movement of the first actuator sleeve,



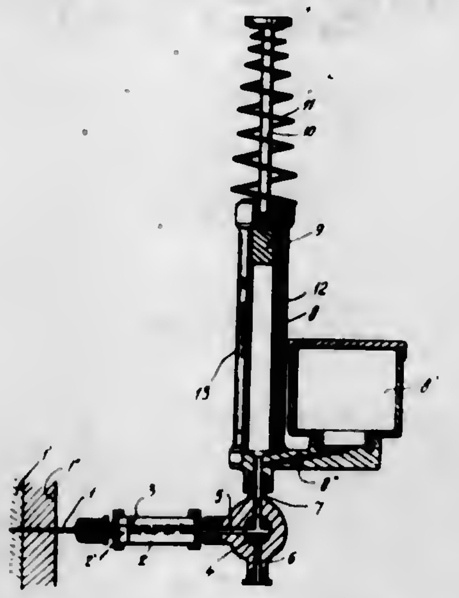
a second actuator sleeve, the second actuator sleeve slidably encompassing the first actuator sleeve and also being in slidable engagement with said guide means, the second actuator sleeve also being abuttingly engageable with the guide means and with the first actuator sleeve, the second actuator sleeve having a portion within the cavity of the elastomeric body and having a cross-sectional area greater than the cross-sectional area of the first actuator sleeve.

3,183,721
PROCESS FOR FORMING A THERMOMETER
Martin Kaynan, 1357 E. 86th St., Brooklyn 36, N.Y.
Filed Dec. 17, 1962, Ser. No. 245,299
4 Claims. (Cl. 73—371)



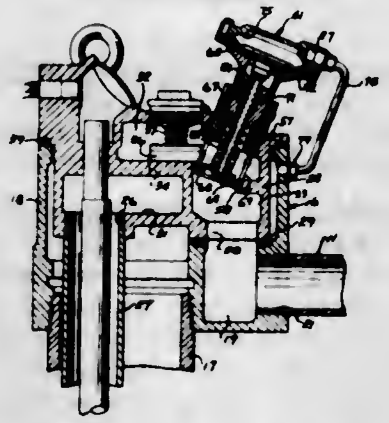
1. A process of manufacturing a glass thermometer and forming markings thereon comprising the steps of:
(*a*) providing a length of clinical lens tubing;
(*b*) heating the tubing at the midpoint thereof;
(*c*) introducing air into said tubing to form an opening and a pair of blisters adjacent said mid point;
(*d*) cutting said opening in half;
(*e*) fusing a swister to a cut end of said opening to form a bulb;
(*f*) introducing mercury into said bulb;
(*g*) raising said thermometer to the annealing temperature thereof;
(*h*) cooling said thermometer;
(*i*) heating the end of said shaft opposite said bulb to form a safety chamber;
(*j*) calibrating said thermometer;
(*k*) applying to a side surface of said shaft a decalcomania having graduations thereon;
(*l*) heating said thermometer by placing said shaft in an oven while insulating said safety chamber with said thermometer being raised to a temperature below the stress temperature of the glass and sufficient to bake in said decalcomania on said shaft;
(*m*) and then cooling said thermometer.

3,183,722
DEVICE FOR INDICATING PRESSURE IN LIQUIDS AND GASES
Hans Peter Olof Unger, Halsingehojden 11, Stockholm, Sweden, and Jan Egon Tengberg, Skansvagen 53, Sollentuna, Sweden
Filed May 22, 1962, Ser. No. 196,693
Claims priority, application Sweden, May 29, 1961, 5,603/61
6 Claims. (Cl. 73—388)



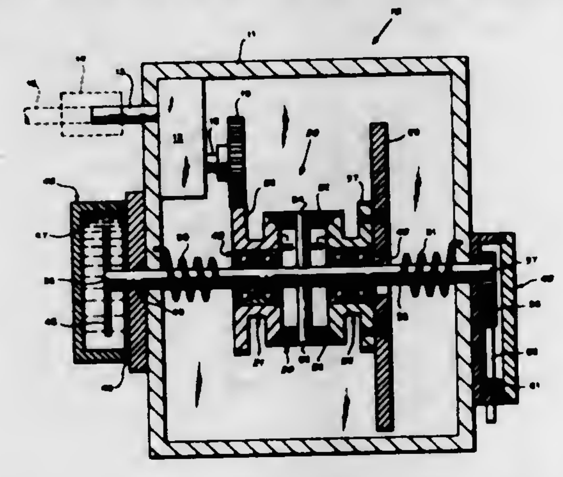
1. A device for the measurement of the pressure of liquids and/or gases enclosed in spaces, vessels, or organs isolated from the atmosphere, such as in a human or animal body, said device comprising a transparent cylinder containing a slidable piston provided with a piston-rod, said cylinder having a duct connected to a nozzle provided with a channel, a puncture needle provided with a channel and being interchangeably fitted in said nozzle, an expansion chamber connected to the connecting duct, the nozzle comprising a tube of transparent material, said tube being provided with at least one latitudinal level mark, characterized in that all component parts of the device are of rigid material and are combined in a rigid unit, a three-way valve, the connecting duct between the nozzle and the cylinder being connected to said three-way valve, which valve is connected to a discharge channel, that the cylinder is provided with at least one pressure and the piston-rod being biased by spring means, and unit graduation.

3,183,723
LEAK DETECTOR
Elmer M. Deters, Davenport, Iowa, assignor to Red Jacket Manufacturing Co., Davenport, Iowa, a corporation of Iowa
Filed Dec. 19, 1962, Ser. No. 245,733
21 Claims. (Cl. 73—40.5)



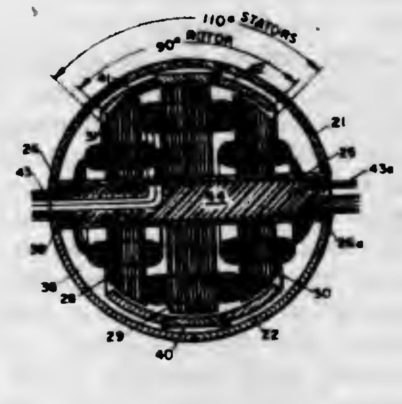
18. An apparatus for detecting a leak in excess of a preselected leakage rate from a fluid delivery line through which fluid is intermittently delivered under pressure and wherein the pressure in the line can vary over a wide range between a low pressure and a relatively higher delivery pressure, said apparatus comprising a casing having an inlet and an outlet adapted to pass fluid to the delivery line, said casing having a port opening between said inlet and outlet and an opening at the side aligned with said port opening, a sleeve mounted in said opening in said side and having a valve seat attached thereto and spanning said port opening, a body mounted in said sleeve having a stem guide bore therein, a valve member cooperable with said seat and having a stem extending through said guide bore, a pressure responsive operator on the outer end of the stem, means on said body defining first and second pressure chambers at opposite sides of said operator, means on said body for limiting movement of the valve member to an initial position disposed at one side of said seat for passing fluid at a rate in excess of said preselected rate through the seat, means for applying fluid pressure from the delivery line to the chamber at one side of said operator for moving said valve member to an intermediate position when the pressure in the line rises to an intermediate pressure range between said low pressure and said relatively higher delivery pressure, means operable when the valve is in said intermediate position for passing fluid at said leakage rate between the inlet and the outlet, said pressure responsive operator being operative when the pressure rises above said intermediate range to move said valve member to an open position at the other side of the seat.

3,183,724
MECHANICAL ROTARY ACCELERATION SENSOR
Edward J. McQuillen, Huntingdon Valley, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 31, 1963, Ser. No. 284,755
1 Claim. (Cl. 73—514)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A device for accurately sensing and controlling speeds of rotation of revolving bodies comprising:
a support member,
an output shaft journaled for rotation within said support member,
first input gear means rotatably supported on said shaft and including a spur gear and a first end gear assembly,
transmission means including a gear box secured to said support member having a stub shaft extending therefrom and formed for connection to the revolving body and further including a pinion gear extending from said gear box engaging said spur gear of said first input gear means,
second input gear means rotatably supported on said shaft and including a second end gear assembly and a spur gear having a disc-shaped inertial rotor member rigidly secured thereto and coaxially disposed about said output shaft, said inertial rotor member being of predetermined mass and also freely rotatable about said shaft,
differential gear means including a pair of spider gears engaging said adjacent first and second end gear assemblies and being rotatably secured at each end of a rod member, said rod member being fixed intermediate its ends to said output shaft to rotate said shaft when said first and second input gear means rotate at different speeds,
a pair of equally preloaded torsion springs each secured between said support member and said output shaft in opposition to the other to provide a predetermined rotational resistive force,
critical damping means including a relatively thin disc member rigidly secured to said output shaft and rotatable within a housing containing damping fluid for precluding oscillation of said output shaft,
an arm member rigidly secured to said output shaft and rotatable therewith,
a pair of parallel flexible switch members adjacent each side of said arm and including contact members intermediate the length thereof,
and conducting means electrically interconnected between each of said pairs of switch members and a speed control circuit whereby said control circuit is energized when one of said contact members is urged by said arm into contacting relationship with the other of said contact members when the acceleration of the revolving body exceeds at predetermined value.

3,183,725
TWO-AXIS GAS BEARING GYRO
Reinhold A. Frye, Little Falls, N.J., assignor to General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed Feb. 15, 1962, Ser. No. 173,391
8 Claims. (Cl. 74—5.7)



1. A gyroscopic device comprising:
a stator assembly of generally spherical contour fixedly mounted with respect to a particular one of its diameters and including three individual circular stators coaxially disposed with respect to said one diameter, the intermediate stator being symmetrically disposed with respect to a plane perpendicular to said diameter at the center of said spherical contour, the other stators being symmetrically disposed with respect to said plane;
a rotor assembly in the form of a hollow symmetrically-truncated sphere concentrically disposed about said stator assembly and defining therewith uniform clearance gaps of spherical contour between its inner surface and the peripheral surfaces of said stators, said rotor assembly including an equatorial segment, circumscribing said intermediate stator and constituting a hysteresis ring, flanked by symmetrical spherical segments of material characterized by high magnetic permeability and low hysteresis;
means for energizing said intermediate stator to generate an electromagnetic flux field co-active with said hysteresis ring to impart rotational motion to said rotor assembly;

means to energize one of said other stators to generate an electromagnetic flux field co-active with one of said high permeability rotor segments to detect angular displacement of the rotor assembly about an axis perpendicular to said diameter; and

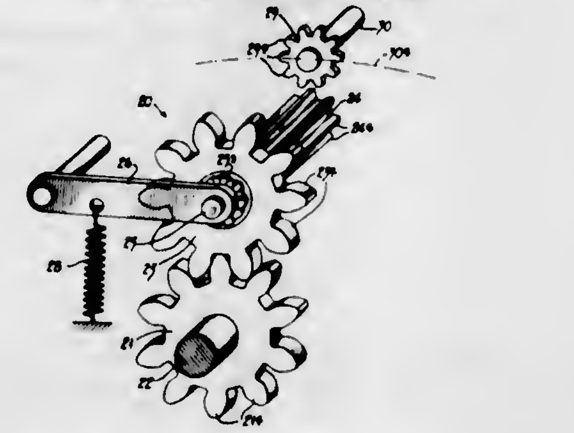
means responsive to said angular displacement of the rotor assembly to energize the other of said stators to generate an electromagnetic flux field co-active with the other of said high permeability rotor segments to exert a force on said rotor assembly opposing said displacement.

3,183,726
TELEVISION TUNER

Joe G. Badger, Bloomington, Ind., assignor to Sarkes Tarzian Inc., Bloomington, Ind., a corporation of Indiana

Filed Feb. 19, 1963, Ser. No. 259,528

15 Claims. (Cl. 74—10.8)



1. In a television tuner of the turret type wherein a rotatable turret is provided which includes a plurality of circuit carrying elements corresponding to different television channels each having an adjustable tuning member, a fine tuning system for adjusting any one of said adjustable tuning members when said rotatable turret is in a predetermined position, comprising a fine tuning shaft, a pivotally mounted member, a first gear on said fine tuning shaft, a second gear on said pivotally mounted member, means exerting a force on said second gear which inhibits rotation thereof, whereby in response to a force exerted on said fine tuning shaft said pivotally mounted member is moved from a first position to a second position, and means carried by said pivotally mounted member and operative when said pivotally mounted member is in said second position to adjust the tuning member of a selected one of said circuit carrying elements, said last-named means being out of engagement with said tuning member when said pivotally mounted member is in said first position, thereby to permit rotation of said turret.

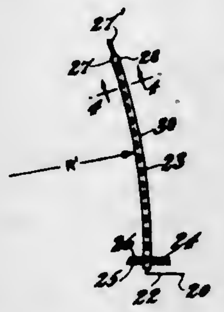
3,183,727
CONTROL TORQUE AND MOTION DEVICE THROUGH A WALL

George Robert Brown, Lansdale, and Emile James Fry, Ardsley, Pa., assignors to Yarnall-Waring Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 18, 1962, Ser. No. 203,352

11 Claims. (Cl. 74—17.8)

1. In a control torque and motion device operating through a wall, an elastically deflectable tube extending through the wall and having a beam portion beyond the wall which is adapted to deflect elastically, said tube in relaxed position being straight, a wire extending through the interior of the tube and exerting force laterally on the tube along the beam portion, the wire when free from the tube having a curvature along a portion which is to extend inside the tube, the curved portion of the wire when inside the tube by its residual stress deflecting the tube into a curvature on a radius larger than the radius of curvature of the wire when free from the tube, the wire and the tube both being deflected by each other within the elastic limit of each, lever means on the wire beyond the tube for sensing motion or torque or both of the wire as desired, the wire when in the tube having clearance and being able to apply energy through the lever arm as the tube deflects, means on the beam for applying load to the beam section generally transverse to the plane of curvature of the combination of the wire and the tube when assembled together and free from lateral restraint, and biasing means acting on the lever arm of the wire for biasing the wire under a predetermined load, the biasing means permitting yielding to establish control responsive to the deflection of the beam portion.

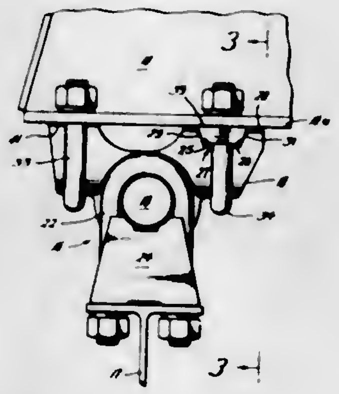


3,183,728
UNIT PUMPER

William H. Ramsdell, Houston, Tex., assignor to The Youngstown Sheet and Tube Company, Youngstown, Ohio, a corporation of Ohio

Filed Aug. 6, 1962, Ser. No. 215,131

4 Claims. (Cl. 74—41)



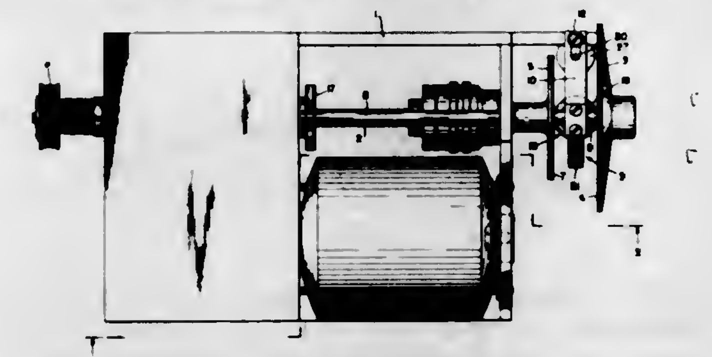
1. A unit pumper comprising,
a Samson post,
a walking beam mounted on the Samson post,
a motor,
crank arm means driven by said motor,
pitman means connected to the crank arm means, and
means connecting the pitman means to the walking beam including a bearing assembly secured to the walking beam by bolts, said bearing assembly having first and second surfaces extending transversely of the walking beam, said walking beam having third and fourth surfaces engaging said first and second surfaces, respectively, at least one pair of said engaging surfaces extending at a wedge angle relative to the other pair of surfaces and providing wedge surfaces urging said engaging surfaces into firm contact whereby forces can be transmitted therethrough to reduce the tendency of said bolts to work loose, at least one surface of each pair of said wedge angle surfaces being convex in a direction extending transversely of the walking beam to permit variations in alignment of the bearing assembly and walking beam.

3,183,729
VARIABLE SPEED TRANSMISSION

Tommy N. Tyler, Littleton, Colo., assignor to Honeywell, Inc., a corporation of Delaware

Filed Jan. 12, 1962, Ser. No. 165,764

5 Claims. (Cl. 74—190.5)



5. A self-adjusting, variable speed transmission, including, a frame, an input disc mounted for rotation in said frame, an output disc mounted for rotation in said frame and having a face overlying and substantially parallel with a portion of the face of said input disc, an intermediate shaft mounted on the frame, an intermediate wheel mounted for axial and rotary movement on the intermediate shaft, a ring forming part of said intermediate wheel and having engagement at its outer surface with a portion of said input disc and with a portion of said output disc, and an inertia-actuated means operably connected to the shaft to mount the shaft for pivotal inertial movement of its longitudinal axis along a curved path that is substantially parallel to the faces of the discs and from one side to the other of a line connecting the centers of the discs.

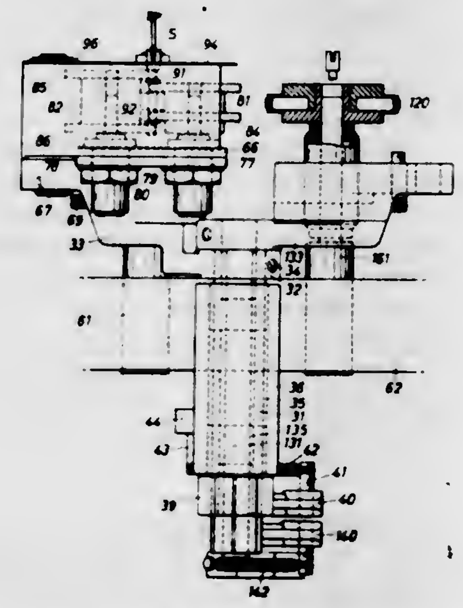
3,183,730
HIGH SPEED SPINDLE ASSEMBLY

Frederick Scragg and Alexander A. Chubb, Macclesfield, England, assignors to Ernest Scragg & Sons Limited, Macclesfield, England

Filed Oct. 2, 1961, Ser. No. 142,271

Claims priority, application Great Britain, Oct. 1, 1960, 33,776/60; Mar. 16, 1961, 9,594/61

16 Claims. (Cl. 74—206)



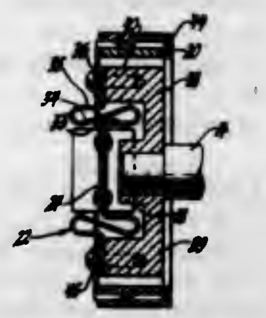
1. In a high speed assembly, in combination, a rotary substantially rigid spindle; locating means locating said spindle at a given location; an endless flexible body having an outer periphery located closely adjacent to said spindle; and rotary support means carrying said flexible body for rotating the same while freeing said body throughout the entire cross section thereof to the influence of centrifugal force resulting from rotation thereof so that said body will engage and drive said spindle while pressing against the same as a result of the centrifugal force, the pressure of said body against said spindle being derived solely from the mass of said body itself and the rotation thereof.

3,183,731
ROTARY MOTION TRANSMITTING MECHANISM FOR INTERNAL COMBUSTION ENGINES AND THE LIKE

John Dolza, 810 State St., Fenton, Mich.

Filed Apr. 24, 1963, Ser. No. 275,286

23 Claims. (Cl. 74—219)



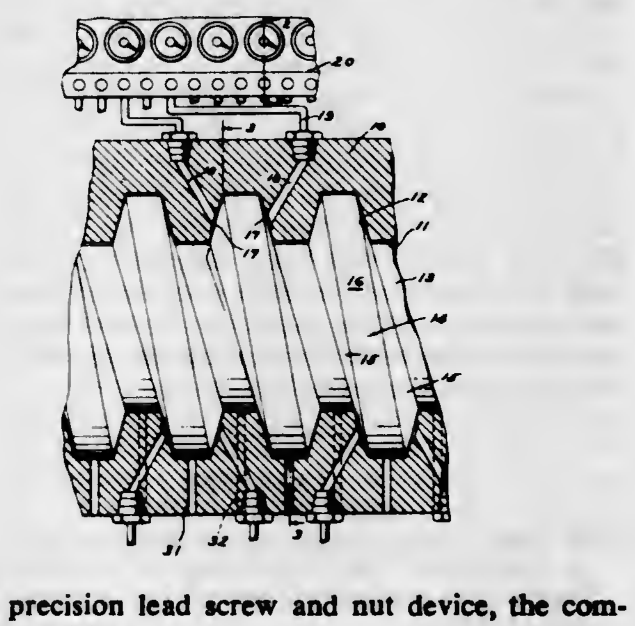
1. A rotary motion transmitting mechanism comprising a first rotary member, a second rotary member with its axis of rotation spaced from that of the first rotary member, and means interconnecting said rotary members to transmit the rotary motion of the one to the other, at least one of said rotary members having a hub, a rim, and a plurality of generally radially projecting flat springs connecting the hub to the rim, each of said springs having at least one reverse bend joining two substantially flat spring portions which extend in planes at an angle to the radial axis of the spring, said springs permitting eccentricity between the hub and the rim while inhibiting angular movement of the hub with respect to the rim.

3,183,732
PRECISION LEAD SCREW

Gordon H. Porath, 6101 Concord, Detroit, Mich.

Filed Dec. 11, 1962, Ser. No. 243,871

14 Claims. (Cl. 74—424.8)



1. In a precision lead screw and nut device, the combination comprising
- a body having an opening therethrough,
- a helical thread formed along the surface of said opening,
- a lead screw having a complementary helical thread threaded into said body,
- each of said threads having generally axial and radial surfaces,
- the radial surfaces of at least one of the threads having a plurality of circumferentially spaced isolated pressure pads provided therein,

an orifice associated with each said pressure pad through which liquid under pretermined pressure is supplied to said pressure pad,

each said orifice being adjustable for initial setting of pressure supplied to its respective orifice so that liquid under different pressures may be supplied to said orifices,

the relative dimensions of said threads being such that a space is provided between the radial surfaces through which a pressurized film of liquid flows continuously so that forces on said body and screw are balanced by pressures in the pads thereby providing a permanent separation of the surfaces and retaining the body in accurate, stable, frictionless relation to the screw.

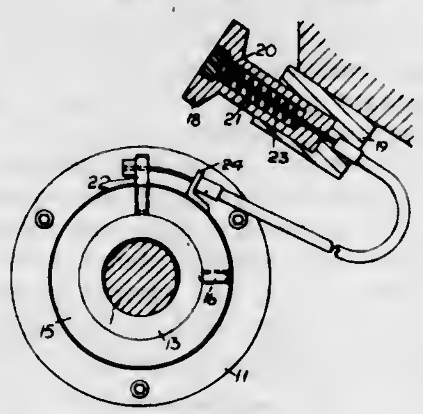
3,183,733
SCREW AND NUT MECHANISMS

John Charles Frederick Whicker, Tring, England, assignor to Rotax Limited, London, England

Filed Apr. 2, 1963, Ser. No. 270,017

Claims priority, application Great Britain, Apr. 5, 1962, 13,205/62

3 Claims. (Cl. 74—424.8)



1. A screw and nut mechanism comprising in combination, a shaft extending from one end of a housing, a helical groove formed in the periphery of the shaft, a nut mounted on said housing, a groove formed in the internal periphery of the nut, a plurality of balls located in said grooves, passage means through which the balls can return from one end to the other end of the groove in the nut as relative rotation is imparted to the shaft and the nut, and a member mounted within an extension of the housing and having a helical rib formed on its face presented to the shaft for engagement with the groove in the shaft, said member being permitted limited angular movement relative to the nut so that, when relative movement takes place between the shaft and the nut in one direction, the rib will freely engage the groove of the shaft but when such relative movement takes place in the opposite direction angular movement of the member will occur relative to the nut and the rib will be caused to bind in the groove of the shaft.

3,183,734
TOOTHED WHEEL

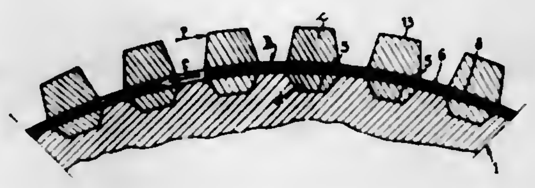
Paul Louis Emile Kuntzmann, Villejuif, France, assignor to Compagnie des Transmissions Mecaniques Seine-Doubs-Isere, Levallois-Perret, Seine, France, a corporation of France

Filed May 28, 1962, Ser. No. 197,984

Claims priority, application France, June 10, 1961, 864,558, Patent 1,299,586

16 Claims. (Cl. 74—434)

1. A gear wheel having an axis of rotation and comprising a center element which constitutes a hub having a peripheral face provided with a plurality of recesses arranged about said axis, said recesses extending substantially parallel to said axis and in circumferentially spaced relation to each other, insert elements arranged about said axis and engaged in the recesses so as to be rigid with the center element with regard to rotation about said axis, said center element adjacent of said insert elements defining spaces therebetween to allow for expansion of said elements, a reinforcement element extending about said axis and completely encompassing the center element and extending transversely of the insert elements, the insert elements including outer gear teeth extending radially outwardly of the reinforcement element and constituting the gear teeth of the gear wheel and the insert elements being engaged between the center member and the reinforcement element so that the reinforcement element retains the insert elements in the recesses.

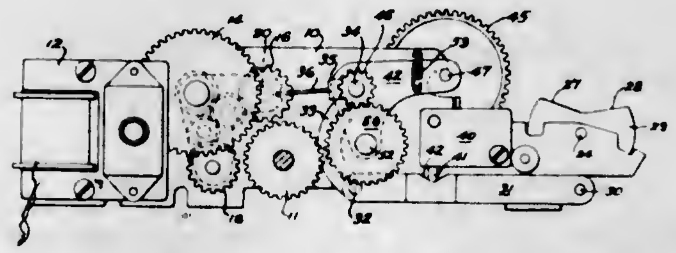


3,183,735
REVERSIBLE POWER AND MANUAL DRIVE

Stuart W. Boreen, Belmont, Calif., and James W. Healy, Wakefield, Mass., assignors to Dasa Corporation, a corporation of California

Filed Nov. 1, 1962, Ser. No. 234,610

3 Claims. (Cl. 74—472)



1. In a recording device having a magazine for a tape-like recording medium, apparatus for positioning such medium, comprising:

(*a*) a driving gear mounted on the magazine and adapted to be driven in either a forward or a reverse direction as required to position the tape-like recording medium;

(*b*) a forward and a reverse gear train, each normally out of contact with the driving gear;

(*c*) means for selectively urging either the forward or the reverse gear train into mesh with the driving gear, such means including a mechanical linkage having a resilient member to limit the maximum pressure between the driving gear and the selected gear train urged into mesh therewith; and,

(*d*) means, responsive to operation of the mechanical linkage, for then simultaneously actuating the forward and the reverse gear train.

3,183,736
REMOTE CONTROL FOR REARVIEW MIRROR

Edwin B. Jacobson, Grand Rapids, Mich., assignor to Jervis Corporation, Grandville, Mich., a corporation of Michigan

Filed Apr. 23, 1962, Ser. No. 189,352

13 Claims. (Cl. 74—501)

1. In a remote control structure for rearview mirrors and the like, a compression actuator comprising:

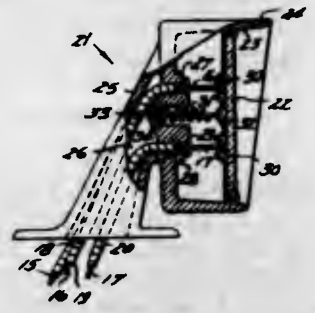
(*a*) a wobble plate;

(*b*) receptacles on said wobble plate;

(*c*) a spherical member extending from said wobble plate;

(*d*) a mating annular bearing plate, a part of said wobble plate engaged with said spherical member and completing a universal joint,

(*e*) a plurality of elongate compression tranamitting members engaged at their terminal ends in the receptacles of said wobble plate; and



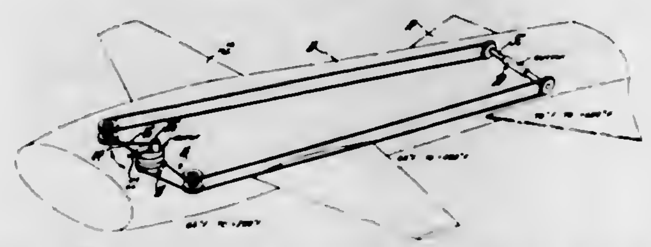
(*f*) threaded means adjusting relative equal contact between said elongate compression transmitting members and said wobble plate.

3,183,737
EXPANSION COMPENSATED CONTROL SYSTEM

Allen S. Matz, Cornwells Heights, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware

Filed May 14, 1962, Ser. No. 194,248

23 Claims. (Cl. 74—501.5)



1. An expansion compensated control system comprising a structure, a power input device fixed to said structure, a power output device fixed to said structure at a position remote from said input device, said structure being subjected to ambient operating conditions adapted to cause the distance between said devices to vary, said input and output devices each including a rotatable member, continuous pulley support means, first tube means connected between said input device and said pulley support means, second tube means connected between said pulley support means and said output device, at least a part of said pulley support means being substantially offset relative to a line-of-centers between the rotatable members of said input and output devices, said pulley support means being connected to said structure only through said first and second tube means, at least one of said tube means being permitted to flex during a change in distance between said devices, and motion transmitting means secured at one end to the rotatable member of the input device and at the other end to the rotatable member of the output device, said motion transmitting means being slidably supported within said first and second tube means and the length thereof being substantially unchanged by flexure of said tube means.

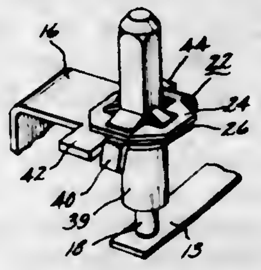
3,183,738
ADJUSTING SCREW SPRING CLIP

Edwin S. Hollister, Allentown, Pa., assignor to General Electric Company, a corporation of New York

Filed Jan. 21, 1963, Ser. No. 252,671

9 Claims. (Cl. 74—526)

2. The combination comprising an adjusting member having a threaded portion and an unthreaded portion having a straight sided cross-section, a clip formed of a strip of resilient sheet material doubled on itself to form an upper and a lower arm defining an acute angle, said lower arm having a circular opening loosely receiving said adjusting member, said upper arm having an opening aligned with said lower arm opening and having a cross-section approximately equal to the cross-section of said unthreaded portion receiving and engaging the unthreaded portion of said adjusting member so that rotation of said member rotates the clip, and a stop tab depending from said lower arm to cooperate with a fixed member for limiting rotation of said clip and adjusting member.

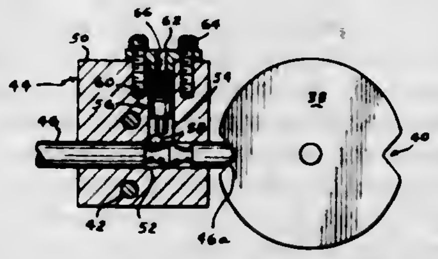


3,183,739
INDEXING DEVICE

Z. Ted Rajewski, Richmond, Ind., and Robert W. Navarro, Cincinnati, Ohio; said Z. Ted Rajewski, now by change of name Ted Rajewski, assignors to the United States of America as represented by the Secretary of the Air Force

Filed Apr. 6, 1962, Ser. No. 185,767

2 Claims. (Cl. 74—527)



1. A device for indexing a gear train assembly or the like to a known position comprising: a housing structure, a gear train assembly within said housing structure and having a shaft extending through said housing structure, a rotary disk joined to the extending shaft of said gear train assembly and having at least one V-shaped detent in the periphery of said rotary disk at right angle to the axis of rotation of said extending shaft, each of said detents being radially symmetrical on said rotary disk, and a nonrotating plunger assembly joined to said housing structure in fixed relationship to said rotary disk, said plunger assembly comprising a body having a first bore and a second bore at right angle to said first bore, a plunger journaled within said first bore and having a spherical end axially extendable in said body to engage a detent in said rotary disk and retractable in said body to be disengaged from said rotary disk, said plunger having two conical base-to-base cam surfaces in spaced relationship to said second bore in said body, and snap-action latch means within said second bore and engaging the base-to-base cam surfaces on said plunger for biasing said plunger to either the extended or retracted position, said plunger when engaging a detent in said rotary disk being moved by the subsequent rotation of said rotary disk by said gear train assembly to the disengaged position.

3,183,740
HOLDING MEANS FOR A MOVABLE OPERATING MEMBER

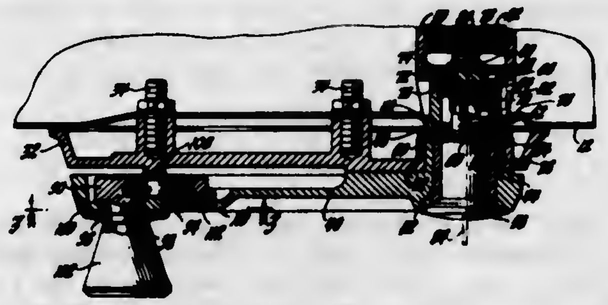
George D. Legge, Farmington, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 4, 1962, Ser. No. 228,463

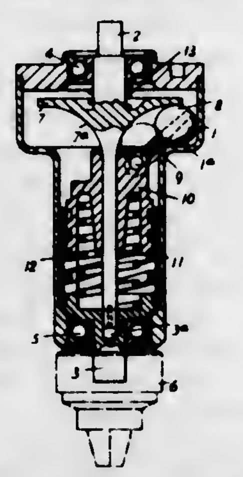
5 Claims. (Cl. 74—545)

1. In combination with an operating member movably mounted relative to a support member, means for locking the operating member in a desired position with respect to the support member and comprising a control mem-

ber mounted by the operating member for movement between first and second positions, the control member including first locking means, the support member being provided with a second locking means engageable with the first locking means to lock the operating member in the desired position when the control member is in its first position, said locking means being disengageable when the control member is actuated to its second position thereby releasing the operating member for movement, resilient means interposed between the control member and the operating member and normally biasing and maintaining the control member in its first position wherein the first locking means is normally conditioned to engage the second locking means and thereby lock the operating member in the desired position relative to the support member, and said operating member having a recess therein adapted to receive and guide movement of the control member and forming a stop engageable to limit movement of the control member when urged toward its second position with sufficient force to overcome the resilience of the resilient means, thereby releasing the operating member for movement relative to the support member, and providing a driving connection between the operating member and the control member effecting subsequent movement of the operating member.

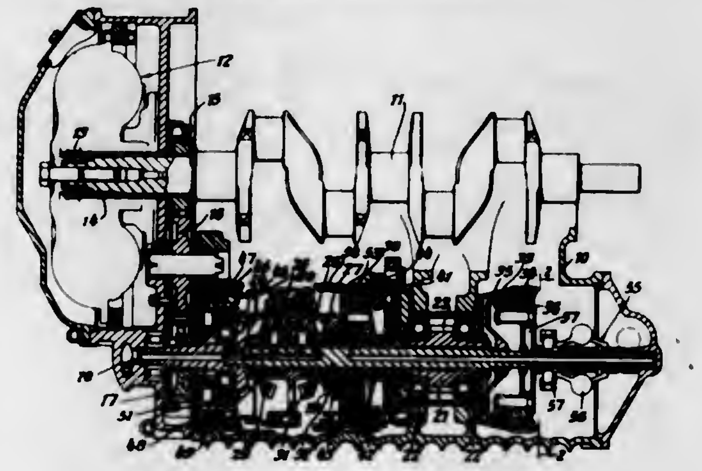


3,183,741
VARIABLE SPEED POWER TRANSMISSION MECHANISM
Frank George Freeman, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Apr. 11, 1963, Ser. No. 272,332
2 Claims. (Cl. 74—751)



1. A variable speed power transmission comprising in combination an input shaft on which is a tapering annular shoulder, a co-axial output shaft, a relatively fixed housing an internal peripheral part of which is uniformly spaced from the shouldered part of the input shaft, an axially movable member in quick pitch screw-thread engagement with the output shaft, a plurality of arms pivotally connected to the member, an equal number of balls engaged respectively within the arms, said balls being in frictional engagement with both the shouldered part of the input shaft and the housing, and resilient means acting between the member and output shaft to urge the balls into contact with the outer portion of the shoulder, the arrangement being such that rotation of the input shaft in one direction will cause the balls to move orbitally, and thereby rotate the member and output shaft at a speed ratio dependent upon their radial position, whilst an increase in load on the output shaft will cause the member to move axially against the action of the spring to reduce the speed ratio.

3,183,742
POWER TRANSMISSION SYSTEMS PROVIDING AUTOMATIC CHANGES OF GEAR RATIO
Frederick Edward Ellis and Peter J. Standbridge, Leamington Spa, England, assignors to Automotive Products Company Limited, Leamington Spa, England
Filed Apr. 13, 1962, Ser. No. 187,374
Claims priority, application Great Britain, Apr. 14, 1961, 13,556/61; June 27, 1961, 23,288/61
1 Claim. (Cl. 74—757)

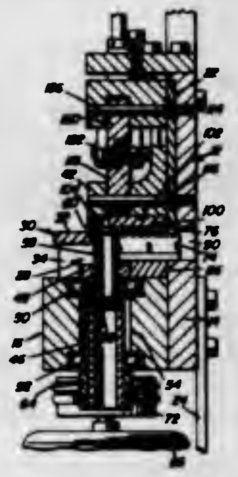


A transmission comprising an input shaft, an output shaft and means connecting the input shaft to the output shaft for driving the output shaft at four different speeds in the same direction as the input shaft and at one speed in the oppoiste direction to the input shaft, said means comprising a carrier, at least one intermediate planet gear assembly mounted on said carrier and comprising larger and smaller bevel gears rotating together as one, a driving bevel gear and a reaction bevel gear both meshing with one of said planet gears, a first and a second driven bevel gear both meshing with the other of said planet gears, said driving bevel gear rotating with said input shaft, means selectively holding the carrier against rotation and releasing the carrier for rotation, means for selectively clutching the first and second driven bevel gears to the output shaft and means for selectively holding the second driven bevel gear and the reaction bevel gear against rotation.

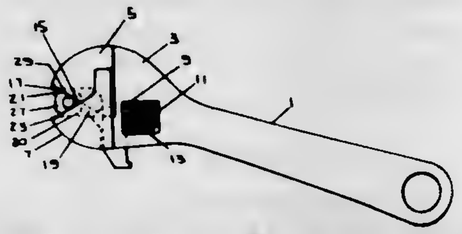
3,183,743
SHEET CUTTING MACHINE
Francis E. O'Donnell, 511 Hurstbourne Road, Francis B. Hallatt, 141 Roxborough Road, Arthur J. Hallatt, Flower City Park, and Fritz Doerschein, 131 Farnsworth Road, all of Rochester, N.Y.
Filed July 17, 1962, Ser. No. 210,421
7 Claims. (Cl. 77—5)

1. A machine for cutting spaced holes adjacent an edge of a thin sheet material and forming perforations between each hole and said edge comprising, supporting means having a fixed surface adapted to support said thin sheet of material over an opening therethrough, cutter means mounted below said supporting means and projecting into said opening to present cutting edges disposed slightly below said fixed surface, yieldable engaging means slidably mounted above said supporting means for movement by a limited amount into said opening to press said material into engagement with said cutting edges, means for displacing said yieldable engaging means into pressing engagement with the material, means mounted in said

opening adjacent the cutting edges operative in response to withdrawal of the yieldable engaging means from said opening for displacing the material out of contact with said cutting edges, said cutter means including rotatable cutting means having a circular cutting edge for cutting a hole in said material and fixed blade means radially aligned with said rotatable means in closely spaced relation thereto to cut the perforations in the material, said means for displacing the material out of contact with the cutting edges comprising elastically deformable means projecting through said opening to the level of said fixed surface on the supporting means slightly above the cutting edges for contact with the material and deformation therewith when engaged by the yieldable engaging means, said yieldable engaging means comprising ram means reciprocably mounted for movement through a fixed stroke, and presser pad means replaceably mounted on the ram means for displacement of the material into the opening at the end of said fixed stroke of the ram means.

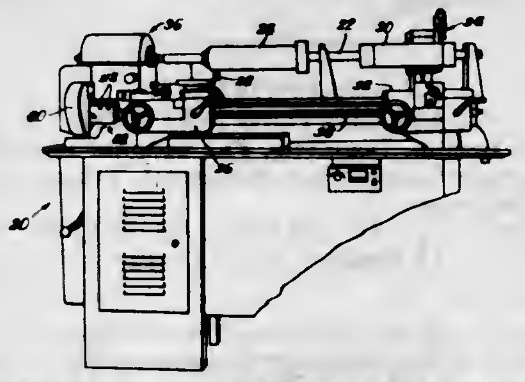


3,183,744
ADJUSTABLE SLIDING SIDE JAW WRENCH WITH STOP MEANS THEREON
Hyman D. Bowman, P.O. Box 735, Raleigh, N.C.
Filed Oct. 17, 1963, Ser. No. 316,883
3 Claims. (Cl. 81—165)



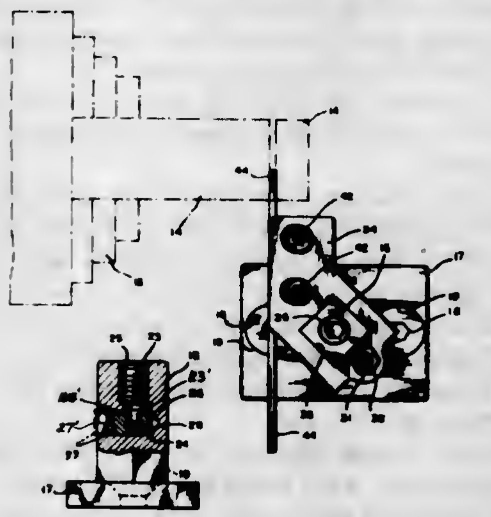
1. In an adjustable wrench of the type having a pair of cooperating jaws each of which has a nut-engaging surface facing the nut-engaging surface on the other jaw, at least one of said jaws being movable toward and away from the other to provide a variable-sized opening between the jaws, the improvement of means carried by each of said jaws for preventing the wrench from slipping past a nut of any size within the capacity of the wrench held thereby comprising a first flange member fixedly carried on one side of one of said jaws and extending outwardly beyond the nut-engaging surface of its associated jaw to obliquely and partially cover one side of the opening formed between the jaws, and a second flange member fixedly carried on the corresponding side of the other of said jaws and extending beyond the nut-engaging surface of said other jaw to obliquely and partially cover said opening, said flange members being parallel and closely adjacent each other on the same side of the wrench and having edges which terminate over the jaw opening and taper along the depth of the jaw opening to provide a V-shaped opening therebetween with a minimum extension of said flange members over the jaw opening at the forward end of the opening and a maximum extension at the rearward end of the opening whereby one member will slide past the other when one jaw moves relative to the other, said flange members being shaped to provide clearance for a bolt carried by a nut of any size within the capacity of the wrench to pass through the jaws while both flanges prevent the wrench from slipping past a nut held by said jaws.

3,183,745
THRUST BEARING MEANS FOR ELECTRONIC ENGRAVING MACHINES
William J. Barron, Peru, Ill., assignor to Graphic Electronics, Inc., La Salle, Ill., a corporation of Delaware
Filed Dec. 29, 1961, Ser. No. 163,289
7 Claims. (Cl. 82—11)



1. In an electronic engraving machine of the type having a rotatable lead screw for axially advancing scanning and cutting components past corresponding rotatable cylinders having copy material and a plate to be engraved mounted thereon, respectively, the improvement comprising, in combination, a housing block rigidly anchored to a fixed body portion of the engraving machine, said block having a horizontal bore therein, a pair of opposed angular roller bearings housed side by side within said bore and supported therein against axial displacement, adapter means extending into said bore in abutting relation with said bearing means whereby said adapter means are rigidly supported against axial displacement in either axial direction, and a horizontally disposed rotatable lead screw in substantial alignment with said adapter means and secured thereto whereby axial thrust on said lead screw will be transmitted through said bearing means to said mounting block and said body portion.

3,183,746
TOOL HOLDERS FOR LATHES
Frank C. Polanski, 4016 16th Ave., Kenosha, Wis.
Filed May 1, 1963, Ser. No. 277,382
5 Claims. (Cl. 82—36)



1. In a tool-holding assembly for a lathe, said assembly having a base with means for adjustably clamping said base to the lathe bed, a post rigid with said base and

projecting upwardly therefrom, said post being of rectangular cross-section and having a transverse bore intermediate its length and having a longitudinal bore communicating with said transverse bore, said longitudinal bore having an outer threaded portion communicating with the upper end of the post, a tool holder having a rectangular internal opening therethrough to snugly and slidably receive said post, said tool holder surrounding said post, set screw means between said tool holder and base for adjusting the height of the tool holder on said post to a predetermined position, a locking pin slidable in said transverse bore of the post, and an actuating screw threaded in the threaded portion of the longitudinal bore of the post, there being means between the lower end of said actuating screw and said pin for causing outward locking movement of the latter when the actuating means is adjusted inwardly.

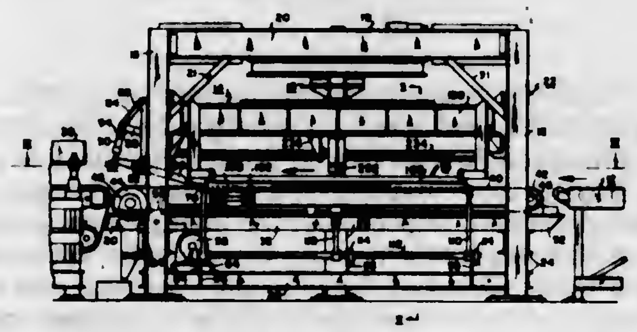
3,183,747

GLASS CUTTING MACHINE

Thomas A. Insolio, Jeannette, Pa., assignor to American-Saint Gobain Corporation, Kingsport, Tenn., a corporation of Delaware

Filed Apr. 15, 1963, Ser. No. 273,002

11 Claims. (Cl. 83—12)



1. A glass cutting apparatus for indexing glass sheets and effecting transverse scores thereon, comprising:

(A) a cutting table;

(B) an endless belt conveyor rotatably mounted on rollers positioned at either end of said table, one surface of said belt conveyor being disposed to travel over the surface of said table.

  (1) means for driving said conveyor means (B) so as to convey sheets of glass across said cutting table (A);

(C) indexing means consisting of an elongated indexing bar suspended transversely above the cutting table disposed to be lowered onto said belt,

  (1) means for lowering and raising said elongated bar;

(D) indexing means consisting of an elongated indexing bar suspended longitudinally along one edge of the cutting table disposed for limited transverse towards and away from said sheets,

  (1) means for effecting transverse movement of said indexing bar towards and away from said sheets;

(E) scoring means comprising an elongated cutting bar longitudinally suspended over the said cutting table, said bar carrying extendible and retractable glass cutters and being disposed to be driven across said sheet transversely so as to score said sheets of glass transversely with said glass cutters,

  (1) means for driving said cutting bar over said cutting table, and

(F) control means disposed to sense glass sheets being conveyed onto said table by said conveyor (B) and cause the drive means (B) (1) to stop and cause the means (C) (1) to lower the indexing bar (C) so that the momentum of said glass sheet will carry its leading edge against the indexing bar (C) and index the sheet transversely.

3,183,748

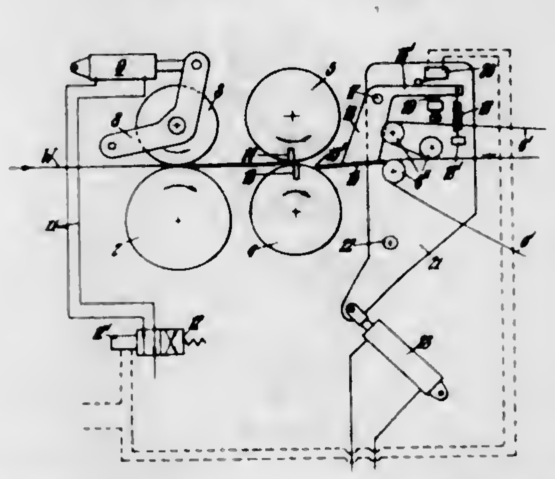
CUTTING DEVICE HAVING MEANS RESPONSIVE TO THE PRODUCT TO DISENGAGE WORK-FEED

Frank William Wilshin, Thornton Heath, Surrey, Jack Frederick Brown, Addington, Surrey, and Hugh Robert Waring Marsh, Esher, Surrey, England, assignors to Masson Scott & Co. Limited, Summerstown, London, England

Filed Feb. 13, 1963, Ser. No. 258,246

Claims priority, application Great Britain, Feb. 22, 1962, 6,979/62

8 Claims. (Cl. 83—61)



1. In apparatus for transversely cutting paper and board material into successive sheets and comprising two coacting rotary knives arranged to cut transversely material fed thereto to divide same into successive sheets, feed means for feeding said material to said knives, and a guide plate immediately downstream of said knives for receiving and guiding sheets issuing from said knives, said guide plate being traversed by said sheets issuing from said knives and having a leading edge closely adjacent to said knives, the improvement comprising a transverse pivot means, means supporting said guide plate from said pivot means, said guide plate having a normal position in which said leading edges lies below the normal path of said sheets issuing from said knives and being movable away from said normal position in a downstream direction by pivoting about said pivot means, means biasing said guide plate into said normal position, and a control system for said feed means, said control system including an element responsive to movement of said guide plate away from said normal position and operatively related with said feed means to disengage said feed means on occurrence of such movement.

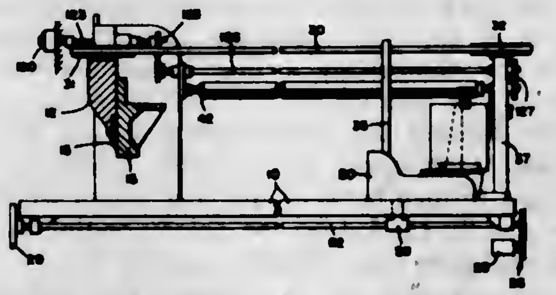
3,183,749

AUTOMATIC MEMORY STORAGE OF THE OPERATIONS OF A CUTTING MACHINE

Russell I. Haywood and Leo D. Barley, Dayton, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Filed Oct. 18, 1961, Ser. No. 145,914

5 Claims. (Cl. 83—71)



1. A paper cutter comprising a power operated knife having a knife control selectively operable to cause a cutting stroke of said knife, a back gage movable toward and away from said knife to position a pile for cutting, drive means for said back gage including a back gage drive control for effecting controlled movement thereof, a memory device capable of storing a plurality of reference marks indicating desired positions of said back gage, a marking means adapted to form reference marks in said memory device, a reading means for reading the reference marks, control circuitry governed by said reading means and connected to actuate said back gage control, means causing relative movement between said memory device and said marking means and said reading means in correlation to back gage movement for marking and/or reading said memory device with reference to the position of said back gage, and a selectively actuated marking control connected to energize said marking means and place a reference mark in said memory device automatically in response to each operation of said knife during an initial job cycle for creating a job cycle control sequence in said memory device while simultaneously initially performing the desired sequence of back gage position and cutting cycles.

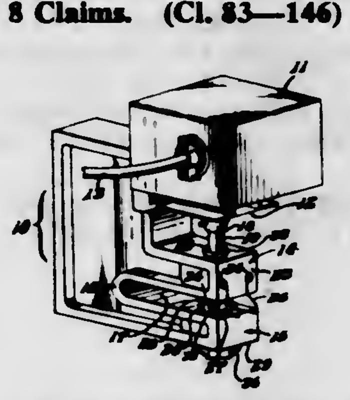
3,183,750

PLASTIC BAG CUTTER

Francis A. Davis, Jr., Lansdale, and Joseph F. Flannery, Philadelphia, Pa., assignors to Paramount Packaging Corporation, Chalfont, Pa., a corporation of Pennsylvania

Filed Sept. 19, 1961, Ser. No. 139,234

8 Claims. (Cl. 83—146)



1. Apparatus for incising sheet material comprising a support frame, a reciprocating shaft carried by said frame, an incising head affixed to an end of said shaft, a die mounted in said frame in alignment with said head, said die having a depression formed therein shaped to correspond to the shape of said head, said die being arranged to receive said head in said depression, guide means for positioning sheet material in said frame between said head and said die, means connected to said shaft for the reciprocal movement thereof whereby said head moves through said sheet material and into and out of said depression in said die, said shaft being arranged for reciprocal movement vertically in said frame, said die being disposed beneath said head, said head and said depression in said die both having the shape of an inverted four-sided pyramid and the cutting edges of said head being disposed at the junctures of the sides thereof.

3,183,751

APPARATUS FOR CUTTING LENGTHS OF RUBBER OR RUBBER-LIKE MATERIAL FROM STRIPS OR SHEETS

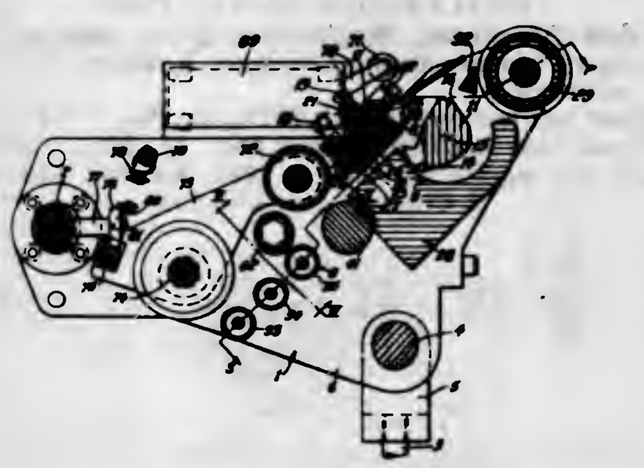
Henry William Trevaskis, Pointe Pleasant, Blackdown, near Leamington Spa, England, assignor to Dunlop Rubber Company Limited, London, England, a British company

Filed Sept. 26, 1961, Ser. No. 140,789

Claims priority, application Great Britain, Oct. 5, 1960, 34,079/60

14 Claims. (Cl. 83—156)

1. Apparatus for severing a strip from a length of material which comprises a frame comprising a pair of parallel side members, means for pivotally supporting said frame at one end on an axis normal to said side members, a pressure roller rotatably mounted on and spanning the space between said side members on an axis parallel to the pivotal axis of said frame at the opposite end of said frame, a feed roller between said pivotal axis and said pressure roller rotatable between said side members on an axis parallel to said pivotal axis, a block between said feed roller and said pressure roller having an upper surface substantially tangent to the surface of said feed roller and extending toward said pressure roller, a fixed cutter element having a lower face spaced above the upper surface of said block to provide a channel for the passage of tread stock from said feed roller to said pressure roller and having a cutting edge transverse to the direction of movement of said length of material at the end of said lower face nearest said pressure roller, and a movable cutter movable from beneath said channel in a direction at an acute angle to the lower face of said fixed cutter element to cutting engagement with said cutting edge of said fixed cutter element to sever a strip of length of material with a chamfered edge.



3,183,752

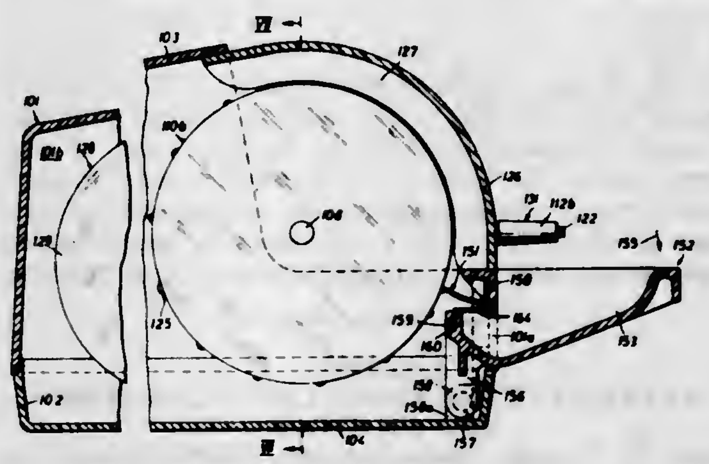
MULTIPLE ROLL TAPE DISPENSER WITH RECEPTACLE

Günter Mews, Bad Godesberg, Germany

Filed May 21, 1963, Ser. No. 281,997

Claims priority, application Germany, May 24, 1962, M 41,468; June 12, 1962, M 41,610

11 Claims. (Cl. 83—167)



7. In a dispenser, particularly for dispensing predetermined lengths of convoluted tape, in combination housing means defining an internal chamber arranged to accommodate a supply of tape and having a front wall provided with a discharge opening through which a length of tape may be expelled from said chamber; and a cutting device including a first knife secured to said housing means and having a cutting edge adjacent to and disposed at a level above said opening so as to be located at the upper side of that portion of tape which is expelled from said chamber, handgrip means articulately secured to said housing means and movable independently of the movement of the tape between two spaced positions, and a second knife secured to said handgrip means and having a cut-

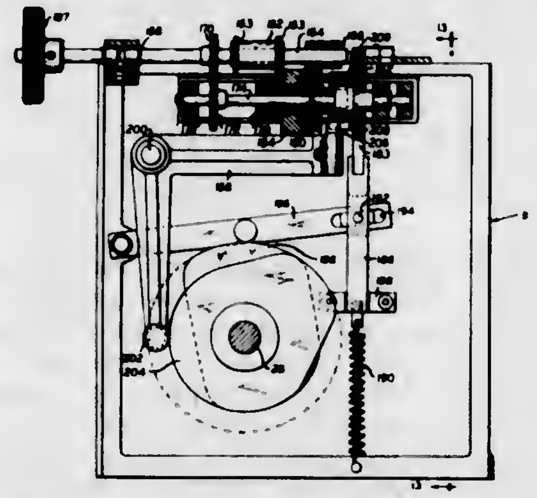
ting edge located at the underside of that portion of tape which is expelled from said chamber when said handgrip means assumes one of said positions, the cutting edge of said second knife cooperating with the cutting edge of said first knife to sever the tape when said handgrip means is moved to the other position.

3,183,753
FILM FEEDER AND CUTTER

Frank M. Flynn, Binghamton, N.Y., assignor to Seary Manufacturing Company, Endicott, N.Y., a partnership

Original application Nov. 21, 1958, Ser. No. 775,412, now Patent No. 3,067,805, dated Dec. 11, 1962. Divided and this application June 5, 1962, Ser. No. 200,253

2 Claims. (Cl. 83—231)



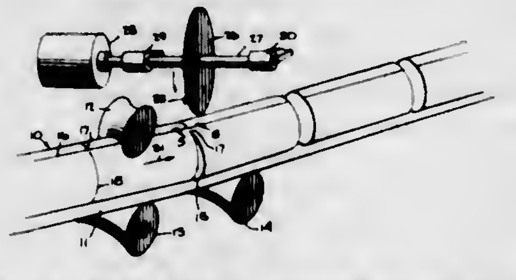
1. In a machine for automatically mounting transparencies in transparency mounts, each of said transparencies being a frame on a roll of film having a perforated edge; means for feeding said film to said machine one frame at a time, comprising a sprocket having teeth adapted to engage said film perforations, a first rotatable shaft for driving said sprocket; and means for intermittently rotating said first shaft comprising a second shaft in axial alignment with said first shaft, means for oscillating said second shaft back and forth, clutch means connecting said second shaft to said first shaft for imparting rotary movement to said first shaft when said second shaft oscillates in one direction and for preventing rotary movement of said first shaft when said second shaft oscillates in the opposite direction, the parts being proportioned so as to rotate said sprocket when said first shaft rotates in said one direction an angular distance equal to the length of one of said frames; means for indexing said sprocket prior to each rotation thereof, cutting means for cutting each of said frames from said roll of film, and means for operating said cutting means after each time said sprocket stops rotating.

3,183,754
APPARATUS FOR SEPARATING LENGTHS OF CAN STOCK

Preben W. Jensen, South Norwalk, Conn., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 6, 1963, Ser. No. 256,733

1 Claim. (Cl. 83—341)



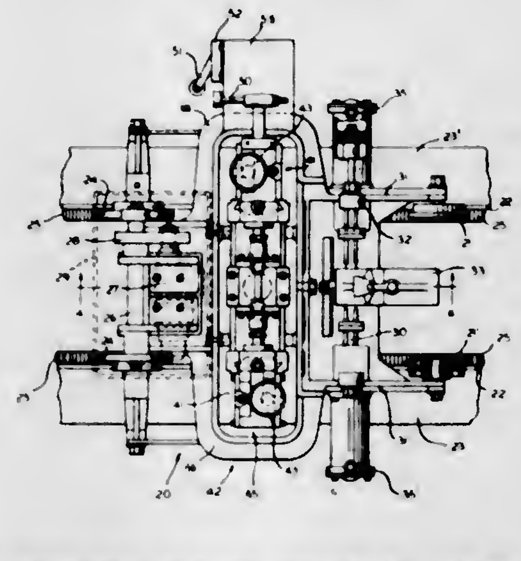
Apparatus for separating a succession of thin sheet metal tubular members for forming can bodies and the like, each of such succession being connected to the succeeding one by a narrow tab-like portion of the sheet metal integral with the trailing end edge of one member and the forward end edge of the next, the members being otherwise separated by transverse slits, said apparatus comprising in combination: means for conveying the succession of members along a predetermined path and at a predetermined speed past a tab-severing location which is relatively fixed in position, said conveying means being shaped and positioned to cause at such location, said path of the members to veer somewhat in a direction to cause said slits to open and expose said tabs for severing; a blade at said location rotatable about an axis which is relatively fixed in a position spaced from said path and in a region with respect to said tabs opposite from said open slits; power means for rotating said blade at a speed and with timing correlated with the conveyor movement, whereby the blade transversely engages and severs the tabs edgewise as same pass said location, said axis extending obliquely with respect to the direction of said path at an angle such that the rotating blade motion has a component along the direction of said path and with a speed in such direction approximating the speed of conveyance of said succession of members.

3,183,755
SPACING MACHINE HAVING AUTOMATIC CONTROL MEANS

Arthur R. Pollasky, deceased, late of Milwaukee, Wis., by Arthur G. Pollasky, executor, 4443 N. 62nd St., Milwaukee, Wis.

Filed June 14, 1963, Ser. No. 288,049

2 Claims. (Cl. 83—396)



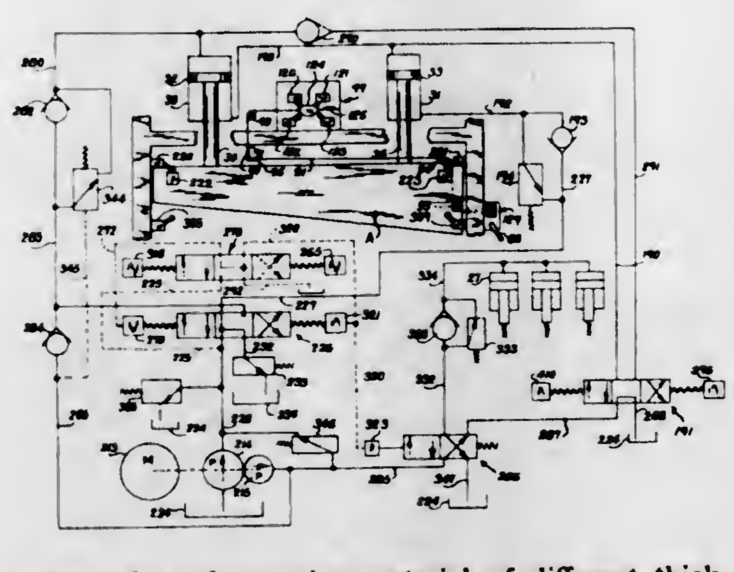
2. In an automatic spacing mechanism for advancing a work piece to preselected positions relative to a tool, said mechanism comprising a track, a gear rack secured to and in parallel relation to said track, a spacer bar secured to and in parallel relation to said track and a stop pin projecting from said bar; the combination with a work piece advancing carriage movable longitudinally of said track and including a reversible motor mounted on said carriage and having a pinion operatively engaging said gear rack, of control means swivelly mounted on said carriage and extending transversely of said bar, trip means on said control means engageable with said stop pin and operative to produce swivel movement of said control means, a control switch mounted on said carriage and operative to control said tool, switch actuating means mounted on said control means and disposed for engagement and operation of said control switch when said control means is swivelled in one direction, a pair of relatively spaced reversing switch means carried by said bar and operative to effect reversal of said motor, and means carried by said carriage alternately engageable with said reversing switches, whereby movement of said carriage on said track is controlled subsequent to operation of said control switch.

3,183,756
CLEARANCE, RAKE ANGLE, AND STROKE LENGTH ADJUSTING MEANS FOR POWER SHEARS

Roy F. Dehn, Wickliffe, Ohio, assignor to The Cleveland Crane & Engineering Company, Wickliffe, Ohio, a corporation of Ohio

Filed Dec. 26, 1962, Ser. No. 247,406

7 Claims. (Cl. 83—530)



3. In a shear for cutting material of different thicknesses, a frame, a support member mounted in said frame and adapted to support a first knife member, an elongated member movable in said frame through a cycle of operation which includes movement through a work stroke and a return stroke, said elongated member being adapted to carry a second knife member inclined at a rake angle to a first knife member on said support member and in position to cooperate wtih a first knife member on said support member to shear material placed therebetween, power means connected to said elongated member for moving said elongated member through said cycle of operation, and means for changing the rake angle of a second knife member mounted on said elongated member simultaneously changing the length of said work and return strokes.

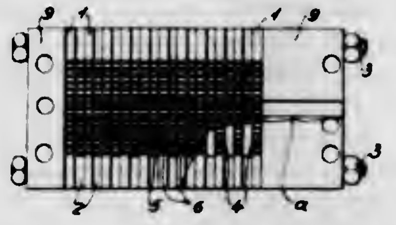
3,183,757
CARD PUNCHING DIES

Villy Frank Sørensen, 5 Maglekildevej, Copenhagen, Denmark

Filed Mar. 12, 1962, Ser. No. 178,797

Claims priority, application Denmark, Mar. 13, 1961, 1,063/61

5 Claims. (Cl. 83—690)



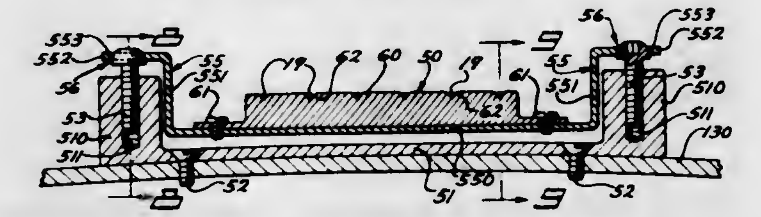
1. A punching die element for use in the punching of rectangular holes in punched cards, comprising a plurality of first steel bars of rectangular cross section each forming in itself a complete and independent element, said first steel bars being placed side by side at a mutual spacing to from a grid, a plurality of grooves extending side by side transversely of said steel bars across at least one face of said grid, a second surface ground steel bar forming in itself a complete and independent element and having a height equal to the depth of said grooves being press fitted in each of said grooves, the outer faces of said second bars and the adjoining faces of said first bar being surface ground in a common grinding operation to form a smooth grid face.

3,183,758
BRIDGES FOR STRINGED INSTRUMENTS

Jack L. Matthew, 28795 Barkman, Roseville, Mich., and Albert Puntari, 16252 E. Eight Mile Road, Detroit, Mich.

Original application July 2, 1963, Ser. No. 292,222. Divided and this application Jan. 15, 1965, Ser. No. 425,810

3 Claims. (Cl. 84—307)



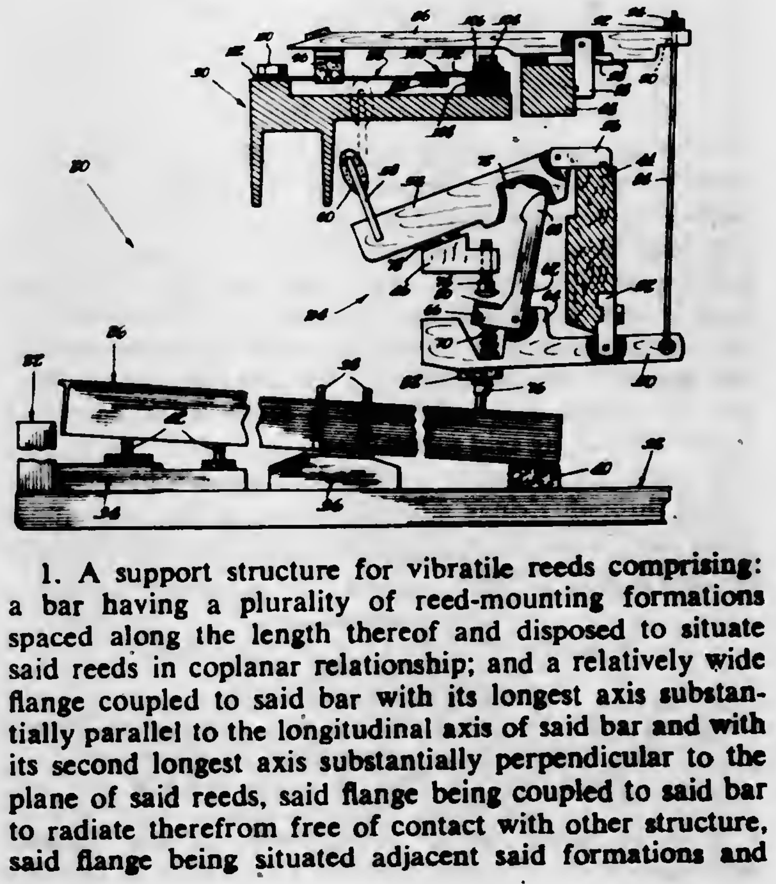
1. In a stringed musical instrument,
a swingable suspension bridge including a base fixed thereon transversely of and below the strings of said stringed instrument, said base having stanchions at opposite ends thereof,
a bridge suspension bar including a low platform, end uprights and outwardly disposed end flanges supported on said stanchions and formed to provide universal movement therebetween,
and a triangular string supporting element disposed longitudinally on said low bridge platform and fixed thereto, the said suspension bridge platform and said string supporting element swinging longitudinally with movement of the strings supported thereon during playing of the said instrument.

3,183,759
RIGIDIZED REED BAR

Harald E. W. Bode, North Tonawanda, N.Y., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio

Filed July 5, 1962, Ser. No. 207,571

14 Claims. (Cl. 84—402)

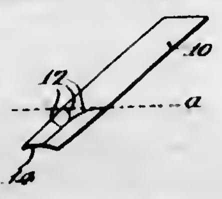


1. A support structure for vibratile reeds comprising: a bar having a plurality of reed-mounting formations spaced along the length thereof and disposed to situate said reeds in coplanar relationship; and a relatively wide flange coupled to said bar with its longest axis substantially parallel to the longitudinal axis of said bar and with its second longest axis substantially perpendicular to the plane of said reeds, said flange being coupled to said bar to radiate therefrom free of contact with other structure, said flange being situated adjacent said formations and

extending along a substantial portion of the length of said bar to provide a member for mechanically reacting to the vibrations of said reeds.

3,183,760
REEDS FOR APPLICATION IN MUSICAL INSTRUMENTS PARTICULARLY IN ELECTRONIC MUSICAL INSTRUMENTS

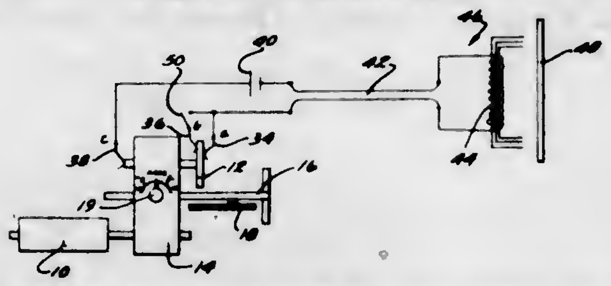
Adolf Michel, Dietramszellerstrasse 2,
Munich 25, Germany
Filed Nov. 7, 1961, Ser. No. 150,677
Claims priority, application Germany, Nov. 9, 1960,
M 47,076
2 Claims. (Cl. 84—408)



1. A reed for use in a musical instrument comprising a thin flat member of uniform thickness from end to end adapted to cooperate with a magnetic field in energy exchange relationship therewith, a deformation provided at a predetermined distance from one end of said reed for fixedly and exactly determining the point at which the reed will bend when vibrating while enabling the provision of a substantially constant area of cooperation between said field and reed for any one of a plurality of positions for said deformation, said deformation being offset from the plane of said reed, and having its longitudinal axial line extending parallel to the central axis of said reed and in a plane parallel to said reed.

3,183,761
METHOD AND MEANS FOR TUNING MUSICAL INSTRUMENTS

Claude P. Van Ooyen, 3710 Cheyenne Drive SW.,
Grandville, Mich.
Filed Mar. 19, 1962, Ser. No. 180,475
5 Claims. (Cl. 84—455)

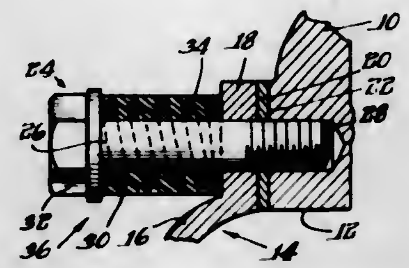


1. A device for tuning musical instruments having a plurality of parallel magnetizable electrically conductive electrically interconnected strings, comprising: means for selectively generating electrical impulses at predetermined frequencies; a solenoid connected to said generating means; and probe means for holding said solenoid in spaced relationship to a string to be tuned while allowing said string to vibrate freely, said probe means carrying a pair of contact bars interposed in series in the electrical circuit connecting said solenoid and said generating means, said contact bars being arranged to close said electrical circuit through strings adjacent to the string being tuned when said probe is in its proper operating position over the string to be tuned.

3,183,762
FASTENING DEVICE

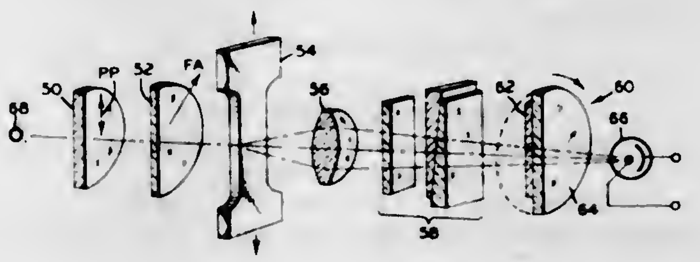
Ougljesa Jules Poupitch, Itasca, Ill., assignor to Illinois Tool Works Inc., a corporation of Delaware
Filed Dec. 26, 1957, Ser. No. 705,270
4 Claims. (Cl. 85—62)

1. A fastening device for securing a first member with respect to a second member comprising a threaded bolt adapted to extend through said first member and to be threaded into said second member, said bolt having radially extending abutment means thereon, a coil spring having a plurality of convolutions encircling said bolt and having a transverse dimension less than said abutment means and disposed beneath said abutment means and having a predetermined minimum axial length when fully axially collapsed and a normal length when unrestrained, and an unyielding rigid heat dissipable element having a melting point less than the remainder of the fastening device elements, said heat dissipable element being of cylindrical configuration and encircling said bolt and coiled spring, said heat dissipable element having a predetermined normal length and resistive of compressive deformation, said element having a length greater than said minimum length of the spring and less than the normal length of the spring, and said fastening device being adapted to be tightened for clamping said element between said abutment means and said first member, and the heat dissipable element being adapted to be dissipated by subsequent application of heat whereby to leave said spring in a semi-expanded condition between said abutment means and said first member to hold said first member against said second member with a predetermined pressure.



3,183,763
POLARIZATION ANALYZERS FOR OPTICAL SYSTEMS EMPLOYING POLARIZED LIGHT

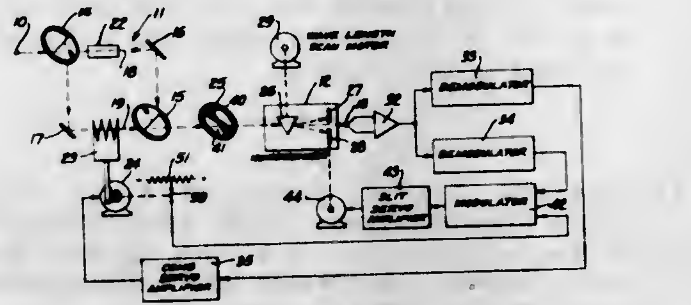
Charles J. Koester, South Woodstock, Conn., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed Dec. 24, 1959, Ser. No. 861,980
29 Claims. (Cl. 88—14)



17. A polarization analyzing assembly for use in an optical system employing a beam of polarized light comprehending a predetermined spectral region, said assembly comprising, in combination, a linear analyzer adapted to be interposed in the path of said beam and having an incident face exposed to said beam when so interposed, a phase-retarding element positioned before said incident face and having its fast axis angularly inclined with respect to the polarization plane of said analyzer, the relative phase-retardation imparted by said element to said beam of polarized light and to the orthogonally related vibrational components thereof when so interposed in said beam being different from an integral number of wavelengths over said spectral region, and means for rotating said analyzer and said phase-retarding element in synchronism when in said beam and about an axis substantially parallel to the path of said beam while maintaining substantially constant said angular inclination therebetween, whereby the transparency of said assembly averaged over a full rotation of said analyzer and said element when in said beam will change with the ellipticity of the light beam incident thereon.

3,183,764
AUTOMATIC SLIT CONTROL FOR ANALYZERS

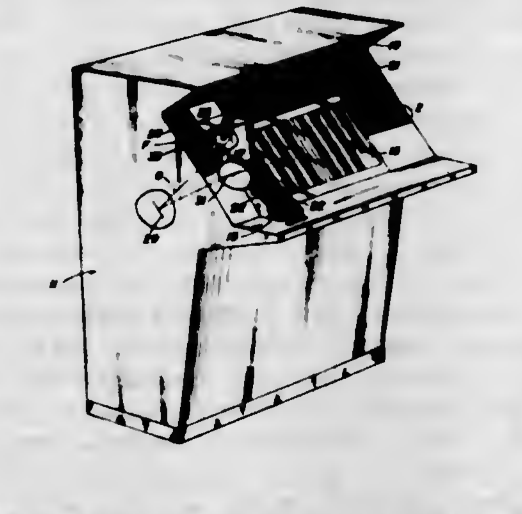
Karl Erik Sandstrom, La Habra, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Nov. 21, 1960, Ser. No. 70,733
6 Claims. (Cl. 88—14)



5. In a double beam, optical null analyzer system, the combination comprising: a radiation source; means defining reference and sample beam paths; a beam attenuator; an attenuator drive for positioning the attenuator in the reference beam path; a monochromator; a radiation sensing unit for generating an electrical signal as a function of radiant energy directed thereto; beam control means for directing radiation from said source through said monochromator to said sensing unit alternately along said reference and sample paths producing radiation at said sensing unit having a first component and a second component; gain control means to adjust the loop gain of said system; means responsive to said first component for producing an attenuator drive signal for actuating said attenuator drive to position said attenuator in said reference beam path and balance the energy in said reference beam path with the energy in said sample beam path; means responsive to said attenuator position for producing a variable reference signal; means for comparing said second component with said reference signal; and means responsive to said comparison means for controlling said gain control means to maintain constant loop gain.

3,183,765
VIEWING APPARATUS

Glen W. Offensend, Norman J. Rosenburgh, and John C. Haelen, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 31, 1960, Ser. No. 66,075
6 Claims. (Cl. 88—24)

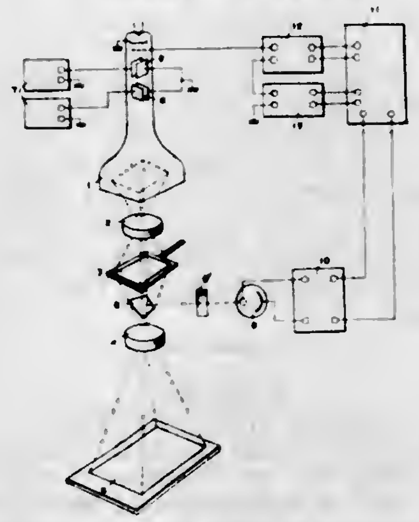


1. Apparatus for viewing, by means of an optical projection system having an optical projection axis, a selected image from an image bearing strip which is slidably mounted in a selected one of a plurality of strip holders, said apparatus comprising:

- (*a*) base means for receiving said one strip holder in a fixed position spaced from the projection axis of said optical projection system;
- (*b*) a platen having a strip supporting surface and being mounted in said base means for movement relative to said optical projection system with said surface moving in the focal plane of said optical projection system in scanning relation to the projection axis thereof;
- (*c*) means for mounting the strip in said one holder in surface contact with said surface;
- (*d*) actuator means for moving the platen and the mounted strip as a unit relative to the fixed holder and to the projection axis to position said selected image in alignment with said projection axis for projection by said optical projection system.

3,183,766
PHOTOGRAPHIC PRINTING APPARATUS

Tomoyoshi Takasaka and Mitsuo Nagayama, Tokyo, Japan, assignors to Logetronics Inc., Alexandria, Va., a corporation of Delaware
Filed June 9, 1961, Ser. No. 116,133
Claims priority, application Japan, June 15, 1960,
35/27,768
7 Claims. (Cl. 88—24)



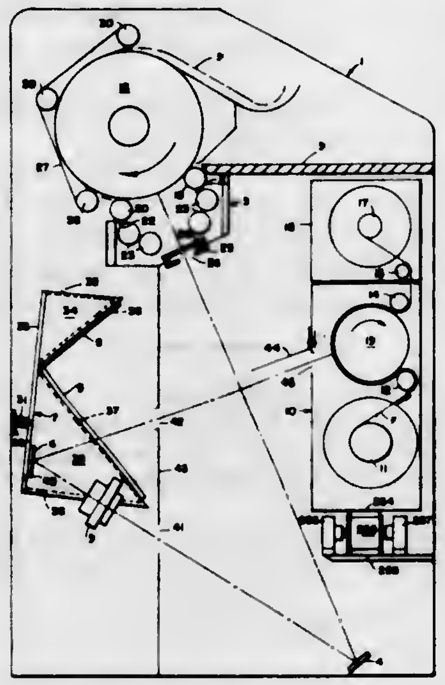
1. Photographic apparatus comprising supporting means for a transparency and a photosensitive surface, a light source and focussing means therefor producing a beam sharply focussed on and scanning said transparency and surface, light intensity sensing and transducing means disposed in the path of light traversing said transparency from said source, means in circuit with said transducing means for separating its output into relatively high and low frequency signal components corresponding to gross and detail contrast of said transparency, and feedback means in circuit with said separating means and light source continuously modifying the intensity of said source as functions of said components.

3,183,767
PHOTOGRAPHIC REPRODUCTION MACHINES

Philip J. Brownscombe, Millington, N.J., assignor to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware
Filed Aug. 30, 1961, Ser. No. 134,876
8 Claims. (Cl. 88—24)

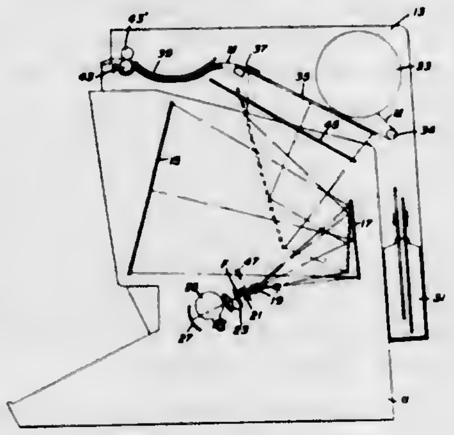
1. A reproduction machine comprising a cabinet containing a lighted, image exposure section, an image recording section, power-driven means in said exposure section for passing a sheet with indicia thereon in a curved path through said image exposure section, means including a lens for directing a narrow image from said exposure

section to said recording section to record the image at a size different from the size of the image on said sheet, driven means in said recording section for passing a sheet of light-sensitive material with exposure to the narrow image in a curved path at a velocity correlated with the velocity at which the sheet is passed through the exposure section to provide a ratio of the velocity of said sheet passing through said exposure section to the velocity of said sheet of light-sensitive material passing through said recording section, respectively, equal to the ratio of the size of the original image and the size of the recorded image, respectively, the ratio of the arc radius in said curved path of said recording section to the arc radius in said curved path in said image exposure section being equal to the linear reduction ratio of said means including a lens.



3,183,768
PROJECTION PRINTER

Norman J. Rosenburgh and Elmer O. Wangerin, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 18, 1961, Ser. No. 160,187
4 Claims. (Cl. 88—24)



1. A photographic printer accessory for use in a device which is adapted to project images for viewing from an image-bearing member, said device having:

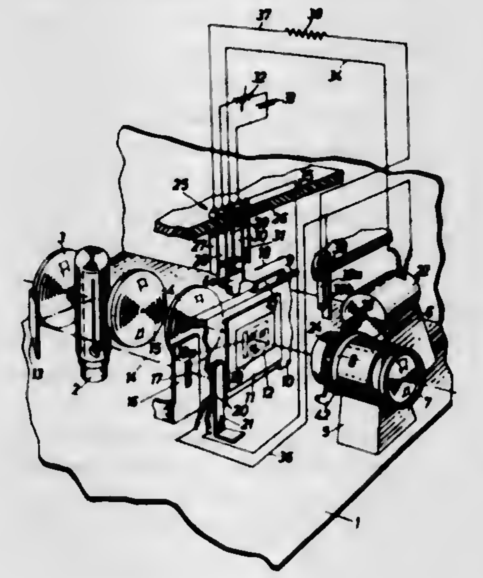
(*a*) a viewing screen,
(*b*) a projecting station for receiving said image-bearing member, and
(*c*) an optical projection system for projecting an image from the member in said projecting station through an optical path onto said screen, said system having a magnification such that the projected image on said screen has a predetermined size,

said accessory comprising:

(1) a printing station for receiving a section of photosensitive print material, said printing station being smaller than the size of said projected image on said screen,
(2) means positionable in said path for directing the projected image to said printing station for exposure on the print material, and
(3) means operatively associated with movement of said directing means for reducing the magnification of said system when said directing means is positioned in said path so that the projected image directed to said printing station is sufficiently reduced in size to fit the printing station and is focused on the print material therein.

3,183,769
AUTOMATIC LIGHT COMPENSATING STRUCTURE FOR PHOTOGRAPHIC PROJECTORS

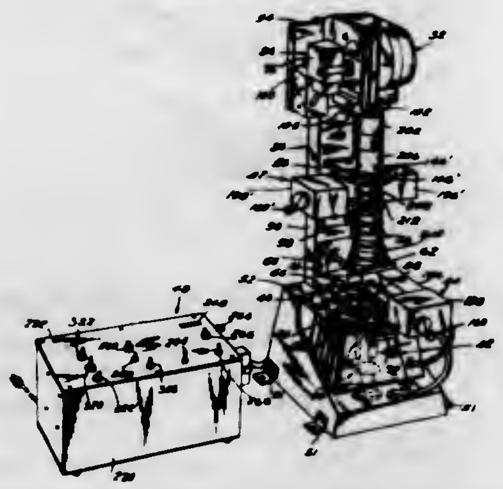
Rudolf Kremp, Grunwald, near Munich, and Willy Kaden, Munich, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed May 14, 1962, Ser. No. 194,382
Claims priority, application Germany, May 17, 1961, A 37,459
15 Claims. (Cl. 88—24)



1. In a photographic projector, in combination, guide means for guiding a transparency for movement along a given path to and from a projecting position; projecting means for projecting an image of a photograph carried by said transparency onto a screen or the like when said transparency is in said projecting position; a mask and a photosensitive transducer means respectively located on opposite sides of said path, said guide means guiding the transparency for movement along said path between said mask and said photosensitive transducer means and said mask being formed with an elongated slot through which light passes to reach said photosensitive transducer means, the light which passes through said slot passing also through the transparency while the latter is moving along said path between said mask and said photosensitive transducer means and said slot being elongated and extending in a direction generally transverse to the direction of movement of the transparency along said path and said slot having a width which is substantially smaller than the length of the transparency in the direction of its path of movement to and from said projecting position; and adjustable means cooperating with said projecting means for adjusting the light intensity with which an image is projected by said projecting means onto a screen or the like, said photosensitive transducer means being operatively connected to said adjustable means for adjusting the latter to provide images of substantially constant light intensity irrespective of variations in the densities of the transparencies from which said images are derived.

3,183,770
AUTOMATIC COPY INSTRUMENT FOR PREPARING MOVIES FROM STILL PICTURES

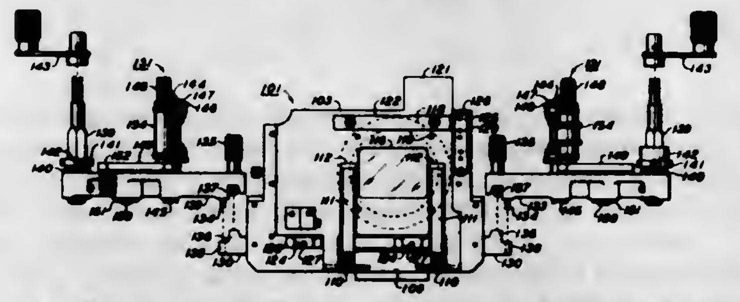
William F. Nyman, Jr., Smithtown, Robert P. Mason, Setauket, Everett L. Noonan, Jr., Staten Island, and William Niederauer, Bay Shore, N.Y., and Warren Putnam Livingston, Summit, N.J., assignors to Bankers Trust Company, New York, N.Y.
Filed May 24, 1962, Ser. No. 197,466
20 Claims. (Cl. 88—24)



1. A copying instrument comprising in combination: a holder for receiving a transparent sheet to be copied; a fixed stationary motion picture film camera spaced from said holder and at one side thereof for exposing movie frames of the film to the sheet to be copied; panning means for automatically moving the holder and the sheet held thereby in substantially any prescribed direction in the plane of the sheet to thereby permit preselected portions of the sheet to be exposed to the movie frames; illumination means at the other side of said holder for illuminating the transparent sheet to be copied; drive means for moving the sheet in synchronization with the advance of the motion picture film; film advance means coupled with said camera for automatically advancing the motion film; and programming means for determining the duration of operation of the synchronized drive means and film advance means in accordance with a preestablished calculation.

3,183,771
MICROFILM HOLDER

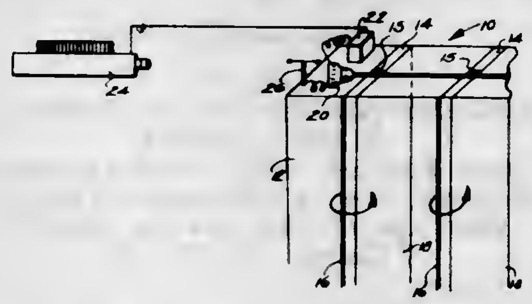
John Rutkus, Jr., Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 3, 1963, Ser. No. 249,199
1 Claim. (Cl. 88—24)



In a film holder, of the type used to position and support record cards or the like containing microfilm images during scanning by a light path of an optical projector and having a front and rear gate securable to a movable carriage in the projector in a position to intersect the light path of the projector during movement of the carriage transversely to the light path, said front and rear gates having optical apertures aligned with each other and with the light path and being biased towards each other to hold the microfilm frame in alignment with the apertures and having record card stops to position the record card between the gates with the microfilm frame aligned with the apertures, the improvement comprising means to allow removal of the record card stops thereby permitting selective positioning of jackets containing a multiplicity of microfilm images, an arm secured to one of said gates and extending in a direction parallel to the gates, a coil spring intersecting a plane extending between the front and rear gates and attached to the end of the arm by a support member movable about the end of the arm to permit height adjustments of the spring, and means to secure the support member and the spring in a position to support the end of the jacket containing microfilm images positioned between the film gates to thereby prevent relative movement of a microfilm image aligned in the optical apertures during movement of the carriage.

3,183,772
ACTION ADVERTISING THRU PROJECTION

Bill F. Fitzpatrick, 914 Rock Creek Ave., Pensacola, Fla.
Filed Mar. 14, 1963, Ser. No. 265,091
1 Claim. (Cl. 88—24)



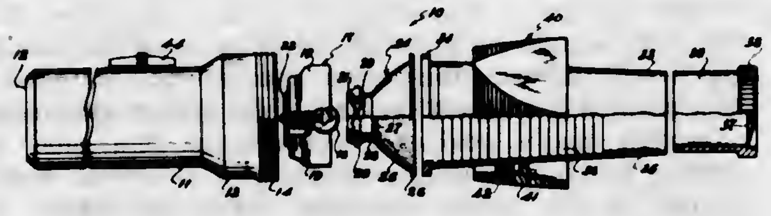
An advertising display comprising in combination a display board having one side for daytime display of a posted and an opposite side for nighttime reflection of a projected image, a projector supported in spaced relation with said display board for projecting an image upon said opposite side thereof, automatic means for controlling the position of both sides of said display board for display purposes, said display board comprising a frame having a front side and a rear side, a plurality of flat strips pivotally supported upon said frame' for rotation about a central longitudinal axis, one side of each of said strips having a portion of a display poster mounted thereon, and the opposite side of each of said strips having a reflector surface, said automatic means affecting rotation of said strips to expose the same one of said sides of all of said strips to said first side of said frame, said automatic means comprising a motor operated gear drive for simultaneously rotating all of said flat strips in a common direction a equal distance, an photo-electric cell connected in circuit with said motor operated gear drive for energizing said drive to rotate said reflector surface side of said strips toward said front of said frame in response to the absence of daylight, and to rotate said poster side of said strips toward said front of said frame in response to the presence of daylight, and wind sensing means for energizing said gear drive to rotate said strips to an intermediate right angle position in which all of said strips substantially lie in a plane extending normal to the plane of said frame in response to the presence of a predetermined wind force exerted upon said strips.

3,183,773
PROJECTION POINTER

Alex J. Weinstein, Mount Vernon, N.Y., assignor to The Edmalite Corporation, New York, N.Y., a corporation of New York
Filed Apr. 1, 1963, Ser. No. 269,416
3 Claims. (Cl. 88—24)

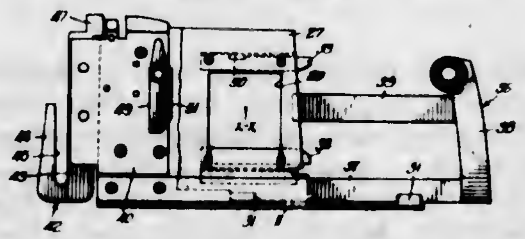
1. A projection pointer comprising
(A) a casing open at its front end,
(B) means supporting a light bulb at said front end of the casing, and having a forwardly opening, nonreflective surface extending around the light bulb,

(C) means in said casing for energizing the light bulb,
(D) a translucent open-ended tube extending forwardly from said front end of the casing, said tube tapering toward its front end so that rays of light from the filament of said bulb impinging against said tube are directed radially outward through the latter, and
(E) a plano-convex lens having a mount carried by the front end of said tube and adjustable axially with respect to said tube to cause said lens to project substantially only an image of the filament of the light bulb focussed on a remote projection surface.



3,183,774
SLIDE PROJECTOR HAVING RECIPROCATING SLIDE CARRIER

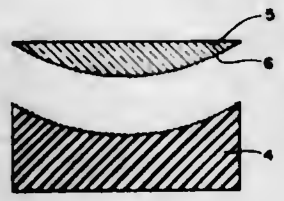
Karl F. Kurz, Portland, Oreg., assignor to Sawyers, Inc., Portland, Oreg., a corporation of Oregon
Filed Apr. 17, 1962, Ser. No. 188,107
7 Claims. (Cl. 88—28)



1. In combination in a slide projector, a casing having a slide viewing aperture provided therein in alignment with the optical axis of the projector and a slide-tray-receiving groove extending along one side thereof, a slide carrier slidably mounted in said casing for reciprocating movement transversely of the optical axis, slide pushing means provided at the outer end of said slide carrier for transferring a slide from a slide tray disposed in the slide-tray-receiving groove to a viewing position in register with said slide viewing aperture upon inward movement of said slide carrier, an upstanding plate member mounted on the opposite end of said slide carrier and having a generally vertical outer edge, a slide-engaging flipper arm pivotably mounted on said plate member and operable during a portion of the outward movement of said slide carrier to return a slide to the slide tray at a faster rate of movement than the corresponding return rate of movement of said slide carrier, an electric cycle motor mounted in said casing on the opposite side of the optical axis from said slide-tray-receiving groove and forwardly of the path of movement of said slide carrier, a drive gear mounted adjacent said cycle motor for being driven by the latter through a gear train, a radial arm secured on the rear surface of said drive gear and having a radial length approximately equal to one-half the length of the path of movement of said slide carrier inwardly or outwardly of said casing, a rearwardly projecting cylindrical drive pin mounted on the outer end of said radial arm, vertically extending slot means provided on said outer edge of said upstanding plate of said slide carrier with said drive pin being engageable therein, whereby upon each revolution of said drive gear said slide carrier is moved both inwardly to transfer a slide from a slide tray to a position in register with said viewing aperture and outwardly to return a slide to the slide tray, and a cycle motor stop switch mounted in said casing adjacent said drive gear and adapted to be actuated by said drive pin at the end of each inward movement of said slide carrier.

3,183,775
BACKLIT PROJECTION SCREEN

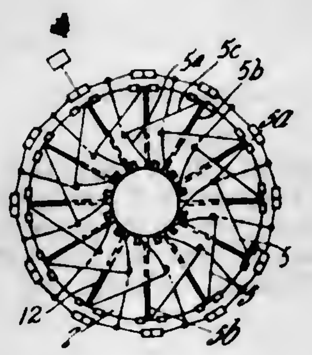
Paul C. Robison, deceased, late of Pacific Palisades, Calif., by Elaine C. Robison, administratrix, Pacific Palisades, Calif., assignor to FMA, Inc., El Segundo, Calif., a corporation of California
Filed Sept. 10, 1962, Ser. No. 223,296
2 Claims. (Cl. 88—28.93)



1. A projection screen that more effectively projects a picture or light image, said screen comprising: a transparent screen body having an anterior surface upon which the picture is viewed and a posterior surface upon which the light image is projected, said posterior surface being covered with a layer of randomly distributed hemispheres in which some of the hemispheres contact one another and others of them are in spaced proximity to one another, said hemispheres being formed integrally with said screen body and constituting the projection surface of the screen.

3,183,776
MIRROR COVER FOR REFLECTING TELESCOPES

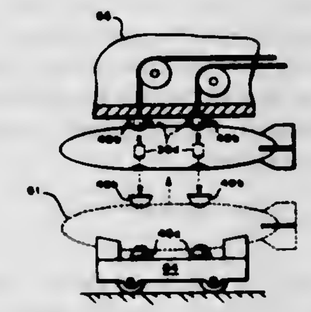
Douglas Edward Wallis, Newcastle-upon-Tyne, England, assignor to Sir Howard Grubb Parsons & Company Limited, Newcastle-upon-Tyne, England
Filed Oct. 2, 1961, Ser. No. 142,051
Claims priority, application Great Britain, Oct. 12, 1960, 34,978/60
2 Claims. (Cl. 88—32)



1. In a telescope incorporating a mirror, a mirror cover comprising a series of movable cover members pivotally mounted around the periphery of the mirror for pivotal movement toward and away from the axis of the mirror, each cover member having two straight converging sides which, when the cover members lie in closed position in a plane substantially perpendicular to the axis of the mirror are disposed radially with respect to said axis, means coupled to said cover members for moving said members in unison and causing them to pivot about the periphery of said mirror from said closed position where they fit together to cover at least an annular portion of the mirror to an open position in which the cover members lie in different planes with gaps defined between adjacent straight sides of adjacent cover members, a plurality of shaped flexible members, each having opposite straight diverging edges and a connecting edge extending between said straight edges, means connecting a first straight edge of each flexible member to a first straight side of a cover member with the connecting edge of each flexible member being located inwardly of the periphery of the mirror and each of said flexible members being dimensioned so that with the cover members closed the other straight edge of each flexible member overlaps the adjacent cover member and guide means on each cover member and acting on the connecting edge of the flexible member of an adjacent cover member to maintain contact between each said flexible member and the cover member which it overlaps whilst permitting relative movement between the cover members and flexible members to cover said gaps for any open position of said cover members.

3,183,777
CONNECTOR ALIGNING DEVICE

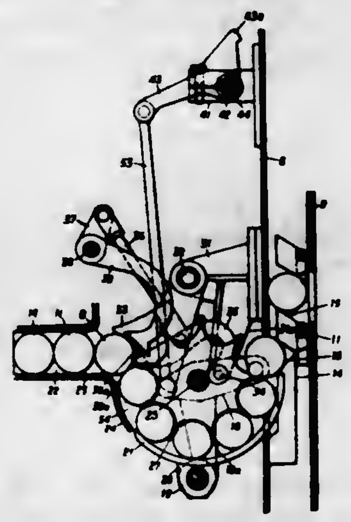
Carl A. Damm, Upper Black Eddy, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Original application Oct. 26, 1962, Ser. No. 233,490, now Patent No. 3,121,583, dated Feb. 18, 1964. Divided and this application Aug. 29, 1963, Ser. No. 305,563
2 Claims. (Cl. 89—1.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A unified bomb stowage, handling, suspension and release system comprising:
a bomb having an upper and lower pair of stud means flush with the surface thereof and an associated upper and lower pair of aligning means surrounding said stud means and being frictionally retained on said bomb, said aligning means including a positive mechanical locking means thereon for selective engagement with a connector, said aligning means and said associated locking means being rotatable between a locked and unlocked position with respect to the connector,
an overhead transfer mechanism including a pair of downwardly extending connectors having releasable locking connection with said upper pair of stud means,
a supporting base having a pair of upwardly extending connectors thereon having releasable locking connection with said lower stud means on said bomb, said supporting base having bomb chocks associated therewith,
a wheeled transfer dolley including a pair of upwardly extending connectors being associated with said overhead transfer mechanism for receiving said bomb for transportation to an aircraft,
said transfer dolley connectors having positive locking connection with said lower pair of aligning means and releasable locking connection with said lower stud means, whereby said lower aligning means will be retained on said transfer dolley,
and an aircraft having hoisting means associated therewith, said hoisting means formed with a pair of connectors having releasable locking connection with said upper pair of stud means and positive locking connection to said upper pair of aligning means, whereby the upper pair of aligning means will be retained on the aircraft when the bomb is released.

3,183,778
CARTRIDGE SUPPLY DEVICE

Rudolf Stadelmann, Zurich, Switzerland, assignor to Verwaltungsgesellschaft der Werkzeugmaschinenfabrik Oerlikon, Zurich-Oerlikon, Switzerland
Filed Nov. 5, 1963, Ser. No. 321,631
Claims priority, application Switzerland, Nov. 9, 1962, 13,164/62
2 Claims. (Cl. 89—33)



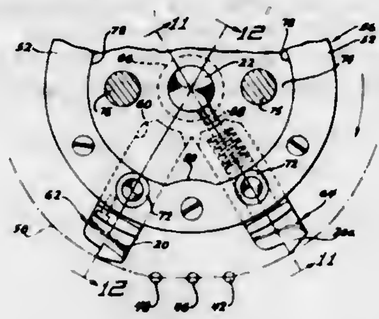
1. A cartridge feeder device for an automatic firearm, comprising in combination: a feeder channel adjoining said firearm and enclosing a feeder path of the cartridges thereto, guides arranged ahead of said feeder channel and determining the conveying path of the cartridges, conveyor means engaging into said conveyor path for the transport of the cartridges lying loosely side by side, a cartridge operated loading lever having a drop-off position in which it is engaging into said conveyor path and a loading position in which it disengages the cartridges moving along said conveyor path, a pusher member having a position of readiness outside said feeder path and a working position inside said feeder path and on transition from said position of readiness to said working position pushing along the cartridges located in said feeder channel, a connecting member connecting said loading lever with said pusher member, spring means moving by the aid of said connecting member and after the passage of the last cartridge through said guides arranged ahead of said feeder channel said loading lever from its loading position into its drop-off position and said pusher member from its position of readiness into its working position, said conveyer means moving said loading lever from its drop-off position into its loading position to load said spring means by the action of the first cartridge being pushed through said guides.

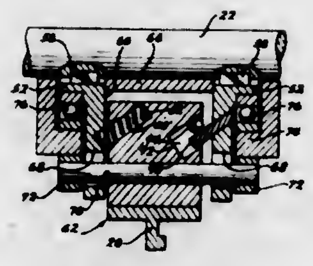
3,183,779
CUTTER DEVICE FOR MANUFACTURING T OR L SLOTS

Hans Nagel, Gingen (Fils), Germany, assignor to Ex-Cell-O G.m.b.H., Eislingen (Fils), Wurttemberg, Germany
Filed July 5, 1961, Ser. No. 122,026
2 Claims. (Cl. 90—11)

1. An L-slot cutter device comprising,
(*a*) a rotatable shaft,
(*b*) a cutter holder rotatable with said shaft,
(*c*) at least one L-shaped cutting tool in said cutter holder and extending radially with respect to said shaft,
(*d*) said cutting tool movably secured in the cutter device, a cam member within said cutter device located between said rotatable shaft and cutter holder and held stationary relative thereto,
(*e*) a guide means within the cutter device,

(*f*) said cam member moving the cutting tool radially toward and away from the shaft at a synchronized time during each revolution, and





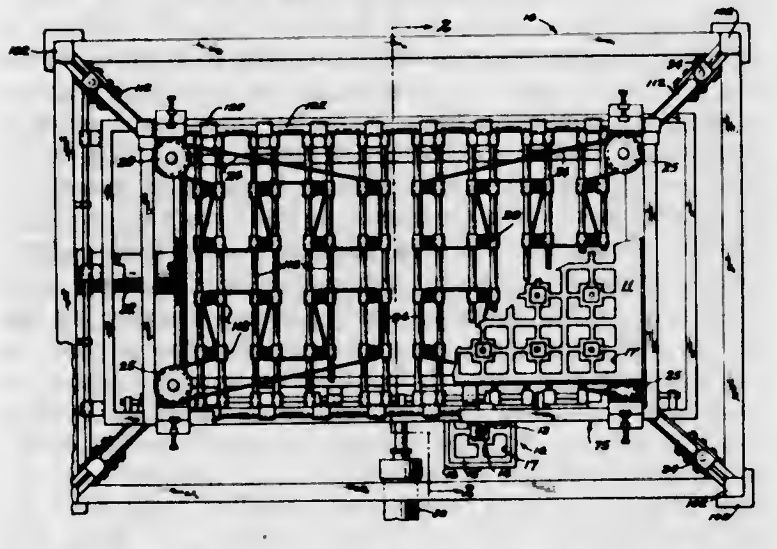
(*g*) said guide means moving the tool in an axially reciprocating movement during said radial movement.

3,183,780
DECORATIVE DESIGN CARVING MACHINE

Jack M. Little, Oakland, Calif., assignor to Spiro Vlahandreas

Filed Sept. 23, 1963, Ser. No. 310,554

2 Claims. (Cl. 90—13.2)



1. Apparatus for carving a pierced work design of a multiply repeated silhouette figure in a building material sheet to form a decorative panel which comprises,

- (*a*) a stationary support frame,
- (*b*) a support bed movably positioned in said frame, said bed being formed by an open, rectangular box member to support only the edges of a sheet of building material,
- (*c*) means for the clamping the edges of a building sheet to said box member for integral movement therewith,
- (*d*) a multiplicity of cutter elements equally spaced from each other in a plurality of rows and held by said frame above said support bed, to permit pierced work carving of said sheet coextensive with the opening in said box and without interference by said support bed,
- (*e*) a pattern support member affixed to one side of said support bed and extending outwardly in a plane parallel with said box member for integral movement with said support bed,
- (*f*) means for integrally moving said support bed and said pattern support member vertically, longitudinally and transversely relative to said stationary support frame,
- (*g*) a position sensing unit mounted on said frame above said pattern support member,
- (*h*) said sensing unit including a stylus member movable from a null position both longitudinally and transversely relative to a pattern mounted on said pattern support member,
- (*i*) fluid drive means between said support bed and said frame, said drive means including (1) means operable to drive said cutters vertically through said sheet, and (2) means to drive said bed transversely and longitudinally in response to the position of said stylus relative to a pattern on said pattern support, the motion of said bed transversely and longitudinally being in a direction opposite to the movement of said stylus relative to said pattern, said cutters being simultaneously driven to cut in unison multiple replicas in silhouette of said pattern in said sheet and thereby to permit movement of said bed in response to the deflection of said stylus, said movement of said bed in response to said stylus movement being continuous until said pattern is driven to a position where it returns said stylus to null position in said positioning sensing element, thereby terminating the cutting of said sheet by said cutters to duplicate in said sheet under each of said cutters the design in said pattern.

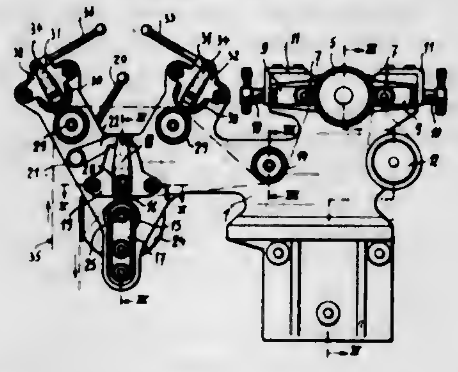
3,183,781
APPARATUS FOR LAPPING CHAINS

Lucien Meyrat, Moudon, Switzerland, assignor to Meyrat & Luisoni, a firm of Switzerland

Filed Nov. 7, 1963, Ser. No. 322,240

Claims priority, application Switzerland, Nov. 21, 1962, 13,639/62

5 Claims. (Cl. 90—19)



1. In an apparatus mounted upon a milling machine for continuously and simultaneously presenting the opposite faces of an elongated workpiece such as a chain in a supported manner to a milling cutter operatively associated with the milling machine, the combination of, a frame supported by the milling machine, a pair of adjacent coaxially-disposed twin cylinders journalled in said frame and being independently rotatable in opposite directions with respect to each other, a return wheel journalled in said frame on an axis parallel with and spaced from the axes of the twin cylinders of said pair thereof, a driving means for driving the chain relatively to the twin cylinders of said pair thereof, and a braking device for tensioning the chain during entrainment thereof over one of the twin cylinders of said pair thereof and over said return wheel and returnably over the other one of the twin cylinders of said pair thereof with one face of the chain bearing upon one of and with the opposite face of the chain bearing upon the other of the twin cylinders of said pair thereof for presenting opposite faces of the supported chain to the milling cutter.

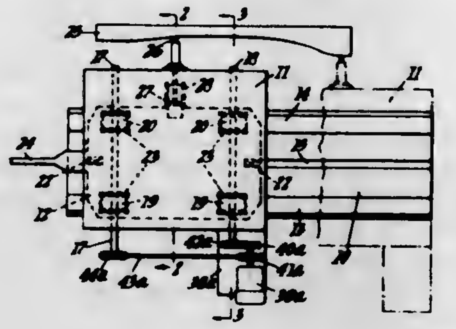
3,183,782
MACHINES HAVING A MOVABLE WORK OR TOOL SUPPORTING TABLE

John Alfred Mills, 24 Kingsley Ave., Melton Park, North Gosforth, Newcastle-upon-Tyne, England

Filed June 26, 1961, Ser. No. 119,725

Claims priority, application Great Britain, June 27, 1960, 22,381/60; Apr. 18, 1961, 13,907/61

2 Claims. (Cl. 90—58)



1. In a machine having a bed, spaced parallel tracks on said bed, a sub-table, rollers mounted on said sub-table and engaging said tracks to support said sub-table for movement longitudinally of said bed, co-operating means on said sub-table and bed to guide said sub-table in a fixed longitudinal path of movement, at least two spaced shafts slidably mounted on said sub-table for movement tranversely of said fixed longitudinal path of movement, the said shafts extending through said rollers to mount the same on said sub-table, said rollers being freely rotatable with respect to said shaft and the said shafts being freely slidable with respect to said rollers, a table directly supported by said shafts and movable therewith whereby said table and sub-table may move in said fixed longitudinal path of movement, or said table may move transversely of said fixed longitudinal path of movement with said sub-table stationary, or said table may move in a path which is the resultant of movement of said sub-table in said fixed longitudinal path of movement and movement of said table transversely of said fixed longitudinal path of movement and means provided for positively rotating said shafts to overcome static friction between said rollers and said shafts.

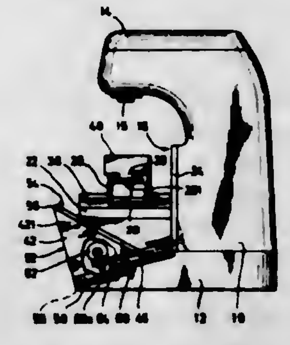
3,183,783
ARRANGEMENT FOR MOVING COMPONENTS OF MACHINE TOOLS AND THE LIKE

Adolf Hüller, Ludwigsburg, Germany, assignor to Karl Hüller G.m.b.H., Wurttemberg, Germany

Filed July 5, 1962, Ser. No. 207,752

Claims priority, application Germany, July 6, 1961, H 43,053

7 Claims. (Cl. 90—58)



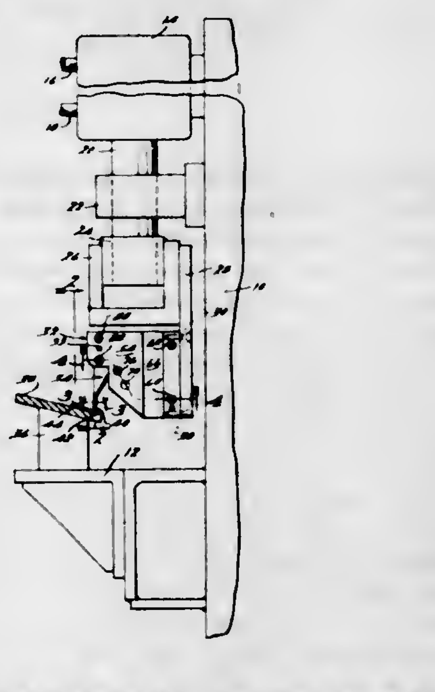
1. In a machine tool, in combination, first supporting means having first elongated guide means; second supporting means projecting beyond said first supporting means and comprising second elongated guide means extending in a direction away from and making an angle of less than 180 degrees with said first guide means; a slide mounted in and reciprocable along said first guide means, said slide having a side facing said second guide means; and an arrangement for reciprocating said slide along said first guide means, said arrangement comprising a motion transmitting member mounted in and reciprocable along said second guide means in directions toward and away from said first guide means, said member having a side slidably engaging the side of said slide, and means for reciprocating said member along said second guide means, an externally threaded spindle extending into said motion transmitting member and having an end anchored in said first supporting means, and a motor-driven spindle nut mounted in said motion transmitting member and meshing with said spindle.

3,183,784
BURRING MACHINE

Roger G. Cudini, Birmingham, Mich., assignor to Moynahan Bronze Company, Flat Rock, Mich., a corporation of Michigan

Filed July 19, 1961, Ser. No. 125,193

5 Claims. (Cl. 90—90)



1. A broaching apparatus for removing burrs from the opposite sides of a slot, comprising: a pair of cutters; motor means for reciprocating said cutters into and out of a slot to be de-burred; a cutting edge on each of said cutters extending obliquely to the direction of reciprocation of said cutters, said cutting edges being located in spaced-apart planes each parallel to the sides of the slot to be de-burred; and means for securing each of said cutters to said motor means so that they are rigid with respect to the latter in the direction of reciprocation and flexible with respect to the latter in a transverse direction perpendicular to said spaced-apart planes, whereby when said cutters are reciprocated into a slot said oblique cutting edges cut burrs from the opposite sides thereof.

3,183,785
ADAPTIVE GAIN SERVO ACTUATOR

Jerald D. Bidlack, Fraser, Mich., assignor to Cadillac Gage Company, Warren, Mich.

Filed June 26, 1963, Ser. No. 290,806

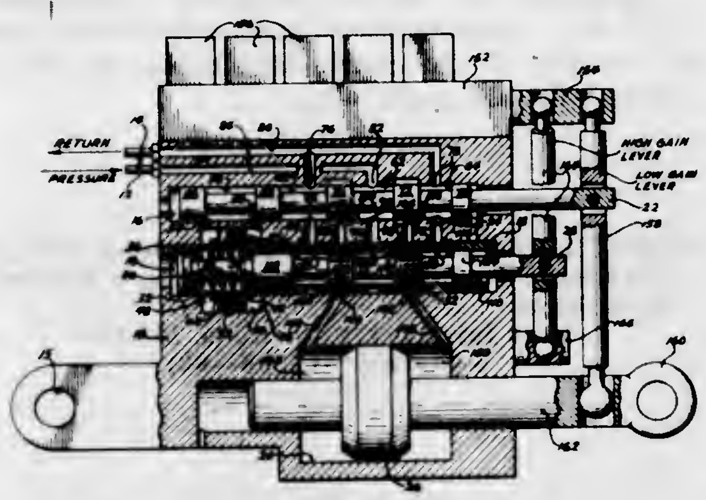
17 Claims. (Cl. 91—20)

1. A fluid operated power servo actuator providing amplitude and power amplifications between an input linear positioner and an output servo power booster comprising in combination:

- said linear positioner having an output member positionable to any one of a plurality of positions in response to command signals;
- said servo power booster having a fluid operated output member capable of linear motion;

servo valve means adapted to control fluid flow for causing the direction and amount of displacement of the servo power booster output member to be dependent from the direction and amplitude of displacement of the linear positioner output member;

first linkage means operated from the linear positioner output member for mechanically operating the servo valve means:



supplementary additive means responsive to the amplitude of displacement of the linear positioner output member for continuously metering added fluid flow to and from the servo power booster in order to increase the response velocity of said booster proportionally to the amplitude of displacement of the linear positioner output member, said supplementary additive means including limiting means for rendering said supplementary means inoperative below a first predetermined amplitude of displacement of the linear positioner output member, fully operative above a second predetermined amplitude and progressively operative in function of the amplitude for displacements comprised between said first and second predetermined amplitudes;

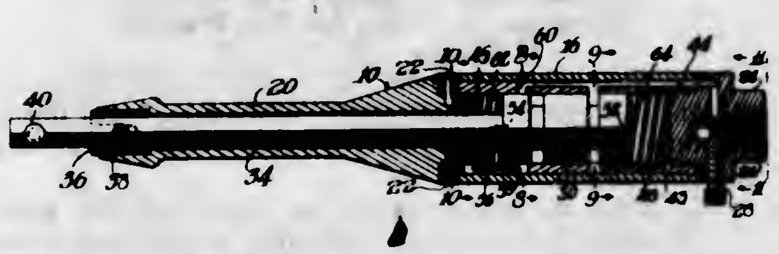
second linkage means operated from the linear positioner output member for mechanically operating the complementary means;

mechanical feedback means from the power booster output member for controlling the servo valve means to cause said servo valve means to close and stop further displacement of said output member as soon as said output member has reached a position analogous to the position of the linear positioner output member;

time delay means progressively cutting off the action of the limiting means after a predetermined time has elapsed.

3,183,786
PNEUMATIC TOOL

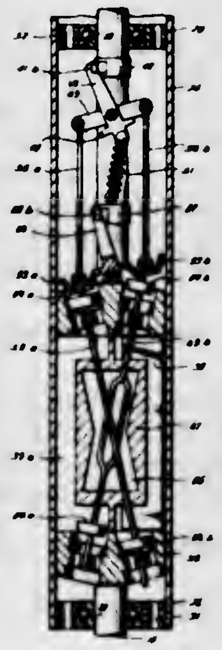
Howard A. Defoe, Jr., 11 Rambo Drive, Rambleton Acres, New Castle, Del.
Filed Aug. 28, 1963, Ser. No. 305,155
4 Claims. (Cl. 91—232)



1. A pneumatic tool comprising a slender elongated housing, a chamber in each end of said housing, a piston intimately reciprocating in said housing, a tool bit holder integral with said piston, said holder and said piston being longitudinally disposed with respect to the longitudinal axis of said housing, said piston being of relatively small mass and small inertia with respect to said housing, said housing having an aperture in one end whereby the reciprocal motion of said piston in said housing may be transmitted to said tool bit holder to provide an operating force outside of said housing, a fluid inlet at the other end of said housing, channel means in said housing and in said piston for alternatively directing fluid from said inlet to each other of said chambers to drive said piston in a forward stroke and in a return stroke, said channel means comprising a drive passage communicating with said fluid inlet and having a pair of branches terminating adjacent said piston, a forward stroke passage communicating with one of said chambers and terminating adjacent said piston, a return stroke passage communicating with the other of said chambers and terminating adjacent said piston, and groove means in said piston whereby movement of said piston causes said groove means to open and close communication of said drive passage with said forward stroke passage and said return stroke passage to permit said fluid to alternately flow to each of said chambers.

3,183,787
FLUID MOTOR

Clyde E. Bannister, 2727 Carolina Way, Houston, Tex.
Filed Mar. 18, 1963, Ser. No. 265,839
21 Claims. (Cl. 91—266)



3. A fluid-actuated oscillating motor comprising:

a housing having a chamber,

a blade mounted on a drive shaft and dividing said chamber into a first section and a second section,

each of said sections having a separate intake port and a separate exhaust port communicating therewith,

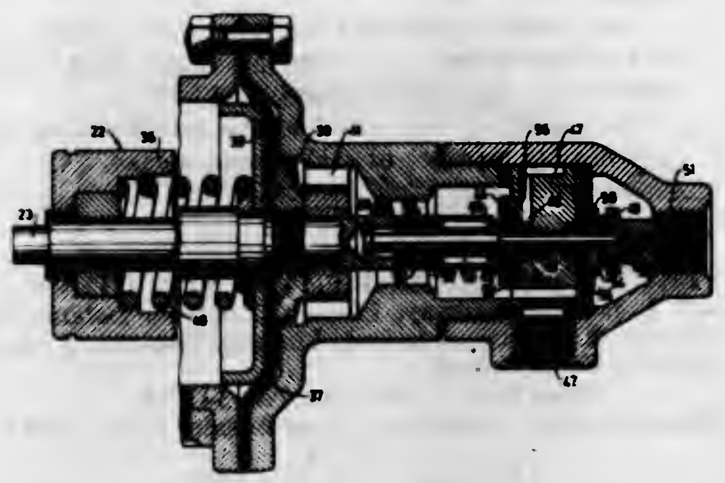
a first substantially rigid valve member mounted in said housing controlling the inlet port of said first section and the exhaust port of said second section,

a second substantially rigid valve member mounted in said housing controlling the inlet port of said second section and the exhaust port of said first section, and

actuator means compelled to move as an incident of the movement of said blade to control the movement of said valves.

3,183,788
DEVICES FOR PERFORMING ROTATIONAL MOVEMENTS

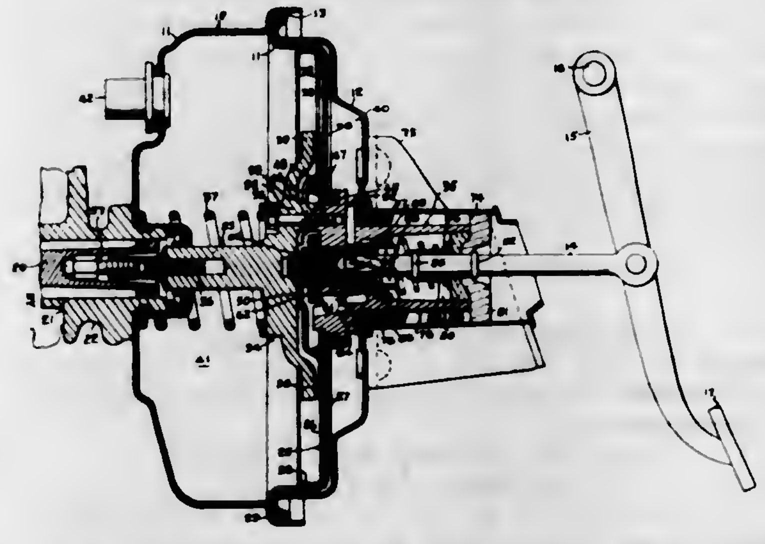
Bror Sigurd Olsson, Mariestadvagen 22, Johanneshov, Sweden
Original application Nov. 9, 1962, Ser. No. 236,576. Divided and this application Nov. 19, 1963, Ser. No. 324,701
5 Claims. (Cl. 91—342)



1. Plate valve means, for use in connection with a pressure fluid actuated servomotor including a reciprocating working element, said plate valve means being adapted for supplying and discharging pressure fluid to a working chamber of the servomotor, said plate valve means comprising two opposite movable valve plates interconnected for tied movement and two seats defining valve flow openings, a shoulder formed on each valve on each plate making a sliding fit with the flow opening of the respective valve seat along a limited length of the stroke of the plate, and an annular space defined around said flow opening between each valve plate and its seat, thereby balancing the pressures on the opposite surfaces of the valve plates prior to valve closing and opening.

3,183,789
FLUID PRESSURE MOTOR MECHANISM

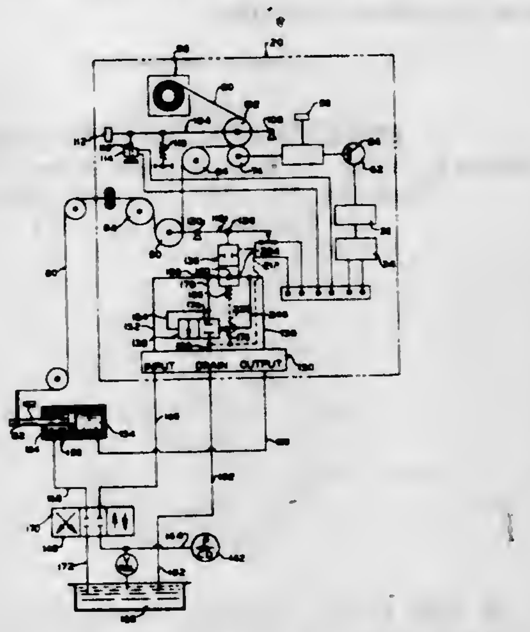
William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed May 14, 1963, Ser. No. 280,270
16 Claims. (Cl. 91—369)



1. In a fluid pressure motor mechanism, a motor having an expansible chamber, a flexible diaphragm forming one wall of said chamber, a distortable diaphragm plate supporting said diaphragm, valve means adapted to direct fluid pressure from a source to said expansible chamber and from said chamber, means engaging said diaphragm plate to transmit force from said diaphragm plate, said diaphragm plate being adapted to distort in response to the fluid pressure in said expansible chamber, and manually operable means to control said valve means, said diaphragm plate directly engaging said manually operable means whereby distortion of said diaphragm plate opposes said manually operable means to thereby tend to reduce the power of said motor mechanism.

3,183,790
HYDRAULIC FEED CONTROL APPARATUS

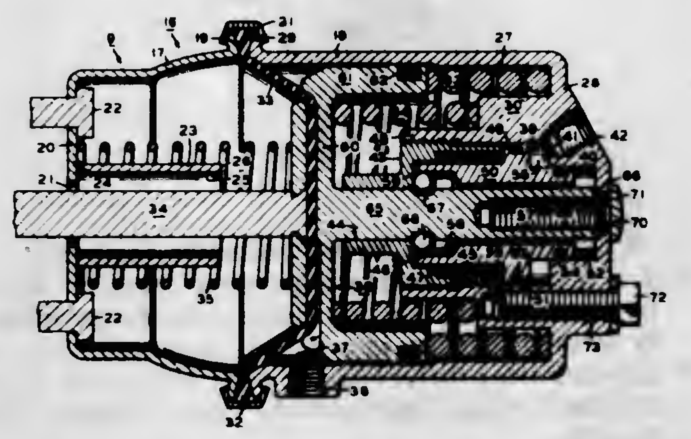
Robert E. Raymond, 131 Norcross Road, Zanesville, Ohio
Filed Nov. 14, 1962, Ser. No. 237,577
22 Claims. (Cl. 91—435)



1. A fluid motor control apparatus comprising, in combination, frame means; a hydraulic circuit including a source of pressurized fluid and a reservoir; a fluid motor in said hydraulic circuit; flow control valve means in said hydraulic circuit and including a moveable main flow control element for controlling the flow of hydraulic fluid therein; flexible strip metering means mounted on said frame and including an operator associated with said flow control element; a flexible strip engaging said strip metering means and including a first end for connection with the output shaft of said fluid motor and a second end; strip return means connected to said second end of said flexible strip; and a synchronous prime mover for operating said strip metering means at a constant reference speed.

3,183,791
FRICTION DEVICE OPERATING MECHANISM

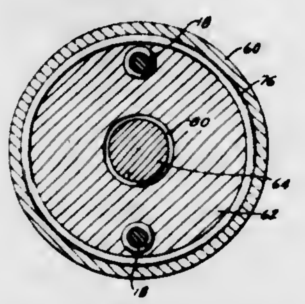
Oliver B. Cruse, Florissant, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,720
10 Claims. (Cl. 92—24)



1. A friction device operating mechanism comprising a housing, piston means slidable in said housing and having a working end thereon, resilient means normally

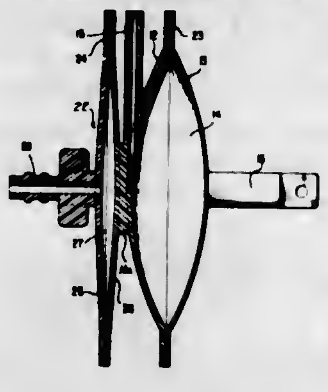
urging said piston means in a working direction to actuate the working end thereof, said piston means including a portion having groove means therein, abutment means movable in said housing independently thereof and radially displaceable relative to said groove means, said abutment means being normally in abutting engagement between said groove means and housing to prevent movement of said piston means in the working direction, an expansible fluid pressure chamber in said housing, and means responsive to fluid pressure in said chamber above a predetermined amount to maintain said abutment means against radial displacement from said groove means and in abutting engagement between said groove means and housing.

3,183,792
FREE PISTON OSCILLATOR
Alton K. Allen, 11 Flower Lane, Kings Point, N.Y.
Filed Jan. 10, 1963, Ser. No. 250,699
13 Claims. (Cl. 92—33)



1. A free piston oscillator comprising a cylinder, a free piston which is reciprocable but not rotatable in said cylinder, and a shaft extending longitudinally of the cylinder, which shaft is rotatable but not reciprocable, and along which the piston is slidable, said shaft being helical so that rectilinear reciprocation of the piston is converted to rotary reciprocation of the shaft, said helical shaft being circular in cross section at every point along its working length, and the centers of successive circular sections lying on a helix.

3,183,793
DIFFERENTIAL FLUID PRESSURE MOTORS
Robert N. McCleery, Detroit, Mich., assignor to The Delman Company, Cookeville, Tenn., a corporation of Tennessee
Filed June 1, 1962, Ser. No. 199,476
4 Claims. (Cl. 92—48)



1. A differential fluid pressure actuator comprising:

(*a*) a first means having a pressure chamber defined by a pair of concave disc shape members peripherally secured together in a sealed relationship with the concave sides thereof facing each other, one of said members being rigid and the other member being flexible,

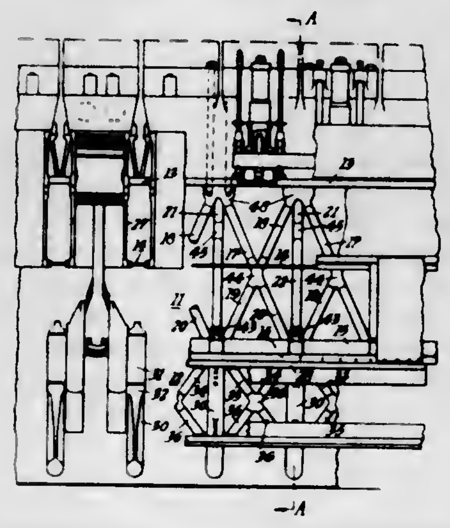
(*b*) inlet means connected to the rigid member of said first means and having a passage open to said chamber,

(*c*) a second means having a pressure chamber defined by a pair of concave disc shape members peripherally secured together in a sealed relationship with the concave sides thereof facing each other, one of said members being rigid and the other member being flexible, the center section of the rigid member of the second means being secured to the center section of the flexible member of the first means,

(*d*) inlet means connected to the rigid member of said second means and having a passage open to the chamber in the second means, and

(*e*) control means connected to the center section of said flexible member of said second means.

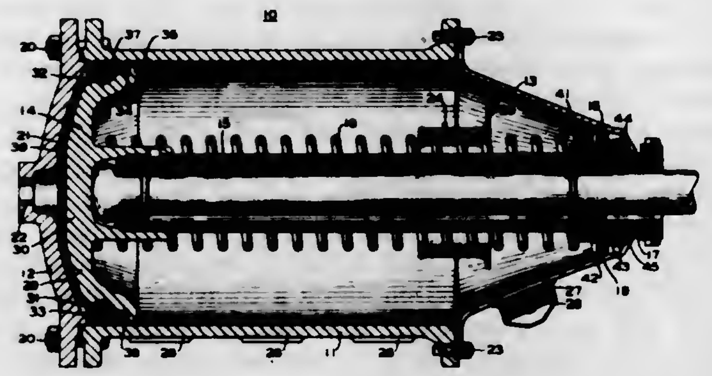
3,183,794
ENGINE OR MACHINE FRAME STRUCTURE
Cecil J. Hind, Broadway, Lincoln, England, assignor to Ruston & Hornsby Limited, Lincoln, England, a company of Great Britain
Filed Feb. 3, 1964, Ser. No. 341,959
Claims priority, application Great Britain, Feb. 6, 1963, 4,775/63
14 Claims. (Cl. 92—146)



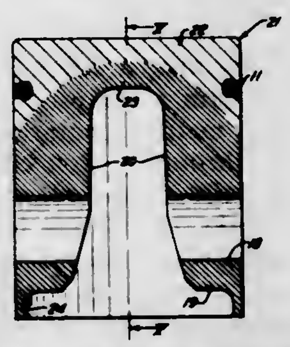
1. A frame structure for a machine in which forces in one part of the machine, due for instance to change in volume of gas or gases, have an interacting cause-and-effect relation with other forces for instance, torque in a crankshaft carried by bearings in another part of the machine, wherein said frame structure connects the said two parts of the machine and at least includes a series of linear members arranged in pairs, each member being disposed in angular intersecting relationship to the corresponding member of that pair substantially to absorb the torsional component at least of the reactionary forces between said two parts.

3,183,795
BRAKE CYLINDER ASSEMBLY
Walter B. Kirk, Pitcairn, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Dec. 24, 1962, Ser. No. 246,801
8 Claims. (Cl. 92—212)

1. In combination, a cylinder having a bore therein, a piston reciprocably movable in said bore and having a radially extending skirt thereon, said skirt having its largest diameter smaller than said bore providing a space between said skirt and said bore, a packing cup carried by said piston and extending radially therefrom in engagement with said bore to effect a seal between said bore and said piston, annular resilient bearing means carried peripherally by said piston and axially supported between and by the skirt and the packing cup, said resilient bearing means having an outside diameter substantially the same size as said bore to resiliently space said piston from said bore to prevent the piston from hammering against the cylinder in response to road shock applied to the cylinder when carried in transit by a rail car.



3,183,796
COMPOSITE CAST-FORGED ALUMINUM PISTON WITH BONDED FERROUS RING-CARRIER, AND METHOD OF PRODUCING SAME
Earl W. Christen, Toledo, Ohio, James F. Seeley, Royal Oak, Mich., and Gerald V. Kingsley, deceased, late of Detroit, Mich., by Mildred W. Kingsley, administratrix, Detroit, Mich., assignors, by mesne assignments, to Universal American Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 19, 1963, Ser. No. 266,458
2 Claims. (Cl. 92—229)



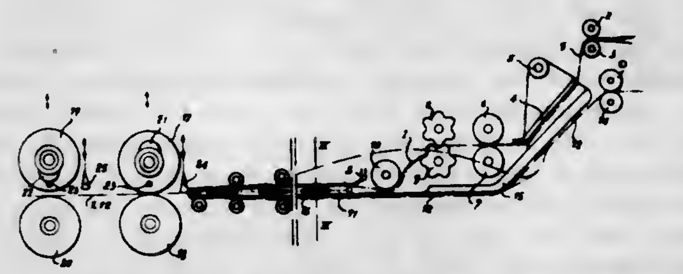
1. An aluminum piston of the type having part of its structure formed of cast aluminum and part formed of forged aluminum, these two parts being molecularly joined into a unitary structure, the improvement which comprises:

(A) a piston head having an upper crown portion (22) of cast aluminum,
  (1) a ferrous ring-carrier (11) cast in the head and having a metallurgical bond with the cast metal of the crown portion;

(B) a skeletal substructure of forged aluminum comprising,
  (1) a substratum (23) forming the lower part of the piston head,
  (2) piston pin bosses (19),
  (3) parts (20) extending downwardly from the substratum (23) and connecting with the piston pin bosses (19),
  (4) a tubular piston skirt (24);

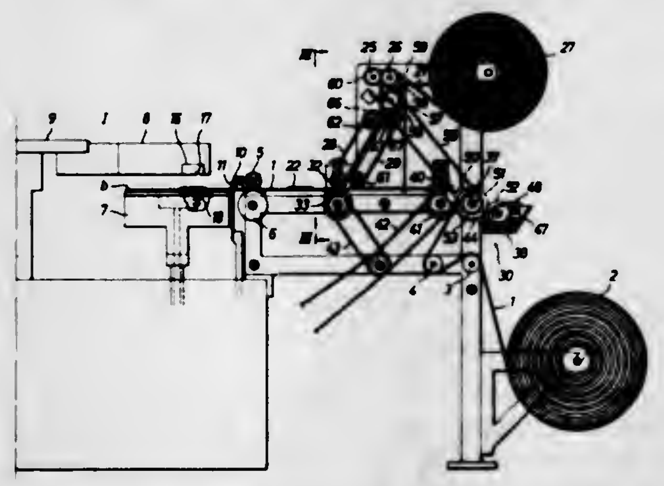
(C) the substratum (23) being spaced away from the ferrous ring-carrier (11) a sufficient distance so as to leave cast metal around the ring carrier.

3,183,797
PROCESS AND DEVICE FOR THE PRODUCTION OF A MULTIPLY TUBE AND BAG MANUFACTURED FROM SUCH TUBE
Joseph Boone, Vedrin, Belgium, assignor to Marius Berghgracht, Le Vieux Logis, Vineuil, St. Firmin, Oise, France
Filed May 22, 1962, Ser. No. 196,688
Claims priority, application Belgium, May 23, 1960, 604,119; Oct. 2, 1961, 608,756
23 Claims. (Cl. 93—8)



1. A process for the continuous production of a multiply tube of paper or the like, with an inner ply having a greater absolute length than its apparent length and one or more outer plies having a length corresponding to the apparent length of the inner ply, comprising the steps of using a preformed flat tube to constitute the inner ply, imparting a speed of forward movement to said flat tube, producing permanent tranverse undulations to said flat tube, thereby to give it a smaller apparent length than its absolute length, surrounding the thus obtained undulated tube with outer plies and longitudinally closing said outer plies upon themselves around said undulated tube, and simutaneously moving forward the assembly of inner and outer plies of the so obtained multiply tube at a speed such that the ratio between the latter speed and said speed imparted to said flat tube substantially corresponds to the ratio between said apparent length and said absolute length.

3,183,798
MACHINE FOR MANUFACTURING BAG PACKAGES
Paul Kühnle, Winnenden, Wurttemberg, Germany, assignor to Fr. Hesser Maschinenfabrik-Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany
Filed Dec. 4, 1962, Ser. No. 242,138
Claims priority, application Germany, Dec. 14, 1961, H 40,036
2 Claims. (Cl. 93—8)



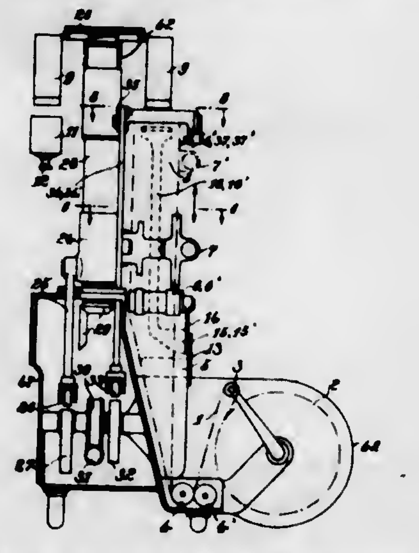
1. A machine for manufacturing bag packages of thin flexible material comprising a periodically rotatable mandrel wheel including folding mandrels, first feeding means for feeding a continuous web of thin, flexible packaging material along a prescribed path towards a particular station past which said folding mandrels successively pass, means adjacent the path of the web of material for

periodically applying adhesive material to specific portions of said web of packaging material as said web is moving towards said station, said portions including first portions enabling the closure of folded bag packages and second portions for the adherence of reinforcing patches, first severing means disposed in the path of said continuous web of packaging material for periodically severing said continuous web of packaging material to form packaging blanks having regions with adhesive material, second feeding means for feeding a continuous web of reinforcing material, second severing means disposed in the path of feed of said continuous web of reinforcing material for periodically severing said web of reinforcing material to form successive reinforcing patches, means for synchronizing said first and second feeding means and said first and second severing means whereby one reinforcing patch is formed for each of said blanks, conveyor belt means extending between said second severing means and the path of said packaging material and located between the mandrel wheel and the means for applying adhesive material to said web, said conveyor belt means including two parallel runs of belts extending upwardly at an angle from the path of travel of the web of material, means for driving the conveyor belt means such that said parallel runs of belts are driven in the same direction and with a component extending in the direction of advancement of said web of packaging material so that the belts receive the reinforcing patches one by one from said second severing means and convey the patches in synchronism to the individual blanks now carrying adhesive material, means elastically urging one of the runs of the belts into contact with the first feeding means to cause the reinforcing patches to be applied with force against the individual blanks in a zone in which the blanks carry adhesive whereby each blank before reaching said folding mandrel has a permanently affixed reinforcing patch in a prescribed location, means associated with the folding mandrels for folding thus reinforced blanks around said folding mandrels to form reinforced packages, and means cooperating with each folding mandrel as the same pass the next successive station after rotation of the mandrel wheel for inserting a pouring spout into the reinforced package on the folding mandrels in the region of the reinforcing patch.

3,183,799

CONTAINER MAKING ARRANGEMENT

Paul Schmidt, Darmstadt, Germany, assignor to Habra-Werk, Wilhelm F. Ott, Darmstadt, Germany
Filed Sept. 19, 1962, Ser. No. 225,411
Claims priority, application Germany, Apr. 21, 1961, H 42,368; Aug. 23, 1961, H 43,459
17 Claims. (Cl. 93—12)

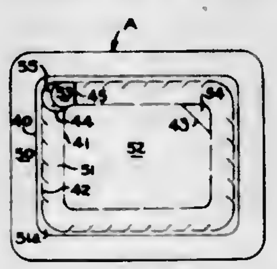


1. An apparatus of the type described comprising, in combination, folding means for longitudinally folding a web of a sheet material so as to align the longitudinal edges of the web whereby two layers of the web are super-imposed; combined sealing and transporting means operable between an open position spaced from said web and a sealing position engaging sections of said longitudinal edges for bonding the same together whereby a tube is formed of the web, said sealing and transporting means being reciprocable in longitudinal direction of said web for moving in said sealing position said web stepwise forward along a first path in longitudinal direction of the same for the lengths of tube sections; while the web remains at a standstill during the return stroke of said combined sealing and transporting means in said open position; a series of supports movable successively and in synchronism with the operation of said sealing and transporting means to and from a position located at the leading end of the web so that each tube section is placed by said combined sealing and transporting means moving forwardly onto one of said supports; bonding means for bonding each tube section along a transverse seam while said web is at a standstill; and cutting means for cutting each tube section along a transverse cutting line off the web while said web is at a standstill.

3,183,800

METHOD OF FORMING A COVER FOR A PACKAGE

Robert A. Farrell, Menasha, and George V. Skowronski, Neenah, Wis., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Original application Feb. 26, 1963, Ser. No. 261,566, now Patent No. 3,158,491, dated Nov. 24, 1964. Divided and this application Nov. 14, 1963, Ser. No. 323,718
3 Claims. (Cl. 93—36)



1. The method of forming a cover to be used with a receptacle portion to form a leakproof package with an opening means, which method comprises passing a web of frangible material through a first cutting station and imposing in the web pairs of spaced, substantially parallel, closed lines of weakness defining tear strips, coating said web with a material which is heat-activatable, passing said web through a second cutting station and producing cover-defining cuts and separating the resulting individual covers from the remainder of the web.

3,183,801

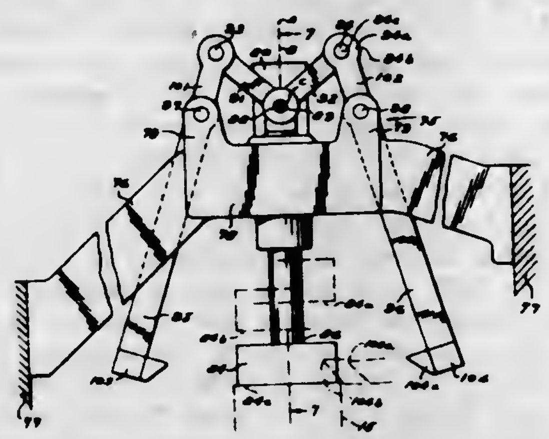
CARTON BREAKER-TUCKER APPARATUS

Harry B. Egleston, Livonia, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed June 11, 1962, Ser. No. 201,642
6 Claims. (Cl. 93—44.1)

1. A breaking and tucking assembly station for a high-speed carton fabricating machine and adapted to operate on the end closure panels of each carton produced by said machine, said assembly comprising:

(*a*) two side support members,
(*b*) a rotatable mandrel assembly supported by said side supports,
(*c*) a bridge member supported by said side supports,
(*d*) an air cylinder secured to said bridge member and having an extendable shaft,
(*e*) a tucker shoe supported by said extendable shaft,
(*f*) a pair of breaker shoes driven and controlled by the said air cylinder,

(g) a mandrel connected to said mandrel assembly having a container mounted on it and said mandrel assembly rotating in timed relationship with said breaker shoes and said tucker shoe,

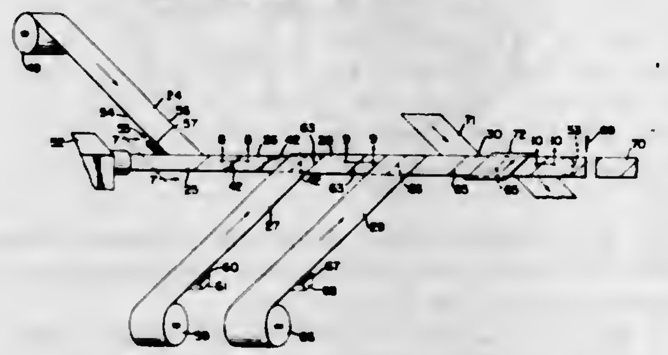


(*h*) said breaker shoes acting on a pair of opposed end closure panels of said container and said tucker shoe acting on the remaining pair of opposed end panels to form a tucked closure end, and
(*i*) said breaker shoes moving away from said end closure panels before said tucker shoes arrives at its closest position.

3,183,802

CONTAINER AND METHOD AND APPARATUS FOR MAKING THE SAME OR THE LIKE

George A. Rutledge, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed May 1, 1961, Ser. No. 106,629
17 Claims. (Cl. 93—80)



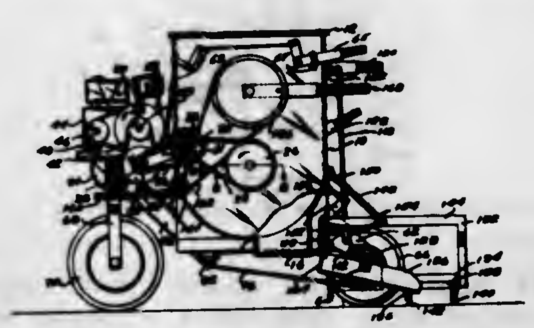
1. A method for making a container body or the like comprising the steps of helically winding a strip of lining material whereby adjacent edges of adjacent convolutions thereof overlap each other, heat sealing together only said overlapping edges of said lining material by only heating a portion of said lining material whereby no wicking action can take place at the spiral seam of said lining material, helically winding a strip of container material on to said helically wound strip of lining material, and helically winding a strip of wrapping material on to said helically wound strip of container material.

3,183,803

APPARATUS FOR APPLYING SEALING MATERIAL

Melvin O. Gierhart, P.O. Box G, Port Jefferson, Ohio
Filed Nov. 28, 1961, Ser. No. 155,283
2 Claims. (Cl. 94—44)

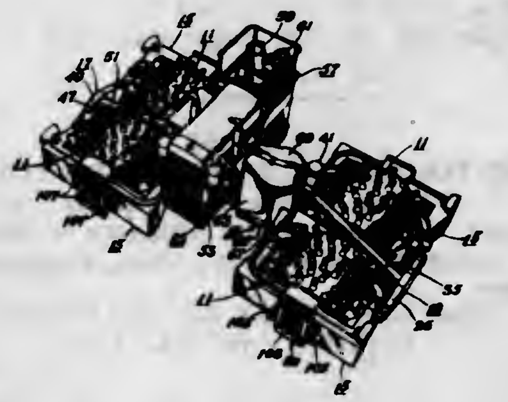
1. A compact self-contained apparatus for mixing and distributing flowable material, such as sealing or dressing material for roofs, pavement areas, and the like, comprising; a hopper open at the top, rear wheels carried by the hopper at the back and supporting the hopper, steerable front wheel means rotatable on a vertical axis through substantially 180 degrees and carried by the hopper at the front, agitator means in the hopper for mixing material therein, a shaft extending transversely through the hopper supporting said agitator means, the bottom of said hopper being rounded to conform with the path of movement of the agitator means therein, a sump in the bottom of the hopper toward the back, a distributing box pivotally mounted on the hopper and extending rearwardly therefrom and comprising resilient strip means about the bottom for yieldable engagement with a surface being treated, an outlet from said sump, a gate valve controlling said outlet, a tray having its front end beneath said outlet and its rear end disposed above said distributing box for conveying material from said outlet to the distributing box, said distributor box having arms extending forwardly from the sides thereof on the outside of said rear wheels, means for raising and lowering said distributing box, an engine carried by the hopper, means drivingly connecting said engine with said agitator means and with said rear wheels and including control means for selectively interrupting and reversing the driving connection between said engine and said rear wheels, platform means at the rear of the hopper for supporting the operator of the apparatus, and control levels carried by the hopper adjacent the operator for controlling said steerable front wheel means and said control means and the means for raising and lowering said distributing box.



3,183,804

EARTH COMPACTING MACHINE

Robert G. LeTourneau, P.O. Box 2307, Longview, Tex.
Filed Apr. 19, 1961, Ser. No. 104,099
4 Claims. (Cl. 94—50)

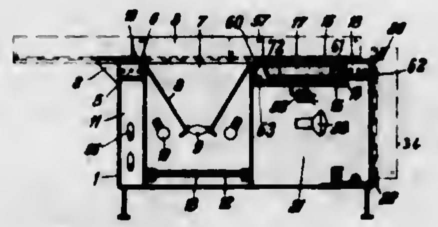


4. A self-propelled earth compacting machine comprising a main frame, a plurality of compactor roller units, each of which is disposed to one side of said main frame with its central axis being substantially normal to the main frame longitudinal axis, an electric motor driving each said roller unit through a gear reduction, a stub axle means for each said roller unit, means including a respective said stub axle means for pivotally supporting said main frame on said roller units with each pivot axis parallel to and spaced laterally from said main frame, with the weight of said main frame and its load on the in-

ner side of said pivot axes counterbalanced by the weight of said electric motors and gear reductions on the outer side of said pivot axes.

3,183,805
ELECTRO-PHOTOGRAPHIC APPARATUS

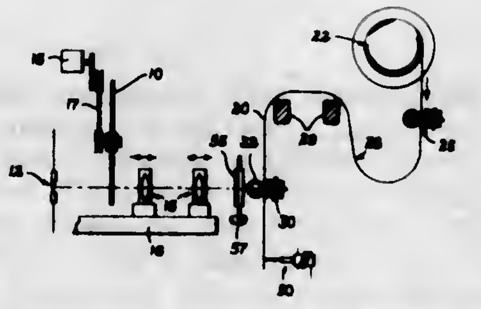
Wilhelm Ritzerfeld, Schorlemer Allee 14, Berlin-Dahlem, Germany, and Gerhard Ritzerfeld, Franzensbader Strasse 21, Berlin-Grunewald, Germany
Filed Oct. 13, 1960, Ser. No. 62,448
Claims priority, application Germany, Oct. 15, 1959, R 26,544; Nov. 17, 1959, R 26,746; Nov. 19, 1959, R 26,757
7 Claims. (Cl. 95—1.7)



1. An apparatus for making electro-photographic prints, comprising, in combination, supporting means having guide means extending along in predetermined path; a charging station located on said supporting means along said path; an exposing station including a means for holding an original and a means for projecting an image for the original, said exposing station being located on said supporting means adjacent said charging station along said path; a developing station located on said supporting means adjacent said exposing station along said path, said developing station including an open container for a developing powder, and a cover means movable between a closing position closing said open container, and an open position; and a holding means including a case open one one side and a holder for an electro-photographic image carrier mounted in said case so that said image carrier faces toward said open side, said case being guided in said guide means for movement along said path between a plurality of positions in which said image carrier successively confronts said charging station, said exposing station, and said developing station, said case having a means for engaging said cover means and for moving the same from said closing position to said open position when moving from said exposing station to said developing station whereby an electrostatic image can be formed on said carrier by successive operation of said stations in said positions of said case.

3,183,806
PHOTOGRAPHIC TYPE COMPOSITION

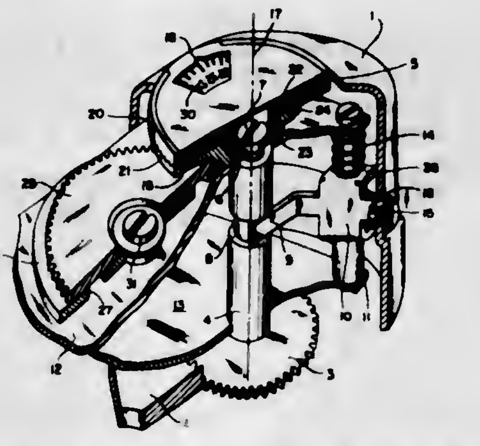
Richard C. O'Brien, Ralph A. Proud, Jr., and Francis Hunstiger, Cleveland, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 15, 1961, Ser. No. 117,454
12 Claims. (Cl. 95—4.5)



1. In a phototypesetting apparatus having means for projecting character images of different widths along a common path and a means for mounting photosensitive record material in an image plane of said projecting means for recording the images to produce lines of composition, the combination of spacer means operative to cause spacing movement of said mounting means in said image plane with respect to said common path, a stepping motor having an output member directly mechanically connected to said spacer means, a position control member included in said motor and operative to change and to maintain the position of said output member in digital fashion solely through the application of an electrical force field on said output member, means generating digital spacing information for each character image representing a desired spacing movement in terms of a position change of said mounting means in relation to said common path, and circuit means responsive to such digital spacing information and connected to said position control member to change the direction of application of the force field in a predetermined sequence to operate said spacer means through predetermined spacing movement increments corresponding to the digital spacing information.

3,183,807
FILM SPEED SETTING DEVICE FOR CAMERAS

Kurt Steisslinger, Stuttgart-Hedelfinger, Germany, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 27, 1962, Ser. No. 219,414
5 Claims. (Cl. 95—10)

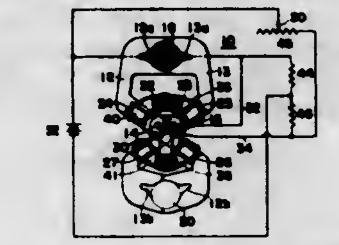


1. A film speed setting device for a camera having an automatic exposure control system responsive to scene light, comprising in combination:

a support member adapted to be rotated and to be moved axially between a control position and a selecting position;
an index member fixed to said support member for movement therewith;
a film speed scale member freely mounted coaxially with said support member and coupled to said exposure control system;
means releasably coupling said index member and said scale member for movement as a unit with said support member so long as said support member is in said control position;
manually operable means coupled to said support member for moving said support member axially to said selecting position in which said coupling means is released and only said index member is movable with said support member; and
means coupled to said support member for rotating said support member and said index member to position said index member relative to said scale member and in relation to a selected film speed number when said support member is in said selecting position and for rotating said support member, said index member and said scale member as a unit to adjust said exposure control system as a function of the selected film speed number when said support means is in said control position.

3,183,808
SYSTEM FOR AUTOMATICALLY CONTROLLING DIAPHRAGM FOR PHOTOGRAPHIC CAMERA

Haruo Teshi and Fumio Sakaki, Nagoya, Japan, assignors to Elmo Company Limited, Nagoya, Japan
Filed Apr. 19, 1963, Ser. No. 274,266
Claims priority, application Japan, May 1, 1962, 37/17,991
6 Claims. (Cl. 95—10)



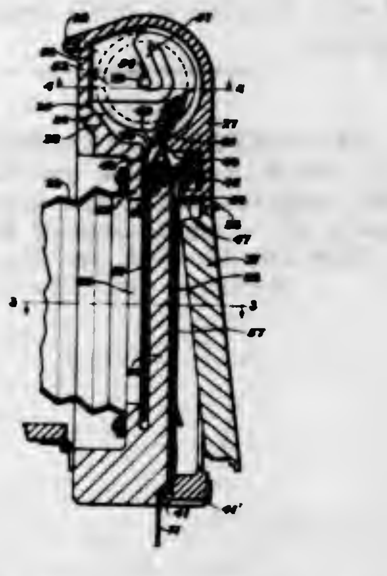
1. A system for automatically controlling a diaphragm device for a photographic camera, comprising a first diaphragm means, a body of photoconductive material in the rear of said first diaphragm means positioned to receive light falling upon the same through said first diaphragm means, second diaphragm means for a photographic objective and operatively connected to said first diaphragm means and movable so as to have the area of the second diaphragm aperture varied in accordance with the variation in aperture of said first diaphragm means, a single Wheatstone bridge type electrical balancing circuit including said body of photoconductive material and a resistance of a predetermined value, and driving means for said diaphragm means and comprising at least one permanent magnet member and a coil member therearound, the said members being movable relative to each other, one of said members being adapted to be fixed to the camera and the other member being fixed to one of said diaphragm means, and said coil member being in said balancing circuit in a position therein in which current flows through said coil member when the circuit is unbalanced, said second diaphragm means defining a diaphragm aperture for a photosensitive member having an area such that the amount of light passing through the aperture of the second diaphragm means to the photosensitive material properly exposes the photosensitive material whenever said body of photoconductive material when exposed to an amount of light passing through said first diaphragm means has a resistance equal to said predetermined value.

3,183,809
PHOTOGRAPHIC APPARATUS FOR USE WITH IMAGE TRANSFER FILM PRODUCT

Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 21, 1963, Ser. No. 282,070
14 Claims. (Cl. 95—13)

1. Photographic apparatus for use with a composite photographic product of the type comprising an elongated strip having a leading end and at least one sheet hingedly secured along one end to an intermediate portion of one face of said strip, said sheet having an image receiving area on one face thereof and being arranged on said strip so that its free end extends toward said leading end and said image area faces outwardly from said strip, said image area being adapted for photographic processing in conjunction with an associated area carried by said strip rearwardly of the hinged connection, said apparatus comprising:

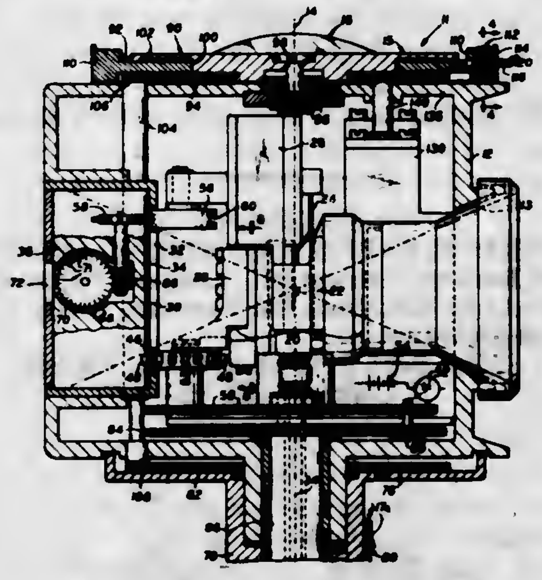
a housing providing
a supply chamber for holding said composite product, and a processing chamber;
means forming a passageway extending between said chambers and through which said sheet may be transferred from said supply chamber to said processing chamber by moving said strip, leading-end-foremost, therealong in the direction of said processing chamber;



and means located along said passageway intermediate said chambers and effective upon such movement of the sheet-bearing portion of said strip therepast for effectively inverting said sheet about its hinge connection with said strip to bring said image area into position for processing with its associated area on said strip.

3,183,810
AUTOMATIC ANGLE CONTROL DEVICE FOR PANORAMIC CAMERA

Rouel R. Campbell, Canoga Park, and Robert Auguste, Granada Hills, Calif., assignors, by mesne assignments, to Bank of America National Trust and Savings Association
Filed June 27, 1962, Ser. No. 205,756
16 Claims. (Cl. 95—16)



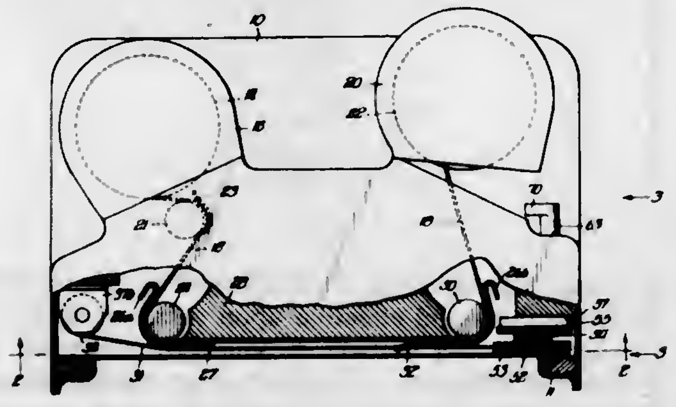
1. In a panoramic camera, a housing for holding film and having a lens through which the film is exposed, a stationary base under the housing and on which the housing moves angularly about a substantially vertical axis, motor means for moving the housing about said axis, an adjustable automatic stop for determining the angle of movement of the camera housing about said axis and for determining the resulting width of the scene photographed by the camera, said stop including two elements located on top of the camera and the first of which is stationary and the second of which moves as a unit with the camera but is adjustable with respect to the camera and angularly about said axis, an electric switch operable to stop the motor means, a surface on one of said elements for operating the switch when said elements come into a predetermined position with respect to one another, said surface having an actuator movable into and out of position for actuating the switch and a manually-actuated handle that shifts

the initial position of the element that moves with the camera to change the angle of relative movement required of said elements to bring them to said predetermined position.

3,183,811

DEVICE FOR THREADING FILM

Eugene W. Elliott, Barrington, and Earl E. Gray, Lombard, Ill., assignors to Chicago Aerial Industries, Inc., Barrington, Ill., a corporation of Delaware
Filed July 24, 1961, Ser. No. 126,036
4 Claims. (Cl. 95—34)

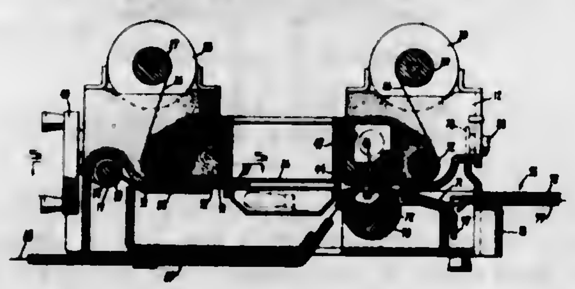


1. In a photographic device including film supply and takeup cassettes, a platen and a format aperture plate disposed between said cassettes, and a mechanism normally operable to effect transfer of photographic film from said supply cassette to said takeup cassette over a path passing between said platen and said format aperture plate, the combination with said photographic device of a means for threading film, said means for threading film comprising a flexible strip means extending across said format aperture plate when in operative position, reel means secured to said flexible strip means at one end thereof for winding said flexible strip onto when said flexible strip is in an inoperative position, and spring means cooperatively associated with said reel means for biasing said flexible strip toward its inoperative position.

3,183,812

PHOTOGRAPHIC COMPOSING DEVICE

Bernard Borisof, Chicago, Ill., assignor, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware
Filed Sept. 5, 1961, Ser. No. 136,060
7 Claims. (Cl. 95—4.5)

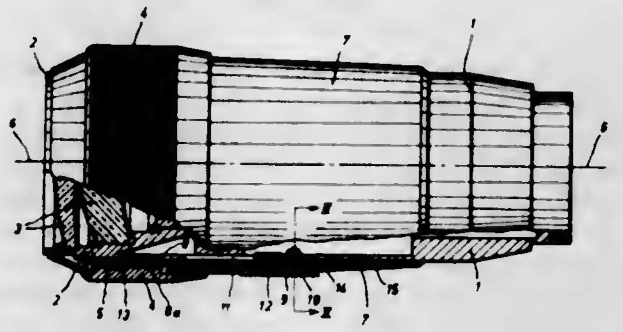


1. A photographic composing device comprising a light source, means for moving an opaque film strip and a photosensitive strip in superposed relationship past said light source, said film strip having a plurality of transparent characters formed thereon for photographic reproduction on said photosensitive strip during operation of said moving means, means for shifting said film strip edgewise transversely of the photosensitive strip to enable the reproduction of each of a plurality of lines of composition, and a gauge disposed transversely of the path of travel of said film strip and said photosensitive strip delineated to represent the invariable path of travel of said photosensitive strip and positioned for passage of said film strip thereover, said gauge for determining the position of each line of composition relative to the edges of said photosensitive strip upon operation of said shifting means.

3,183,813

DEVICE FOR FOCUSSING OF PHOTOGRAPHIC OBJECTIVES

Karl-Heinz Wöhner, Oberkochen, Wurttemberg, and Otto Weiss, Aufhausen, Kreis Aalen, Wurttemberg, Germany, assignors to Carl Zeiss Stiftung, Heidenheim (Brenz), Germany, a corporation of Germany
Filed June 28, 1962, Ser. No. 205,927
Claims priority, application Germany, July 6, 1961, Z 8,844
8 Claims. (Cl. 95—45)

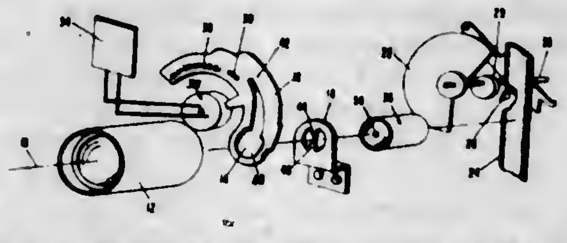


1. In a device for focussing the objective of a photographic camera provided with a mirror reflex viewfinder, a tubular main mount part fixedly attachable to the body of the camera, a sleeve mounted for axially slidable movement on said tubular mount part, stop means on said tubular mount part and said sleeve for limiting the axially slidable movement of said sleeve on said tubular mount part, a rotatable manually operable focussing ring threadedly connected with said axially slidable sleeve to be axially moved with the latter, an axially adjustable objective mount containing said objective arranged in threaded engagement with said focussing ring so as to move in axial direction when said focussing ring is rotatably adjusted, a lock member for locking said sleeve and tubular part against rotational and longitudinal movement, and manually operable means for releasing said lock member to permit longitudinal sliding movement of said sleeve on said tubular part but preventing relative rotation therebetween.

3,183,814

CAMERA EXPOSURE CONTROL

Albert Vesa, Hanson, and Daniel E. Phipps and Jean L. Hunerwadel, Braintree, Mass., assignors to Keystone Camera Company, Inc., Boston, Mass., a corporation of Massachusetts
Filed Mar. 27, 1963, Ser. No. 268,248
14 Claims. (Cl. 95—64)



11. An exposure control mechanism for a photographic camera comprising at least one diaphragm element having an elongated aperture formed therein operable to define a diaphragm opening,

said aperture having a portion of generally tapered configuration,

a lens system defining an optical axis,

means to move said diaphragm element in a direction perpendicular to said optical axis for regulating the light transmitted through said lens system,

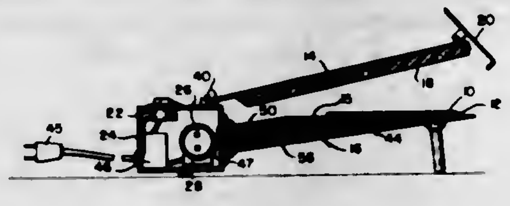
and an optical filter disposed in alignment with the central portion of said lens for attenuating the light transmitted through said central portion of said lens more than the light transmitted through the peripheral portion of said lens,

said optical filter having a width greater than the smallest width of said tapered portion.

3,183,815

ILLUMINATION DEVICE

Narinder S. Kapany, Woodside, and David F. Capellaro, Belmont, Calif., and Ralph G. Ostensen, Morton Grove, Ill., assignors, by mesne assignments, to SCM Corporation, a corporation of New York
Filed Mar. 12, 1962, Ser. No. 178,983
5 Claims. (Cl. 95—73)



1. A book and document copying device, comprising:

(*a*) a wedge-shaped, light conductive prismatic element composed of a group of slender, elongated, internally reflective, rectilinear light transmitting fibers arranged in juxtaposed, parallel, side-by-side relationship to define a wedge-like prism having substantially planar, spaced apart, parallel, first and second faces, a third, substantially planar, light receiving face normal to and intersecting said first and second faces, and a fourth, substantially planar, light emitting, original and copy sheet supporting face intersecting said first face in an acute angle and said second face in an obtuse angle, a first end of each of said fibers terminating in a plane coinciding with said light receiving face and the second end of each of said fibers terminating in a plane coinciding with said light emitting face;

(*b*) means for supporting said prismatic element with said fourth face oriented substantially horizontally;

(*c*) a tubular fluorescent lamp mounted closely adjacent the third light receiving face of said prismatic element, said lamp being so sized and so oriented relative to said third face that the projection of the light emitting surface of the lamp upon the plane of said third face envelops said third face; and

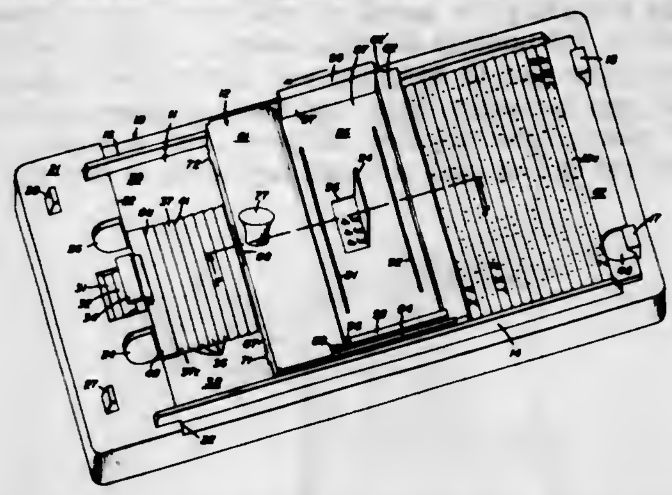
(*d*) a timer operatively connected to said lamp, said timer being selectively activatable to automatically maintain said lamp energized for a predetermined, variable time interval to thereby expose a photosensitive copy sheet on said fourth face for said predetermined interval.

3,183,816

CARD SHINGLING DEVICE

Glenn W. Offensend, Charles E. Swing, and Gordon L. Barringer, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 30, 1961, Ser. No. 85,808
22 Claims. (Cl. 95—85)

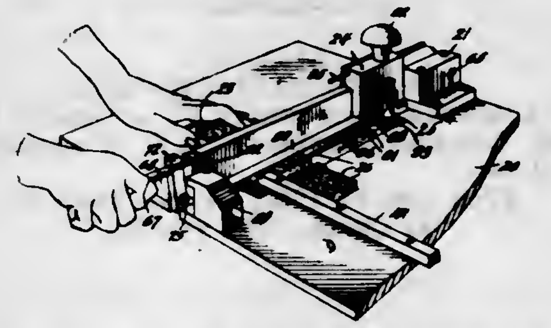
1. A device for supporting and maintaining a group of cards in a shingled arrangement comprising a member having a surface provided with a card support area and co-planar flat surface areas disposed on opposite sides of the card support area, said card support area comprising a series of stepped surfaces disposed, respectively, in spaced parallel planes which are inclined upwardly above the plane of said co-planar flat surface areas for supporting portions of the respective cards of a fanned-out group of cards, the surfaces in said series being separated by shoulders each of which has a height which is not greater than the thickness of one of the cards.



3,183,817

CHANGEABLE TYPOGRAPHIC MAKE-UP SYSTEM

George J. H. Sausele, New Providence, N.J., assignor to American Type Founders Co., Inc., Elizabeth, N.J., a corporation of Delaware
Filed Oct. 3, 1962, Ser. No. 228,045
3 Claims. (Cl. 95—85)



1. The method of preparing and maintaining current a page form of selectively variable copy as for the classified advertising pages of a newspaper, which method comprises preparing fragmentary galley sheets of individual interchangeable items of various lineage mounted on the top surfaces of blocks of corresponding lineage areas; arranging the blocks with their galley sheets applied thereto, in columnar series in a page form chase, including removing any blocks bearing outdated items and inserting any blocks bearing new items at appropriate places in the chase according to the proper classification, displacing adjacent retained blocks such distances in the column as necessary; clamping the blocks in the chase; illuminating the faces of the blocks and photographing the completed form contained in the chase, the blocks being chamfered to a somewhat trapezoidal sectional configuration to produce downwardly convergent opposite side walls, and the form being also back-lighted through a transparent chase in addition to the front illumination for photographing the form, such back-lighting being passed through the resulting wedge-shaped spaces between the blocks and adjacent parts of the form, to eliminate possible line shadows at the margins of the items.

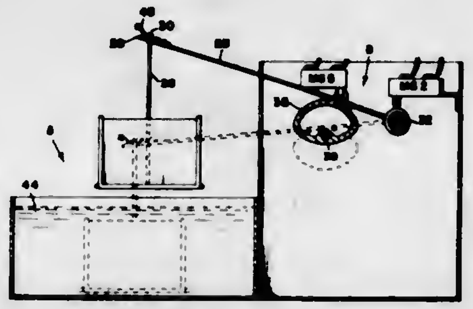
3,183,818

AUTOMATIC FILM PROCESSING DEVICE

Jack Pangborn, 616 E. 10th St., and Warren E. Wheeler, 430 K St., both of Davis, Calif.
Filed Jan. 5, 1961, Ser. No. 80,925
7 Claims. (Cl. 95—89)

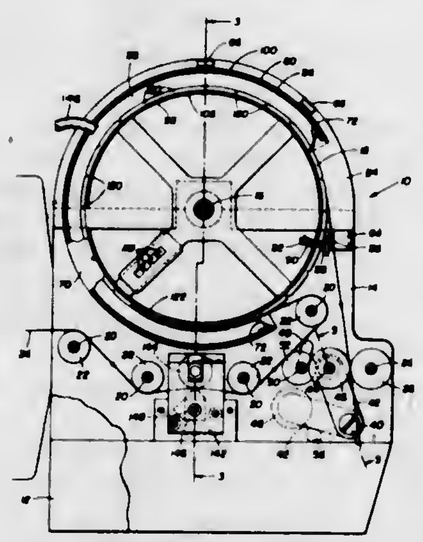
1. A device for processing photographic materials comprising: a horizontal track, an arm, means to mount said arm for vertical pivotal movement on said track and

for longitudinal movement along said track, a longitudinal surface mounted in supporting relationship under said arm extending the length of said track and mounted in parallel relationship thereto, means to move said longitudinal surface to an upper and lower position to cause said arm to move to upper and lower positions, a plurality of photographic solution carrying tanks mounted under the free end of said arm and registered so that the free end of said arm passes directly over each of said tanks as the arm is moved longitudinally along said track, means to suspend photographic material from the free end of said arm to a depth sufficient to cause the photographic material to be submerged in solutions carried by the said tanks when said arm is in the lower position and to be positioned above the top wall of the tanks when said arm is in the upper position, and means to move said arm into registration with each of said tanks.



3,183,819
PROCESSING MECHANISM

Robert A. Gordon, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 30, 1962, Ser. No. 190,870
12 Claims. (Cl. 95—89)

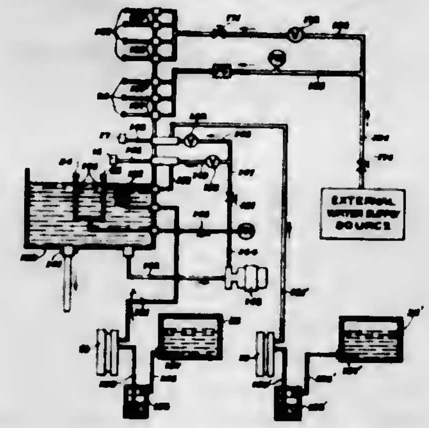


1. In a processing device for an exposed, moisture laden web of photographic material of an initial temperature and incorporating a developing agent and ingredients for development, the combination comprising:

(A) an enclosed, elongated processing chamber having a restricted entrance and a restricted exit at opposite ends,
(B) means for transporting said web through said chamber,
(C) means for producing and maintaining a heated vapor of the moisture contained by said web within said chamber, said vapor having a dew point temperature above said initial temperature of said material, said means further including:
  (*a*) first and second surfaces extending lengthwise of said chamber on opposite sides of said web as it is transported through said chamber,
(D) means for heating one of said surfaces to a temperature sufficient to drive the moisture from said web,
(E) means for heating the other of said surfaces to a temperature sufficient to vaporize said moisture driven from said web, and
(F) means associated with one of the first and second surfaces at said chamber entrance to prevent said initial temperature of said material from rising above said dew-point temperature.

3,183,820
CLEANING MEANS FOR A VISCOUS SOLUTION PROCESSING DEVICE

Leslie I. Edgcomb and Paul A. Hermle, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 130,376, Aug. 9, 1961. This application May 8, 1964, Ser. No. 369,343
2 Claims. (Cl. 95—89)



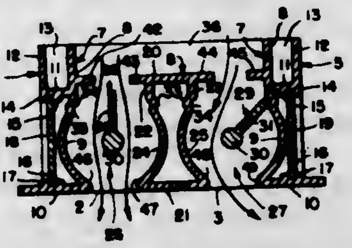
1. In a device for processing a movable exposed photographic film by the application of a viscous processing solution onto the surface thereof, the combination comprising:

means including a coating hopper for extruding a layer of viscous processing solution onto the surface of said film as it is transported through said device for processing said film;
means connected to said hopper for feeding said processing solution through said hopper for application to said film at a predetermined rate;
means including a source of cleaning water for directing jets of water against the film for removing the processing solution from said film after it is processed;
means including a sump for receiving said water after it has removed the processing solution from the film;
means connected to said hopper for feeding said water from said sump through said hopper for cleaning same; and
means for selectively connecting each of said solution and water feeding means to said hopper.

3,183,821
SELECTIVE AIR DISCHARGE PATTERN SLOT DIFFUSERS

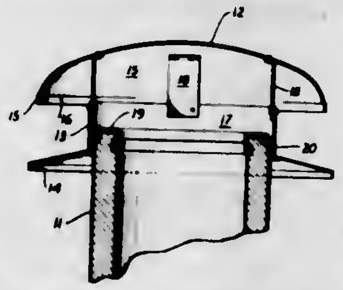
Eugene F. Averill, Waterloo, and Harold E. Straub, Cedar Falls, Iowa, assignors to Titus Manufacturing Corporation, Waterloo, Iowa, a corporation of Iowa
Filed Apr. 9, 1963, Ser. No. 271,729
3 Claims. (Cl. 98—40)

1. A slot diffuser comprising spaced, oppositely disposed elongated side walls defining therebetween an air flow channel, the downstream edge of each of said walls having an inwardly directed lip, said lips defining therebetween an elongated air discharge slot, an elongated vane member extending longitudinally in said channel upstream from said lips, means rotatably supporting said vane in said channel with its pivot axis extending longitudinally of said channel and substantially mid-way between said elongated walls, said vane member extending toward the upstream side of said channel and having a width sufficient to be pivotable into contact with an upstream portion of either of the side walls of said channel in an upward and outward orientation whereby said vane member is adapted to be swung between extreme positions against the respective side walls for blocking off air flow through said channel along one of said side walls and for deflecting air against the other of said side walls as well as positions intermediate said extreme positions.



3,183,822
DOME TYPE CHIMNEY TOP

Richard L. Stone, Palo Alto, and George R. Cunnington, Jr., Los Altos, Calif., assignors to William Wallace Corporation, Belmont, Calif., a corporation of Delaware
Filed Nov. 8, 1962, Ser. No. 236,457
4 Claims. (Cl. 98—83)



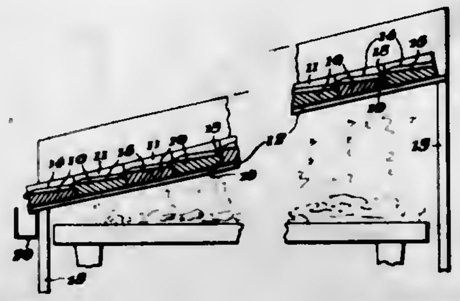
1. A terminal device adapted to be connected to the end of a fixed prefabricated double walled conduit extending above a building roof, said device comprising in combination:

a single wall band forming a central section;
an upper cover member having a generally oblated semispheroidal shape extending over and rigidly connected to said conduit section, said cover member thereby forming an annular discharge opening to said terminal device around the upper end of said conduit section;
and means attached to said central section for connecting it to the end of said double walled conduit, said means comprising an annular adapter ring attached to the inner wall of said central section, said ring having an edge flange adapted to fit inside the end of said double walled conduit;
a downwardly sloping annular collar member fixed near the lower end of said central section;
said cover member and said collar member both having a diameter substantially larger than said central section and being thereby adapted to shield the opening to said terminal device from the direct influx of ascending and descending wind gusts while providing minimum resistance to the flow of gases from the double walled conduit as well as a strong uniform aspirating effect at said discharge opening.

3,183,823
GRILLS FOR COOKING FOOD

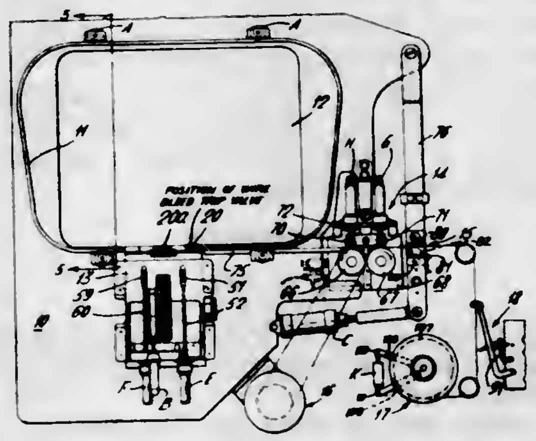
Lloyd Grimshaw, 27 Amherst Park, London, England
Filed July 1, 1963, Ser. No. 291,714
4 Claims. (Cl. 99—445)

1. An underfired cooking grill comprising a pair of spaced apart parallel side supports sloping downwardly from rear to front of said cooking grill, and a plurality of grill bars extending between said side supports and supported thereby, each said grill bar being ridged transversely of its length to provide alternate ridges and valleys, and being serrated along a front edge thereof to provide points in correspondence with said valleys and recesses in correspondence with said ridges said points being undercut to a predetermined depth and said grill bars being interlocked by the points of a first of said grill bars overlapping, to said predetermined depth, the valleys of a next forwardly arranged one of said grill bars, said ridges and valleys of said grill bars being aligned, and apertures being formed in said ridges at said recesses.



3,183,824
PACKAGE BINDING MACHINES

Peter Roy Cook, Beckenham, Kent, England, assignor to Package Sealing Company (Export) Limited, Ealing, London, a company of Great Britain
Filed Nov. 13, 1962, Ser. No. 236,881
12 Claims. (Cl. 100—4)



1. For binding packages with a flexible metal binding material, a machine comprising:

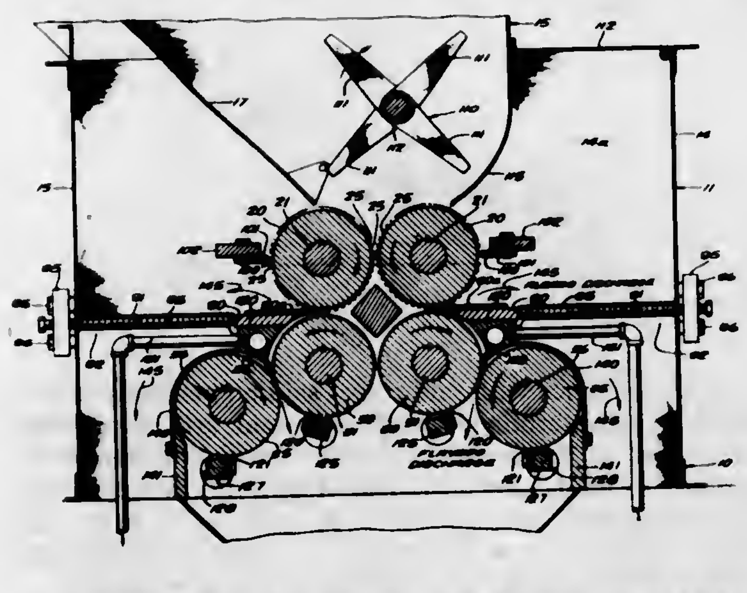
means for feeding said material endwise;
a guide for receiving a free end of the material being fed and forming it in a loop with overlapping ends;
means for tightening said loop around a package;
a connecting device for joining the ends of the tightened loop;
pneumatic means for operating components of the machine in an automatic sequence which includes the loop-forming operation;
a controlling air circuit which includes an air duct and a bleed port to which the air duct leads;
a guide structure which the bleed port opens into and which is positioned to receive the free end of the material as it approaches its final position;
whereby the free end of the material itself acts as an obturator for said bleed port, and means in said air circuit responsive to pressure changes in said air duct for effecting a succeeding step in the sequence of operations.

3,183,825
APPARATUS FOR RECOVERY OF CITRUS PEEL OIL

Donald R. James, Covina, Calif., assignor to Citrus Equipment Corporation, Whittier, Calif., a corporation of California

Filed May 15, 1961, Ser. No. 109,941

10 Claims. (Cl. 100—98)



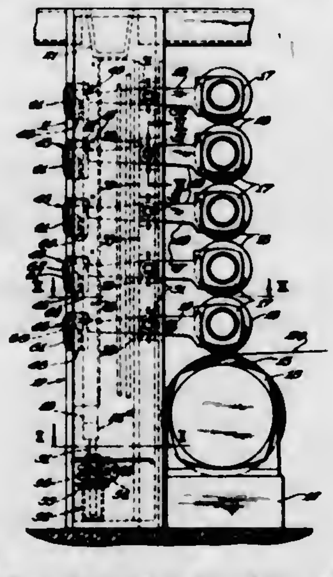
1. An apparatus for shaving citrus peel comprising a pair of closely spaced, parallel rollers, means on each of said rollers for selectively adhering citrus peel thereto with the albedo portion of the peel facing the selecting roller, a pair of knife blades, one operably associated with each of said rollers for shaving the flavedo portion from the albedo portion of said adhered peel, a second pair of rollers, one roller of said second pair being parallel to and closely spaced from one roller of said first-mentioned pair of rollers, each of said knife blades extending into the discharge side of the bite between the rollers of the first and second pairs of rollers, and a third pair of rollers, one roller of said third pair being parallel to and contacting one roller of said second pair of rollers and forming a bite therewith positioned to receive flavedo layers shaved from said peel whereby said flavedo layers are pressed to rupture the oil cells thereof and release the oil therefrom.

3,183,826
CALENDER STACK

Lawrence A. Moore and Le Roy F. Gilbank, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed July 11, 1963, Ser. No. 294,368

12 Claims. (Cl. 100—163)



1. In a calender stack, a pair of parallel spaced channel-like posts opening toward each other, a base extending from the bottoms of said posts having bearing supports extending upwardly therefrom, a bottom roll journalled in said bearing supports, a series of spaced superposed calender rolls supported on said bottom roll, the supports for said calender rolls comprising individual bearing housings for the ends of said rolls, lift arms supporting said bearing housings and extending along the insides of said posts and pivoted thereto intermediate their ends, pivoted load relieving levers pivotally mounted on said posts engaging upper surfaces on opposite ends of said lift arms from said bearing supports, and fluid pressure operated members holding said pivoted load relieving levers and lift arms in position and rocking said pivoted load relieving levers to engage said arms and exert lifting pressures on said bearing housings and rolls, and fluid pressure lines operatively connected to said fluid pressure operated members and extending from each of said members in readily accessible position within the openings of said channel-like posts.

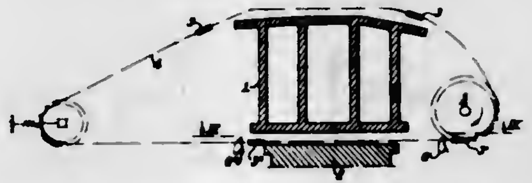
3,183,827
DEVICE ENSURING THE IMMOBILIZATION IN REGISTERED WORKING POSITION OF BARS CONVEYING SHEET MATERIAL IN A PLATEN PRESS

Josef Kury, Pully, Switzerland, assignor to J. Bobst and Son SA., Prilly, near Lausanne, Switzerland, a corporation of Switzerland

Filed Jan. 24, 1963, Ser. No. 253,542

Claims priority, application Switzerland, Feb. 12, 1962, 1,760/62

9 Claims. (Cl. 100—215)



1. In a platen press having a fixed platen and a movable platen adapted for being driven in alternating fashion towards and away from the fixed platen, a pair of driven chains, a plurality of bars coupled between the chains at spaced intervals for being driven thereby in synchronism with the movement of the movable platen to successively position a sheet element between the platens with the latter separated, stops for engaging the bars, and means supporting said stops for reciprocal and pivotal movement in spatial relation with the chains to cause said stops to engage said bars and travel therewith to guide said bars as the latter are driven by said chains and to hold said stops fixed in position as the bars occupy a position in which the associated sheet element is placed between the platens.

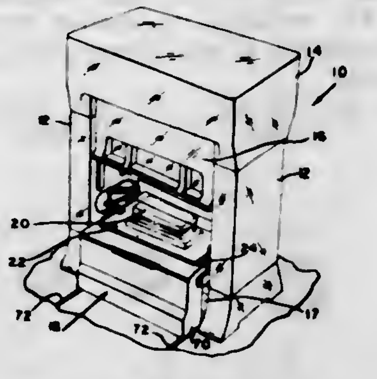
3,183,828
APPARATUS FOR LOADING DIES IN PRESSES

Albert Clements, Hamilton, Ohio, assignor to The Minster Machine Company, Minster, Ohio, a corporation of Ohio

Filed Mar. 11, 1964, Ser. No. 351,172

13 Claims. (Cl. 100—229)

1. A device for changing dies in a vertical press having a bed and a bolster resting on the bed and supporting the press die comprising; a frame having a horizontally extending portion adapted to be inserted over the bed into the working space of the press, a vertical portion depending from one end of said horizontal portion, said horizontal portion having side parts and being adapted to receive the press bolster between said side parts, means on the bottom of the said vertical portion and on the bottom of the other end of said horizontal portion movably supporting said frame, means carried by the frame operable to raise and lower at least said horizontal portion of the frame, and means on the frame for engaging said bolster on opposite sides of the center of gravity thereof to lift the same from the bed of the press when said horizontal portion is raised while setting the bolster down on the press bed when said horizontal portion is lowered.

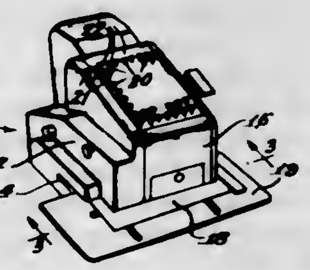


3,183,829
CHECK WRITING MACHINE

John Kreidich, Chicago, Ill., assignor to The Hedman Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 11, 1962, Ser. No. 243,840

9 Claims. (Cl. 101—19)



1. In a check writing machine having a plurality of numeral keys arranged in columns wherein each column of keys of the plurality of columns of keys is adapted to correspond to either a significant or nonsignificant digit order depending on whether a key in the column or in a column corresponding to a higher digit is operated, said keys being connected to operate a check printing mechanism, the improvement comprising a series of key punches for each column of keys with each key punch in a series corresponding to one of the digits zero to nine and connected to be selectively operated for key punching a check in accordance with digit value in the digit order, means individual to each series of key punches for operating any one key punch in a series to key punch said check, and a selector slide for each column of keys mounting said key punch operating means in a position to operate the key punch corresponding to zero in the series, and means operated from the numeral keys to move said slide into a position for operating any key punch in the series corresponding to a significant digit upon operation of a numeral key in the column corresponding to a significant digit, and means for operating said key punch operating means for all the columns to punch the check with markings for all the digit orders.

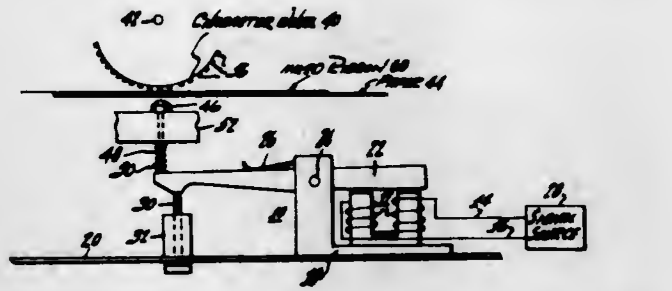
3,183,830
PRINT REGISTRATION CONTROL MEANS IN HIGH SPEED PRINTERS

Donald M. Fisher, Gloucester, and James E. Linnell, Haddonfield, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Dec. 27, 1960, Ser. No. 78,370

3 Claims. (Cl. 101—93)

1. In an "on-the-fly" printer for printing a line of characters on a recording medium, the combination comprising: means providing a path for said recording medium; continuously moving type disposed on one side of said path; a plurality of hammers, one for each character position in said line, disposed on the opposite side of said path, each of said hammers having an adjustable rest position adjusted so that all of the characters printed in a said line have the same print density; a like plurality of signal responsive means each for impelling a different one of said hammers against said type; a storage device providing output signals over separate channels for said signal responsive means; adjustable delay means connected in each of said channels and being adjusted so that all of the characters printed in a said line are in registration; and a plurality of trigger circuits each connected to receive the output of a different one of said delay means, each trigger circuit providing, when triggered, a pulse of the same width to a different one of said signal responsive means.

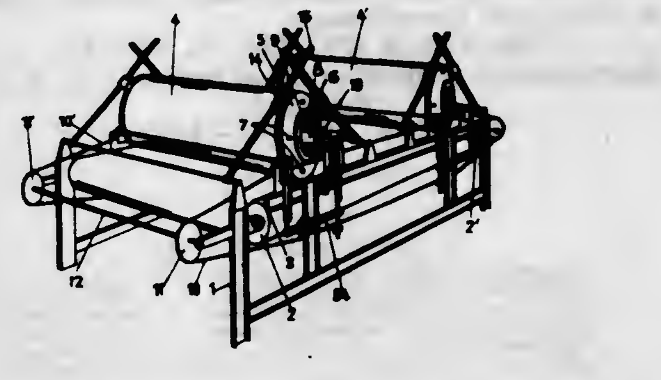


3,183,831
ROTARY PRINTING MACHINE

Franz Peter Zimmer, 7 Engelhartstrasse, Kufstein, Austria

Filed July 31, 1961, Ser. No. 127,914

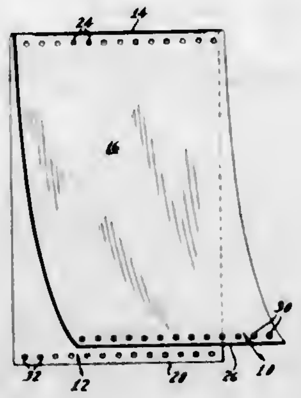
1 Claim. (Cl. 101—115)



A rotary printing machine for printing textiles or similar material, comprising an endless printing support, a plurality of rotatable design cylinders spaced apart above said printing support, each design cylinder comprising a gauze, two spaced support rings on which said gauge is tensioned, a ring gear upon each support ring having a diameter less than said support ring, said gauze having the shape of a closed cylinder, tightening means for said gauze engaging said support rings, endless chains running in synchronized movement on both sides of said design cylinders in mesh with said ring gears for rotating said design cylinders, each of said support rings having an annular groove therein, a plurality of axially displaceable rollers guided in said groove, means for holding said rollers in said groove in a plurality of circumferentially spaced positions whereby said design cylinder is supported against movement in longitudinal and vertical directions, means for axially displacing at least one of said rollers, a lever pivotally mounted adjacent each end of each design cylinder, a pair of vertically adjustable chain rollers operatively connected to each lever, one at each end thereof, and so disposed that one of said pair of chain rollers is in front of and the other behind the design cylinder, whereby pivotal movement of the lever causes movement of said chain rollers in opposite vertical directions, said chains being conducted over said chain rollers.

3,183,832
LITHOGRAPHIC PRINTING FOIL

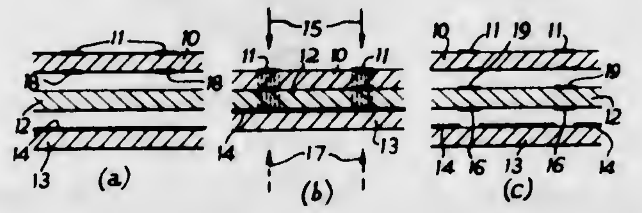
Frederick W. von Meister, Peapack, N.J., and Edmund B. Fritz, Yalesville, Conn., assignors to Azoplate Corporation, a corporation of New Jersey
Filed Feb. 1, 1960, Ser. No. 5,751
4 Claims. (Cl. 101—149.2)



1. A dual planographic printing foil for use in an offset printing press which comprises a pair of foils, having a combined thickness in the range of about 0.0035 to 0.0075 inch, attached along a common edge, each foil having two surfaces with an imageable layer on each, and means for attaching the dual foil to a printing cylinder.

3,183,833
METHOD OF PRODUCING DUPLICATING MASTER SHEETS

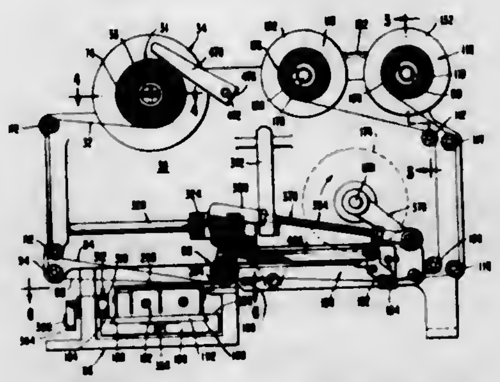
Alfred Ernest Block, London, England, assignor to Block & Anderson Limited, Hammersmith, London, England, a company of Great Britain
Filed Mar. 5, 1962, Ser. No. 177,462
Claims priority, application Great Britain, Mar. 8, 1961, 8,508/61
2 Claims. (Cl. 101—149.4)



1. The method of producing a mirrorscript duplicating master or like sheet from a sheet bearing an original image which is absorptive of infra-red radiation, which comprises the steps of providing an off-set repeat of the original image in heat sensitive pigment-containing material on the side of said original sheet opposite to that carrying the original image, placing a receptive sheet of material suitable for forming the base of the produced master sheet between the image-bearing original sheet and a transfer sheet of heat sensitive transfer material of a character suitable for forming the duplicating master image, the side of said original sheet carrying said off-set repeat of the original image being in contact with one side of said receptive sheet and the heat sensitive transfer material of said transfer sheet being in contact with the opposite side of said receptive sheet, maintaining said sheets in face-to-face contact with one another while subjecting them to infra-red radiation of an amount sufficient to cause melting and displacement of said off-set repeat image and said transfer material to the opposing sides of said receptive sheet by conducted heat from said original image upon heating of the latter by absorption of said radiation and then removing said receptive sheet for use as the required duplicating master sheet.

3,183,834
BED AND CYLINDER TAPE PRINTING MACHINE

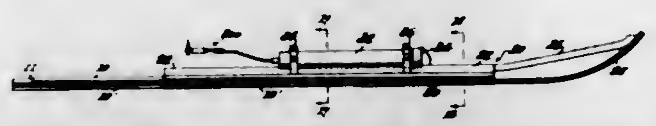
Adrian Marmor, Bryn Mawr, and Walter E. Colburn, Havertown, Pa., assignors to Brewer Pharmacal Engineering Corporation, Upper Darby, Pa., a corporation of Pennsylvania
Filed Jan. 19, 1962, Ser. No. 167,368
17 Claims. (Cl. 101—260)



1. A cyclically operable recorder comprising:
(*a*) support means for removably supporting indicia bearing key plate means;
(*b*) a roller;
(*c*) guide means for said roller fixed above and spaced from said support means;
(*d*) means mounting said roller on said guide means for movement across said key plate support means through a cycle of operation to and from retracted and extended terminal positions on transversely opposite sides of said support means, said mounting means permitting limited relative movement of said roller toward and away from said support means;
(*e*) means for carrying a supply of record tape;
(*f*) take-up means for receiving said tape from said supply;
(*g*) means for guiding said tape from said supply over said key plate support means under said roller and to said take-up means;
(*h*) actuating means for moving said roller to and from its extended and retracted positions and simultaneously therewith urging said roller and therefore said tape tightly against said key plate when in said support means during such movement of the roller from its retracted to its extended terminal position, and away from such contact on return of the roller to its retracted terminal position, thus to make an impression of said key plate indicia on said tape only on its movement to the extended position.
(*i*) means responsive to the movement of said roller moving means on its return movement to said retracted terminal position to grip and advance said tape incrementally to said take-up means during the said return movement thus to move a different portion of said tape over said key plate supporting means for subsequent impression of key plate indicia thereon;
(*j*) motor means for effecting a cycle of operation of said actuating means to move said roller from its retracted position to its extended position and return it to its retracted position; and
(*k*) control means for the starting and stopping of said motor to complete each cycle of operation; wherein
  (A) said tape supply means comprises,
    (1) a reel of tape, and
    (2) friction brake means for said reel; and
  (B) said take-up means comprises,
    (1) a reel upon which said tape is received;
    (2) friction drive means for said reel, said drive means being of less force than said brake means whereby tape feed is only by said tape advance means; and
    (3) means for driving said friction drive means by said motor means.

3,183,835
MINE CLEARING SNAKE

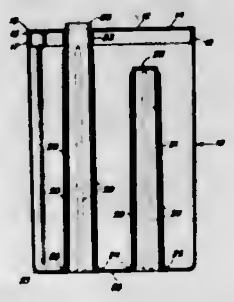
James L. Bisch, Valencia, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed July 15, 1952, Ser. No. 299,060
10 Claims. (Cl. 102—19)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. An explosive mine clearing snake comprising, in combination, an elongated container for explosive charges, the container being composed of upper and lower longitudinally corrugated segments opposing each other with corresponding channels in oppositely directed registry and each segment including a plurality of corrugated sections united serially in end-to-end relation, the said channels in the united sections defining explosive-retaining channels, explosive charges in the channels, self-propulsion means for the snake mounted on the container forwardly thereof, means for energizing the propulsion means, a firing assembly mounted on the container rearwardly thereof and including detonating means for the explosive charges, an anchor device, and a pull cable connected to the detonating means for the explosive charges and to the anchoring device for firing the explosive charges when the snake has traveled through the predetermined range from the said anchor device, the pull cable having an effective length corresponding to the said predetermined range of travel.

3,183,836
CANISTER FOR CAST PRIMER

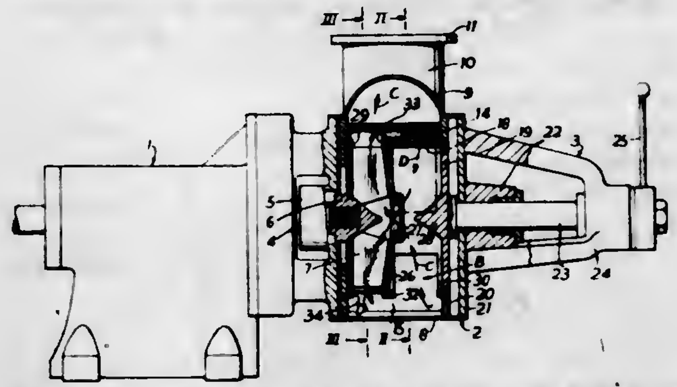
George L. Griffith, Coopersburg, Pa., assignor to Trojan Powder Company, Allentown, Pa., a corporation
Filed Aug. 21, 1963, Ser. No. 303,583
7 Claims. (Cl. 102—24)



1. A canister for cast primers suitable for mass production and automatic filling, comprising a container and a cover for the container; said container being a one-piece body with an open end for receiving the primer material and a closed end, there being two walled wells in the container, one to receive a Primacord passing longitudinally through the canister and the other a parallel well to house a blasting cap, the Primacord well extending from the closed end of the container to a level above the open end of the container, and being open at its junction with said closed end and it its junction with the cover, said blasting cap well having a closed end within the container, the other end of the blasting cap well being open so that a blasting cap may be inserted in the canister, said cover closing the open end of the container and having an opening snugly receiving the Primacord well.

3,183,837
PUMP

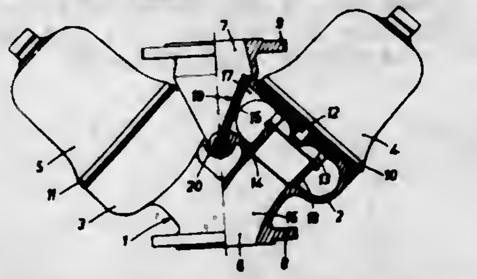
Guy S. Helliwell, Whitecroft, 139 Hinckley Road, Kirby Muxloe, England
Filed Jan. 9, 1963, Ser. No. 250,394
Claims priority, application Great Britain, Jan. 11, 1962, 1,045/62
2 Claims. (Cl. 103—2)



1. A liquid pump comprising a fixed cylindrical casing with two sets of ports therein, each set having at least two rotationally staggered ports, two conduits each connected with one of the ports of each set, a cylindrical valve shell rotatably mounted with a sliding fit within said casing and having an apertured internal partition disposed in a plane perpendicular to the axis of the shell and dividing it into a cylindrical inlet compartment and a cylindrical outlet compartment, an impeller mounted in said outlet compartment, the two sets of ports being at positions along the axial length of the casing corresponding to these two compartments, respectively, said valve shell having an arcuate slot in the peripheral wall of each of the inlet and outlet compartments for registration with the associated set of ports, and a turning device connected to said valve shell for rotating said shell to place said liquid inlet and outlet compartments into liquid flow communication selectively with casing ports connecting to one or the other set of conduits.

3,183,838
TWIN PUMP DEVICE

Sixten Englesson, Djursholm, Sweden, assignor of one-half to AB Flygts Pumpar, Solna, Sweden
Filed Mar. 27, 1963, Ser. No. 268,403
5 Claims. (Cl. 103—4)

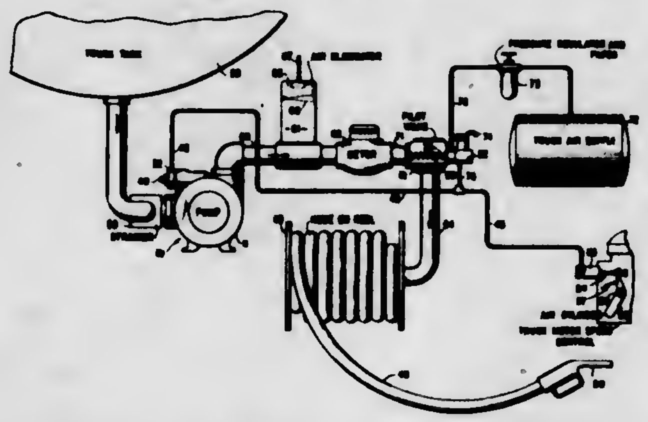


1. A centrifugal twin pump device, comprising in combination, a housing, said housing having two opposite open end sections provided with tube connection means, one end section serving as an inlet and the other as an outlet, said housing defining four open ended internal branch channels, two branch channels flaring outwardly in said housing from each of said open end sections, a right angle being formed between the two branch channels of each end section, the axes of the four branch channels forming a diamond shape, one branch channel of one open end section intersecting at right angle one branch channel of the other open end section, the open ends of said intersecting branch channels being enlarged to form a pump chamber for a centrifugal pump impeller, a centrifugal pump unit including a motor and an impeller disposed in each pump chamber and connected to the branch channels thereof, the axes of the centrifugal pump units coinciding with the branch channels in the inlet open

end section, and valve means operable for alternatingly closing one branch channel of an open end section.

3,183,839
PUMP CONTROL

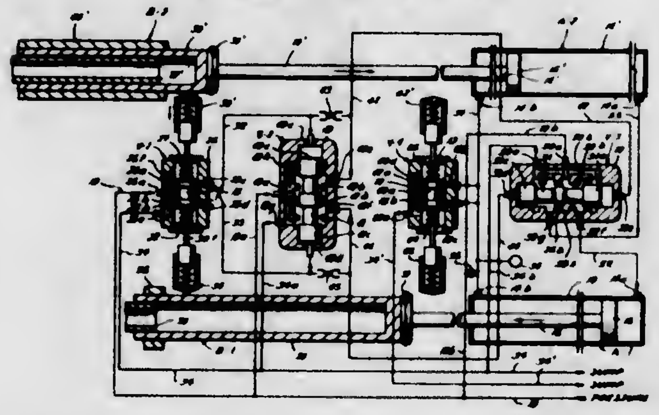
Virgil A. Brunson and Harold L. Vanden Hoek, Grand Rapids, Mich., assignors to Blackmer Pump Company, Grand Rapids, Mich., a company of Michigan
Filed May 16, 1963, Ser. No. 280,841
4 Claims. (Cl. 103—21)



2. A system for supplying liquid selectively at either of two controlled pressures comprising, in combination, a positive displacement pump, a relief valve for bypassing liquid from the outlet to the inlet side of the pump to limit the pressure on the outlet side, a spring having one end engaging the relief valve to bias the valve toward closed position, a chamber having a wall which supports the other end of the spring and which is expansible to change the closing bias of the valve, a fluid pressure-actuated control for regulating the speed of the pump, means for supplying fluid under pressure to the chamber and to the fluid pressure-actuated control, means for sensing flow of liquid in the system, and means actuated by the sensing means for changing the pressure of the fluid supplied to the chamber and to the fluid pressure-actuated control to reduce the closing bias of the valve and the speed of the pump when the flow of liquid supplied by the system is reduced.

3,183,840
PUMP

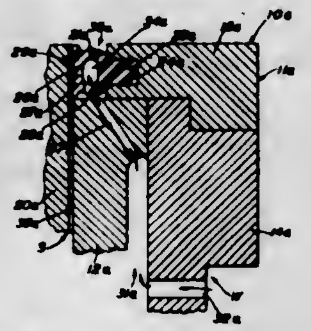
George E. Conover, Houston, Tex., assignor to Lynes, Inc., a corporation of Texas
Filed Aug. 3, 1962, Ser. No. 214,565
4 Claims. (Cl. 103—49)



1. A double-acting pump having a pair of power sections and a control means therewith for controlling the pumping action of the pump, including:
- (*a*) a control valve for controlling fluid inlet to the pair of power sections for alternate pumping with said sections,
- (*b*) an intermediate valve operably connected with said control valve for hydraulically shifting same, and
- (*c*) a pilot valve adapted to be mechanically moved for controlling hydraulic fluid flow to said intermediate valve to control the movement thereof.

3,183,841
PUMP AND SEALING UNIT THEREFOR

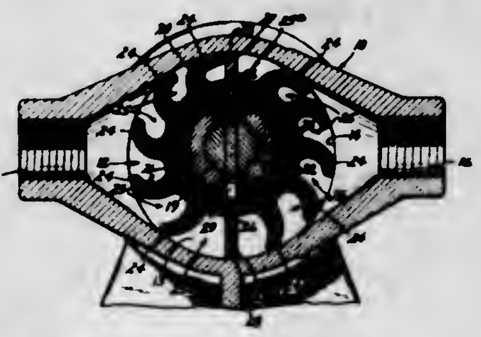
William C. Gaynor, 1835 N. New England, Chicago, Ill.
Filed Sept. 12, 1963, Ser. No. 308,432
4 Claims. (Cl. 103—111)



1. A pump comprising a pump housing having a suction water inlet and a water outlet, a rotary impeller in the said pump housing and including a lateral wall surface facing toward the said water inlet opening, a flexible and resilient annular sealing unit including an annular hollow body having a lateral sealing surface facing toward and engaging the said lateral wall surface of the said rotary impeller, and means carried by the said housing for supporting the said flexible annular sealing unit and retaining the said annular hollow body thereof under compression and for urging the said lateral sealing surface thereof into sealing engagement with the said lateral surface of the said rotary impeller, the said means for supporting the said flexible and resilient sealing unit including a suction mouth liner arranged about the said inlet opening of the said pump, the said suction mouth liner having an annular groove formed therein, and the said flexible and resilient sealing unit including an annular anchoring flange mounted under compression in the said annular groove in the said suction mouth liner.

3,183,842
PUMP CONSTRUCTION

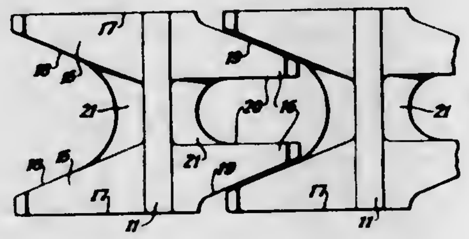
Harry J. Sadler, Minneapolis, and Ernest E. Cook, Coon Rapids, Minn., assignors to Hypro Engineering, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 1, 1963, Ser. No. 320,869
4 Claims. (Cl. 103—117)



1. In a fluid pump, a housing defining:
- (*a*) a chamber having spaced parallel end walls and a cylindrical side wall, and having circumferentially spaced inlet and outlet ports communicating with said chamber,
- (*b*) a shaft journalled for rotation in at least one of said end walls on an axis radially offset from the axis of said chamber,
- (*c*) a rotor fast on said shaft within said chamber, said rotor comprising:
  - (1) a diametrically enlarged hub concentric with said shaft and extending between said end walls,
  - (2) a plurality of circumferentially spaced radially outwardly projecting flexible resilient vane-like impeller elements fast on said hub,
  - (3) said impeller elements also extending between said end walls and having constant sweeping engagement with said cylindrical side wall during rotation thereof and being flexed rearwardly in varying degrees during such rotation,
  - (4) said impeller elements defining a plurality of circumferentially spaced axially extended pockets of varying capacity,
- (*d*) one of said pockets defining a radially outwardly opening axially extended channel, and
- (*e*) a relatively rigid impeller blade mounted and guided in said channel for limited reciprocal movements generally radially of said rotor and adapted to constantly engage said cylindrical side wall during rotation of said rotor.

3,183,843
ROTARY FLUID PRESSURE PUMPS AND MOTORS OF THE ECCENTRIC VANE TYPE

David H. Cockburn, 1 N. Park, Iver, Buckinghamshire, England
Filed Apr. 22, 1963, Ser. No. 274,530
4 Claims. (Cl. 103—136)

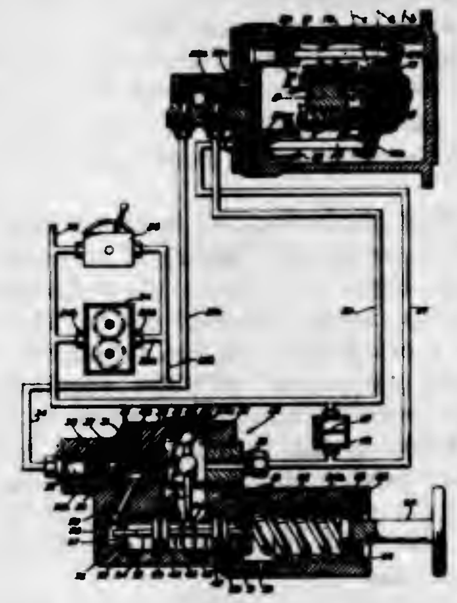


1. In a hydraulic pump or motor of the type comprising a casing defining a substantially cylindrical working chamber with a circumferential wall and two end walls and a rotor mounted eccentrically within said casing, said rotor having a plurality of spaced grooves extending longitudinally and radially inwardly from the circumference thereof, the improvement comprising
- a series of slipper elements corresponding in number to the number of said spaced grooves and adapted to slidably engage the circumferential wall of the cylindrical working chamber,
- each of said slipper elements having a stem portion slidably extending into its particular groove so as to move in and out of said groove,
- each of said slipper elements having a first pair of fingers curved to fit the contour of the cylindrical working chamber extending forwardly from said stem, and a second pair of fingers curved to fit the contour of said cylindrical working chamber extending to the rear of said stem,
- the second pair of fingers of any slipper element of said series interfitting with the first pair of fingers of the next adjacent slipper element while providing openings for the passage of fluid between said second pair of fingers.

3,183,844
PUMP CONTROL

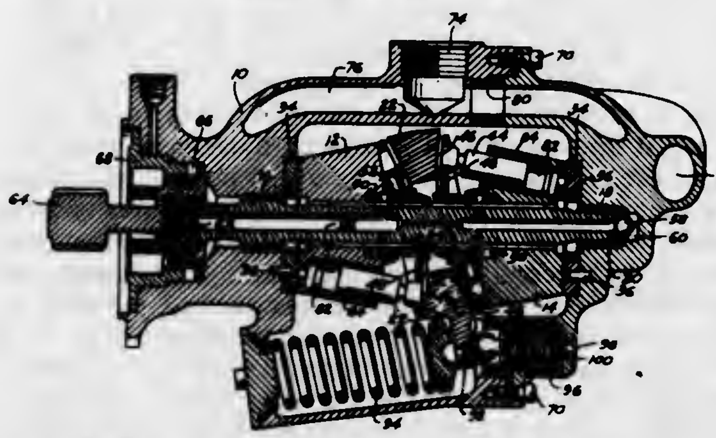
Arnold Pitt, 5 Hillgarden Road, Weston, Ontario, Canada, and Tadeusz Budzich, 3344 Colwyn Road, Cleveland, Ohio
Filed Mar. 31, 1961, Ser. No. 99,862
2 Claims. (Cl. 103—162)

1. In a swash plate pump of the kind including a swash plate which provides an annular cam face for moving a series of pistons axially of their bores as the pistons are traversed around the cam face on a circular path, the pistons being biased towards the cam face by springs, the swash plate being journalled for movement about [illegible] axis which extends substantially diametrically of the cam face and being biased by said springs of the pistons towards an intermediate position of adjustment about said axis in which the cam face is perpendicular to said circular path and in which the output of the pump is zero; means for moving the swash plate about said axis in opposite directions from said intermediate position of adjustment against the bias imposed by said springs and the force imposed on the swash plate by the pressure of the fluid being pumped to effect a determined output of the pump, said means including a first piston and cylinder arrangement, means for supplying fluid at a fixed constant pressure to said first piston and cylinder arrangement, means connecting said first piston and cylinder arrangement to said swash plate for the swash plate to be moved in a first direction about its axis of movement when fluid under pressure is supplied to said first piston and cylinder arrangement, a second piston and cylinder arrangement, means for supplying fluid at a selectable constant pressure to said second piston and cylinder arrangement, and means connecting said second piston and cylinder arrangement to said swash plate for the swash plate to be moved in a second direction opposite to said first direction about its axis of movement when fluid under pressure is supplied to said second piston and cylinder arrangement, the working area of said second piston and cylinder arrangement being such that at maximum selectable fluid pressure it exerts a force on said swash plate in said opposite direction which is greater than the force exerted by the first piston and cylinder arrangement in said one direction at said fixed constant pressure, the swash plate, when the forces exerted by said first and second piston and cylinder arrangements are equal, lying in said intermediate position of adjustment in which the output of the pump is zero, said means for supplying fluid at a selectable constant pressure comprising a valve body having an internal cavity and having an inlet to said cavity and an outlet from said cavity, a valve member and a complementary valve seat associated with said inlet to control the admission of fluid under pressure into said cavity, and actuating means for moving the valve member off its seating to admit fluid under pressure to said cavity, said actuating means including a push rod acting on the valve member and movable for moving the valve member relatively to its seating, a lever pivoted at one of its ends for movement in a plane which includes the longitudinal axis of the push rod, the lever acting on one end of the push rod at a position intermediate the ends of the lever, a control piston having a working face exposed to the pressure within the cavity, a connection between the control piston and the other end of said lever for the lever to be moved in a valve closing direction by the control piston on an increase in pressure in said cavity, a spring acting on the lever and biasing the lever in a valve opening direction, and means for varying the bias exerted by said spring in said valve opening direction.



3,183,845
PUMP

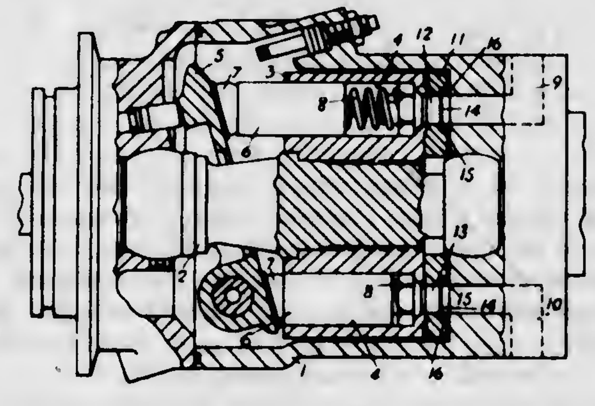
Henry Park Tyler, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 228,966
3 Claims. (Cl. 103—162)



1. A fluid pressurizing apparatus comprising:
- a housing;
- a shaft with a plurality of splines in said housing;
- a first fluid displacing unit having a central opening adapted to receive the splines of said shaft, said first fluid displacing unit having a plurality of first fluid displacing members which members are equidistantly positioned, said first fluid displacing members including a plurality of first cylinders and located on said shaft so that an axis of one of the cylinders and an axis of a spline of the shaft are so arranged to be in the same radial plane and substantially parallel;
- a second fluid displacing unit having a central opening adapted to receive the splines of said shaft, said second fluid displacing unit having a plurality of equidistantly spaced second fluid displacing members including a plurality of second cylinders with an axis of one of the second cylinders angularly displaced from the axes of said spline which is in the same radial plane as the cylinder of said first cylinders with said axis of said one of said second cylinders substantially parallel to the axis of said first cylinders of said first fluid displacing unit and the splines of said shaft; and
- common passages to severally connect an inlet means and an exhaust means of said first and second fluid displacing units.

3,183,846
FLUID PUMPS AND MOTORS

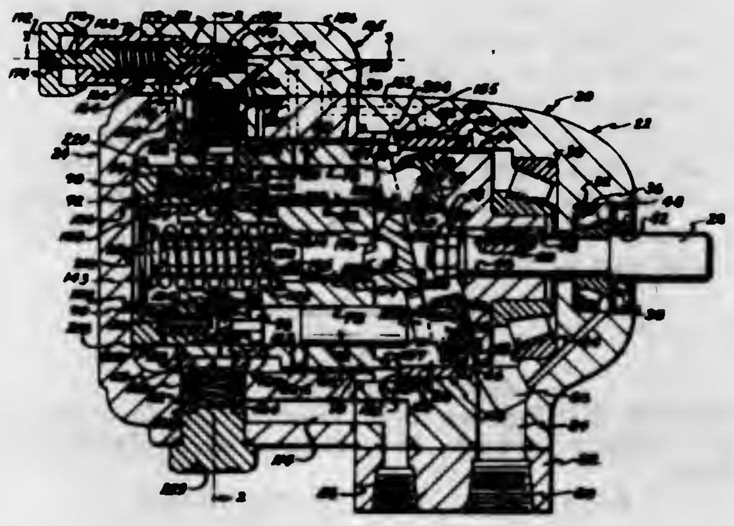
Robert Thomas John Skinner, Kenilworth, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Dec. 3, 1962, Ser. No. 241,889
2 Claims. (Cl. 103—162)



1. Hydraulic apparatus comprising in combination a hollow body having at one end a portion which is provided with a flat internal surface, and with an inlet and outlet extending from said flat internal surface at different positions, a shaft extending through the interior of said hollow body and the other end thereof, means whereby said shaft is rotatably supported at both ends of said hollow body, a rotor which is mounted on the portion of said shaft within said hollow body so that said rotor is rotatable with said shaft, and which is provided with a plurality of longitudinally extending bores in equi-angularly spaced positions, a plurality of pistons mounted within said bores, and extending from the end of said rotor remote from said inlet and outlet, a swash plate which is mounted within said hollow body at the end thereof adjacent to the outer ends of said pistons, and which is obliquely disposed relative to the axis of rotation of said rotor, shoes provided on the outer ends of said pistons, and in contact with said swash plate, springs acting on said pistons for maintaining said shoes in contact with said swash plate so that said pistons are reciprocated during rotation of said rotor, a non-rotatable annular valve plate which is disposed between said flat internal surface and the adjacent end of said rotor, and which is provided with a pair of spaced arcuate ports through which the adjacent ends of the bores in said rotor communicate in turn with said inlet and outlet during rotation of said rotor, the side of said valve plate adjacent to said flat internal surface being provided immediately around said arcuate ports respectively with a pair of recesses which form shoulders extending in a plane at a right angle to the axis of said rotor, a pair of resilient gaskets which are of circular cross-section, and which are disposed in said recesses respectively to bear against the corresponding shoulders formed by said recesses, and a pair of arcuate sealing rings which are associated with said arcuate ports respectively, each of said sealing rings being of substantially L-shaped section, and having one of its flanges disposed between the corresponding gasket and said flat internal surface, and the other of its flanges in contact with the internal side of the corresponding gasket.

3,183,847
VARIABLE DISPLACEMENT PUMP

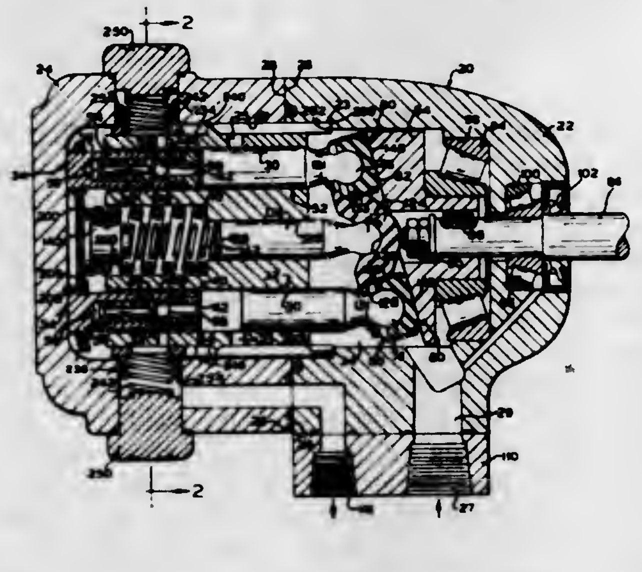
Robert E. Raymond, Zanesville, Ohio, assignor to Hydro-Kinetics, Inc., Zanesville, Ohio, a corporation of Ohio
Filed Dec. 22, 1961, Ser. No. 161,554
14 Claims. (Cl. 103—173)



1. In a hydraulic machine the combination of housing means including a housing inlet port and a housing outlet port; a cylinder barrel slideably disposed in said housing means and including a plurality of cylinders and an annular manifold, said cylinder barrel including an axially extending side wall provided with a barrel inlet port communicating with said cylinders and a barrel outlet port connecting said manifold with said housing outlet port; a plurality of pistons disposed in said cylinders; a plurality of reaction plugs having inner ends slideably disposed in said cylinders and outer ends freely engaging said housing means; outlet valve means disposed in said barrel for conducting fluid from said cylinders to said manifold; cam means rotatably mounted in said housing means and in driving engagement with said pistons; piston return means engaging said pistons; and means for shifting said barrel in said housing means.

3,183,848
CARTRIDGE TYPE PUMPING APPARATUS

Robert E. Raymond, Zanesville, Ohio, assignor to Hydro-Kinetics, Inc., Zanesville, Ohio, a corporation of Ohio
Filed May 9, 1962, Ser. No. 193,458
13 Claims. (Cl. 103—173)

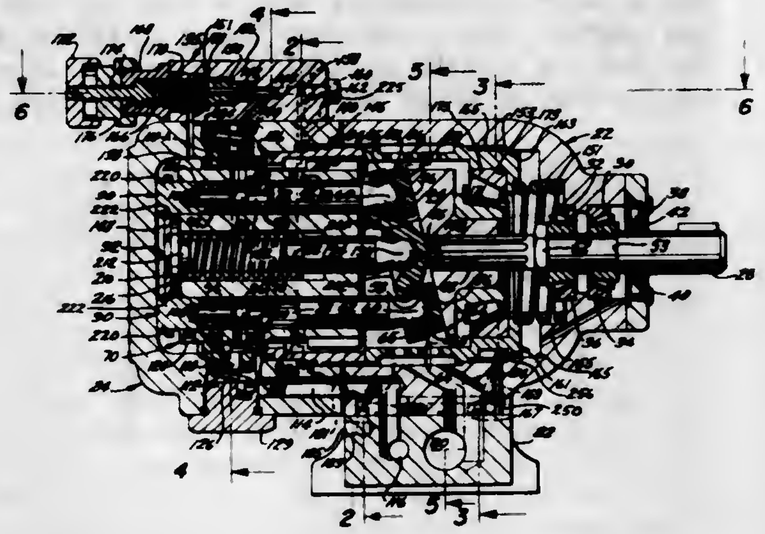


1. In a hydraulic machine the combination of housing means including an inner wall, an end wall, an end opening opposite said end wall, and housing inlet and outlet ports; a cylinder barrel removeably mounted in said housing means and including a plurality of axially extending cylinders, said cylinder barrel including an axially extending side wall provided with a barrel outlet port communicating with said cylinders; a plurality of pistons mounted for reciprocation in said cylinders; means connecting said barrel outlet port with said housing outlet port; exhaust valve means for said cylinders; means for keying said cylinder barrel against rotation in said housing means; a plurality of reaction plugs extending into said cylinders and including outer ends in force transmitting relationship with said end wall of said housing means; reaction plug connecting means; means attaching the outer ends of said reaction plugs to said connecting means to form a reaction plug assembly; and means for retaining said reaction plug assembly on said cylinder barrel.

3,183,849
VARIABLE DISPLACEMENT PUMP

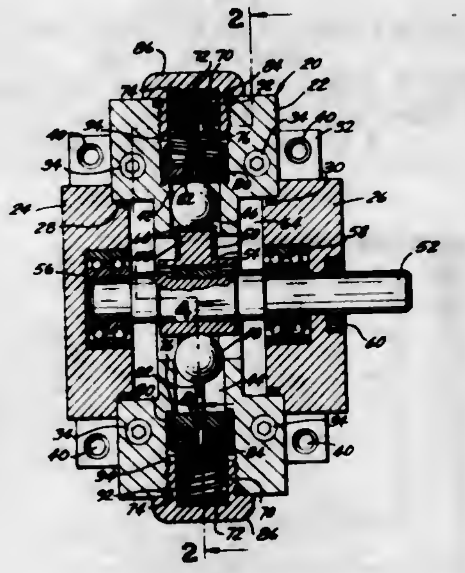
Robert E. Raymond, Zanesville, Ohio, assignor to Hydro-Kinetics, Inc., Zanesville, Ohio
Filed May 10, 1962, Ser. No. 187,325
8 Claims. (Cl. 103—173)

1. In a hydraulic machine the combination of housing means including a plurality of axially disposed pumping cylinders having side walls provided with intake ports and a reaction cylinder communicating with a source of pressurized fluid; piston driving means including a cam axially moveably mounted in said housing means; a plurality of pumping pistons disposed in said pumping cylinders and in driven engagement with said cam; a cam return spring operative between said cam and said housing means in one axial direction; an annular reaction piston in said reaction cylinder for moving said cam in said one axial direction in opposition to reaction forces exerted by said pumping pistons on said cam, yoke means engaging said pumping pistons; and a pumping piston return spring operative between said yoke and said housing means in the other axial direction.



3,183,850
BALL PUMP

Robert E. Raymond, 131 Norcross Road, Zanesville, Ohio
Filed May 10, 1962, Ser. No. 187,369
19 Claims. (Cl. 103—174)



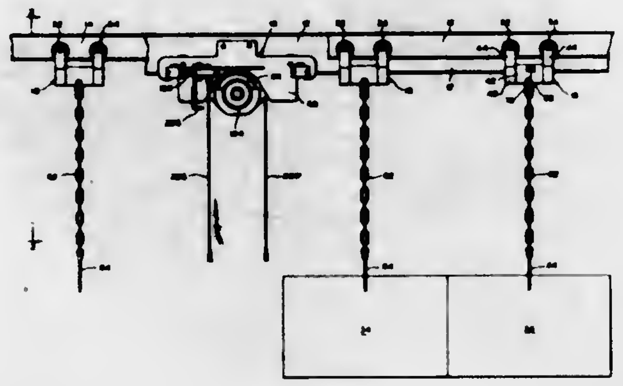
1. An improved hydraulic machine comprising, in combination, casing means including a cylinder having a cylinder wall provided with a slotted inner end forming a ball guide and an intake port, exhaust valve means for said cylinder; shaft means rotatably mounted in said casing means and including a cam means; a ball disposed in said cylinder in engagement with said cam means and movable to an inner location in said cylinder wherein the major diameter of said ball is disposed inwardly of said intake valve port to open said port, said ball thereby serving the triple function of a piston means for said cylinder, a bearing member on said cam means, and a valve element for said intake valve port; and means biasing said ball towards said eccentric.

3,183,851
CONVEYOR SYSTEM

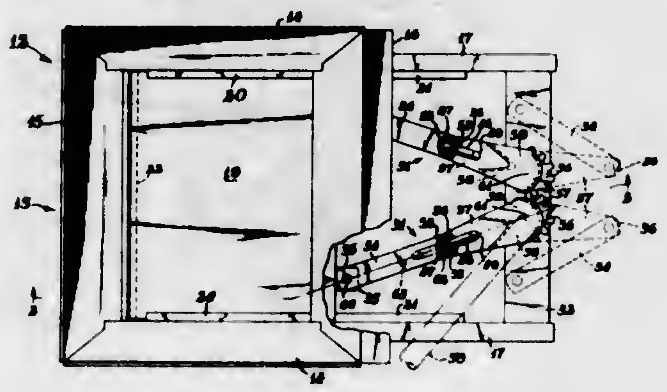
Gordon L. Hawks, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Mar. 13, 1963, Ser. No. 264,984
10 Claims. (Cl. 104—91)

1. In a conveyor system: a middle and two side monorail tracks, a plurality of trolleys mounted on said side

monorail tracks, a tractor assembly mounted on said middle monorail track for movement in opposite direction, a pusher arm extending laterally from each side of said assembly, each of said arms having a yieldable one-way push bar pivotally mounted on the free end of each arm in close proximity to the respective side track for engagement with said trolleys, said push bars being yieldable in one direction only and in opposite directions to one another, a drive wheel mounted on said assembly beneath said middle track for driving engagement with the underside thereof, and a motor supported by said assembly for driving said drive wheel.

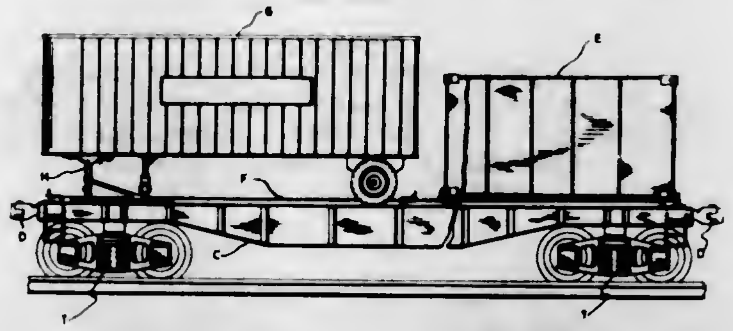


3,183,852
DISCHARGE OUTLET ASSEMBLY FOR HOPPER CAR
William E. Fritz, 815 S. Quincy St., Hinsdale, Ill.
Filed Aug. 21, 1963, Ser. No. 303,641
9 Claims. (Cl. 105—282)



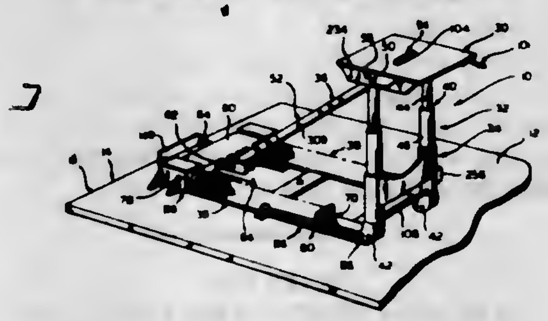
1. A discharge outlet assembly comprising:
(*a*) an enclosure defining a discharge opening,
(*b*) a slidable gate for said opening movable from closed position through one side of said enclosure to open position beyond said one side,
(*c*) ways supported on opposite sides of said enclosure and extending toward each other on which said gate is slidable in a horizontal plane,
(*d*) support means mounted on and extending laterally from said enclosure in the direction of opening movement of said gate,
(*e*) a pair of crank arms mounted on said support means to rotate about parallel vertical axes normal to said plane,
(*f*) link means individual to each crank arm pivotally connected at one end to the distal end thereof and pivotally connected at the other end to said gate, and
(*g*) means operatively interconnecting said crank arms and causing conjoint rotation thereof for moving said gate along said ways between closed and open position.

3,183,853
SLIDING FRAME CAR
Boris Terlecky, New York, N.Y., and Richard Krause, New Brunswick, N.J., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Oct. 10, 1960, Ser. No. 61,500
8 Claims. (Cl. 105—368)



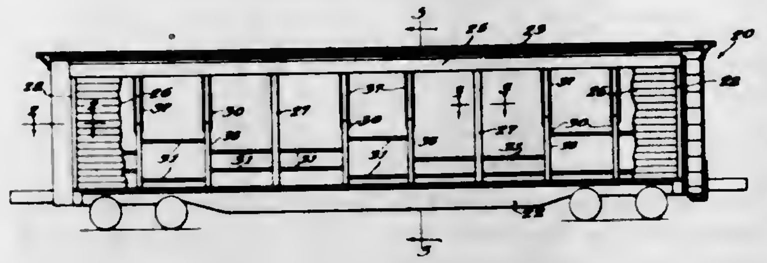
1. A cushioning means for cushioning lading carried on a railway car having a flat deck, comprising two spaced apart parallel frame members resting upon and longitudinally slidable on the deck, spring devices supported on the deck between said spaced apart frame members and being operatively connected to said frame members and the deck to resist longitudinal sliding of the frame members on the deck, a rubber cushioning unit also supported between said frame members and operatively connected to said frame and said deck to resist longitudinal sliding of the frame members on the deck, lading supporting devices connected to said frame members and longitudinally slidable therewith, and means connected to said frame members and operable to engage first said spring devices and second said rubber cushioning unit whereby the lading carried on said lading supporting device is cushioned by the frame members sliding on the deck under control firstly of said spring devices and secondly by the spring devices and said rubber cushioning unit acting in parallel.

3,183,854
FIFTH WHEEL STAND FOR RAILROAD CARS
James E. Candlin, Jr., Lansing, and William Van Der Sluys, Homewood, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed May 4, 1960, Ser. No. 26,884
4 Claims. (Cl. 105—368)



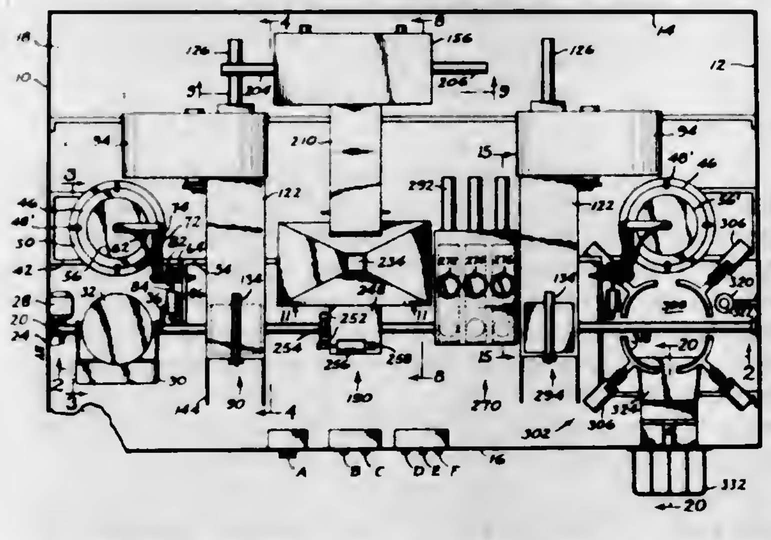
1. In a railroad flatcar that includes as a fifth wheel stand a fifth wheel plate structure defining a trailer kingpin seat, a kingpin latching device carried by the plate structure for securing the plate structure to a trailer kingpin having a longitudinal load-bearing portion located adjacent the trailer undersurface when the pin is received in said seat, said latching device including means for engaging the pin load-bearing portion, and a retractable support structure for said fifth wheel plate structure, the improvement wherein said stand comprises in its raised position: at least two elongate, generally rectilinear struts disposed at an angle to each other and anchored at their lower ends to the car structure and at their upper ends to the fifth wheel plate structure, the longitudinal axes of said struts intersecting at a point which is at least as high as a horizontal plane passing through a section of the longitudinal load-bearing portion of said kingpin, the upper ends of said struts being connected to said fifth wheel plate structure at longitudinally spaced points.

3,183,855
LOAD RETAINER
Franklin P. Adler, Michigan City, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Feb. 26, 1962, Ser. No. 175,761
13 Claims. (Cl. 105—369)



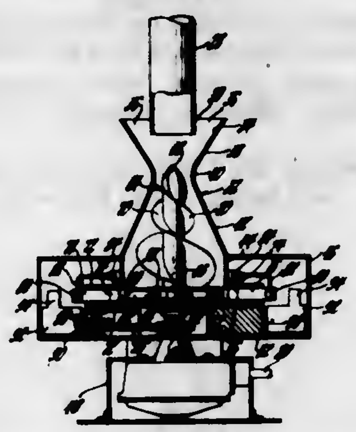
1. A collapsible load retainer for a cargo carrier comprising means providing a pocket in the floor structure of the said cargo carrier, a pair of vertical standards extending upwardly from said pocket, one of said standards being slotted, a rail having a head end and a free end, the head end of said rail interlocking with and being received within said slot for vertically sliding movement between an elevated position and a storage position in which it is disposed within said pocket, and means to secure both ends of said rail to said standards in a predetermined elevated position, the slot of said slotted standard being provided with an enlarged slot portion providing a shoulder, the head end of said rail including a neck extending through said slot and a head located within said slot, said end securing means for the head end comprising a boss located on said neck adjacent to said head so that longitudinal displacement of said rail outwardly of said slot into a locking position will cause said boss to engage said shoulder, and said end securing means for the free end of said rail including means to maintain said rail in said longitudinally displaced locking position.

3,183,856
APPARATUS FOR MAKING AND DISPENSING SANDWICHES
Carl H. Jolly, 15734 SE. Powell, Portland, Oreg.
Filed Oct. 31, 1961, Ser. No. 149,033
8 Claims. (Cl. 107—1)



1. Sandwich making apparatus, comprising a horizontal sandwich support mounted for reciprocation between a start position and an end position, bottom bread half storage means, dispenser means communicating with the bottom bread half storage means and having a discharge end positioned adjacent the reciprocation path of the support, the dispenser means being operable when the support is moved from its start position to a position adjacent the discharge end of the bottom bread half dispenser to remove from said storage means and dispense a bottom bread half flatwise on the support, sandwich food storage means, dispenser means communicating with the food storage means and having a discharge end positioned adjacent the reciprocation path of the support and spaced from the first named discharge end in the direction toward the end position of reciprocation of the support, the food dispenser means being operable when the support is moved from its position adjacent the discharge end of the bottom bread half dispenser to a position adjacent the discharge end of the food dispenser to dispense the food onto the bottom bread half previously deposited on the support, top bread half storage means, dispenser means communicating with the top bread half storage means and having a discharge end positioned adjacent the reciprocation path of the support and spaced from the second named discharge end in the direction toward the end position of reciprocation of the support, the last named dispenser means being operable when the support is moved from its position adjacent the discharge end of the food dispenser to a position adjacent the discharge end of the top bread half dispenser to remove from said storage means and dispense a top bread half over the sandwich food previously deposited onto the bottom bread half.

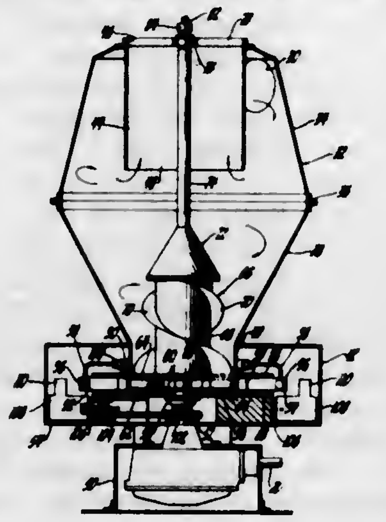
3,183,857
HAY WAFERING METHOD AND APPARATUS
Stanley L. Lawrence, Livonia, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed Aug. 23, 1962, Ser. No. 218,963
9 Claims. (Cl. 107—14)



4. In an apparatus for making compressed hay wafers, and of the type having an annular series of die cells including entrance ends thereof circumferentially spaced about and communicating with a wafering chamber in which there is mounted a rotary hay compaction means for compacting hay received within said chamber into and through said die cells to form wafers; the improvement comprising an axially open and extending hopper having one open end thereof communicating with said chamber and the other open end thereof spaced therefrom, axially extending rotatable feed auger means mounted within said hopper and having one end thereof drivingly connected to said rotary hay compaction means for rotation with the latter and the other end thereof spaced axially therefrom and terminating axially between said ends of said hopper, means for delivering hay to be wafered in an accompanying air stream through said other end of said hopper into the latter and axially upon said other end of said feed auger means, and vent means for venting the air stream from said hopper through said other end thereof.

3,183,858
HAY WAFERING METHOD AND APPARATUS

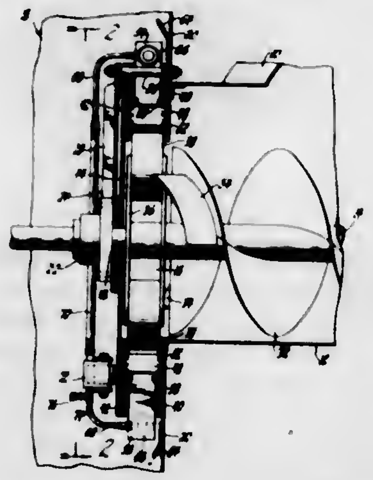
Stanley L. Lawrence, Livonia, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed Aug. 23, 1962, Ser. No. 218,965
16 Claims. (Cl. 107—14)



4. In an apparatus for making compressed hay wafers, and of the type having an annular series of die cells including entrance ends thereof circumferentially spaced about and communicating with a wafering chamber in which there is mounted a rotary hay compaction means for compacting hay received within said chamber into and through said die cells to form wafers; the improvement comprising a hopper having one end thereof communicating with said chamber, feed auger means mounted within said hopper, and means for delivering hay to be wafered in a swirling flow path in said hopper axially toward and radially about said feed auger means for feed to said chamber.

3,183,859
DIE CELL CONSTRUCTION FOR HAY WAFERING APPARATUS

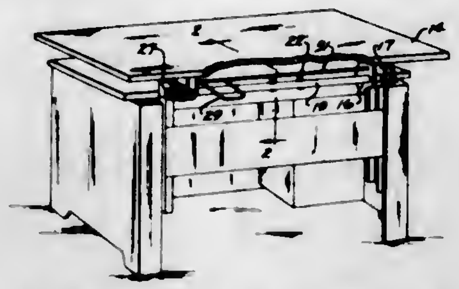
Merle H. Peterson, Livonia, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland
Filed Apr. 24, 1963, Ser. No. 275,318
14 Claims. (Cl. 107—14)



1. In an apparatus for making compressed hay wafers, and of the type including two pairs of opposed die wall members defining a die cell having an entrance end communicating with hay compression means to compress hay into and therethrough to form wafers; the improvement comprising means respectively mounting said pairs of die wall members for movement relative to each other, and control means controlling relative movement of said respective pairs of die wall members and being alternatively selectively operable to bias the latter relatively toward each other and to completely release said respective pairs of die wall members for free relative movement away from each other as hay is compressed into said die cells.

3,183,860
TILTABLE TABLE AND LOCKING MECHANISM

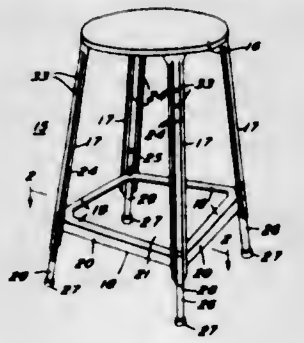
Victor J. Kritske, Sheboygan, Wis., assignor to Mayline Company, Inc., Sheboygan, Wis., a corporation of Wisconsin
Filed Apr. 22, 1963, Ser. No. 274,553
9 Claims. (Cl. 108—2)



1. In a table having a tiltable top member, a table supporting frame member, a vertically extending plate integral with said frame member, a pair of plates and means securing them rigidly to the table top in a depending parallel arrangement, means pivotally supporting the depending plates on the vertical plate for pivotal movement relative thereto about a generally horizontal pivot axis, a locking pin and means mounting it on said depending plates for reciprocation in a path perpendicular to said depending plates and generally parallel to said pivot axis, a lever pivotally supported on one of the depending plates for movement about an axis generally parallel to said pivot axis and operatively connected to said pin, the vertical plate having a plurality of slots spaced along an arc concentric with and removed from said pivot axis of said pivot means for locking engagement by said pin, and manually operable means for operating said lever to effect engagement and disengagement of the pin and slots.

3,183,861
STOOLS

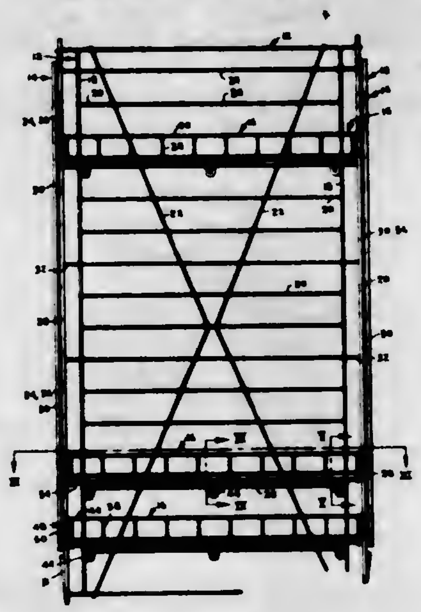
Robert T. Halstrick, Huntingdon Valley, Pa., assignor to American Metal Works, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed May 2, 1963, Ser. No. 277,546
1 Claim. (Cl. 108—144)



In a stool having a seat, main legs extending downwardly from and in diverging relation to said seat, said legs each being of channel shape with opposite side flange portions and flaring rims extending outwardly from said side flange portions, a bracing frame at lower portions of said legs engaged with said rims in bridging relation to said side flange portions and retaining said legs in spaced relation, leg extension tubes at the lower ends of said main legs, and self locking means for adjustably connecting said extension tubes and said main legs and retaining said tubes and legs in locked condition including in said opposite side flange portions of said main legs transversely aligned elongated slots with an opposite parallel pair of longer side margins and with their longer margins disposed at an inclination with respect to the longitudinal axis of said main legs, openings of square shape in said tubes for selective alignment with said slots, and locking pins square in shape with opposite faces extending through said slots and selected ones of said openings and with one of said locking pin faces disposed for engagement with corresponding ones of said margins of each said slot and the other of said locking pin faces engaging a remote portion of said square shaped opening.

3,183,862
FOLDABLE DISPLAY DEVICE

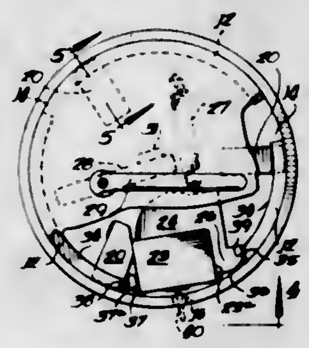
James Michael Melvin, Elwood, Ind., assignor to Monticello Manufacturing Corporation, Elwood, Ind.
Filed Dec. 10, 1963, Ser. No. 329,542
6 Claims. (Cl. 108—144)



1. A display rack, comprising
- an upright panel including a series of vertically spaced members,
- means providing a recess in said panel adjacent each of said vertically spaced members;
- a shelf;
- a finger carried by said shelf and adapted to engage one of said recesses to restrict the shelf against lateral movement and to rest on one of said vertically spaced members to support said shelf;
- said finger being provided by heavy wire or rod extending from said shelf and formed to run rearwardly, then forwardly, providing a smooth entry-portion for entering into said recess;
- said shelf including a laterally extending member from which said finger is formed as an integral extension thereof.

3,183,863
SAFE AND LOCKING MECHANISM

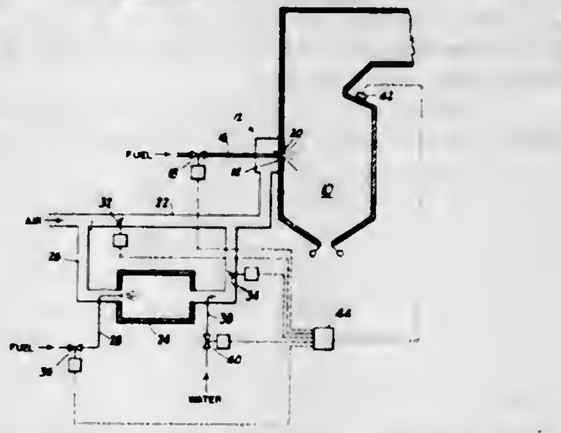
George E. Jeffres, 1116 E. Taylor St., Bloomington, Ill.
Filed Sept. 27, 1963, Ser. No. 312,195
2 Claims. (Cl. 109—59)



1. A safe having, in combination, an elongated tubular container open at one end, an interrupted flange member extending around the interior of said container adjacent said open end, a cover adapted to fit into and close said open end and having inner and outer sides and lugs spaced from each other and the inner side of the cover to move through interruptions in said flange member during movement of the cover axially into a lift-off position of engagement with the member and to move inwardly behind the member as an incident to turning of the cover from the lift-off position to a locked position to retain the cover in engagement with the member, a stop rigid with the interior of said container, a lock mechanism carried by the inner side of said cover and having a bolt movable radially of the cover and into and out of a position of radial overlap with the stop to prevent rotation of the cover from said locked position to said lift-off position, yieldable means normally urging said bolt out of said radial overlap position, said lock mechanism having a radially facing keyway and normally acting on said bolt to retain the same against movement radially out of said overlap position under the action of said yieldable means but releasing the bolt for movement out of the overlap position in response to operation of a key in said keyway, means on said container defining a radially opening keyhole in registry with said keyway when said cover is in said locked position and out of registry when the cover is rotated away from the locked position and toward said lift-off position whereby a key extending through said keyhole and into said keyway prevents rotation of the cover out of the locked position, a handle mounted on the exterior of said cover and rotatable about an axis extending longitudinally of the container, and an arm located on the inner side of said cover and movable with said handle and relative to the cover in one direction to shift said bolt against the action of said yieldable means and into said radially overlapping position, said arm being movable angularly with said handle in the opposite direction to engage a stop on said cover and rotate the cover away from said locked position and into said lift-off position.

3,183,864
METHOD AND SYSTEM FOR OPERATING A FURNACE

Mathew P. Stengel, Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Feb. 14, 1962, Ser. No. 173,205
12 Claims. (Cl. 110—1)

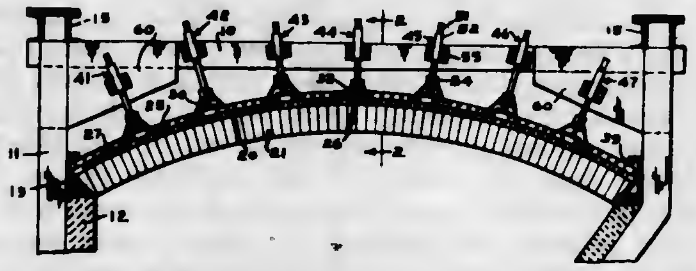


12. In the operation of a furnace wherein a main air stream is conveyed to a main burner which supplies fuel and air to the furnace with the fuel being burned therein the method of operation comprising:
- (*a*) monitoring the flame in the furnace and in response to the flame being extinguished terminating the fuel supply;
- (*b*) forming combustion gases by burning a fuel at a location separate from the furnace utilizing a portion of said air stream as the combustion supporting medium;
- (*c*) providing a mixture of the combustion gases and the remaining portion of the air stream;
- (*d*) burning sufficient fuel so that the oxygen in said mixture is at least below that required to support combustion of the main fuel;

(*e*) and introducing this mixture into the furnace through the main burner.

3,183,865
REFRACTORY ARCH FURNACE ROOF

Robert P. Ross, Louisville, Ky., assignor to Corhart Refractories Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Mar. 8, 1962, Ser. No. 178,298
8 Claims. (Cl. 110—99)



1. An arched furnace roof construction comprising:

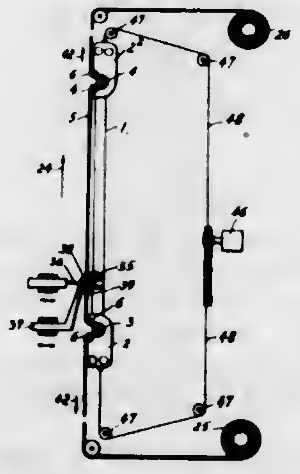
(*a*) a series of refractory brick rows extending in arch form between fixed skewbacks,

(*b*) an overhead furnace supporting structure fixed against vertical movement and arranged above said series of rows,

(*c*) vertical movement control means having fixed upper and lower stop means thereon and being rigidly attached to said overhead supporting structure and interconnected with at least every fifth brick row in said series, said vertical movement control means adapted to allow only a limited amount of upward and downward movement of said brick rows, while maintaining substantially their original smooth contour, substantially equal to the rise and fall of said brick rows resulting solely from thermal expansion and contraction of said brick caused by changes in their temperature due to operational heating and cooling of the furnace.

3,183,866
METHOD OF AND DEVICE FOR EMBROIDERING A WEB OF CLOTH OR THE LIKE

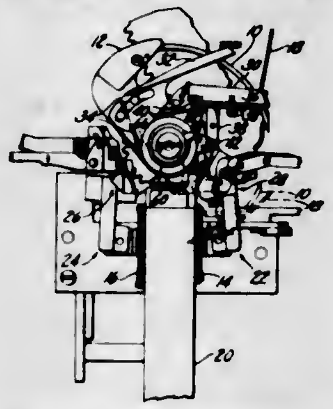
Wilhelm Walbert and Franz Josef Gierse, Aachen, and Karl Max Schäfer, Wilhelmshaven, Germany, assignors to Wirkmaschinen-Fabrik Wilhelm Barfuss G.m.b.H., Wilhelmshaven, Germany
Filed Oct. 11, 1962, Ser. No. 229,910
Claims priority, application Germany, Oct. 14, 1961, W 30,879
14 Claims. (Cl. 112—90)



3. A device for automatically feeding a web of cloth or the like in an embroidering machine having a cloth supply roller, a cloth take-up roller, and needle means extending transversely of said web, comprising a movable embroidering frame located between said supply and take-up rollers, said frame having mounted thereon a first driven web engaging roller and a second driven web engaging roller at opposite ends of the frame in the feed direction, means driving said rollers to rotate the peripheries thereof at relatively different velocities for moving said frame longitudinally along the web toward the supply roller while placing the web between said rollers under tension in the feed direction, said two driven rollers having means for retaining said rollers in fixed position against rotation, and means on said frame for stretching said web of cloth transversely of the feed direction thereof.

3,183,867
ARTICLE STRINGING MACHINE HAVING A STRAND CONTROL GRIPPER

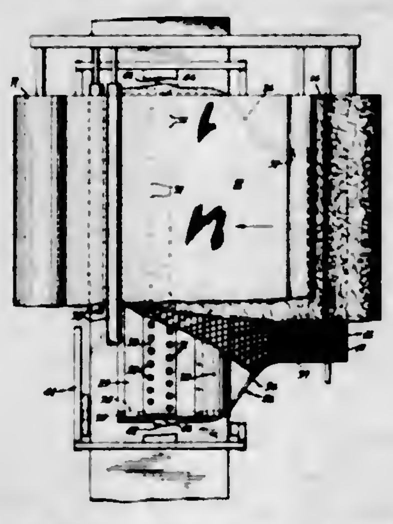
Herman A. Imhof, Hamilton, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Aug. 14, 1963, Ser. No. 302,158
5 Claims. (Cl. 112—104)



1. An article stringing machine comprising a curved eye-pointed needle, a needle carrier upon which the needle is mounted and actuated about an axis to carry the leading end of a strand in an arcuate path in the needle plane through a work piece, a needle guide journaled coaxially with the needle carrier for movement with the needle carrier a part of the distance toward the work piece, strand guiding means in the needle plane and formed in the needle guide, a strand control lever pivoted on the needle guide, resilient means urging the lever toward a strand engaging position at the strand guiding means and means for actuating the lever away from the strand engaging position during a part of the operating cycle of the machine.

3,183,868
APPARATUS FOR PRODUCING STRETCHABLE FABRIC

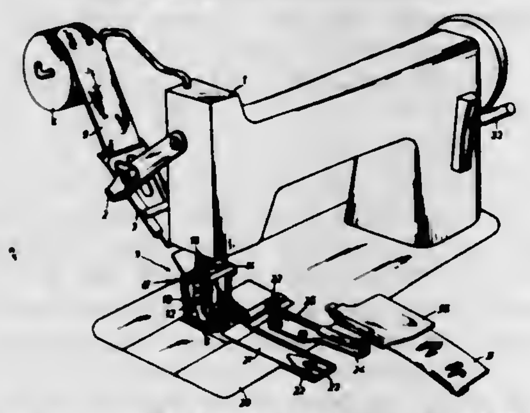
Nathan Shotsky, Woodmere, N.Y., assignor to The Multex Company, Brooklyn, N.Y., a partnership of New York
Filed May 16, 1963, Ser. No. 280,910
9 Claims. (Cl. 112—118)



1. A sewing machine comprising: a plurality of sewing needles arranged in laterally spaced relation; means for feeding a plurality of superposed layers of sheet material to and past said needles for stitching the layers of sheet material together along a plurality of lines extending longitudinally of the layers; one of the layers being laterally resiliently stretchable and having two laterally spaced apart margins; two laterally fixed and laterally spaced apart guide means for interlocking with the margins respectively, each having a leading end portion extending forward of said needles and laterally spaced mutually apart a distance equal to the lateral distance between the two margins in the unstretched, stretchable layer, whereby said leading end portions may respectively engage the margins; said two guide means each having a mediate portion extending longitudinally adjacent said needles and laterally mutually spaced apart a distance greater than the lateral distance between the two margins in the unstretched, stretchable layer, whereby the stretchable layer is laterally stretched between said mediate portions of said two guide elements as the stretchable layer is longitudinally advanced along said guide elements to said needles and is stitched thereby.

3,183,869
METHOD AND APPARATUS FOR SEWING A BINDING ON A GARMENT

Svend Astrupgaard, Lyngby, and Kristen Hedegaard, Gentofte, Denmark, assignors to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany
Filed July 27, 1962, Ser. No. 212,791
Claims priority, application Germany, Aug. 2, 1961, P 27,648
5 Claims. (Cl. 112—140)

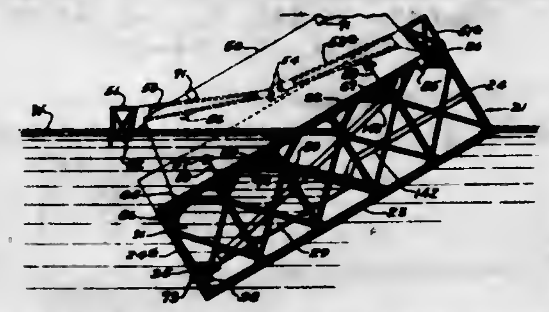


4. In a two needle sewing machine for sewing bindings onto garments, a needle bar supporting two needles, a presser foot supported rearwardly of said needles as viewed from the operator's station, a two part top feed foot, a stitch plate having needle apertures one for each needle and disposed below said needles, a blind stitch folding device including at least one guiding tongue, means permitting adjustment of said guiding tongue horizontally and a pair of folding members of channel form for the edges of a binding strip disposed laterally of said at least one guiding tongue for guiding the edges of the binding strip over said tongue, said tongue being arranged intermediate said pair of folding members and adapted to separate the edges of the binding strip from the center part of said strip and having a forward edge disposed proximate said stitch plate adjacent the plane of movement of said needles.

3,183,870
DUMPING BARGE WITH PIVOTED SIDE RAILS

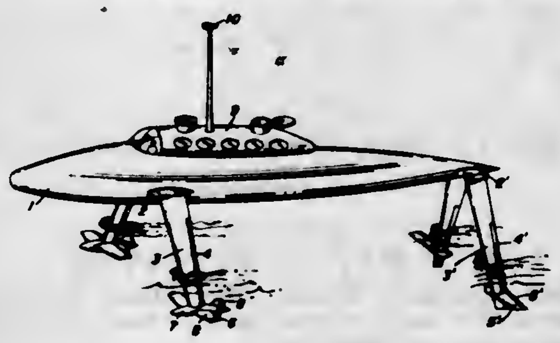
Bertell W. King, 17 Battery Place, New York, N.Y.
Filed Feb. 1, 1963, Ser. No. 256,796
17 Claims. (Cl. 114—32)

1. A barge comprising a hull having a deck, sides, a hull bottom, and ends; partition means dividing the interior of the hull into flood compartment means on one side of the hull and an air chamber on the other side including a longitudinally extending partition between the deck and at least a mid bottom, the partition being such that the lateral bottom dimension of said flood compartment means is substantially greater than the lateral dimension at the deck; means to flood and discharge water from said flood compartment means including an inlet means into said flood compartment means comprising a bottom connection between said flood compartment means and the hull having a bottom inlet in the bottom region of the hull, means closing the bottom inlet, a topside connecting means between said flood compartment means and the hull having an inlet in the top region of the hull, means closing said topside connection inlet, and the inlets of the connections being on the opposite side of the hull from the flood compartment means.



3,183,871
SPEED BOAT WITH UNDERWATER WINGS

Otto Reder, Bremen-Lesum, Germany, assignor to "Weser" Flugzeugbau G.m.b.H., Bremen, Germany
Filed Aug. 13, 1962, Ser. No. 216,630
Claims priority, application Germany, Aug. 28, 1961, W 30,621
4 Claims. (Cl. 114—66.5)

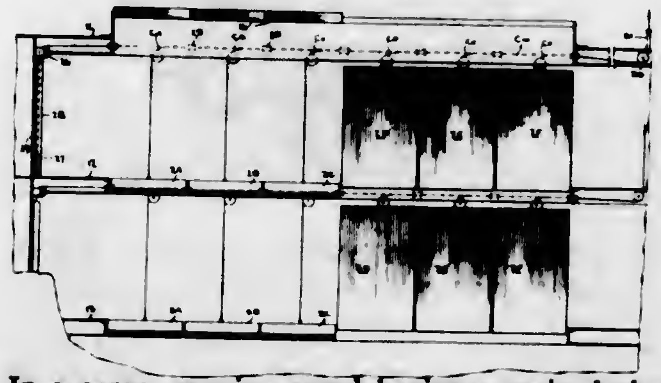


1. A craft adapted for surface and subsurface operation comprising: propulsion means, a hull and a hydrofoil assembly, said hydrofoil assembly including a plurality of supporting columns arranged in pairs spaced along the hull and each pair of columns including a column on each side of the hull, each said columns having a hydrofoil cross section with the major axis thereof extending in the direction of movement of the ship, controllable ailerons on the trailing edges of said columns and extending to the region of the ends thereof remote from said hull, hydrofoil means supported by each of said columns in the region of the end thereof remote from said hull and extending at an angle to the longitudinal axis of the respective column, said hydrofoil means including ailerons on the trailing edges thereof, means pivotally connecting said supporting columns to said hull for movement of each said column in a vertical plane transverse to the longitudinal axis of the hull and into a plurality of operating positions, said operating positions including a first operating position of the supporting columns wherein they extend substantially vertically downwardly from the hull and a second operating position of said columns wherein they extend substantially horizontally outwardly from the hull, said hydrofoil means performing as hydrofoils in said first position of said columns, and in said second position of said supporting columns and said supporting columns performing as hydrofoils and said hydrofoil means performing as directional rudders, said propulsion means being carried by at least some of said columns

at the extreme ends thereof remote from said hull so as to be submerged in all tilted positions of said columns.

3,183,872
HATCH COVER ASSEMBLY

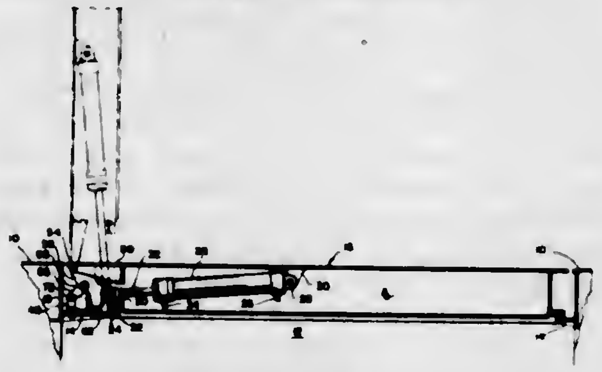
Clayton H. McLaughlin, 60 Remsen St., Brooklyn 1, N.Y.
Filed May 14, 1962, Ser. No. 194,373
1 Claim. (Cl. 114—201)



In a cargo carrying vessel having a main deck and a plurality of 'tween decks, the decks having vertically aligned hatch openings which open up substantially the entire area of the associated deck, a cover assembly for each opening comprising an array of cantilever wings constituted by a pair of rows, the wings in one row being hingedly connected to one side of said opening and the wings in the other row being hingedly connected to the other side of said opening, whereby when the wings are closed they all lie flush with the deck, a selector mechanism for each deck for each row of wings including a main cable having a series of stub cables each connectable to one of said wings, and means to drive said main cable to pull said stub cables simultaneously and thereby raise only the wings connected thereto to a vertical position, whereby access to a particular area in said vessel may be had by raising corresponding wings in the deck assemblies.

3,183,873
HATCH COVER ACTUATOR

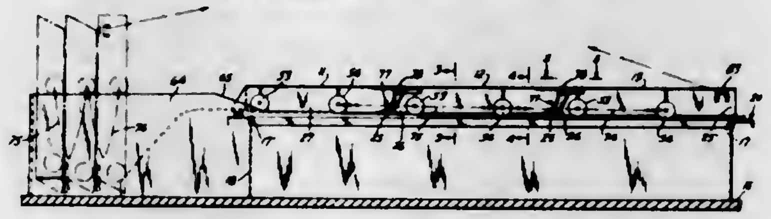
Wallace Hamilton, Bentleyville, Ohio, assignor to PneumoDynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Jan. 18, 1963, Ser. No. 252,434
4 Claims. (Cl. 114—201)



1. In deck structure defining a hatch opening, hatch cover means adapted to close said hatch opening, one of said hatch cover means and the deck structure carrying a peripheral resilient sealing device, the other of said hatch cover means and deck structure having a surface opposed to said sealing device for engagement therewith when the hatch cover means is in a closed position to effect a watertight seal thereof, a hinge lever pivotally connected to said hatch cover means, power actuating means having one end operatively connected to said hatch cover means and the opposite end operatively connected to said hinge lever, and link means having one end pivotally connected to said hinge lever and an opposite end pivotally connected to said deck structure, whereby when said hatch cover means is in a closed position, said power actuating means first lifts said hinge lever and said hatch cover means pivotally connected thereto away from the deck structure thereby to break said seal and thereafter swings said hatch cover means to an open position.

3,183,874
HATCH COVER ASSEMBLY

Cecil R. Barlow, Roslyn, N.Y., assignor to Fuller Company, Catasauqua, Pa., a corporation of Delaware
Filed Feb. 19, 1962, Ser. No. 173,999
6 Claims. (Cl. 114—202)

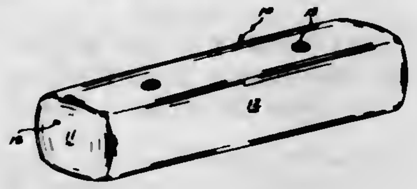


1. A cover assembly for a hatchway comprising a set of substantially rectangular panels adapted to be positioned in side by side relation in substantially a horizontal plane over said hatchway when in closed position, a stowage area at one end of said hatchway adapted to accommodate all of said panels in substantially vertical position, a pair of laterally spaced parallel tracks extending along each side of said hatchway and along said stowage area, a pair of rollers rotatably mounted on each end of each of said panels and adapted to ride on the respective tracks, one of the rollers of each pair being positioned adjacent the end of the associated panel adjacent said stowage area and the other between the center of the panel and the other edge thereof and extending outwardly of the first roller and defining a pivot roller, a portion of the innermost track of each pair extending along said stowage area being inclined downwardly, and a portion of the outermost track of each pair extending along said stowage area to serve as a pivot support for said other roller, whereby as the first rollers of each panel preceding the next adjacent panel successively ride down said inclined portions and the other pivot rollers of each panel ride along said pivot portions, said panels will successively be pivoted about said other rollers to hang in substantially vertical position in said stowage area, complementary guiding means and reaction means rigid respectively with the ends of adjacent panels near the adjacent edges thereof, said guiding means comprising a rigid member secured to each of the ends of the associated panel adjacent the edge thereof nearest the stowage area and extending substantially parallel to such panel ends, the free ends of said rigid members straddling the ends of the preceding panel and being slightly spaced therefrom, said reaction means comprising a strip secured to each of the ends of each of said preceding panels and against which the free ends of said rigid members are adapted to abut, whereby when force is exerted against the panel most remote from the stowage area to move it toward the latter, the free ends of the rigid members will abut against the reaction strips of the preceding panel to move the latter toward the stowage area without skewing thereof, and flexible means connecting adjacent panels, said flexible means being taut when said panels are in closed position and slack when in stowed position.

3,183,875
BUMPER

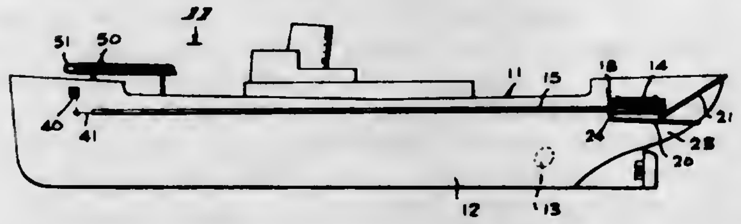
Linus E. Russell, Springfield, Ohio, assignor to Peters & Russell, Inc., Springfield, Ohio, a corporation of Ohio
Filed Dec. 9, 1963, Ser. No. 329,038
2 Claims. (Cl. 114—219)

1. A marine type bumper, including a hollow body, comprising an integrally formed continuous wall of a resilient material, said wall being generally square-like in cross section, having opposing end walls, side walls and top and bottom walls, and means for suspending said bumper to take impacts on its side walls, said means including at least one core section interconnecting said top and bottom walls and opening therethrough, said section being made of a resilient material like said walls and joining unitarily at its ends to said top and bottom walls and defining a through line passing opening, said section being located and having a breadth to be spaced from side and end walls of said body, said body having a plurality of said core sections, one near but spaced from each end wall of said body, said body being adapted to be suspended alternatively in the bight of a line passed through the openings in both said core sections or from a line passed through the opening in only one of said core sections, said body in the former instance being adapted to be brought up adjacent to the underside of the gunwhale with its side walls horizontally disposed relative to the boat axis and in the latter instance to be suspended vertically with one end projecting upward above the plane of the gunwhale.



3,183,876
SHIP PRESERVER MEANS

Semen M. Kronhaus, 4012 Shelburn Court, Los Angeles, Calif.
Filed May 19, 1964, Ser. No. 368,647
6 Claims. (Cl. 114—229)

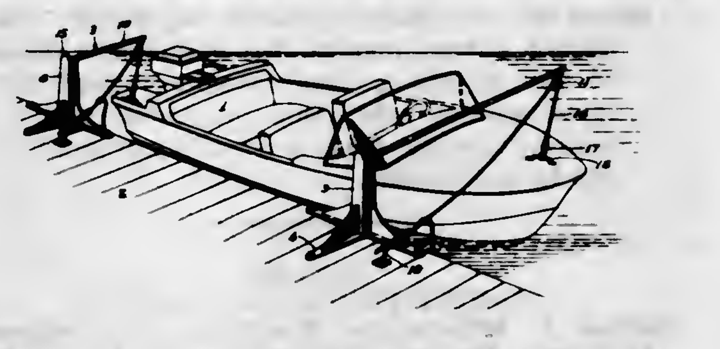


1. In apparatus for temporarily closing a hole in a ship's hull caused by a collision or accident, a carriage mounted on each side of the ship for movement longitudinally thereof, substantially rigid guide elements connecting said carriages and movable to a position such that they extend from one carriage down the adjacent side of the ship, under the hull thereof and up the other side of the ship to the other carriage, a rolled-up curtain supported on one carriage, means for lowering said rolled-up curtain to a predetermined point, said curtain being guided in its movement by said guide elements, and means for unrolling said curtain from said point onward along the ship's hull to cover the opening therein.

3,183,877
BOAT MOORING DEVICE

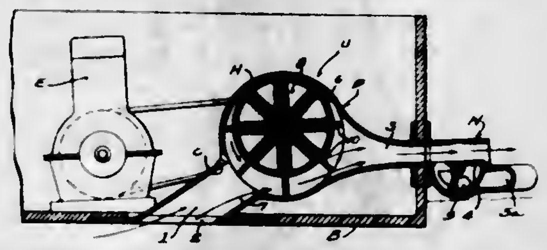
Howard A. Benzel, 28 Lombardy, Lancaster, N.Y.
Filed June 25, 1963, Ser. No. 290,351
8 Claims. (Cl. 114—230)

2. A boat mooring device comprising, a one-piece mounting member having a base adapted for attachment to a dock and a resiliently somewhat yieldable post extending upwardly therefrom, a normally generally upright socket member carried by said post, the upper end of said post extending above the upper end of said socket member and having an upwardly opening recess therein, and an extension member having an arm slip-fitted in said socket member and a cantilever arm projecting therefrom, said cantilever arm being received in said recess when in a predetermined operative position, and boat securing means connected to said cantilever arm adjacent the outer end thereof.



3,183,878
HYDROJET PROPULSION UNIT FOR WATER CRAFT

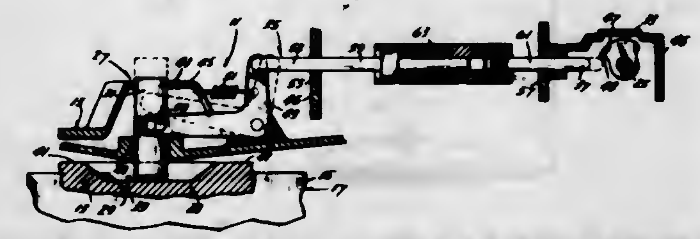
George R. Aschauer, Racine, Wis., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed Feb. 27, 1963, Ser. No. 261,282
8 Claims. (Cl. 115—16)



1. In combination with a water craft, a marine jet propulsion unit mounted for discharge rearwardly of the craft and of the type operating on the reaction principle of the pressure within the unit being unbalanced by lack of pressure at its discharge opening, said unit having a water intake opening below the surface of the water and a rearwardly directed free jet nozzle located above the waterline, a water duct extending without any sharp turns from said opening to said nozzle, and a high speed centrifugal sliding vane type pump in said duct and having its rotational axis positioned in a transverse direction and constructed to greatly accelerate and feed water through only a small portion of the total circumferential travel of said vanes in said pump and in a substantially straight line, whereby no spinning movement is imparted to the flow path of the water passing through said unit, said pump and said jet nozzle being of a width which is at least one-half of the width of the stern of said water craft.

3,183,879
SPEED CONTROL DEVICE

Richard C. Heidner, Libertyville, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Feb. 23, 1962, Ser. No. 175,087
8 Claims. (Cl. 115—18)



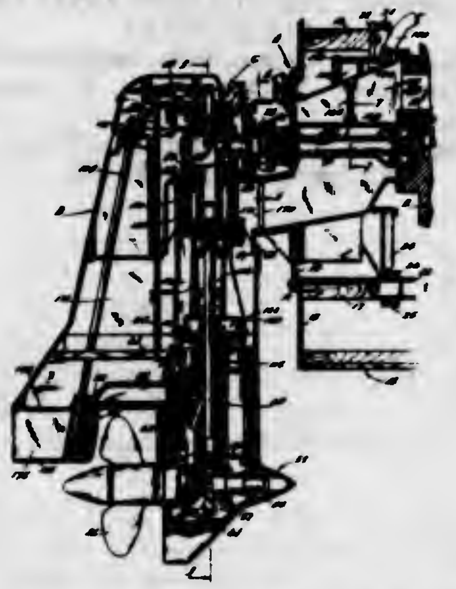
1. In an outboard motor including a bracket adapted to be mounted on a boat, a propulsion unit including a throttle control member movable between low and high speed positions, and means mounting said propulsion unit on said bracket for swinging movement of said unit rela-

tive to said bracket about a generally upright axis, the improvement comprising

means on said motor operably engageable with said throttle control member for limiting the movement of said throttle control member toward the high speed position when said propulsion unit is positioned remotely from a preselected position relative to said bracket.

3,183,880
MARINE PROPULSION DEVICE

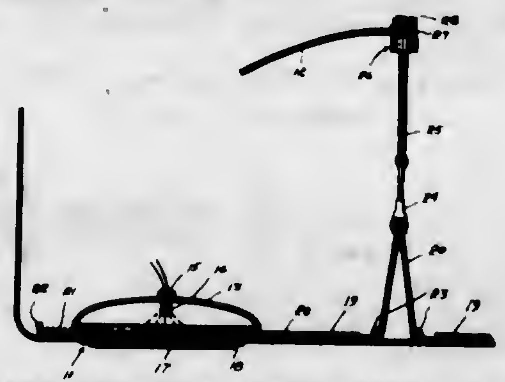
William J. Shimanckas, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Continuation of application Ser. No. 143,865, Oct. 9, 1961. This application July 10, 1963, Ser. No. 295,594
21 Claims. (Cl. 115—41)



1. In an inboard-outboard drive for a boat, the combination with a boat-mountable intermediate unit having a drive shaft extending aft therethrough and means journalling said drive shaft, of a prime mover having a shaft connected with the drive shaft, said prime mover being disposed forwardly of said unit and mounted thereon to be supported through said unit from the boat, and a propulsion unit aft of the intermediate unit and having means supporting it through the intermediate unit from the boat, said propulsion unit having a propeller and propeller shaft and means connecting the propeller shaft with said drive shaft.

3,183,881
STOP LIGHTS PROVIDING VISUAL INDICATIONS TO THE EXTENT OF BRAKE APPLICATIONS

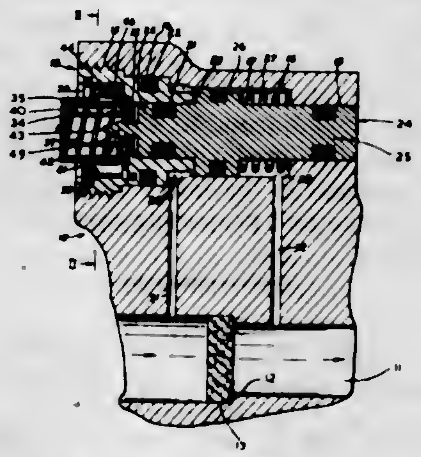
Charles Tatham III, Box 242, Keene, N.H.
Filed Feb. 7, 1962, Ser. No. 171,771
3 Claims. (Cl. 116—42)



1. A stop light for a vehicle having brakes and a fluid pressure brake operating system including a movable operator control, the extent of movement of which is proportional to the extent of brake application, said stop light comprising a reflector, a socket for supporting a lamp within said socket, a translucent cover for said reflector, a shield between said cover and said reflector, means yieldably holding said shield in a first position in which a portion of said reflector is unblocked thereby, and a piston-cylinder unit, the piston of said unit being connected to said shield for moving it against the action of said yieldable means to decrease the area of the reflector blocked by said shield, and said cylinder being in communication with the system, the piston moving in relation to the extent of brake application.

3,183,882
PRESSURE RESPONSIVE INDICATING DEVICES

Robert Preece, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England
Filed Nov. 19, 1963, Ser. No. 324,659
Claims priority, application Great Britain, Nov. 29, 1962, 45,186/62
6 Claims. (Cl. 116—70)

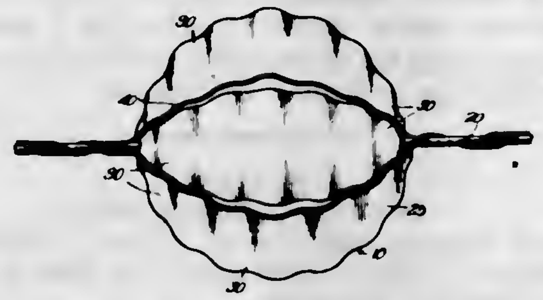


1. A pressure responsive indicating device comprising a housing, bore means in said housing, plunger means slidably disposed in said housing, hollow plug means secured in one end of said bore means, said plunger means having one end extending into the adjacent end of said plug means, said plunger means having an enlarged central portion, inlet and outlet passage means in said housing in communication with opposite sides of said central portion to transmit differential pressure thereacross, biasing means normally urging said central portion against said plug means, an outer sleeve extending into and secured to said plug means adjacent said one end of said plunger means, a hollow inner sleeve disposed within said outer sleeve forming an indicator button, other biasing means normally urging said button toward an indicating position outside of said outer sleeve, a pair of resilient arms on the end of said inner sleeve adjacent said one end of said plunger means, said arms extending radially inwardly toward each other to form an opening therebetween, a projection extending beyond said one end of said plunger means and into said hollow inner sleeve and between said arms, a bead on the end of said projection of larger area than said opening, whereby said button is latched in a non-indicating position until the differential pressure across said central portion of the plunger means exceeds a predetermined value to cause said bead to move out of said inner sleeve and release said button.

3,183,883
INDICATING DEVICE FOR CABLES

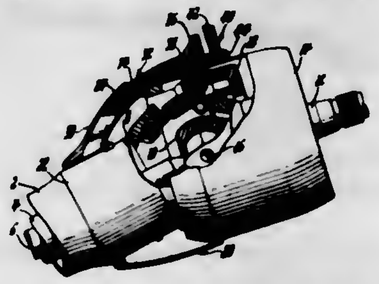
Jon R. Ruhlman, Cleveland, and Harrison L. Williams, Euclid, Ohio, assignors to Preformed Line Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 3, 1961, Ser. No. 129,086
7 Claims. (Cl. 116—114)

1. An appliance adapted to be mounted on a linear body such as a suspended electrical cable comprising a plurality of surface forming units, each of said surface forming units being composed of a plurality of elements having first and second end portions, said first and second end portions being helically formed to an internal diameter and a sufficiently open pitch so as to be applicable to said linear body from the side thereof without exceeding the elastic limits of the elements, said elements being diverted from their normal helical courses intermediate their ends so that a pair of adjacent ones of said elements define a finite area therebetween, material means substantially coextensive with said finite area secured to and extending between said adjacent elements, said surface forming units being closely spaced along their edges and arranged to define a three dimensional figure.



3,183,884
TRANSMISSION CONTROL INDICATOR FOR ADJUSTABLE STEERING WHEEL

William H. Daniels, Southfield, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 11, 1963, Ser. No. 315,565
8 Claims. (Cl. 116—124)

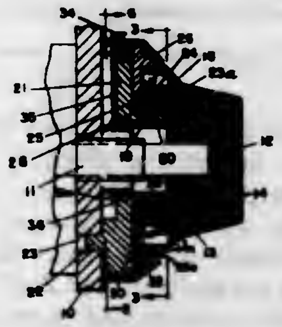


1. In a tilt steering assembly having a fixed lower column section and an upper column section tiltable about a horizontal axis relative to said lower section, a transmission control member concentrically surrounding said lower section and rotatable about the axis thereof, a dial assembly fixed on said upper section and tiltable therewith, and a pointer assembly positively rotatable with said control member and telescopable relative thereto in an arcuate path lying in the plane containing the axis of said control member, and means associated with said pointer assembly for imparting telescoping movement thereto responsive to tilting movement of said indicator dial.

3,183,885
INDICATING DIAL

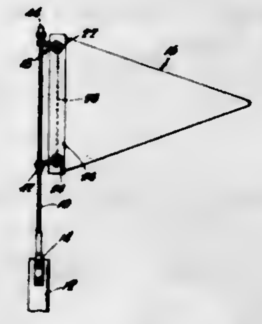
William Venema, 33 Lee Drive, North Haledon, N.J.
Filed Mar. 6, 1964, Ser. No. 350,000
5 Claims. (Cl. 116—124)

1. An actuating and revolution indicating mechanism which is adapted to be connected to a rotatable control shaft of an instrument, said mechanism comprising; a shaft actuating knob, means by which said knob is adapted to be secured to the outer end of said shaft, a graduated annular dial secured to said knob about the rear end of said hub which is adapted to indicate fractional movements of each revolution of said shaft, a base plate which is adapted to be secured in fixed position adjacent an instrument panel, said base plate having a central aperture and an elongated tubular sleeve which extends forwardly from said base plate in axial alignment with said aperture and through which said shaft extends, said knob having an integral axially disposed elongated tubular hub which extends rearwardly therefrom and is rotatably mounted in said sleeve about said shaft, a circular plate secured to the outer end of said sleeve, a disk rotatably mounted on said sleeve in rearwardly spaced relation to said circular plate with the rear face thereof in contact with the front face of said base plate, the outer section of the front face of said disk being provided with an annular row of graduations constituting a dial for indicating the number of complete revolutions of said shaft, said knob having an integral concentric annular flange which extends rearwardly therefrom about said circular plate in radially spaced relation thereto, and interconnecting means which is disposed about said sleeve between the front face of said disk and the inner periphery of said annular flange which is operative to rotate said disk a fraction of a revolution at the end of each revolution of said knob and shaft and thereafter lock said disk against further movement until the next actuation thereof by said means.



3,183,886
FLAG HOLDER

Merritt L. Moffitt, Jr., 9 Weirwood Road, Radnor, Pa.
Filed Nov. 29, 1963, Ser. No. 326,694
2 Claims. (Cl. 116—173)

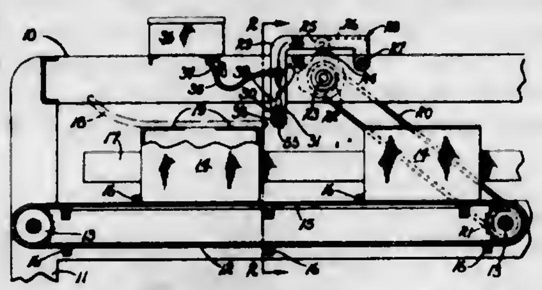


1. A flag holder assembly for attaching a flag having spaced grommets in the leading edge thereof to a flag supporting means, comprising, a wire fastener formed from a single wire element extending in parallel relation along the leading edge of the flag between the spaced grommets, said fastener element proximate each grommet extending substantially perpendicular to and away from the leading edge of the flag to form a first set of parallel arms, the wire element at the outer end of each said arm being wound in a cylindrical coil to provide an attachment means for said flag supporting means, the wire element extending inwardly from each said coil forming a second set of arms substantially parallel with said first set of arms, and hooks on the inner ends of said second set of arms adapted to pass through the grommets and coact with the first set of arms to secure the leading edge of the flag in a taut disposition along said fastener spaced from the flag supporting means, the cylindrical coils providing a spring-biasing effect on said second set of arms thereby securing said hooks in engagement with said first set of arms.

3,183,887

CARTON SEALING APPARATUS AND ADHESIVE DISPENSER THEREFOR

Edward J. Derderian, 4514 N. Wilson, Fresno, Calif.
Filed Aug. 28, 1962, Ser. No. 219,904
3 Claims. (Cl. 118—3)

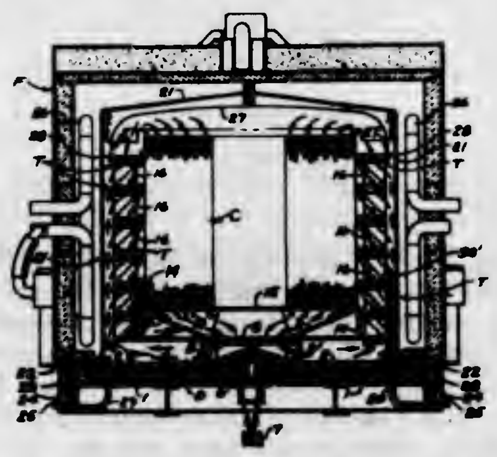


1. In a carton sealing apparatus having a frame, conveyor means to advance a plurality of cartons along a path of travel at predetermined intervals of spacing, and power means to drive the conveyor means; the combination of an adhesive supply reservoir; adhesive dispenser means including normally closed flow control valve means engageable by the cartons and movable to an open position incident to engagement therewith; a conduit interconnecting the reservoir and the dispenser means; means mounting the dispenser means on the frame above the conveyor means for movement between a raised inoperative position and a lowered dispensing position; and power driven cam means operatively associated with the mounting means to effect movement of the dispenser means from one of said positions to the other; wherein said dispenser means includes an auxiliary cam carried by the dispenser means and provided with a profile surface adapted to engage the cartons whereby the dispenser means is lowered and raised toward and away from the cartons in accordance with said profile surface to dispense adhesive in a predetermined pattern on the cartons.

3,183,888

APPARATUS FOR SURFACE COATING OF STRIP METAL OR THE LIKE

Calvin C. Blackman, Bay Village, Ohio, assignor to Lee Wilson Engineering Company, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 29, 1961, Ser. No. 155,585
6 Claims. (Cl. 118—49.5)

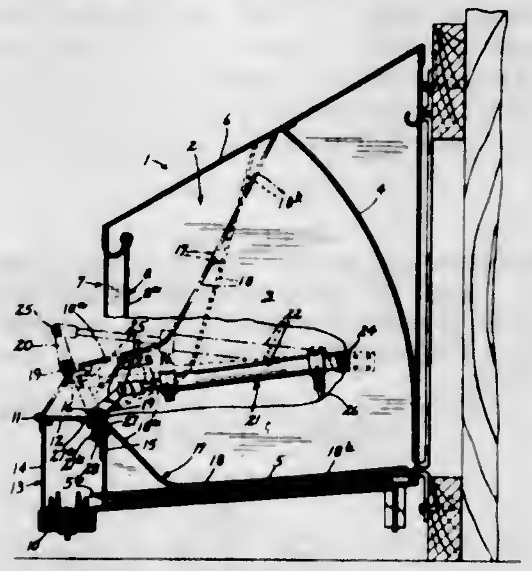


1. Apparatus for applying a metallic coating to strip metal in open coils having spaced apart laps including, a base structure, a charge support on said base structure having a perforate coil supporting area on which an open coil may be placed with its axis vertical, a plurality of metallic coating material carrying containers supported by said base structure, blower means, a removable housing adapted to be supported on said base structure and to enclose said charge support and an open coil supported thereon and said coating material carrying containers, means for directing substantially the entire volume of atmosphere moved by said blower means through the spaces between the laps of said open coil and then in parallel flow through bodies of metallic coating material carried by said coating material carrying containers whereby the entire volume of atmosphere within said housing will be continuously and repeatedly circulated through the spaces between the laps of said open coil and, between each passage through said open coil, in parallel flow through bodies of coating material on said coating material carrying means, containers for driving said blower means, means for directing a gaseous activating agent into the space within said housing, and means for heating the circulating atmosphere.

3,183,889

AUTOMATED EGG NEST

Seymour Peterson and John W. Granath, Dassel, Minn., assignors to Storm Industries, Inc., Dassel, Minn., a corporation of Minnesota
Filed Sept. 5, 1963, Ser. No. 306,932
8 Claims. (Cl. 119—45)



1. A poultry nest having:

(*a*) opposite side, top, bottom and rear walls which cooperate to define a nesting chamber having an open front,

(*b*) a combination sweep-barrier element extending between said side walls,

(*c*) means pivotally mounting the forward end of said element for pivotal swinging movements of the free rear end portion thereof from a generally horizontal position adjacent the bottom wall of said chamber to a generally upright, tilted position adjacent the open front where it constitutes a barrier to said chamber,

(*d*) said rear wall being closely spaced from and having a contour which conforms generally to the path of travel described by the said free rear end portion of said sweep.

3,183,890

AUTOMATIC SPRAY WASHING DEVICE FOR COWS

Teunis Albers, 21205 Norwalk Blvd., Artesia, Calif.
Filed Sept. 5, 1961, Ser. No. 136,989
1 Claim. (Cl. 119—159)

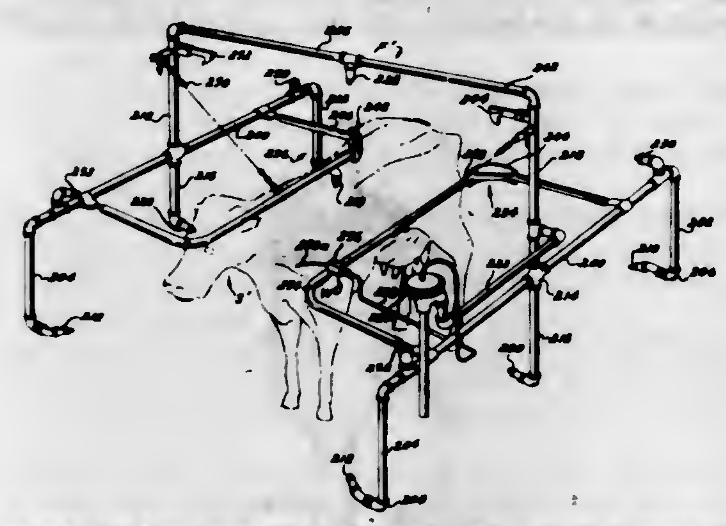
A cow washing device, comprising:

a tubular frame including portions adapted to convey water and further including mounting means, said frame defining a relatively wide gateway through which more than one cow can pass abreast;

stall bar means carried by said mounting means and pivotable between a raised position out of the way of cows passing through said gateway and a lowered position to narrow said gateway so that only one cow can pass therethrough abreast;

bias means interposed between said mounting means and said stall bar means and biasing said stall bar means towards said gateway in said lowered position for resilient retraction of said stall bar means to accommodate different size cows;

a plurality of water nozzles coupled to said portions of said frame;



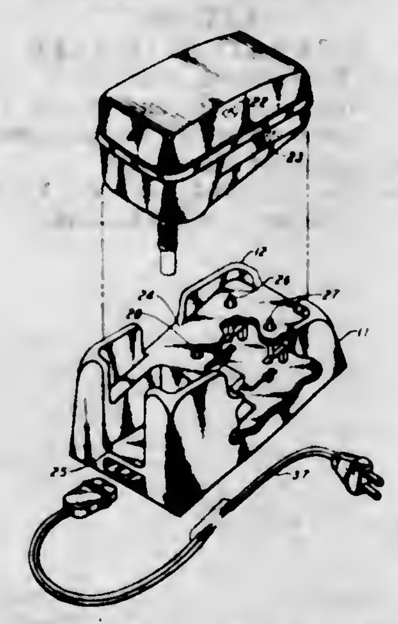
a water valve operative to supply water under pressure to said portions of said frame;

and switch means coupled to said water valve and located for actuation by a cow passing said stall bar means to operate said valve.

3,183,891

CORDLESS ELECTRIC DEVICE AND RECHARGING STAND THEREFOR

Clyde E. MacDonald, 323 E. Amelia St., Orlando, Fla.
Filed May 7, 1963, Ser. No. 278,618
3 Claims. (Cl. 120—36)

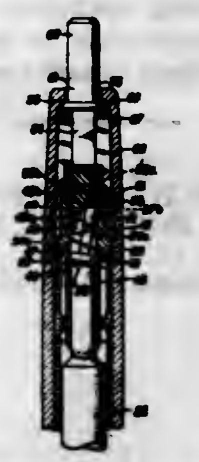


1. A recharging stand for automatically keeping the battery of a battery-powered eraser charged to its peak condition despite frequent use, said stand comprising a base portion, a battery recharging arrangement disposed in said stand, and an eraser-supporting upper portion contoured to easily receive a battery-powered eraser and retain same in a pre-established position, said stand having upstanding sidewalls extending upwardly from said base portion and defining therebetween said eraser-supporting upper portion, a specific opening in one of said sidewalls into which an operative portion of said eraser may be accommodated, thus establishing the uniqueness of said pre-established position for said eraser, and a plurality of electric contacts disposed upon said eraser-supporting upper portion and electrically connected with said battery recharging arrangement, whereby when a battery-powered eraser having electric contacts on its lower surface is placed upon said eraser-supporting upper portion, the electric contacts disposed upon said upper portion of said stand engage said contacts of said battery-powered eraser and bring about a recharging operation.

3,183,892

PROJECT-RETRACT MECHANISM FOR A BALL-POINT WRITING INSTRUMENT

Curtis L. Malm, Norwalk, Calif., assignor to Paper Mate Manufacturing Company, Santa Monica, Calif., a corporation of Delaware
Filed Jan. 31, 1963, Ser. No. 255,325
5 Claims. (Cl. 120—42.03)



4. In a writing instrument barrel for use with a project-retract mechanism for a writing unit, the provision of:

a hollow barrel having an axially extending latch receiving aperture provided with opposing, laterally spaced side walls,

said side walls having a pair of longitudinally displaced and oppositely inclined project and retract stop shoulders,

an elongated floating latch member contained within said barrel and adapted to engage said longitudinally spaced stop shoulders,

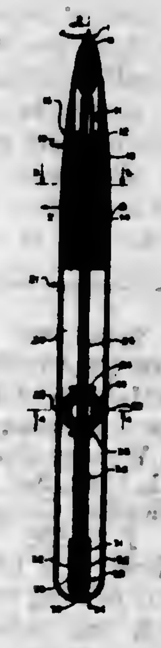
spring means within said barrel for biasing said latch member toward said stop shoulder,

said retract stop shoulder presenting a lower guide face portion at a smaller angle to the axis of said aperture and an upper guide face portion at a greater angle to said axis of said aperture, terminating in said retract stop shoulder.

3,183,893

FOUNTAIN PEN

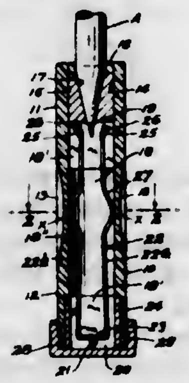
Benjamin F. Miessner, Miami Shores, Fla., assignor to Miessner Inventions, Inc., Miami Shores, Fla., a corporation of New Jersey
Filed Feb. 16, 1962, Ser. No. 173,718
10 Claims. (Cl. 120—48)



1. In a fountain pen having in its forward portion a point and an ink-collector from which during writing ink may flow to the point, the combination of an elongated reservoir positioned to the rear of the ink-collector

and having a stiff but transversely deformable wall, fluid-conducting means extending between the ink-collector and a point within the reservoir adjacent the rear end of the reservoir, valve means at the rear end of and controlling the conduction of fluid through said fluid-conducting means, means within the reservoir at a longitudinally intermediate portion thereof for sensing transverse deformation of the adjacent portion of the reservoir wall, and longitudinally extending mechanical means coupling said valve means to sensing means for operation of said valve means upon deformation of said reservoir wall portion.

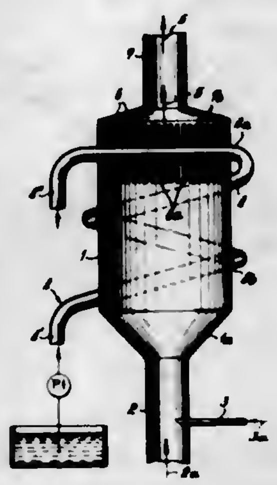
3,183,894
PENCIL SHARPENERS
Hugh H. Hampton, 2908 17th St., Sacramento 18, Calif.
Filed Aug. 14, 1963, Ser. No. 302,168
5 Claims. (Cl. 120—92)



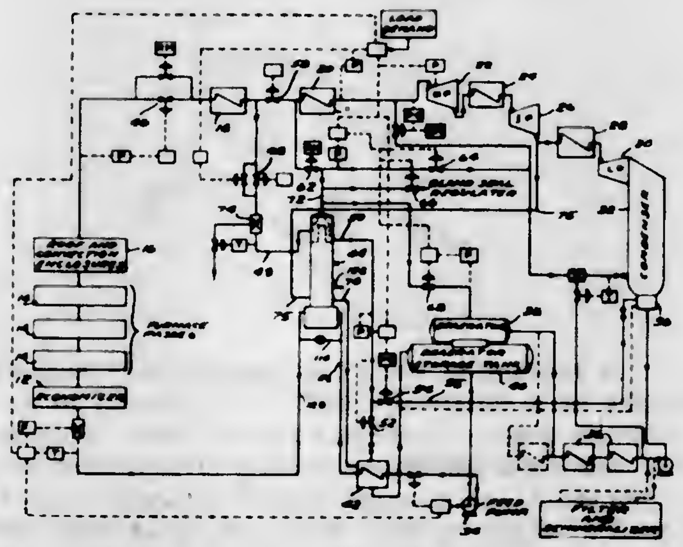
1. A sharpener for the lead point of a pencil, comprising an elongated tubular housing having at one end portion a pencil tip guide provided with a truncated inverted conical bore, the vertex of the bore being inward, an elongated cutter-blade carrier in the tubular housing comprising a pair of relatively spaced generally parallel elongated resilient spring arms integrally connected relatively at one end which is loosely mounted in one end portion of the housing opposite the tip guide, said spring arms extending from said loosely mounted end toward the tip guide and having the free ends thereof terminating in adjacently spaced relation to said tip guide, the free ends of said arms being spring biased outwardly oppositely away from each other whereby said free ends are normally spaced apart, cutting blade means at said free end portion of the arms, said housing having a resiliently flexible area centrally of its length and manually depressable inwardly against said spring arms for bringing the free terminal ends of the ams toward each other and the cutter blade means into cutting relation adjacently spaced from the adjacent end of the inverted conical bore of the tip guide, the longitudinally central portion of the spring arms being adapted for pivotal bearing against said longitudinal central inwardly pressed portions of the housing for oscillating pivotal movement thereagainst, whereby the cutter blade portion at the free end of the spring arms may be aligned with the axis of the tip guide.

3,183,895
APPARATUS FOR HEATING WATER AND SIMILAR FLUIDS
Franz Haag, Plochingen, Germany, assignor to Junkers & Co. G.m.b.H., Wernau (Neckar), Germany
Filed Sept. 12, 1962, Ser. No. 223,104
Claims priority, application Germany, Sept. 14, 1961, J 20,535
17 Claims. (Cl. 122—24)

1. In an apparatus for heating water and similar fluids, in combination, at least one pulse jet burner including combustion chamber means having an inlet through which a combustible mixture may enter into and an outlet through which products developing during pulsating combustion of such mixture are evacuated from said chamber means, and resonance duct means communicating with said outlet so as to receive products of combustion from said chamber means; and a heat exchanger including heat accumulating elements provided in at least one of said means in the region of said outlet so as to be heated by products of combustion, said heat accumulating elements defining between themselves a plurality of passages spaced from each other transversely of said means and having a combined cross-sectional area which at most equals five times the mean cross-sectional area of said resonance duct means, and fluid-containing conduit means having at least one portion located in such close proximity of said elements that the elements transmit heat to the fluid.



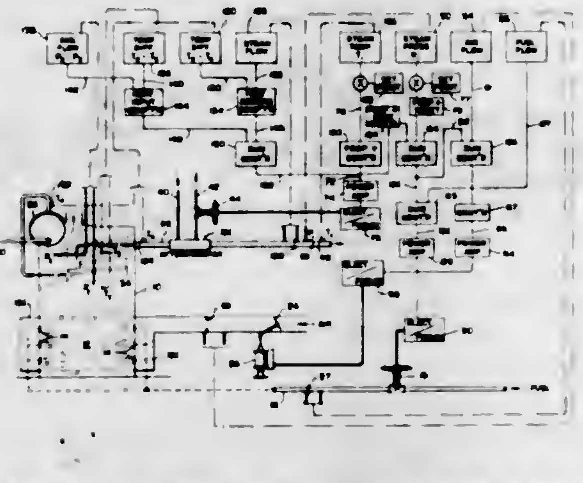
3,183,896
SEPARATING HEATER
Robert I. Lytle, Morristown, George P. Moran, Basking Ridge, and William D. Stevens, North Caldwell, N.J., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Jan. 15, 1964, Ser. No. 337,860
6 Claims. (Cl. 122—406)



2. A once-through vapor-generator comprising:
- a main flow path including in series a vapor generating section, a vapor superheating section means adapted to feed all of the flow from the vapor generating section to the superheating section, feedwater means for introducing feedwater to said generating section, means for conveying fluid from said superheating section to a point of use, means for conveying exhaust fluid from said point of use to said feedwater means,
- a start-up by-pass system by-passing said point of use comprising,
- a pressure vessel including a separating zone and a heat exchange zone,

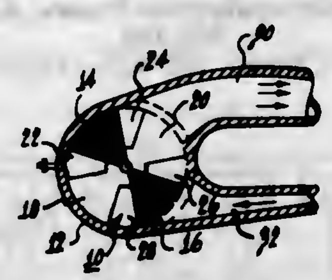
- a first conduit leading from said main flow path downstream of the vapor generating section to said vessel separating zone for conveying a two-phase fluid during start-up of the generator to the separating zone,
- separating means in said separating zone for separating the fluid into a high enthalpy phase and a low enthalpy phase,
- means within said vessel leading from said separating zone to the heat exchange zone by which at least a portion of the high enthalpy phase is conveyed to the heat exchange zone,
- a second conduit leading from said separating zone to the main flow path downstream of the first conduit by which at least another portion of the high enthalpy phase is returned to the main flow path,
- means in the heat exchange zone by which sufficient latent heat in the high enthalpy phase is transferred to the vapor generator feedwater to condense the high enthalpy phase,
- third and fourth conduits leading from said separating zone and heat exchange zone, respectively, for recycling the low enthalpy phase and condensed high enthalpy phase to the feedwater means,
- said by-pass system further including valve means in said first and second conduits to isolate said by-pass system from the main flow path.

3,183,897
SUPERHEAT CONTROL
Guy M. Baudelet de Livois, Paris, France, assignor to Societe dite Controle Bailey, Paris, France, a company of France
Filed Nov. 13, 1961, Ser. No. 151,939
Claims priority, application France, Feb. 13, 1961, 852,585
10 Claims. (Cl. 122—479)



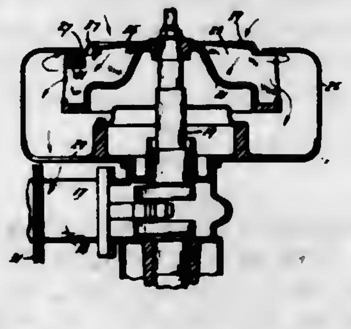
1. In a control system for a vapor generating apparatus having a firing means with a controllable fuel supply, a vaporizer for converting liquid to saturated vapor under the influence of the heat input, and a superheater for superheating the vapor under the influence of the heat input, the combination comprising, means responsive to the pressure of the superheated vapor for controlling the fuel supply, means for varying the temperature of the superheated vapor independently of the heat input, means responsive to the temperature of the superheated vapor for controlling said temperature varying means to maintain a relatively constant superheated vapor temperature, means for anticipating a variation in temperature of the superheated vapor and for establishing a signal representative of the variation tendency and the extent of variation, and means responsive to said signal for modifying the rate of fuel supply to the vapor generating apparatus in anticipation of a temperature variation to counteract the same and assist said temperature varying means in maintaining a relatively constant superheated vapor temperature.

3,183,898
ROTARY ENGINE
John J. Sandone, 117 French Ave., Haddon Township, Camden County, N.J.
Filed Dec. 6, 1962, Ser. No. 242,749
14 Claims. (Cl. 123—11)



1. Transmission means for driving a drive shaft at a relatively constant speed, first and second hub elements having central apertures to form cylindrical surfaces, each having curved grooves of different angles therein, said hub elements being dimensioned to fit over said drive shaft with said surfaces disposed to engage the surface of said drive shaft, said drive shaft including a third groove, motion transmitting means disposed within the curved grooves of said first and second elements and said third groove of said drive shaft to move axially of said drive shaft when said drive shaft is moved, and means for driving said first and second elements to transmit motion to said drive shaft through said motion transmitting means, the relative speeds of said first and second elements being different than the speed of said drive shaft, with said relative speeds being dependent upon the different angles of said curved grooves in the surfaces of said first and second hub elements with respect to said third groove.

3,183,899
CHAFF-PROOF AIR INTAKE ARRANGEMENT
Lloyd H. Tuggle, Lamar, Mo., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Nov. 14, 1962, Ser. No. 237,506
6 Claims. (Cl. 123—41.65)

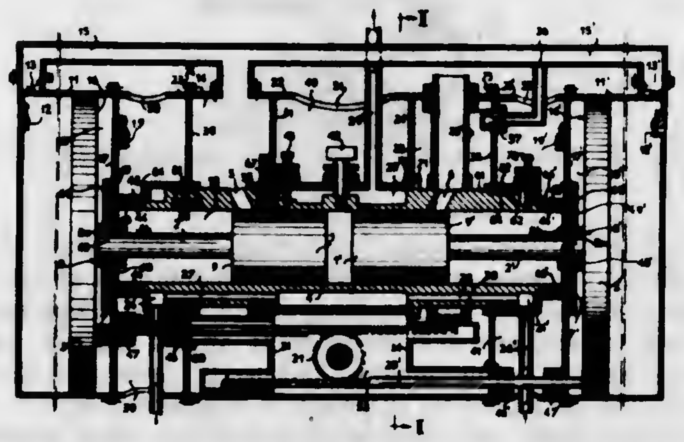


1. An air-cooled engine including a flywheel having a plurality of radially projecting vanes, a shroud disposed around said flywheel, having an air-entry opening generally co-axial with said flywheel, and an air-discharge opening adapted for directing a flow of air toward said engine, a screen carried adjacent to said vanes by said flywheel, and an imperforate ring carried by said flywheel, said ring including an inner margin extending from said screen, and an outer margin extending within said shroud and beyond the peripheral edge of said shroud opening and in generally opposing relation to the margin extending from the peripheral edge of said shroud opening, the radial extent of said outer margin beyond the peripheral edge of said shroud opening being at least as great as the shortest distance between the periphery of said outer margin and said housing.

3,183,900
FLOATING-PISTON INTERNAL-COMBUSTION MACHINE

Kurt Hermann Wilhelm Hellweg, Antony, France, assignor to Societe Civile pour l'Etude d'Engins a Pistons Libres E.P.L., Boulogne-sur-Seine, Seine, France, a company of France

Filed Aug. 2, 1961, Ser. No. 128,761
Claims priority, application France, Aug. 9, 1960, 835,386
9 Claims. (Cl. 123—41.78)



5. A free piston type combustion machine comprising a motor cylinder having intake ports and exhaust ports, a pair of opposed motor pistons reciprocable in said motor cylinder, an annular casing assembly surrounding the latter, a pair of compressor cylinders secured to both ends of said annular casing assembly, a pair of opposed compressor pistons connected to said motor pistons and reciprocable in said compressor cylinders, said annular casing assembly being portioned in a plurality of axially spaced annular compartments, one of them surrounding said intake ports, a second of them surrounding said exhaust ports, the two latter compartments being separated and surrounded by other compartments opened to the atmosphere, said annular casing being rigidly connected to said motor cylinder in a single radial plane with respect to the axis of the latter, slidable and sealed contacts being provided between said motor cylinder and respectively the compressor cylinders and the other internal parts of said annular casing assembly.

7. A free piston type combustion machine according to claim 5 wherein the outer face of said motor cylinder and the inner face of said internal parts are so shaped as to form sealed annular cooling fluid chambers, means being provided in said annular casing assembly to deliver a cooling fluid into said annular chambers and to discharge it therefrom.

3,183,901
COMPRESSION-COMPENSATING MEANS FOR POPPET VALVES

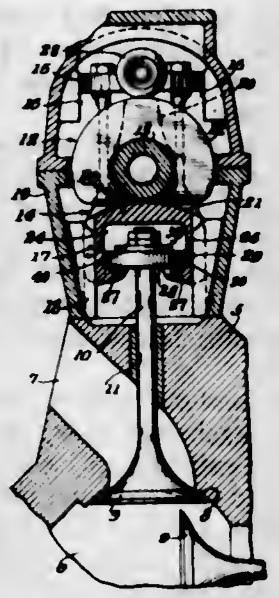
Niel C. Thuesen, 6021 Compton Ave., Los Angeles, Calif.
Filed Jan. 29, 1965, Ser. No. 428,953
6 Claims. (Cl. 123—90)

1. In a poppet valve mechanism having a poppet valve having a stem and guided to move between open and closed position and a cage controlled by a shaft having reciprocal cams thereon to reciprocate said cage, compression-compensating means interconnecting the valve and cage for reciprocating said valve between open and closed positions and allowing completion of the closing reciprocative movement of the cage after the valve has closed, said compression-compensating means comprising:

(*a*) a ring member having a central hole and supported by the cage and movable thereby when the cage is moving in a valve-closing direction,

(*b*) a spring disc provided with flexible fingers affixed to said member with the fingers extending radially toward a central hole in the disc,

(*c*) a bearing member adjustably connected to the end of the stem and disposed in engagement with the fingers of the disc on the side of the disc opposite to the side thereof to which the ring member is affixed,



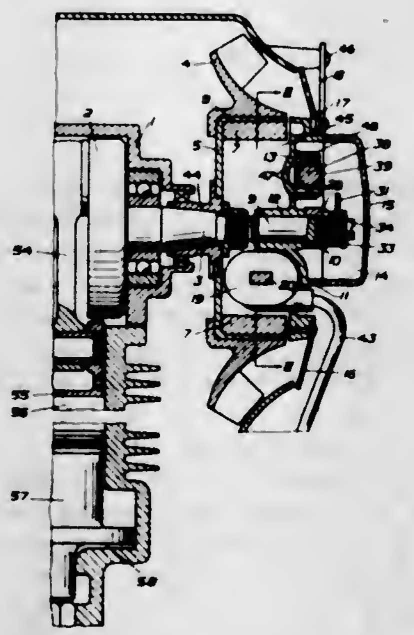
(*d*) said end of the stem being biased by the resilience of said fingers into contact with the cage on a face thereof opposite to the portion supporting the ring member, and

(*e*) convex annular faces on said ring member and bearing member in engagement with the opposite sides of the spring fingers to flex said fingers toward the convex face on the ring member when the valve movement is arrested and the cage continues its closing reciprocative movement.

3,183,902
IGNITION APPARATUS

Sven Erik Wicklund, Saltsjobaden, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden

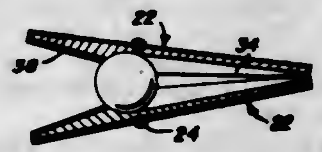
Filed May 15, 1962, Ser. No. 194,828
14 Claims. (Cl. 123—148)



1. A magneto ignition apparatus for an internal combustion engine having a casing and a crank shaft mounted to rotate in said casing, the combination which comprises magneto magnets mounted to be rotated by said crank shaft, a magneto housing journalled on and carried by said crank shaft and anchored to said casing against rotation with the crank shaft, ignition coil means including at least a primary winding, a core, and a secondary high tension winding disposed within the magnetic field of said magneto magnets, means for conducting magnetic flux from said magneto magnets at least through said primary winding, a circuit breaker having a fixed and a swingable breaker point mounted on and outside said magneto housing, cam means driven from said crank shaft cooperating with said breaker to move said breaker points in and out of contact with each other, an electric conduit leading from said coil means to said breaker, an electric condenser mounted outside said magneto housing and connected in parallel to said breaker, and an electric conduit leading from said secondary winding for supplying high tension current to a spark plug in the internal combustion engine.

3,183,903
MARBLE SHOOTER

John O. Thompson, Box 133, Osage, Wyo.
Filed May 16, 1963, Ser. No. 280,863
6 Claims. (Cl. 124—10)

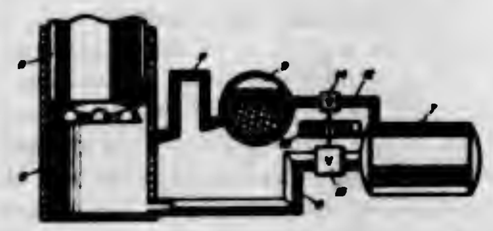


1. A marble shooter comprising a pair of elongated superimposed members having fulcrum forming means adjacent the center thereof, resilient means biasing said members in opposite directions about said fulcrum forming means for retaining one end of one member adjacent an end of the other member with the other ends spaced apart, marble guide means on at least one of said members for guiding movement of a marble longitudinally between the members, said marble guide means including a shoulder for engaging a marble and preventing movement of the marble in one direction, said shoulder being disposed between the center of the member and the ends of said members normally retained in adjacent relation and facing the center of said members, whereby insertion of a marble between the adjacent ends of said members will pivot the adjacent ends apart, said shoulder receiving the marble and retaining it in place thereby retaining the normally adjacent ends of the members in spaced apart relation whereby subsequent movement of the normally adjacent ends of the members will cause fulcruming thereof about the marble until the surfaces of the members diverge from the shoulder and marble to the other ends thereof for ejecting the marble therefrom.

3,183,904
WATER INJECTION FOR EJECTION PERFORMANCE BOOST

Edward J. Barakauskas, Saratoga, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Jan. 25, 1963, Ser. No. 254,825
1 Claim. (Cl. 124—11)



A missile launching apparatus for increasing the energy of launching comprising:

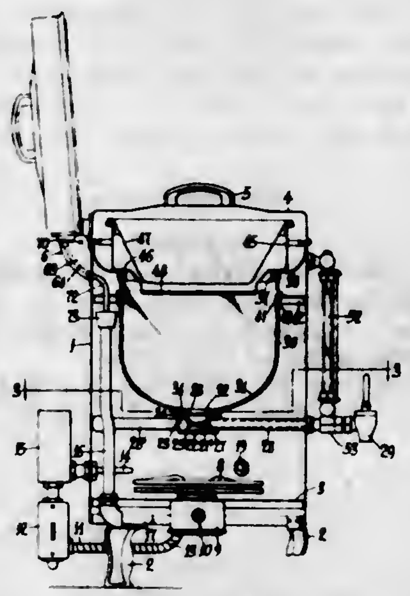
- a launching tube closed at its bottom end and having a missile supported in said tube and spaced from said bottom end;
- a compressed air delivery tube secured to and communicating with the tube adjacent the bottom end;
- a tank delivering compressed air to said delivery tube;
- a valve in said delivery tube between said tank and said launching tube to control the delivery of said compressed air to the launching tube;
- a tank containing water;
- a water delivery tube connected to said launching tube directly below the bottom end of said missile;
- a tube connecting said water tank with said compressed air tank;
- a valve in said connecting tube to control the passage of compressed air from said compressed air tank to said water tank;
- a mechanism controlling the actuation of each of said valves;

whereby compressed air and water are delivered to the space at the bottom of the launching tube as desired, the resultant movement of the missile in the tube increasing the volume of the closed chamber causing an expansion of the air resulting in a temperature drop to the freezing point of water, the consequent freezing of the water liberating the latent heat of fusion, the energy of said liberated heat adding to the energy of launching.

3,183,905
COFFEE URN WITH COVER HAVING CONDENSATE DRAIN EXTENDING THEREFROM

Franklin H. Kirchner, Buffalo, N.Y., assignor to Franklin Coffee Urn Corp., Buffalo, N.Y.

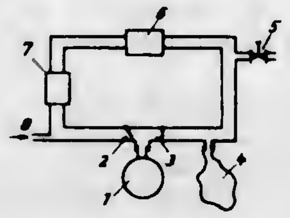
Filed Nov. 13, 1961, Ser. No. 151,683
4 Claims. (Cl. 126—383)



1. A coffee urn comprising, a casing containing a water chamber, an overflow drain for said chamber, means for heating water in said chamber, a cover, a hinge mounting said cover on said casing for movement between open and closed positions relative thereto, said hinge including a first part mounted on said casing and a second part mounted on said cover for movement therewith relative to said first hinge part, said first hinge part having a passage therethrough communicating with said overflow drain and venting said chamber to atmosphere, and said second hinge part having a drain passage therethrough from inside said cover, said second hinge part passage communicating with said first hinge part passage when said cover is in open position, whereby said hinge comprises a vent for said chamber and a condensate drain for said cover.

3,183,906
METHOD FOR DOSING THE CONCENTRATION OF GASEOUS OR VAPOROUS ANESTHETICS IN CLOSED SYSTEMS OF ANESTHESIA

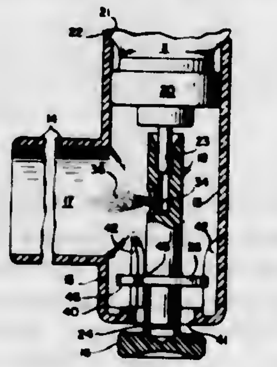
Peter Moyat, Bergen, Kreis Hanau, Germany, assignor to Hartmann & Braun Aktiengesellschaft, Frankfurt am Main, Germany
Filed Jan. 19, 1961, Ser. No. 83,695
Claims priority, application Germany, Jan. 26, 1960, H 38,487
13 Claims. (Cl. 128—188)



7. An apparatus for administering anesthetics which have a high vapor pressure comprising an endless conduit for circulation of gas and provided with two serially connected check valves therein for substantially unidirectional flow of the gas in the conduit and provided with an opening between the check valves and with a branch duct at said opening for leading the gas to a patient so that inhalation and exhalation produce a circulation of gas through the conduit, inlet means to the conduit for supplying oxygen to the conduit, a vent valve connected to the conduit and open to the ambient atmosphere for regulating the degree of closure of the conduit, a vessel connected serially into the conduit and containing a reversible physical absorber for active anesthetic agent, the absorber being exposed to the gas in the conduit and the absorber being of sufficient quantity to reduce the partial pressure of the active anesthetic in the conduit to a value safe for the patient, whereby breathing by the patient tends to circulate gas through the conduit and vessel and thereby active anesthetic agent will be released from the physical absorber as the anesthetic agent becomes depleted from gas in the conduit to supply more anesthetic to the conduit gas and at a partial pressure safe for the patient.

3,183,907
DEVICE FOR INHALATION AEROSOL

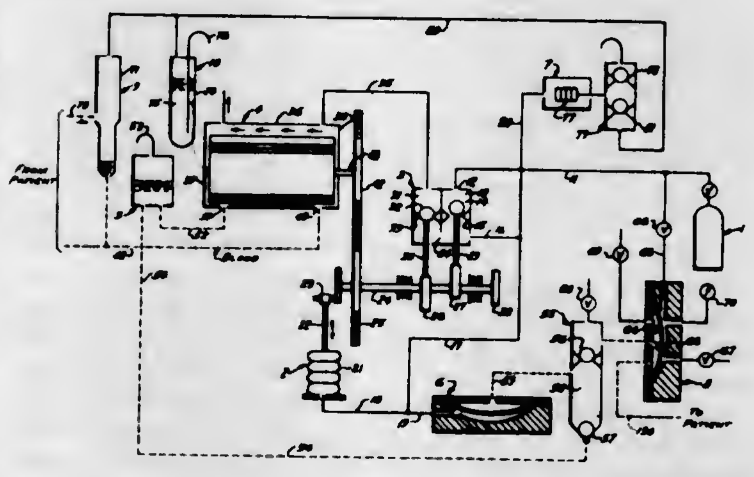
Vannevar Bush, Belmont, and John A. Hastings, Bass River, Mass., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
Filed June 25, 1962, Ser. No. 204,913
6 Claims. (Cl. 128—208)



1. An aerosol inhalation device for administering to the lung cavities a medication stored with a propellant under pressure in an aerosol container having a hollow discharge valve stem projecting from a sealing closure, said device comprising: (*a*) a closed chamber effected by having an inlet opening adapted to fit in a substantially air-tight manner about the sealing closure of the aerosol container with the aerosol discharge valve inside the chamber, said closed chamber also having an outlet tube adapted to be grasped by the lips of the user and through which an aerosol mist, when it is formed in the closed chamber, passes into the mouth of the user, said closed chamber also having vent means, which, when actuated to open position, admits air from the exterior of said closed chamber to the interior of said closed chamber; (*b*) mechanism positioned within said closed chamber adapted to engage said aerosol discharge valve stem and, when displaced, moving said aerosol valve stem to discharge a propellant-medication mixture from the aerosol container into said closed chamber and in the direction of the outlet tube; (*c*) an aerosol actuating button positioned outside said closed chamber; and (*d*) connecting means mechanically connecting said actuating button with said mechanism and responsive to the actuation of said mechanism for opening said vent means to admit air into said closed chamber from the exterior thereof when the mechanism is actuated to effect a discharge of the propellant-medication mixture from the aerosol container into the closed chamber.

3,183,908
PUMP OXYGENATOR SYSTEM

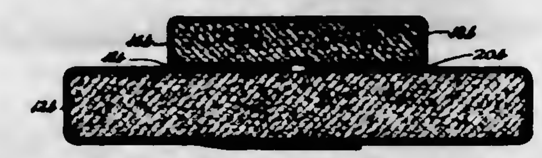
Samuel C. Collins, Belmont, and Ernest M. Barsamian, West Roxbury, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 18, 1961, Ser. No. 139,016
16 Claims. (Cl. 128—214)



1. For use in a system that assumes the functions of the lungs of a patient during surgery, the combination of a cylindrical container, said container adapted to contain a pool of blood being positioned in a substantially horizontal attitude, means for forming a pool of blood at the bottom of said container thereof, a first sleeve mounted between opposite end walls of said container, means for rotating said sleeve about an axis that is parallel to but below the longitudinal axis of symmetry of said container, the location of said axes with respect to the surface of said pool of blood being such that a wall length portion of said sleeve extends into said blood pool whereby the inner and outer wall surfaces of said sleeve become covered with a thin film of blood after a few rotations of said sleeve, a second sleeve positioned within said first sleeve, a loop of wire secured around the outer surface of said second sleeve adjacent each end thereof, said loops of wire freely resting on a portion of the inner wall surface of said first sleeve whereby a finite separation between the lower inner wall surface of said first sleeve and a confronting portion of the outer wall surface of said second sleeve is established and whereby said second sleeve rotates in response to the rotation of said first sleeve, means for establishing a continuously fresh oxygen atmosphere within said enclosed container and means for withdrawing blood from said pool.

3,183,909
CONVERTIBLE SANITARY NAPKIN

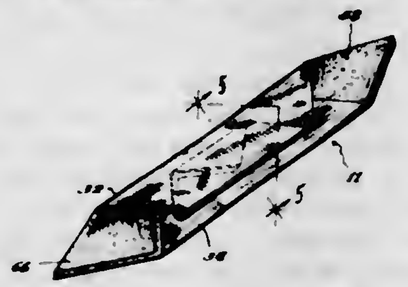
Walter Glynn Roehr, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Sept. 24, 1962, Ser. No. 225,783
10 Claims. (Cl. 128—290)



1. A convertible sanitary napkin comprising a first elongate absorbent pad, a light weight wrapper of fluid pervious material enclosing said first pad, a second elongate absorbent pad of lesser thickness than said first pad, a light weight wrapper of fluid pervious material enclosing said second pad, said pads being maintained with their longitudinal center lines in registered engagement by interbonding extending along the respective center line pad areas, whereby said second pad may be folded along its longitudinal center line to provide an outwardly extending rib-like vestibule element.

3,183,910
SANITARY NAPKIN ROLL AND METHOD OF MAKING

Lloyd D. Patterson, Menasha, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,417
6 Claims. (Cl. 128—290)

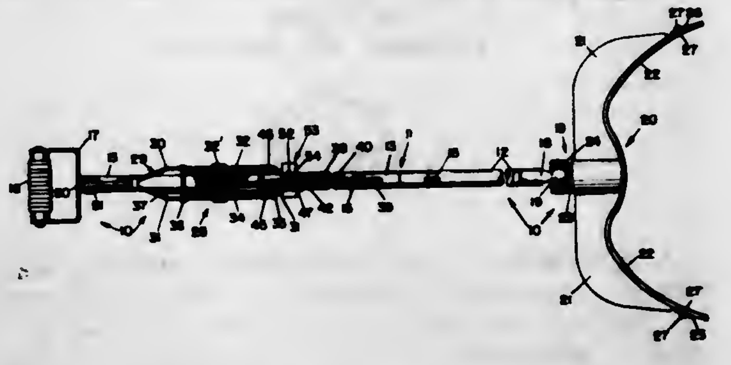


6. A folded sanitary napkin of unitary construction having a substantially fluid impervious bottom layer and multiple layers of fluid absorbent material folded thereover, said napkin being fabricated from sanitary napkin stock comprising a single rectangular laminate in which a selected area has been rendered substantially fluid impervious and which consists of layers of normally absorbent material and an underlying layer of gauze-like webbing, said laminate having a plurality of spaced diagonally disposed fold lines, two of said lines defining a relatively wide central strip-like area extending between two diagonally disposed corners of said rectangle, and other of said lines defining a number of adjoining strip-like areas of lesser width disposed laterally of each side of said central area, said strip-like areas being overfolded from the corners inwardly on each of said fold lines to provide multiple layers of absorbent material overlying said central area, said central area containing an impregnant rendering the normally absorbent material in said area substantially fluid impervious.

3,183,911
FETAL EXTRACTOR

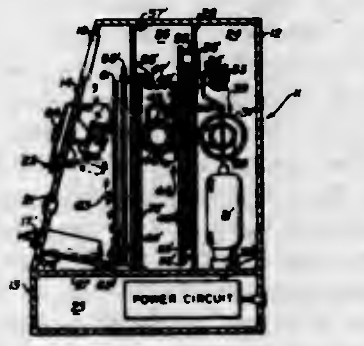
Alfred A. Anglemyer, 2585 Evelyn Drive, Dayton, Ohio
Filed Nov. 29, 1962, Ser. No. 240,995
9 Claims. (Cl. 128—353)

1. A veterinary fetal extractor comprising: a horizontally extending breechen member for contacting the body of an animal, an elongated rigid base member, means swivelly connecting one end of said base member to the midpoint of said breechen member for relative lateral and vertical adjustment therebetween, a cable puller including operating means therefor connected to the opposite end of said base member, a pull cable extending from said cable puller toward said breechen member, and a connector on the free end of said cable for attachment to a fetus.



3,183,912
DIATHERMY MACHINE

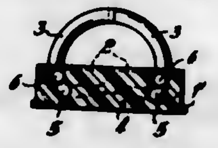
George S. Mogilner, 2758 Whittier Blvd., Los Angeles, Calif.
Filed May 31, 1962, Ser. No. 198,891
4 Claims. (Cl. 128—421)



1. A diathermy unit for producing electro-therapeutic high frequency waves comprising a generally box-like housing, said housing interiorly compartmented into a high-frequency power supply section, a high-frequency circuit section and a tuned circuit output section; power supply means positioned in said power supply section; high-frequency generating means positioned in said high-frequency circuit section electrically connected to said power supply means, a high-frequency tuned circuit comprising a high-frequency transformer, a condenser, and a tuning condenser all electrically connected and positioned in said tuned circuit output section and electrically connected to said high frequency generating means; said tuning condenser comprising at least one condenser plate fixed in a vertical transverse position in said output section in said housing and a moveable condenser plate held in face to face relationship with said fixed plate, a resilient spring member supporting said moveable condenser plate at one of its edges whereby said plate is moveable in swinging relationship to said fixed plate; an inclined control panel forming the front portion of said housing; a manually controlled rotatable shaft retained at one of its ends in said front panel and extending into said output section at an angle normal to said panel; a control knob affixed to the end of said shaft exterior to said panel; a right-angled contacting arm rigidly affixed to the other end of said shaft and contacting said moveable condenser plate in rotatable-sliding relationship, and output terminals connected to said high frequency tuned circuit whereby high frequency waves are applied exteriorly of said diathermy unit.

3,183,913
LOOSE-LEAF BINDER MECHANISM

Hermann Frodermann, Hedrichsdorf 6, Espelkamp-Mittwald, Westphalia, Germany
Filed June 19, 1962, Ser. No. 203,596
Claims priority, application Germany, June 19, 1961, F 34,202
2 Claims. (Cl. 129—24)

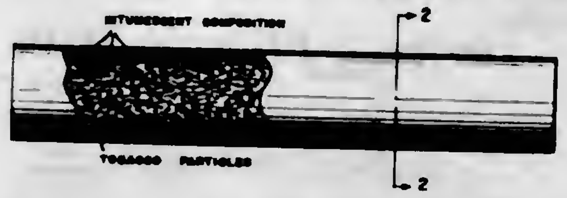


1. A loose-leaf binder mechanism comprising, in combination, support means including an elongated base member having a pair of top face portions inclined to each other in direction transverse to their elongation and including with each other an angle slightly greater than 180°, and a pair of projecting members respectively connected to opposite ends of said base member projecting upwardly therefrom; a pair of elongated flat rails superimposed on said elongated base member and extending parallel to each other between said projecting members, each of said pair of elongated rails having inner and outer substantially parallel edge faces, said inner edge faces having each an opper face portion adapted to abut against the corresponding upper face portion of the inner edge face of the other rail and a lower face portion outwardly inclined to said upper face portion, and each of said elongated rails having a pair of trunnions respectively projecting from opposite ends thereof aligned along a common axis extending substantially parallel and adjacent to said outer edge face; a pair of ring halves fastened spaced from each other to each of said rails projecting upwardly therefrom and having each a free end adapted to abut against the free end of the corresponding ring half on the other of said rails; and a pair of guide grooves formed in each of said projecting members and being downwardly inclined towards each other and respectively receiving said trunnions so as to mount said rails movable between a closed position in which said rails extend substantially in one plane and in which said trunnions are respectively located at upper portions of said guide grooves which are spaced from each other so as to press in said closed position of said rails the upper portions of said inner edge faces thereof against each other and to hold said free ends of said ring halves in abutting relationship against each other and an open position in which said trunnions are located at a lower portion of said guide grooves and in which said lower face portions abut against each other so that said rails are inclined with respect to each other so that the free end of said ring halves will be spaced from each other, said trunnions being tensionless guided in said grooves, and said grooves, said inner edge faces of said rails and said top face portions of said base member constructed to limit the angular position of said rails.

3,183,914
CIGARETTE

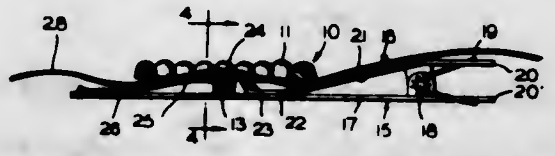
Charles C. Cohn, Atlantic City, N.J., assignor to Samuel L. Cohn and Charles C. Cohn, doing business as Colonial Alloys Company, Philadelphia, Pa., a partnership
Filed Jan. 24, 1962, Ser. No. 168,532
The portion of the term of the patent subsequent to Apr. 23, 1979, has been disclaimed
8 Claims. (Cl. 131—4)

2. A cigarette or the like comprising a wrapper, a tobacco filler contained within said wrapper and a non-toxic sodium silicate composition in granular form interspersed with the tobacco particles, said silicate composition being distributed throughout the filler and being intumescent so that it foams up and fuses under the heat of the burning cigarette to such a substantial extent to hold the tobacco ash on the cigarette and to insulate the burning portion of the cigarette from a supporting structure to prevent burning thereof, said composition having a weight ratio of sodium monoxide:silicon dioxide within the range of 2:1 to 1:4.



3,183,915
HAIR ORNAMENT WITH A RESILIENT ATTACHING CLIP

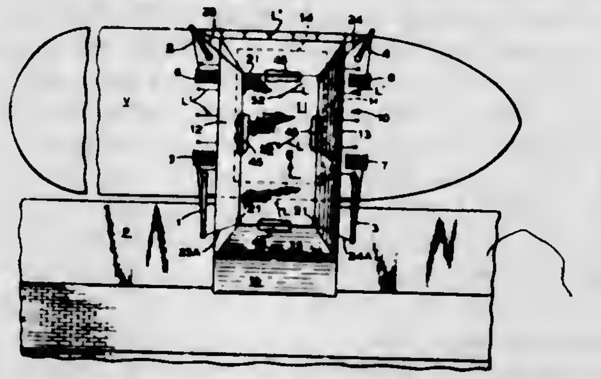
George Noel Bolinger, Shelbyville, Ill., assignor to Sta-Rite Ginnie Lou, Inc., Shelbyville, Ill., a corporation of Illinois
Filed July 10, 1962, Ser. No. 208,762
5 Claims. (Cl. 132—47)



2. A hair ornament comprising a relatively rigid body having an ornamental circular portion and a cross bar extending diametrically thereacross, and a clip for attaching the ornament to the hair of the wearer, said clip having an arm extending diametrically across and beneath said circular portion in contact with opposite sides thereof, said arm intermediate its ends having an upwardly offset portion extending over said bar to fix said clip against longitudinal displacement, said arm being formed of resilient material to facilitate its insertion beneath one side of said circular portion, then over said bar, and then under the other side of said circular portion and to maintain resilient engagement of said arm with said bar and with said opposite sides of said circular portion.

3,183,916
CARGO LOADING TENT

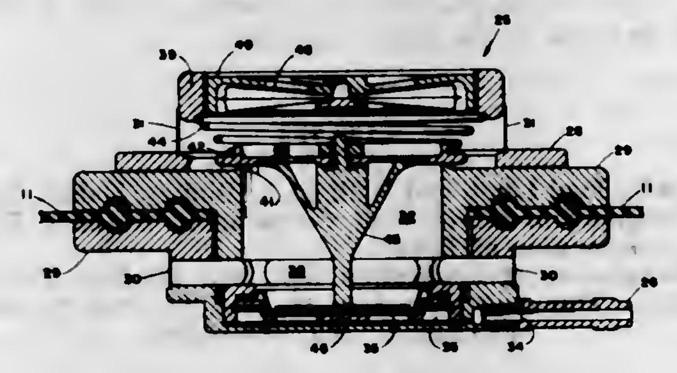
Frank J. Marino, Brooklyn, N.Y., assignor to L. Marino, Inc., Brooklyn, N.Y., a corporation of New York
Filed Sept. 19, 1963, Ser. No. 310,038
6 Claims. (Cl. 135—6)



1. For use with at least one pair of loading booms of a vessel which are movable to selected angular positions relative to the deck of said vessel and at least one pair of runners extending from the respective booms, a cargo loading tent for suspension over a hatchway of said vessel, said tent comprising a top portion and side portions extending from said top portion, the top portion of said tent being formed with at least one pair of longitudinally spaced small crown receiving openings, a crown member in each opening and substantially filling said opening to limit the ingress of rain into said tent, means for securely mounting said crown members in the respective crown receiving openings, said crown members including means for independently suspending said tent from said booms to locate the crown members in the top portion of said tent in selected positions spaced from the respective booms while said booms are in selected angular positions thereof, each of said crown members further including a pair of pulley means mounted thereon for guiding one of said runners into the interior of said tent whereby the terminal ends of said runners are adapted to be interconnected and connected to a sling load for maneuvering said sling load in response to regulated movement of said runners through the pulley means of said crown members.

3,183,917
FLUID CONTROL APPARATUS

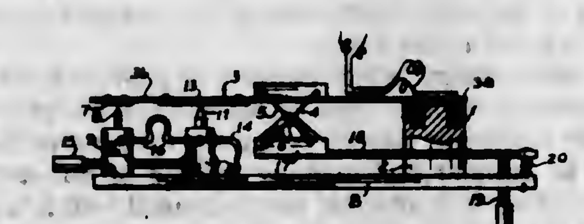
John W. Henneman, Rock Island, Ill., assignor to The Bendix Corporation, Davenport, Iowa, a corporation of Delaware
Filed Nov. 28, 1962, Ser. No. 240,533
4 Claims. (Cl. 137—81)



2. A garment pressure regulator for a garment and ventilation gas source of the type in which pressurized ventilation gas is introduced via a conduit containing a check valve and is exhausted from said garment via an exit opening comprising, a valve for disposition in said exit opening. an actuator for said valve sensitive to the differential of pressures to which it is subjected, and means for subjecting said actuator to the differential of a pressure having the pressure of said ventilation gas upstream of said check valve and the pressure of said garment.

3,183,918
TRANSDUCER ASSEMBLY FOR TRANSFORMATION OF SMALL FORCES INTO PNEUMATIC PRESSURES

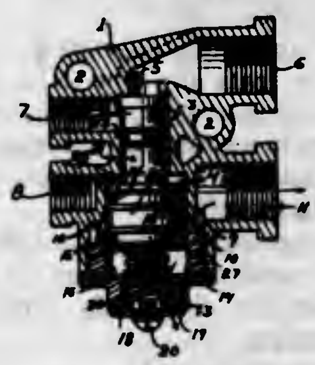
Karl Bester, Speidelweg 22, Stuttgart-Rohracker, Germany
Filed Oct. 25, 1962, Ser. No. 234,006
Claims priority, application Germany, Oct. 28, 1961, B 64,582
4 Claims. (Cl. 137—85)



1. A transducer for converting measuring forces of the order of 150 mg. and the like at full scale to pneumatic pressure of the order of an atmosphere comprising, a base; a balance beam, two spaced-like sets of a pair of like crossed spring blades, the planes of the blades of the two sets being coincident from set to set and mutually intersecting within the sets and end portions of all blades being secured on the beam to form a fulcrum mount; blocks carrying the respective sets of blades and cradled to swing with respect to the base about an axis coincident with the intersection of the planes of crossed blades; means for holding the blocks fixed with respect to each other and for varying the nul position of the beam with respect to the base; a dipping galvanometer coil pending from an arm of the beam and a magnet fast on the base for interaction with the coil; an air chamber mounted on the base near the beam and provided with a jet member so that air may issue from the chamber and jet member against the beam and tend to counteract on the beam against moments due to the magnet and coil, a pilot air nozzle directed toward an end of the beam for directing a weak stream of air against the beam; an amplifier pneumatically connected between the nozzle and air chamber to deliver air to the chamber at an air pressure higher than that of the air just before reaching the nozzle, and takeoff means on the chamber for pneumatically connecting a pneumatic load to the chamber.

3,183,919
BREAKAWAY VALVE FOR VEHICLE BRAKE SYSTEMS

Clarence R. Herring, La Habra, Calif. (% Sealco Airbrakes Inc., 13530 Nelson Ave., City of Industry, Calif.)
Filed May 29, 1963, Ser. No. 284,176
2 Claims. (Cl. 137—102)



1. A breakaway valve adapted for installation on an application line and a pressure supply line of a vehicle brake system, said breakaway valve comprising:

(*a*) a valve body structure having a bore defining an application line valve chamber of minor diameter, and a pressure supply line valve chamber of major diameter;
(*b*) inlets and outlets for said respective valve chambers;
(*c*) an exhaust port communicating with said pressure supply line valve chamber;
(*d*) a ring of axially directed slits formed in the side walls of said pressure supply line valve chamber for communication with said pressure supply line chamber outlet, and seal rings supporting lands formed between said slits;
(*e*) a valve plunger including a minor valve portion fitting said application line valve chamber and isolating said chamber from said pressure supply line valve chamber, and a major valve portion fitting said pressure supply line valve chamber and normally closing communication between the pressure supply line chamber inlet and outlet;
(*f*) said valve plunger including a pair of seal rings movable over said lands constructed and arranged for communication between said pressure supply line chamber outlet and either said pressure supply line chamber inlet or said exhaust port;
(*g*) said valve plunger being movable in response to pressure at said pressure supply line chamber inlet to cause said minor valve portion to open communi-

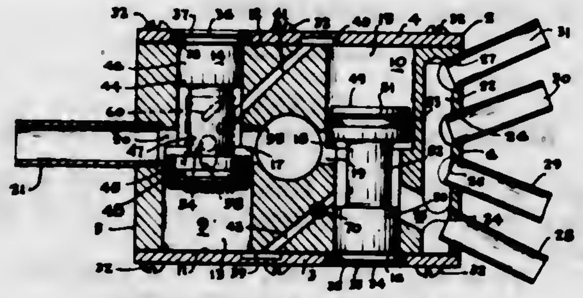
cation between said application line chamber inlet and outlet, and said major valve portion to open said pressure supply line chamber inlet and outlet and close said exhaust port;

(*h*) and yieldable means operable on drop in pressure at said pressure supply line chamber inlet to cause closure of said application line chamber valve and said pressure supply line chamber valve, to close and to open communication between said pressure supply line chamber outlet and said exhaust port.

3,183,920
PULSATOR FOR A MILKING MACHINE

Clyde D. Cochran, Deerfield Beach, Fla., assignor to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 26, 1962, Ser. No. 226,328
11 Claims. (Cl. 137—105)



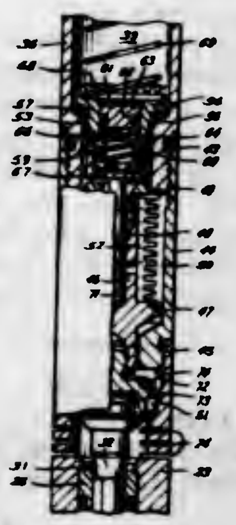
1. A pulsator for milking machines comprising
(*a*) a body member,
(*b*) means for connecting one side portion of said body member to the teats of a cow to be milked,
(*c*) means for connecting another side portion of said body member to a source of vacuum,
(*d*) said body member having a discharge outlet for discharging milk therefrom,
(*e*) said discharge outlet being in communication with said second-mentioned means at all time, and
(*f*) third means for alternately connecting said first-mentioned means
  (1) to atmosphere and
  (2) to said discharge outlet and, therefore, to said second-mentioned means,
(*g*) said third means including
  (1) one cylinder operatively connected between said second-mentioned means and said discharge outlet,
  (2) a second cylinder operatively connected between said first-mentioned means and said discharge outlet,
  (3) pistons reciprocably mounted in said cylinders, and
  (4) means, including a slide operable by one of said pistons, for controlling the reciprocation of said pistons in said cylinders.

3,183,921
GAS LIFT VALVES

Henry U. Garrett, Longview, Tex., assignor to Udell, Inc., Longview, Tex., a corporation of Texas

Filed Apr. 3, 1963, Ser. No. 270,372
11 Claims. (Cl. 137—155)

10. A pressure-responsive valve comprising,
a hollow housing,
a main valve for controlling the passage of fluid between inlet and outlet ports in the housing,
a pressure dome,
motor means sensitive to a differential in dome pressure and inlet fluid pressure for actuating the main valve,
said motor means defining a sealed chamber,
a valve passage in the housing between the pressure dome and the sealed chamber,
a one-way valve in said passage seatable by dome pressure in the direction of the sealed chamber,

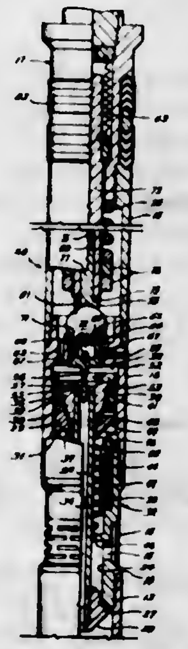


and means between the pressure dome and sealed chamber for transmitting a selected amount of dome pressure to the sealed chamber.

3,183,922
GAS LIFT VALVE

Charles Paul Lamb and William A. Dudley, Dallas, Tex., assignors to Merla Tool Corporation, Garland, Tex., a corporation of Texas

Continuation of application Ser. No. 170,593, Feb. 1, 1962. This application Aug. 18, 1964, Ser. No. 390,408
10 Claims. (Cl. 137—155)

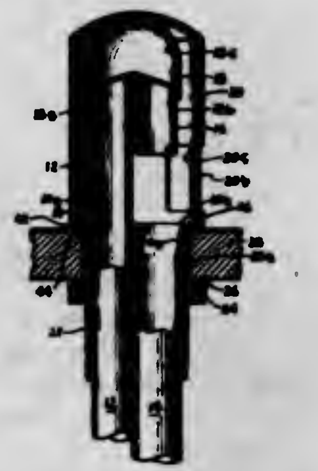


1. In a gas lift valve having a main valve member controlling flow through the valve and a piston member reciprocating in a cylinder for controlling opening and closing of the main valve member in response to opening and closing of a pilot valve,
the improvement which consists in providing the piston member with a rigid frusto-conical periphery with the small end thereof facing the main valve member,
and an annular seal member formed of polytetrafluroethylene with an inner frusto-conical wall to conform to the periphery of the piston member and an outer cylindrical wall to conform to the wall of the cylinder, said piston member at its larger diameter section in engagement with the seal being substantially less in diameter than the inner diameter of said cylinder, said seal member having its small area end unsupported to permit the seal to slide along the piston member and be wedged between the piston member and cylinder.

3,183,923
AIR GAP ANTISYPHONING DEVICE

Robert E. Henrikson, 419 N. Park Road, La Grange Park, Ill.

Filed May 11, 1961, Ser. No. 109,460
5 Claims. (Cl. 137—216)

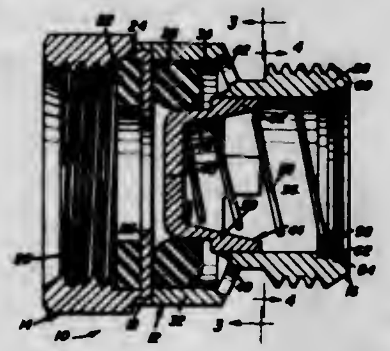


1. An antisyphoning device comprising a pipe, a nipple disposed in closed side-by-side relationship thereto, a coupling having a generally U-shaped passage connecting said pipe and nipple, and a tube aligned generally with said nipple and spaced a predetermined distance therefrom remotely from said coupling, said passage being larger than the internal diameters of said pipe and nipple at the connecting portions thereof and having an outer wall length substantially longer than that of a simple pipe bend, said connecting portions of said pipe and nipple defining planes oblique to the axes thereof each of which planes is inclined in the direction away from said coupling from the inner margin to the outer margin of said passage.

3,183,924
VACUUM BREAKER INCLUDING CHECK VALVE

Paul J. Duchin, Milford, Mich., assignor to Aquaval Specialties, Inc., Milford, Mich., a corporation of Michigan

Filed Aug. 22, 1962, Ser. No. 218,625
5 Claims. (Cl. 137—218)

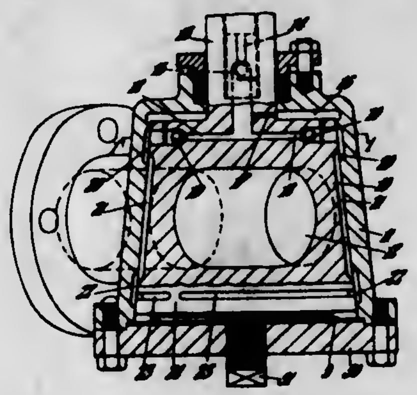


1. A vacuum breaker for a water supply system comprising a housing having communicating rearward inlet and forward outlet portions, said housing being substantially cylindrical with the rearward portion being larger in diameter than the forward portion, both portions defining interior surfaces, an annular lateral wall being provided between the adjacent inner ends of the rearward and forward portions, air intake means, said air intake means consisting of a plurality of air ports through said lateral wall, sealing means, said sealing means comprising a resilient ring seal located within the rearward portion adjacent the air intake ports and in peripheral slidable engagement with the interior surface thereof, said seal selectively completely sealing said air ports, slidably mounted check valve means, said check valve means cooperating with said seal for selectively preventing communication between the rearward inlet and forward outlet portions by forming a flow barrier rearward of the air intake ports, means normally biasing said check valve means into engagement with said seal, said check valve means being mounted for movement both in conjunction with the seal for maintaining the flow barrier and relative to said seal for enabling flow therebetween, said lateral wall limiting the forward movement of said seal while allowing continued forward movement of the check valve means for enabling relative movement therebetween sufficient so as to allow a flow of fluid therethrough from the rearward inlet portion to the forward outlet portion.

3,183,925
PLUG VALVE HAVING A PARTICULAR LUBRICANT SEALANT ARRANGEMENT

Edgar Hoyle, Newport, and Terence John Floyd, Wellington, England, assignors to Audco Limited, Newport, England

Filed May 14, 1963, Ser. No. 280,294
3 Claims. (Cl. 137—246.14)



1. A fluid-controlling valve incorporating a hollow body and a tapered closure member which is mounted in a seating in the body so as to be angularly movable between a closed position in which flow of fluid through ports formed in the valve body is prevented and an open position in which such fluid flow is permitted via an aperture formed in the closure member wherein there is provided a chamber disposed adjacent to the smaller end of the closure member for receiving pressurized lubricant to urge said closure member towards the large end of its seating, means for feeding lubricant from the exterior of the valve to said chamber, second means for feeding lubricant to two regions of the inter-engaging surfaces of the closure member and its seating, said regions being disposed respectively on opposite sides of the closure member axis and being in communication with each other when the closure member is in an open position, the closure member being arranged to be biased by upstream pressure to engage its surface with the surface of the body so as to isolate said regions from each other when the closure member is in a closed position, and means responsive to upstream pressure for preventing lubricant from flowing from said second feeding means to that region of the inter-engaging surfaces of the closure member and its seating which, when the closure member is in its closed position, is disposed upstream of the closure member axis.

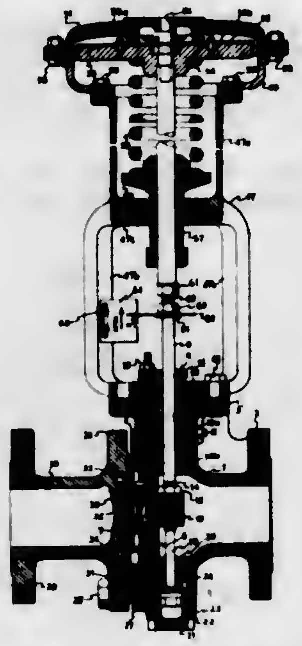
3,183,926
CONVERTIBLE GATE VALVE WITH REMOVABLE HOUSING SECTION

William Donald Boudet, Cincinnati, Ohio, assignor, by mesne assignments, to Richards Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed May 19, 1961, Ser. No. 111,206
11 Claims. (Cl. 137—270)

1. In a sliding plate regulator valve, a valve body, said valve body comprising first and second hollow body members, said first hollow body member having at one end means for attachment to a conduit, a valve stem, said

first body member having means for slidably mounting said valve stem in a transverse position, means associated with said first body member for actuating said valve stem, a fixed apertured plate mounted in a seat near the other end of said first body member, a sliding apertured plate lying outwardly against said fixed apertured plate, said apertures cooperating to control fluid flow through the flow passage defined by the hollow bodies, said plates being symmetrically mounted with respect to each other and a connection between said valve stem and said sliding apertured plate through the fixed apertured plate, said sliding plate having its face opposite said fixed plate recessed to reduce the net area acted upon by fluid pressure, said second body member having at one end means for attachment with a conduit and at the other end means for attachment with said first body member, both of said attachment means providing planes of parting which are perpendicular to the flow axis, the plane of parting between said first and second body members lying beyond the said sliding apertured plate on the side away from said valve stem, whereby said second hollow body member after disconnection from its conduit and from said first hollow body member may be removed without disturbance of said plates and without disconnection of said first hollow body member from its conduit, providing access to said plates and the interior of said first body member.



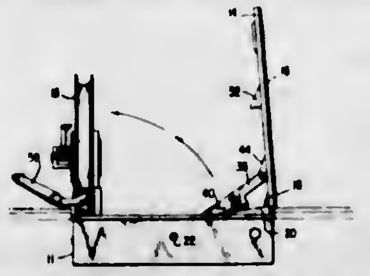
3,183,927

FIRE EXTINGUISHING APPARATUS

Wilfred W. Weese, Flushing, and Harry Swartz, 105 E. 73rd St., New York, N.Y.; said Weese assignor to said Swartz

Filed Oct. 7, 1963, Ser. No. 314,368

6 Claims. (Cl. 137—355.19)



1. The combination of a receptacle, a collapsible hose, a hose reel pivotally mounted on said receptacle for hinged movement between a storage position enclosed in said receptacle and a position extending outwardly therefrom; said collapsible hose being spirally coiled in collapsed form on said reel; and means on said hose reel for delivering fluid to said hose in response to the unreeling of substantially all of said hose from said reel.

3,183,928

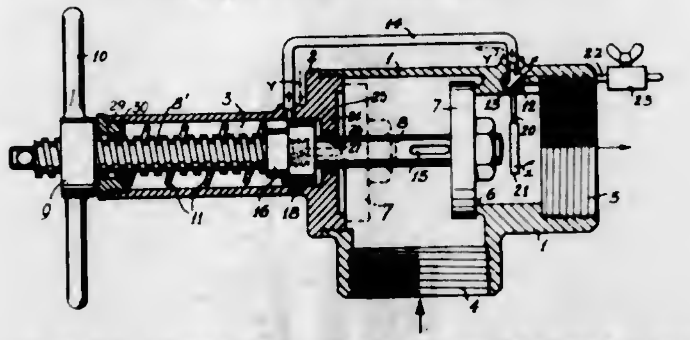
AUTOMATIC SHUT-OFF VALVE

Peretz Rosenberg, Beth-Shearim, Israel

Filed Nov. 13, 1962, Ser. No. 236,815

Claims priority, application Israel Nov. 23, 1961

7 Claims. (Cl. 137—460)



1. A valve, comprising: a valve chest having an inlet port and an outlet port; a valve seat between the two ports; a valve member movable from an open position away from said valve seat to a closed position against said valve seat; spring means biasing said valve member to its closed position; means enabling the manual opening of said valve member against said spring and inlet pressure; said valve member being disposed with respect to said inlet port so that when the valve member is in its open position the inlet pressure normally retains the valve member in said open position against the action of said spring; a chamber; a bypass enabling communication to be established between the outlet port of said chest and said chamber; a cock in said bypass movable from a normal position interrupting said communication to an actuated position establishing said communication; operator means for moving said cock between said positions; and means operative when said communication is established to apply a force on said valve member which, when added to the force applied by said spring, is sufficient to move it to its closed position; whereby said valve, when opened, will automatically close upon the actuation of said operator means or upon the drop of the inlet pressure below the amount necessary to overcome said spring means.

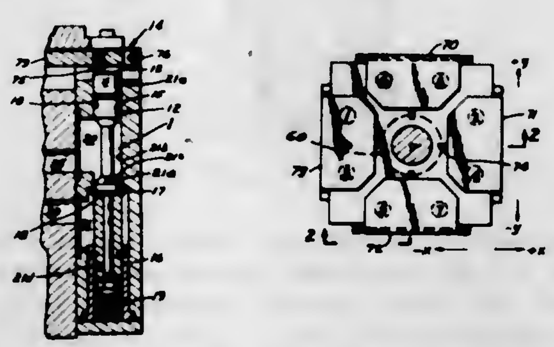
3,183,929

CIRCUIT AND CONTROL

Paul J. Weaver, Pasadena, Calif., assignor to True-Trace Corporation, El Monte, Calif., a corporation of Connecticut

Filed Aug. 8, 1962, Ser. No. 215,597

5 Claims. (Cl. 137—596.18)



1. A plural axis control for controlling the flow of pressurized fluid from a source of pressurized fluid to exhaust comprising: a first and a second pair of motor supply lines; four pairs of normally-closed valves, each of said valves having an inlet port and an outlet port, the inlet port of a first valve of each said pair of valves being connected to the said source, and the outlet port of each of said first valves being connected to a respective motor supply line and to the inlet port of the second valve of its respective pair, the outlet port of each first valve and the inlet port of the second valve of the same pair thereby being connected to a respective one of said motor supply lines, each of said pairs of motor supply lines being so connected to the valves of two different pairs of valves, the outlet port of each of said second valves being connected to said exhaust; and means for actuating a first valve of a pair connected to the motor supply line of one pair of lines and the second valve of the other pair of valves connected to the other of the motor supply lines in the same pair of motor supply lines, thereby selectively to supply fluid under pressure to a selected one of a selected pair of motor supply lines, and to connect the other motor supply line of the selected pair of lines to exhaust, the said means being adapted to select the first valve of any pair and simultaneously the second valve of the other pair of valves which is associated with the same pair of motor supply lines, the means for actuating said valves comprising four hinged plate means each operably overhanging two valves which are thus selectible, and a fluid-actuated actuator operable on respective hinge plate means.

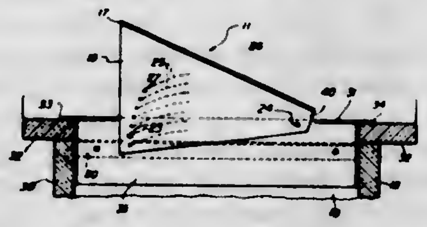
3,183,930

CALIBRATED AIR DUCT VALVE

William Herschel Barr, 5811 Highland Hills Drive, Austin, Tex.

Filed Jan. 2, 1963, Ser. No. 249,037

4 Claims. (Cl. 137—610)



1. An insert for use in an air conditioning system having a main plastic air duct, a branch plastic air duct leading therefrom at 90°, comprising a housing having a vertical base with a four-sided tube secured thereto and snugly fitting the interior of the branch duct and flanges overlying the wall of the main duct on two sides, a three-sided deflector pivoted to the tube to move outward into the main duct, means for locking the deflector in chosen calibrated position, and an angled clip mounting on each of two opposite sides of the tube, one flange of each clip being secured to the tube and the other flange is located between the wall of the main duct and the wall of the branch duct, whereby the two angled mounting clips may be secured to the tubes at the time of installation and the branch duct may then be put in place to surround the tube.

3,183,931

CHARGING VALVE FOR OLEO PNEUMATIC AIRCRAFT LANDING STRUTS

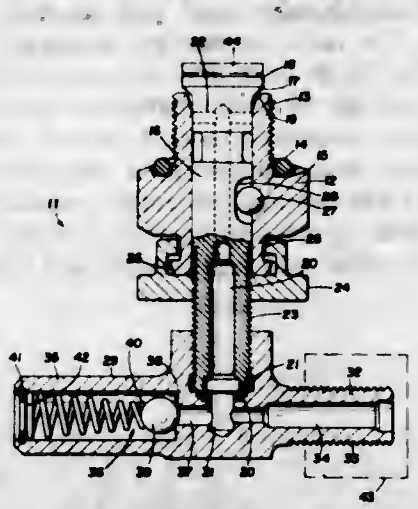
Bryan Cyril Alford, Downsview, Ontario, Canada, assignor to The De Havilland Aircraft of Canada, Limited, Downsview, Ontario, Canada

Filed Feb. 25, 1963, Ser. No. 260,595

Claims priority, application Canada, Feb. 9, 1963, 868,449

4 Claims. (Cl. 137—612.1)

1. A charging valve incorporating a spring loaded pressure relief valve for use with aircraft oleo pneumatic landing struts and the like and comprising: a charging valve body portion; outlet connection means for attachment of said body portion to said struts; a passageway defined by said body portion; valve means in said body portion operable to occlude said passageway; a charging valve inlet connecting member of T-shaped construction; air pressure supply connecting means on one arm of said T; a passageway defined by the leg of said T in communication with said passageway in said body portion; passageways defined by the arms of said T axially aligned with one another, one of said passageways providing a housing for said pressure relief valve and the other said passageway communicating with said air pressure supply connecting means, said valve means including a core member slidably located in said passageway of said body portion and extending axially from both ends thereof, and a valve head on one end of said core member oriented to occlude said passageway.



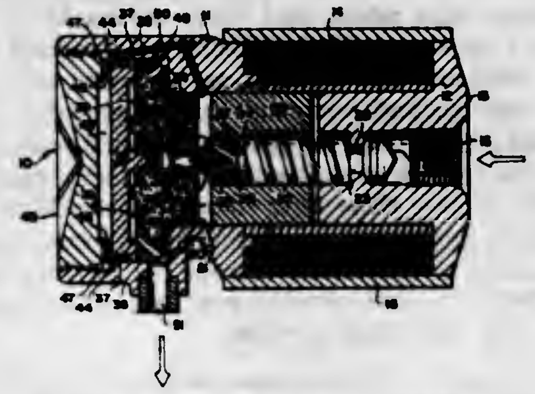
3,183,932

REGULATOR VALVE

John T. Karpus, Jr., Detroit, Mich., assignor to Pneumo-Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware

Filed July 13, 1961, Ser. No. 123,843

7 Claims. (Cl. 137—614.19)



1. A combination shut-off and constant mass flow regulator valve for controlling the flow of fluid therethrough comprising a casing provided with a fluid inlet for receiving fluid under pressure and a fluid outlet for discharging the fluid, valve means in the casing to prevent flow of fluid through the fluid outlet, yieldable means normally holding the valve means in closed position, means for opening the valve means against the force of the yieldable means to allow flow of fluid through the fluid outlet, a passageway formed in said casing, a regulator chamber in the casing receiving fluid under pressure from the fluid inlet, and a regulator member disposed in the casing and having a projecting portion extending therefrom, said regulator member being movable responsive to the pressure of the fluid in the regulator chamber operable to position said projecting portion relative to said passageway to deliver a constant mass flow rate through the fluid outlet at varying inlet pressures.

3,183,933

MULTIPORT VALVE FOR WATER TREATMENT SYSTEM

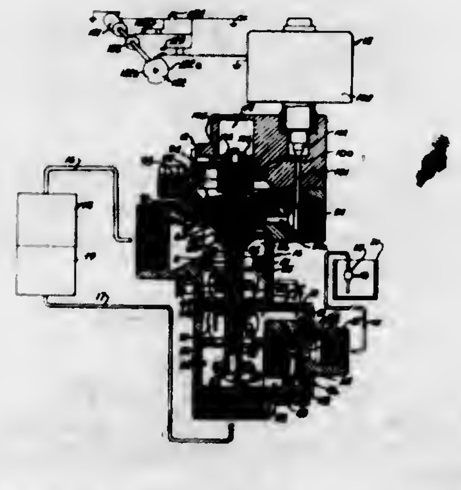
Robert A. Whitlock and Vernon J. Pillote, Rockford, Ill., assignors to AquaMatic Inc., Rockford, Ill., a corporation of Illinois

Filed Apr. 12, 1962, Ser. No. 187,067

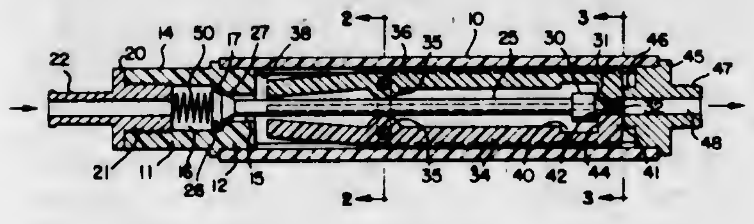
11 Claims. (Cl. 137—624.18)

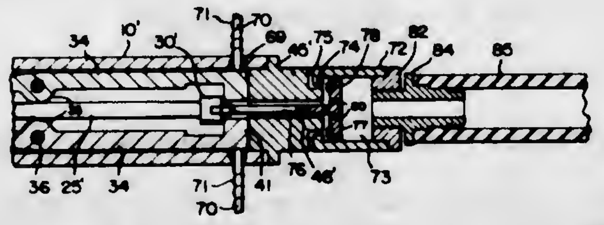
1. A multiport valve comprising, a casing having an inlet chamber and first and second outlet chambers therein,

a fluid inlet passage communicating with said inlet chamber, said casing having first and second ports therein between said inlet chamber and said first chamber and between said inlet chamber and said second chamber, respectively, a first tank connecting passage in said casing communicating with said first chamber, a second tank connecting passage in said casing, an ejector including raw water inlet connected to said second outlet chamber to receive fluid under pressure; a regenerant inlet connected to said ejector; and an outlet communicating with said second tank connecting passage, a third port between said second chamber and said second tank connecting passage, a valve means in said casing mounted on a common stem member for controlling flow through each said first, second and third ports, said valve means being movable between a service position closing said second port and opening said first and third ports; a regeneration position opening said second port and closing said first and third ports, and a rinse position closing said first port and opening said second port and at least partially opening said third port to pass rinse fluid to said second tank connecting passage, and valve member actuating means operative upon successive actuations thereof for moving said valve means between said service position; said regeneration position and said rinse position.



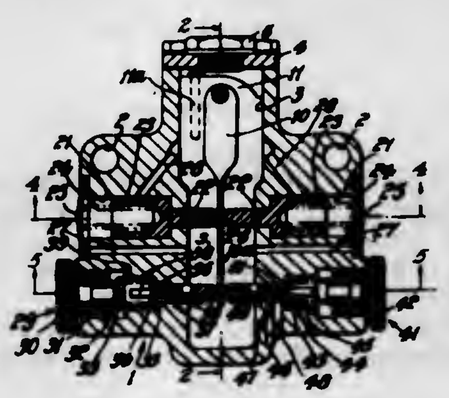
3,183,934
CAM-OPERATED VALVE
George Kenneth Miner, R.R. 3, Box 1161,
Clinton St. Road, Batavia, N.Y.
Filed Dec. 26, 1962, Ser. No. 247,205
15 Claims. (Cl. 137—625.27)





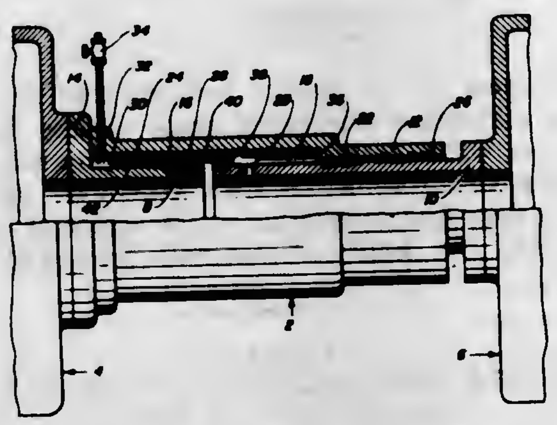
15. A valve mechanism for supplying fluid under pressure intermittently, comprising a body that is formed with a fluid inlet, a fluid outlet, and a chamber providing an elongate, generally cylindrical passage between said inlet and said outlet, said body being formed with a seat that extends transversely of and that is disposed about said passage, an elongate, rod-like element that is disposed in said passage to extend generally axially thereof and that is formed with an enlarged diameter part providing a valve closure member, said element being mounted for movement in one direction to move said member into engagement with said seat to close the valve to obstruct the flow of fluid through said passage and for movement in the opposite direction to move said member out of engagement with said seat to permit the flow of fluid through said passage, said element also being formed with cam follower surfaces that extend radially thereof and that are angularly spaced from each other, a plurality of elongate levers that are disposed in said passage to extend lengthwise thereof in angularly spaced relation to each other about said element, said levers being formed with cam surfaces respectively that are disposed in engagement with said cam follower surfaces respectively, said levers being mounted for pivotal movement radially of said element about pivot points that are spaced axially of said passage from said cam surface to effect movement of said element to adjust the position of the valve closure member to the closed position of the valve upon pivotal movement in one direction and to adjust the position of the valve closure member to an open position of the valve upon pivotal movement in the opposite direction, said body being formed with at least one escape opening therein on the outlet side of said valve seat, and closure means coupled to said element and disposed for engaging and sealing said escape opening in fluid-tight fashion when said element is in its fully opened position and for disengaging said escape opening when said element is in a position other than its fully opened position.

3,183,935
LEVELLING VALVE FOR VEHICLES WITH PNEUMATIC OR HYDRAULIC SUSPENSION
Raymond John Davies and Peter Derek Mills, Warwick, England, assignors to Dunlop Rubber Company Limited, County of London, England, a British company
Filed Mar. 29, 1962, Ser. No. 183,649
Claims priority, application Great Britain, Apr. 5, 1961, 12,102/61
14 Claims. (Cl. 137—627.5)



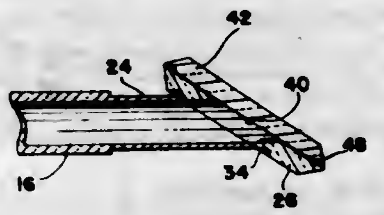
1. A levelling valve for pneumatic suspension for vehicles which comprises a housing, an operating rock shaft journaled in said housing to be rocked by displacements of a running gear relative to a vehicle body, valve means in said housing to control the flow of fluid to and from a pneumatic suspension of a vehicle, a fulcrum resiliently pressed to operative position, a lever fulcrumed on said fulcrum when said fulcrum is in operative position and connected to said valve means and to said rock shaft to be tilted by said rock shaft about said fulcrum to operate said valve means and a fluid actuated means actuated by successive rocking of said rock shaft to move said fulcrum to inoperative position to render said lever inoperative and to permit said fulcrum to return to operative position when rocking of said rock shaft ceases.

3,183,936
EXPANSION JOINT
Rudolph Michel, Hyattsville, Md., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 31, 1963, Ser. No. 284,763
2 Claims. (Cl. 137—802)



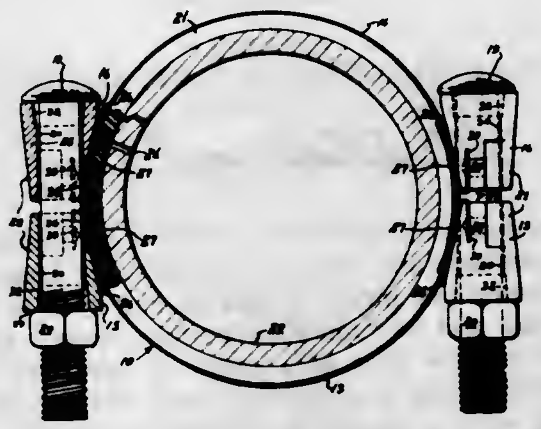
1. A regulated thrust limiting expansion joint in a system carrying a fluid under pressure comprising:
an inner sleeve,
a second inner sleeve in opposed axial alignment with the first inner sleeve and separated therefrom,
a flange integral with the second inner sleeve and remote from the first inner sleeve,
an inner sleeve extension attached to the first inner sleeve and slidably disposed concentrically about the second inner sleeve and spaced from said flange,
an outer sleeve attached to the flange and slidably disposed concentrically about the first inner sleeve, inner sleeve extension and the second inner sleeve,
inner sealing rings attached to the exterior of the second inner sleeve and in slidable contact with the interior of the inner sleeve extension,
outer sealing rings attached to the exterior of the inner sleeve extension and in slidable contact with the interior of the outer sleeve,
the first inner sleeve, the inner sleeve extension and the outer sleeve defining a balance chamber,
the first inner sleeve having at least one hole extending from the balance chamber to the interior of the first inner sleeve,
the second inner sleeve, including the flange, the inner sleeve extension and the outer sleeve defining a leak-off reservoir,
the inner sleeve extension and the outer sleeve forming an outer channel means extending from the balance chamber to the leak-off reservoir for transmitting fluid from said balance chamber to said leak-off reservoir, said outer channel partially obstructed by the outer sealing rings,
the inner sleeve extension and the second inner sleeve forming an inner channel means extending from the interior of the inner sleeve and the second inner sleeve to the leak-off reservoir for transmitting fluid from said interior to said leak-off reservoir, said inner channel partially obstructed by the inner sealing rings,
and a variable pressure regulating means vented to the exterior of said expansion joint communicating with said leak-off reservoir for controlling the rate of separation of said opposed axial alignment of said spaced inner sleeve and second inner sleeve, by control of fluid vented to said exterior by said regulating means.

3,183,937
SEALING MEANS FOR OPTICAL MASER
Kenneth D. Earley, Bayside, Thomas G. Polanyi, Beechhurst, and William Watson, Flushing, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed June 5, 1962, Ser. No. 200,239
5 Claims. (Cl. 138—89)



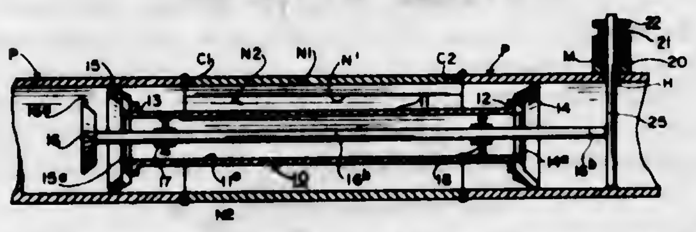
5. An hermetically sealed structure comprising a first disc having an aperture, one surface of the first disc carrying a first annular groove adjacent the periphery thereof, the other surface of said first disc having an annular channel disposed about and adjacent said aperture whereby a lip is formed between said channel and said aperture, a second solid disc, one surface of said second disc having a second annular groove adjacent the periphery thereof, said discs being positioned in mating contact with the first and second grooves being in registration to form a common conduit, said discs having a common periphery and being bonded together in the region extending between said common periphery and said common conduit, and a hollow tube open at at least one end, said end being bonded to said first disc with the tube wall being in registration with said lip.

3,183,938
LOW BOLT PIPE REPAIR CLAMP
Telford L. Smith and Lynn E. Smith, both of 1525 Kensington Circle, Los Altos, Calif.
Filed Sept. 8, 1961, Ser. No. 136,803
7 Claims. (Cl. 138—99)



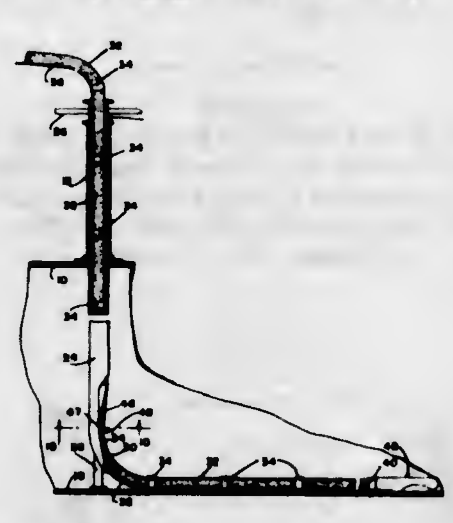
1. A pipe repair clamp comprising a flexible band member, said band member having bent back portions at the ends thereof, a pair of rigid lugs for said band member, each lug having a main body portion and integral spaced apart boss members thereon, each said lug having a bolt hole extending through each said boss portion and a slot means for retaining a said bent back portion of said band, each said slot means extending longitudinally along said body portion and across said bolt holes on one side of said lugs, and bolts extending through said bolt holes in said lugs, means in the bent back portions of said band member for forming recesses aligned with said bolt holes, said bolts lying closely adjacent to the outside surface of the pipe being repaired and being thereby adapted when tightened to apply a force on said lugs along a line substantially in alignment with the tension forces of said band pulling on said lugs from a point adjacent said bolts.

3,183,939
VALVED BRIDGING PLUG AND METHOD
Ralph C. Immel, 5530 Palomar Lane, Dallas, Tex.
Original application Nov. 25, 1960, Ser. No. 71,628, now Patent No. 3,114,395, dated Dec. 17, 1963. Divided and this application Apr. 19, 1963, Ser. No. 277,976
2 Claims. (Cl. 138—97)



1. The method of repairing a pipeline carrying fluid under pressure by replacing a faulty portion thereof without interruption of fluid flow, comprising the steps of introducing a plug having a closed bore therethrough into the pipe line; pumping the plug to a position where the plug spans said faulty portion; opening said bore through the plug to maintain fluid flow therepast; cutting away the faulty portion; installing a new portion of pipeline; reclosing said bore; and pumping the plug beyond the repaired portion to a place of convenient removal.

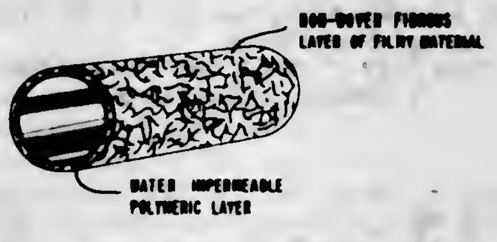
3,183,940
FLUID HANDLING APPARATUS
Henry E. Alquist and Earl E. Kleinmann, Bartlesville, Okla., assignors to Jesse J. Worten, Bartlesville, Okla.
Filed Aug. 17, 1962, Ser. No. 217,737
8 Claims. (Cl. 138—106)



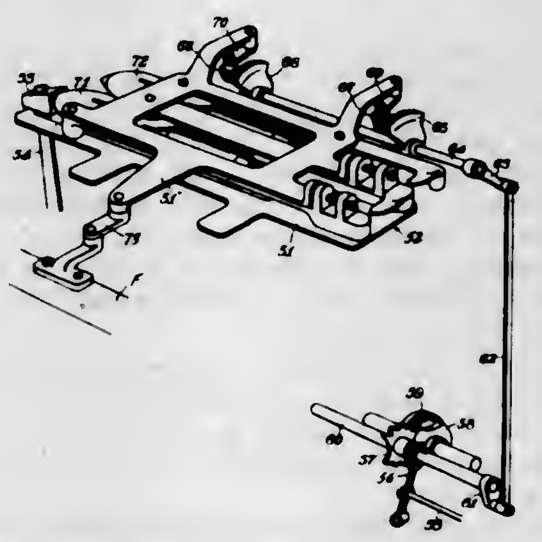
1. Fluid handling apparatus comprising a flexible hose having a substantially uniform unobstructed longitudinal passage, restraining means having an end fixed to an end of said hose and its remaining portion loosely attached externally to said hose at a series of relatively closely spaced points along a substantial length thereof and freely slidable relative thereto in a direction parallel to said passage, said restraining means being flexibly movable with said hose in the direction of a first plane disposed radially of said passage and substantially rigid in the direction of a second plane disposed radially of said passage and normal to said first plane, and a guide member providing an abutment slidably engaging said restraining means to control the direction of longitudinal movement of said hose.

3,183,941
TUBULAR FLUID CONDUIT OF FILM FIBRIL ELEMENTS
Rudolph Woodell, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 16, 1962, Ser. No. 180,172
6 Claims. (Cl. 138—141)

1. A tubular fluid conduit having walls formed of a wound coherent aggregate of plexifilamentary material, said material being composed of networks having a surface area greater than 2 m.^{3}/g. and comprising a three-dimensional integral plexus of synthetic organic, crystalline polymeric, fibrous elements, said elements being coextensively aligned with the network axis and having the structural configuration of oriented film-fibrils, an average film thickness of less than 4 microns and an average electron diffraction orientation angle of less than 90°; within said walls the fibrous elements being heat-welded and compacted together at their cross-over points but retaining their said orientation at the center of thickness of the walls, the density of said walls being 0.65 to 0.90 g./cm.^{3}.

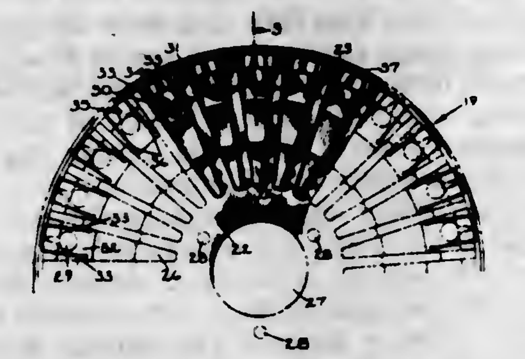

NON-WOVEN FIBROUS LAYER OF FILMY MATERIAL
WATER IMPERMEABLE POLYMERIC LAYER

3,183,942
SHUTTLE BOX CHANGING APPARATUS IN AN AUTOMATIC LOOM
Seiji Kondo and Rihei Nishikawa, Kariya, and Masaru Yoshida, Gifu, Japan, assignors to Toyoda Automatic Loom Works, Ltd., Kariya, Japan, a corporation of Japan
Filed Mar. 6, 1962, Ser. No. 177,793
Claims priority, application Japan, Mar. 10, 1961, 36/8,462
4 Claims. (Cl. 139—171)



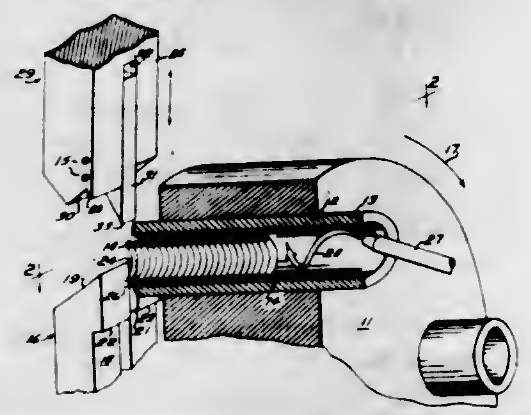
1. A shuttle box changing apparatus for an automatic loom having a picker and a picker stick and two shuttle boxes on one side of the loom and at least one shuttle box on the other side of the loom, said apparatus comprising a shuttle box frame in which said two shuttle boxes are positioned, shuttle box frame moving means coupled to said shuttle box frame for moving said shuttle box frame in a substantially semicircular arc curving first toward the center of the loom and then away from the center of the loom, said arc lying in a plane perpendicular to the plane of movement of the picker stick with the end of one shuttle being moved out of a recess in the picker and the end of the other shuttle moved into the recess in the picker during said movement of the shuttle box frame along said arc, a detecting device on the opposite side of the loom for detecting a shortage in the cop yarn, and a controlling device coupled between said detecting device and said shuttle frame moving means for actuating said shuttle frame moving means when the detecting device detects a shortage of cop yarn.

3,183,943
BOBBIN HOLDER FOR LOOM FILLING BATTERY
Elliott L. Remington, Hopkinton, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine
Filed Apr. 15, 1963, Ser. No. 273,085
2 Claims. (Cl. 139—249)



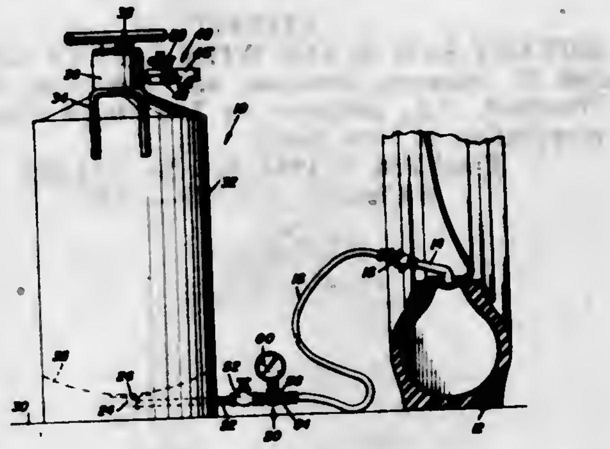
1. A small-end disc of unitary construction for the filling replenishing battery of a loom comprising a circular series of pressure yielding indentations being adapted to sustain the tip ends of filling bobbins, bobbin tip positioning grooves leading to each of said indentations, each indentation in said series being centrally positioned on a flexible integrally formed member, said flexible member being formed between two radially directed cuts connected at the outward ends of said cuts by a circumferential cut the inward ends of said radially directed cuts delimiting a flexible hinged area, and a smooth raised annular peripheral surface for separately supporting the end of filling from each bobbin.

3,183,944
APPARATUS FOR FORMING TERMINAL LOOPS ON COIL SPRINGS
George A. Reddington, 2635 Vistagrand Court, San Leandro, Calif.
Filed Mar. 8, 1960, Ser. No. 13,511
13 Claims. (Cl. 140—103)



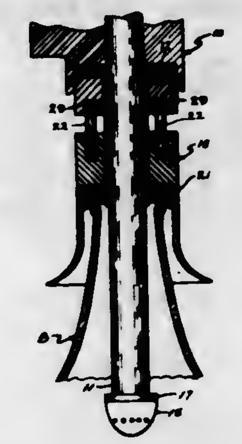
1. In an apparatus for bending the terminal turn of a coil spring to form a loop at the end thereof, the combination comprising a forming anvil having a first face and having a second face inclined with respect to said first face and intersecting therewith to form an edge on said anvil, a cylindrical tubulation for receiving said spring, means positioning said tubulation with a first end thereof adjacent said first face of said anvil and with a diameter of said tubulation substantially contiguous with said edge of said anvil, a compressed air source connected to provide an air current within said tubulation in the direction of said first end thereof whereby said spring is forced against said anvil, said air current having an angular component of motion within said tubulation to rotate said spring into position adjacent said anvil, and a pick element having a terminal point which pick is movable towards said second face of said anvil across said first end of said tubulation whereby said point pries said terminal turn from said spring and bends said turn towards said second surface of said anvil.

3,183,945
PRESSURIZED WATER TANK FOR FILLING VEHICLE TIRES
Charles L. Edwards, Jr., 306 E. Park Ave., Tarboro, N.C.
Filed Mar. 14, 1962, Ser. No. 179,633
6 Claims. (Cl. 141—38)



1. An apparatus for filling a pneumatic tire with air or liquid and withdrawing air or liquid therefrom comprising, a tank adapted to contain a liquid under pressure or sustain air pressure above atmospheric, means for monitoring the air pressure sustained in said tank independently of said tire, a liquid pipe opening into said tank at the bottom thereof forming a single liquid discharge connection, a tire connection coupling head provided with a pressure gage connected to said liquid pipe for monitoring the pressure therein, a single manually controlled liquid discharge valve provided in said liquid pipe in advance of said pressure gauge, a tire conduit connected to said head to permit said tire to be filled with either liquid from the discharge valve or air through the coupling head, and manually controlled bleed valve means connected to the coupling head for controlling the pressure in said tire conduit as monitored by the pressure gauge to regulate flow of the liquid into the tire.

3,183,946
ADAPTOR FOR CENTERING BELLS ON BOTTLE FILLING MACHINES
Joe S. Tidwell, % Crawford Johnson Co., 3301 11th Ave. N., Birmingham, Ala.
Filed Aug. 1, 1962, Ser. No. 214,054
2 Claims. (Cl. 141—371)

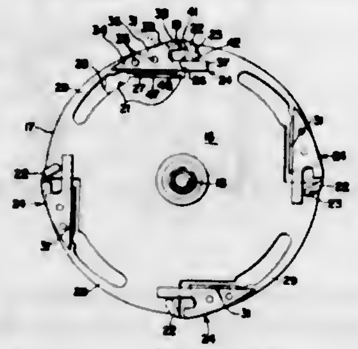


1. In combination,
(*a*) a bottle filling tube enlarged at its lower end,
(*b*) a bottle centering bell having a bore through which said tube extends with the lower end of the tube carrying the bell in slidable relation,
(*c*) an adaptor located above the upper end of the bell and having a bore slidably receiving the tube,
(*d*) means adjacent the upper end of the tube to engage the adaptor to stop the upward sliding movement of the bell and adaptor,

(*e*) and coacting elements on said bell and said adaptor to space the adaptor from the bell at different distances, one of said coacting elements being a plurality of pins and the other coacting element being recesses of different lengths to receive the pins.

3,183,947
ROTARY SAW BLADE WITH SAFETY GUARD

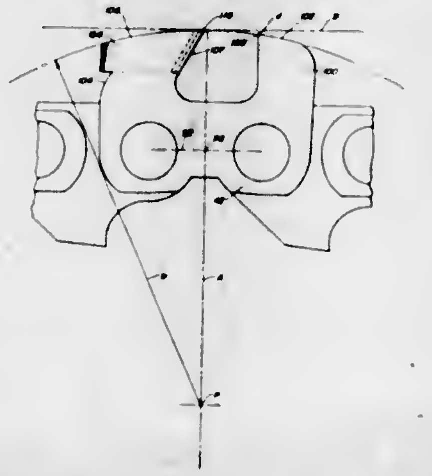
Ralph E. Johnson, Boonton, and Frederick R. Wiehl, Westfield, N.J., assignors to The Singer Company, a corporation of New Jersey
Filed Feb. 5, 1962, Ser. No. 171,201
6 Claims. (Cl. 143—133)



1. A rotary saw comprising in combination a blade body having a substantially circular peripheral edge formed with at least one interruption, at least one yielding cantilever arm formed on said blade body and defining one side of a slot extending into the blade body from the interruption formed in said peripheral edge and said slot extending in a circumferential direction away from one side of said interruption, a cutting tooth carried by said blade body adjacent to the other side of said interruption and at the periphery of said blade body, and a guard member secured to the free end of said yielding arm adjacent to said first side of said interruption at the periphery of said blade body, said guard member being effective to shroud said tooth during non-cutting rotation of said blade body.

3,183,948
SAW CHAIN

Raymond R. Carlton, Portland, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Original application Oct. 12, 1959, Ser. No. 845,788, now Patent No. 3,040,602, dated June 26, 1962. Divided and this application May 2, 1962, Ser. No. 191,822
3 Claims. (Cl. 143—135)

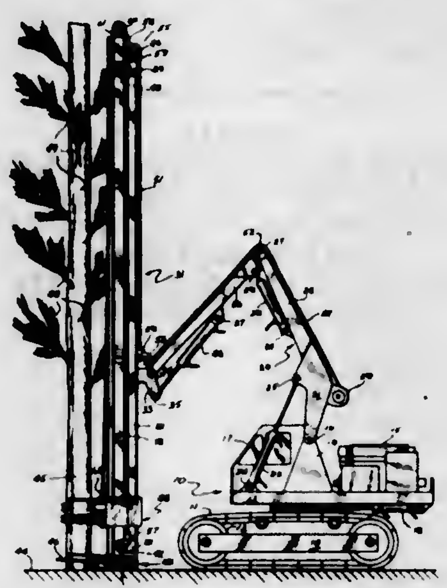


1. A saw chain cutter link for use in a saw chain which can be sharpened while mounted upon a chain saw and while being positioned on and driven by the chain saw sprocket, comprising:

a link body having forward and rear ends and having means defining parallel pivot axes spaced from each other longitudinally of said link,
a cutter element projecting outwardly from the rear of said body and having on its outer portion a forwardly projecting cutting edge positioned rearwardly of the midpoint of the line joining said pivot axes,
a depth gauge element projecting outwardly from the front of said body in the same direction as said cutter element and a lesser distance from said line joining said pivot axes than said cutter element,
said depth gauge element being spaced from said cutter element forwardly of said body and having its outer trailing edge positioned forwardly of said midpoint a greater distance than said cutting edge is positioned rearwardly of said midpoint,
each of said cutter and depth gauge elements terminating at its outer end in a convex arcuate surface,
the arcuate surfaces of both said elements having substantially the same radius of curvature and being concentric about a common axis parallel to said pivot axes and in a plane through said midpoint, said plane being perpendicular to said line joining said pivot axes.

3,183,949
RESILIENTLY CONTRACTABLE CUTTER HEAD FOR DELIMBING TREES

Robert W. Larson, Ashland, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed June 27, 1963, Ser. No. 290,971
3 Claims. (Cl. 144—2)

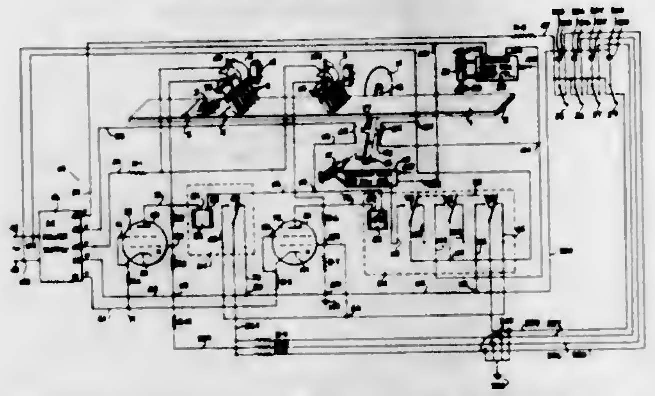


1. A cutter head assemblage for delimbing standing trees which comprises:

(*a*) a mounting frame adapted to be positioned adjacent the trunk of a tree,
(*b*) a first arm swingably mounted on said frame,
(*c*) a second arm swingably mounted on said frame and opposed to said first arm for reception of a tree trunk therebetween,
(*d*) a first pair of shearing blades having their adjacent ends pivotally mounted on said first arm and having spring means biasing said blades toward one another to define a configuration concavely directed toward said second arm,
(*e*) a second pair of shearing blades having their adjacent ends pivotally mounted on said second arm and having spring means biasing said last-mentioned blades toward one another to define a configuration concavely directed toward said first arm,
(*f*) each of said shearing blades having an upwardly directed impact edge,
(*g*) means biasing said first and second arms toward each other for resiliently fitting said first and second pairs of shearing blades against opposed areas of a tree trunk,
(*h*) and lift means secured to said mounting frame for swiftly raising the entire assemblage vertically along the trunk of a standing tree so as to shear by impact the branches therefrom.

3,183,950
MULTIPLE LENGTH DEFECT TRIM SAW

Charles A. Sherman, 3914 S. 7th St., Tacoma, Wash.
Filed Oct. 23, 1963, Ser. No. 318,348
5 Claims. (Cl. 144—2)



5. A lumber-cutting apparatus comprising:

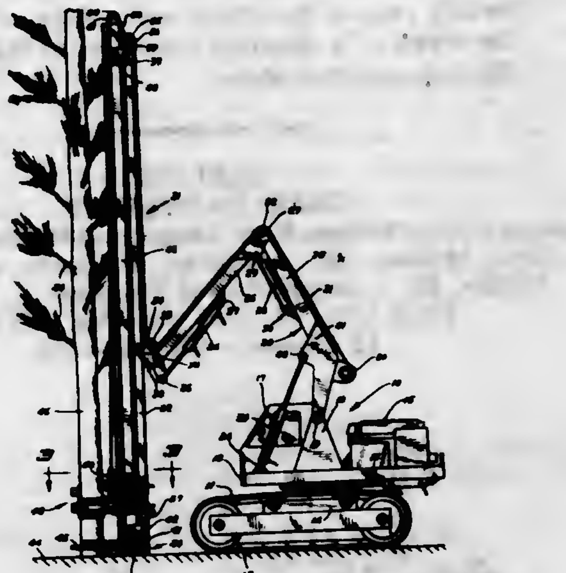
a conveyor means for conveying boards endwise to and from a cutting station,
a transversely reciprocative cut-off saw being actuatable for a cutting operation for cutting said boards at said cutting station,
means for holding said boards during a cutting operation,
a first set of defect indicator means detector means positioned in the path of said boards before said boards reach the plane of said saw,
a second set of defect indicator means detector means positioned in the path of said boards between said first set of detector means and said plane of said saw,
length detecting means positioned in the path of said boards at a distance from said plane of said saw remote from said first and said second detector means,
said length detector means including a maximum length detector means and a standard length detector means,
control means actuating said saw responsive to;
  actuation of said maximum length detector means,
  actuation of said standard length detecting means after the actuation of said first detector means but before the actuation of said second detector means,
  actuation of said second detector means.

3,183,951
CUTTER HEAD ASSEMBLAGE FOR IMPACT SHEARING OF TREE LIMBS

Robert W. Larson, Ashland, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed June 11, 1963, Ser. No. 287,042
10 Claims. (Cl. 144—3)

1. A cutter head assemblage for delimbing standing trees which comprises:

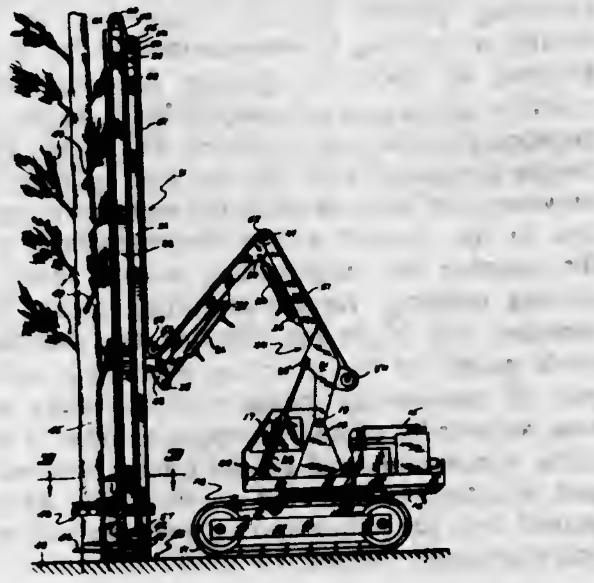
(*a*) a mounting frame adapted to be positioned adjacent the trunk of a tree;
(*b*) a first delimbing arm swingably mounted on said frame and having a shearing blade concavely curved toward the tree trunk, said shearing blade being rigid and fixed to said first delimbing arm;
(*c*) a second delimbing arm swingably mounted on said frame and having a shearing blade concavely curved toward the tree trunk at a position offset below and generally opposed to said first delimbing arm, said shearing blade being rigid and fixed to said second delimbing arm;
(*d*) each of said shearing blades having an upper horizontal impact edge;
(*e*) means adapted to bias said delimbing arms convergently into engagement with the tree trunk; and



(*f*) lift means secured to said mounting frame for swiftly raising the entire assemblage vertically along the trunk of a standing tree so as to shear the branches therefrom by impact between the impact edges of said shearing blades and said branches.

3,183,952
CAMMED BLADE CUTTER HEAD FOR DELIMBING TREES

Robert W. Larson, Ashland, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed June 28, 1963, Ser. No. 291,501
9 Claims. (Cl. 144—3)



1. A cutter head assemblage for delimbing standing trees which comprises:

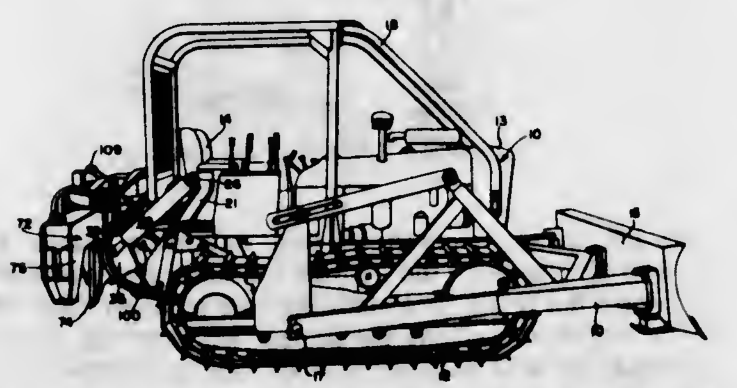
(*a*) a mounting frame adapted to be positioned adjacent the trunk of a tree;
(*b*) a first jaw swingably mounted on said frame;
(*c*) a second jaw swingably mounted on said frame and opposed to said first jaw for reception of a tree trunk therebetween;
(*d*) portions of said first and second jaws being shiftable in a horizontal plane;
(*e*) a plurality of blade retaining plates pivotally mounted on each of said jaws;
(*f*) a vertical blade concavely formed toward the tree trunk secured to an inwardly directed edge of each of said retaining plates, each of said vertical blades terminating upwardly in an impact edge;

(*g*) cam means connecting said shiftable jaw portions and said blade retaining plates for advancing and retracting said vertical blade from a trunk of a tree, and

(*h*) lift means secured to said mounting frame for swiftly raising the entire assemblage vertically along the trunk of a standing tree so as to shear by impact the branches therefrom.

3,183,953
TREE HARVESTER

James C. MacMillan, Rock Island, and Robert L. Schmidt, East Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 14, 1963, Ser. No. 265,241
12 Claims. (Cl. 144—34)



1. A tree harvester supported on a tractor comprising: a main frame on the rear portion of the tractor including a pair of transverse pivots; a transverse structure disposed rearwardly of the tractor and having forwardly projecting arms supported on the pivots to permit vertical movement of the structure; power means on the tractor for raising and lowering the structure; an elongated horizontal rod mounted on and extending across the structure defining a transverse horizontal pivot; an elongated tree-receiving member pivotally supported on the rod and having an opening at one side thereof for receiving a tree portion; an hydraulic cylinder fixed to move with the member and supported concentrically on the rod; a piston between the rod and cylinder; fluid inlet and discharge means associated with the rod and cylinder for effecting movement of the tree-receiving member transversely relative to the tractor; a tree shearing blade supported on the member for reciprocating motion across the tree-receiving opening; force-transmitting means between the member and blade for effecting the shearing action; a cable pulley on the structure concentric with the rod; a pair of transversely spaced vertical rollers on the structure rearwardly of and on opposite sides of the pulley; a cable winch supported on the tractor between the tractor and structure and having a rearwardly extending cable played over the pulley and between the rollers with a free end rearwardly thereof.

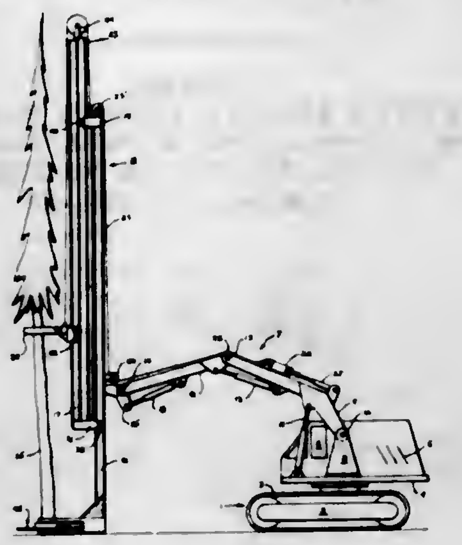
3,183,954
SHEARS

Robert W. Larson, Sanborn, Wis., assignor to Beloit Corporation, a corporation of Wisconsin
Filed July 10, 1963, Ser. No. 294,031
12 Claims. (Cl. 144—34)

1. A shear comprising

(*a*) a frame means,

(*b*) a pair of overlapping blade members adapted for extension in a horizontal plane and pivotally mounted to said frame means for movement to open and closed positions for cutting objects thereby with the upper surface of one of said blade members adjacent the cutting edge thereof having a planar extension thereof adapted to form a platform to support an object cut by said blade means when said blade means is in its closed position,

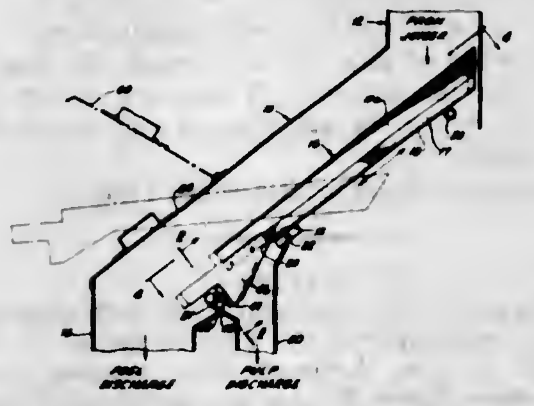


(*c*) a vertical extending flange provided adjacent the trailing edge of each of said blade members and forming with said frame means an enclosing wall for said platform when said blade means is in its said closed position so as to enclose and thereby confine cut objects on said platform, the said flange on the blade member having the planar extension thereon terminating at the beginning of said extension, and

(*d*) actuating means for moving said blade means to said opened and closed positions.

3,183,955
CITRUS JUICE EXTRACTING MACHINE HAVING MEANS FOR SEPARATING JUICE AND PULP FROM PEEL

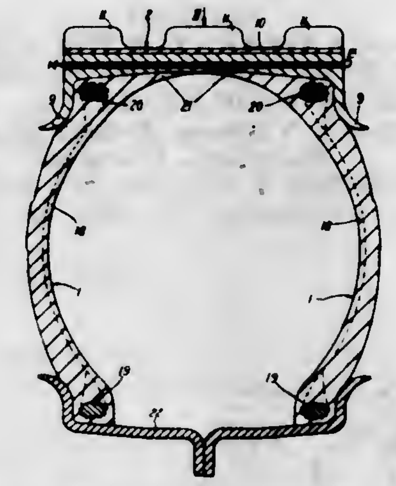
Donald R. James, Covina, Calif., assignor to Brown Citrus Machinery Corporation, Whittier, Calif., a corporation of California
Filed Feb. 25, 1963, Ser. No. 260,498
11 Claims. (Cl. 146—3)



1. In combination with a citrus juice extracting machine of the type adapted to extract juice and pulp from citrus fruit and to discharge citrus peel segments, pulp particles and juice therefrom, the pulp particles being smaller in size than the minimum overall dimensions of the peel segments: a grid positioned to receive peel segments and pulp particles discharged from said machine, said grid comprising a bottom plate inclined at an angle from the horizontal, a plurality of laterally spaced vanes extending longitudinally along said plate and generally perpendicular thereto, the spacing between adjacent vanes being less than the minimum overall dimensions of the peel segments, and means for longitudinally oscillating said grid.

3,183,956
PNEUMATIC TIRE

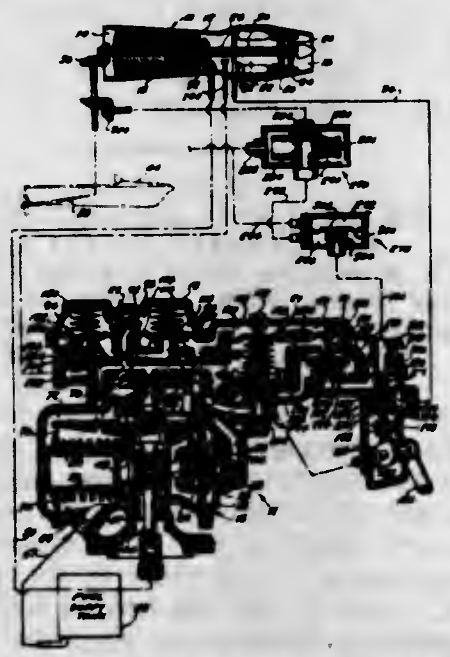
Peter John Jenkins, Four Oaks, Sutton Coldfield, England, assignor to Dunlop Rubber Company Limited, London County, England, a British company
Filed Sept. 10, 1963, Ser. No. 307,819
Claims priority, application Great Britain, Sept. 24, 1962, 36,175/62
17 Claims. (Cl. 152—191)



1. A pneumatic tire comprising a pair of annular sidewall portions each comprising an annulus of reinforced rubber compound, and a detachable circumferential tread hoop extending around and mounted at its sides on the sidewall portions, said circumferential tread hoop incorporating a plurality of axially extending segments arranged end-to-end circumferentially of the tire in interlocking relationship, some at least of the segments being flexible and securing means associated with the segments by which adjacent segments are detachably secured together in interlocking relationship to prevent relative movement of adjacent segments in the circumferential direction of the tire.

3,183,957
TURBINE ENGINE FUEL CONTROL

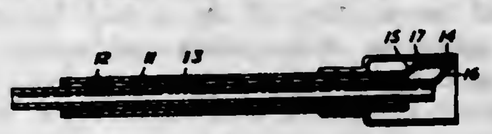
Warren H. Cowles, Birmingham, and John E. Smith, Rochester, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Oct. 9, 1961, Ser. No. 143,880
6 Claims. (Cl. 158—36.4)



4. A fuel control for a turbine engine or similar device comprising means for developing pressures having a pressure differential proportional to the speed of the engine, means for developing a pressure intermediate the first mentioned pressures, a throttle valve responsive to each of the pressures for metering fuel to the engine in quantities substantially linearly proportional to engine speed during periods of engine acceleration and a governor valve responsive to the pressure differential and operably associated with the throttle valve to maintain the engine speed below a predetermined value comprising a valve seat up-stream from the throttle valve, a diaphragm carried needle valve cooperable with said valve seat to restrict the flow of fuel to the throttle valve, the opposite surfaces of said diaphragm being exposed to the said pressures whereby said pressure differential is felt thereacross, resilient means for biasing said diaphragm in a direction to move the needle valve away from the valve seat, and means for varying the force exerted on the needle valve by the resilient means in accordance with manual engine parameter demands.

3,183,958
GAS IGNITER

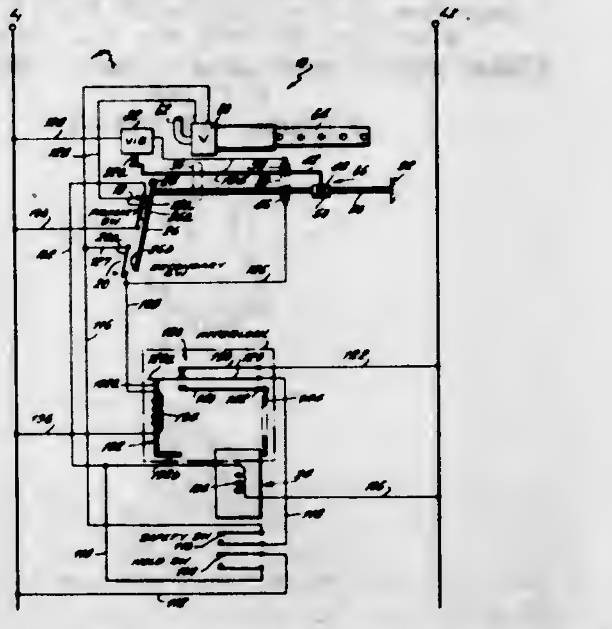
George Davies, St. Brelade, Jersey, Channel Islands, assignor of one-half to Herbert Abraham Walford, St. Brelade, Jersey, Channel Islands
Filed July 11, 1961, Ser. No. 123,199
16 Claims. (Cl. 158—115)



9. A gas ignition head including a conduit having an end for introducing a flow of gas, a filament for igniting gas flowing from the conduit, comprising a few spaced turns of wire, a part at least of the filament being positioned behind the end of the conduit in the direction of gas flow, means holding the filament adjacent the end of the conduit, a housing defining a restricted space around the end of the conduit and containing the filament and a tongue projecting obliquely from the end of the conduit into the housing for causing a portion only of the gas from the conduit to flow into the housing.

3,183,959
GAS BURNER IGNITION SYSTEM

Pat Romanelli, Bronx, N.Y., assignor to Ram Domestic Products Company, Englewood, N.J., a partnership
Filed Feb. 25, 1963, Ser. No. 260,790
7 Claims. (Cl. 158—124)

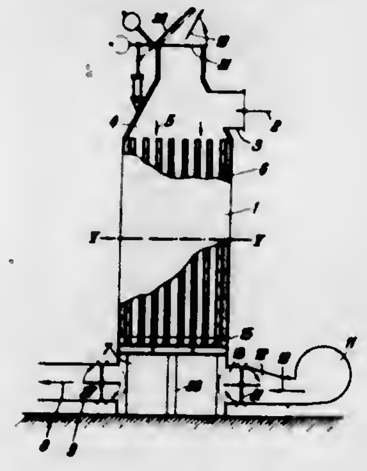


1. An automatic fuel ignition system in combination with gas fired devices having a source of electric power, a burner, and a normally closed electromagnetic fuel valve for controlling the flow of gas into said burner, said system comprising an ignition element in proximity to said burner for igniting same, a solenoid operated relay, a primary

switch having a normal first position in which it connects the solenoid of said relay across said power source and a second position in which it connects said fuel valve across said power source for selectively energizing said valve to control the flow of fuel to said burner, a secondary normally closed switch connected in series with said ignition element and said power source for selectively energizing said ignition element, temperature sensing means in temperature-sensing proximity to said ignition element and to the burner including a temperature responsive element which expands when heated, a movable switch-control element positioned for engagement by said temperature responsive element upon expansion of the latter for movement into actuating engagement with said primary and secondary switches, said switch-control element moving sufficiently to actuate said primary switch to open said fuel valve before engagement with said secondary switch upon an initial increase in temperature at said temperature responsive element caused by energization of said ignition element, said switch-control element subsequently engaging said secondary switch to de-energize said ignition element upon further expansion of said temperature responsive element in response to the increased temperature of the ignited burner, time-controlled means for de-energizing said ignition element and closing said fuel valve in response to the failure of said temperature responsive element to sense said increased temperature of the ignited burner within a preselected time period, said safety means comprising a time-controlled element in series with said secondary switch and in parallel with said ignition element, and an interlock switch in series with said ignition element and with said fuel valve, said time-controlled element being operatively engaged with said interlock switch to open same after a predetermined period of time during which said ignition element remains energized, said solenoid operated relay including a normally open safety switch connected in series with said interlock switch, said fuel valve and said ignition element, and a second normally open hold switch connecting the solenoid of said relay across said power source and forming a holding circuit therefor independent of said primary switch, said safety switch and hold switch closing upon the energization of the relay solenoid only when said primary switch is in its first position.

3,183,960
HEAT TRANSFER METHOD

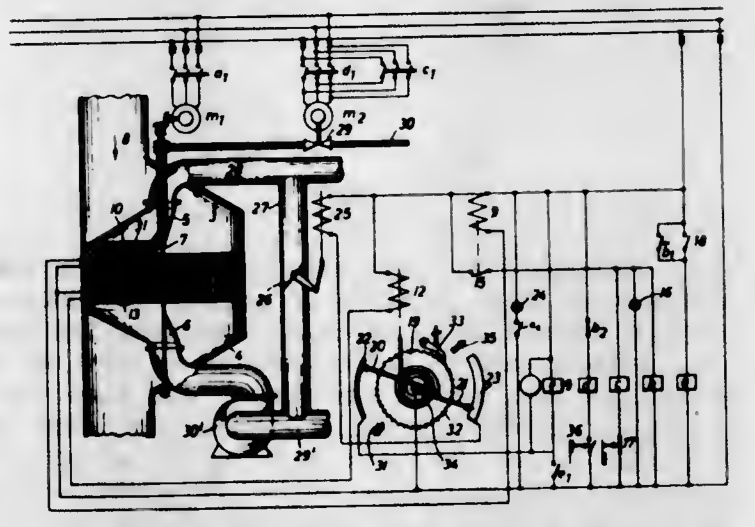
Jean Prat, 64 Rue Miromesnil, Paris 8, France
Filed Apr. 30, 1962, Ser. No. 190,994
Claims priority, application Germany, May 5, 1961, P 27,105
1 Claim. (Cl. 165—1)



A method for the transfer of heat from an intermittent supply of hot gases from converters or arc furnaces which comprises passing said hot gases downwardly through passages of uniform cross-section of an accumulator during successive interrupted intervals of time at a velocity of more than fourteen meters per second to maintain said passages free from accumulation of particles and to carry said particles directly downwardly and deposit them out of said gas stream, passing air through the passages for the hot gases between said intervals in which the supply of hot gases is interrupted and mixing air with the cooled gases leaving the accumulator during the periods when the hot gases are supplied to the accumulator to reduce the temperature of the gases supplied for filtration.

3,183,961
METHOD AND APPARATUS FOR CONTROLLING THE TEMPERATURE AND HUMIDITY OF A REGENERATIVE AIR-HEATER

Herbert Brandt, Vahlberg, Rothemuhle uber Olpe, Westphalia, Germany
Filed Sept. 8, 1960, Ser. No. 54,724
7 Claims. (Cl. 165—2)

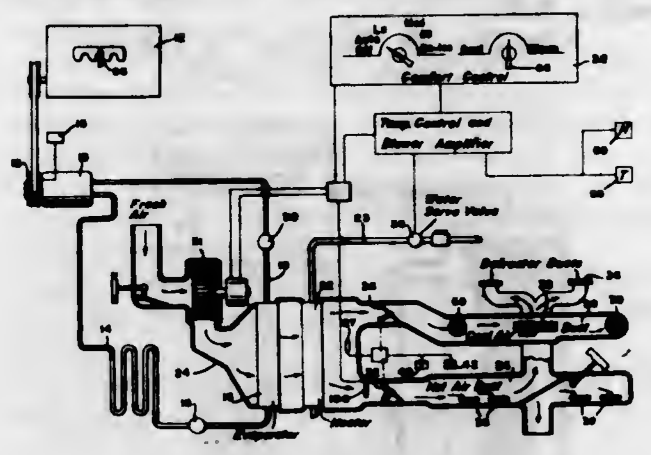


1. A method for maintaining a predetermined maximum temperature gradient between the temperature of the heat yielding gases and the temperature of the heat absorbing gases at the opposite points of entry of both such gases into a rotary regenerative heat exchanger, said method comprising the steps of measuring the temperature of the entering heat yielding gases, controlling a cooling means in response to such temperature to cool said heat yielding gases when the temperature thereof approaches the ignition temperature of combustion residues present in the heat exchanger, simultaneously measuring the humidity of the entering heat absorbing gases and simultaneously controlling a heating means in response to such humidity measurements to maintain the temperature of the entering heat absorbing gases slightly above the dew point to prevent condensation of moisture on the surfaces of the heat exchanger.

3,183,962
METHOD AND APPARATUS FOR AIR CONDITIONING CARS

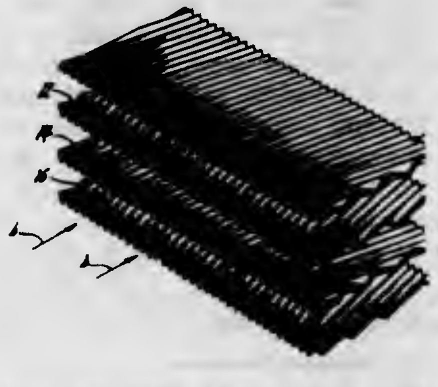
William K. Steinhagen, Royal Oak, and Edward W. Yott, St. Clair Shores, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 8, 1960, Ser. No. 68,125
14 Claims. (Cl. 165—3)

14. The method of conditioning air for the passenger compartment of a car which comprises, cooling a stream of air for the compartment to a first predetermined temperature and thereafter reheating the air a controlled amount to so condition said air so as to produce a second predetermined temperature in the passenger compartment, directing said reheated air adjacent the floor of the passenger compartment when the temperature of the reheated air is above a third predetermined temperature and directing the conditioned air into the upper portion of the compartment when the temperature of the reheated air is below the third predetermined temperature, varying the rate of air flow when air is discharged into the upper portion of said compartment directly in proportion to the deviation of the temperature of the reheated air from the second predetermined passenger compartment temperature, and varying the rate of air flow when air is discharged into the lower portion of the compartment in direct proportion to the temperature of the reheated air.



3,183,963
MATRIX FOR REGENERATIVE HEAT EXCHANGERS

James R. Mondt, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 31, 1963, Ser. No. 255,336
4 Claims. (Cl. 165—10)



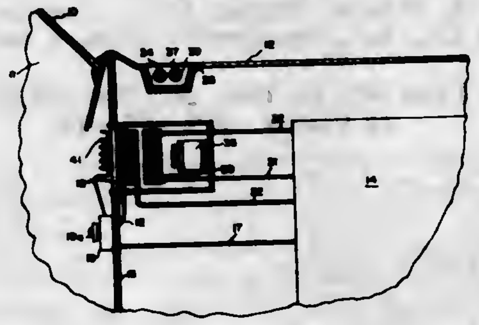
1. A matrix for regenerative heat exchangers for affecting a fluid, said matrix comprising a stack of at least three superimposed sheets, each of said sheets having corrugations, the corrugations of at least one of said sheets being in contact with and traversing the corrugations of adjacent sheets preventing nesting, means defining a general direction of an entrance path for a fluid parallel and aligned with the planes of said sheets, said means and sheets being cooperatively arranged in proximity to introduce and discharge said fluid the length of each of said corrugations extending at an angle within a range of 5 to 20 degrees with the said fluid entrance path, and slits formed transverse to said corrugations in each of said sheets.

3,183,964
AIR-CONDITIONING CONTROL SYSTEM FOR VEHICLES AND THE LIKE

Samuel C. Spivey, 1102 S. 20th St., Birmingham, Ala.
Filed Nov. 16, 1962, Ser. No. 238,168
1 Claim. (Cl. 165—28)

The combination with a vehicle having a passenger compartment and heating and cooling means for the compartment embodying means to deliver air over heat exchangers forming parts of the heating and cooling means and into the passenger compartment of the vehicle, of

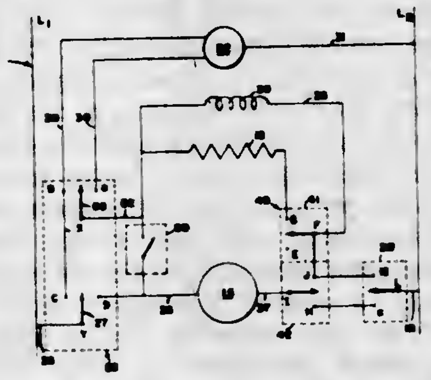
- (*a*) a first temperature responsive control located outside the passenger compartment in position to receive radiant energy from outside the compartment,
- (*b*) an enclosure for said first control insulating it against conducted heat from the vehicle body,
- (*c*) a second temperature responsive control positioned to sense directly the temperature of air delivered from the heat exchangers into the passenger compartment,
- (*d*) a third temperature responsive control located at a position in the passenger compartment remote from the air passing over the heat exchangers,
- (*e*) a temperature responsive valve controlling flow of heating medium to the heat exchanger of the heating means,



- (*f*) means operatively connecting the first and third controls to the temperature responsive valve, whereby the setting of the valve is determined in part by the combined effects of outside and inside temperature on said first and third controls,
- (*g*) means operatively connecting the second control to the valve, whereby the setting of the valve is further determined in part by the temperature sensed by said second control,
- (*h*) a fourth temperature responsive control located outside the vehicle passenger compartment, and
- (*i*) means operatively connecting the fourth control to the cooling means whereby the cooling means is automatically energized when the outside temperature reaches a predetermined point.

3,183,965
HEAT PUMP CONTROL CIRCUIT

William A. Moakley, Jr., Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Aug. 1, 1961, Ser. No. 128,480
2 Claims. (Cl. 165—29)



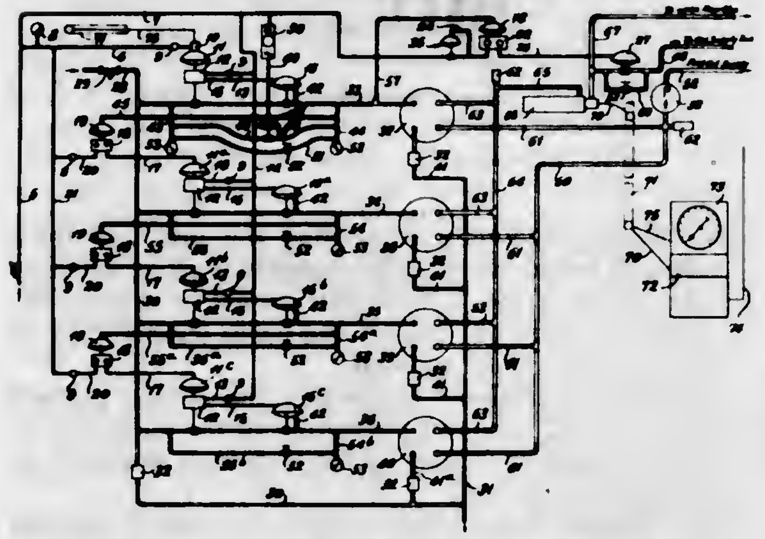
1. A control circuit for a heat pump including a refrigeration system having a compressor, heat transfer members, fan control means for passing air to be either heated or cooled over the heat transfer members, and a reversing valve including a solenoid coil controlling flow of refrigerant from the compressor selectively to the heat transfer members; said circuit comprising: a selector switch including a first control arm operable to complete a circuit through said fan means or said compressor selectively, and a second control arm electrically independent of said first control arm for completing a circuit

through said fan control means when said first control arm is positioned to complete a circuit through said compressor; a normally closed defrost switch in series with said second control arm of the selector switch and with said reversing valve solenoid coil, said normally closed switch being in series with said first switch arm of the selector switch and adapted to open in response to a condition indicating need for defrosting one of the heat transfer members to interrupt the circuit through the fan control means.

3,183,966
CONTROL SYSTEM

Warren M. Wilson, Huron, Ohio, assignor to W. M. Wilson Co., Inc., Strongsville, Ohio, a corporation of Ohio

Filed July 31, 1961, Ser. No. 128,189
12 Claims. (Cl. 165—32)

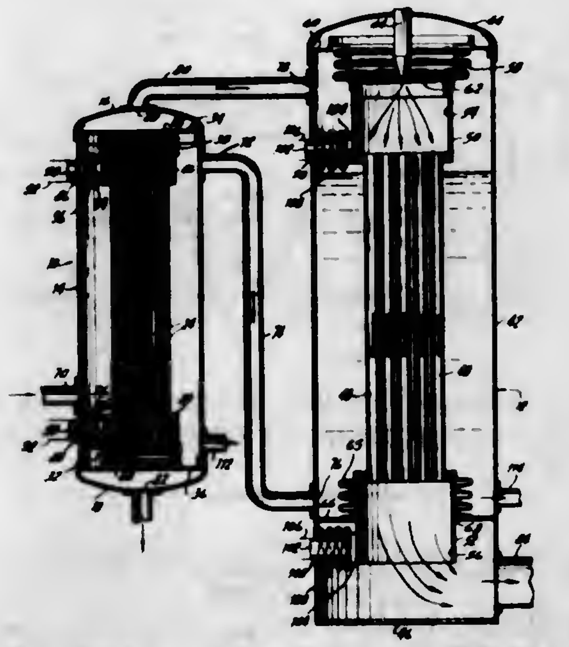


1. A control system of the character described comprising a series of heat exchangers, steam supply circuit means from a supply source to and through said heat exchangers, liquid circuit means for the liquid which is to be controlled and extending from a supply source to and through said heat exchangers to a use location, sensing means in said liquid circuit means intermediate the heat exchangers and said use location for sensing a condition of the flowing liquid and providing an output signal depending upon the viscosity thereof, said sensing means including a blender into which flows liquid from all of said heat exchangers and a viscosity sensing probe in said blender, control devices operatively associated with said steam supply circuit means controlling the steam to said heat exchangers, said control devices including a first set of diaphragm control valves controlling the flow of steam to said heat exchangers, air pressure supply circuit means communicating with said diaphragm control valves, an electropneumatic positioner operatively associated with at least the one diaphragm control valve for the first heat exchanger in the series of heat exchangers, control means operatively associated with said sensing means and including a computer receiving an electric signal from said sensing means, a control instrument receiving an electric signal from said computer and an electrical circuit from said control instrument to said electropneumatic positioner to impart an electric signal to said positioner to adjust the functional amplitude of said one diaphragm control valve, the other diaphragm control valves of said first set of diaphragm control valves which control the steam flow to the heat exchangers other than the first heat exchanger of the series being operatively associated with said air pressure supply circuit means through pressure pilots and proportional band adjusting devices, said pressure pilots being operatively connected to the steam supply circuit means at a location therein that is intermediate a heat exchanger of the series and the diaphragm control valve which controls the steam flow to said last mentioned heat exchanger.

3,183,967
HEAT EXCHANGE UNIT

Michael W. Mettenleiter, 885 Park Ave., New York 21, N.Y.; Paul R. Borchardt, 2383 Walton Ave., Bronx 68, N.Y.; and Winston Dindial, 147—58 Village Road, Jamaica, N.Y.

Filed Dec. 29, 1961, Ser. No. 163,363
4 Claims. (Cl. 165—83)

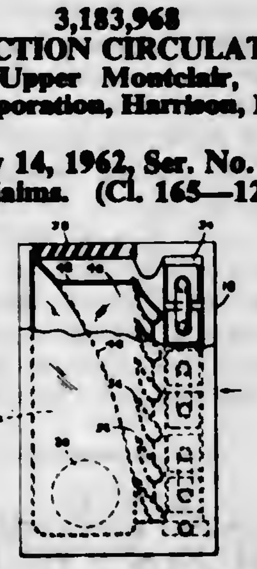


1. In apparatus for the treating of liquids, an outer housing having inlet and outlet openings, a heat exchange unit within said housing, said heat exchange unit comprising spaced headers each having an opening and rigid tubes connecting said headers, means mounting said heat exchange unit within said housing comprising a bracket including a corrugated portion connecting each said header and the wall of said housing, said brackets defining between them an air and liquid tight chamber within said housing, electromagnetic means extending through an opening in said housing connected to said heat exchange unit for imparting rapid vibration to said unit, and a resiliently flexible sleeve surrounding said electromagnetic means defining an air and liquid tight chamber therearound between said housing and said heat exchange unit.

3,183,968
INDUCTION CIRCULATORS

Walter K. Jekat, Upper Montclair, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

Filed May 14, 1962, Ser. No. 194,495
3 Claims. (Cl. 165—123)



1. A terminal unit for a positive pressure multi-room air conditioning system comprising:

(*a*) a casing having a plurality of spaced inlet and outlet openings therein for the passage of air therethrough,

(*b*) heat exchange means disposed in said casing adjacent said inlet openings,

(*c*) a plenum disposed in said casing spaced from said heat exchange means and having a wall extending rearwardly away from said heat exchanger, said plenum being adapted to be connected to a source of supply of conditioned primary air from said multi-room air conditioning system,

(*d*) a plurality of profile tube means disposed in said casing between said wall and said heat exchanger operatively positioned to draw secondary air through said heat exchange means,

(*e*) a single connector connected to each of said profile tube means and said plenum and adapted to communicate the primary air from the plenum to each of said profile tube means,

(*f*) each of said profile tube means having an elongated horizontal slot therein to permit the discharge of primary air therefrom,

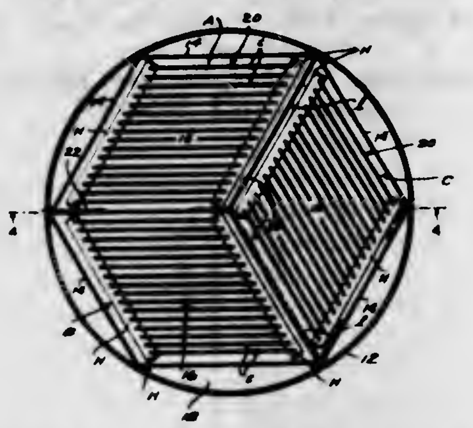
(*g*) said profile tube means being spaced one above the other to allow secondary air to pass therebetween,

(*h*) each of said profile tube means slots being directed away from said heat exchange means.

3,183,969
HEAT EXCHANGERS

Alan Bell, Cookham, Berks, England, assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed Feb. 28, 1962, Ser. No. 176,456
4 Claims. (Cl. 165—160)



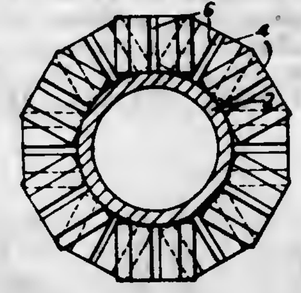
1. A tube and shell heat exchanger comprising a cylindrical shell, a plurality of tube assemblies disposed in said shell, each of said assemblies comprising a plurality of heat exchanger tubes positioned in parallel planes to form a parallelepiped configuration for said assembly, said assemblies being juxtaposed so that the cross-sections thereof form a hexagonal configuration and being disposed within said cylindrical shell so that the hexagonal configuration is circumscribed by the circular cross-section of said shell, said shell being subdivided by baffles extending longitudinally within the shell and defining compartments each containing one of said assemblies, said baffles defining in cross-section a parallelogram configuration for each assembly and an outer annular hexgonal configuration encompassing the plurality of assemblies, and a flow passage between said outer hexagonal baffle and said cylindrical shell and further comprising a means for passing one fluid through said tube assemblies and means for passing another fluid through said compartments.

3,183,970
FINNED TUBES AND HEAT EXCHANGERS FORMED OF SUCH TUBES

Norman G. Worley, London, England, assignor to Babcock & Wilcox Limited, London, England, a British company

Filed Nov. 21, 1961, Ser. No. 153,991
Claims priority, application Great Britain, Nov. 24, 1960, 40,429/60
7 Claims. (Cl. 165—181)

1. A finned tube having a multiplicity of longitudinally spaced transversely extending fins positioned on its exterior surface and arranged for the flow of a heat transfer fluid passing over said tube and between said fins, each of said fins comprising a main part and a border part, the main part of each of said fins being formed by a pair of substantially parallel flat sides extending from and rigidly secured to the tube, all of the sides of the main parts of said fins being in parallel relationship with each other, the border part of each fin extending along at least a portion of the edge of the corresponding main part in the same plane as the main part and tapering outwardly from the main part to an edge of the fin in a manner adapted to reduce eddying of the fluid during its

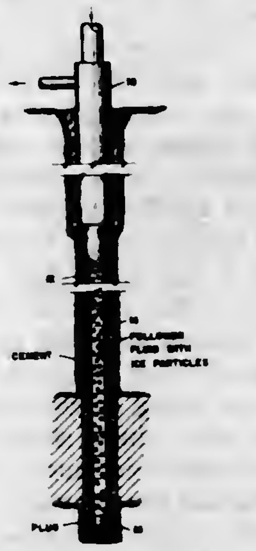


flow into and beyond the spaces between the sides of the main parts of the fins, the flow of fluid being such as to pass transversely of the tube in a direction generally parallel to the sides of the main parts of said fins, each of said fins having a groove formed in at least one of the sides of its corresponding main part and extending completely across the main part of the fin to create turbulence and consequent disturbance of the fluid boundary layer flow at the sides of the main parts of the fins as the fluid passes through the spaces between the sides of the main parts of the fins.

3,183,971
PRESTRESSING A PIPE STRING IN A WELL CEMENTING METHOD

James W. McEver and William K. Godfrey, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Jan. 12, 1962, Ser. No. 165,948
3 Claims. (Cl. 166—21)



3. In well operations the method of sealing an elongated tubular member in a well borehole, said method comprising

(*a*) positioning a string of pipe in a well,

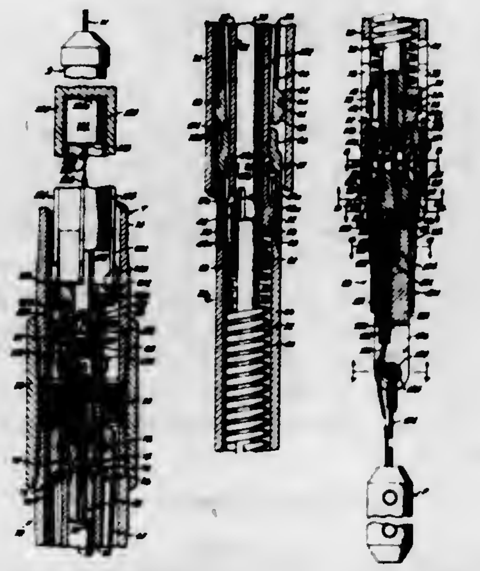
(*b*) depositing a quantity of sealing material in the space between said pipe string and the wall of the well at a predetermined level,

(*c*) allowing said sealing material to stand undisturbed for a period sufficient for said material to harden and form a closure between the pipe string and the wall of the well, and

(*d*) producing a final prestressed condition in a portion of said pipe string by contracting the portion of

the pipe string adjacent the level of at least a portion of the sealing material for at least a major portion of the time during which the material hardens,
(*e*) the step of contracting a portion of the pipe string comprising cooling the portion of pipe string adjacent said sealing material to a temperature below that normally encountered during normal operations at the depth of the material.

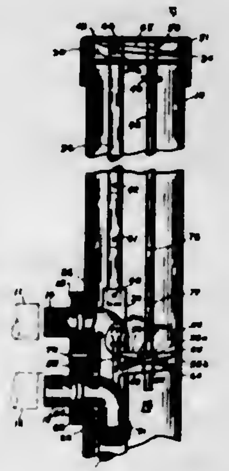
3,183,972
PERFORATOR HANGER
John V. Fredd, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Apr. 14, 1961, Ser. No. 103,157
9 Claims. (Cl. 166—35)



1. In a well having a tubing string therein provided with vertically spaced apart tubing joint recesses, apparatus for perforating said well, comprising: a perforator hanger adapted to be vertically disposed in said tubing string for vertical movement therethrough and comprising inner and outer members telescoped together for limited vertical and rotational relative movement; spring means connected to said inner and outer members for biasing said inner member downwardly and rotationally in said outer member; interengaging lug means on one and slot means on the other of said members for permitting first and second consecutive limited relative rotative movements of said members by said spring means in response, respectively, to consecutive first upwardly and second downwardly movements of said inner member relative to said outer member; locking means mounted on said outer member for locking said perforator hanger against vertical movement in said tubing string by upward movement of said outer member in said tubing string; means forming an electrical circuit through said inner member; switch means in said electrical circuit for closing said circuit in response to one of said first relative movements of said members and for opening said circuit in response to one of said second relative movements of said members, said switch means having a first switch part connected to said outer member for movement therewith and a second switch part connected to said inner member for movement therewith; means operable in response to one of said second relative movements of said members for unlocking said locking means whereby said perforator hanger may be pulled from the well; a running tool adapted to be connected to a wire line; interengaging means on and for connecting said running tool and said inner member; an electrical battery mounted for movement with said running tool, said battery being electrically connected to said electrical circuit; an electrically operated gun perforator suspended from said perforator hanger; and means electrically connecting said gun perforator to said electrical circuit, said switch means being disposed in said circuit between said battery and gun perforator.

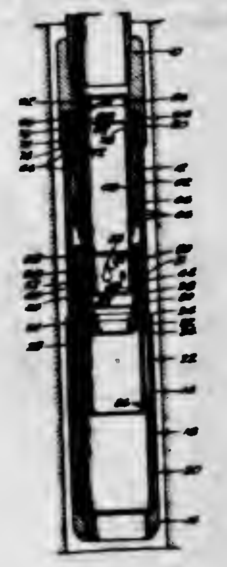
7. In a well having tubing set therein, the method of perforating the well without removal of such tubing from the well, comprising: lowering on a wire line through such tubing an electric current supply means and a perforator hanger from which a perforating gun is suspended a substantial distance therebelow; anchoring said perforator hanger in said tubing such that the gun suspended from said perforator hanger is located adjacent the area of the well to be perforated; next pulling upwardly on and releasing downwardly said wire line; connecting said electric current supply means to an electrical circuit leading to the perforating gun in response to the last-mentioned step of pulling upwardly on and releasing downwardly said wire line; pulling upwardly on said wire line; completing the electric circuit and firing the perforating gun in response to the last-mentioned step of pulling upwardly on said wire line; and then by means of said wire line unanchoring and removing said perforator hanger from said tubing along with such apparatus as remains suspended therefrom.

3,183,973
PITLESS WELL CONNECTOR
Henry B. Eging, 11565 Chillicothe Road, Box 35, Chesterland, Ohio
Filed Feb. 12, 1964, Ser. No. 345,554
8 Claims. (Cl. 166—85)



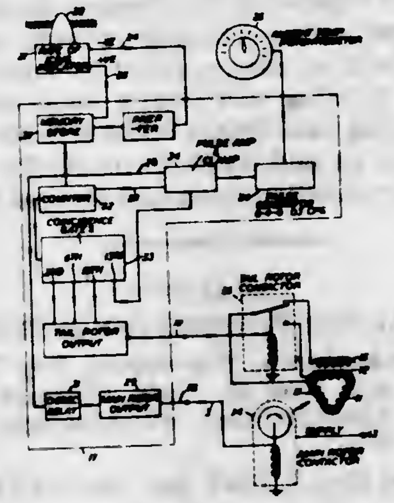
8. A pitless well adapter comprising a body portion having a laterally directed opening in a lateral projection and a downwardly directed opening, a fluid passage in said body portion interconnecting said openings, a support plate, a rod secured to said support plate at an upper end portion and to said body portion at a lower end portion, a guide means extending outwardly from said body portion opposite said lateral projection, aligned openings in said support plate and said guide means, respectively, a push-pull rod slidably received in said aligned openings, and a pair of arms pivoted on said push-pull rod above said guide means, means causing the free end portions of said arms to move outwardly in opposite directions from said rod as said rod is moved downwardly, a free end portion of one of siad arms engaging and exerting lateral force against said body portion upon downward movement of said push-pull rod while the free end portion of the other one of said arms moves laterally away from said body portion, whereby said body portion is moved laterally away from said push-pull rod upon further downward movement of said push-pull rod when said movement of the free end portion of said other arm is arrested by an obstruction.

3,183,974
FULL FLOW PACKER CEMENTING SHOE
Eugene E. Baker, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Nov. 29, 1962, Ser. No. 240,817
3 Claims. (Cl. 166—141)



1. In apparatus for cementing casing in a well, the combination comprising: a tubular member having a port in the wall thereof; expansible packer means surrounding said member in the vicinity of said port; an extended sleeve slidably mounted on the outside of said member above said packer means for setting said packer means when a downward force is applied thereto; a first internal sleeve slidably mounted on said member, said sleeve having a first position wherein it obstructs said port and a second position wherein it does not obstruct said port; means including a shear pin extending through said port and rigidly connecting said external sleeve with said first internal sleeve whereby movement of said first internal sleeve toward said second position causes said external sleeve to set said packer means; a first seating member mounted in said first internal sleeve, said seating member having a groove in the outer periphery thereof and a plurality of radial passageways extending from said groove to the interior of said seating member; a releasing sleeve movably mounted in said first seating member and having a plurality of apertures in the walls thereof, said releasing sleeve having a first position in which said walls obstruct the passageways in said first seating member and a second position in which said apertures in said walls communicate said passageways with the interior of said releasing sleeve; means in said peripheral groove and said passageways for preventing relative movement of said first internal sleeve and said first seating member when said releasing sleeve is in said first position; a second internal sleeve slidably mounted in said tubular member, said second internal sleeve having a first position remote from said first internal sleeve and a second position wherein it cooperates with said first internal sleeve in the second position thereof to completely obstruct said port; said second internal sleeve having a first groove formed in the outer periphery thereof, a second groove formed in the inner periphery thereof and a plurality of radial passageways connecting said grooves; a second seating member mounted in said internal sleeve, the lower end of said second seating member being engageable with said releasing sleeve; and means in said grooves and said passageways for cooperating with said tubular members and preventing relative movement of said second internal sleeve and said second seating member until said second internal sleeve reaches said second position.

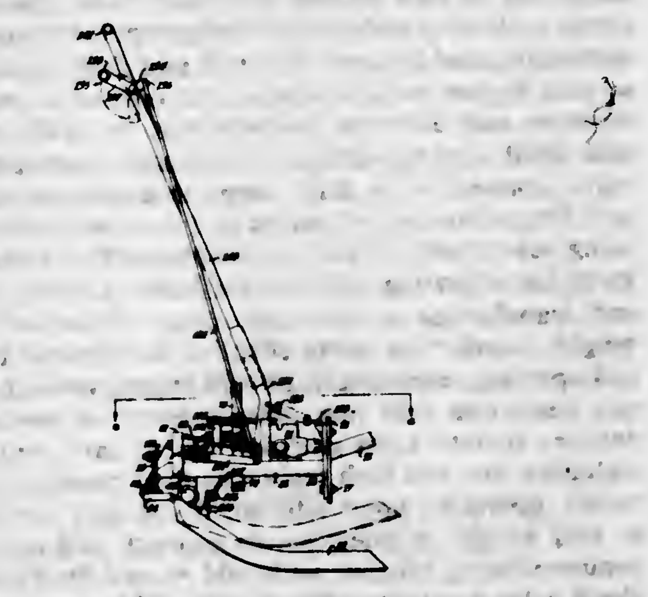
3,183,975
DE-ICING
John Raymond Keen, Luton, England, assignor to D. Napier & Son Limited, London, England, a company of Great Britain
Filed Aug. 8, 1963, Ser. No. 300,780
Claims priority, application Great Britain, Aug. 9, 1962, 30,616/62
4 Claims. (Cl. 170—135.22)



1. De-icing equipment comprising a number of individual electrical resistance heaters distributed over the surfaces from which ice is to be removed, means for energizing the heaters in sequence in a predetermined heating cycle, means responsive to the rate of icing coupled to initiate said predetermined heating cycles, and temperature sensing means responsive to the ambient temperature to determine the dwell time during which each individual heater is operative as a function of the temperature sensed.

3. A helicopter having rotor blades and equipment as defined in claim 1 for controlling de-icing of the helicopter's main and tail rotor blades in which individual heaters are distributed over the rotor blades, in which the main rotor has some of the heaters distributed over its blades and means for energizing them in turn, and in which the tail rotor has a heater and means for energizing it only when certain of the heaters on the main rotor are being energized.

3,183,976
BEET ROW FINDER AND STEERING MECHANISM FOR BEET HARVESTERS
Eugene C. Rollins, % General Machine Co., P.O. Box 1484, Ogden, Utah
Filed July 16, 1962, Ser. No. 210,009
8 Claims. (Cl. 171—8)



1. A beet row finder and harvester steering mechanism comprising: a sensing frame; a four-way valve mounted

on said frame including a reciprocable valve actuator and resilient means for biasing said actuator to a neutral position; a pair of transversely spaced ground engaging beet row finding fingers; means for pivotally mounting said fingers to said frame on horizontal and vertical axes, said fingers being arranged to straddle a beet row; an overtravel linkage connected between said fingers and said actuator for moving said actuator in either direction in response to the rotation of said fingers about said vertical axis and for permitting a further rotation of said fingers beyond the limits of movement of said actuator; means for manually pivoting said fingers upon said horizontal axis and elevating said fingers relative to said frame; and means mounted on said frame for manually pivoting said fingers in either direction upon said vertical axis.

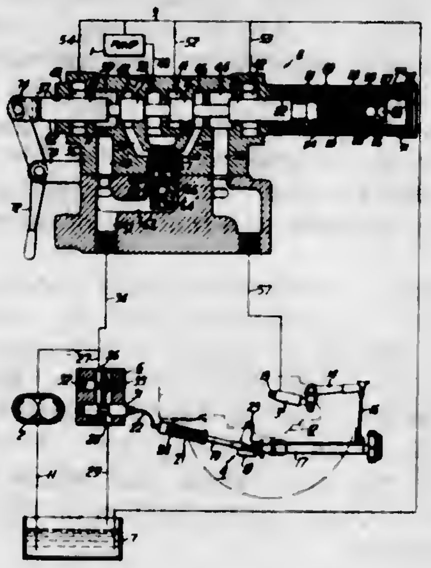
3,183,977

TRACTOR POWER LIFT SYSTEM

Edward B. Heckenkamp, Wauwatosa, Roy W. Johansen, West Allis, and John R. Plate, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Dec. 3, 1962, Ser. No. 241,710

4 Claims. (Cl. 172—7)



1. In a hydraulic power lift system for tractors, the combination of a first and second fluid pump having large and small output capacities, respectively; an implement lifting ram; a draft sensing device; sump means operatively connected to said pumps; a bypass valve interposed between said sump and said second pump; means operatively connecting said bypass valve with said draft sensing device so said bypass valve is closed and opened in response to increase and decrease, respectively, of draft sensed by said draft sensing device; a manually operable control valve connected in fluid communicating relation with said first pump, second pump and ram; said control valve being selectively adjustable independently of said bypass valve for activating said ram for holding, lifting, lowering and transferring weight and, upon adjustment to said weight transferring being effective in response to closing and opening, respectively, of said bypass valve, to activate and deactivate said ram independently of pressure fluid delivery thereto from said first pump; said control valve including low and high resistance fluid passages simultaneously operative upon adjustment of said control valve to said weight transferring, to connect said ram in fluid communicating relation with said second fluid pump; and check valve means associated with said low resistance passage so as to prevent return flow of fluid from said ram through said low resistance passage.

3,183,978

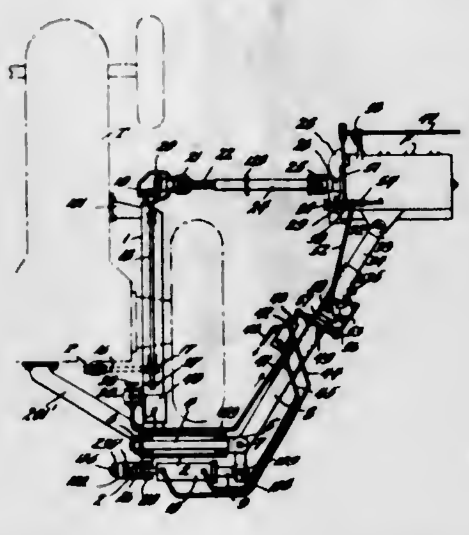
LATERALLY RETRACTABLE AGRICULTURAL IMPLEMENT

Franco Alzani and Gino Ceroni, San Martino in Argine, Italy, assignors to Arturo Ansaloni del Dr. Edo Ansaloni, Bologna, Italy, a firm of Italy

Filed July 5, 1962, Ser. No. 207,763

Claims priority, application Italy, July 6, 1961, 12,887/61; May 4, 1962, 9,292/62

3 Claims. (Cl. 172—38)



1. In combination with a vehicle adapted for ground traversing movement normally along its longitudinal axis, an attachment carried by said vehicle comprising a rigid frame fixedly supported by said vehicle, said frame having a portion projecting rearwardly from the vehicle, a rigid arm pivotally connected to said portion for swinging movement about a vertical axis, said arm projecting forwardly from said pivotal connection and diverging at an acute angle from the said longitudinal axis of the vehicle, an extension of said arm projecting rearwardly from said pivotal connection, said arm terminating forwardly in a free end displaced laterally to one side of the vehicle, an hydraulic ram connected at one end to said extension of said arm and at the other end to said portion of said frame extending rearwardly from said vehicle and normally maintaining said arm in its said position at an acute angle to the longitudinal axis of the vehicle, said hydraulic ram being selectively operative to retract said arm inwardly toward the vehicle, an implement carried at the free end of the arm normally in laterally spaced relation to one side of the vehicle, and a resiliently forwardly projected feeler carried at the free end of the arm normally in advance of the implement, said hydraulic ram including a control valve, and operative connections between said control valve and said feeler for operating said hydraulic ram to swing said arm and implement laterally inwardly toward the vehicle.

3,183,979

VIBRATING PLOW

Thelmer A. Rogers, P.O. Drawer 1589, Lubbock, Tex.

Filed Jan. 3, 1964, Ser. No. 335,483

5 Claims. (Cl. 172—40)

1. In a plow having

(*a*) a frame,

(*b*) a hitch on the frame for attaching it to a draft vehicle,

(*c*) a tool bar attached to the frame,

(*d*) at least one shank depending from the tool bar, and

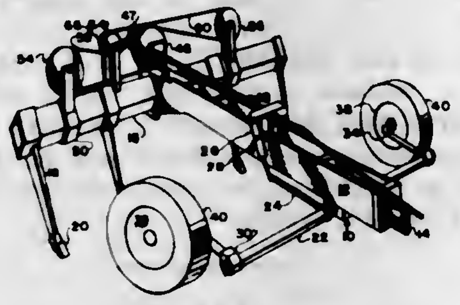
(*e*) ground engaging wheels on the frame;

the improvement comprising:

(*f*) two weights mounted on the frame for periodic movement,

(*g*) gearing interconnecting said weights,

(*h*) the gearing causing the horizontal component of motion of one weight to be equal and in the same direction as the horizontal component of motion of the other weight, and



(*j*) the gearing causing the vertical component of motion of one weight to be equal and in the opposite direction as the vertical component of the other weight,

(*k*) means for driving said gearing to produce said periodic motion,

(*m*) arms interconnecting the wheels to the frame, and

(*n*) said arms mounted for horizontal movement so that the frame may vibrate horizontally with respect to the wheels.

3,183,980

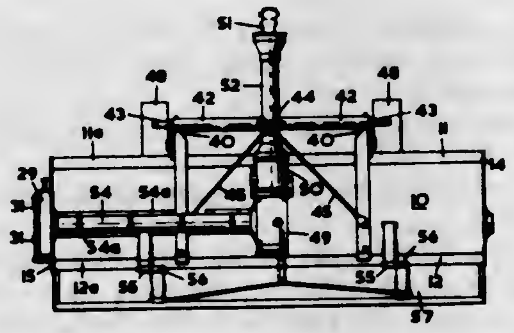
ROTARY CULTIVATING MACHINE CONSTRUCTION

John Arthur Howard and John Henry Desmond Craig, West Horndon, England, assignors to Rotary Hoes Limited, Essex, England

Filed May 27, 1963, Ser. No. 283,415

Claims priority, application Great Britain, July 12, 1962, 26,799/62

2 Claims. (Cl. 172—47)



1. A rotary cultivator, to be attached transversely to the rear of a tractor to have its rotor driven from a power take-off shaft of the tractor, comprising a sheet metal casing and an arcuate shield, said casing defining a roof portion, downwardly-extending end walls and downwardly-extending front and rear flanges, said arcuate shield within said casing and directly secured to said roof portion, end walls and front and rear flanges for stiffening said casing, said front flange, a forward portion of said roof portion and said shield defining a space having a three-sided cross-section, a hollow sheet metal member of equivalent cross-section arranged in said space with its three sides flatly engaging the roof portion front flange and shield for further stiffening the structure, a rotor shaft, said end walls providing supports for bearings for said rotor shaft, pick-up arms for connection to a power-lift mechanism of said tractor fast with said roof portion and said front flange, and drive transmission means for said rotor shaft supported from said casing.

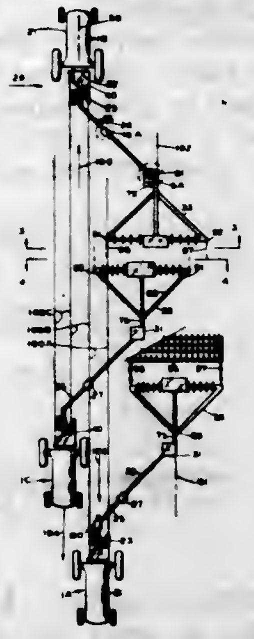
3,183,981

EARTHWORKING APPARATUS INCLUDING AN ALTERNATING IMPLEMENT, ANOTHER IMPLEMENT AND PIVOTAL DRAFT MEANS INTERCONNECTING THEM

Charles Schlabs, Rte. 2, Hereford, Tex.

Filed Mar. 8, 1963, Ser. No. 264,000

6 Claims. (Cl. 172—162)



1. Apparatus for mechanical earth treatment comprising, in operative combination, a first earth treating tool and means operatively attached thereto for movement thereof relative to and along the direction of the surface of the earth, said means having a front end and a rear end, a straight line passing from said rear end to said front end passing in the direction of movement of said means for moving, said first earth treating tool being attached to the rear of the rear end of said means for moving and being adapted for use in either of two operative positions relative to the direction of said movement, said means for movement having a longitudinal axis and the direction of said movement of said first earth treating tool being parallel to said longitudinal axis; rotatable means attached to and supported by said means for moving and attached to said first earth treating tool for rotatably supporting said first earth treating tool and rotating said first earth treating tool from one operative position to the other about said longitudinal axis of said means for moving and operating means connected thereto for rotating said rotatable means; a rigid elongated means firmly attached to said rotatable means and in part extending rearward thereof along the axis of rotation of said rotatable means and in part extending at an angle to said axis to the distal end of said rigid elongated means, said rigid means being rotatable about the axis of said rotatable means together with said rotatable means; a rigid elongated spacing element connected by a universal joint at its proximal end to the distal end of said first rigid means, a straight line from the distal end of said rigid elongated spacing element to its proximal end forming the longitudinal axis of said element, and a second earth working implement comprising a frame and a plurality of earth treatment tools attached thereto at intervals along the width of said frame, the distal end of said rigid elongated spacing element being firmly yet rotatably attached to said frame by means fixed for rotation about an axis parallel to the longitudinal axis of said second earth working implement.

3,183,982

FARM IMPLEMENT LIFT APPARATUS

Arnold F. Kopaska, Guthrie Center, Iowa

Filed May 15, 1963, Ser. No. 280,615

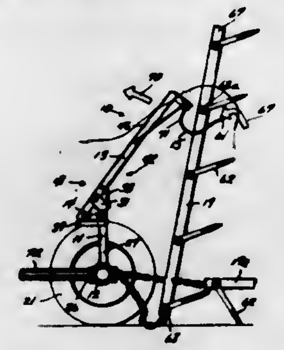
6 Claims. (Cl. 172—624)

1. In combination with a wheeled transport carrier having a drawbar with at least one harrow section chained

therebehind, said carrier having rearward and forward ends and said harrow section having rearward and forward ends and a plurality of rungs extending thereacross substantially at right angles to the direction of travel of said carrier,

at least one support unit, having upper and lower ends, secured to said drawbar for each harrow section chained to said drawbar,

an elongated member vertically pivotally secured adjacent its lower end to the upper end of said support unit and adapted to pivot rearwardly to a predetermined position at times and adapted to be pivoted forwardly to a predetermined position at times,

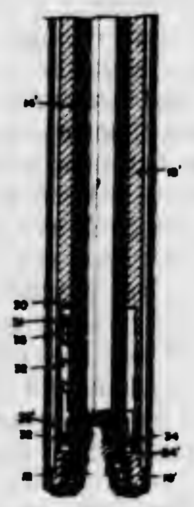


said elongated member having a hook means secured thereto adjacent its upper end which is adapted to receive one of said rungs of said harrow section when said elongated member is in its rearward predetermined position and the rearward end of said harrow section is pivoted upwardly about its forward end, said elongated member adapted to pivot forwardly as said harrow section is pivoted about its forward end after said hook means has received said rung; said elongated member and said hook means causing the forward end of said harrow section to be raised from its supporting surface as said elongated member is pivoted to its forward predetermined position, whereby said harrow section will be placed in a transport position,

and means for selectively maintaining said elongated member in its forward predetermined position.

3,183,983
CORE MAGNETIZATION DEVICE

Charles B. Vogel, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 19, 1962, Ser. No. 224,678
1 Claim. (Cl. 175—44)



Core marking device for core drilling system comprising:

a core drilling system having a drill string with a rotatable core barrel therein and a drill bit, said core drilling system being disposed at the lower end of said drill string;

a pick-up coil disposed on said drill string adjacent the outer surface of the core barrel;

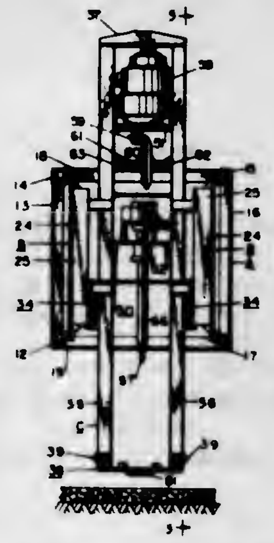
a power supply;

a trigger circuit, said trigger circuit being coupled to said power supply and said pick-up coil being coupled to the input side of said trigger circuit;

a pair of diametrically opposed coils having cores therein and disposed on the drill string adjacent the outer surface of the core barrel with their axes aligned with the axis of the pick-up coil, said coils being coupled to the output side of said trigger circuit to magnetize the core as the core is cut by said core drilling system.

3,183,984
APPARATUS AND METHOD FOR SETTING HYDROSTATIC PRESSURE RELIEF VALVES THROUGH WEARING LININGS

Harry D. Durston, Pasco, and Alfred Perry, Moses Lake, Wash., assignors to J. A. Terteling & Sons, Inc., Boise, Idaho, a corporation of Idaho
Filed Oct. 5, 1964, Ser. No. 401,481
9 Claims. (Cl. 175—57)



1. The method of setting hydrostatic pressure relief valves through wearing linings over earth and into the earth comprising

first, forming a passage for the valve through the wearing lining and into the earth,

then connecting the valve to apparatus operable to vibrate it,

and then moving the valve into that passage while simultaneously vibrating the valve by said apparatus to conform the passage to the configuration of the valve.

4. Apparatus for piercing wearing linings over earth and the like and setting hydrostatic pressure relief valves through the linings and into the earth, comprising:

a piercing-setting member operable when driven into the lining to form a passage therein,

means connected to said member and operable to vibrate it as the member is driven through the lining to compact the materials surrounding the passage formed during the piercing operation, and to consolidate the materials surrounding the valve during the setting operation,

a reciprocable unit mounting said member and said vibrating means,

a vertically-extending support assembly carrying vertical-extending rack means,

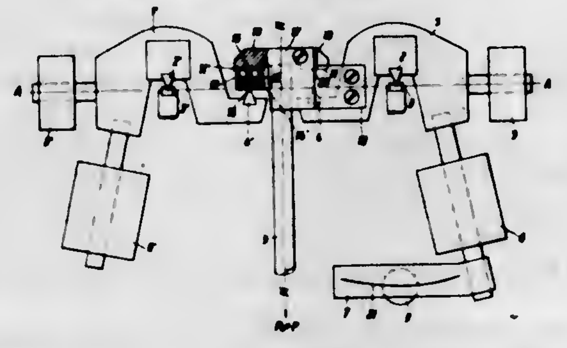
a drive motor mounted on said reciprocable unit,

and gear means driven by the motor and engaged with said rack means, said reciprocable unit being mounted on said gear means in such fashion that the unit is selectively driven upward and downward to drive the piercing-setting member in the same directions, when the drive motor is supplied with power, depending on the direction of rotation of the gear means,

said support assembly itself being movable between an upper position remote from the lining and a lower position adjacent the lining.

3,183,985
DOUBLE BEAM BALANCE

Hans Schick and Manfred Kammerer, Ebingen, Germany, assignors to August Sauter K.G., Ebingen, Germany
Filed Oct. 14, 1963, Ser. No. 315,755
Claims priority, application Germany, Oct. 17, 1962, S 82,085
15 Claims. (Cl. 177—217)

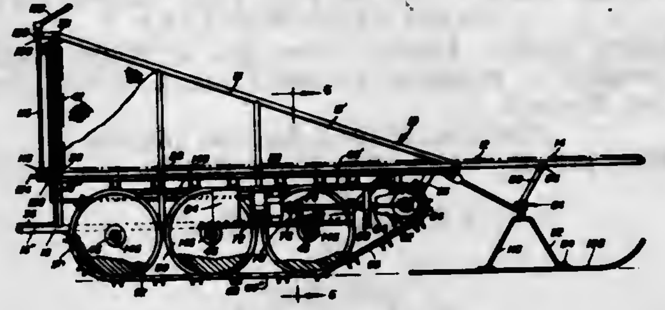


1. In a balance, the combination of first and second beams, each having a first and second end; first and second central knife edge means associated respectively with said first and second beams and located between said first and second ends for supporting said beams for rotation at respective first and second fixed points; first and second load knife edge means associated respectively with said first and second beams and separated from the corresponding first and second central knife edge means by a distance in the direction of said first ends; first means moving in response to the load to be weighed; a transverse member associated with said first means and having first and second ends; two first members, one associated with each of said first and second ends of said transverse member and each having a first bearing surface for the corresponding first and second load knife edge means for transmitting to the respective first and second load knife edge means, as equal and parallel forces for all angular positions of the beams, the movement of said transverse member when said first means moves; and second means, located between said transverse member and the respective first members and in physical contact therewith, for permitting a low friction lateral movement of said first members with respect to said transverse member and first means, as the corresponding beams rotates about its fixed point, and for insuring a constant clearance, at all times, between said transverse member and said first members.

3,183,986
MOTORIZED SNOW SLED

Gerald P. Trombley, New Hyde Park, N.Y.
(9 N. Maryland Ave., Port Washington, N.Y.)
Filed June 19, 1962, Ser. No. 203,511
2 Claims. (Cl. 180—5)

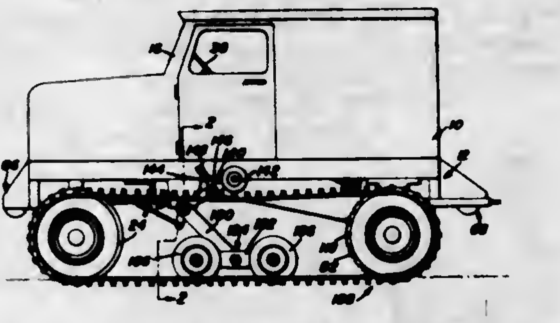
1. A motorized snow sled comprising a support frame including a generally horizontally disposed elongated longitudinally extending upper section, a pair of generally parallel depending side sections extending along and supported from the opposite side marginal edge portions of said upper section, a crawler tread-type drive assembly supported from and between said side sections and below said upper section including a single elongated endless crawler tread assembly including upper and lower reaches with the lower reach including at least portions disposed below the lowermost portions of said side sections, and motor means supported from said support frame, drivingly connected to said tread assembly and disposed within the confines of said endless crawler tread assembly, said crawler tread-type drive assembly including a drive shaft journalled between said side sections having a drive wheel fixed on each end, said crawler tread assembly including a pair of elongated, endless and flexible tension members entrained about said drive wheels, said tread assembly



including a plurality of elongated transversely extending cleats interconnecting said tension members at points spaced longitudinally therealong, said motor means including an output shaft to which a worm gear is operatively connected, said drive shaft having a gear wheel mounted thereon with which said worm gear is meshed, said output shaft including clutch means disposed between said motor and worm gear and a heavy flywheel disposed between said gear wheel and clutch means.

3,183,987
SNOW VEHICLE HAVING DEMOUNTABLE CRAWLER TREADS

Gerald P. Trombley, New Hyde Park, N.Y.
(9 N. Maryland Ave., Port Washington, N.Y.)
Filed Oct. 9, 1962, Ser. No. 229,393
4 Claims. (Cl. 180—6.24)

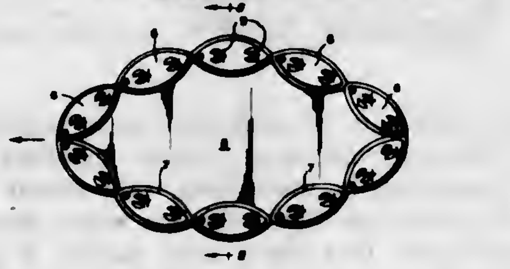


1. A combination vehicle comprising a main frame, a pair of opposite side rear wheels dependingly journaled for rotation from the rear end portion of said frame, a pair of opposite side dirigible front wheels dependingly journaled for rotation from the forward end portion of said frame, steering means interconnecting said dirigible front wheels for simultaneous steering, motor means supported from said frame and drivingly connected to one pair of said wheels, the last-mentioned pair of wheels each including clutch and brake means for selectively declutching said last-mentioned wheels from driven connection with said motor means and braking said last-mentioned wheels, said one pair of said wheels also including additional brake means for simultaneously braking said one pair of wheels, a pair of endless track members removably entrained over corresponding ones of said front and rear wheels, and said steering means including means for locking said dirigible wheels in adjusted position, a bogie wheel assembly dependingly supported from each side of said frame for movement in a plane containing the corresponding front and rear wheels toward and away from engagement with the lower reach of the corresponding track member from the inside thereof, and means yieldably urging said bogie wheel assemblies toward engagement with said lower reaches, said vehicle also including an idler tension wheel for each of said endless

track members swingably supported from said frame for adjustable vertical movement in a plane containing the corresponding track member and toward and away from the upper reach thereof from outside the corresponding track member.

3,183,988
COMPOSITE VEHICLE FOR TRAVELING OVER LAND AND/OR WATER

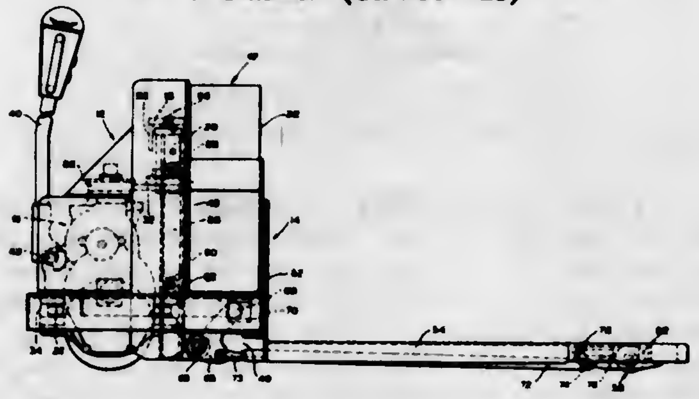
Richard Stanton Jones, Cowes, Isle of Wight, England, assignor to Westland Aircraft Limited, Yeovil, Somerset, England
Filed Jan. 8, 1962, Ser. No. 164,956
Claims priority, application Great Britain, Jan. 17, 1961, 1,971/61
7 Claims. (Cl. 180—7)



1. A composite ground-effect vehicle, comprising: means forming a platform; a plurality of individually operable ground-effect machines; and means detachably connecting said ground-effect machines to the periphery of said platform substantially in sealing engagement therewith, whereby a supporting gas cushion is created under each of said individual ground-effect machines, and a corresponding gas cushion is created under said platform to at least in part support said platform.

3,183,989
HAND LIFT TRUCK

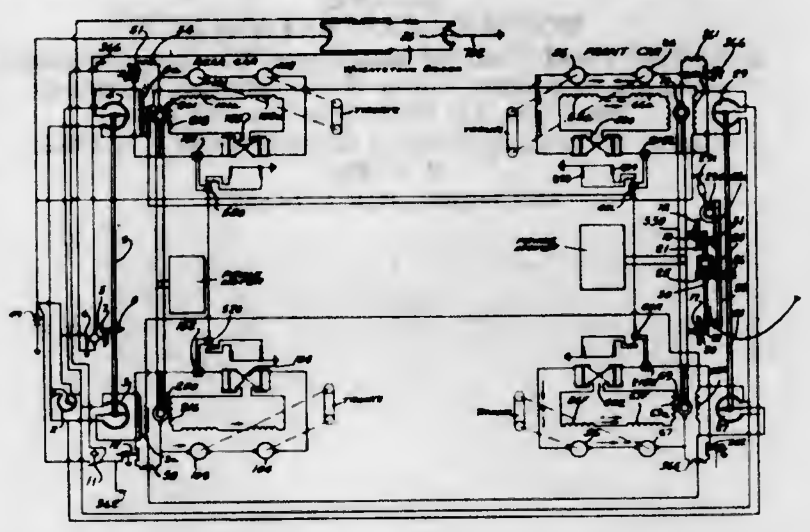
George J. Trusock, Battle Creek, and Kenneth C. Johnson, Kalamazoo, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Mar. 16, 1962, Ser. No. 180,124
9 Claims. (Cl. 180—13)



1. In a hand lift truck, the combination of a drive head and main frame, a pair of forwardly extending load support members mounted on said main frame for elevation relative thereto, each of said pair of members supporting adjacent the forward end thereof a pivoted trail wheel assembly, and actuating link and lever means connected to each said trail wheel assembly, said latter connection including a transverse member mounting said actuating linkage in eccentric relation to each said trail wheel assembly and being reversible relative to said trail wheel assembly so as to dispose the latter in oppositely disposed eccentric relation to said actuating linkage, each of said load support members being reconnectable at a second position transversely of the load support frame upon a reversal in the position of said trail wheel assembly relative to the actuating linkage, as aforesaid, whereby the spacing between said pair of load support members can be varied.

3,183,990
MULTIPLE TRACK STEERING APPLICATION FOR A PLURALITY OF VEHICLES

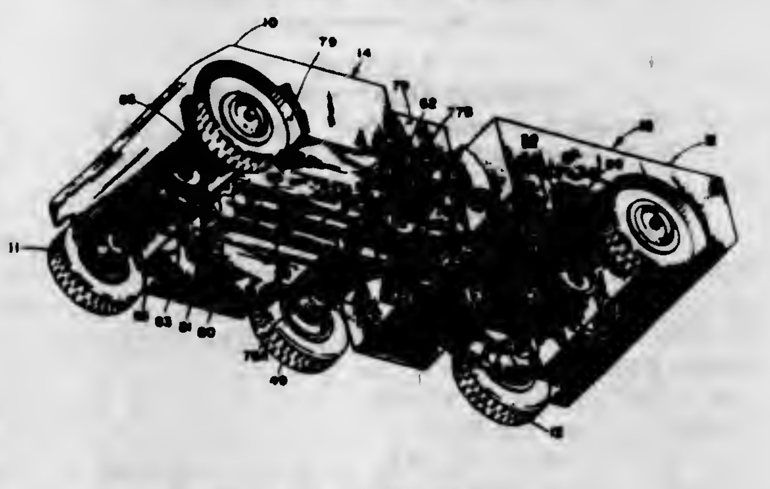
Theodoric B. Edwards, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 29, 1963, Ser. No. 255,160
6 Claims. (Cl. 180—14)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a vehicle train, having a command vehicle and a subservient steered vehicle, each vehicle having a pair of tracks, an electric motor control steering system comprising a prime mover, a plurality of compound wound, direct current generators driven by said prime mover, a group of series wound motors operably connected in series circuit arrangement with said generators mechanically connected to each track for each of said vehicles, said group of motors for each track being energized by one of said generators, said generators for each track of each vehicle having their armatures interconnected by torque transferring means and adapted for regenerative braking during steering on tortuous and rough terrain, a mechanical-electrical hitch means adapted to connect two adjacent vehicles, said hitch means having a variable electrical resistance means arranged as a variable and separate divider of a bridge circuit operated by said hitch means and connected to the motors controlling the subservient vehicle tracks to correct the steering of said subservient vehicle to conform to the steering path of said command vehicle.

3,183,991
VEHICLE

Roger L. Gamaunt, Fawnskin, Calif., assignor of ten percent to Harry E. Teasdall, Fallbrook, Calif., thirty-five percent to Geraldine E. Gamaunt, and ten percent to Harry Ervin Teasdall, as trustee
Filed Apr. 13, 1960, Ser. No. 21,981
18 Claims. (Cl. 180—24)

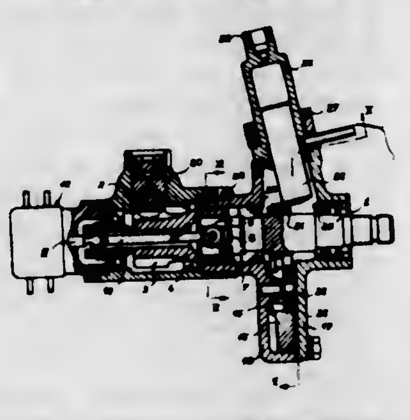


1. A six-wheeled vehicle having:
a forward body with a longitudinal axis;
a rear body with a longitudinal axis;

one pair of wheel mounted on one, and two pairs of wheels mounted on the other of said bodies, all of said wheels being in load-bearing relation between the vehicle bodies and the ground and two of said pairs of wheels being deflectable relative to said bodies for steering said vehicle; and
attachment means rotatably and pivotally joining said rear body to said forward body for rotation of said rear body on a longitudinal axis and pivoting on a transverse axis,
said attachment means including means limiting pivoting of said rear body on said forward body at all times, including and following intervals during which said two of said pairs of wheels are being deflected, to motion in a plane which is vertical when said rear body is laterally level, said last-named means including structure laterally spaced on each side of said forward body longitudinal axis, intersecting said transverse axis, and connected with said forward and rear bodies,
said attachment means further including means restricting rotation of said rear body relative to said forward body, in all pivoted positions of the rear body, to rotation about an axis fixed in a common vertical plane with the longitudinal axis of the forward body.

3,183,992
VARIABLE PRESSURE MEANS COOPERATING WITH THE STEERING SHAFT OF VEHICLES

Antoine Brueder, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a corporation of France
Filed Dec. 16, 1963, Ser. No. 330,979
Claims priority, application France, Jan. 9, 1963, 920,854, Patent 82,895
7 Claims. (Cl. 180—79.2)

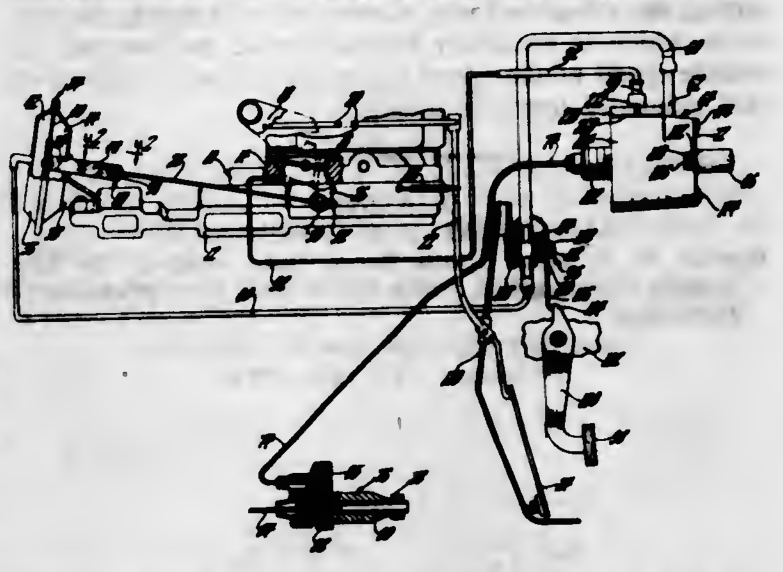


1. Servo steering of automotive vehicle, wherein the steering shaft controlling the servo-action device proper has associated therewith a device adapted to exert on said shaft a resistance to the steering movement, said last-named device comprising a cam rotatably connected to said shaft and co-operating with a push member responsive to a device delivering a fluid pressure varying at least as a function of the vehicle speed to create said resistance, and said cam is shaped to cause said resistance to vary with the steering angle characterized in that said cam is disposed around said steering shaft and formed with internal teeth in meshing engagement with a pinion connected to said shaft, said cam being centered on a member constituting the support of said push member.

3,183,993
SPEED CONTROL SYSTEM

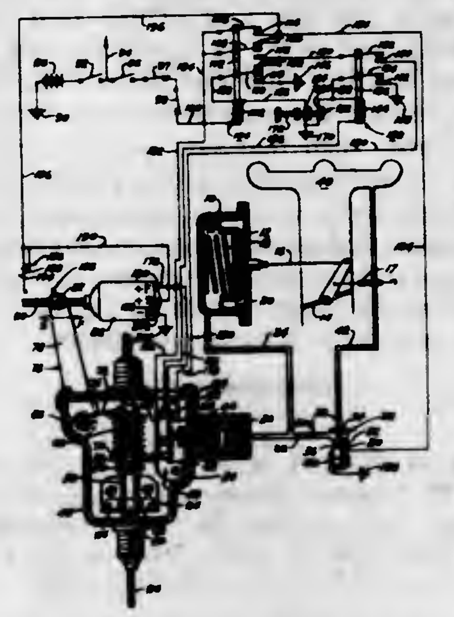
Leland C. Parker, Rochester, and Donald D. Stoltman, Henrietta, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 7, 1961, Ser. No. 115,539
21 Claims. (Cl. 180—82.1)

1. In a dynamic fluid pressure system having a first fluid pressure source for producing a first variable pressure and a second fluid pressure source for producing a second pressure greater than said first pressure, fluid pressure modification mechanism comprising a chamber, first means metering said first pressure into said chamber in inverse relation to variations in said first pressure, second means metering said second pressure into said chamber and producing therein a control pressure intermediate said first and second pressures, and means in series with and intermediate said first means and said chamber for limiting the metering action of said first means.



3,183,994
AUTOMOTIVE CRUISE CONTROL

Frederick E. Goerke and Robert E. Reichard, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed Feb. 18, 1963, Ser. No. 259,068
15 Claims. (Cl. 180—82.1)



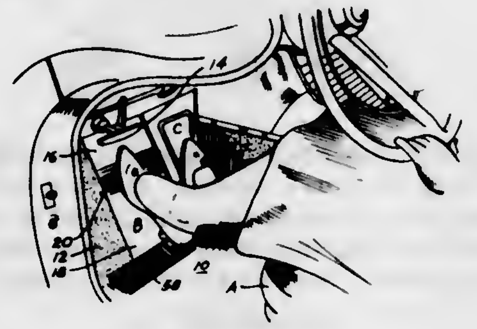
3. In a cruise control system for an automotive vehicle having an engine and a driver operated throttle control member for controlling the fuel supply to the engine, a power unit having a pressure responsive element located therein, said pressure responsive element being operatively connected to said throttle control member for controlling movement thereof, fluid pressure means for causing movement of said pressure responsive element, solenoid valve means for controlling the application of said fluid pressure to said pressure responsive element, modulating valve means operatively connected to said power unit for regulating and controlling the application of said fluid pressure to said pressure responsive element, speed responsive governor means operatively connected to said modulating valve means for controlling movement thereof at predetermined speeds, said governor means including a variable governor load spring for determining the speed at which movement of said modulating valve means

occurs, manually operable actuating means for rendering said cruise control system operable, and speed controlled means operatively connected to said variable governor load spring and said actuating means for varying and setting the effective force exerted by said spring to that value which is necessary for automatic maintenance of vehicle speed at the speed occurring during actuation of said manually operable means.

3,183,995
AUTOMOTIVE FLOORBOARD

Harold B. Schultz, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed July 18, 1963, Ser. No. 295,930
3 Claims. (Cl. 180—90.6)



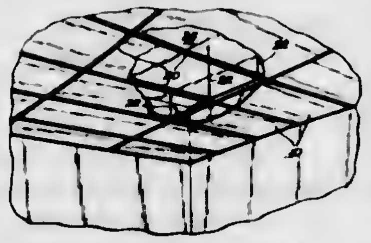
1. In controls for a vehicle, a floorboard having adjacent and horizontal and inclined areas including:

a portion extending across said inclined area and spaced a predetermined distance away from said horizontal area, which portion is adapted to receive an operator's foot such that the heel of the foot rests adjacent the horizontal area, an upwardly extending section adapted to form with said portion the inclined area, which section is operatively connected to said horizontal area such that said portion and said section swing inwardly as pressure is applied thereto by the operator's foot, a control mechanism, and a means connecting said portion with said control mechanism, said upwardly extending section having a hinge adjacent to the lower extremity thereof to which the lower portion is hingedly mounted.

3,183,996
ACOUSTICAL STRUCTURAL PANEL

Raymond W. Capaul, Aurora, Ill., assignor to Forty-Eight Insulations, Inc., Aurora, Ill., a corporation of Illinois

Filed Sept. 4, 1959, Ser. No. 838,140
12 Claims. (Cl. 181—33)

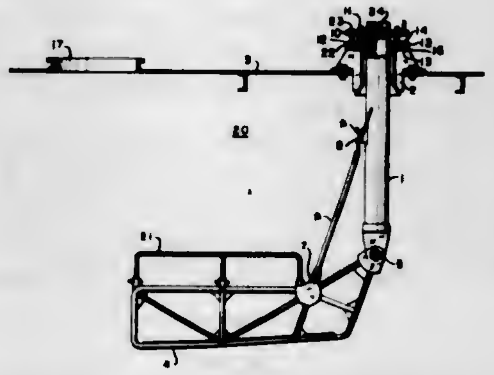


1. A unitary structural panel having rigidity to be edge supported, said panel comprising a relatively thick core of mineral wool and binder means therefor forming a flat semirigid panel having front and back surfaces, a relatively thin glass fiber mat bonded to the entire front surface of said panel and including bonded, interlocked strands of glass fibers for imparting structural rigidity to said semirigid panel, and a flexible backing sheet bonded only along discrete areas to the back surface of said panel to inhibit air passage and thermal transfer through said panel and to absorb and reflect sound energy traversing through said panel.

3,183,997
SUSPENDED WORKING PLATFORM UNIT

Hendricus P. Kleiss, Schiedam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Feb. 7, 1963, Ser. No. 257,045
Claims priority, application Netherlands, Feb. 28, 1962, 275,359
2 Claims. (Cl. 182—82)



1. A rotatable suspended working platform supported solely from a single overhead carrying member and adapted for use in closed tank structures that have at least one access opening in the top thereof, comprising:

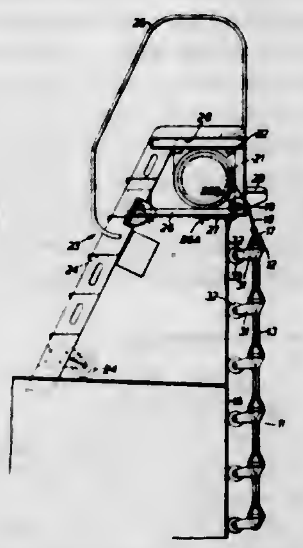
- (*a*) a vertical support shaft;
- (*b*) a carrying member having means for rigid attachment to the tank at said access opening, for suspending said shaft for rotation about a vertical axis;
- (*c*) a horizontal plate surrounding the shaft and positioned in supported relation to said carrying member, said plate being movable with respect to the shaft, and a horizontal rod inserted transversely through to the top part of the shaft and connected to said plate in supported relation, whereby the shaft can be lowered from the carrying member by sliding through said plate after removal of the rod;
- (*d*) a rigid platform pivotally secured directly to the lower portion of said shaft to one side thereof for movement about a horizontal axis, whereby said platform, with the shaft pivotally attached, can pass through a narrow opening when the platform is pivoted upwardly; and
- (*e*) means to interconnect said platform and shaft into a rigid unit wherein said platform is substantially horizontal.

3,183,998
APPARATUS FOR PICKING UP AND LOWERING A PILOT AT SEA

Beverly Carl Major, Windward, St. James St., Yarmouth, Isle of Wight, England

Filed Aug. 20, 1963, Ser. No. 303,295
Claims priority, application Great Britain, Aug. 21, 1962, 31,981/62
3 Claims. (Cl. 182—93)

1. Apparatus for picking up and lowering a pilot at sea, comprising a foot plate, a carriage carrying the foot plate and comprising a short length of rope ladder only about the height of a man and having treads, rollers at the inner sides of each end of each tread of the ladder, a transportable frame having a rigid ladder having treads spaced apart with a vertical component onto which the boarding pilot can step, a winch carried by the frame, a cable guide supported by said frame near the top of the rigid ladder, and a hoisting cable on the winch extending over the cable guide and connected to the rope ladder for raising the rope ladder and foot plate from sea level,

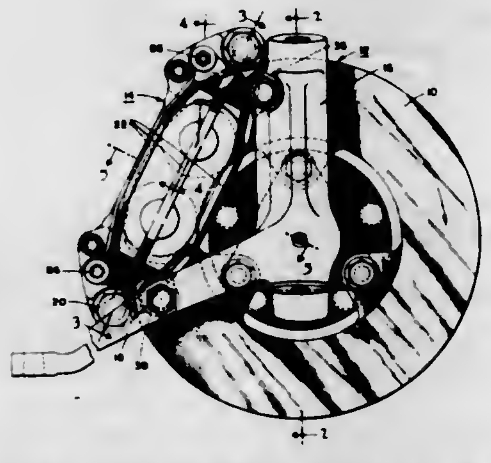


said cable normally supporting said rope ladder in spaced relation below said winch.

3,183,999
SPLIT HOUSING SPOT TYPE DISK BRAKE

Edwin K. Buyze, St. Clair Shores, and Rene H. Vansteenkiste, Grosse Pointe Woods, Mich., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 28, 1962, Ser. No. 248,004
11 Claims. (Cl. 188—18)



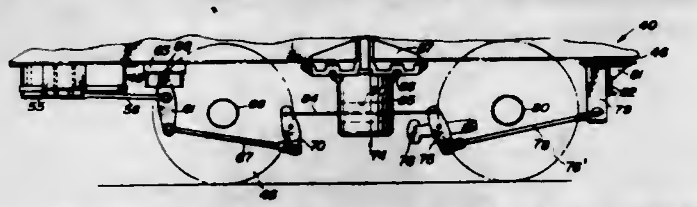
1. A disk brake spindle assembly for the front wheel of an automobile of the type having a pivotable wheel comprising:

- (*a*) a spindle assembly comprising,
  - (1) a pivotable vertical spindle support having a mounting surface on its upper end,
  - (2) a horizontal spindle support extending outward from said vertical spindle support for mounting a wheel hub having a rotatable brake disk thereon,
  - (3) a steering arm extending longitudinally and inward from said vertical spindle support having a mounting surface on its extended free end,
- (*b*) a split housing comprising,
  - (1) two housing portions connected together at their end portions and encompassing a sector of said brake disk therebetween to form a brake housing,
  - (2) piston bores in each said housing portion opposite said sector of said disk and aligned between said end portions,
  - (3) an upper and a lower mounting face on said housing located radially outward in the same sector of said brake disk as said piston bores in said housing,
- (*c*) and fastening means connecting said upper mounting face to said upper end of said vertical spindle support and said lower mounting face to said free end of said steering arm, said housing providing self-aligning torsional restraint of said brake disk on said hub during braking.

3,184,000
BRAKE RIGGING FOR RAILWAY CARS

Charles R. Radey, Michigan City, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Continuation of application Ser. No. 328,014, Dec. 4, 1963. This application Oct. 30, 1964, Ser. No. 409,045
14 Claims. (Cl. 188—52)



1. A railway car having a truck bolster at one end thereof, a first pair of wheels joined by a transversely extending axle portion disposed on one side of said truck bolster, a second pair of wheels being joined by an axle being disposed on the opposite side of said bolster, a fulcrum lever pivotably attached to said car and pivotably connected to a brake rigging connecting rod, means connected to said fulcrum lever for applying force thereto to pivot said fulcrum lever, said brake rigging rod extending below one of said axle portions on one side of said truck bolster and being pivotably connected to a first brake lever, said first brake lever connected to a portion of a second brake lever disposed on the opposite side of said truck bolster by a connecting rod, means for engaging said wheels in response to movement of said brake levers, and means connected to said second brake lever for limiting the longitudinal movement thereof.

3,184,001
BRAKE DRUM AND LINING

Earl W. Reinsch, Dayton, and Gene P. Baynes, Kettering, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 16, 1962, Ser. No. 217,426
5 Claims. (Cl. 188—71)

500X

2. A torque transmitting device comprising a sintered ferrous facing and a mating surface consisting of steel substantially free from ferrite.

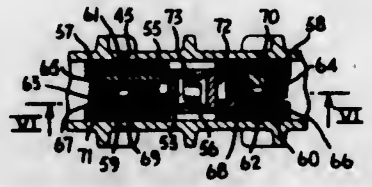
3,184,002
AXIALLY SPREADING BRAKE OF THE SECTIONAL BRAKE SHOE AND ROTARY CASING TYPE

Hermann Klaue, Konstanz (Bodensee), Germany

Filed Feb. 28, 1963, Ser. No. 261,663
Claims priority, application Germany, Feb. 28, 1962, K 46,019; Mar. 15, 1962, K 46,181
2 Claims. (Cl. 188—72)

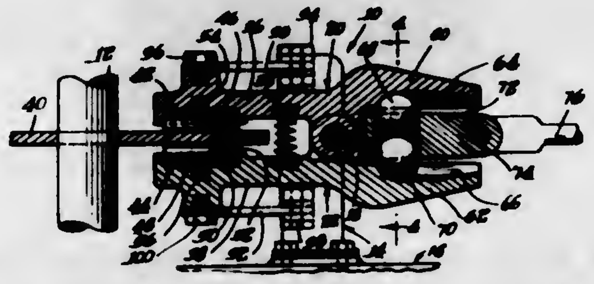
1. A brake for a rotary member in the suspended section of a vehicle, comprising a brake casing revolving

in unison with the rotary member and including two spaced flanges perpendicular to its rotary axis, a brake carrier rigid with the suspended section of the vehicle, two pairs of parallel braking shoes disposed between said flanges and extending in face to face relationship with the casing flanges, said pairs being angularly spaced with reference to the rotary axis of the casing to either side of an axis of symmetry, means urging the corresponding shoes of both pairs towards each other into an inoperative position, a fluid-operated cylinder the axis of which extends across said axis of symmetry. two pistons carried inside said cylinder and adapted to be urged by the fluid away from each other in opposite directions, two medial rings revolvable each round a further axis parallel with the rotary axis of the casing and passing through the shoes of the corresponding pair, each medial ring being provided on its surface facing one braking shoe with a raceway sloping peripherally towards said braking shoe and with an annular raceway on its opposite surface, an outer projection on each medial ring adapted to be angularly shifted by the corresponding piston, a presser ring fitted between said annular raceway of each medial ring and the corresponding brake shoe and rigid with the latter and including a part-spherical projection, a series of rolling members inserted between the sloping raceway of each medial ring and the cooperating braking shoe, the angular shifting of each medial ring urging said rollers members towards the corresponding braking shoe to urge it away from the other braking shoe of the pair and towards the corresponding casing flange, a further series of rolling members inserted between said annular raceway of each medial ring and the part-spherical projection and adapted to transmit the reaction produced by the braking and to allow a slight tilting of the brake shoe rigid with said presser ring.



3,184,003
BRAKE STRUCTURE

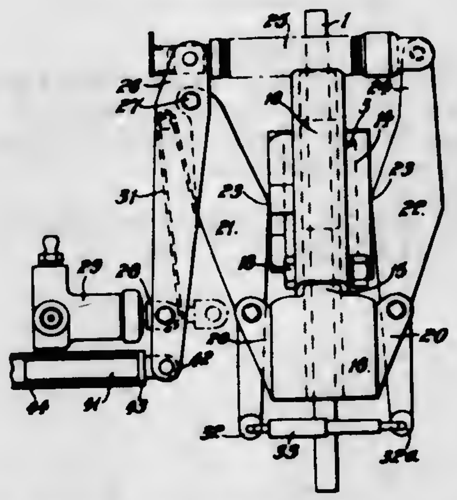
Osborn A. Kershner, St. Joseph, Mich., assignor, by mesne assignments, to Lambert Brake Corporation, St. Joseph, Mich., a corporation of Michigan
Filed May 15, 1961, Ser. No. 110,071
5 Claims. (Cl. 188—73)



1. In a brake structure for controlling a rotatable member having opposite sides, the combination comprising a pair of members pivoted for movement about a common predetermined axis, means including a mounting bracket and pivot pin means carried thereby pivotally supporting said pivoted members, said members including first portions for embracing said rotatable member, friction means on said portions for frictionally engaging said rotatable member, means for pivoting said pivoted members for releasably urging said friction means against said rotatable member, and a pair of generally flat elongated strap-like links having first ends respectively connected with said portions of said pivoted members on mounting axes parallel to the axis of rotation of said rotatable member and opposite ends connected to said bracket on mounting axes parallel to the axis of rotation of said rotatable member for resisting torque tending to twist said pivoted members transversely of said first mentioned axis resulting from engagement of said friction means with said rotatable member during a braking operation, said strap-like links having flat sides and narrow edges and being disposed with flat sides thereof facing said portions of the pivoted members for enabling the links to flex with the pivoted members when said pivoted members are moved toward and away from the rotatable member during a braking operation.

3,184,004
DISC BRAKES

Henry James Butler, Sutton Coldfield, England, assignor to Dunlop Rubber Company Limited, London County, England, a British company
Filed July 26, 1961, Ser. No. 126,932
Claims priority, application Great Britain, July 27, 1960, 26,105/60
16 Claims. (Cl. 188—73)



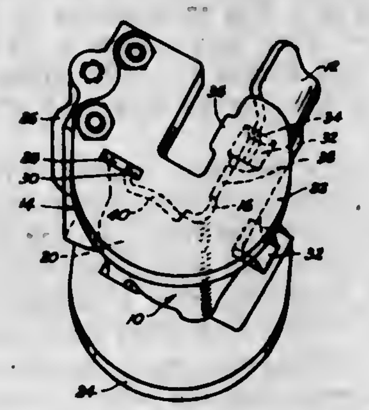
1. A disc brake comprising a rotatable disc, a pair of friction elements one on each side of said disc adjacent to a segment of the adjacent braking surface of said disc, a non-rotatable element adjacent to said disc, a pair of beam members disposed one on each side of said disc alongside a chord of said disc, each beam member being pivotally secured to said non-rotatable element and having a fulcrum engagement with the adjacent friction element to move its respective friction element to frictional engagement with a braking surface of said disc, a lever fulcrumed intermediate its ends on one of said beam members at a locus on said beam spaced from its pivotal mounting on said non-rotatable element, said lever extending beyond said locus, a link beyond the periphery of said disc connecting said lever beyond its fulcrum with the free end of said beam member on the other side of said disc, and a force applying means engaging said lever to tilt said lever in a direction to draw said beams toward each other and apply a brake applying force to said friction elements at the fulcrum of said beam elements.

3,184,005
CALIPER, SPOT-TYPE DISC BRAKE

René Alphonse Louis Thirion, Paris, France, assignor to Societe Anonyme D.B.A., Paris, France, a company of France
Filed Jan. 8, 1963, Ser. No. 250,145
Claims priority, application France, Feb. 1, 1962, 886,596
4 Claims. (Cl. 188—73)

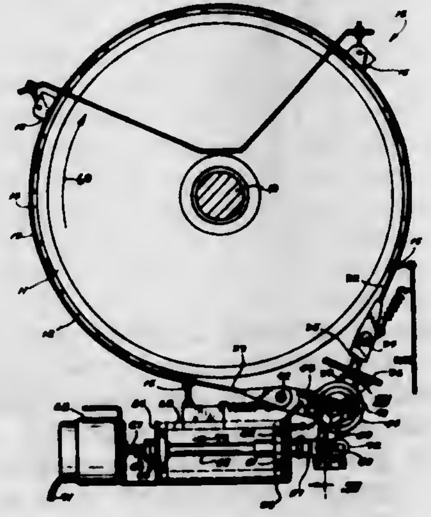
1. A disk brake comprising: a rotor having opposed friction surfaces thereon, a fixed support member having a portion thereof extending opposite one of said friction surfaces, a caliper comprising two circumferentially spaced

members extending across the outer periphery of said rotor, a brace member located opposite the other rotor friction surface and operatively connected to said circumferentially spaced members, actuating means carried by said brace member, a first friction member located between said actuating means and said other friction surface for engagement therewith, a second friction member located between said support member portion and said one friction surface, means securing said second friction member to said circumferentially spaced members for movement therewith toward and away from said one friction surface, said circumferentially spaced members embracing said support member and being slidably secured thereto, coacting anchoring surfaces located on the circumferentially spaced ends of said support member portion and on said circumferentially spaced members, whereby torque exerted on said second friction member will be transmitted through said circumferentially spaced members to one of said circumferentially spaced anchoring surfaces on said support member portion upon brake application during rotation of said rotor in one direction and to the other of said circumferentially spaced anchoring surfaces on said support member portion upon brake application during rotation of said rotor in the opposite direction.



3,184,006
CAM-ACTUATED BAND BRAKE

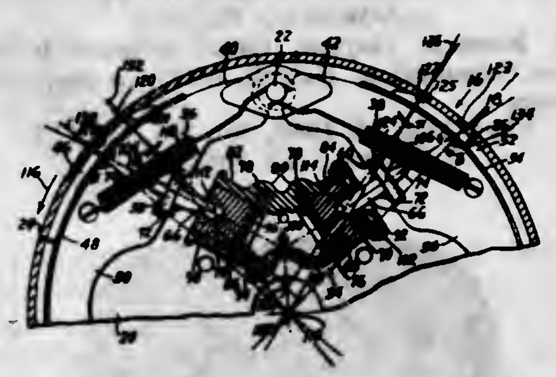
Robert P. Fox, St. Paul, Minn., assignor to American Hoist & Derrick Company, St. Paul, Minn., a corporation of Delaware
Filed Dec. 28, 1961, Ser. No. 162,671
2 Claims. (Cl. 188—77)



1. The combination with a rotatable brake drum and a continuous brake band substantially encircling said drum, said brake band having first and second ends, of:
- a brake actuating mechanism including a cam shaft having integral end portions pivotally mounted on a first axis independent of and adjacent said drum, said axis being fixed with respect to said drum,
- said first and second ends of said brake band being rotatably mounted on said cam shaft about a common second axis parallel to and spaced from said first axis,
- a lever integral with said cam shaft and extending outwardly from said first axis, and spring means for exerting force on one end of said lever thereby to rotate said cam shaft to position to tend to simultaneously clamp both ends of said brake band down onto said brake drum said cam shaft being the sole means for restraining the band from rotating with the drum when said band and drum are engaged.

3,184,007
WHEEL CYLINDER MEANS WITH FEEDBACK

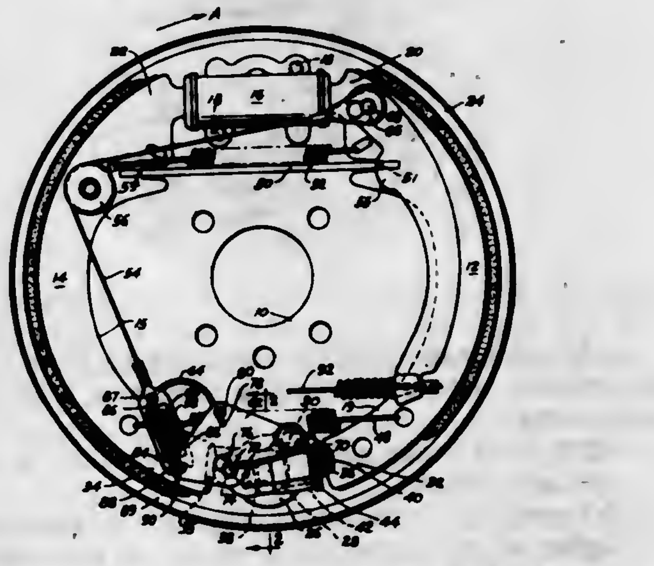
Anton F. Erickson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 25, 1962, Ser. No. 204,775
3 Claims. (Cl. 188—78)



1. A brake shoe actuating mechanism for a servo brake comprising a brake shoe and a rotatable brake drum engageable by said brake shoe, said actuating mechanism comprising a wheel cylinder having a piston movable therein along an axis, a thrust link movable by said piston and having an output end engaging said brake shoe and actuating thereon at an effective point in axial alignment with the piston axis until said shoe engages said drum to be moved in servo action thereby, said thrust link output end then pivoting about said piston in the direction of rotation of said drum and pivoting on said brake shoe to move the effective point of engagement in the direction opposite to the direction of rotation of said brake drum.

3,184,008
AUTOMATIC ADJUSTER FOR NON-SERVO BRAKE

John L. Winge and Edward K. Dombeck, South Bend, Ind., assignors to The Bendix Corporation, South Bend, Ind., a corporation of Delaware
Filed May 15, 1963, Ser. No. 280,659
10 Claims. (Cl. 188—79.5)



1. A drum brake comprising: a support member, a pair of brake shoe members disposed in end-to-end re-

lationship on said support member, an anchor member fixed to said support member and disposed between a pair of adjacent ends of said brake shoe members, adjustable means carried by said anchor member and operatively connected to one of said adjacent shoe ends, said adjustable means comprising a rotatable element, a lever pivotally mounted on one of said members and having a portion engaging said rotatable element for rotating the same, force transmitting means operatively connected to said lever for rotating said lever, a rigid member extending between and operatively connected to each of said brake shoe members, resilient means urging said brake shoe members into anchoring engagement with said rigid member during brake release position, and actuating means disposed between the other pair of adjacent brake shoe ends.

3,184,009
TORQUE TRANSMITTING AND/OR ENERGY ABSORBING DEVICE

Earl W. Reinsch, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 16, 1962, Ser. No. 217,425
2 Claims. (Cl. 188—251)

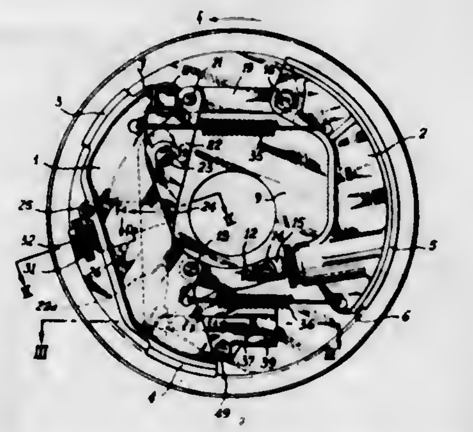
[redacted]

1. A brake for use in an automotive vehicle and the like, comprising in combination; a sintered ferrous brake lining and a braking surface cooperating with said lining, said braking surface consisting of nodular iron.

3,184,010
LEVER ACTUATED BRAKE

Louis Charles Brisson, Vineuil Saint-Firmin, France (Jagny sous Bois, par Mareil-en-France, Seine et Oise, France)

Filed Mar. 18, 1963, Ser. No. 265,907
Claims priority, application France, Mar. 23, 1962, 891,968
6 Claims. (Cl. 188—78)



1. In combination with a circular brake drum mounted for rotation with a wheel of a vehicle, a brake system comprising:

(*a*) a fixed brake plate rigidly connected to an axle of said vehicle;

(*b*) operating lever means pivotally mounted on said plate at an intermediate point on said lever, said lever means having a length substantially equal to the diameter of said brake drum;

(*c*) **brake actuating means mounted on said plate and bearing against one end of said lever means to cause the latter to pivot under the action of a braking pressure applied to said actuating means;**

(*d*) **primary brake shoe means having a braking surface adjacent to, and concentric with, said brake drum;**

(*e*) **secondary brake shoe means having a braking surface adjacent to, and concentric with, said brake drum;**

(*f*) **first link means pivotally connecting said primary brake shoe to the leading end of said secondary brake shoe, said leading one end being the end of said brake shoe first encountered by a point on said brake drum when said vehicle is traveling forward;**

(*g*) **second link means pivotally connecting the other end of said lever to the other end of said secondary shoe; and**

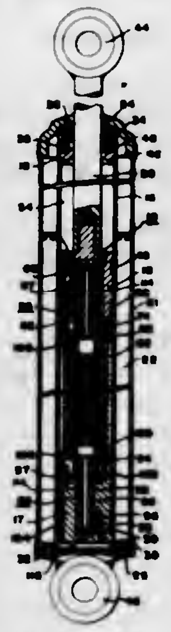
(*h*) thrust means pivotally connected between a point on said primary shoe and a point on said lever, said latter point being between said one end thereof and the point where said lever is mounted on said plate

(*i*) whereby, when said lever is pivoted by said actuating means, it urges both brake shoes against said drum and the rotational movement induced in said primary shoe by contact with the rotating drum is translated by said first link means into a force further urging said secondary shoe against said drum.

3,184,011
LOAD SENSITIVE SHOCK ABSORBER

Donald E. Pollock, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 3, 1963, Ser. No. 292,683
9 Claims. (Cl. 188—88)

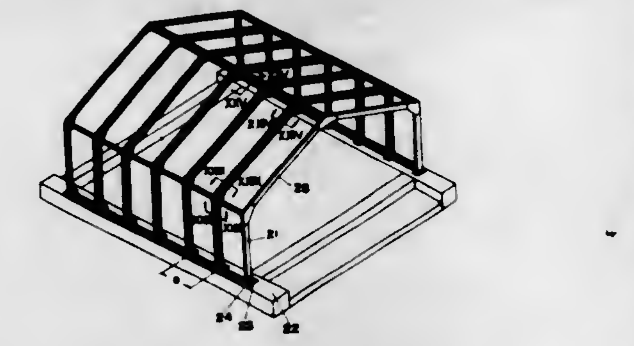


5. In a direct-acting shock absorber, the combination of, means including cylinder means and a reciprocable piston means slidably mounted within said cylinder means for forming first and second fluid chambers, said piston means including first valve means controlling fluid flow thereacross in opposite directions of flow on opposite reciprocal movement of said piston means within said cylinder means, actuator means within one of said fluid chambers for reciprocating said piston means, fluid reservoir means receiving fluid displaced from said fluid chambers by said actuator means and from which fluid is returned to said fluid chambers, second valve means providing for restricted flow of fluid from one of said fluid chambers to said reservoir and substantially unrestricted return flow thereto, each of said first and second valve means including a movable element having a first opening therein and a fixed element having a second opening therein, means for resiliently biasing said movable elements relative to said fixed elements for reducing fluid flow restriction across said first and second openings therein, said cylinder means and actuator means having a variable static length corresponding to the weight of a sprung mass associated with the shock absorber that varies in accordance with changes in the weight of the sprung mass, means for resiliently biasing said movable elements in an opposite direction for increasing fluid flow restriction between said first and second openings responding to changes in the static length of said cylinder means and actuator means to optimize the damping factor of the shock absorber by varying the damping coefficient thereof in accordance with changes in the weight of the sprung mass, and means including said movable and fixed elements of said first and second valve means for stabilizing said movable elements in a predetermined location corresponding to a particular static length during oscillations of the sprung mass produced by normal road shock conditions to thereby maintain a shock absorber damping coefficient corresponding to the weight of the suspended mass that will produce an optimum shock absorber damping factor.

3,184,012
PREFABRICATED HOUSE STRUCTURES

Shohei Fujishima and Tokusaburo Ishimoto, Kita-ku, Osaka, Japan, assignors to Sekisui Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed Mar. 8, 1961, Ser. No. 94,228
Claims priority, application Japan, Apr. 17, 1960, 35/21,875; Sept. 14, 1960, 35/46,993
1 Claim. (Cl. 189—1)

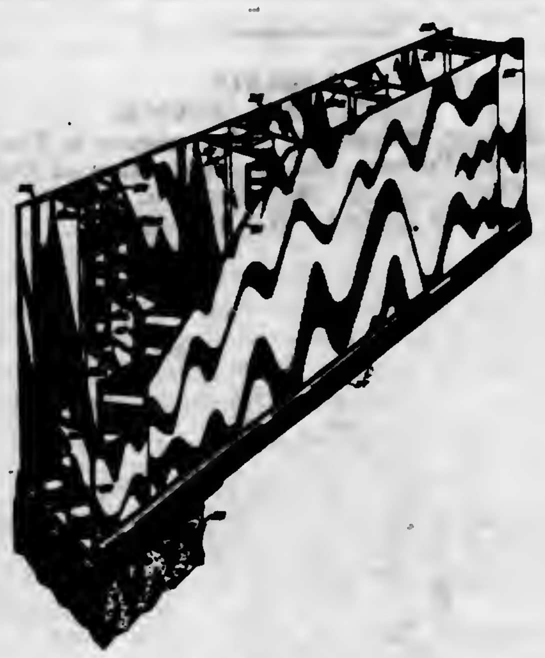


A prefabricated house structure having side walls and a gable roof, said structure comprising a foundation, two rows of units facing each other erected on top of said foundation, each of said units being of uniform width, and being formed of a vertical wall component having a lower and an upper end and an inwardly and upwardly directed roof component having a lower and an upper end, said wall and roof components being rectangular frames formed from elongated structural members, said side walls being formed of two rows of said spaced-apart wall components, each wall component laterally abutting, and being secured to, at least one other wall component, and said gable roof being formed of two rows of said roof components upwardly inclining from the upper ends of said side walls and spanning the space between said side walls, said upper ends of said roof components abutting each other and being secured together approximately midway between said side walls, base plates fixed to said foundation and provided with upright members, said upright members being interposed between said abutting wall components at their lower ends, means to secure said wall components to said upright members, gusset plates fixedly attached to said upper ends of said wall components and said lower ends of said adjoining roof components, ridge plates interposed between said abutting roof components, and means to secure to said upper ends of said abutting roof components to said ridge plates.

3,184,013
INTERLOCKED PANEL STRUCTURE

John Pavlecka, 8797 Capital Ave., Oak Park 37, Mich.

Filed Nov. 4, 1952, Ser. No. 318,692
32 Claims. (Cl. 189—34)

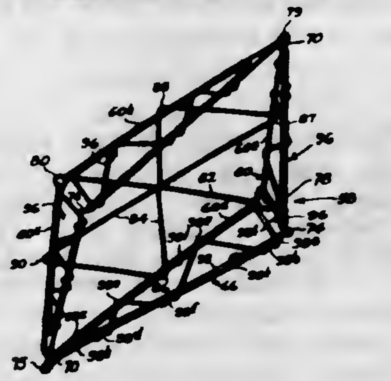


1. In a structure, a number of structural members in lateral association with one another, other structural members extending in lateral association with one another at a distance from said first members, a linear key interjacent said distanced members, said key having a central web and having reentrant lengthwise mortise-and-tenon formations on both sides thereof, each of said number of structural members having a wall means extending thereon and reaching to one of said key sides, and each of said other structural members having a wall means extending thereon and reaching to the other one of said key sides, said wall means at each key side bearing reentrant mortise-and-enon formations jointly complemental to one another and to said key side formations and being in a slidable interfit with said formations and said key web being in contiguity of said sides thereof with said wall means reaching thereto for relative immobility therewith.

3,184,014
BUILDING CONSTRUCTION

Wesley W. Nightingale, Rte. 2, Box 163, Creswell, Oreg.

Filed Feb. 9, 1962, Ser. No. 172,258
8 Claims. (Cl. 189—34)



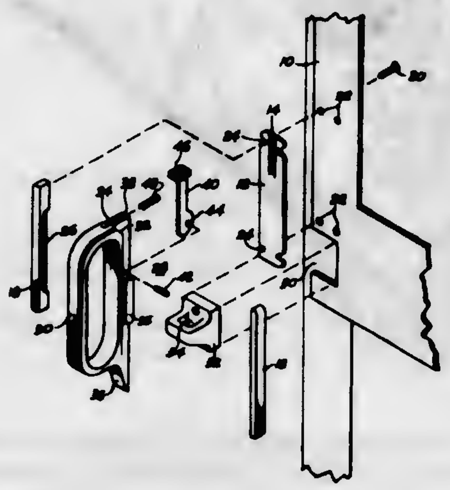
1. A building component comprising facing structure of quadrilateral outline defining an outer face for the component bounded by four margins, and truss structure opposite said outer face secured to said facing structure and making the component rigid, said truss structure including a border portion of quadrilateral outline in matching relationship with said outer face, means fixing corresponding corners of said border portion and said facing structure at one set of oppositely disposed corners of said border portion, said border portion between its points of joinder with said facing structure being yield-

able away from the facing structure in a direction laterally of the plane of the face defined thereby, and detachable spreader elements interposed between the facing structure and yieldable part of said border portion holding the latter spread laterally from the facing structure.

3,184,015

FASTENING DEVICE

Paul T. Kellogg, Baltimore, Md., assignor to The Bendix Corporation, Towson, Md., a corporation of Delaware
Filed Aug. 30, 1961, Ser. No. 134,997
5 Claims. (Cl. 189—36)



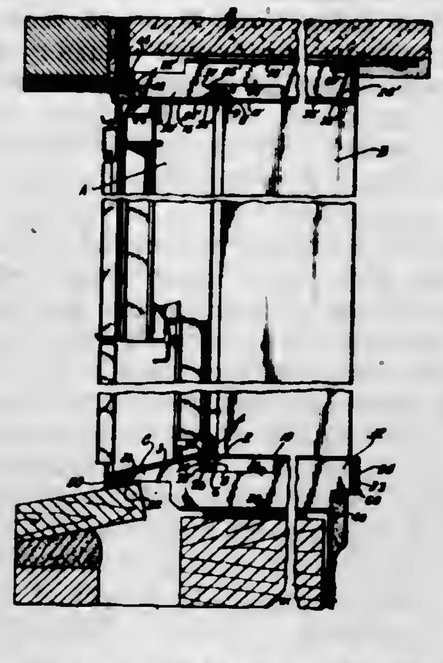
1. A fastening device for removably holding a first member in a desired spaced relationship with a second member comprising a locking block adapted to be fastened to one of said members including means defining a passageway, a mounting plate, and a pair of grooved mating retainer blocks for attachment to the other of said members, a handle assembly including a slide section having outwardly extending projections for sliding in the grooves of said retainer blocks, a wedge portion forming an extension of said slide section adapted to be wedged tightly against one internal surface of said passageway when said handle assembly is moved to its latched position, a slot in said handle assembly and a cam-lever member pivotally fastened in said slot having a cam surface adapted to engage said mounting plate and a thumb engaging surface extending outside of said slot, resilient means acting against said cam-lever member to urge said cam surface against said mounting plate, and a hand receiving section positioned to facilitate movement of said thumb engaging surface to release said cam surface from engagement with said mounting plate and subsequent movement of said handle assembly along said grooves.

3,184,016

ANCHORS FOR METAL WINDOWS

Arthur Smith, Amityville, and Peter Lacoppola and John S. Dougherty, Plainview, N.Y., assignors to General Bronze Corporation, Garden City, L.I., N.Y.
Filed Oct. 31, 1962, Ser. No. 234,440
6 Claims. (Cl. 189—75)

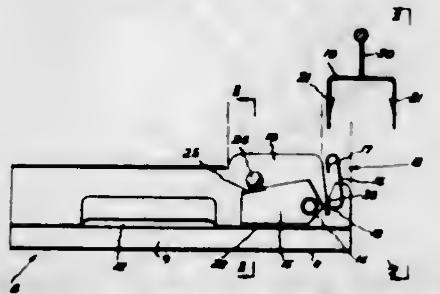
1. The structure comprising in combination a window sash frame and a metal casing operatively assembled therewith, said frame having rearwardly extending opposed spaced flanges defining a rear channel which presents a rearwardly exposed opening between the opposed edges of said flanges, and said casing including a front flange extending from the forward edge thereof and an angle flange extending from the rear edge thereof to define a rear casing channel, said rearwardly exposed opening in the rear frame channel being less in transverse dimension than the width of said front flange of the casing and less in transverse dimension that the transverse dimension at the base of said rear frame channel, said front flange of the casing being operatively engaged in said rear channel of the frame by and between said rearwardly extending flanges of the frame, and anchor means having front end portions in operative interlocking engagement with portions of the frame and a rear end portion operatively engaged in the rear channel of the casing, thereby to interlock said frame and said casing as a unit.



3,184,017

CEILING PANEL SUSPENSION MEANS

Neville Whalley Gravenor, Epping, near Sydney, New South Wales, Australia, assignor to Ashman & Hart Pty. Limited, Artarmon, near Sydney, New South Wales, Australia
Filed Sept. 12, 1963, Ser. No. 308,577
Claims priority, application Australia, Sept. 24, 1962, 22,449/62
8 Claims. (Cl. 189—88)



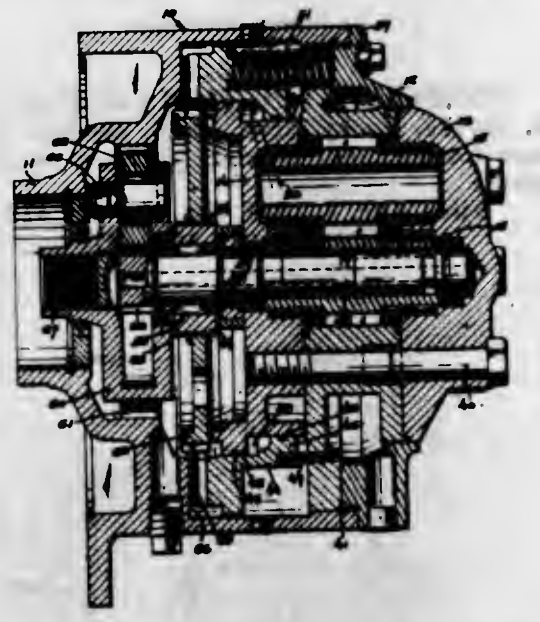
1. Suspension means for suspending a ceiling panel from an overhead support comprising a mounting element on the panel; a hook comprising a prong pivotally mounted on said element; an abutment means limiting pivotal movement of the hook in one direction and thereby defining an operative position for the hook wherein the prong of the hook engages over said support and the pivot axis of said hook is so placed with regard to the said prong that, when the hook is in its operative position, an upward force on said prong urges the hook into contact with said abutment while the said prong of the hook is so shaped that the hook may be swung away from said abutment to bring the prong clear of said support should the panel be raised.

3,184,018

REVERSIBLE DRIVE ASSEMBLY INCLUDING FLUID-POWERED PRIME MOVER

Sommerville Grant Christison, North Surrey, British Columbia, Canada, assignor, by mesne assignments, to Gearmatic Co. Ltd., North Surrey, British Columbia, Canada, a corporation of British Columbia
Filed Dec. 14, 1962, Ser. No. 244,759
10 Claims. (Cl. 192—3)

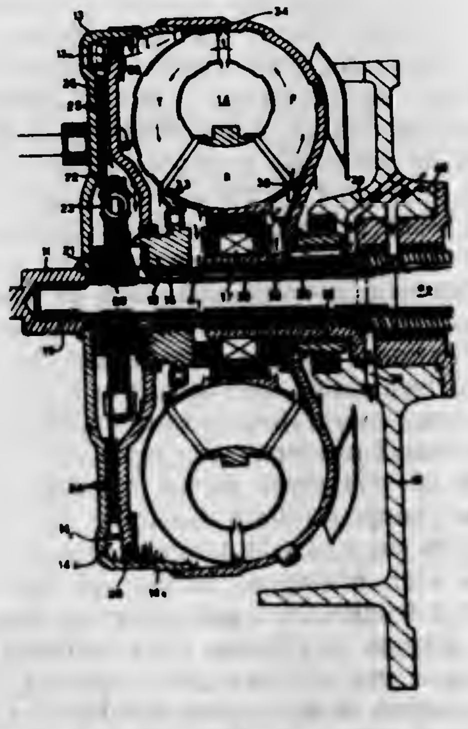
1. In a transmission, a reversible fluid motor, a pressure source of fluid supply, a control valve for either isolating the motor from said pressure source or supplying pressure fluid therefrom to either side of the fluid motor, selectively so as to drive the same in either a forward or reverse direction, selectively, a driving shaft powered by said motor, a spring-set brake for the shaft, and means acting to release the brake automatically when power is applied from the fluid motor to drive the driving shaft, the control valve being characterized in that the same permits fluid to circulate freely through the motor when the motor is isolated from the pressure source so that the brake is the sole agency for bringing the driving shaft to rest and thus permits the motor to be smoothly accelerated and decelerated in all speeds from zero to maximum when being reversed with the driving shaft subjected to feed back loads tending to create an overrunning condition.



3,184,019

HYDRAULIC COUPLING HAVING COMMUNICATING CLUTCH AND PRESSURE CHAMBERS

Raymond Le Brise, Saint-Denis, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a corporation of France
Filed Sept. 29, 1960, Ser. No. 59,432
Claims priority, application France, Oct. 5, 1959, 806,742, Patent 1,246,261; Nov. 30, 1959, 811,652
8 Claims. (Cl. 192—3.2)

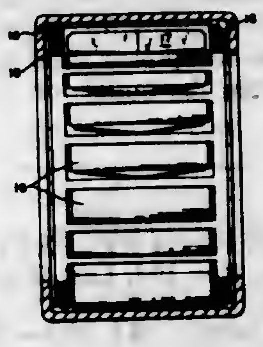


1. In a power transmission comprising a drive shaft, a hydraulic coupling having an impeller wheel coupled with said drive shaft and a turbine wheel hydraulically driven by said impeller wheel, a clutch having an axially fixed cylinder, an axially movable piston, said cylinder and piston including plate portions, and a driven friction disc between said plate portions to be engaged thereby, said piston defining within said cylinder a clutch chamber containing said friction disc, and a pressure chamber separated from said clutch chamber by said piston, a fluid control circuit comprising said chambers, a small opening through one of said plate portions for interconnecting said chambers, fluid pressure means feeding said pressure chamber for circulating fluid from the pressure chamber through said small opening to the clutch chamber, a return conduit means connected with said clutch chamber, and a valve means in said return conduit means for controlling the fluid flow in the circuit and thereby the pressure drop through said small opening in order to selectively engage and disengage said clutch.

3,184,020

OVERRUNNING CLUTCH AND CAGE THEREFOR

Carl F. Benson, Torrington, and John H. Cowles, Forestville, Conn., assignors to The Torrington Company, Torrington, Conn.
Filed Mar. 1, 1962, Ser. No. 176,681
6 Claims. (Cl. 192—45)



1. An overrunning roller clutch comprising a thin shell outer cylindrical clutch member having a plurality of inwardly sloped wedge shaped cams, a one piece roller cage having end rings, peripheral teeth on said rings engaging the outer clutch member between said cams, spaced longitudinal bars on the cage, a roller retaining step integrally formed on the inner rear edge of each bar, a resilient roller support means on the front face of each bar and a bearing roller in the space between each two adjacent bars.

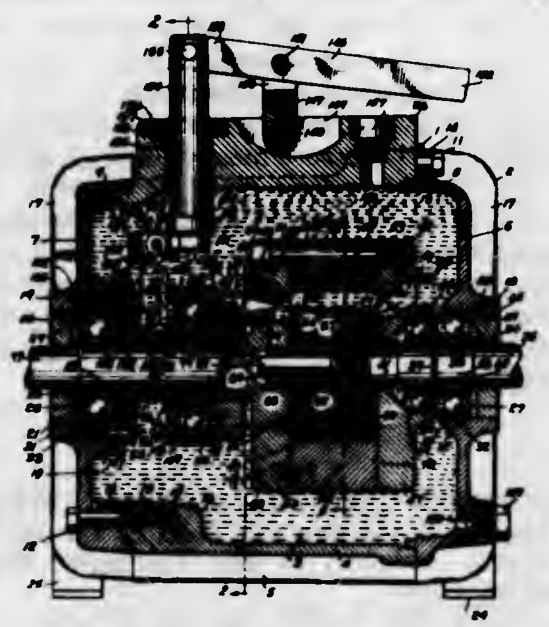
3,184,021

VARIABLE SPEED DEVICE

Benjamin D. Alleman, 2213 W. Broadway, Enid, Okla.
Filed Sept. 14, 1961, Ser. No. 138,093
3 Claims. (Cl. 192—58)

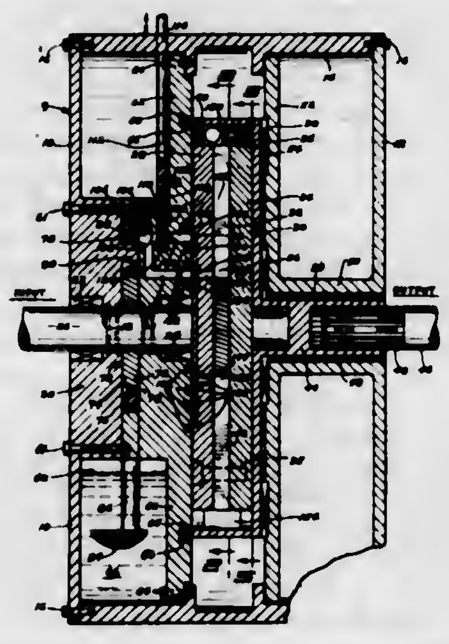
1. A variable speed device including a fixed casing for containing hydraulic fluid, a rotary casing, means for rotatably mounting the rotary casing in the fixed casing for bodily movement through the hydraulic fluid and having an inlet and an outlet on opposite sides thereof for flow of hydraulic fluid into and from the rotary casing, a driving element in the rotary casing, a power input shaft rotatably mounted in the fixed casing and extending into the rotary casing to actuate the driving element, a driven element in the rotary casing and actuated by the driving element for moving the hydraulic fluid from the inlet to the outlet, a conical valve for valving flow of fluid from the outlet into the fixed casing, a power output shaft extending into the fixed casing and having direct connection with the rotary casing on the side thereof having the outlet, a carrier having a collar slidably keyed on the power output shaft for bodily carrying the conical valve for rotation with the rotary casing, a ring member having rotatable support on the collar of the carrier and provided

with trunnions on opposite diametric sides thereof, bell crank levers connected with the trunnions, means for pivotally supporting the bell crank levers in the fixed casing on opposite sides of the power output shaft, a yoke connecting the bell cranks, a rod reciprocable in the fixed casing and having connection with the yoke, and means externally of the fixed casing for reciprocating the rod to shift the carrier on the power output shaft for moving the valve to and from the outlet for controlling speed of the rotary casing.



3,184,022
FLUID CLUTCH WITH RETRACTABLE VANES

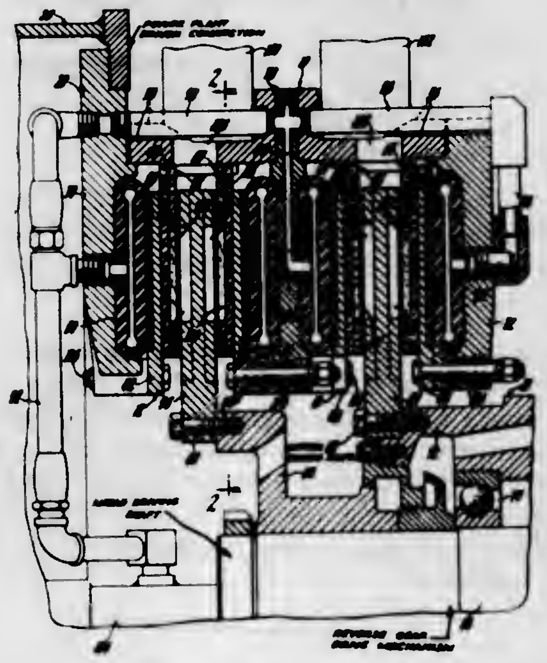
Howard G. Olson, Box 204, East Glacier Park, Mont.
Filed May 14, 1962, Ser. No. 194,564
8 Claims. (Cl. 192—58)



4. An hydraulic coupling comprising in combination; a rotor, said rotor having a plurality of circumferentially spaced apart radially movable vanes disposed on the periphery thereof, said vanes being normally biased to a retracted position within said rotor and movable to a radially extended position upon rotational speed of said rotor above a predetermined value, a casing surrounding said rotor, said casing having an endwall adjacent one face of said rotor and a sidewall spaced radially from the outward edge of said rotor to define a fluid reaction chamber intermediate the outward edge of said rotor and the sidewall of said casing, a wall member positioned adjacent the other face of said rotor, divider means affixed to said casing and projecting radially inwardly from said sidewall and having an inward edge positioned in sealing relationship with the peripheral surface of said rotor, ramp means rigidly connected to said casing adjacent said divider for directing each of said vanes radially inward to allow said vanes to slide over said divider when said rotor is operative above a predetermined speed, said vanes being adapted to impart motion to a fluid within said chamber.

3,184,023
COMPOUND FRICTION COUPLING

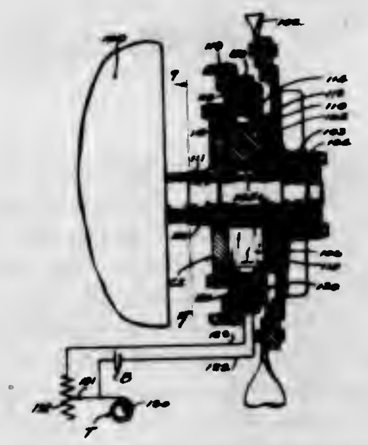
Arne J. Hovde, Rocky River, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 4, 1961, Ser. No. 129,428
5 Claims. (Cl. 192—87)



1. A torque transmitting mechanism capable of accommodating limited misalignment and of providing prolonged periods of variable slip operation between a continuously driven input member and a load driving output shaft, said mechanism comprising an input driven cylindrical housing having a plurality of air circulating ports extending therethrough, said output shaft extending within and spacedly embraced by said housing in substantially coaxial relation and rotatably mounted to permit limited angular and lateral misalignment therebetween, a driven output plate fixedly secured to said output shaft within said housing, a pair of backing plates in spaced flanking relation to the driven plate, an annular driving plate of frictional material secured to each of said backing plates and frictionally engageable with said driven plate, said driving plates being slidably splined internally of the housing, inflatable actuating means interposed between said housing and each of said backing plates and selectively inflatable to regulate and deflatable to release frictional driving engagement between said driving and driven plates, said inflatable actuating means and driving plates cooperating to accommodate the limited angular and lateral misalignments permitted between the rotative axes of said input driven housing and output shaft and to damp resultant torsional load variations acting therebetween, and said driven output plate and said driving plate each having a plurality of spiral grooves opening on the frictionally engageable opposing surfaces thereof, the grooves of adjacent plates defining intersecting fan passages, and said passages cooperating with said ports upon rotation of said plates and housing to induce cooling air flow over and outwardly therethrough over and between said frictionally engageable surfaces.

3,184,024
CENTRIFUGAL CLUTCH HAVING AN OUTPUT CONTROLLED SUPPLEMENTARY CLUTCHING FORCE

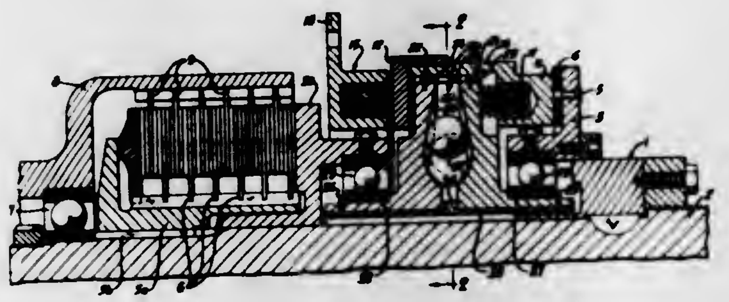
George R. Aschauer, Racine, Wis., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed Nov. 6, 1963, Ser. No. 321,855
7 Claims. (Cl. 192—103)



1. A centrifugal friction clutch comprising, centrifugally actuated friction-type clutching means capable of slipping action when engaged, auxiliary clutching force exerting means operatively connected with said centrifugally actuated clutching means for causing additional clutching force, and triggering means connected with said auxiliary means and being capable of adding energy to the auxiliary clutching force exerting means so as to cause the latter to further engage the centrifugally actuated friction type clutching means, said triggering means being associated with and capable of sensing the output of said clutch for actuation and control thereby.

3,184,025
CENTRIFUGALLY OPERATED ACTUATING MECHANISM

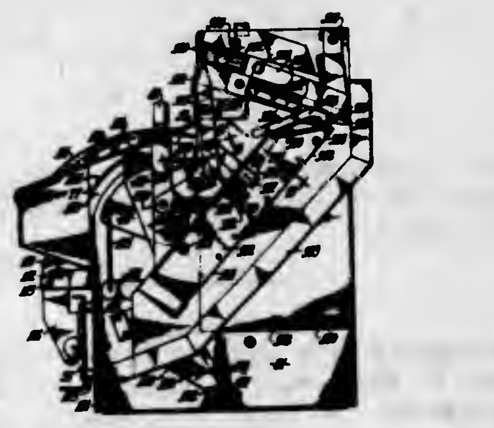
George R. Aschauer, Racine, Wis., assignor to Twin Disc Clutch Company, Racine, Wis., a corporation of Wisconsin
Filed Aug. 30, 1963, Ser. No. 305,730
4 Claims. (Cl. 192—105)



1. An actuating mechanism comprising a rotatable drive member, an axially slidable, cylindrical, sleeve-like pressure member selectively engageable with said drive member; engaging means for selectively engaging said pressure member with said drive member for infinitely varying the rotative speed of said pressure member; an actuatable member; and a centrifugally operated actuating means mounted between and connecting said pressure member and said actuatable member for causing actuation of said actuatable member with a force which is dependent on the rotative speed of said pressure member as determined by said engaging means; said actuating means comprising, a pair of action parts located within and connected to said cylindrical pressure member for rotation thereby, said parts being splined to said pressure member for rotation therewith and being relatively axially separable to cause actuation of said actuatable member, and means between said action parts and radially shiftable by centrifugal force due to rotation of said pressure member to cause said axial separation of said action parts; and means for rotatably supporting said action parts for rotation independently of said actuatable member and said drive member.

3,184,026
VENDING MACHINE

Ernest S. Hoobler, Torrance, Calif., assignor to Mercury International Insurance Underwriters, Los Angeles, Calif., a corporation of California
Filed Apr. 1, 1963, Ser. No. 269,661
3 Claims. (Cl. 194—57)



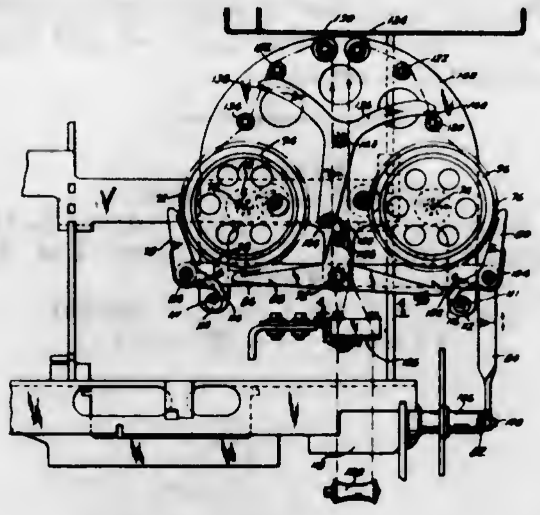
1. In a vending machine, a coin control mechanism comprising:
a plurality of elongated parallel plates in abutment to form a coin guideway having open upper and lower ends;
one of said plates carrying a coextensive flange traversing the width of said guideway and normally sealing the lower side of said guideway along its length;
the outermost of said plurality of plates having a row of aligned uniformly spaced holes along the length of said guideway;
a pin member adapted to be inserted through a selected one of said holes to block said guideway at a selected point along its length;
a coin deposit chute communicating with the lower open end of said guideway;
a first trip-lever connected to one of said outermost plates for selectively pivoting said plate to remove said pin member from said guideway and thereby release coins within said guideway to said deposit chute;
a coin return chute extending below said coin guideway; and
a second trip-lever connected to said plate carrying said flange and adapted to pivot said plate to open the lower side of said guideway and thereby drop all coins within said guideway into said return chute.

3,184,027
FEED MECHANISM FOR INKED RIBBON

Bernard Howard, Upper Saddle River, N.J., assignor to Mite Corporation, New Haven, Conn., a corporation of Delaware
Filed June 20, 1962, Ser. No. 203,768
18 Claims. (Cl. 197—160)

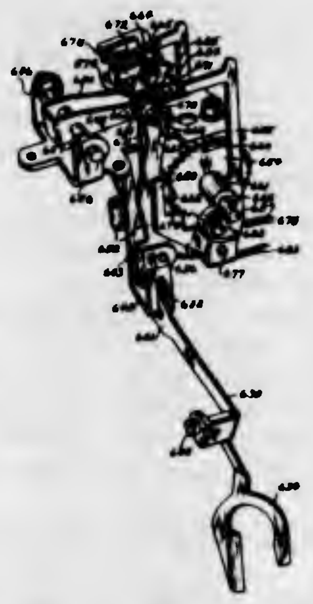
1. Feed mechanism for an ink ribbon or the like, said mechanism comprising a first spool holder with a ratchet wheel, a second spool holder with an oppositely facing ratchet wheel, a forward feed pawl cooperating with one ratchet wheel, a reverse feed pawl cooperating with the other ratchet wheel, linkage to reciprocate the feed pawls, means to disengage each feed pawl from its ratchet wheel near the end of its feed stroke, a check dog for one ratchet

wheel, a check dog for the other ratchet wheel, and a ribbon reversing means so connected to said check dogs but not to said feed pawls as to make one check dog operative and the other inoperative while both feed pawls remain operative.



3,184,028
RIBBON FEED AND REVERSE MECHANISM

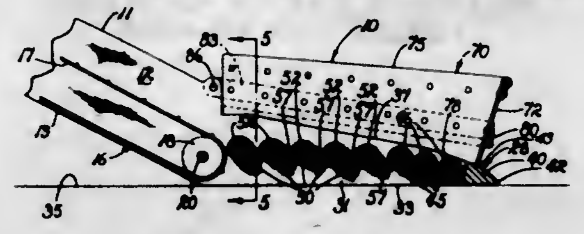
Edward F. Kleinschmidt, Wilmette, Ill., and Joseph A. Mankawich, Las Vegas, Nev., assignors to SCM Corporation, a corporation of New York
Original application Nov. 30, 1954, Ser. No. 472,076, now Patent No. 3,014,095, dated Dec. 19, 1961. Divided and this application June 12, 1961, Ser. No. 116,493
11 Claims. (Cl. 197—161)



1. An ink ribbon feeding and reversing assembly comprising: a support; a pair of rotatable ribbon spools; a spool drive hub and ratchet wheel for and connected to each spool, all rotatably mounted on a common axis; linkage means reciprocably mounted between said spool drive hubs, including a pawl for each ratchet wheel and a common reciprocable carrying means mounting said pawls, for alternatively drivingly engaging one or the other of said ratchet wheels to rotate the corresponding spool; means fastened to said reciprocable pawl carrying means adapted to engage a cyclically operated member to reciprocate said pawl carrying means and rotate one of said spools to feed a ribbon; and means actuated by said reciprocable linkage means and automatically responsive to the other of said spools being completely unwound of a ribbon to cause said reciprocable linkage means to engage the ratchet wheel of said other spool to feed a ribbon in the opposite direction.

3,184,029
MATERIAL HANDLING APPARATUS

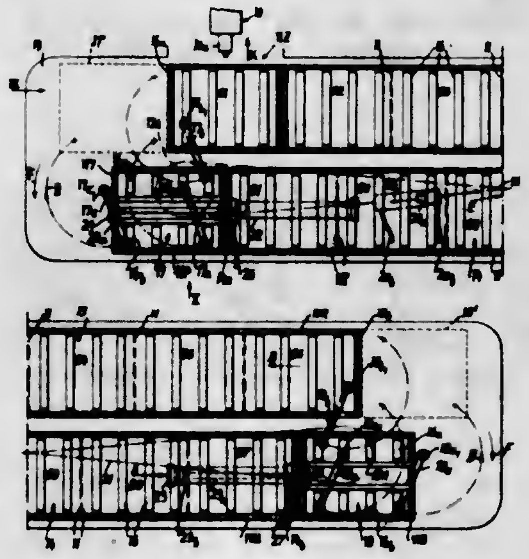
Stanley Loosli, Ashton, Idaho, assignor of one-half each to Herbert A. Huebner, Los Angeles, Calif., and Richard M. Worrel, Fresno, Calif.
Filed Feb. 12, 1962, Ser. No. 172,696
7 Claims. (Cl. 198—9)



1. In a material handling apparatus having an elongated power driven inclined conveyor mounted for earth traversing movement and having a lower end disposed in the direction of such movement, the combination of a pair of side plates mounted on the forward end of the conveyor and forwardly extended therefrom for pivotal elevational movement, a pick-up blade disposed in a predetermined inclined plane interconnecting the forwardly extended ends of the side plates, a plurality of material conveying rollers mounted between the plates in substantially parallel relation to the blade and between the blade and the conveyor, said rollers having upper peripheries disposed in a substantially common inclined plane continuously extended from said plane of the blade to the conveyor, and a drive linkage connected to the conveyor and to the rollers rotating the rollers with the upper peripheries thereof traveled toward the conveyor and with successive rollers having increased peripheral velocities in the direction of the conveyor.

3,184,030
APPARATUS FOR INTERMITTENTLY MOVING A SERIES OF ITEMS IN AN ENDLESS PATH

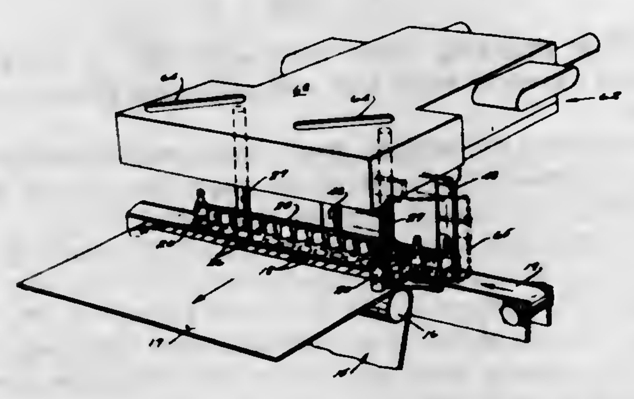
Herbert Ludwig, Desmastrasse 112, Uesen, near Bremen, Germany
Filed May 4, 1962, Ser. No. 192,397
Claims priority, application Germany, May 8, 1961, D 36,014
9 Claims. (Cl. 198—24)



1. In an apparatus for intermittently moving a plurality of items in an endless path, in combination, a first and a second elongated track extending substantially parallel to each other and having each a first and second end, each of said tracks having item supporting rollers having axes of rotation substantially normal to the longitudinal direction of said tracks; a first transfer device movable between the first ends of and into alignment with said first and second tracks; a second transfer device movable between the second ends of and into alignment with said first and second tracks, each of said transfer devices having item supporting rollers having axes extending in the aligned positions of said transfer devices substantially parallel to the rollers of said tracks, so that an item located on one of said transfer devices may be pushed along the rollers thereof onto the rollers of the respective track.

3,184,031
LEHR LOADER

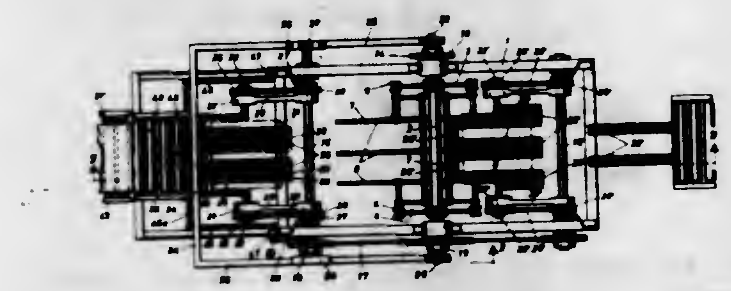
Glenn H. Dunlap, Lancaster, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Mar. 28, 1963, Ser. No. 268,792
9 Claims. (Cl. 198—24)



1. In combination, a lehr conveyor, a cross-conveyor extending horizontally across an end of the lehr conveyor, a dead plate lying between said conveyors, means moving the cross-conveyor to present rows of upstanding articles thereon for group transfer to the lehr conveyor, article transfer means including an article engaging device, and means for reciprocating the device along a path extending diagonally only across both the cross-conveyor path and dead plate thereby to correspondingly move each article during its transfer to the lehr conveyor and means for imparting vertical movement to said device in timed relation to its movement along said path.

3,184,032
ARRANGEMENT IN PATERNOSTER ELEVATORS

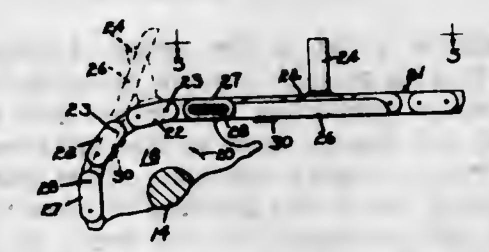
John Petter Ingemar Jonsson, Gothenburg, Sweden, assignor to Lecab Rullbanor Aktiebolag, Harryda, Sweden
Filed June 26, 1962, Ser. No. 205,439
2 Claims. (Cl. 198—27)



1. A vertical conveyor comprising an upright frame, an endless conveyor extending longitudinally of said frame, driven means rotatably supported by said frame and connected to said conveyor for driving the same, at least one goods carrying member having a plurality of spaced apart tines extending laterally of said conveyor, at least one rotatably mounted shaft connected to said frame, means for rotating said shaft in coordination with said driven means, a plurality of spaced apart arms fixedly connected at one end to and extending radially from said shaft, a serpentine goods transferring member having a plurality of extended interconnected loops being positioned for having the tines of said goods carrying member pass therebetween during the movement of said conveyor and being rotatably mounted on the other end of said arms, means for maintaining said goods transferring member horizontal during its movement around said shaft, a U-shaped yoke pivotally connected to said upright frame and has said shaft rotatably mounted thereon, roller means extending laterally of and connected to said U-shaped yoke and positioned for extending between some of said loops of said goods transferring member when the same moves by said roller means and means for oscillating said U-shaped yoke to vary the angle thereof.

3,184,033
CONVEYOR AND ARTICLE DISCHARGE MECHANISM

Reinhold A. Pearson, Spokane, Wash., assignor to R. A. Pearson Co., Spokane, Wash.
Filed Sept. 26, 1963, Ser. No. 311,776
4 Claims. (Cl. 198—27)



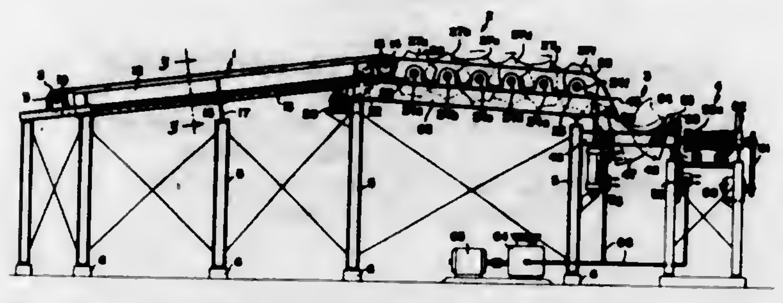
1. A conveyor comprising:
a rigid supporting framework;
first and second transversely spaced endless roller chains entrained about longitudinally spaced pairs of terminal sprockets rotatably mounted on said framework to thereby form respective upper and lower flights of said chains, said chains being each constructed of pivotally interconnected chain elements joining successive pivot pins, the respective sprockets carrying said chains being operatively interconnected for conjoint rotation relative to said framework;
a pair of transversely aligned lugs fixed respectively to corresponding first chain elements of each chain and protruding perpendicularly outward therefrom in upright directions along the upper chain flights;
a pair of longitudinal levers pivoted respectively to corresponding second chain elements of said chains about coaxial axes parallel to the chain pivot pins and located forwardly of said first chain elements in the intended direction of motion of said chains, said levers extending respectively alongside said lugs a radial distance relative to their respective axes in excess of the maximum radial distance between said lugs and said axes; and
stop means fixed relative to one chain element of each of said chains in the pivotal paths of movement of said levers about their respective axes adapted to restrict pivotal motion of said levers in a rotational direction opposite to the intended rotational direction of motion of said sprockets and to support said levers at positions along the chain upper flights wherein said levers are below the top edges of said lugs.

3,184,034
LOG DECK AND SEPARATOR

Frank G. Stuller, William H. Gumz, and Eugene J. Anderson, Milwaukee, Wis., assignors to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 11, 1963, Ser. No. 257,623
6 Claims. (Cl. 198—29)

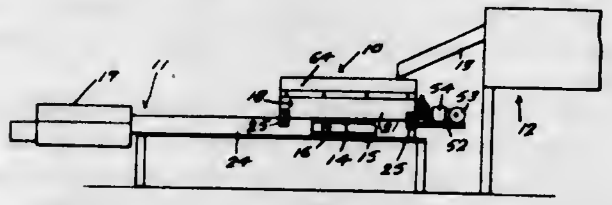
1. Log handling apparatus for receiving a group of logs and delivering the same one at a time as required, comprising a platform for receiving the group of logs and having power-operated means to move the logs toward

one end of the platform, a power-operated deck disposed to receive the logs from said platform and operable to separate and transfer the logs moving across the deck, a trough disposed to receive each log from said deck, power-operated transfer arms disposed to lift the log from the trough and in an upper position forming a ramp downwardly and away from said trough, a power-operated roll conveyor disposed to receive the log from such ramp and to deliver the log as required, sensing means responsive to



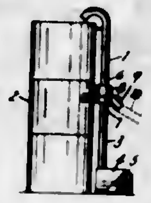
the presence of a log in the trough, blocking means responsive to a log on said conveyor below the ramp, and actuating means connecting said means and power-operated deck and transfer arms so that the presence of a log in the trough suspends operation of the platform and separating deck and so that provided or when there is no log on the roll conveyor below the ramp the arms are moved to lift the log from the trough to transfer the same to said conveyor.

3,184,035
FISH STICK DISTRIBUTING APPARATUS
George D. Wiley, 37 Cherry Lane, R.D. 3,
Doylestown, Pa.
Filed June 19, 1963, Ser. No. 288,986
2 Claims. (Cl. 198—33)



1. A fish stick distributing apparatus comprising a frame having side walls and end walls, said frame having an open top and an open bottom, means adapted to support said frame above an endless conveyor and beneath the discharge end of a chute, a plurality of shafts extending between and through said end walls, means supporting and journaling said shafts in said walls in transversely spaced apart substantially parallel relation to one another for defining long narrow passages therebetween of a width determined solely by the spacing between adjacent shafts, driving means connected to complementary ends of each of said shafts for revolving the shafts simultaneously at uniform speeds and with adjacently disposed shafts rotating in opposite directions to one another, said passages between the shafts being of a width greater than the maximum cross sectional dimensions of fish sticks discharged into the frame onto the shafts from said chute and substantially less than the length of the fish sticks whereby the fish sticks will be oriented into positions lengthwise of the shafts for discharge downwardly through said passages onto said endless conveyor in transversely spaced longitudinal rows with the individual fish sticks disposed longitudinally of the conveyor, the portions of said shafts disposed between said end walls being of non-circular shape in cross section for agitating and separating the fish sticks in contact therewith, said driving means revolving the shafts such that similar elements of adjacent oppositely rotating shafts will assume positions in opposed relation to one another.

3,184,036
FLOW DIVERTING MECHANISM FOR VERTICALLY DISPOSED CONVEYOR TUBES
Theron John Reed, Burr Oak, Mich., assignor, by mesne assignments, to American Planter Co., Burr Oak, Mich., a corporation of Michigan
Filed Apr. 9, 1962, Ser. No. 185,917
5 Claims. (Cl. 198—68)



1. Flow diverting valve mechanism for a vertically disposed conveyor tube with a screw auger therein comprising,

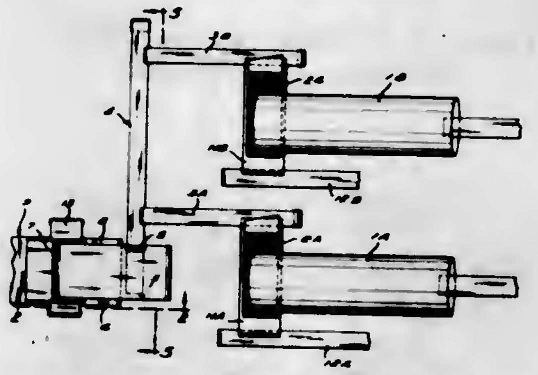
an enlarged cylindrical drum interposed in said tube and concentrically about the auger therein and projecting beyond the sides of said tube,

a diverted flow tube of approximately the same diameter as said conveyor tube obliquely intersecting the side and bottom of said drum and extending laterally to the side of the lower portion of said conveyor tube and opening into said drum and extending downwardly therefrom,

and a damper valve positioned in said flow tube adjacent the upper end thereof and arranged to selectively open and close said flow tube,

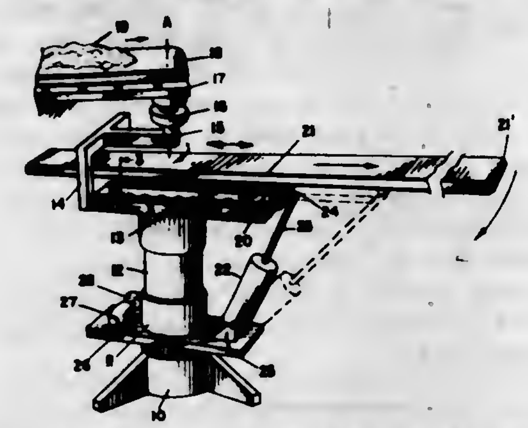
the diameter of said drum being slightly less than twice the diameter of said conveyor tube and the vertical length of said drum being slightly more than twice the diameter of said conveyor tube and equal to at least one pitch length of the auger.

3,184,037
RECIPROCABLE CONVEYOR
Melvin J. Greaves and Alfred W. Babb, Cleveland, and Fred J. R. Dicks, Chardon, Ohio, assignors to Arthur G. McKee & Company, Cleveland, Ohio, a corporation of Delaware
Filed June 12, 1961, Ser. No. 116,424
17 Claims. (Cl. 198—89)



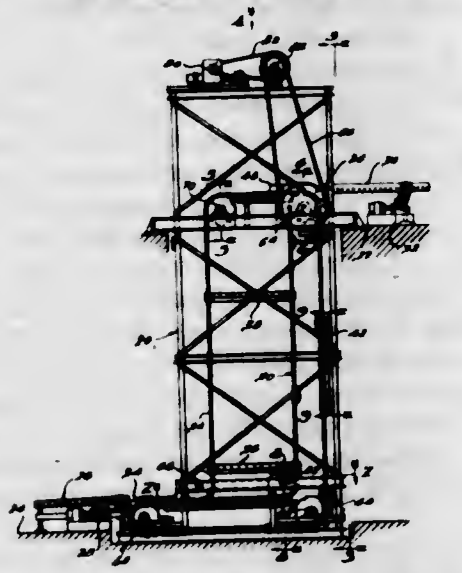
1. Apparatus for distributing loose flowable material comprising a stationary support; a carriage longitudinally reciprocably carried by said support; a roller, adapted to carry a belt, rotatably mounted on said carriage near one end thereof; a roller, adapted to carry a belt, rotatably mounted on the portion of said stationary support adjacent the other end of said carriage; an endless conveyor belt carried by said stationary support and said carriage so that its upper run, which is adapted to carry material, passes over said roller on said stationary support and said roller on said carriage; means for moving said belt so its upper run moves toward said roller on said carriage; an elongated fluid-operated cylinder mounted on said stationary support, said cylinder having projecting from each end thereof a carriage-actuating piston rod; and dash-pot means connecting each end of said piston rod to said carriage.

3,184,038
MATERIAL HANDLING APPARATUS
Joseph Petchuk, 2227 Midvale Ave., Los Angeles, Calif.
Filed May 24, 1963, Ser. No. 282,965
2 Claims. (Cl. 198—97)



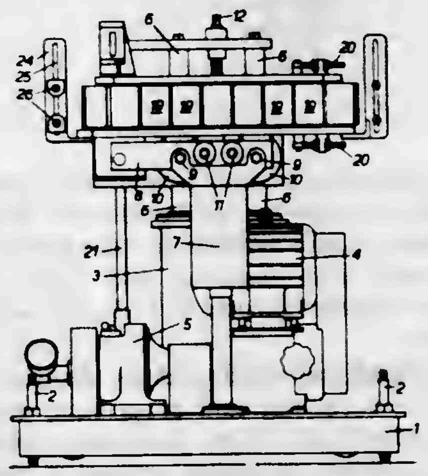
1. A material handling apparatus for depositing material over a given area comprising, in combination: a base support; telescoping column means rotatably supported by and extending upwardly from said base support; a table mounted to the upper end of said telescoping column means; an open frame structure extending upwardly from one edge of said table and including an arm extending over said table in vertical spaced relationship thereto; a thrust bearing supported at the end of said arm in coaxial alignment with the axis of rotation of said column means and table for supporting a material delivery conveyor; and a material depositing conveyor means mounted on said table beneath said material delivery conveyor and including a supporting conveyor mounted on top of said table for movement therealong; and a principal conveyor including an elongated cantilever conveyor portion mounted on top of said supporting conveyor for movement along said supporting conveyor, said conveyor means being movable longitudinally along said table with the rear end thereof passing through said open frame structure and rotatable with said table so that the far end of said cantilevered conveyor portion may be swept over an arc of 360°, thence retracted and swept over an arc of smaller radius, and so forth to deposit said material over said given area.

3,184,039
HEAVY DUTY VERTICAL LIFT CONVEYOR
Adolph Czarnecki, Birmingham, Mich., assignor to Anchor Steel and Conveyor Company, Dearborn, Mich., a corporation of Michigan
Filed Aug. 13, 1962, Ser. No. 216,666
13 Claims. (Cl. 198—154)



1. A conveyor system having a path of movement defined by continuous spaced chain means, platform means connected to said chain means for movement therewith in a load-supporting and carrying position along a portion of the path of movement of said spaced chain means, sprocket means associated with said chain means to drive and guide said platform means along said path of movement, support means associated with said sprocket means to engage portions of said platform means and guide said platform means as said chain means pass over said sprocket means and control means operative between said support means and said chain means to prevent buckling or distortion of said platform means during movement around said support means.

3,184,040
TAKE-OFF MACHINES
Alvin Dexter Barnett, 12 Firsway, Wightwick,
Wolverhampton, England
Filed Jan. 7, 1963, Ser. No. 249,893
Claims priority, application Great Britain, May 12, 1962,
18,339/62
2 Claims. (Cl. 198—165)



1. A machine for supporting and conveying extruded material issuing continuously from a die or former comprising in combination, a manually adjustable platform, a vertical pedestal mounted on said platform, an electric motor and gear box, mounted on said platform, a pair of spaced parallel vertical guides mounted at the rear of said platform, a vertical telescopic pillar mounted at the front of said platform, a cross-head slidably mounted on each guide and upon the front pillar, transverse guide shafts interconnecting the two cross-heads, a slidable saddle on each guide shaft, a manually operable screw-threaded shaft and nut mechanism to impart a traversing motion to both of said slidable saddles on said guide shafts, a pair of manually adjustable and manually operated spaced vertical shafts on each saddle, a driven sprocket mounted upon said vertical shaft coacting with each cross-head, each pair of vertical shafts carrying an endless belt adapted to drive said driven sprocket, drive means including a driving sprocket for said endless belt which is driven from said electric motor to each of the endless belts for each of the vertical shafts and associated driven sprockets, equidistantly spaced pairs of elastic pads on said endless belts for frictionally gripping the conveyed extruded material, means for adjusting the cross-heads in a vertical position to adapt the take-off operation to different thicknesses of the extruded material, means to adjust the saddles in a horizontal position to manipulate the extruded material to the pads and save wear on the belts which are vertically arranged.

3,184,041
PUSHER-TYPE CONVEYOR
Boyd T. Aydelott, 19544 Gulf Blvd., Indian Rocks
Beach, South Shore, Fla.
Filed Dec. 17, 1962, Ser. No. 245,178
3 Claims. (Cl. 198—168)

1. Apparatus for continually conveying comminuted materials comprising:

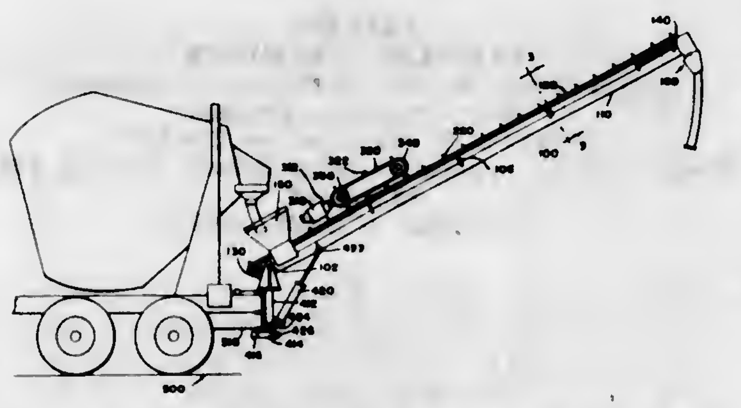
(A) gathering means,

(B) a tube open at both ends communicant with said gathering means, said tube having

(B1) a generally cylindrical main, center portion and

(B2) first and second semi cylindrical opposite side portions communicant with said center section;

(C) first and second continuous cables respectively passing through said first and second side sections;



(D) more than one paddle assemblies having closely fitting elements relative to the interior of said center section, said paddle assemblies comprising

(D1) cross bars spanning said cables, said cross bars defining opposite forked ends receiving said cables,

(D2) cylindrical steel paddles having transverse grooves receiving said cross bars, and

(D3) cylindrical rubber paddles mounted on said steel paddles in radial extension thereof, said rubber paddles scraping the entirety of said center portion of said tube.

(E) means fixing said assemblies on said cables;

(F) driving means operatively engaging said paddle assemblies; and

(G) dispensing means fixed to said tube.

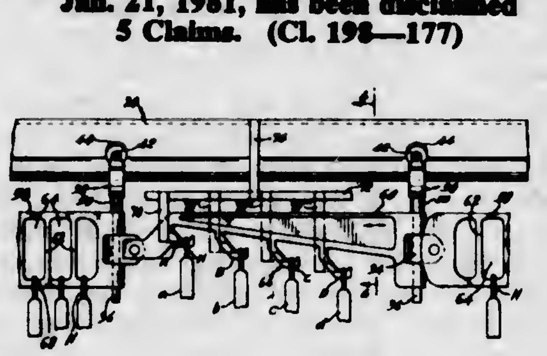
3,184,042
ARTICLE HANDLING APPARATUS

Abraham Rutkovsky and Sam Rutkovsky, Brooklyn, N.Y., assignors to Rallex Corporation, Brooklyn, N.Y., a corporation of New York

Filed Dec. 27, 1961, Ser. No. 162,487

The portion of the term of the patent subsequent to Jan. 21, 1981, has been disclaimed

5 Claims. (Cl. 198—177)



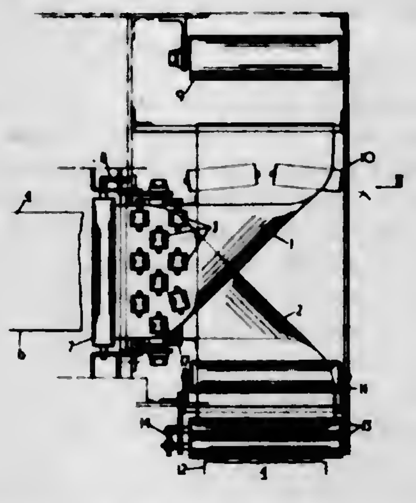
1. Conveyor apparatus comprising, an endless rail, an endless article carrying chain mounted for circulatory movement on said rail and comprising an endless series of links disposed in end-to-end relation and pivotally connected to each other at their respective adjacent ends, a plurality of said links each having a similar series of article carrying hooks longitudinally spaced from each other, said hooks of each one of said plurality of links corresponding to the hooks of each one of the other links of said plurality of links, a series of spaced article removing operating means, corresponding to each one of said series of article carrying hooks of said plurality of links, and positioned to be passed by said article carrying hooks as said chain moves around said rail, each of said article removing operating means being positioned relative to a corresponding one of said article carrying hooks of each one of said series of article carrying hooks for control by passage of said corresponding one article carrying hook to cause removal of the article carried by said corresponding one article carrying hook, and another plurality of said links each having a similar series of article carrying means, each article carrying means being positioned relative to each article removing operating means to avoid removal of the article carried by the article carrying means as the latter passes the position of each article removing operating means during movement of said chain and the article removing operation from said article carrying hooks.

3,184,043
CONVEYOR SYSTEMS

John Gibbon, Chilton Moor, England, assignor to Coal Industry (Patents) Limited, London, England

Filed July 7, 1961, Ser. No. 123,387

1 Claim. (Cl. 198—187)



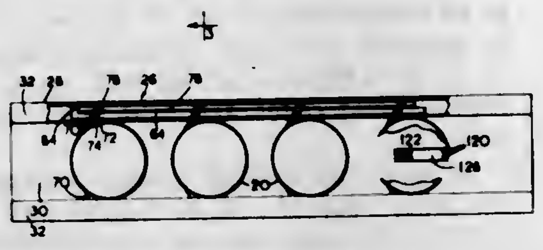
An angle station for an endless belt conveyor system comprising a framework, a first curved plate mounted in the said framework and curved in part-spiral shape about a first axis at an angle to one of its sides in such a manner that the said one of its sides and a side parallel to it before curvature are after curvature at approximately 90° to one another and are in parallel and vertically spaced planes, a second curved plate mounted in said framework below said first curved plate and curved in part-spiral shape about a second axis at essentially 90° to said first axis in such a manner that one of its sides and a side parallel to it before curvature are after curvature at approximately 90° to one another and are in parallel and vertically spaced planes, each said plates being apertured so as to define a plurality of openings arranged in spaced rows extending parallel to the said first mentioned side of the plate, the openings in one row being laterally off-set from the openings in an immediately adjacent row and each opening having projecting therethrough a roller mounted on the said plate, the spacing of said openings and the extent of projection of said rollers being such that in operation of the angle station, a conveyor belt passing around the plate is in contact only with the rollers, the angle station further comprising a reversing roller mounted adjacent to and with its axis substantially parallel to one of the sides of the first curved plate, whereby in operation the conveyor belt passes over and around the first curved plate then around the reversing roller so that material carried on that portion of the run of the belt which is passing over the first curved plate at any given instant falls onto that portion of the belt run which has passed around the reversing roller.

3,184,044
RECIPROCATING CONVEYORS

Kenneth M. Allen and Chester H. Harper, Newberg, Oreg., assignors to Allen-Harper, Inc., Portland, Oreg., a corporation of Oregon

Filed Oct. 29, 1962, Ser. No. 233,730

7 Claims. (Cl. 198—221)



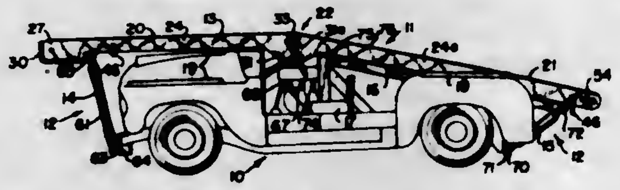
1. In a conveyor, an article guiding track,
a guide extending along one side of the track,
a driving bar slidable in the guide,
a drag bar frictionally engaging and slidable in the guide alongside of the driving bar and being located in the guide at a position on the opposite side of the driving bar from the track,
a dog having a slot extending along the central portion thereof and a hole at one end thereof,
a first pin on the driving bar and projecting into the slot,
a second pin on the drag bar and projecting into the hole,
and means for reciprocating the driving bar along the guide to pull the drag bar through the dog and retract the dog from the track in movement in one direction,
the driving bar being provided with a member at one end thereof for engaging and pushing the drag bar after the dog has been swung into the track when the driving bar is moved in the direction opposite to said one direction.

3,184,045
PORTABLE CONVEYOR SYSTEM

Edwin L. Fry, Canon City, Colo., assignor to Fry and Company, Canon City, Colo., a corporation of Colorado

Filed Mar. 22, 1963, Ser. No. 267,279

7 Claims. (Cl. 198—233)



1. A portable elevating conveyor comprising in combination with a motorized self-propelled vehicle:

(*a*) an end-support bracket means at each end of the vehicle and an intermediate-support bracket means upon the body of the vehicle;

(*b*) an elongated conveyor section adapted to be longitudinally disposed above the vehicle with each end of the section overlying an end of the vehicle;

(*c*) an extendible elevator means at each end of the vehicle, with the base of each elevator means being pivotally mounted upon an end-support bracket means to generally upstand from the end of the vehicle and with the extended end of each elevator means being pivotally connected to the end portion of the conveyor section thereabove to thereby raise and lower that end of the conveyor section; and,

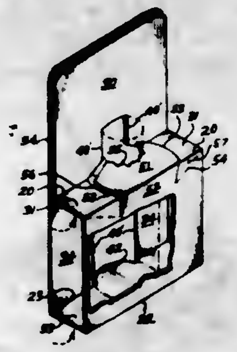
(*d*) a stabilizer bar having a base end pivotally mounted upon the intermediate-support bracket means on the vehicle to extend generally longitudinally underneath the conveyor frame and having an extended end pivotally connected to the conveyor-frame, elevator-means combination at a location which is longitudinally offset a substantial reach from the point of connection at the intermediate-support bracket means, whereby to incline the stabilizer bar more generally horizontally than vertically and to minimize the longitudinal shift of the conveyor section with respect to the vehicle as it is raised and lowered by the elevator means.

3,184,046
DISPLAY CARTON AND DISPLAY PACKAGE

Robert A. Berg, Chicago, Ill., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Filed May 31, 1962, Ser. No. 199,057

14 Claims. (Cl. 206—45.14)



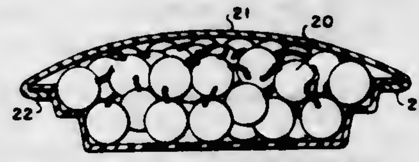
1. A carton for an article, said carton comprising
front and rear panels, and
top and bottom panels extending between said front and rear panels,
said panels defining in the erect carton a space for enclosing a portion of said article,
said front panel having an aperture therein, said aperture having a contour which prevents the outward movement of said article through said aperture,
said top panel having an aperture which is contiguous with said front panel aperture,
a locking member extending from said rear wall, said locking member being aligned with said top panel aperture and being adopted to engage an article,
the said panels and said locking member cooperating to press and hold an article placed in the carton in a protruding position with respect to said front panel aperture.

3,184,047
TRAY

Wayne C. Gilman, Spartanburg, and Richard O. Kuehne, Taylors, S.C., assignors to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

Filed May 17, 1963, Ser. No. 281,246

2 Claims. (Cl. 206—45.34)



1. A tray especially suitable for packaging comprising:

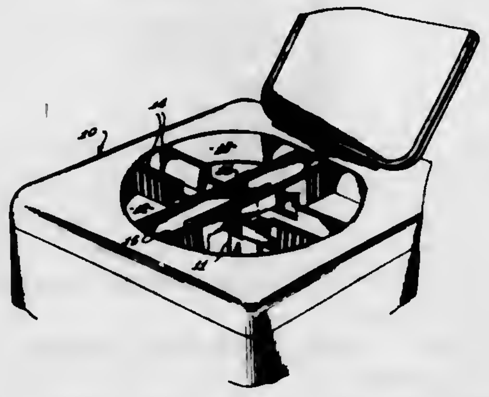
(*a*) a bottom portion having a plurality of separate spaced apertures therethrough,

(*b*) a solid inner boundary wall extending upwardly from and completely surrounding the outer periphery of said bottom portion and diverging slightly outwardly from said periphery,

(*c*) a step portion extending around the upper periphery of said inner wall on a plane substantially parallel with said bottom portion, said step portion having a planar surface area not greater than about ⅓ of the planar surface area of the bottom portion, and said step portion being positioned about midway

between the bottom portion and the hereinafter described flange,
- (*d*) an outer boundary wall diverging slightly outwardly from and completely surrounding the outer periphery of said step portion,
- (*e*) a laterally extending flange completely around the upper periphery of said outer boundary wall on a plane substantially parallel to said bottom and step portions,
- (*f*) said step and bottom portion only having a plurality of separate spaced apertures therethrough, and
- (*g*) said bottom portion, inner wall, step portion, and outer boundary wall forming a product receptacle.

3,184,048
PACKING BRACE
Verne G. Bjerum, 2452 Lovejoy St., Pomona, Calif.
Filed Aug. 6, 1962, Ser. No. 214,993
2 Claims. (Cl. 206—46)

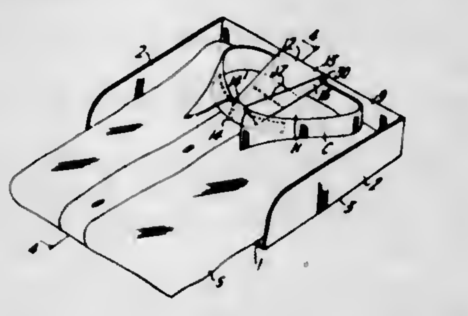


2. Bracing means for securing the agitator and rotatable hub of an automatic washing machine against movement during shipment, which includes:
- a pair of lower braces formed of corrugated paper material, said braces having a centrally located notch in their upper surfaces, the ends of said braces having downwardly converging lines marked thereon to aid in forming a pair of braces having downwardly tapering ends, said braces being capable of being shaped by a pocket knife;
- a pair of upper braces formed of corrugated paper material, said braces having a centrally located notch in their lower surfaces whereby the notch areas of said upper and lower braces may interfit, the central areas of said braces engaging and holding said agitator, the ends of said upper braces having downwardly converging lines marked thereon to aid in forming a pair of braces having downwardly tapering ends, said upper braces being capable of being shaped by a pocket knife, said upper and lower braces being substantially perpendicular to each other;

and flexible tension means around said upper and lower braces and holding said braces together and to said agitator.

3,184,049
GARMENT CONTAINER
George A. Gundersen, 851 Killeen Ave.,
Ottawa, Ontario, Canada
Filed Dec. 6, 1962, Ser. No. 242,738
Claims priority, application Canada, Oct. 31, 1962,
861,350
4 Claims. (Cl. 206—46)

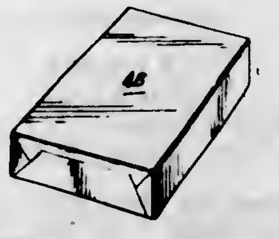
1. In combination a garment having a folded collar, and a container for said garment, said container including:
- (i) a bottom;
- (ii) a pair of mutually opposed walls;
- (iii) at least one intermediate wall connecting adjacent ends of said pair of walls together and normal thereto, all of said walls being articulated to said bottom and being substantially perpendicular thereto, said intermediate wall including:
  - (*a*) an outer wall member articulated to the bottom;
  - (*b*) a pair of inner wall members each articulated to the upper edge of said outer wall member;
  - (*c*) a pair of primary extensions each articulated to an associated said one of said pair of mutually opposed walls and extending normal thereto so as to form a pair of wall members intermediate said outer and said inner wall members;
  - (*d*) at least one locking tongue projecting from the lower edge of each said inner wall member;
- (iv) a pair of locking slots in said bottom adjacent said intermediate wall and each receiving an associated said locking tongue;
- (v) an upper member articulated, at one end thereof, to the upper edge of said outer wall member and extending substantially normal thereto;
- (vi) a wing member articulated to the other end of said upper member and adapted to extend downwardly therefrom;
- (vii) a pair of mutually opposed side members each articulated to an associated marginal side edge of said upper member and adapted to extend downwardly therefrom, each of said side members being spaced a predetermined distance from said inner wall member;
- (viii) at least one lower member adapted to extend substantially parallel with, and spaced from, said upper member, said lower member being articulated to the lower edge of one of said side members;
- (ix) retaining means on said lower member adapted to cooperate with the remaining side member to form a local bottom closure and to maintain said side members in spaced relationship with one another; whereby:
  - when said garment is within said container, said wing member is located within the folds of the collar and said lower and side members are located entirely within the confines of said collar, a portion of said collar, remote from the wing member being located between said inner wall members and adjacent ends of said side members, said upper member and the upper edges of said walls serving, when stacked immediately below an adjacent and upper container, to support the latter and thereby prevent crushing of the garment in the lower container.



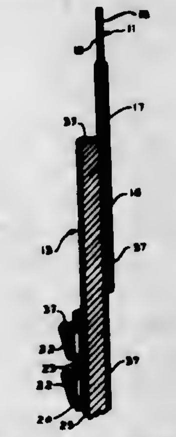
3,184,050
DISPOSABLE PAINT TRAY AND PACKAGE INCLUDING SAME
Truman L. Dahlberg, Flossmoor, and Leslie E. Thompson, Hinsdale, Ill., assignors to De Soto Chemical Coatings, Inc., Chicago, Ill., a corporation of Delaware
Filed July 17, 1962, Ser. No. 210,422
3 Claims. (Cl. 206—47)

1. A combined paint package comprising a preformed container formed from a unitary blank of relatively stiff sheet material adapted to encompass the top, bottom and

bottom and opposed external rectangular side walls and end walls of uniform height, a plurality of painting instrumentalities disposed in said tray for ultimate consumer use including a paint applying tool and at least one relatively flat packet consisting of a paint impervious receptacle and a quantity of liquid paint sealed therein, said packet being disposed in a plane substantially parallel to the bottom of said tray, an open-ended sleeve wrapper of rectangular cross-section and formed of relatively stiff sheet material adapted to encompass the top, bottom and sides of said container with the contents therein, said container when removed from said wrapper adapted to serve as a tray for the paint in the course of use thereof.

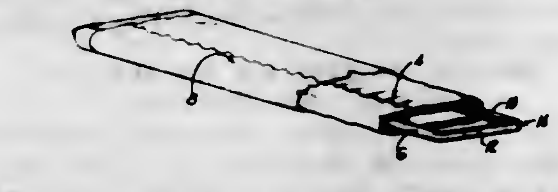


3,184,051
STRIPPABLE DISPENSING SHEATH AND METHODS FOR APPLYING THE SAME TO ARTICLES OF MERCHANDISE
Sidney V. Winton, New York, N.Y., assignor, by mesne assignments, to Lionel Tinfow, North Caldwell, N.J.
Filed Dec. 5, 1962, Ser. No. 242,502
9 Claims. (Cl. 206—47)



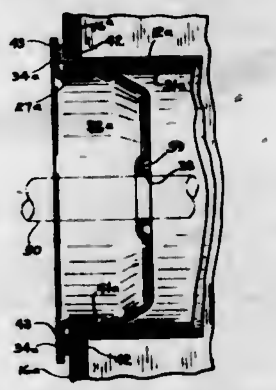
1. A strippable dispensing sheath for articles of merchandise comprising,
- (*a*) a tear-strip detachably secured to an article of merchandise, a portion of the tear-strip extending beyond the edge of the article of merchandise,
- (*b*) a sealed container receiving items complementary to the article of merchandise detachably secured to the said article, and
- (*c*) a relatively thin, strippable contour sheath overlying the container, the article of merchandise and at least that portion of the tear-strip attached to the article of merchandise.

3,184,052
CURTAIN ROD PACKAGE
Arthur E. Gledhill, Wallingford, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Apr. 11, 1963, Ser. No. 272,355
3 Claims. (Cl. 206—47)



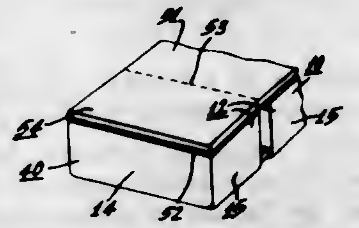
1. A curtain rod assembly comprising two L-shaped rod sections C-shaped in cross-section, one of said sections being slightly larger in cross-section than the other and adapted for telescoping connection, and two L-shaped brackets having a base member and a back member joined at one end thereof and having at the juncture thereof an arcuate support rib integral with said juncture and said members, each of said members having at least one hole therein, said back member being wider than said base member and having its edges extending beyond the edges of said base member at the point of juncture thereof, said back members fitting snugly within the larger of the rod sections, and the base members fitting within the smaller of the rod sections and connecting the assembly together.

3,184,053
SHIPPING AND DISPENSING CASE FOR COILED MATERIALS
Bruce E. Eldridge, San Francisco, Calif., assignor to Oliver Tire & Rubber Company, Oakland, Calif., a corporation of California
Filed June 11, 1962, Ser. No. 201,570
6 Claims. (Cl. 206—52)



6. A shipping and storage container for suspending a coil of relatively heavy material about its rotational axis within the container comprising: a box member including a pair of opposite end panels, a pair of opposite side panels, and enclosure means connected to said end panels and side panels, said side panels having axially aligned circular openings therethrough; tubular core means comprising an outer core member fixed within said coil and a longer inner core member disposed within said outer core member extending between said openings and supporting said coil of material within said container; annular bearing members attached to said side panels around said openings; a pair of cup members with an outwardly radial flange fitted loosely in each of said openings but snugly in the ends of said inner core member to retain it within said box; and a plurality of radially extending detent members rigidly connecting said cup members to said inner core member; whereby said cup members are rotatable relative to said container when said coil is rotated.

3,184,054
PACKAGE
Richard Kuhlman, Summit, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed July 13, 1962, Ser. No. 209,548
1 Claim. (Cl. 206—56)



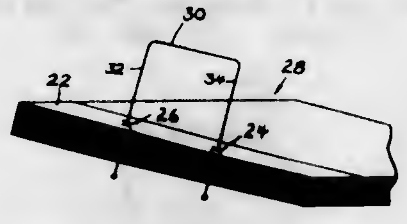
A package for electron tubes and the like including a self-supporting tray having a plurality of connected compartments, each of said compartments having yieldable side walls, end walls, and a bottom wall, a relatively thin web extending between adjacent compartments for connecting said compartments in spaced apart relation, said tray having upper surfaces, and said webs being disposed adjacent said bottom wall, and a flat closure member engaged with and cemented only to said upper surfaces and closing said compartments, said member having lines of perforations therein disposed between adjacent compartments of said trays.

3,184,055
ASSEMBLY OF BAGS

Francis A. Davis, Jr., Lansdale, and Joseph F. Flannery, Philadelphia, Pa., assignors to Paramount Packaging Corporation, Chalfont, Pa., a corporation of Pennsylvania

Original application Sept. 19, 1961, Ser. No. 139,234. Divided and this application Jan. 9, 1963, Ser. No. 250,376

3 Claims. (Cl. 206—57)



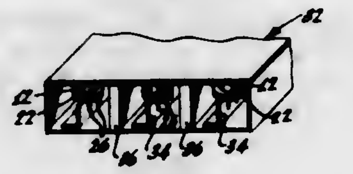
1. An assembly of bags wherein the uppermost bag may be subjected to air to open the same, comprising a stack of bags made from a thin thermoplastic material capable of being heat sealed, each bag having an open end and a flap extending from a major wall at the open end, each bag having a closed end opposite its open end, said flaps being disposed one above the other and separated from one another, the closed ends of said bags being disposed one above the other, each flap having a pair of intersecting incisions disposed on opposite sides of a median line directed from the closed end to the open end of each bag and spaced from the free edge of said flap, said assembly of bags being mounted on a pair of spaced posts of a U-shaped wicket, each of said posts passing through one of said incisions with the bags being disposed on said posts in such relationship that each bag may be removed from said posts by tearing the flap upon the movement of said bag from the incisions toward said free edge, said assembly of bags being arranged for ready attachment to a packaging machine wherein air will open the uppermost bag and the uppermost bag may be torn from said posts.

3,184,056
PACKAGES FOR ELECTRONIC AND OTHER COMPONENTS

Thaddeus W. Kisor, Flemington, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Nov. 21, 1960, Ser. No. 70,466

6 Claims. (Cl. 206—65)



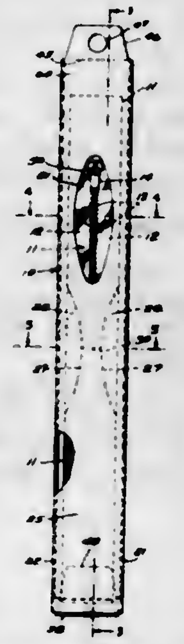
1. The combination of a tubular container and a plurality of transistors each having a body portion and at least two dependent legs, said container having a top, a base and sides and being normally open at both ends, said ends being closed by closure members, at least one supporting rail fixed to said base between said sides and extending longitudinally along said base, said rail extending vertically from said base toward said top and terminating short of said top, each transistor being located in said container with the body portion of the transistor resting on and in sliding contact with the top edge of said rail and with the legs of said transistor straddling said rail, the height of said rail being greater than the length of said legs whereby the ends of said legs are positioned above and out of contact with said base and whereby said transistors may be slid along said rail.

3,184,057
PACKAGE

William E. Kidd, Jr., Teaneck, N.J., assignor to Coats & Clark Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 18, 1962, Ser. No. 224,336

1 Claim. (Cl. 206—78)



A flat package comprising a slide fastener stringer having opposed tapes and interlocked fastener elements secured along the confronting edges of said tapes and separable by means of a slider, and a case therefor comprising a sheet having a series of creased substantially parallel fold lines dividing said sheet into a series of successive elongated panels with an outer end panel, one of the other panels having a pair of opposed slits extending generally therealong and defining a pair of opposed tabs, said slits being arcuate with their convex sides facing each other to form said tabs in segmental form, said slit panel having an additional slit extending between the peaks of said arcuate slits, said tabs being spaced and said stringer being releasably held flat on said one panel with said tabs overlying the sides of the stringer and with the interlocked fastener elements extending along the spacing between said tabs, the spacing between said tabs being sufficient to fully reveal the fastener elements between said tabs when the case is opened, said stringer being enclosed in said case and said sheet being successively and continuously folded about said fold lines with said stringer attached to said one panel, and with said outer end panel folded flat against one of the other panels, and means for releasably securing said end panel to said panel against which said end panel is folded.

3,184,058
SPECTACLE SALES DISPLAY

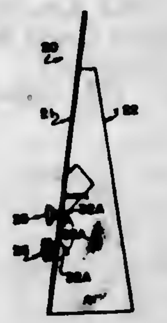
Arthur H. Crowther, Meadowbrook, Pa., assignor to Bachmann Bros., Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 24, 1963, Ser. No. 318,689

3 Claims. (Cl. 206—79)

1. A spectacle sales display comprising a stiff resilient card having front and rear sides, said card having a pair of aligned spaced generally U-shaped cuts arranged with their concave sides facing oppositely away from each other, the card material bounded within each cut de-

fining a tab resiliently deflectable rearwardly out of the plane of said card to form a through opening, and spectacles including a pair of temples mounted on the front side of said card, each of said temples extending through



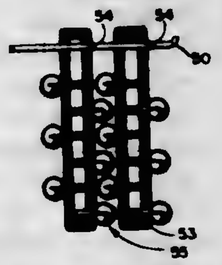
one of the openings and being engaged rearwardly by one of the resiliently deflectable tabs, whereby the temples are resiliently biased by said tabs toward the rear side of said card and are removably retained in closed position on said card.

3,184,059
UTILITY PACKAGE

Clifford F. Kaplan, Leominster, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

Filed Feb. 9, 1961, Ser. No. 88,168

5 Claims. (Cl. 206—80)



1. A combined packaging, decorative and safety protective device comprising:

a base of substantially rectangular shape;

said base having two parallel side portions, connected by end portions so as to define a hollow space therebetween;

one of said side portions having a plurality of spaced openings therein, each adapted to receive the stem portion of a light bulb inserted therein;

the other of said side portions also having a plurality of spaced openings therein, each adapted to receive the stem portion of a light bulb inserted therein;

said opening in said one side portion being in staggered relationship with respect to the openings in said other side portion;

a plurality of electric bulbs, each having an elongated metallic stem portion, and a bulbous portion attached to one end of said metallic stem portion at a reduced diameter portion of said bulbous portion;

said stem portions of said bulbs being disposed in the openings in the side portions of the base;

the stem portions of the bulbs being of a length no greater than the space between the side portions of the base, whereby the bulbs are supported on the base member in perpendicular relationship to the side portions with the bulbous portions upstanding from the side portions of the base and the stem portions of the bulbs being disposed in staggered relationship and contained within the hollow space defined by the side and end portions of the base;

each of said bulbs having substantially all of the bulbous portion thereof covered by a thin thermoplastic film member which conforms closely to the configuration of the bulbous portion and extends over and is bonded to said side portions of the base member;

whereby the bulbous portions upstanding from the side portions of the base are covered by the protective film member; and whereby each of the bulbs along with that portion of the film member which covers the bulbous portion of the bulbs can be readily removed from the base portion of the packaging device;

the removed portion of the film member remaining in closely conforming relationship to said bulbous portion.

3,184,060
PACKAGING TACKY LATEX EMULSION PAINTS IN CONTAINERS MANUFACTURED FROM POLYOLEFINIC MATERIALS

Frank M. Harris, Phoenix, Md., assignor to Owens-Illinois Glass Company, a corporation of Ohio

No Drawing. Filed Feb. 13, 1963, Ser. No. 258,123

2 Claims. (Cl. 206—84)

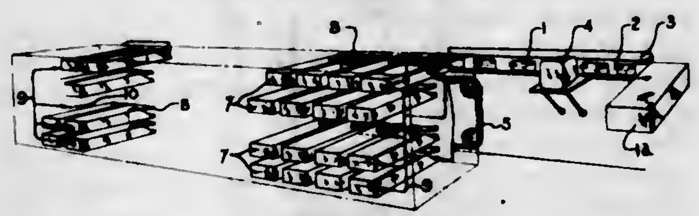
1. A package comprising a substantially rigid container substantially filled with a tacky latex emulsion paint, said container comprising walls with inner surfaces of a high density polyethylene having a density of between about .941 and .965 gram per cubic centimeter and a melt index of between .1 and 2.0.

3,184,061
APPARATUS AND METHOD FOR SORTING FLAT ARTICLES

Maurice M. Levy, 208 Clemow Ave., Ottawa, Ontario, Canada

Filed Feb. 8, 1961, Ser. No. 87,888

4 Claims. (Cl. 209—72)



1. Apparatus for sorting code-bearing flat articles comprising a plurality of accumulators each constructed for receiving and retaining said articles, each accumulator being individual and separate and movable relative to the other accumulators, an elongated sorter having an electronic reader and a plurality of sorting outlets, means defining a sorting station extending along said sorter, means mounting a first row of said accumulators at said sorting station with each accumulator in register with a respective sorting outlet, said sorter including means for sorting said articles into said respective accumulators at said sorting station in accordance with a code designation associated with each said article and a feeder for feeding unsorted said articles individually to said sorting means for sorting into said accumulators, means defining a plurality of storage stations, means mounting at least one further row of said accumulators at said storage stations, means for moving said first row of accumulators to transfer said first row from said sorting station to a selected one of said storage stations, and means for moving a second row of accumulators from a storage station into said sorting station to replace said first row independently of the movement of said first row and independently of further accumulators in storage stations.

3,184,062
FILTER UNIT

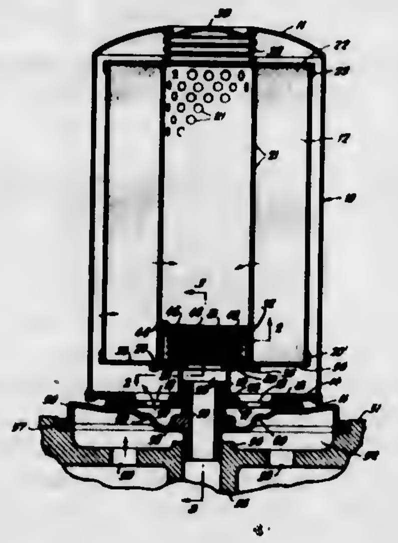
Kingsley E. Humbert, Jr., Gastonia, N.C., assignor to Wix Corporation, Gastonia, N.C., a corporation of North Carolina

Filed Feb. 27, 1962, Ser. No. 175,930

5 Claims. (Cl. 210—130)

1. A full flow spin-on type oil filter, comprising a cylindrical filter cartridge housing having an end closure pro-

vided with an inlet and a central outlet nipple extending into the housing, a unitary self-contained filter cartridge support and valving means comprising a sleeve having an open end receptive of and in fluid tight engagement with said nipple, the sleeve extending from said end closure into the housing and terminating at its other end in a relatively wide flat annular cartridge support flange extending laterally therefrom in one plane, an elongate cylindrical valve casing comprising a cylindrical wall concentric with said sleeve and having one end resting on said flange adjacent to the lateral outer edge of the latter and rigidly and permanently joined thereto, said casing wall having at its other end a relatively wide integral inwardly projecting imperforate annular flange terminating in an inturned annular lip, said lip defining an oil in-flow passage and also forming a valve seat, said cartridge support flange providing a valve seat and having an oil flow opening therethrough leading into said valve casing from an area adjacent said cartridge support flange, a first valve disc element in said casing seated on said support flange and having a central oil port aligned with said outlet nipple, said first valve disc element being imperforate outwardly of said port and covering and closing said oil flow opening when seated on said support flange, a second valve disc element of substantially the dimensions of said first valve disc element, within said casing in aligned spaced relation with said first disc element and providing with the first disc element a space to receive spring means, the second valve disc element seating against the said annular lip to close said in-flow passage, said second valve disc element being imperforate within the area thereof defined by said lip, spring means in the said space in the valve casing between said valve disc elements and engaging both elements and urging both elements to closed position on their respective seats, means located radially outwardly of said annular lip whereby oil may flow into and through the valve casing to and through said central oil port of the first valve disc element and to said sleeve and outlet nipple when said second valve disc element is unseated from the annular lip, a filter cartridge in the housing embodying an annular filter medium having a central passage therein open at one end, said cylindrical valve casing being positioned a substantial distance within said central passage and in engagement with the wall thereof and supported on said wide flat cartridge support flange, and said second valve disc element being on the outlet side of the annular filter medium for oil flowing therethrough and effecting increased tensioning of said spring means on the first disc valve element to maintain the same firmly on its seat by pressure of the flowing filtered oil when the second valve disc element is unseated from the annular lip seat.



3,184,063

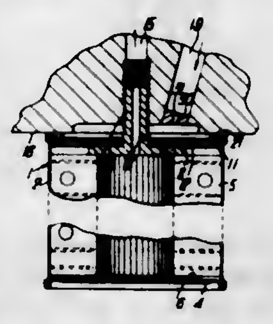
LIQUID FILTER

Kenneth Ernest Buckman, Winsor, near Woodlands, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 7, 1962, Ser. No. 200,864

Claims priority, application Great Britain, June 9, 1961, 20,864/61

2 Claims. (Cl. 210—130)



1. A filter unit comprising a casing sealingly capped at one end by a first wall means and sealingly capped at the other end by a second wall means, a hollow cylindrical flow-through filter element coaxially disposed within said casing, said filter element bearing against said first wall means at one end and bearing against said second wall means at the other end, said first wall means having inlet and outlet ports which provide for the flow of fluid through the filter element, said second wall means including a resilient sheet metal portion, said resilient sheet metal portion including a resilient gasket bonded to the inner surface of said sheet metal portion and bearing against the end surface of said filter element whereby excessive fluid pressure caused by said filter element when substantially clogged and resisting the normal fluid flow through said filter element will cause said resilient sheet metal portion to yield and become partially disengaged from said mating filter element so as to allow incoming fluid to bypass said filter element and pass through said outlet port.

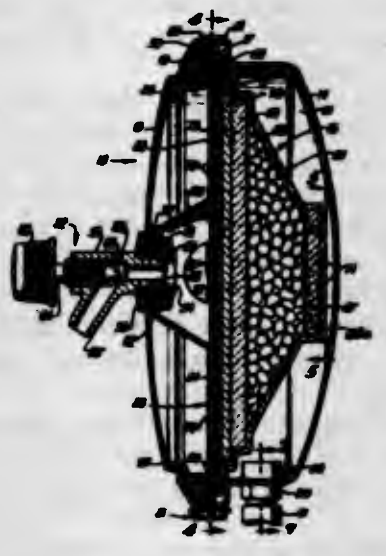
3,184,064

DOMESTIC WATER FILTER

Ralph L. Sampson, Encino, Herbert Ruttenberg, Los Angeles, and Leonard Miller, Encino, Calif., assignors to Water Gard Corporation, Los Angeles, Calif., a corporation of California

Filed June 12, 1961, Ser. No. 116,566

3 Claims. (Cl. 210—136)



1. A filter element for entraining material, filtered from a fluid, substantially entirely within the element and removably insertable as a unit in the housing of a filter structure, comprising: a generally frusto-conical filter cage open at its base, outlet end and having a perforate apex, inlet end with a plurality of apertures therein, each of said apertures having an area sufficiently large to provide for entry of the fluid to be filtered in its original condition into the inside of the filter element, said frusto-conical cage being stepped to provide a plurality of axially spaced annular seats of successively increasing diameter in a direction away from said apex, inlet end; a plurality of coaxially aligned, juxtaposed porous filter members within said cage and arranged to receive fluid from said apex, inlet end of said cage, each of said filter members being in contact with its neighboring filter member, said filter members successively increasing in diameter in a direction away from said apex inlet end of said cage, and having their outer peripheries received within said annular seats; and a perforate cap member secured to and closing the base, outlet end of the filter cage, said filter members being held in engagement with said apex, inlet end of said cage, their respective annular seats, and each other by said cap member, and said cap member having an internal annular projection thereon spaced inwardly from the peripheral edge thereof, the outer peripheral edge portion of the filter member adjacent said cap member being clamped in sealing engagement between said annular projection and said filter cage.

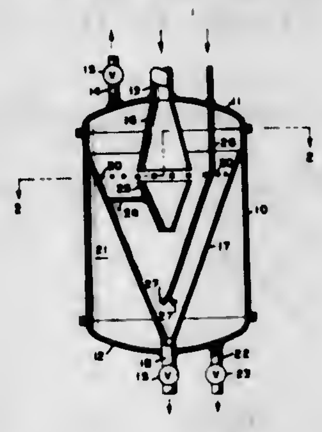
3,184,065

SETTLER

Paul C. Bradford, Edwardsville, Ill., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 29, 1961, Ser. No. 163,241

6 Claims. (Cl. 210—519)



1. A gravity settler for settling suspended solids from a liquid which comprises:

(*a*) a vessel having an inlet

(*b*) a first wall structure within said vessel defining a downwardly divergent deceleration channel which is open at the bottom and connected at the top to said inlet,

(*c*) a second wall structure within said vessel defining a downwardly convergent concentration channel situated substantially beneath said deceleration channel, the top of the concentration channel being greater in area than the bottom of the deceleration channel,

(*d*) an outlet for settled solids at the bottom of the concentration channel,

(*e*) outlet means for clarified liquid situated near the top of said second wall and passing therethrough at locations spaced radially from and situated substantially at the level of the open bottom of said deceleration channel for the horizontal flow of liquid from said open bottom to the said outlet means, and

(*f*) a third wall structure mounted within said concentration channel directly beneath and spaced from the first wall structure, said thrid wall structure defining a central concentration channel which is downwardly convergent and open at the bottom and being spaced from said second wall structure to provide an annular up-flow space.

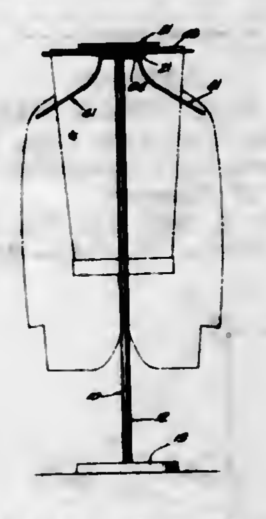
3,184,066

VALET STAND AND GARMENT HANGERS

Laurence W. Van Dusen, Escondido, Calif., assignor to Mission Industries, Escondido, Calif., a corporation of California

Filed Nov. 7, 1962, Ser. No. 235,931

6 Claims. (Cl. 211—1)



2. A device for hanging garments comprising the combination of a free-standing support member, means on said support member forming a generally horizontal slot; and a garment-supporting assembly removably connected to said support member, said garment-supporting assembly including a hook portion having a thickness slightly less than the width of said slot for insertion into and removal from said slot in a general horizontal direction whereby said garment-supporting assembly is removably supported on said stand, said assembly including a garment-supporting hanger operably connected to said hook portion for swingable movement of said hanger with respect to said hook portion so that said hanger is adapted to be maintained in a generally vertical position independent of the disposition of said hanger portion with respect to the horizontal and the vertical, said garment-supporting hanger having garment shoulder-engaging portions extending generally in a vertical plane, and a trousers-support bar connected to the upper portion of said garment-supporting hanger, said hook portion being connected to said trousers-supporting bar.

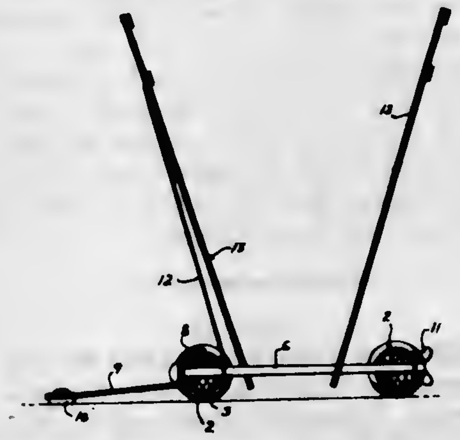
3,184,067

ECHELON SORTER

Raymond B. Larter, P.O. Box 39652, 3726 Effingham Place, Los Angeles, Calif.

Filed Dec. 10, 1962, Ser. No. 243,253

7 Claims. (Cl. 211—10)



1. An echelon sorter, comprising:

(*a*) a pair of parallel base bars each having enlargements at their ends to support said bars above an underlying surface;

(*b*) a plurality of guide rods extending therebetween;

(*c*) a plurality of separator panels having perforations along their lower margins to receive selected guide rods and disposed in echelon relation, said panels being tiltable and slidable on said rods between said base bars;

(*d*) one upper corner of each panel being beveled to form a sloping margin at the upper portion of one side;

(*e*) and indicia-retaining means disposed along said margin.

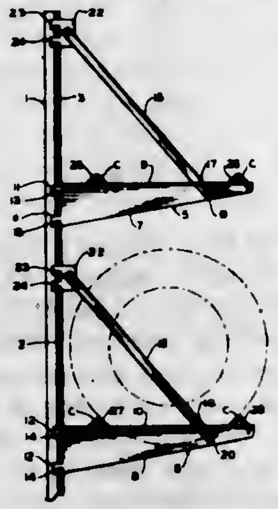
3,184,068

DISPLAY RACK FOR TORUS SHAPED ARTICLES

Adolph H. Wende, University City, Mo., assignor to Share Manufacturing Corporation, St. Louis, Mo., a corporation of Missouri

Filed Apr. 4, 1962, Ser. No. 185,022

3 Claims. (Cl. 211—23)



1. A display rack for torus-shaped objects such as automobile tires and the like, said rack comprising a plurality of uprights lying in a common plane such as a vertical wall to which said uprights are adapted for spaced parallel attachment, each of said uprights having a plurality of spaced apertures, a plurality of brackets each provided at one of its ends with hook means engaged in any one of the apertures so that each bracket will extend outwardly from the upright to which it is attached, each of said brackets also including a top web and lengthwise extending and depending flange having a rearwardly presented abutment face engaged against the upright to which the bracket it attached, strut means for each bracket, each strut means being bolted at its lower end to the flange of the bracket for limited pivoted movement with respect thereto, a strut-bracket similarly secured to the upper end of the strut-means for limited pivoted movement with respect thereto, said strut-bracket being provided with hook means engaged in a selected aperture of the upright to which its associated bracket is attached whereby each bracket can be removably and adjustably mounted upon a selected one of the uprights, so as to be paired up in transverse alignment with a similar bracket on another upright, and a pair of longitudinal rails associated with such pair of transversely aligned brackets, means securing said rails upon the top webs of the brackets in spaced parallel relation so as to support the torus-shaped object in substantially upright position therebetween.

3,184,069

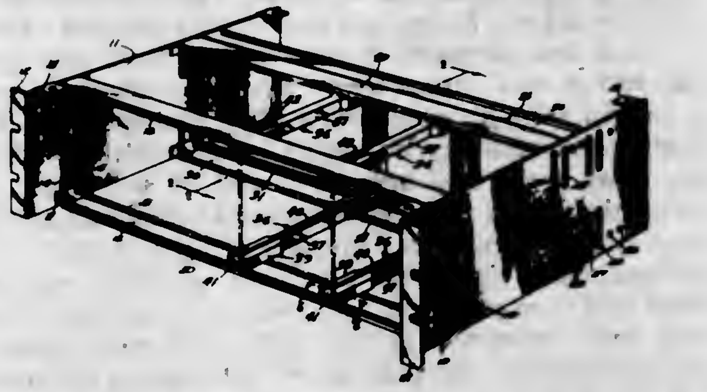
PRINTED CIRCUIT CARD RACK

Allen E. Rosenberg, Brookline, Mass., assignor to Garde Manufacturing Company, Cumberland, R.I., a corporation of Rhode Island

Filed Mar. 29, 1962, Ser. No. 183,495

8 Claims. (Cl. 211—41)

1. A rack for holding a plurality of printed circuit cards comprising a frame having a rectangular plate at each end, a pair of spaced parallel channel members extending between said plates adjacent one side, a second pair of spaced parallel channel members extending between said plates adjacent the other side, a plurality of vertically disposed pairs of card slides mounted between said channel members, each vertically disposed pair of slides having mutually opposed slots for holding the printed circuit cards, means for adjusting the channel members to adjust for the length of the printed circuit cards, and means for mounting a multiple connector at the rear ends of each said pair of card slides, said channel members having a row of teeth along one edge at right angles to the channel member, the external face of each of said card slides having a rib outwardly thereof with said ribs held transversely extending between said teeth.



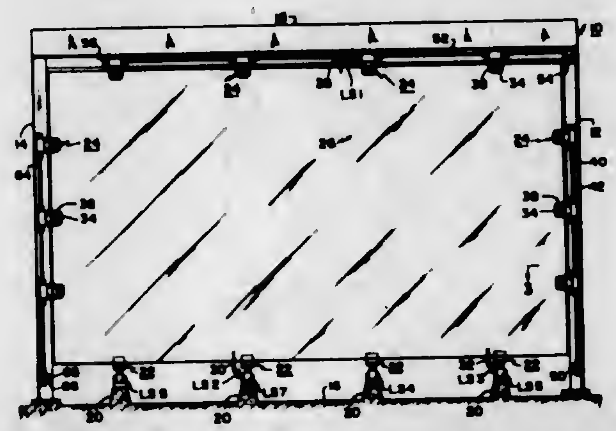
3,184,070

APPARATUS FOR SUPPORTING GLASS SHEETS

Edmond A. Pirlot, Kingsport, Tenn., assignor to American-Saint Gobain Corporation, Kingsport, Tenn., a corporation of Delaware

Filed Nov. 26, 1962, Ser. No. 240,106

15 Claims. (Cl. 211—41)



1. Apparatus for supporting glass sheets in a substantially vertical position comprising an upstanding frame member having a pair of spaced vertical pedestals and a horizontal truss member secured to the top portions of said pedestals, clamp means connected to both of said pedestals and said horizontal truss member and extending inwardly therefrom, said clamp means arranged upon engagement to support said glass sheet within said upstanding frame, said clamp means having portions arranged to clamp the peripheral edge portion of said glass sheet, means to selectively disengage said clamp means connected to said horizontal truss member and said pedestals to expose the surface of said glass therebetween while maintaining the remaining clamp means engaged to support said glass sheet.

3,184,071

PLASTIC CASE FOR CONTAINERS

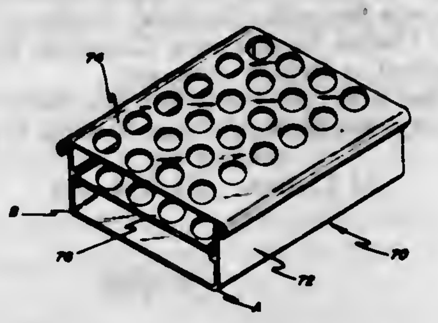
Gerard V. Delaire, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 12, 1962, Ser. No. 244,045

14 Claims. (Cl. 211—74)

1. A case for supporting containers comprising

(A) an extruded thermoplastic resin body member consisting of a pair of substantially parallel side walls connected to an intermediate web and shoulder means on the upper ends of said side walls, and



(B) an extruded thermoplastic resin spanner member having apertures therein and having shoulder means engaged by securing means with the shoulder means of the side walls of the body member whereby undesired spreading of the side walls is reduced substantially.

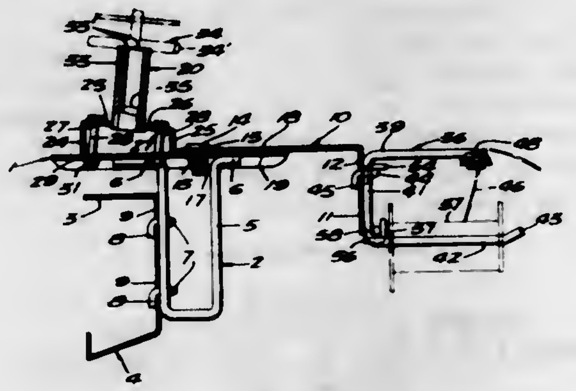
3,184,072

MOUNTING BRACKET FOR PARTS CONTAINERS AND TOOL HOLDERS

Godfrey L. dé Caccia, Long Beach, Calif., assignor, by direct and mesne assignments, to Pendleton Tool Industries, Inc., Los Angeles, Calif., a corporation of Delaware

Filed June 18, 1962, Ser. No. 203,324

6 Claims. (Cl. 211—86)



1. A mounting bracket for supporting accessories at a production or assembly station, comprising: a base plate; means for mounting said base plate on a support so as to extend laterally outwardly therefrom; an accessory supporting plate; means operable for selectively pivotally mounting said accessory supporting plate at different locations on said base plate with said accessory supporting plate extending outwardly from an edge of said base plate and movable about said pivot means to extend the accessory supporting plate in different directions from said base plate; a flange at a margin of said accessory supporting plate having openings therein affording the attachment to said flange of an accessory; and detent means embodied in opposed surfaces of said plates at points spaced from said pivot means operable to releasably hold said accessory supporting plate in predetermined positions with respect to said base plate.

3,184,073

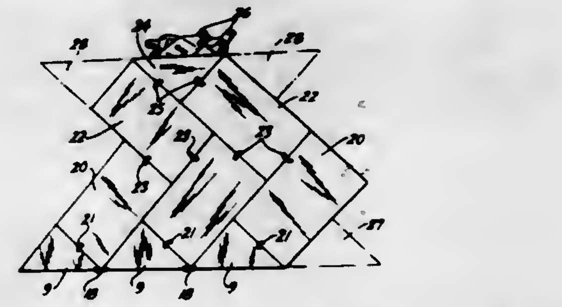
MERCHANDISE DISPLAY ASSEMBLY AND STRUCTURAL UNIT FOR USE THEREWITH

Edgar O. Bartolucci, Spring Valley, N.Y., assignor to Interstate Boochever Corp., Fair Lawn, N.J., a corporation of New Jersey

Filed July 17, 1963, Ser. No. 295,650

2 Claims. (Cl. 211—132)

1. A knock-down merchandise display assembly comprising a multiple number of identical rectangular corrugated-board cartons each having one long and two short dimensions, and a multiple number of hollow triangular prismatic units each defined by a pair of triangular corrugated-board walls in spaced parallel relation and a pair of rectangular connecting walls extending between them, each triangular wall conforming in outline to a 45-degree isosceles triangle in which each of the short sides has a length equal to that of a short dimension of the carton, said connecting walls extending only between the short sides of the triangular walls leaving the hypothenuse sides disconnected, each connecting wall having a length equal to the other short dimension of the carton, a plurality of said units lying side by side on a horizontal surface with the short sides up to define a series of right-angled troughs, said cartons being supported in said troughs with their long dimensions slanting upward at 45 degrees to the horizontal, said cartons lying with their short dimensions oriented to allow the cartons to lie in adjacent contact, and U-shaped connecting staples having pointed ends extending through said triangular walls and through selected carton walls to hold adjacent elements of the assembly together.



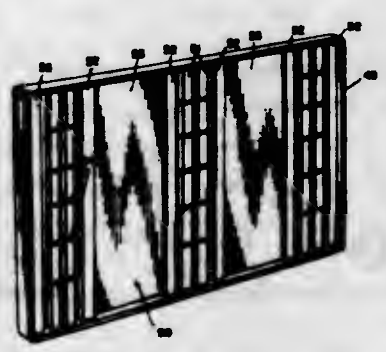
3,184,074

BACKGROUND PANEL STRUCTURE

Walter P. Baermann, 600 Asheville Road, Waynesville, N. C.

Filed Apr. 5, 1963, Ser. No. 270,920

6 Claims. (Cl. 211—135)



2. An improved background panel which comprises: support posts, individual extrusion units and a flat sheet between and supported by said posts, said individual extrusion units including interlocking members, said individual extrusion units being hollow and having openings communicating with the interior of said units, said openings being adapted for receiving shelf supporting brackets and the like.

3,184,075

ADVERTISING DISPLAY RACK AND CLIP THEREFOR

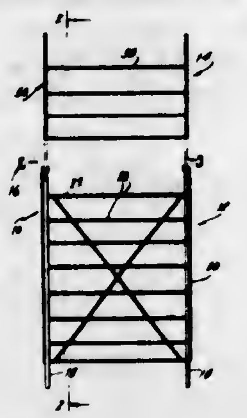
Melvin Cohen, 150 Dayton Ave., Passaic, N.J.

Filed Feb. 12, 1964, Ser. No. 344,265

4 Claims. (Cl. 211—140)

1. An advertising and display device comprising in combination a lower display rack, an upper display rack, clip means for maintaining said upper display rack and said lower display rack in releasably abutting relationship, said lower display rack having at least one pair of

support assemblies, display shelves carried by said assemblies, upper display rack receiving means connected to said assemblies, said upper display rack having at least one pair of side members, said upper display rack being supported by said upper display rack receiving means, said clip means comprising a plurality of spaced clips, each

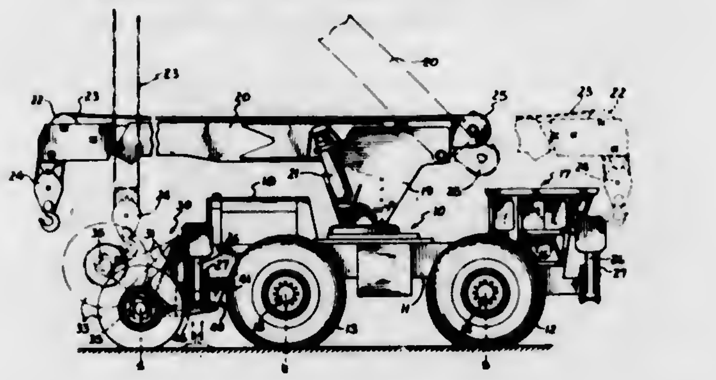


of said clips including a planar central connecting portion. opposed curved engagement sections extending arcuately outwardly from said central portion of said clip and toward each other, one of said engagement sections embracing one of said assemblies, said other of said engagement sections embracing said side members.

3,184,076

AUXILIARY AXLE FOR VEHICLES

Edwin C. Brown, Aurora, and Granville Woolman, Naperville, Ill., assignors to Baldwin-Lima-Hamilton Corporation, a corporation of Pennsylvania
Filed May 23, 1963, Ser. No. 282,626
6 Claims. (Cl. 212—145)

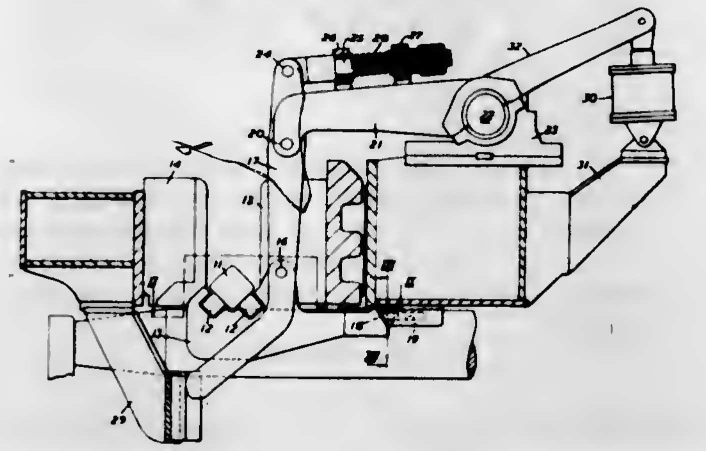


1. In a crane-type vehicle having an unsprung chassis supported by front and rear wheels, the combination comprising, a pair of outriggers mounted on said chassis behind said rear wheels, means for lowering said outriggers into ground engaging contact to relieve the load supported by said rear wheels, a frame mounted in trailing relation about a transverse horizontal axis on said chassis, an auxiliary axle mounted on said frame and journalling a pair of spaced-apart support wheels, said frame being swingable about said axis between an upraised position whereby said support wheels are raised above the ground and a lowered position wherein said support wheels are located in ground engaging contact, a link adapted to interconnect said frame and said chassis to secure said frame in said upraised position whereby said support wheels are raised above the ground, means interconnecting said frame and said chassis for securing said frame in said lowered position when said load on said rear wheels is relieved by said outriggers, and means for raising said outriggers whereby a portion of said load is transferred to said support wheels.

3,184,077

GUIDING AND MANIPULATING APPARATUS FOR A ROLLING MILL

Patrick Alwyne Clark, Norton, Sheffield, and Tom Alexander George Shimeld, Sheffield, England, assignors to Davy and United Engineering Company Limited, Sheffield, England, a British company
Filed Sept. 26, 1961, Ser. No. 140,817
Claims priority, application Great Britain, Sept. 30, 1960, 33,619/60
11 Claims. (Cl. 214—1)

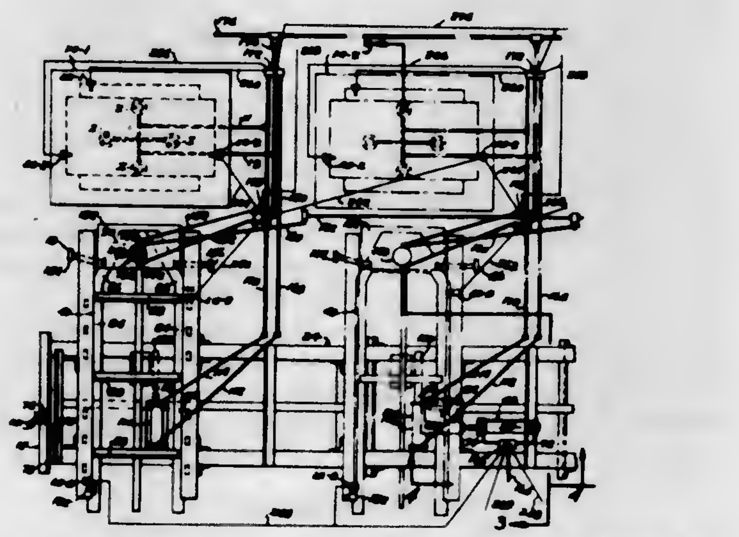


1. A billet manipulator for a rolling mill comprising a pair of spaced-apart manipulating devices, each of which is movable with respect to the other, a pair of mutually inclined rollers for supporting a billet, a support beam for both said rollers slidably connected to one of said manipulating devices for movement transversely of the spacing between said manipulating devices, and a linkage member pivotally connected to said support beam and to one said manipulating device and engaging the other said manipulating device, for adjusting said support beam automatically on movement of at least one of said manipulating devices, to maintain said pair of rollers symmetrically disposed with respect to said devices for a given range of separation thereof.

3,184,078

WORK HANDLING SYSTEM

Robert Lee Medley, Jr., 18451 St. Mary's St., Detroit, Mich.
Filed Jan. 2, 1963, Ser. No. 249,034
12 Claims. (Cl. 214—1)



1. A work transfer apparatus for moving workpieces between a plurality of workpiece processing stations disposed side by side in substantial alignment with one another, said apparatus comprising

an elongated base frame structure having a longitudinal guideway thereon adapted to be positioned substantially parallel to the stations,

a longitudinal carriage mounted for travel in a longitudinal direction along said longitudinal guideway,

a plurality of cross-carriage supporting structures mounted in longitudinally spaced relationship on said main carriage and having a plurality of transverse guideways thereon disposed transversely to said longitudinal guideway in spaced substantially parallel relationship,

a plurality of cross-carriages mounted on said transverse guideways for travel back and forth therealong toward and away from their respective stations,

a workpiece carrier mounted on each cross-carriage,

a workpiece gripper mounted on each workpiece carrier,

a workpiece receiver disposed adjacent said base frame structure in approximate alignment with said stations,

means for advancing and retracting said cross-carriages to and from said stations in timed relationship with one another,

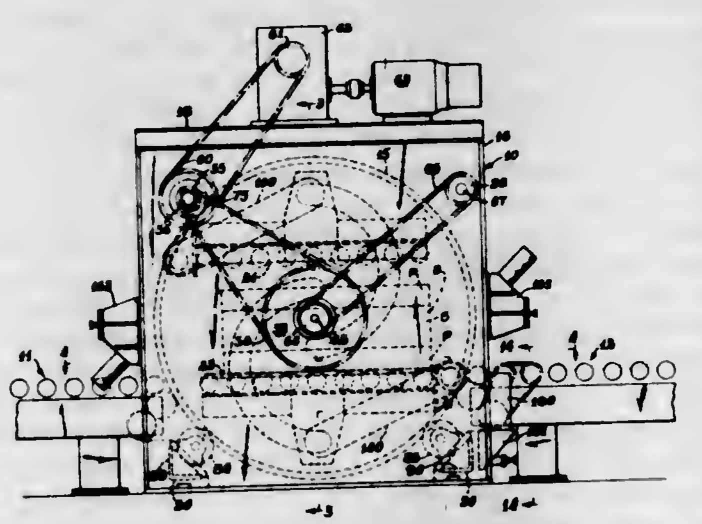
means responsive to the retraction of said cross-carriages to predetermined locations for moving said longitudinal carriage step by step to and fro along said longitudinal guideway in steps corresponding approximately to the spacing of said stations,

and means responsive to the initial arrival of said grippers at said stations for activating said grippers to grip workpieces disposed at said stations and responsive to the subsequent arrival of said grippers at the next adjacent stations for inactivating said grippers to release the gripped workpieces.

3,184,079

BUNDLE TURNING MACHINE

Dario Buccicone, Gary, Ind., assignor to Buccicone Engineering Co., Inc., Gary, Ind., a corporation of Indiana
Filed Mar. 18, 1963, Ser. No. 265,794
19 Claims. (Cl. 214—1)

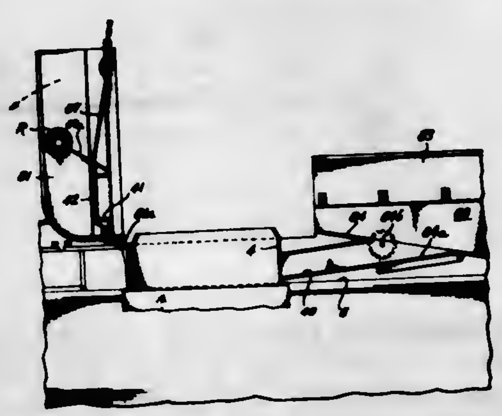


1. A bundle turning machine adapted to be positioned between a pair of horizontally disposed, material advancing conveyors, said machine comprising an upright supporting frame, a drum mounted for rotation in the frame on an axis extending transversely of the path of the material on the conveyors, said drum having aligned openings in the side walls to permit free passage therethrough of material, a pair of clamp forming conveyor sections mounted in said drum, the lowermost one of said sections having a material carrying surface which in the nonclamping position thereof is aligned with the corresponding surfaces of said pair of conveyors so as to form a bridge between the same for passage of material, means to move said conveyor sections in a radial direction toward the axis of rotation of the drum and into clamping engagement with material delivered to the lowermost one of said conveyor sections when the drum is in normal nonrotating position, said conveyor sections being connected to said drum for rotation therewith, means to rotate said drum through 180° to invert the conveyor sections, means to move the conveyor sections apart to unclamp the material and means operative to connect the lowermost one of said conveyor sections to the drive mechanism for the adjoining conveyor whereby to advance the material when the lowermost one of said conveyor sections is in normal non-clamping position.

3,184,080

TROUGH FOR TRAWLERS

Frank J. Luketa, 5567 Greenwood, Seattle, Wash.
Continuation of application Ser. No. 859,389, Dec. 14, 1959. This application Aug. 6, 1962, Ser. No. 215,041
8 Claims. (Cl. 214—15)

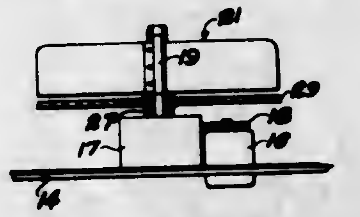


1. In a trawler having an after deck extending from the vicinity of its stern forwardly, a winch supported at the forward portion of said after deck and oriented athwartship, a hatch in said after deck, aft of the winch, a pair of spaced side walls rising from said deck and extending forwardly from the vicinity of the stern to include between them at least a part of the hatch, said side walls defining the opposite sides of a trough, a bottom landing intermediate said side walls and intermediate the stern and the hatch, an after end wall rising from said landing, a forward end wall sloping from said landing upwardly towards and past such portion of the hatch as is included between the side walls, and a hatch cover removably mounted over said hatch, and including at least a part of said sloping forward end wall.

3,184,081

SILAGE DISTRIBUTOR

James B. Perdue and Lawrence E. Tate, P.O. Box 38, Browns, Ala.
Filed Aug. 15, 1963, Ser. No. 302,289
4 Claims. (Cl. 214—17)



1. Apparatus for distributing silage as it is introduced into a silo comprising:

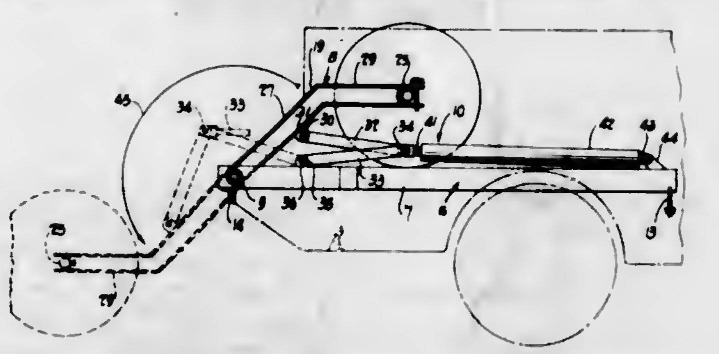
(*a*) a rotary impeller mounted within the silo subjacent the point of introduction of silage for rotation about a generally vertical axis and having radially extending blades,

(*b*) a generally horizontal distributor plate mounted subjacent said impeller for free rotation relative to said impeller about a vertical axis concentric with the axis of rotation of said impeller and in position to support the silage at an elevation to be engaged by said impeller, and

(*c*) means to rotate said impeller as silage is introduced whereby silage falling onto said distributor plate imparts rotation to said distributor plate by engagement of the impeller with the silage, said rotation of the distributor plate being in direct proportion to the volume of silage being introduced.

3,184,082
REEL LOADER

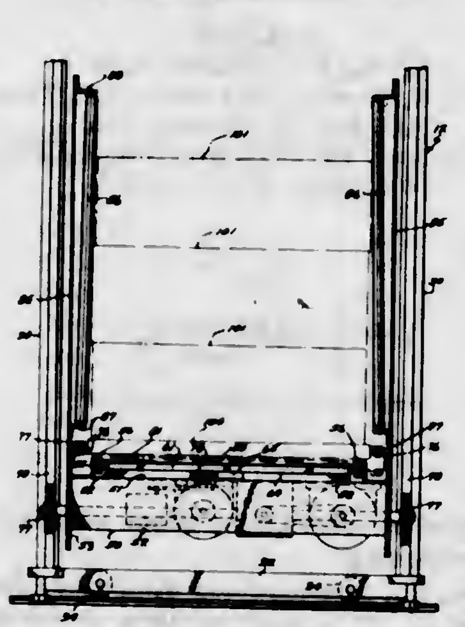
Fred C. Hall, 820 Sharon Park Drive, Menlo Park, Calif.
Filed Sept. 26, 1963, Ser. No. 311,733
4 Claims. (Cl. 214—77)



1. In reel positioning apparatus of the class described, in combination, a main frame, an open ended lift frame pivotally connected thereto, reel engaging means on said lift frame, means to move said engaging means from a position below and to the rear of said main frame to a position above and near said main frame, said moving means, including a first link means pivotally connected to said lift frame at a point intermediate the ends of said lift frame, second link means pivotally connected to the main frame and said first link means, and power means directly connected to both said link means and said main frame whereby to cause movement of said engaging means as stated.

3,184,083
LOAD CHECKING AND POSITIONING DEVICES FOR AUTOMATIC WAREHOUSE SYSTEM

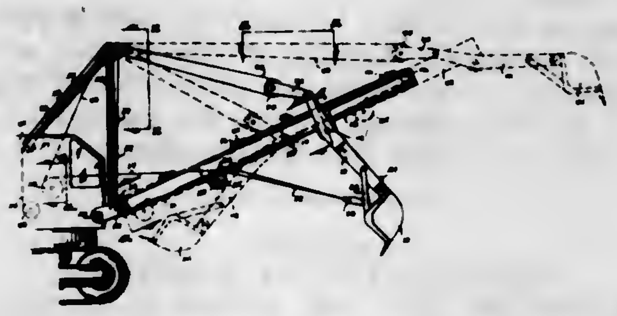
Anthony R. Chasar, Mentor, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 25, 1963, Ser. No. 253,968
6 Claims. (Cl. 214—95)



1. A load carrier movable between different load support means of an automatic warehousing system for transferring a load to or from any of said support means; said carrier comprising a main frame; a horizontally extendible extractor carried by said main frame and movable horizontally out of said main frame for transferring a load at a load support means; upwardly directed guide means having guide surfaces carried by said main frame and disposed symmetrically on either side of the path of movement of said extractor and extending upwardly adjacent to the sides of a load being moved by said extractor; said guide means being tilted in the direction of said extractor and having portions of said surfaces directed laterally outwardly away from each side of said extractor and a load thereon whereby said guide means on opposite sides of said extractor converge upwardly and tend to straighten and center to load therebetween.

3,184,084
ADJUSTABLE BOOM TYPE PULL SHOVEL ATTACHMENT FOR CRANES AND THE LIKE

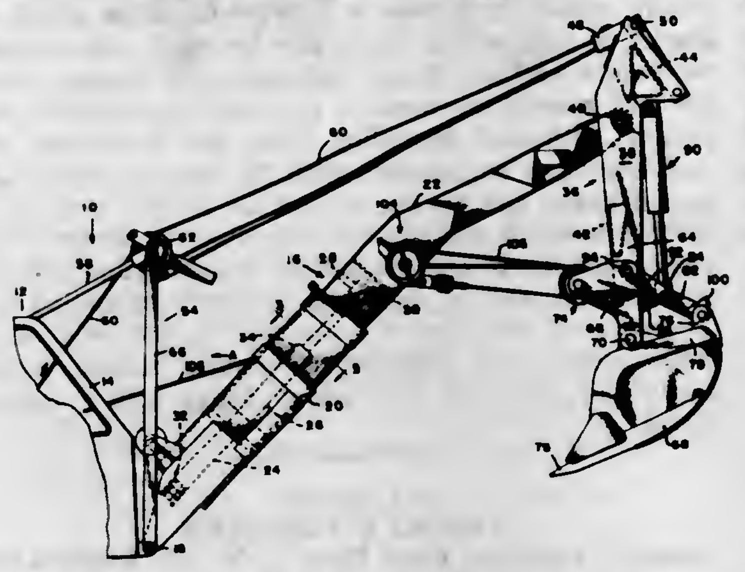
Thomas A. Hellander, 1510 18th St. S., Moorhead, Minn.
Continuation of application Ser. No. 140,303, Sept. 25, 1961. This application Dec. 6, 1963, Ser. No. 330,517
4 Claims. (Cl. 214—134)



1. In combination with a crane of the type having at least three drums; an attachment comprising an elongated boom; means at one end of said boom operatively attaching said boom to said crane to swing in a vertical plane; an implement stick; said implement stick having a longitudinal axis thereof extending vertically through said boom; said implement stick having an upper portion projecting above said boom and a lower portion extending below said boom; an implement mounted on the lower end of said implement stick; a movable carriage mounted on said boom for movement longitudinally thereof; a transverse pivot pin carried by said carriage; said implement stick having an intermediate portion receiving said pivot pin whereby said implement stick is mounted for swinging movement on said pivot pin in a vertical plane passing through said boom; a gantry; a hoist cable reeled on one of said drums; said hoist cable being entrained on said gantry and extending therefrom towards said implement stick; means pivotally connecting said hoist cable to said upper portion of said implement stick; a pull cable reeled on a second one of said drums; means pivotally connecting said pull cable to said lower portion of said implement stick; said hoist cable, in cooperation with said pull cable and with gravity, supporting and controlling the vertical position of said implement stick; said implement, said boom and said carriage; said pull cable, in cooperation with said hoist cable and with gravity, operating said implement stick and said implement; means at one end of said gantry operatively attaching said gantry to said crane; means to retain the position of said gantry; a third cable reeled on a third one of said drums; said third cable entrained on said gantry and operatively secured to said carriage; said third cable, in cooperation with said hoist cable, operating said gantry and positioning and restraining said carriage.

3,184,085
TELESCOPING HOE BOOM

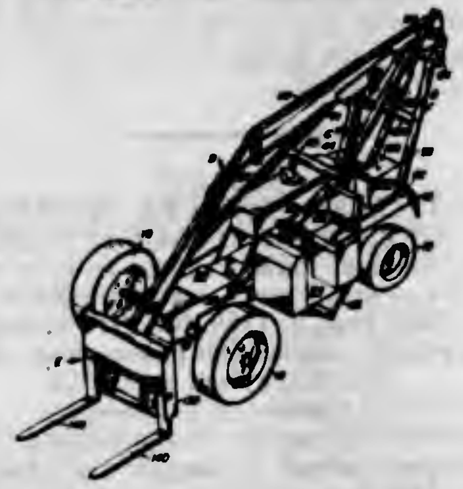
Kenneth W. Randall, Indianapolis, Ind., and Henry J. Vos, Grandville, Mich., assignors to Insley Manufacturing Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Aug. 13, 1962, Ser. No. 216,485
3 Claims. (Cl. 214—138)



1. In a material-handling machine including a body portion, a bucket arm pivotally mounted relative to the body portion, a shovel bucket, means pivotally mounting the bucket to the bucket arm and means for pivoting the bucket about its pivotal mounting comprising a linearly extensible prime mover having one end pivotally carried by the bucket arm, a first arm member pivotally connected at one end to the bucket at a point spaced from the pivotal mounting of the bucket to the bucket arm, a second arm member, means pivotally mounting one end of said second arm member to the bucket arm at a point spaced from the pivotal mounting of the bucket to the bucket arm, means pivotally interconnecting the other ends of said first and second arm members and the other end of said prime mover, and stop members carried by the bucket arm and engageable by said second arm member when the bucket is in the digging position whereby such engagement relieves digging forces from said prime mover.

3,184,086
HIGH LIFT MOBILE LOADER

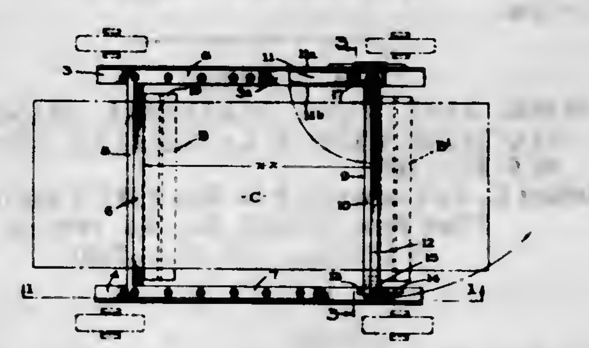
Le Grand H. Lull, 5501 Woodlawn Blvd., Minneapolis, Minn.
Filed May 15, 1963, Ser. No. 280,663
9 Claims. (Cl. 214—140)



1. In a loader, a mobile frame, upwardly and rearwardly inclined forward link structure pivotally mounted at its lower end to the forward end of said frame, upstanding rear link structure pivotally mounted at its lower end to the rear of said frame, said forward and said rear link structure each including laterally converging support members and forming with said frame generally pyramidal boom support means, a boom pivotally carried by the upper ends of said forward and rear link structure, and hydraulic cylinder means extending between the boom and the frame spaced lengthwise of the boom from said rear link structure for raising and lowering and advancing and retracting said boom.

3,184,087
STRADDLE TRUCK SUPPORT SHOE

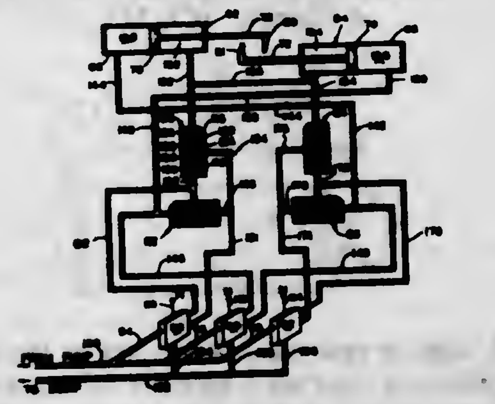
William L. Prindle, Chicago, Robert H. Bielfeldt, Midlothian, and Richard J. Surdell, Lansing, Ill., assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Filed Feb. 25, 1963, Ser. No. 260,377
3 Claims. (Cl. 214—392)



1. In a straddle truck having load-lifting means vertically adjustable in relation to the ground, a support shoe assembly attached to said lifting means and comprising, a pair of parallel side frame channels, a stationary transverse support arm connecting said channels adjacent one end thereof, a movable support arm adjacent the opposite ends of said channels and including pivot means at one end for attachment to one of said channels, a handle joined to said movable arm adjacent said pivot means and disposed normal to said movable arm, said movable support arm when in an operative position extending from one of said channels to the other of said channels with said handle parallel to one of said channels, whereby said movable arm may be pivoted out of the way to provide an unobstructed passageway between said channels back to said stationary support arm.

3,184,088
HYDRAULIC CONTROL SYSTEM FOR MOVING CLAMPING MEMBERS ON A LIFT TRUCK LATERALLY, INDEPENDENTLY OF EACH OTHER, AND SIMULTANEOUSLY IN THE SAME AND OPPOSITE DIRECTIONS

Kenneth H. Berge, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Sept. 11, 1961, Ser. No. 137,157
5 Claims. (Cl. 214—653)

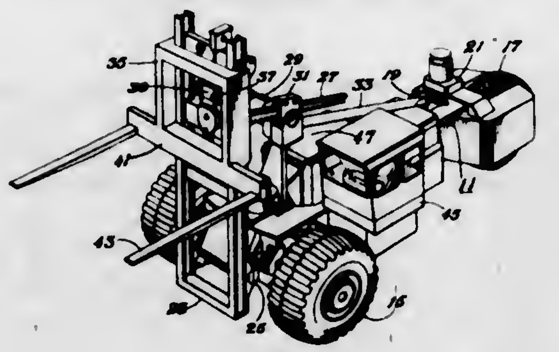


2. In a load gripping device having a pair of load-engaging members, first and second fluid motor means for moving said members along a predetermined path, a source of pressure fluid, and fluid circuit means operatively connected to said fluid source and to said motor

means for automatically effecting simultaneous movement of said members along said path in the same direction and alternatively in opposed directions, the improvement comprising means for effecting movement of either of said members along said path while maintaining the other member stationary, said movement-effecting means comprising a pair of fluid circuits connected to each other and to said first and second motor means, a plurality of control valves controlling fluid flow in said circuit means and circuits, and a plurality of check valve means connected fluidly intermediate said circuit means for automatically preventing flow between the circuit means upon operation of the circuit means or of either of the circuits, each of the second and third valve means comprising a pair of check valve units fluidly connected to each other for allowing flow to the associated motor means in either direction.

3,184,089
FORK LIFT TYPE MATERIAL HANDLING MACHINE WITH A LATERALLY ADJUSTABLE FRAME

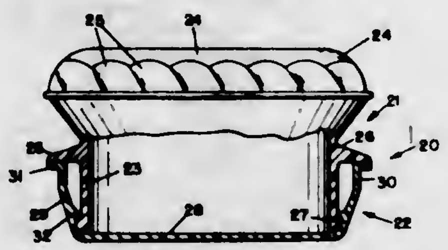
Robert G. LeTourneau, P.O. Box 2307, Longview, Tex.
Filed June 1, 1962, Ser. No. 199,456
4 Claims. (Cl. 214—730)



4. In combination with a material handling machine of the fork lift type having a wheeled front axle, a main frame, and an elevatable load supporting structure attached to said main frame at the forward end portion thereof; means for supporting said main frame adjacent its forward end portion on said axle for movement longitudinally of said axle; said supporting means including carriage means interposed between said axle and said main frame; and means for moving said main frame longitudinally of said axle.

3,184,090
FITMENT FOR JARS AND THE LIKE

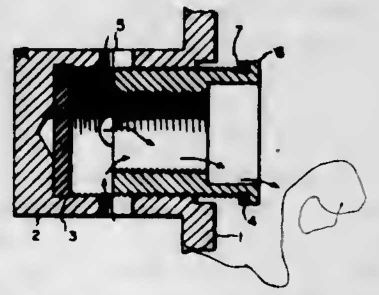
William H. Robinson, New Vienna, Ohio, assignor to Buckeye Molding Company, New Vienna, Ohio, a corporation of Ohio
Filed July 25, 1962, Ser. No. 212,317
4 Claims. (Cl. 215—48)



1. A stopper type closure for jars or the like, comprising a relatively rigid core member having a knob portion and a substantially cylindrical support portion having an open bottom extending downwardly from the knob portion, said support portion being adapted for insertion into the circular mouth of the jar, and an integral annular outwardly extending flange surrounding the upper extremity of said support portion adjacent the knob, and a second integral outwardly extending flange of substantially less diameter than the first mentioned flange and having a flat top surface and an arcuate surfaced outer rim surrounding the lower extremity of the support portion, a sealing member of resilient material including an annular cylindrical side wall of a diameter in excess of the diameter of said cylindrical support portion and coaxially spaced there from a distance in excess of the diameter of said second flange and having its top abutting the bottom surface of said first-mentioned flange, and an inverted integral downwardly tapering frusto-conical wall integral with and depending from said cylindrical side wall into close engagement with the arcuate rim of said second flange and having an annular bottom portion extending beneath and closely engaging the underside of said second flange and the bottom of said cylindrical support portion, and at least one inwardly extending protuberance of cusp-shaped cross section interiorly of the frusto-conical wall adjacent its annular bottom portion and engageable over said second flange with a snap-on action.

3,184,091
LIQUID CONTAINER

August J. Hoffman, Pearl River, N.Y. (% Pomona Post Office, 112 Quaker Road, Mount Ivy, N.Y.)
Filed July 11, 1962, Ser. No. 208,989
5 Claims. (Cl. 217—99)



1. A liquid container of rigid material comprising in combination

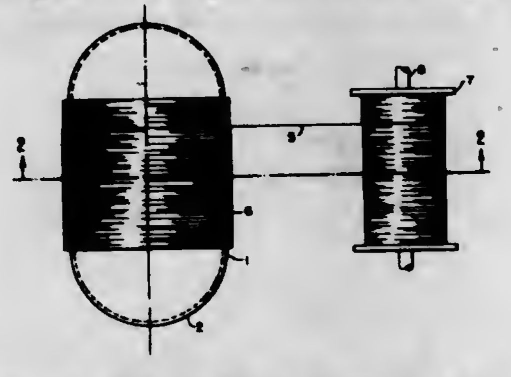
(*a*) a portion of an end thereof having a rigid, internally projecting boss with a cylindrical hollow internally threading, a solid wall closing the internal end, the boss being provided with openings spaced intermittently in its cylindrical side wall, the external end of the boss being at least flush with the container end, and

(*b*) a hollow, rigid, peripherally imperforate, open ended, externally threaded plug engaging the inner threads of the boss and when screwed in forming a seal against the closed end of the boss and the outer end of the plug when screwed in being at least flush with the outer end of the boss, whereby by unscrewing the plug the peripheral openings in the boss are gradually exposed.

3,184,092
THIN-WALLED PRESSURE VESSELS AND METHOD OF MANUFACTURE

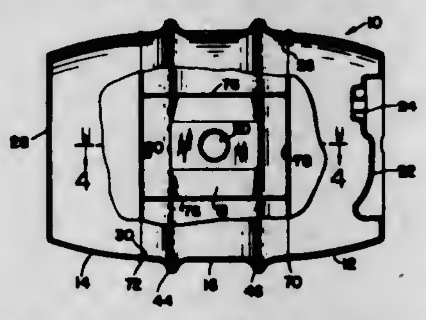
Henri J. C. George, Paris, France, assignor to Quartz & Silice S.A., Paris, France, a corporation of France
Filed Sept. 9, 1960, Ser. No. 55,080
Claims priority, application France, Sept. 10, 1959, 804,785, Patent 1,243,920
1 Claim. (Cl. 220—3)

A pressure vessel capable of maintaining high bursting strength at temperatures in the order of about 1000° C., comprising a hollow metallic vessel which would normally be weakened at temperatures in the order of about 1000° C. to a point where said metallic vessel would rupture under its designed pressure limit, said metallic vessel having a coefficient of thermal expansion substantially greater than that of quartz, said pressure vessel having a plurality of windings of a quartz filament wound under a tension less than the yield point of said filament, said windings maintaining their tensile strength at a temperature in the order of about 1000° C. and restraining thermal expansion of said metallic vessel.



3,184,093
BARREL

Marion E. Dole, Beatrice, Nebr., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed June 29, 1962, Ser. No. 206,280
1 Claim. (Cl. 220—5)

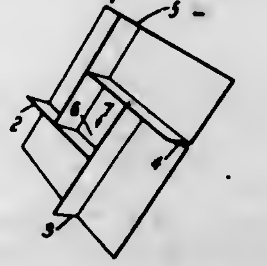


In a barrel having a pair of generally cup-shape end sections arranged in a spaced apart facing relation, an arcuate center member secured at its ends and extending between said end sections, said center member having a pair of spaced-apart edges which define with said end sections an opening in a side wall of said barrel, said center member having a pair of spaced circumferentially extending rolling projections formed therein which project radially outwardly of said center member and form circumferentially extending grooves on the inner surface thereof, a shaped block fitted in said side wall opening and secured at its edges to the edges of said center member and to said end sections. said block having its outer surface shaped to form spaced rolling projections corresponding substantially in external cross sectional shape to the shape of the projections on said center member and circumferentially aligned therewith so as to form therewith spaced annular rolling rings on said barrel, said block having an increased thickness section formed substantially centrally thereof and extending between the rolling projections formed thereon, said block having a bung opening formed in said increased thickness section and having the inner surface thereof shaped so that it is provided with grooves which communicate with the grooves in said center member and inclined surface portions which intersect and interrupt the grooves in said block and slope toward said opening from opposite sides thereof.

3,184,094
EXTENSIBLE METAL SHEETS

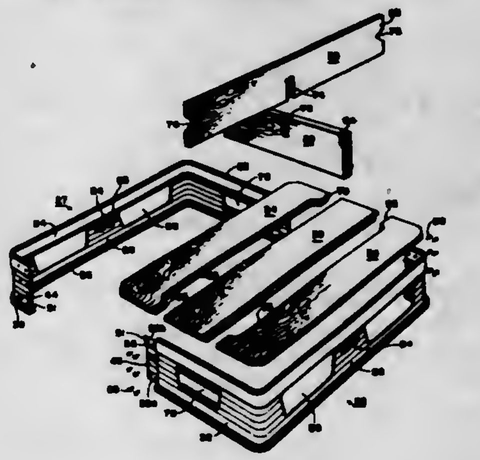
Michael Joseph French, Cambridge, and John William Ledward Petty, Haywards Heath, Sussex, England, assignors to Conch International Methane Limited, Nassau, The Bahamas, a Bahamian company
Filed June 4, 1963, Ser. No. 285,279
Claims priority, application Great Britain, July 27, 1962, 28,880/62
17 Claims. (Cl. 220—9)

1. An extensible unitary, continuous, fluid impermeable sheet including an enclosed area bounded entirely by non-intersecting but meeting corrugations in the sheet, which corrugations extend linearly beyond the enclosed area, and which corrugations are capable of flexing in response to thermal expansion and contraction of the sheet; a supporting structure for said sheet, spaced from said sheet, and a pivotal supporting connection between the center of said enclosed area and said supporting structure whereby said sheet expands and contracts in response to temperature changes by angular rotary movement about said pivotal connection due to the flexing of said corrugations.



3,184,095
CARRYING CASE FOR BOTTLE CARTONS AND THE LIKE

Richard N. Brandon, Richmond, and Woodrow W. Solley, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed May 28, 1959, Ser. No. 816,601
3 Claims. (Cl. 220—21)



1. A carrying case for bottles and the like comprising: a pair of identical inwardly facing extruded metal sidewall forming members each having a main member forming a first substantially straight wall of said case and having integrally therewith a short leg at right angles to said main member and forming a portion of a second substantially straight wall of said case, said main member also having a long leg at right angles to said main member and forming a portion of a third substantially straight wall of said case, each sidewall forming member having a floor-receiving channel extending along the main member and short and long leg thereof; a flat, non-metallic floor at the bottom of said case and receivable in said channels; and two non-metallic dividers inside said case at right angles to each other, said sidewall forming members, floor, and dividers being shaped to be substantially completely secured together by two similar securing joints, each joint being produced at an end means of a short leg of one of said sidewall forming members and at an end means of a long leg of the other of said sidewall forming members, said joints being located adjacent and spaced from opposite obliquely disposed corners of said case, said end means of said sidewall forming members permitting said sidewall forming members to be assembled together by effecting relative movement therebetween in the same plane as said floor to insert said floor

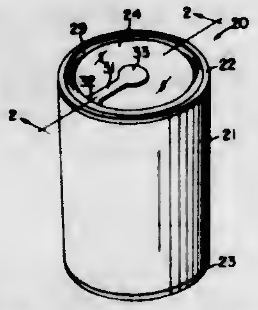
in said channels and to form said joints, one of said dividers being held within said case against sidewise rocking movement by a slotted flange construction which receives an end of said divider in the slotted portion of said flange, each of said long legs having a hand-hold opening therein one horizontal edge of which is formed by said slotted flange construction.

3,184,096
CONTAINER SEAL AND OPENING MEANS

William E. Cheeley, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Oct. 4, 1961, Ser. No. 142,962

11 Claims. (Cl. 220—46)



1. In combination, a container having a wall, said wall having an opening bounded by an inner peripheral edge of said wall, an insert disposed in said opening and having an outer peripheral edge spaced from said peripheral edge of said wall, a continuous sealing means detachably secured to said inner peripheral edge of said wall and permanently secured to said outer peripheral edge of said insert to seal said insert in said opening, and handle means having one end interconnected to said sealing means and extending at least partly across said insert to provide means for pulling said sealing means and said insert from said container.

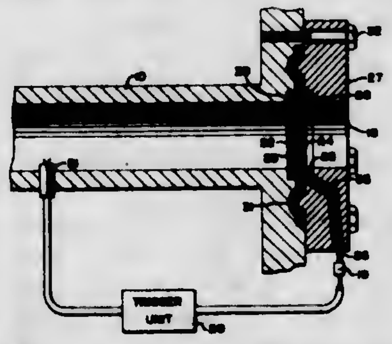
3,184,097
VALVE WITH EXPLODING DIAPHRAGM

Earl E. Kilmer, College Park, and Rayner A. Montgomery, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Jan. 19, 1962, Ser. No. 167,452

4 Claims. (Cl. 220—47)

(Granted under Title 35, U.S. Code (1952), sec. 266)



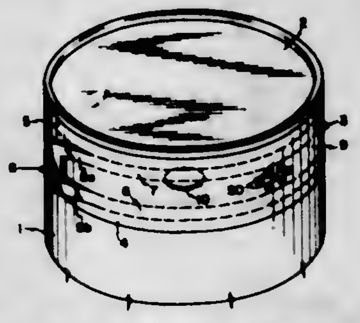
1. An explodable diaphragm arrangement to provide a high speed valve for suddenly releasing pressurized gas from an opening comprising a continuous sheet of high velocity flexible explosive for covering said opening, an air tight plastic film, a sheet of flexible woven plastic material, said film and said woven material being flammable, a second sheet of high velocity flexible explosive having an aperture therein at the center thereof the size of said opening, holding means for securely holding said continuous sheet across said opening with one side thereof in contact with said pressurized gas, for tightly clamping said film and said sheet of woven material against said continuous film on the opposite side of said film to provide reinforcement therefor, and for holding said second sheet against said film and said woven material, and detonating means connected to said second sheet, whereby actuation of said detonating means opens said diaphragm.

3,184,098
RIP STRIP CONTAINER

George Sabaka, R.D. 3, Hanover, Pa.

Filed July 17, 1964, Ser. No. 383,406

3 Claims. (Cl. 220—54)



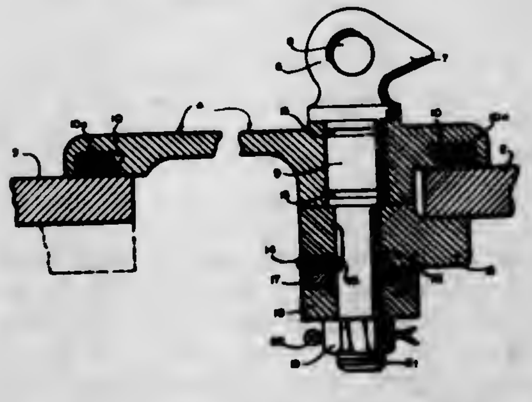
1. An improved container assembly which comprises in combination (1) a tubular container having a port communicating from within to without said container, (2) a cylindrical integral collar unit rigidly affixed about the circumference of said container over said port, (3) a first rip strip of said collar unit intermediate, (4) a first stop of said collar unit and, (5) a collar of said collar unit, (6) a second rip strip of said collar unit intermediate said collar and, (7) a second stop of said collar unit, said collar unit being rigidly affixed to said container solely by means of said stops, whereby when said strips are removed from said collar unit intervals will exist between said collar and said stops and said collar will be movable in a directly vertical direction between said stops over said port and will also be rotatable in a directly horizontal direction about the longitudinal axis of said container.

3,184,099
CLOSURE PLATE FOR CARGO TANKER

William H. Gravert, Port Washington, N.Y., assignor to Marine Moisture Control Company, Inc., Inwood, Long Island, New York, a corporation of New York

Filed June 17, 1963, Ser. No. 288,862

4 Claims. (Cl. 220—55)



1. For use with a smooth, unobstructed portion of a ship's deck of thick steel plate having an orifice, an orifice cover comprising a removable metal cover plate; a continuous gasket firmly held on the underside of said cover plate for sealing said plate against said wall; and cam pressure clamping means for securely sealing said cover plate in place against the smooth top side of the deck under sufficient pressure to effectually compress said gasket between the cover plate and the deck, said clamping means comprising rotary means including a rotatable shaft passing through a circular aperture in said cover plate near the rim thereof, a rotation control element fixed to said shaft on the outer side of said cover plate for rotating said shaft, cam means rotatable with said shaft for clampingly engaging said deck between the

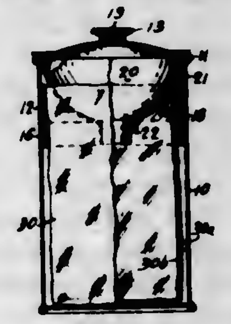
under side of said cover plate near the rim thereof and the cam face of said cam means, as said shaft is rotated; sealing means between said rotary means and said cover plate for preventing the passage of fluid or gas, said sealing means comprising at least one O-ring in an annular groove in said shaft and engaging the wall of said aperture.

3,184,100
WASTE GREASE DISPOSAL UNIT

Maurice E. Thomas, 4150 Sherbrooke St. W., Westmount 6, Quebec, Canada

Filed Jan. 28, 1963, Ser. No. 254,124

1 Claim. (Cl. 220—63)



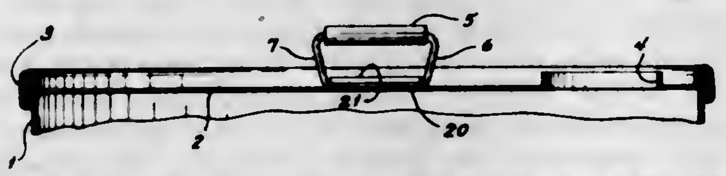
A waste collection and disposal assembly comprising a two-piece canister body having a lower body portion and a top portion telescopically and removably received in said lower body portion, said lower body portion having a height substantially twice the height of said top portion, a funnel removably mounted on the upper edge of said top portion, said funnel including a depending spout extending below a plane extending through the upper margin of said lower body portion, and a disposable bag disposed in said lower body portion and having an upper open portion completely enclosing said spout and circumposed about and engaging an intermediate portion of said funnel whereby when the level of waste grease in said disposable bag reaches said funnel a user is apprized that the disposable bag should be replaced and removal of the top portion and funnel provides ready access to the upper open portion of said disposable bag to permit ready removal of said disposable bag without spilling the contents thereof, said disposable bag comprising a grease impermeable material of a semi-rigid character, the upper open unfilled portion of said bag being manually foldable into a transverse seal extending across the top of said bag to seal the bag when the filled bag is disposed.

3,184,101
PAIL HANDLE

Walter J. Pentesco, St. Catharines, Ontario, Canada, assignor to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 13, 1962, Ser. No. 223,472

5 Claims. (Cl. 220—94)



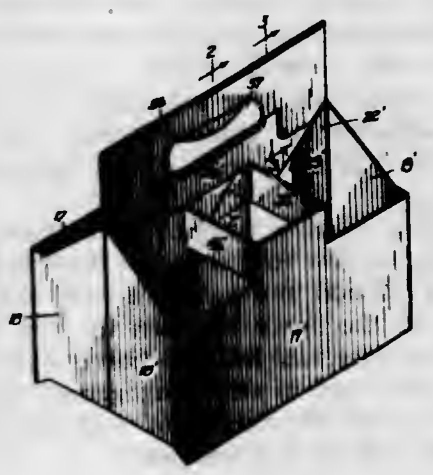
1. Pail handle construction comprising two generally U-shaped rod-like members, each providing a pair of legs, one leg of each U-shaped member adapted for lengthwise engagement with a container wall, the free end portion of each of said other legs terminating in an integral interlocking means said end portions positioned in interlocked relationship, and a resilient radially expandable tubular hand grip closely surrounding and engaging the said interlocked end portions of said other legs whereby said other legs are retained in interlocked relationship.

3,184,102
ARTICLE CARRIER

Edwin L. Arneson, Morris, Ill., assignor to Federal Paper Board Company, Inc., Bogota, N.J., a corporation of New York

Filed Oct. 3, 1962, Ser. No. 228,066

7 Claims. (Cl. 220—113)



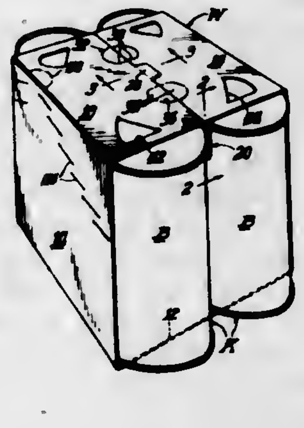
7. In a bottle carrier, a pair of rectangular bottom panels foldably connected to each other along a central fold line, side wall panels foldably connected to the outer edges of the bottom panels, end wall panels foldably connected along vertical hinge lines to the end edges of the side wall panels, each of said end wall panels having a longitudinal center partition forming flap connected along a vertical hinge line to the inner edge thereof, said longitudinal partition flaps having top portions extending vertically above the top edge of the side wall panels and the respective longitudinal partition flaps at each end of the carrier being connected in face-to-face relation, a pair of handle forming sections spanning the space between and secured to the top extensions of said longitudinal partition flaps, said handle sections being foldably connected along their top edges and having aligned hand holes, and reinforcing strips extending along the top edges of said handle sections so as to form four thicknesses of material between the top edge section of the handle and the hand holes, said handle reinforcing strips being taken from one of the handle sections and being integrally hinged to each other and to said one handle section on hinge lines parallel with the top edges of said handle sections.

3,184,103
WRAP AROUND CAN CARRIER CARTON WITH CENTRAL RETAINING MEMBER

Francis A. Chidsey, Jr., Wayne, and John V. Mahon, Norristown, Pa., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Nov. 19, 1962, Ser. No. 238,456

8 Claims. (Cl. 220—115)



8. A wrap around carton formed from a unitary blank of foldable paperboard for enclosing portions of the ends

and sides of two parallel, opposed rows of cans, arranged in side-by-side relation, each of which has at an end thereof a peripheral chime of greater diameter than the remainder of the can body, comprising:

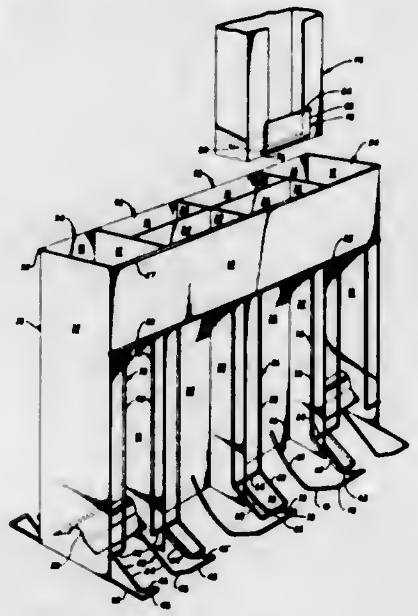
- (*a*) a pair of opposed substantially parallel top and bottom walls;
- (*b*) a pair of opposed substantially parallel side panels hingedly connected at opposite side edges to respective walls to define a tubular structure; and
- (*c*) a retaining member hingedly connected to one wall and including a head portion disposed between a pair of adacent cans at a location immediately inwardly adjacent the chimes thereof, and connected to said one wall by a neck portion disposed between said chimes;
- (*d*) said head portion comprising at least five interconnected, narrow folded panels disposed in parallel overlying relation and having a total thickness sufficient to fill the space between the can bodies substantially solidly, said head portion including shoulder portions arranged in close engagement with the can chimes to limit movement of said cans relative to each other and to said one wall.

3,184,104
DISPENSER

Vincent M. De Domenico, Hillsborough, and Harry L. Davis, El Cerrito, Calif., assignors to Golden Grain Macaroni Co., San Leandro, Calif., a corporation of California

Filed Dec. 5, 1963, Ser. No. 328,295

3 Claims. (Cl. 221—92)



3. A gravity-feed dispenser for similarly shaped round articles, comprising:

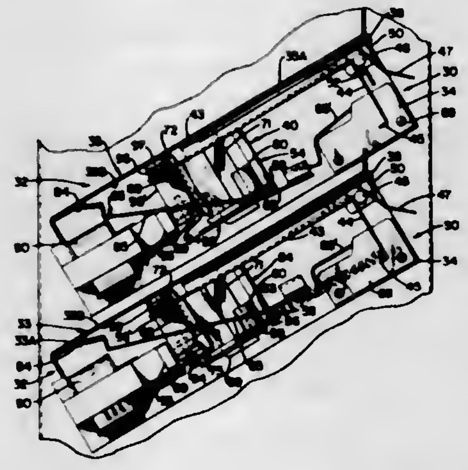
- (*a*) an open tube form body member having a lower discharge end and front and rear sides spaced apart by a distance sufficient to contain therebetween at least two of said articles in side by side relationship, said member being adapted to contain a plurality of said articles in stacked relationship;
- (*b*) means carried by said body member adjacent the lower end thereof to control the dispensing of articles from both the front and rear sides thereof and to limit the removability of said articles from each of said sides to one at a time, said means comprising:
  - (1) a deflector fixedly related to said body member adjacent said lower end between said front and rear sides, said deflector being spaced from each of said sides by a distance sufficient to permit said articles to pass thereby;
  - (2) front and rear pairs of support members fixedly related to said body member adjacent the lower discharge end thereof, said front and rear pairs of support members each having inclined portions extending outwardly and downwardly from said deflector towards and below the respective front and rear sides which are adapted to partially laterally offset, from top to bottom, the articles engaging said portions through said discharge end and in the direction of said respective front and rear sides;
  - (3) support member portions extending outwardly and upwardly from said front and rear support members as continuations thereof adapted to prevent the lowermost of said articles from being dispensed out of said body member under the pressure exerted upon said lowermost article by the articles thereabove; and,
  - (4) guard members carried at the front and rear sides of said body member and defining with the respective support member portions extending from said front and rear support members discharge mouths each dimensioned and disposed to permit the manual removal therefrom of but one article at a time.

3,184,105
RECORD VENDING MACHINE

John T. Willoughby, Compton, Calif., and Hyman P. Silverman, Denver, Colo., assignors to Record Vending Machines, Inc., Denver, Colo., a corporation of Colorado

Filed Mar. 29, 1962, Ser. No. 183,470

5 Claims. (Cl. 221—129)



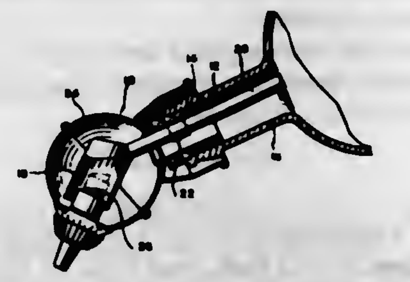
1. A phonograph record vending machine comprising a housing, a delivery area communicating between the interior and exterior of the housing, at least one record compartment arranged vertically above the delivery area, said compartment having a platform inclined downwardly toward the delivery area and a record dispensing unit for mounting records in stacked relation substantially parallel to and above said inclined platform, said unit having a center support member extending downwardly toward said platform for mounting records in stacked relation substantially parallel to said platform, a laterally offset retention member at the lower end of said center support member, slide means normally aligned within said center support member above said retention member being slidable into engagement with the lowest record for record movement into alignment with said retention member whereby to release each record in succession, slide actuating means including a spring-biased pivotal member extending downwardly through said center support member for engagement with said spring-biased pivotal member whereby to cause movement of said slide actuating means and release of a record for delivery to said delivery area.

3,184,106
ADJUSTABLE, SIPHON-TYPE LIQUID DISPENSER

Harold A. Payne, 252 Bering Ave., Toronto, Ontario, Canada

Filed Oct. 9, 1963, Ser. No. 315,090

1 Claim. (Cl. 222—46)



A device for dispensing liquid in predetermined amounts from a bottle comprising a bulb adapted to receive liquid from a bottle, a measuring chamber in said bulb, a siphoning tube carried by said bulb, one end of said siphoning tube projecting into said measuring chamber, means for varying the projection of said siphoning tube into said measuring chamber over a range whereby a predetermined amount of liquid dispensed by said device can be varied, said latter mentioned means comprising a knob rotatably mounted with respect to said bulb, said knob being formed with a through opening having a first end and a second end, said first end of said through opening terminating in a spout that is exterior of said bulb, at least a portion of the through opening of said knob being threaded, said siphoning tube being in threaded engagement in said threaded portion of said knob and extending beyond the second end of the through opening, means for preventing said siphoning tube from rotating about its own longitudinal axis as said knob is rotated whereby with rotation of said knob the projection of said siphoning tube into or out of said measuring chamber can be varied, a dial on said bulb, a pointer for said dial carried by said knob and adapted to move across said dial as said knob is rotated, limit means for limiting the rotational movement of said knob to not more than 360°, said siphoning tube being threaded as aforesaid with a thread having a pitch adapted to give said range of variation of projection of said siphoning tube into said measuring cup in response to rotational movement of said knob as limited by said limit means, and calibrations on said dial related to the projection of said siphoning tube in said measuring cup whereby said pointer by its position on said dial indicates the amount of liquid dispensable by said device for any setting of said pointer on said dia'.

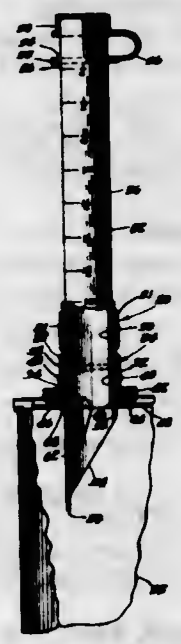
3,184,107
SPOUT FOR CANS

Kenneth J. Kohanzo, Deerfield, Ill.
(29 E. Madison St., Chicago, Ill.)

Filed Apr. 23, 1962, Ser. No. 189,391

4 Claims. (Cl. 222—49)

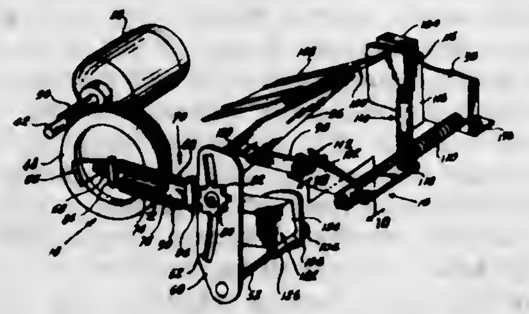
1. A can opening and liquid dispensing device for opening a generally flat topped can containing liquid and effecting upon upending of the can the dispensing by gravity of the liquid contents of the can except for a residual volume of liquid retained in the can by the dispensing device and being determined in volume by preadjustment of the dispensing device to equal any desired volumetric portion, including zero, of the volume of the can; comprising, in combination, an elongated dispensing and gauging tube cylindrical in shape and being straight throughout the length of the tube, a generally cylindrical can piercing sleeve closely encircling said dispensing and gauging tube for longitudinal sliding movement with respect to the tube and having an overall length that is much shorter than the length of the tube; said sleeve including means extending along an adjacent segment of the tube of substantial axial length and having a slidable, closely encircling fit with said tube to form a seal therewith and hold the tube securely in coaxial alignment with the sleeve and to hold the tube firmly with limited frictional force in any longitudinal position to which it is moved with respect to the sleeve, said sleeve having thereon a circular seal seat encircling a medial portion of the sleeve, a resilient annular seal supported on said seat in adjacent encircling relation to said sleeve and defining an annular can sealing surface facing axially inward with reference to the sleeve, said sleeve including a can piercing segment thereof extending axially inward beyond said sealing surface and having a can piercing shape defining a can piercing point and a can cutting edge, said can piercing segment of the sleeve being of radially thin construction and having an inner diameter that conforms closely to the outer diameter of said tube so that said sleeve piercing segment has a radial clearance from said tube that is limited substantially to that required for easy longitudinal movement of the tube with respect to the sleeve, said piercing segment of the sleeve having retaining lugs struck out from the sleeve and defining cam surfaces confronting said sealing surface and being inclined axially outward in a common rotary direction from leading portions of the respective cam surfaces, cutting blades struck out of said piercing segment of said sleeve and forming radially protruding can slitting edges extending axially inward from the leading portions of said respective cam surfaces to provide for slitting of marginal portions of a can being pierced by said piercing segment whereby the leading portions of said respective cam surfaces are moved inwardly of adjacent marginal edges of can structure pierced by said piercing segment to effect upon rotation of said sleeve means in a direction opposite from said common rotary direction a camming against said seal of the marginal edge structure of a can pierced by said sleeve means to produce a tight seal between said sleeve means and the can, said tube having an inner end defining an opening into the tube; said tube being movable longitudinally within said sleeve to different gauging positions with respect to the sleeve, including a fully extended can emptying position in which said opening in the inner end of the tube is substantially flush axially with said sealing surface and positions in which the inner end of said tube projects inwardly beyond said sleeve; said piercing segment of the sleeve defining therein a passage opening axially inward and extending axially outward into proximate relation to said seal, the inner end of said tube having thereon an abutment shaped to move through said passage and engage the sleeve to stop outward movement of the tube in a position of the tube in which said opening in the tube is proximate to said sealing surface to permit emptying through said passage and said tube opening of a can engaged by said sealing surface, and means on



said tube forming a graduated scale extending longitudinally along the tube for determining the longitudinal position of the tube with reference to the sleeve.

3,184,108
APPARATUS FOR MIXING FEEDS

Theodore H. Grau, Rembrandt, Iowa
Filed Nov. 13, 1962, Ser. No. 237,259
16 Claims. (Cl. 222—58)

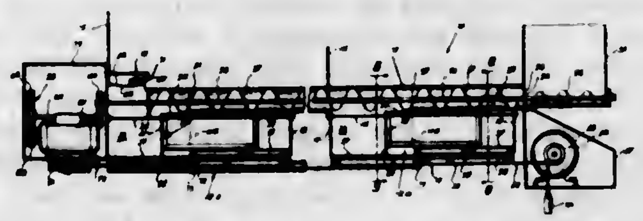


14. A dispensing device for free flowing materials comprising in combination:

a hopper having an inclined bottom provided with a discharge opening,
a gate reciprocally mounted on said bottom to serve as a closure for said opening,
a shaft rotatably journalled to said hopper,
motor means connected to said shaft for oscillating the same about its longitudinal axis,
linkage means connecting said shaft to said gate to effect reciprocation thereof relative to said opening, and
control means intermediate said motor means and said shaft for selectively regulating the degree of oscillation of said shaft and thereby selectively regulating the degree of reciprocation of said gate and the amount of said opening exposed during each cycle of gate reciprocation.

3,184,109
FEEDING SYSTEM

Donald L. Brackett, Oskaloosa, Iowa, assignor to Mahaska Industries, Inc., Oskaloosa, Iowa, a corporation of Iowa
Filed May 3, 1963, Ser. No. 277,801
10 Claims. (Cl. 222—64)

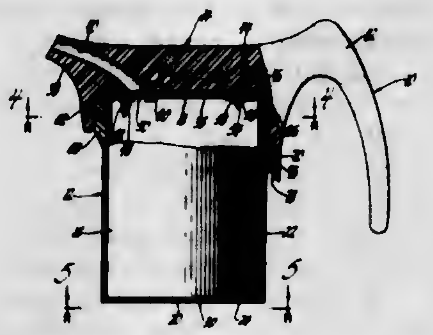


1. A feeding system for periodically and simultaneously supplying feed to a plurality of separate feeding locations comprising:

(*a*) means for storing a supply of feed,
(*b*) feed dispensing units corresponding in number to the number of feeding locations and supported at a higher elevation than said feeding locations, each unit including a housing defining a feed metering chamber,
(*c*) door means mounted on said housing of each unit for movement to first and second positions for opening and closing the bottom of said metering chamber,
(*d*) conveyor means including a motor, said conveyor means connecting the units in series and operable to move feed from said feed storing means to sequentially fill the metering chamber of the respective units,
(*e*) means including a motor for simultaneously moving said door means to the first position thereby opening the bottom of said metering chambers discharging feed to the feeding locations,
(*f*) switch means actuated in response to feed moved into the last unit to disconnect said conveyor means motor from and connect said door motor to a source of energy whereby said conveyor means is rendered inoperative and said door means are moved to the first position, and
(*g*) means for moving said door means from the first to the second position thereby closing the bottom of said metering chambers.

3,184,110
PITCHER ASSEMBLY FOR A LIQUID CONTAINER

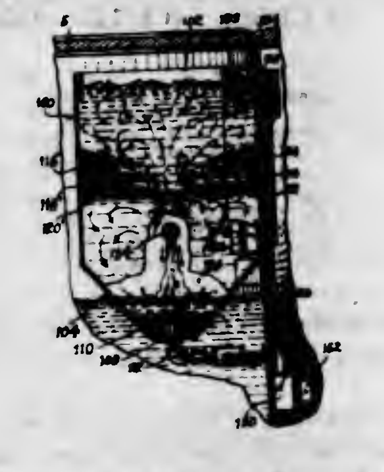
Steve Gombar, Royal Oak, and Charles G. Thayer, Clawson, Mich., assignors of thirty-three and one-third percent to Gabriel L. Dery, Madison Heights, Mich.
Filed Nov. 29, 1962, Ser. No. 240,940
1 Claim. (Cl. 222—86)



A pitcher assembly for removably holding and dispensing the contents of a liquid container; said pitcher assembly comprising a pitcher body including a substantially continuous rim portion defining an opening in the upper end thereof through which a liquid container may be removably inserted within said body with the top of said liquid container projecting above said rim portion, a pitcher top member adapted to be removably mounted axially on said body over said opening therein and comprising a substantially continuous rim portion adapted to closely overlie said rim portion of said body, sealing surface means on said top member radially inwardly from said rim portion thereof and disposable opposite the top of a container within said body, said sealing surface means being recessed relative to said continuous rim portion of the top member and disposed a predetermined distance axially opposite the top of a container within said body, an annular wall member on said top member adapted to closely encircle the portion of a liquid container projecting from the pitcher body when said pitcher top member is mounted upon said body, means including a liquid inlet opening in said sealing surface means defining a pouring and dispensing spout extending through said top member, means including a vent opening in said sealing surface means spaced from said liquid inlet opening defining a vent passage extending through said top member, a pair of punches secured to said top member respectively adjacent said liquid inlet opening and said vent opening and extending axially beyond said rim portion of said top member to puncture openings in the top of a container within said body substantially respectively opposite said liquid inlet opening and vent opening upon mounting said top member upon said body, a pair of yieldably compressible seals seated against said sealing surface means and respectively surrounding said liquid inlet opening and said vent opening and their associated punches so as to surround the respective openings punctured in the top of a container, the uncompressed thicknesses of said seals being substantially greater than said predetermined distance between said sealing surface means and the top of a container whereby said said seals are yieldably compressed between said sealing surface means and the top of a container upon mounting said top member upon said body, cooperably engageable releasable latch means carried respectively by said top member and said body to releasably latch the former upon the latter solely in response to relative axial movement therebetween, said seals applying positive force against said top member and against the top of the container to bias the former away from the latter and maintain latching engagement of said latch means, and a handle extending from said top member.

3,184,111
APPARATUS FOR USE IN FILTRATION OF CONTAMINATED FLUIDS

Herbert M. Watson and Samuel B. Moseman, both of 2311 N. Front St., Harrisburg, Pa.
Filed Mar. 21, 1961, Ser. No. 97,221
5 Claims. (Cl. 222—133)

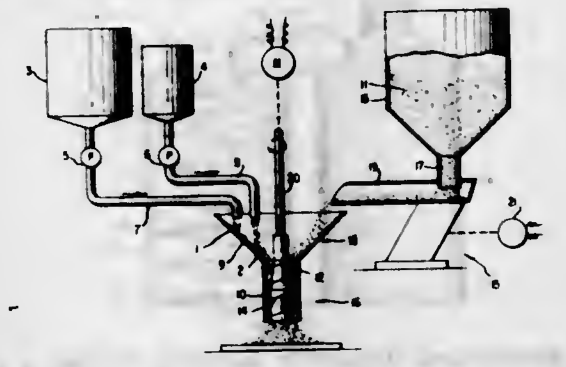


1. In a filter system including a filter chamber, a plurality of filter elements disposed in said chamber for supporting particulate material on the surfaces thereof, means for feeding contaminated liquid to said chamber, means for withdrawing filtered fluid from said chamber after said fluid has passed through said filter elements and means for feeding particulate material in said filter chamber: the improvement in the last-mentioned means comprising a particulate material chamber separate from said filter chamber, drain means communicating said particulate material chamber with said filter chamber, means for delivering fluid to said particulate material chamber, a plurality of vertically spaced baffle means horizontally disposed within said particulate material chamber above said drain means and said fluid delivery means, said baffle means including a vertically extending fluid passageway therethrough and said baffle means supporting particulate material on opposite sides of said fluid passageway within said material chamber.

3,184,112
SYSTEM FOR ADMIXING AND DISCHARGING PARTICULATE MATERIAL

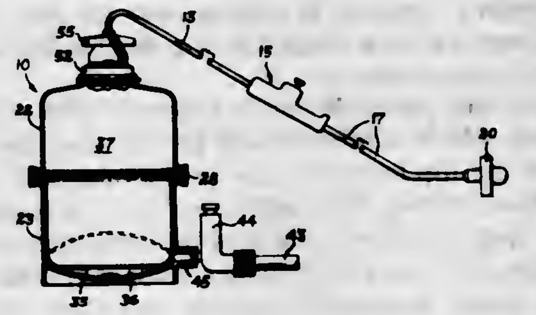
Theodore S. Loeser, New Brunswick, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Dec. 7, 1961, Ser. No. 157,648
7 Claims. (Cl. 222—136)

1. In a system which is particularly adaptable for metering, admixing and discharging materials at least one of which is solid particulate material and another of which is a thermosetting material, means for feeding proportioned amounts of said materials to a vertically disposed mixing section wherein said materials are admixed and from whence said admixed materials are discharged, said mixing section comprising: a housing, a metering screw rotatably mounted in said housing which admixes and conveys said material through said mixing section the length of said metering screw in said housing being at least about 1.5 times greater than the internal diameter of said housing, and screw flights on said metering screw running the entire length thereof in said housing, the clearance between said screw flights and said housing being about ¹⁄₁₆ to about 8 times the diameter of the largest particle of said particulate material, the root diameter of said metering screw being greater at the discharge end of said mixing section than at the feed end thereof with the configuration of the screw root and of the screw flights of said screw being such that the volumetric compression ratio thereof is about 2 to about 10 to 1.



3,184,113
FLUID OPERATED SPRAYING DEVICE HAVING NON-RIGID FOLLOWER AND METERING VALVE

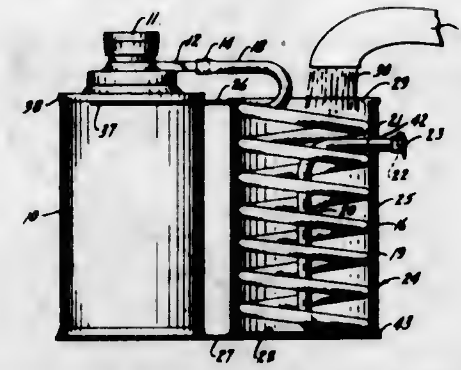
Russell R. Curtis, Indianapolis, Ind., assignor to Curtis Dyna-Products Corporation, a corporation of Ohio
Filed Dec. 6, 1962, Ser. No. 242,661
5 Claims. (Cl. 222—386.5)



1. In a hand spray device of the character described, a container comprising, upper and lower cup shaped sections each having a radially outwardly extending flange around the periphery of the open end thereof, each of said flanges having a face extending radially of the associated said section, said faces adapted to contact one another when said sections are secured together, a circumferential groove in one of said flanges extending from said face thereof in a direction parallel to the axis of said section, a complementary mating tongue projecting from said face of the other of said flanges in an axial direction for snug insertion into said groove to insure proper alignment and a fluid tight connection between said sections, clamp means for engaging said flanges and forcing them together to provide a fluid tight container, a flexible diaphragm for dividing the interior of said container into upper and lower fluid tight chambers, said diaphragm having an enlarged bead around the periphery thereof, said bead having a predetermined configuration and a thickness substantially larger than the thickness of the adjacent portion of said diaphragm, and means defining a second circumferential groove in said other flange extending axially inward from said face of the associated said flange and being spaced radially inward of said tongue and radially outward of the inner edge of said face for receiving said bead so that when said sections are secured together said flat faces tightly clamp said diaphragm adjacent said bead to lock said diaphragm in place.

3,184,114
PRESSURIZED DISPENSER ASSEMBLY

Lester Minear, 1024 Foster, Evanston, Ill.
Filed Nov. 29, 1962, Ser. No. 240,899
2 Claims. (Cl. 222—146)



1. A pressurized dispenser assembly having a pressurized container holding material to be dispensed under pressure, such as shaving cream, and an outlet to dispense such material,

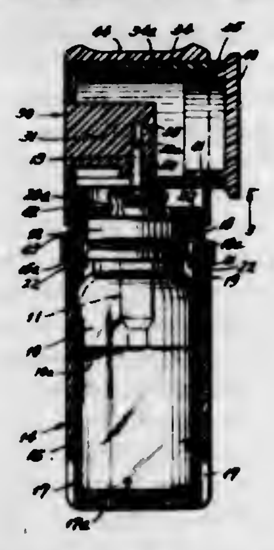
an adjoining open top container removably fixed to the pressurized container to form a single unit therewith, the open top container having a continuous side wall and a bottom wall,

an elongated tube formed from heat conducting material, one end of the tube joined to the outlet of the pressurized container, the major portion of the tube having a descending branch, said descending branch being substantially coiled in repeating turns which substantially extend from the top of the continuous side wall to substantially the bottom wall, a minor portion of the tube having an ascending branch which extends from the final turn of the coil to an upper part of the side wall, and the end of said ascending branch extending out of the container and serving as a discharge for the heated and pressurized material,

whereby the coiled descending branch provides a total length which is substantially greater than the distance from the top to the bottom of the open top container so that heating fluid which is freely introduced into the open container may heat the pressurized material dispensed from the container while it travels through the coiled descending branch and then out of the container.

3,184,115
AEROSOL DISPENSING PACKAGE

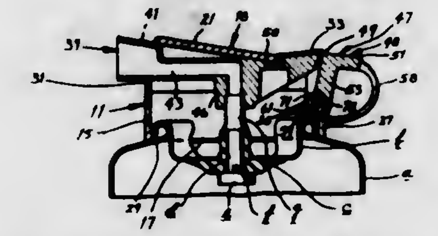
Philip Meshberg, 15 Stoneleigh Road, Fairfield, Conn.
Filed May 7, 1962, Ser. No. 192,737
21 Claims. (Cl. 222—156)



1. An aerosol package comprising an unreinforced frangible bottle containing an aerosol under pressure and having a dispensing valve secured thereto provided with a projecting stem portion, a plastic protective housing of resilient shock-absorbing material having side walls and an integral end wall, the housing adapted to receive said bottle through the other open end, and a closure for said housing inserted in said open end and having a portion extending along said walls and secured thereto to prevent the closure from moving out of closing relation with the housing, said projecting valve stem extending through the closure to the outside of the housing and having a dispensing means connected thereto, said housing preventing the valve from being projected therefrom in the event of the bottle having material under pressure becoming broken.

3,184,116
TAMPER PROOF NOZZLE ASSEMBLY FOR PRESSURIZED DISPENSERS

James K. Huling, Belleville, Ill., assignor to The Clayton Corporation of Delaware, St. Louis, Mo., a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,964
11 Claims. (Cl. 222—182)



1. Locking actuator construction for dispensers of the type having a valve mounted in a dispenser container, comprising

a radially extending discharge spout part having a rearward, downwardly-operable finger actuator portion, a forward nozzle outlet portion and a latching tab extending downwardly from the finger actuator portion, together with

a cap part adapted for snap-on engagement with the dispenser container, said cap part having a first aperture through which said nozzle outlet portion projects, a second aperture through which said finger actuator portion projects and a tab-engaging seat on the portion of said cap part diametrically opposite said first aperture,

said actuator construction being characterized in that said latching tab depends from said finger actuator portion and terminates in an end which is registrable with said tab-engaging seat on the cap part, and in that

said finger actuator portion has a thinned bendable cross-section portion radially inward of the latching tab, whereby to permit radial deflection of the latching tab for engaging the tab-engaging seat on the cap part.

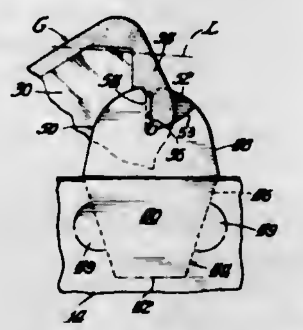
3,184,117
BAG-IN-BOX ARRANGEMENT FOR PACKAGING AND DISPENSING OF LIQUIDS

John W. Sanderson, Chicago, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Sept. 26, 1962, Ser. No. 226,331
6 Claims. (Cl. 222—183)

1. A container arrangement for packaging and dispensing of liquids comprising:

(*a*) an outer box formed from foldable paperboard;
(*b*) said box including a plurality of side walls hingedly interconnected to form a tubular structure, and end closure flaps hingedly connected to end edges of certain of the side walls to close the ends of the structure;
(*c*) a flexible, plastic inner bag removably disposed within said box;
(*d*) said bag having a pouring spout,

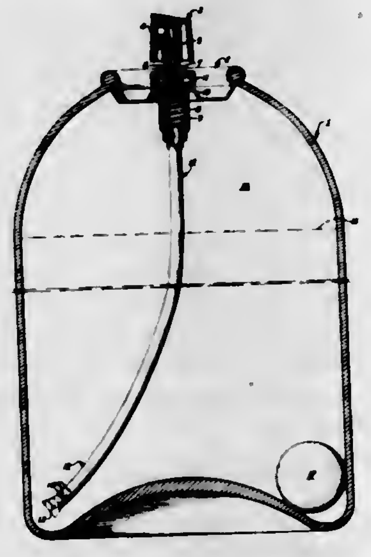
(*e*) said bag pouring spout including a flanged portion presenting a slit therein; and
(*f*) a pouring spout carrying tab formed from adjacent portions of one of the side walls and one of the end flaps of said box;



(*g*) said tab being hinged along its lower edge to said one side wall and having the remainder of its edges defined by a partly perforated line which with the hinge line of the tab defines a pouring spout opening in the box when the tab is pulled out;
(*h*) said tab including a segment cut from and joined to the remainder of the tab;
(*i*) said segment having at its free end an enlarged head portion disposed to extend through the slit in the flanged portion of the bag pouring spout to interconnect the tab and pouring spout, so that when the tab is pulled out from the box side wall the bag pouring spout will be pulled out through the pouring spout opening.

3,184,118
AEROSOL SPRAY CONTAINER

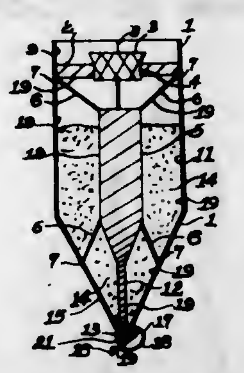
Milo E. Webster, Rochester, N.Y., assignor to Bernz O Matic Corporation, Rochester, N.Y., a corporation of New York
Filed June 14, 1963, Ser. No. 287,909
4 Claims. (Cl. 222—189)



1. In an aerosol spray container comprising a pressurized container having therein a fluid to be dispensed and a propellant under pressure, a dip tube extending below the surface of said fluid and terminating at the bottom portion of the container and an aerosol spray valve having at least one orifice constriction flow connected with the dip tube, the improvement which comprises the end of said dip tube being sealed and the wall of said dip tube being provided with a plurality of perforations, said perforations being disposed in proximity to the sealed end of said dip tube, with each perforation having a flow area which is smaller than that of the smallest orifice in the spray valve.

3,184,119
DISPENSER WITH POSITIVE INERTIAL FEED

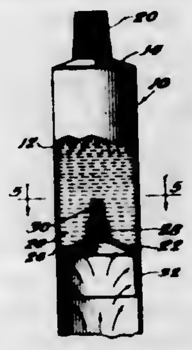
Fay E. Null, Okaloosa County, Fla.
(Box 158, Shalimar, Fla.)
Filed Mar. 12, 1964, Ser. No. 351,479
11 Claims. (Cl. 222—196.2)



1. In a dispenser with positive inertial feed, the combination of a container, a discharge lid connected to said container by spring-type distortion means such that said lid remains closed by said spring-type distortion means in the preshake, inverted position of said dispenser, a discharge chamber in said container whose lower end is closed by said lid that contains the approximate volume of material to be discharged in a downward stroke, and an inertial plunger within said container having spring-type distortion means for positioning said plunger in the preshake condition so that its lower end is just above and of approximately the same diameter as said discharge chamber so that in a shake stroke the lower end of said plunger drives the material in said discharge chamber down past said discharge lid.

3,184,120
DISPENSING DEVICE FOR FLUIDS

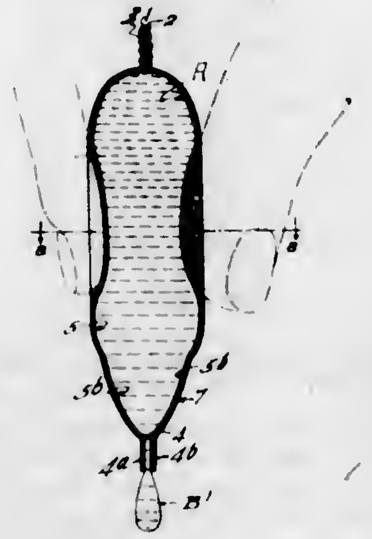
Karl Undi, Hammond, Ind., assignor of one-half to Katherine Undi, Hammond, Ind.
Filed Aug. 16, 1963, Ser. No. 302,553
2 Claims. (Cl. 222—209)



1. A device for dispensing fluids, comprising: a tube having a hollow body of deformable, dimensionally-stable material, the tube having an outlet at its top end for the fluid dispensed and being closed at its lower end, said lower end being provided with an inlet for admitting air into the tube; and a plunger positioned within the tube beneath the fluid to be dispensed, said plunger having an annular top portion in close slidable sealing engagement with the inner wall of the tube and being provided with a resiliently flexible, flared, depending annular skirt having a peripheral dimension slightly larger than the inner peripheral dimension of the hollow body of the tube, said skirt being normally resiliently urged against the inner surface of the hollow body so as to make a close sealing slidable fit within said hollow body of the tube, compression of the lower end of the tube beneath the plunger compressing the air confined within said tube so as to further urge the depending flexible skirt against the inner surface of the hollow body and to maintain intimate sealing engagement therewith while advancing the plunger upwardly of the tube and dispensing the fluid in the tube through said outlet.

3,184,121
PACKAGE WITH SELF SEALING CLOSURE

Lloyd I. Volckening, Glen Ridge, N.J., assignor to Ivers-Lee Company, Newark, N.J., a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 299,383
1 Claim. (Cl. 222—213)

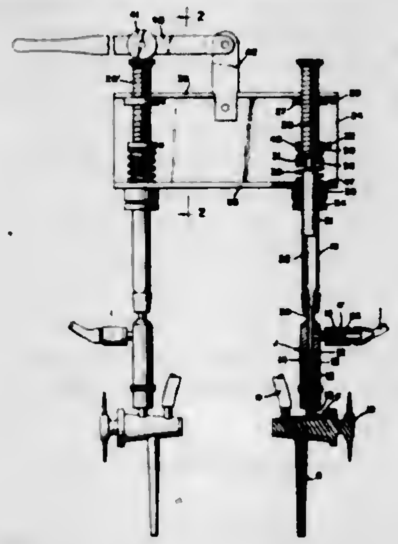


A package for a fluent commodity comprising at least two layers of thin flexible material of uniform thickness sealed together in zones forming and bounding between them a commodity-containing compartment and an elongated discharge passage therefor having opposed flat walls openable between the layers to provide an outlet at one end, the portions of said layers forming the walls of said compartment being self-sustaining but resilient providing for momentary pressing of said walls toward each other to force some of said commodity through said discharge passage and for subsequent resilient movement of said walls away from each other and toward their original condition, the portions of said layers forming the flat walls of said discharge passage being flexible and of uniform thickness and free for limited movement away from and into contact with each other upon application of pressure to the walls of the compartment exteriorly thereof and upon release of said pressure from said walls, respectively, to permit flow of the commodity out of the compartment through said outlet and to seal the outlet and discharge passage by action of partial vacuum in the compartment, respectively, said layers having been preformed with identical main recesses and with tapered extension recesses, said main recess of each layer being complemental to the main recess of the other layer forming said compartment and each extension recess being complemental to the other extension recess forming a tapered relatively rigid-walled nozzle whose larger end communicates with said compartment and whose smaller end terminates between said flat walls of the discharge passage intermediate the length and width of said discharge passage, the outlet end of said discharge passage being initially sealed by extensions of said layers sealed together beyond said outlet end, said extensions being removable along a tear line extending across said discharge passage outwardly of said nozzle to expose said outlet between the edges of said flat walls of said discharge passage for subsequent discharge of the commodity.

3,184,122
SEMI-AUTOMATIC DILUTION PIPETTE

Samuel T. Nerenberg, % Children's Hospital, Maple and California Sts., San Francisco 18, Calif.
Filed Aug. 27, 1962, Ser. No. 219,629
4 Claims. (Cl. 222—255)

1. A dilution pipette capable of repeatedly dispensing a constant volume of sample solution and a preselected volume of diluent therefor comprising a calibrated sample solution chamber having a port for ingress of sample solution and for subsequent discharge of the chamber volume of sample solution and a preselected volume of diluent, a diluent metering chamber of adjustable volume for holding diluent, conduit means establishing fluid communication between said diluent metering chamber and said sample solution chamber, a 2-way valve having first and second positions between said sample solution chamber and said diluent metering chamber permitting fluid communication therebetween when in said first position, valve means between said 2-way valve and said diluent metering chamber for pemitting fluid movement between said 2-way valve and said diluent metering chamber only towards said 2-way valve, a diluent storage chamber, a conduit establishing fluid communication between said diluent storage chamber and said diluent metering chamber, valve means between said storage chamber and metering chamber permitting fluid flow therebetween only toward said metering chamber, a vacuum chamber, a conduit for establishing air communication only between said storage chamber and said vacuum chamber, a conduit establishing fluid communication between said vacuum chamber and said sample solution chamber through said 2-way valve when the 2-way valve is in its second position, and pumping means operable to urge diluent from said storage chamber to fill said metering chamber to a preselected volume by creating negative pressure in said metering chamber which thereby creates a partial vacuum in said storage chamber and in turn in said vacuum chamber, said partial vacuum serving to draw sample solution into said sample solution chamber when said 2-way valve is in its second position, said pumping means then being operable to discharge a predetermined volume of the diluent urged into the diluent metering chamber through the sample solution chamber and its port along with the sample solution in the sample chamber when said 2-way valve is in its first position.

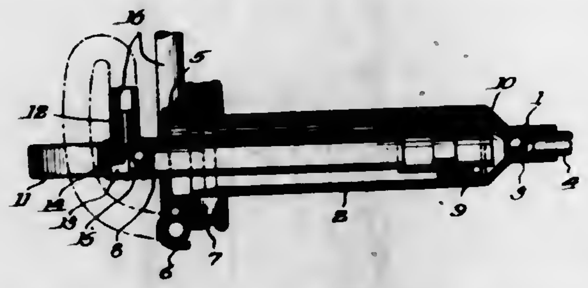


3,184,123
DISPENSING DEVICE

Philip Joseph Stretton Willshaw, Southgate, London, England, assignor to The Diversey Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 27, 1962, Ser. No. 240,228
7 Claims. (Cl. 222—321)

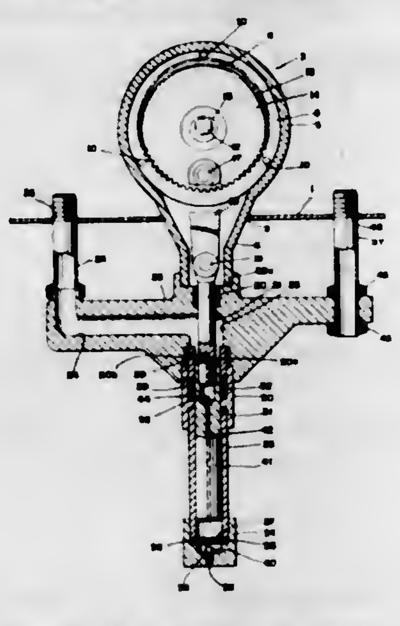
1. A dispenser for liquid comprising: a tubular casing member having an inlet valve at one end, a centrally opened capping member secured at the opposite end, means to secure the cap to a vessel from which liquid is to be withdrawn, an inner tubular plunger supported within the casing and extending through the length of the casing from the inlet valve through the cap opening, said cap central opening providing a guide through which the tubular plunger is adapted to be reciprocated, a capping member on the end of the tubular plunger remote from the

inlet valve to form a liquid-receiving chamber, means to seal the outer wall of the tubular plunger against the inner wall of the tubular casing to preclude leakage therebetween, means to provide for reciprocation of the plunger within the casing thereby to draw liquid into the plunger, valve means to permit liquid drawn into the tubular plunger to be directed therefrom into the said chamber, a flexible outlet means secured to the chamber and adapted to receive liquid and then to dispense liquid concurrently with a reciprocating movement of the plunger, an outlet tube clamp means secured to the capping member, and means to secure a sufficient length of the flexible outlet tubular member to accommodate the two extreme positions of the plunger between the dispensing chamber and the clamp, thereby to restrain the free-end of the outlet tube from reciprocation with plunger movement.



3,184,124
MOTOR-DRIVEN GEARED PUMP

Louis Beck, 6399 Crossview Road, Cleveland, Ohio
Filed Aug. 14, 1963, Ser. No. 302,109
3 Claims. (Cl. 222—333)

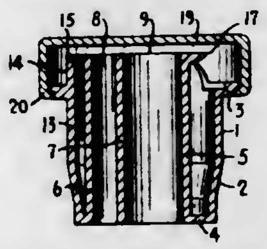


1. In a dispenser for a fluid material comprising a container, a cover for said container, a discharge assistant, a dispensing passageway, and a filling passageway, mounting means for said discharge assistant, said mounting means comprising:

- (A) First and second vertically disposed, tubular elements, said elements
  - (*a*) extending downwardly through spaced openings in said cover,
  - (*b*) said first tubular element including a portion of said dispensing passageway,
  - (*c*) said second tubular element including said filling passageway in free communication with the interior of said container,
- (B) a horizontal yoke attached to said tubular elements and spanning the space therebetween in downwardly spaced relationship to said cover, said yoke including:
  - (*a*) a centrally disposed vertical passageway,
  - (*b*) a vertical passageway in communication with the interior of said first tubular element, and
  - (*c*) a horizontally disposed passageway interconnecting said vertical passageways to complete a dispensing path through said yoke and said first tubular member,
- (C) said discharge assistant comprising a pump, actuating means for said pump, driving means for said actuator, and transmission means interconnecting said driving means and said actuating means,
  - (*a*) said pump being suspended from said yoke beneath said centrally disposed passageway, and including a discharge path in fluid communication therewith,
  - (*b*) said transmission means including gears disposed in a gear housing, said gear housing
    - (1) mounted on said yoke above said centrally disposed passageway and
    - (2) including a neck portion in communication with said passageway,
  - (*c*) said actuating means extending through said centrally disposed passageway and said neck and operatively connecting said gears and said pump, sealing means surrounding said actuating means and disposed in said vertical passageway above its juncture with said interconnecting passageway and preventing fluid communication between said discharge path and said neck of said gear housing,
  - (*d*) said driving means mounted on said gear housing and comprising a motor operatively connected to said gears.

3,184,125
INSERTABLE CLOSURES FOR CONTAINERS

Albrecht Jutzi, Zurich, Switzerland, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed Apr. 6, 1962, Ser. No. 185,684
Claims priority, application Great Britain, Apr. 10, 1961, 12,873/61
9 Claims. (Cl. 222—479)



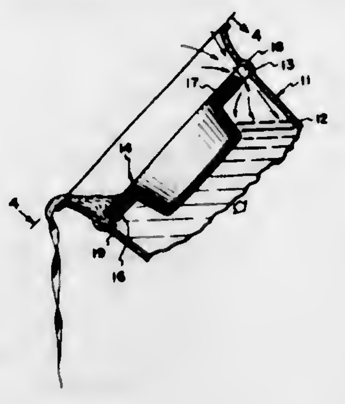
1. A closure for a container comprising a stopper insertable into an opening in a container and engaging the walls of the container, a spout fixed to and extending from one end of the stopper and forming a passage extending through said stopper to an outer end of said spout for discharging fluid from said container, a duct extending through said stopper adjacent to said passage and having an outer end for admitting air into said container, and severable means united with said spout and duct and sealing the outer end of said passage and said duct.

3,184,126
FLOW CONTROL VALVE FOR DRINKING CONTAINERS AND THE LIKE

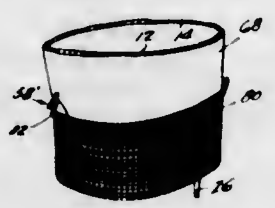
Don C. Casull, 3112 South 7th East, Salt Lake City, Utah
Filed May 27, 1963, Ser. No. 283.381
8 Claims. (Cl. 222—487)

1. A flow control device comprising in combination a generally tubular flexible walled member, a fluid impervious generally disc-like valve member adapted to be received concentrically within said tubular member transverse to the longitudinal axis thereof and with its peripheral edge in sealing engagement with the inner wall of said tubular member, and said valve member comprising a

deformable peripheral edge portion formed from resilient material, and a stiffener inwardly adjacent all of said edge portion, whereby when pressure is applied to two opposite sides of the walled member at a location where said deformable peripheral edge contacts said wall passages are formed between said wall and said deformable peripheral edge portion at two other opposite sides of said wall where pressure is not applied.



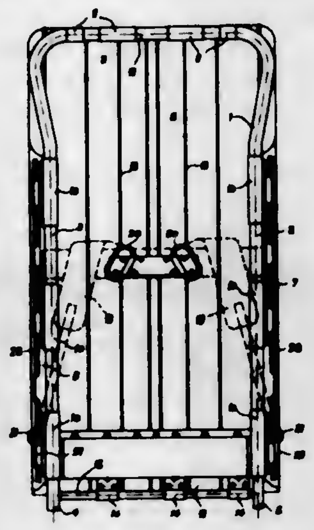
3,184,127
INFLATABLE GARMENT HOLDER AND DRYING DEVICE
Elbridge G. Smith, 2824 W. Fort St., Detroit, Mich.
Filed Mar. 6, 1964, Ser. No. 349,812
3 Claims. (Cl. 223—67)



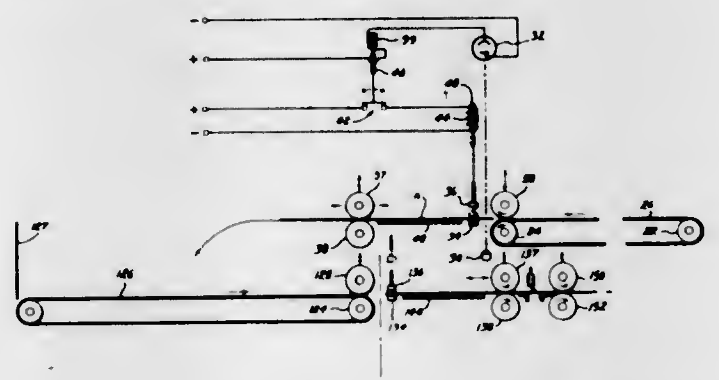
1. An inflatable garment-holding device for supporting a garment to be dried thereon, said garment-holding device comprising a torso section including normally spaced apart front and rear panels and a pair of opposed side panels, a bottom wall extending across the lower edges of said panels and walls, said panels and walls forming a substantially hollow cavity therebetween, said front and back panels adjacent those ends thereof remotely-disposed from said bottom wall terminating in a substantially hollow cylindrical collar having a closed outer end, a pair of substantially frusto-conical sleeves each having, respectively, open communication with one of said sidewalls, the other end of said sleeves being sealed, means on said sleeves releasably engaging said sleeves of said garment, a substantially frusto-conical elastic mesh device surrounding the base of said torso portion of said device and overlying the lower end of the garment mounted thereover, and means releasably engaging said garment and said mesh device at spaced intervals around the periphery thereof.

3,184,128
PACK BOARD
Siegfried Bucher, P.O. Box 4092, Edmonton, Alberta, Canada
Filed Jan. 21, 1963, Ser. No. 252,857
2 Claims. (Cl. 224—25)

1. In a pack board, a substantially U-shaped framework, a sheet of rigid material substantially co-extensive with the dimensions of the U-shaped framework, such sheet having an upwardly curved front which is secured to the crosswise portion of the U-shaped framework and turned up sides which are secured along the sides of the U-shaped framework, the ends of the U-shaped framework being adapted to rigidly interconnect with the ends of a framework of a second pack board, means to interconnect the sheets of material of each pack board when the ends of the U-shaped framework are interconnected and strap means connected to the pack board to secure the pack board on the back of a user.

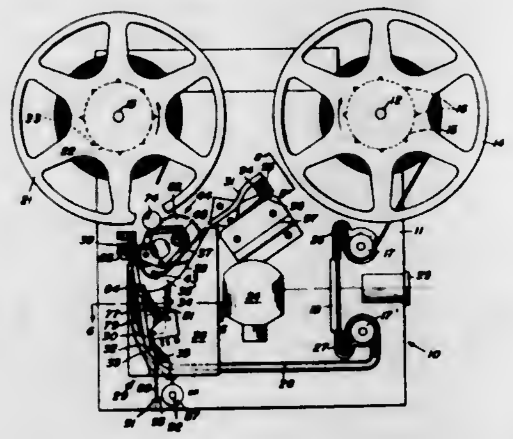


3,184,129
METHOD AND MEANS FOR REMOVING THE TRIM FROM SHEETS TO FORM BLANKS
John E. Knecht, Pointe Claire, Quebec, Canada, assignor to Bathurst Containers Limited, Montreal, Quebec, Canada
Filed Feb. 8, 1963, Ser. No. 257,222
6 Claims. (Cl. 225—2)



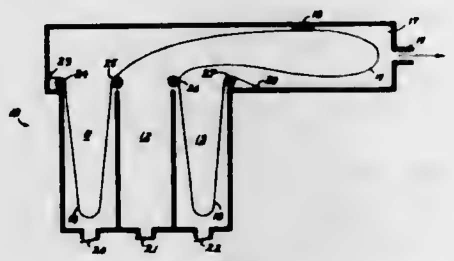
1. Means for stripping the exterior trim from a sheet comprising: a pair of contrarotating opposed rollers biased toward contact with one another, for conveying a blank in a predetermined direction; said rollers being designed, constructed and mounted to exert a predetermined frictional pulling force on such sheet; opposed gripping members located on opposite sides of the path of a blank when viewed edgewise, said gripping members being located in the opposite of said predetermined direction from said rollers; said gripping members being actuable: from an inactive position wherein at least one of said gripping members is out of contact with such sheet, to an active position wherein a sheet therebetween would be clamped with a predetermined restraining frictional pulling force less than said predetermined frictional force; and means responsive to the movement of such sheet, to actuate said gripping members from said inactive position to an active position to grasp said sheet, adjacent the trailing edge thereof and means operable on movement of the useful portion of said sheet away from said grippers to actuate said grippers to an inactive position.

3,184,130
AUTOMATIC REWIND PROJECTOR
Henry E. Brayer, deceased, late of Rochester, N.Y., by Jean M. Brayer, executrix, Rochester, N.Y., and William P. Ewald, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 9, 1962, Ser. No. 236,743
17 Claims. (Cl. 226—11)



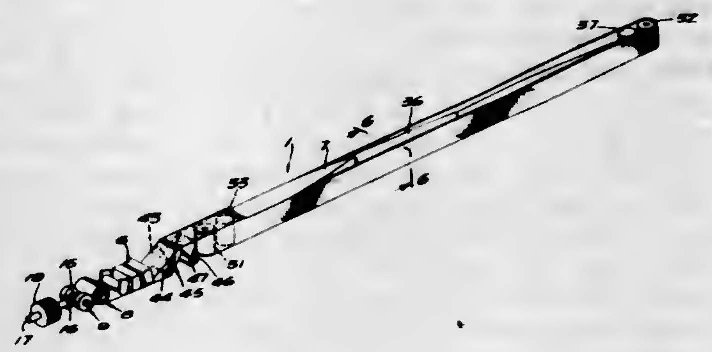
1. In a motion picture projector having a film source and a film take-up means, the combination comprising:
- (*a*) first means for transporting said film from a film source through said projector along one path extending between said film source and said film take-up means for projection;
- (*b*) second means movable from a normal inoperative position to an operative position into engagement with said projected film along said one path for transporting same back to said film source over a different path for rewinding; and
- (*c*) control means for said second means and responsive to the absence of film in a portion of said one path spaced from said film source for moving said second means from its inoperative to its operative position.

3,184,131
CONTINUOUS TAPE SYSTEM
Ivan O. Fieldgate, Halesite, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Aug. 20, 1962, Ser. No. 217,903
3 Claims. (Cl. 226—97)



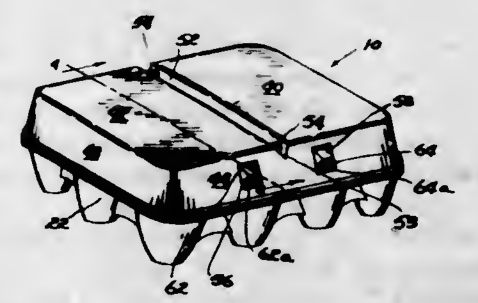
1. In an information processing apparatus, a tape handler means comprising,
- a substantially air-tight enclosure including means to store at least one loop of an elongated tape adapted to store information along a portion of said loop,
- an information processing station within said enclosure including transducer means to transfer said information, and
- fluid control means for moving tape in said enclosure to said information processing station, whereby said elongated tape is moved out of said means to store said loop past said information processing station in a predetermined mode of operation when the fluid control means is actuated in accordance with a predetermined schedule.

3,184,132
TAPE TRANSPORT
James T. Blakistone, Los Angeles, and Donald L. Burdorf, Arcadia, Calif., assignors to Leach Corporation, Compton, Calif., a corporation of Delaware
Filed Feb. 7, 1962, Ser. No. 171,670
12 Claims. (Cl. 226—181)



1. A magnetic tape recorder comprising an elongated housing, guide members extending transversely of said housing, said guide members being spaced longitudinally of said housing, said guide members being adapted to receive an endless loop of magnetic recording tape wound on said spaced guide members so as to have an exterior and an inner portion, reader head means, tape drive means adjacent said reader head means, said reader head means and said tape drive means being located longitudinally of said housing beyond said spaced guide members, the inner portion of said endless loop of tape being adapted to extend to said reader head means and said tape drive means for return to the exterior of said loop of tape, means for rotating said inner portion of said tape 90° prior to reaching said reader head, and means for rotating said tape 90° following said tape drive means and prior to said return to said exterior of said loop.

3,184,133
CARTON CONSTRUCTION
James W. Boyd and Robert J. Allen, Crown Point, Ind., assignors to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed May 31, 1963, Ser. No. 284,634
9 Claims. (Cl. 229—2.5)



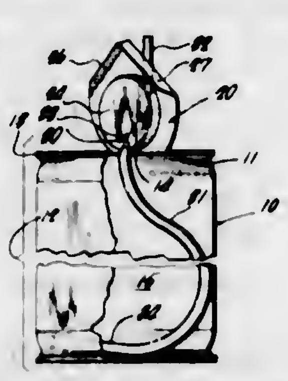
1. A molded pulp carton comprising a cellular tray having a bottom, front, back, and end walls delimiting and extending upwardly from said bottom and defining an open upper side, and partitioning means disposed

within the interior of said tray and cooperating with said walls and bottom to form a plurality of article-accommodating pockets and effect rigid interconnection between opposed walls of said tray; a cover hingedly connected to the upper edge of said tray back wall, said cover, when in one position of hinged adjustment, overlying, registering with, and closing the tray open upper side, said cover including a top surface delimited by front, back, and end walls which depend angularly outwardly from said top surface, an elongated continuous, rectilinear, hollow, inflexible rib disposed intermediate said cover end walls and depending from said cover top surface an amount less than the extent to which said front, back, and end walls depend therefrom, said rib rigidly interconnecting said cover front and back walls and retaining same in a substantially fixed relative position, the longitudinal axis of said rib being disposed substantially normal to the hinge axis of said cover, the ends of said rib being integral with said cover front and back walls, and rib reinforcing means disposed within the hollow of said rib and angularly positioned with respect to the rib axis and rigidly interconnecting depending hollow-forming portions of said rib, said cover front wall having a substantial portion thereof depending from the bottom of the rib integral with said front cover, said cover front wall being provided with an aperture spaced from the end of said rib integral with said front wall; and a latching flap hingedly connected to the upper edge of said tray front wall and being provided with protruding means projecting outwardly through said cover front wall aperture to effect locking of said cover in said closed position.

3,184,134
CONTAINER WITH STRAW

Max Cohen and Edward R. Elston, Ontario, Calif., assignors to Insco Enterprises, Inc., Ontario, Calif., a corporation of California

Filed June 26, 1963, Ser. No. 290,688
5 Claims. (Cl. 229—7)

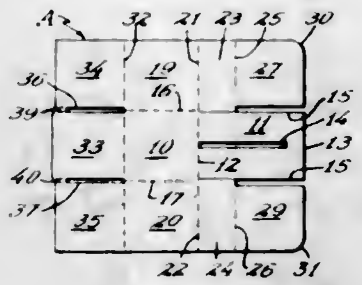


2. In a liquid container having an enclosed interior volume, a top having therethrough an aperture substantially smaller in dimension than the dimensions of the top and an edge, the combination comprising a sealing member for closing the aperture, the sealing member being hingedly secured to the container top and releasably engaged with the container edge, the sealing member including a recessed portion configured and sized to mate intimately in a liquid-tight relationship with the periphery of the aperture and to extend interiorly of the container when the sealing member is disposed in closure relation to the aperture, the sealing member defining a sipping port therethrough within the recess, a flexible sipping straw extending from the interior of the container through the sipping port to an exterior end, and a closure member removably and snugly mating with the sealing member in the recess for closing the recess, the exterior end of the straw being stored in the recess between the sealing member and the closure member.

3,184,135
CUSHIONING PAD

Ronald V. Johnson, Minneapolis, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota

Filed Mar. 18, 1963, Ser. No. 265,793
2 Claims. (Cl. 229—14)

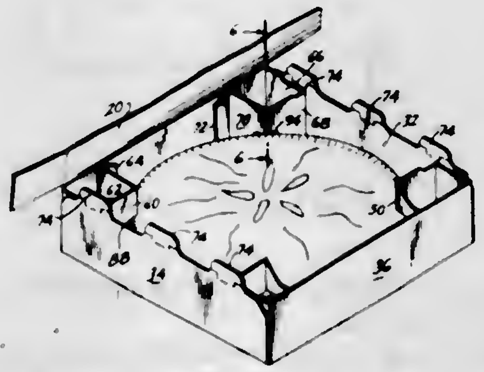


2. A blank for forming a corner pad for a pair of spaced parallel members and including three generally square panels of substantially equal size connected along parallel fold lines, a rectangular panel hinged to an edge of the intermediate panel of the series and being longer in a direction at right angles to the line of hinge than in width, said rectangular panel having a slot therein of a length greater than the width of said square panels and extending at right angles to the hinge line supporting the same, panel portions hinged to the edges of the remaining two square panels along fold lines substantially aligned with the hinge line connecting the rectangular panel to the intermediate square panel, said panel portions being substantially equal in length to the distance between the adjacent edge of the rectangular panel and said slot, partition panels foldably connected to the ends of said panel portions, and a reinforcing panel hingedly connected to each said square panel along a line of fold parallel to those connecting the panel portions and a rectangular panel to said square panels, said reinforcing panels being substantially equal in size to said square panels.

3,184,136
CARTON STRUCTURE

Hampton E. Forbes, Jr., Wilmington, Del., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

Filed Apr. 16, 1964, Ser. No. 360,399
3 Claims. (Cl. 229—14)



1. A pre-assembled carton capable of being shipped flat and erected on automatic machinery for holding articles in a pre-determined spaced relationship with respect to said carton comprising,

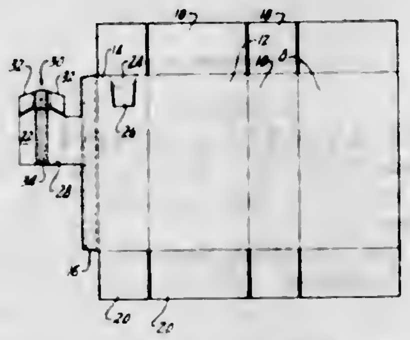
(*a*) a top panel,
(*b*) a fastening panel attached to one side of the top panel,
(*c*) a first side panel foldably attached to the other side of the top panel,
(*d*) a bottom panel foldably attached to the first side panel,

(*e*) a second side panel foldably attached to the bottom panel,
(*f*) a pair of end flaps foldably attached to the top panel,
(*g*) a pair of end flaps foldably attached to the bottom panel,
(*h*) a pre-fastener cushion side flap foldably attached to at least one end of a side panel, each pre-fastened cushion side flap being capable of being folded flat during shipment of the empty carton and forming a corner cushion device when the carton is erected for use, each pre-fastened cushion side flap comprising:
  (1) a first spacer panel foldably attached to a side panel,
  (2) a second spacer panel foldably attached to the first spacer panel,
  (3) a third spacer panel foldably attached to the second spacer panel,
  (4) a fastening panel foldably attached to the third spacer panel and fastened to its respective side panel,
  (5) means in said second and third spacer panels for engaging the article to be packaged.

3,184,137
CARTON WITH INTEGRAL SPOUT

Harry G. Mohler, 1633 E. Maiden St., Washington, Pa.

Filed July 17, 1963, Ser. No. 295,678
3 Claims. (Cl. 229—17)



1. A blank for forming a multi-sided container having a portion of one sidewall of double thickness, said blank having tab portions thereon for forming the top and the bottom of the container, a first side of said blank having adjacent the upper edge thereof a pair of perforatedly defined portions defining a pair of tabs which project toward each other and said blank having a glue flap extension along the edge of said first sides, an appendage connected to said first side of said blank having a cut portion shaped to provide a spout which is disposed to be adjacent and movable through the opening defined by one of said tabs when said appendage connected to said first side of said blank having a cut portion shaped to provide a spout which is disposed to be adjacent and movable through the opening defined by one of said tabs when said appendage is folded against said first side.

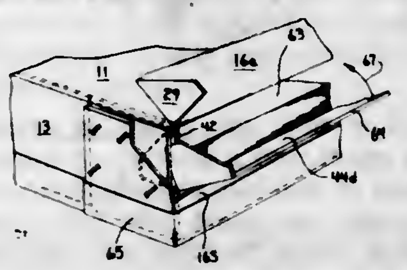
3,184,138
END-OPENING CONTAINER

John D. Ridgeway, Jr., Milwaukee, Wis., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana

Filed Apr. 22, 1964, Ser. No. 361,684
9 Claims. (Cl. 229—17)

1. A telescope box comprising:

a body having a bottom panel (**39**) and parallel side panels (**41–42**) and parallel end panels (**43–44**) joined to said bottom panel, one (**44**) of said end panels having a reverse score line (**51**) extending thereacross from one side panel (**42**) to the other side panel (**41**), said score line dividing said one end panel into a support portion (**44*s***) below said score line and a door portion (**44*d***) above said score line, a pair of flaps (**49–48**) integral with the material of said one end panel and joined thereto at score lines, each of said flaps having an ear portion (**52**) defined by a margin (**53**) of said door portion and further defined by a generally trapezoidal cut (**54–56–57**) extending from the end of said reverse score line to a point adjacent a margin (**59**) of the flap, the flap material between said point and said margin constituting an easily severable bridging strip (**61**) retaining the ear portion (**52**) as part of the flap (**49**) until said strip is severed, the severing of said strips at both end flaps accommodating access to the interior of said body;



and a cover received on said body, said cover having a top panel (**11**) and parallel side panels (**12–13**) and parallel end panels (**14–16**), one of said cover end panels having tabs (**36**) therein at opposite ends thereof, a pair of cover flaps (**19–21**), one cover flap of said pair joining each end of said one cover end panel and attached to one of said cover side panels, a tear tape (**25**) extending across said one cover end panel and secured to said tabs, said tabs being adapted to be manually torn from said one cover end panel and said tape being operable when one of said tabs is torn and pulled to sever said one cover end panel into a stationary cover wall portion (**16*s***) and a cover door portion (**16*a***), the material of said cover door portion being integral with the material of said top panel (**11**) and hinged thereto at a score line (**38**), each of said cover flaps having a cover ear portion (**29**) joining said cover door portion and each cover ear portion being defined by a score line (**28*a***) at the end of said cover door portion and a cut extending from one of said tabs (**36**) to a point adjacent a margin (**31**) of the cover flap leaving an easily severable bridging strip (**32**) maintaining the position of said cover ear in said cover flap (**19**) until severed to accommodate outward and upward swinging of said cover door portion, the ears of said body portion being frictionally engaged and retained between the side walls of said cover and said side panels of said body when said door portion (**44*d***) of said body is positioned coplanar with the said support portion (**44*s***) thereof, and the said door portion of said body being engaged and retained in substantially coplanar relationship with said support portion thereof by the upper portion of said cover door portion (**16*a***) when said cover door portion is returned toward coplanar relationship to said stationary wall portion (**16*s***) of said cover.

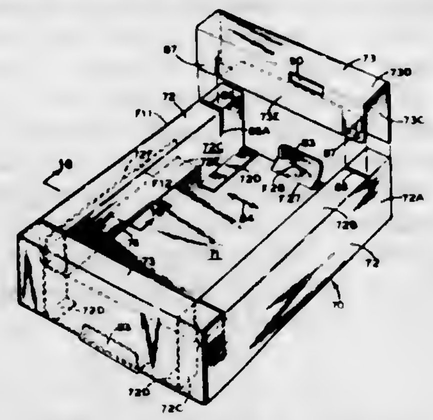
3,184,139
BOX CONSTRUCTION

Sidney Conescu, 188 Beach 147th St., Neponsit, Long Island, N.Y.

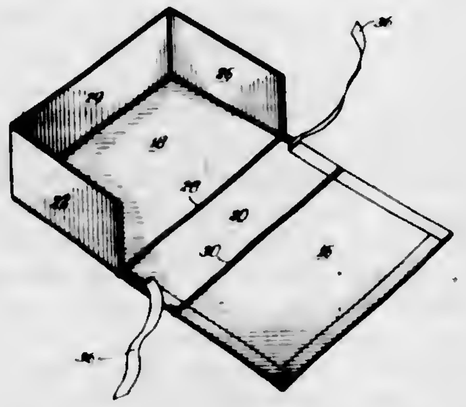
Filed Dec. 3, 1962, Ser. No. 241,593
8 Claims. (Cl. 229—23)

4. An open top display box comprising a first blank of sheet material having a plurality of transversely extending foldlines about which said blank is folded to define a bottom panel, and a pair of opposed integrally connected side panels, each of said side panels including spaced apart inner and outer side wall portions, a top

side wall portion and a horizontally spaced bottom side wall connected between said inner and outer side wall portions, said bottom side wall being spaced above said bottom panel to define therebetween a recess, and means for maintaining said side panels in erected position on said bottom panel, and a second and third blank of sheet material, each of said latter blanks being folded to define a double walled end panel, and means for interlocking said end panels to and between said side panels.



3,184,140
PAPERBOARD CARTON
Arthur W. Peterson, 5035 S. Laramie Ave., Chicago, Ill.
Filed May 16, 1963, Ser. No. 280,789
13 Claims. (Cl. 229—23)



3. A paperboard carton comprising: a first panel having lines of scoring thereon to divide the panel into a top wall, a bottom wall, and a side wall; a second panel having lines of scoring thereon to provide a sufficient number of side walls to form a closed carton, said panel having a peripheral edge; and means for securing said first and second panel together including a coating of self-adhering material on a portion of one surface of said first panel and a coating of said self-adhering material on the peripheral edge of said second panel so as to form a completely closed carton by firmly pressing together the coated portions of said panels, each of said walls forming the carton being of substantially uniform thickness throughout its entirety.

3,184,141
COLLAPSIBLE CELLULAR CARTON
George Vrana, New York, N.Y., assignor to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 5, 1963, Ser. No. 306,777
12 Claims. (Cl. 229—28)

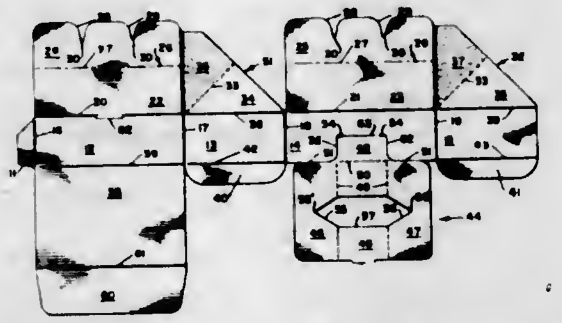
1. In a paperboard container having substantially full depth, front, rear, side and bottom planar walls, an integral divider structure comprising:

(*a*) a two-ply central divider portion integral with said full bottom wall and extending upwardly therefrom and having free edge portions disposed a predetermined distance above said bottom wall,

(*b*) said divider portion being located in a plane intermediate and substantially parallel with said front and rear walls,

(*c*) a channel member having a planar web and integral transverse divider panels,

(*d*) said channel member being associated with one of said front and rear walls and extending to the other of said walls,



(*e*) said transverse divider panels having recesses therein extending upwardly from said web for said predetermined distance,

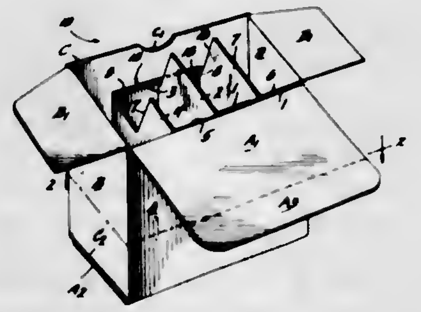
(*f*) said web defining a slot communicating with said recesses,

(*g*) means securing said channel member to said other of said walls,

(*h*) said recesses engaging free edge portions of said central divider portion and thereby supporting said divider portion in an upright position, and

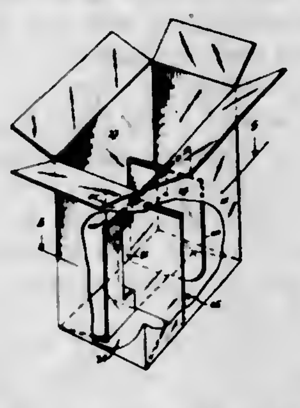
(*i*) said transverse divider panels cooperating with said central divider portion and said full planar walls to form a plurality of compartments.

3,184,142
MULTI-CELL CARTONS
Charles W. Rosenburg, Jr., Buffalo, N.Y., assignor to F. N. Burt Company, Inc., Buffalo, N.Y., a corporation of Delaware
Filed Jan. 15, 1964, Ser. No. 337,765
7 Claims. (Cl. 229—28)



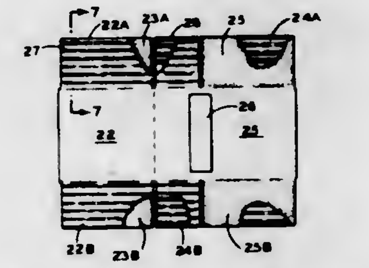
1. A one-piece multi-cell carton comprising pairs of respectively oppositely displosed side and end wall panels, hingedly connected at adjoining side edges to complete a rectangular structure; certain of said side and end wall panels provided at their upper and lower edges with hingedly connected cooperating top and bottom forming flaps; two series of unitary hingedly connected stretch panels and partition panels integral with and hinged to the respective meeting side edges of the adjoining terminal side and end panels, and directed inwardly of the carton, each series comprising alternate stretch and partition panels beginning with a stretch panel secured flatwise to the adjacent side wall panel, the initial stretch panel of the first of said series being of the width of the first cell at that end of the carton and the initial stretch panel of the second series being of a width equal to the combined width of said first cell and the second cell in the series, the partition panels being of a length equal to that of the end wall panels, the second stretch panel of said first series being of multi-cell width and the second stretch panel of said second series being of single cell width.

3,184,143
COLLAPSIBLE CARTON
Joseph Lawrence Kotowick, Vancouver, British Columbia, Canada (986 Pinewell Crescent, Richmond, British Columbia, Canada)
Filed Feb. 14, 1963, Ser. No. 258,430
17 Claims. (Cl. 229—28)



1. A collapsible multiple cell carton formed from a unitary blank with foldably connected upright side and end walls and a bottom closure comprising side and end flaps in hinged relation to the respective upright walls, a divider assembly comprising longitudinal and transverse dividers in hinged relation to the bottom closure flaps with portions of the divider assembly including longitudinal and transverse members integrally and foldably connected to each bottom flap, each bottom flap and the respective connected divider assembly members in flatwise contacting relation with the respective wall of the container in the collapsed condition.

3,184,144
SELF SEALING CONTAINER
Abbot Greene, 24 Carter Road, and Paul Densen, 27 Colony Drive E., both of West Orange, N.J.
Filed May 26, 1964, Ser. No. 370,192
3 Claims. (Cl. 229—37)



1. A self-sealing container which is both collapsible and stackable comprising,

(*a*) a blank of sheet material defining opposed side and end panels hingedly connected together in end to end relationship to define in the erected folded position thereof a closed quadrilateral figure,

(*b*) said side panels being longer than said end panels,

(*c*) closure flaps extending from and hingedly connected to the edge of each of said side and end panels,

(*d*) said flaps being substantially coextensive in length with respect to their connected panels,

(*e*) the flaps hingedly connected to said end panels having a width no greater than one-half of the length of said side panels,

(*f*) and the flaps hingedly connected to said side panels having a width no greater than one-half of the length of said end panels,

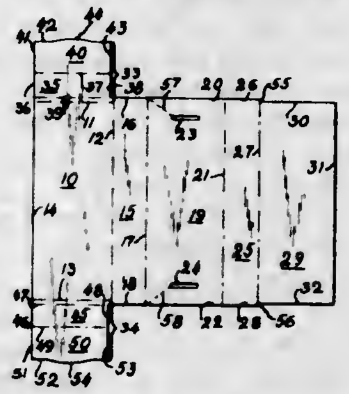
(*g*) said flaps in the collapsed position of the container being disposed in face to face contacting relationship whereby the diagonally opposed end portions of the respective side panel flaps are disposed in overlapping contacting relationship with one another,

(*h*) and a coating of pressure sensitive adhesive applied to a surface portion of each of said flaps,

(*i*) each of said end panel flaps having its outer surface portion coated with said adhesive,

(*j*) and each of said side panel flaps having its respective inner surface coated with pressure sensitive adhesive applied in a plurality of spaced relatively narrow strips extending substantially co-extensively the length of said side panel flaps to define a plurality of strips of alternately coated and uncoated portions, said strips being so relatively located in the collapsed position of the container that the coated strip portions on one of said side panels coincide with the uncoated strip portions of the other side panel flap so as to prohibit sticking of said side panel flaps in the overlapping portions thereof.

3,184,145
WRAPPER
James K. Baker, Cleveland, Ohio, assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 217,568, Aug. 17, 1962. This application June 1, 1964, Ser. No. 374,554
3 Claims. (Cl. 229—40)



1. A paperboard blank for a pilferproof wrapper comprising:

(*a*) a bottom panel;

(*b*) a side panel foldably connected to said bottom panel;

(*c*) a top panel foldably connected to said side panel, the top panel having a pair of locking slots disposed in a portion immediate to the free edges thereof;

(*d*) a second side panel foldably connected to said top panel;

(*e*) a secondary bottom panel foldably attached to the second side panel;

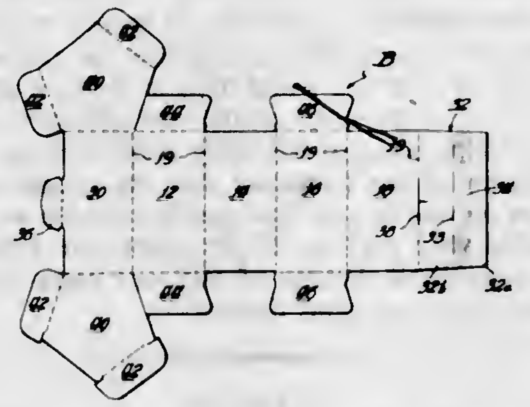
(*f*) a pair of end bottom panels foldably connected to opposite ends of said bottom panel;

(*g*) an end wall panel foldably connected to an other end of each end bottom panel, said end wall panel having a tab integrally formed from a portion of a free edge thereof, the tab engageable with said locking slots, when the wrapper is formed said secondary bottom panel overlying said bottom panel and in apposition therewith, the end bottom panels overlying the inner surface of said secondary bottom panel and in apposition therewith, said end wall panels being approximately perpendicular to the inner surface of said secondary bottom panel, said tabs being in locking engagement with the locking slots, a surface of each of said end bottom panels being in apposition with a portion of said secondary bottom panel and clamping the secondary bottom panel in apposition and superimposed to a portion of said bottom panel, positioning the secondary bottom panel against the bottom panel and holding the wrapper in a closed position by the springing action of the end wall panels upon the secondary bottom panel.

3,184,146
COLLAPSIBLE FOLDING CARTON WITH ODD NUMBER OF UNCREASED SIDE WALLS

Robert M. Hurley, Lexington, Mass., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Aug. 18, 1964, Ser. No. 390,417
2 Claims. (Cl. 229—41)

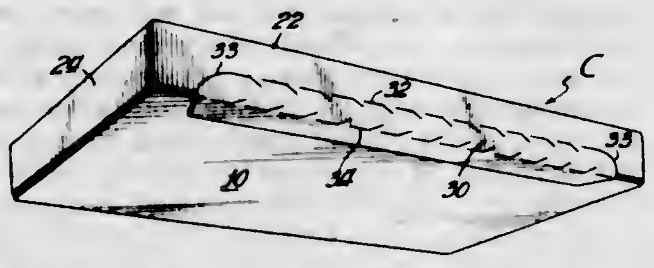


1. A collapsible folding carton formed from a unitary blank of foldable paperboard, comprising:
- (*a*) an uneven number of side walls of substantially the same length hingedly attached to each other along adjacent side edges on parallel hinge lines to form a tubular structure;
- (*b*) one of said side walls including a pair of substantially co-extensive side wall inner and outer panels formed from opposite end portions of the blank;
- (*c*) each of said panels having a free side edge and being hingedly attached along its opposite side edge to an adjacent wall of the carton;
- (*d*) said outer panel being uncreased and disposed to completely overlie said inner panel;
- (*e*) said inner panel being divided by a fold line disposed between and parallel to the side edges of said inner panel, into an outward section, located adjacent the free side edge of said inner panel, and an inward section, located between said outward section and the adjacent side wall, to accommodate collapsing of said tubular structure;
- (*f*) said outward section being adhesively secured to an adjacent overlying portion of said outer panel;
- (*g*) said outer panel having hinged to and projecting from its free side edge a male locking tab receivable within a complementary female locking slit, located at the hinge line connecting said inner panel and adjacent side wall, to maintain the carton in erected condition; and
- (*h*) a pair of opposed end walls hinged to opposite ends of said structure.

3,184,147
END LOADING, TOP OPENING, FOLDING CARTON

Richard S. Wolowicz, Chicago, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Feb. 20, 1964, Ser. No. 346,280
2 Claims. (Cl. 229—51)

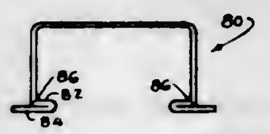


1. An end loading, top opening carton having a pair of telescoping portions formed from a unitary blank of foldable paperboard comprising:
- (*a*) a tray portion including a horizontal bottom wall and a pair of opposed, vertical, front and rear side walls and a pair of opposed, vertical, end walls hinged to side and end edges, respectively, of said bottom wall and extending normal thereto to form a box-like enclosure;
- (*b*) a cover portion including:
  - (i) a horizontal top wall hinged at its rear edge to the upper edge of said tray portion rear side wall;
  - (ii) a front wall hinged at its upper edge to the front edge of said top wall and disposed to overlie said tray portion front side wall but being free from direct attachment thereto;
  - (iii) a pair of end walls hinged at corresponding edges to end edges of said top wall and disposed to overlie said tray portion end walls but being free from direct attachment thereto;
- (*c*) means hingedly connecting opposite ends of said tray portion rear side wall to respective end walls of said cover portion;
- (*d*) said cover portion front wall having immediately above its lower edge a removable section extending transversely across only a part of said front wall and having its ends spaced inwardly from the ends of said front wall and being defined in part by a pair of vertically spaced weakened lines of tear which, for the greater part of their length, extend parallel to each other and to the lower edge of said front wall;
- (*e*) a glue flap the same length as the removable section hingedly attached at its forward edge to the lower edge of said cover portion front wall removable section, on a hinge line coinciding with one of said weakened lines of tear, and being adhesively secured to a marginal portion of the outer surface of said tray portion bottom wall immediately adjacent the front edge of said bottom wall.

3,184,148
CARRIER PACKAGE AND METHOD OF ASSEMBLY

Ougljesa Jules Poupitch, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Original application Feb. 15, 1960, Ser. No. 8,776, now Patent No. 3,115,266. Divided and this application Sept. 5, 1963, Ser. No. 306,765
4 Claims. (Cl. 229—52)

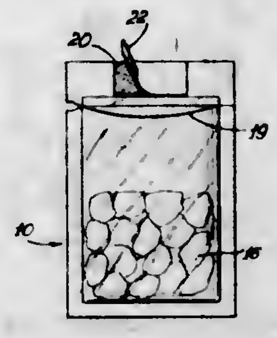


1. In combination, a container carrier having a relatively thin web portion, said web portion defining spaced apertures of predetermined size, and initially generally U-shaped handle means having a base portion and a pair of generally parallel leg means extending therefrom, each of said leg means having transversely deformable end portions adapted to be upset after insertion in said apertures, the transversely deformable end portions on each of said leg means having first and second parallel portions joined at the terminal end thereof, and groove means formed in said first portion at a position intermediate the length of said second portion, said groove means providing a prestressed portion for quick deformation of said second portion and a part of said first portion as a unit to a position parallel with said base portion to present at least a pair of transversely extending finger portions on each leg means for underlying generally opposed areas immediately adjacent each aperture of the web portion to prevent withdrawal of said leg means therefrom.

3,184,149
RE-SEALABLE BAG

John P. Repko, Parma, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Oct. 24, 1962, Ser. No. 232,677
4 Claims. (Cl. 229—66)

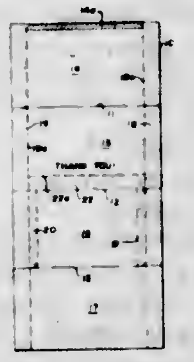


1. A sealed bag assemblage, with product therein, said assemblage capable of being opened and of being resealed after being opened whereby the product therein can be gradually dispensed while the balance will remain in protective condition, comprising a sealed bag having one side comprising a sheet of flexible material having a tear means arranged on said side near one end thereof and adapted for cutting through said side of said bag, and a pressure sensitive adhesive on said side near said end of said bag whereby after use of said tear means, said end of said bag may be folded upon itself and pressure applied to said adhesive to reseal the bag.

3,184,150
MULTIPLE PURPOSE MAILING PIECE

Samuel B. Hubbard, 3025 Taylor St., Dallas, Tex.

Filed Mar. 28, 1963, Ser. No. 268,783
2 Claims. (Cl. 229—73)

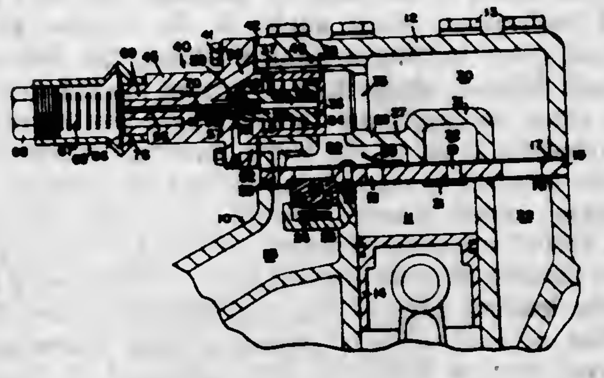


2. Means for forming a multi-purpose mailing piece which is characterized by
- (*a*) a rectangular blank having parallel tear lines extending the length of said blank spaced inwardly of two opposed edges thereof and further having at least two fold lines transverse to said tear lines substantially equally spaced to delineate first and second face panels,
- (*b*) a flap secured to the second of said face panels including a plurality of panels successively longer than the length of the second of said face panels, said plurality of panels being perforated to form extensions therealong of said tear lines on said blank and having adhesive means extending thereacross in a zone of limited width adjacent to the edge of said second face panel opposite said first face panel,
- (*c*) adhesive zones extending the length of said blank except for the first face panel in the zone outside said tear lines, and
- (d) adhesive zones of limited width extending parallel and adjacent to said tear lines insides said tear lines extending the length of said second face panel.

3,184,151
COMPRESSOR CAPACITY CONTROL

David N. Shaw, Liverpool, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed May 31, 1962, Ser. No. 198,854
10 Claims. (Cl. 230—31)

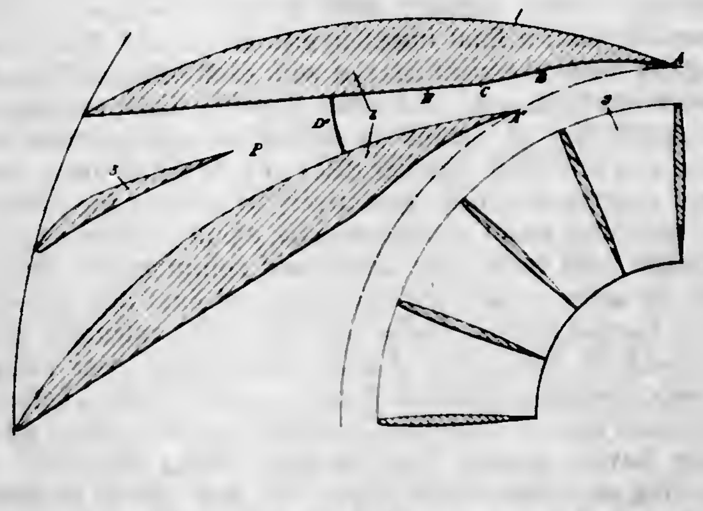


1. In a reciprocating compressor the combination of a cylinder including a movable piston therein, a suction manifold, a discharge manifold, a cylinder head for the compressor, said cylinder head including a partition separating a discharge chamber from a suction chamber, said partition having an opening therein, normally open pressure actuated means for closing said partition opening, a bleed passage communicating said discharge manifold with said pressure actuated means and said suction manifold, means for controlling the pressure in said bleed passage including means to regulate flow through said bleed passage, and means responsive to changes in suction manifold pressure to actuate said flow regulating means to control pressure in said bleed passage including a pressure powered operator engageable with said flow regulating means, whereby upon a predetermined increase in suction pressure said operator actuates said flow regulating means to decrease flow through said bleed passage so that said pressure actuated means closes said partition opening to load said compressor, and upon a predetermined decrease in suction pressure said operator actuates said flow regulating means to increase flow through said bleed passage so that said pressure actuating means opens said partition opening to unload said compressor.

3,184,152
SUPERSONIC COMPRESSORS

Fernand Bourquard, Courbevoie, France, assignor to Commissariat a l'Energie Atomique, Paris, Seine, France, a French society

Original application July 6, 1959, Ser. No. 825,166, now Patent No. 3,156,407, dated Nov. 10, 1964. Divided and this application Aug. 7, 1964, Ser. No. 388,122
Claims priority, application France, July 7, 1958, 769,692, Patent 1,232,326
3 Claims. (Cl. 230—127)



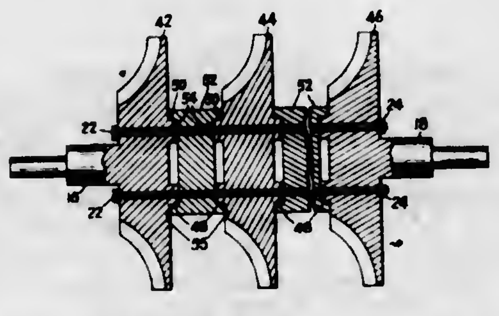
1. A supersonic centrifugal flow compressor for a gaseous fluid which comprises a rotor turning in one direc-

tion, a fixed diffuser member coaxially surrounding said rotor, centrifugal blades carried by said rotor so as to deliver at their trailing edges fluid streams flowing at supersonic velocity and inclined at acute angles to the circular periphery of said rotor turning in said direction, and diffuser blades carried by said fixed member to form between them a plurality of passages for said gaseous fluid inclined at obtuse angles to the circular periphery of said rotor turning in said direction, the face of each of said diffuser blades that is turned toward the axis of said rotor having, from the leading edge thereof to an intermediate point of the corresponding passage, an area in the form of a concave spiral arc to produce recompression waves directed toward said rotor, the end of said spiral arc corresponding to the last recompression wave capable of reaching said rotor without being stopped by the leading edge of the next diffuser blade, the fore portion of each of said passages being convergent and the rear portion divergent in the direction of the gaseous fluid flow, with a throat between said portions, so as to produce a normal shock wave rearwardly of said convergent portion, downstream of which shock wave the fluid flow is subsonic, the above mentioned face of each of said diffuser blades comprising, after said spiral arc area, a convex area extending from said concave area toward said throat, said concave and convex areas being arranged to produce, in said convergent portion of said passage, a succession of expansion waves creating an acceleration of the gaseous fluid flowing past them to reach said throat, said convex area beginning at the point from which an expansion wave starting from said last mentioned face turned toward the axis of said rotor reaches the leading edge of the next blade facing said last mentioned face.

3,184,153
ROTOR CONSTRUCTION

William A. Zech, Clarence, and Fred K. Kunderman, North Collins, N.Y., assignors to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 18, 1962, Ser. No. 167,058
2 Claims. (Cl. 230—134)

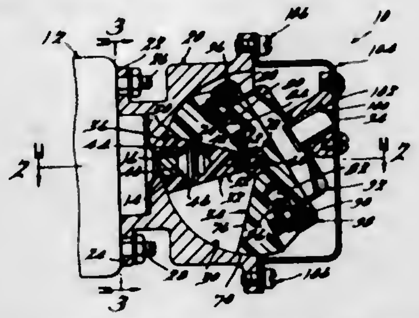


1. A multi-stage centrifugal compressor rotor comprising: a first impeller disc; at least one intermediate impeller disc; a final impeller disc all of said discs being axially unsymmetrical coaxial with each other and axially spaced to form a set of tandem impeller discs; coaxial cylindrical journal means extending outwardly from said first and said final impeller discs in a direction away from said intermediate disc respectively to provide for rotation of said discs about a common axis; axially extending rings coaxial with each other about said common axis formed on the sides of said first disc and said final disc opposite said journal means; similar coaxial axially extending rings formed on both sides of said intermediate discs respectively; coaxial cylindrical spacer member located between adjacent ones of said discs, respectively; said spacer members having coaxial ring portions closely internally receiving said rings, respectively; and said spacer members having a diameter greater than the diameter of said journal means.

3,184,154
AIR COMPRESSOR

Claude H. May and Keith H. Rhodes, Racine, Wis., assignors to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware

Filed June 20, 1962, Ser. No. 203,884
3 Claims. (Cl. 230—137)



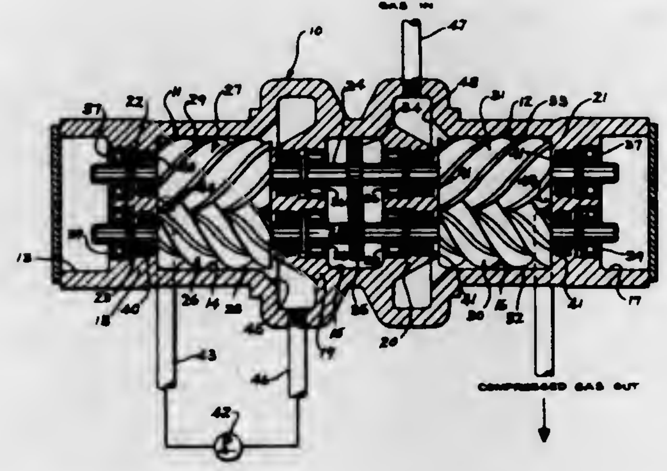
1. A rotary positive displacement air compressor comprising
a housing having
a concave hemispherical recess therein,
a wedge-shaped member having
a convex hemispherical surface complementary to the concave recess in said housing so as to be rotatable therein, said wedge having
a pair of radially convergent opposite side faces,
a wedge pin secured to said wedge extending diametrically of the recess in said housing,
a web having
a convex hemispherical surface complementary to the recess in said housing and
a diametrically extending circular recess for the acceptance of said wedge pin, said web having
a pair of angularly related radially convergent inner faces complementary to the side faces of the wedge and of substantially greater included angle,
a spider pivotally secured to said web so as to be rotatable relative thereto about an axis extending normally to the axis of said cylindrical recess in the web and coplanar therewith, and
means supporting said spider for rotation about an axis angularly related to the axis of rotation of said wedge, said housing having
a pair of apertures therein communicating with a compression chamber defined by the concave recess in said housing, said web and said wedge whereby rotation of said wedge, said web, and said spider effects a variation in the volume of said compression chamber to effect compression of the air therein.

3,184,155
MOTOR COMPRESSOR UNIT

William R. Crooks, Mount Vernon, Ohio, assignor to The Cooper-Bessemer Corporation, Mount Vernon, Ohio, a corporation of Ohio

Filed Apr. 17, 1963, Ser. No. 273,686
3 Claims. (Cl. 230—139)

1. In a combination motor and high pressure fluid pumping device: a housing having a motor chamber and a pumping chamber spaced apart in end to end relationship therein, a pair of shafts extending longitudinally through both of said motor and pumping chambers, said shafts being totally confined within said housing with no external mechanical connections, a first pair of meshing generally helical axial flow screw type rotor members in said motor chamber with respective ones of said rotor members on respective ones of said shafts, a second pair of meshing generally helical axial flow screw type rotor members in said pumping chamber with respective ones of said rotor members on respective ones of said shafts, means supplying high pressure hydraulic fluid adjacent a first end of said meshing helical screw type rotor members of said motor chamber and removing lower pressure from the opposite end of said meshing helical screw type rotor members of said motor chamber, means supplying low pressure fluid adjacent a first end of said meshing helical screw type rotor members of said pumping chamber and discharging high pressure fluid at the opposite end of said meshing helical screw type rotor members of said pumping chamber, said first end of said pumping chamber lying in the same direction relative to its opposite end as does the first end of said motor chamber relative to its opposite end, and said motor rotor members and pump rotor members being sized relative to each other such that all of the torque developed by said motor rotor members is used to drive said pump rotor members.

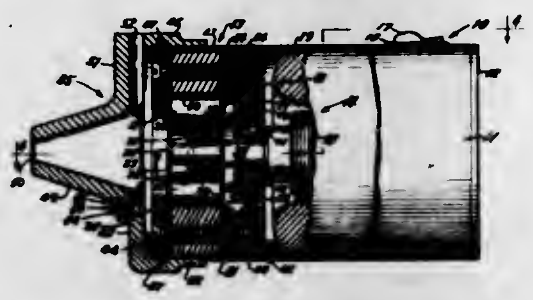


3,184,156
SKIN STIMULATING AND CLEANING DEVICE AND PUMP THEREFOR

Medard W. Welch, 2052 Lincoln Park W., Chicago, Ill., and John Dubrovin, Chicago, Ill. (6710 Sauganash Ave., Lincolnwood 30, Ill.)

Original application Sept. 6, 1957, Ser. No. 682,456. Divided and this application May 31, 1962, Ser. No. 208,161

7 Claims. (Cl. 230—152)

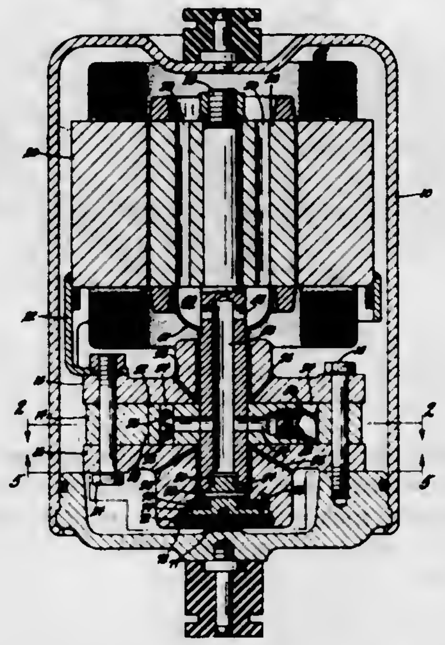


1. A vacuum pump of lightweight compact arrangement including a stator ring defining internally thereof a pump cavity which is enclosed by inlet and outlet end plates, a rotor in said cavity drivingly carried by a rotatable shaft received through said outlet end plate, inlet and outlet circumferentially spaced chambers formed in said stator and in communication with said pump cavity, ports in said inlet and outlet end plates in communication with said inlet and outlet chambers respectively, and a pump discharge and shaft journalling housing attached to said outlet end plate and including an end surface portion spaced from said outlet end plate and through which said shaft extends, said housing being provided with at least one discharge port which is in communication with the port of said outlet end plate through said housing, the end surface portion of said housing being provided centrally thereof with a recess in communication with the interior of said housing and in which is mounted a bearing journalling said shaft.

3,184,157
REFRIGERATING APPARATUS

Robert Galin, Bellbrook, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 20, 1962, Ser. No. 203,892
7 Claims. (Cl. 230—207)



1. In a motor-compressor unit, the combination, an outer housing forming an oil sump, a motor disposed within said housing including a main shaft, means forming a cylindrical compression chamber, a rotatable impeller secured to said shaft and mounted within said compression chamber, said impeller being smaller in diameter than said chamber and having contact with one wall of said chamber at one point on its periphery, a plurality of vanes slidably supported in slots formed in the outer periphery of said impeller, means forming communication between the inner ends of said slots, an inlet port for said compression chamber, a plurality of outlet ports in the outer periphery of said impeller, an axially extending bore in said shaft, a common connection within said impeller between said outlet ports and said bore, an oil pump operatively connected to said shaft and having a portion extending into said bore and sealing the lower end of said bore, said oil pump having an inlet port disposed within said oil sump and having outlet means for supplying lubricant to the bearing surfaces of said shaft, said motor including a rotor having an axially extending passage therein located radially outwardly of said shaft bore, enclosure means forming a revolving muffling chamber connecting said shaft bore and said passage, said enclosure means including means forming an oil drain aperture from said muffling chamber for returning lubricant to said oil sump.

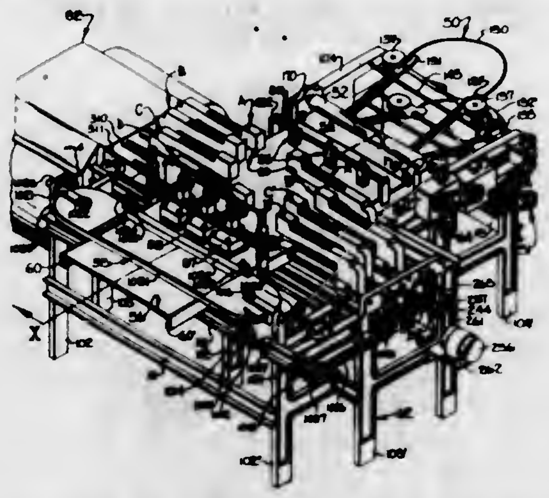
3,184,158
GARMENT CUTTING MACHINE AND METHOD

Franciscus H. J. Beeren, Gastonia, and William Bain, Charlotte, N.C.; said Bain assignor to said Beeren

Filed Dec. 18, 1961, Ser. No. 159,889
64 Claims. (Cl. 234—3)

1. A method of cutting a web which comprises advancing the web in a substantially straight path in an intermittent step-by-step manner, moving a thin cutting blade having a substantially triangularly-shaped cutting edge into and out of the web in a reciprocating manner while the movement of the web is stopped between intermittent movements thereof and with the blade extending in substantially perpendicular relation to the web, turning the blade at various angles about a substantially perpendicular axis with respect to the path of travel of the web, and varying the depth of penetration of the blade into the web in substantially proportional relationship to said

various angles such that the lengths of all the cuts formed by the blade are substantially the same when measured in parallel relation to the path of travel of the web.

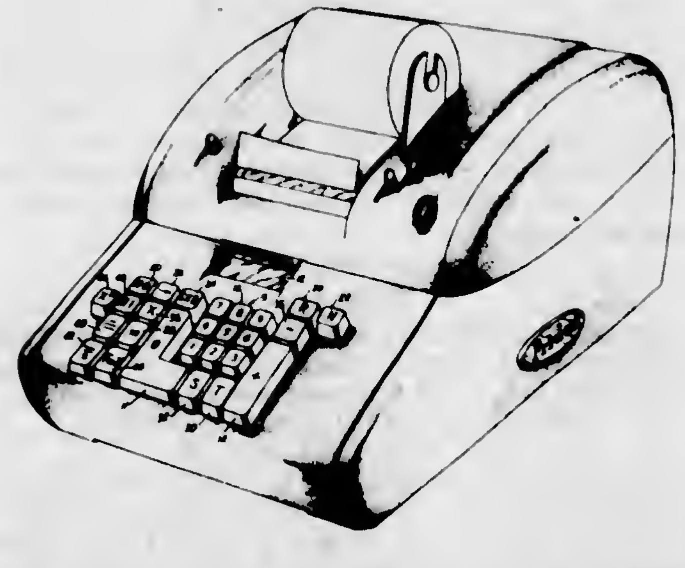


12. Apparatus for cutting a web comprising a table adapted to support the web for longitudinal movement thereon, a cutter mounted for reciprocating motion along a line perpendicular to said table, means for reciprocating said cutter, said cutter having a free end movable into and out of the web with each reciprocation thereof, pattern controlled means rotating said cutter about a perpendicular axis and causing the cutter to occupy various angular positions with respect to the longitudinal axis of the table, pattern controlled means for shifting the cutter predetermined distances transversely of the table in either direction, said cutter being substantially triangularly shaped, and means to vary the depth of penetration of the cutter into the web during reciprocation of the cutter to thereby vary the length of the cuts formed in the web by the cutter.

3,184,159
PROGRESSIVE LATCHES FOR CALCULATING MACHINES

Harold J. Chall, Castro Valley, and Cecil F. Clemons, San Leandro, Calif., assignors, by meme assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware

Filed Feb. 12, 1962, Ser. No. 172,630
4 Claims. (Cl. 235—60)

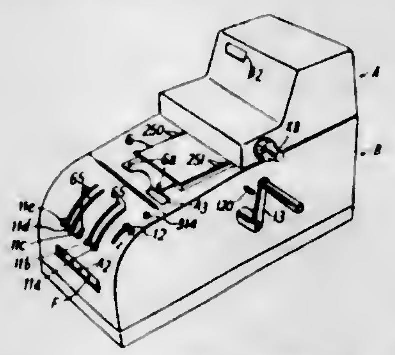


1. In combination in a multiplying calculating machine:
(*a*) means for cyclically operating the machine,
(*b*) printing means operated by the cyclical operation of said machine,
(c) a blocking lever for blocking a printing operation of said printing means,
(*d*) means for biasing said lever out of blocking position,
(*e*) a cyclically operating cam which, in the home position thereof, holds said blocking lever in print-blocking position, said cyclically operating cam being operable during the cyclic operation of the machine to release said blocking lever for unblocking the printing means,
(*f*) multiplication control means operable for initiating a multiplication operation of said machine,
(*g*) a latching lever for said blocking lever,
(*h*) means activated by said multiplication control means upon the initiation of multiplication for urging said latching lever to a latching position, and
(*i*) a live tip on one of said levers normally engageable with the other lever for preventing said latching lever from moving into said latching position, whereby upon initiation of multiplication, said latching lever is prevented by said live tip from preventing operation of said blocking lever, so that said blocking lever releases said printing means for printing during the first cycle of multiplication,
(*j*) the operation of said blocking lever to print-unblocking position, carrying said other lever and said live tip free of each other and permitting motion of said latching lever toward said latching position,
(*k*) return of said blocking lever to home at the end of said first cycle of operation being effective to rock said live tip to non-obstructing position, whereby said latching lever engages said blocking lever and holds it in print-blocking position so that printing is blocked during the remaining cycles of multiplication.

3,184,160
DATA RECORDING MACHINES

Vernon Watkins Sparrow, London, England, assignor to Bell Punch Company Limited

Filed July 18, 1961, Ser. No. 124,890
22 Claims. (Cl. 235—60.15)

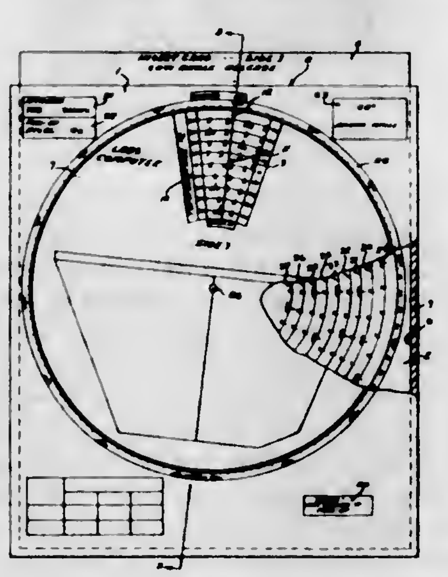


1. A subtraction unit comprising a succession of sections including a first section and a second section corresponding respectively to a lower order digit and the next higher order digit of the minuend element, of the subtrahend element and of the remainder element of a subtraction operation, said second section including a gear which occupies a zero position at the commencement of a subtraction operation and which, in a first phase of the subtraction, is rotated forwardly or backwardly from such zero position according to whether the value of the higher order digit of the subtrahend is greater or smaller than the value of the digit of corresponding order of the minuend, the movement of the gear being proportional to the difference between these values, said first section including a stepped rotary cam associated with said gear, the cam occupying a zero position at commencement of subtraction and further, during the first phase of subtraction being rotated forwardly or backwardly from the zero position according to whether the value of the lower order digit of the subtrahend is greater or smaller than the value of the digit of corresponding order of the minuend, said unit further comprising means operatively connecting said rotary cam and said gear such that said gear is automatically returned towards zero position through a one digit arc of movement in the event of movement of said cam having been in the forward direction, and said connecting means including a lever located in the first section movable between a first position in which a feeler on the lever intercepts said cam and a second position to which the lever is moved by forward rotation of the cam from said zero position thereof, the lever remaining in its first position if the cam is rotated backwardly, said lever carrying a stop which protrudes into the second section said connecting means further comprising, a rack located in said second section movable into mesh with said gear after rotation of said gear from said zero position and a carrier for said rack also located in said second section, the rack being pivotally mounted upon said carrier for movement into and out of mesh with said gear, said carrier being reciprocable between a first position which it occupies at the commencement of a subtraction and a second position, said connecting means still further comprising yieldable urging means coupled to said rack for bringing said rack into said second position after the rack has been moved into mesh with the gear and only after said lever has been moved to its second position, said stop then occupying a position in which it is clear of the path of the carrier, while in said first position of the lever the stop intercepts said path, said gear being returned towards its zero position by movement of said carrier to said second position and the consequent movement of said rack.

3,184,161
LOW ALTITUDE BOMBING HAND COMPUTER

Paul A. Schwarz, Pittsburgh, Pa., and Richard L. Krumm, Atwater, Calif., assignors to the United States of America as represented by the Secretary of the Air Force

Filed Apr. 1, 1958, Ser. No. 725,761
4 Claims. (Cl. 235—89)

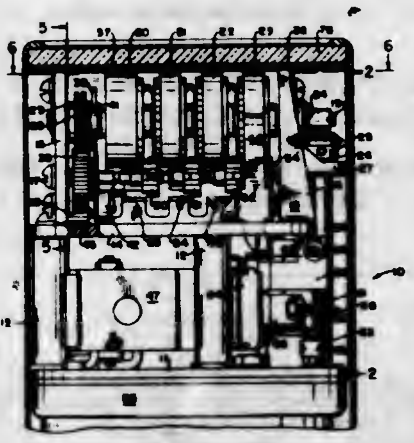


1. A low altitude bombing indicator device comprising a pair of rectangular transparent base panels, spacer means surrounding three sides of the perimeter of said base panels to fix the said panels in spaced parallel relation to provide a rectangular pocket between the panels for receiving a bombing data predetermined information insert card therein, an opaque circular disk rotatably adjustable on the outer face of each of said transparent base panels in concentric relation to each other arranged to expose a portion of said base panels surrounding the periphery of said disks and continuously expose certain predetermined corelated bombing data on said insert card located outwardly beyond the periphery of said disks, said disks having window openings therein for simultaneously selecting displaying corelated portions of concentric rings of predetermined bombing data on both sides of said insert card located inside the periphery of said disks when said disks are rotatively adjusted to predetermined positions, and a rectangular insert card shaped to fit said rectangular pocket, said insert card having predetermined corelated bombing data located on both sides thereof beyond the periphery of said disks for continuous display through both of said panels outwardly of the periphery of said adjustable disks as said disks are rotatably adjusted to all positions, said insert card having concentric rings of cooperating corelated variable bombing data located on both sides thereon inside the periphery of said disks to be selectively displayed through said windows in the two disks when said disks are rotatably adjusted to predetermined rotative positions on said panels.

3,184,162
HIGH SPEED RESET COUNTER

John J. Ambrozaitis, Waterbury, Conn., assignor to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware

Original application Sept. 26, 1958, Ser. No. 763,753, now Patent No. 3,070,300, dated Dec. 25, 1962. Divided and this application Feb. 15, 1962, Ser. No. 173,567
10 Claims. (Cl. 235—139)



1. A direct reading tens-transfer counter, comprising a plurality of drums mounted for rotation, external drive means for the lowest order drum, Geneva-type transfer means interconnecting all said drums, each to a drum of the next higher order, said transfer means being operative upon rotation of the lowest order drum from a "9" position to a "0" position to effect rotation of the drum of the next higher order from one index position to another, means for initiating a counting period, means for terminating a counting period, and line-up means operative in association with said means for terminating a counting period at the end of a counting operation and acting only upon the drum of the lowest order for rotating that drum from any position between its "9" and "0" positions only to the closer of the two positions.

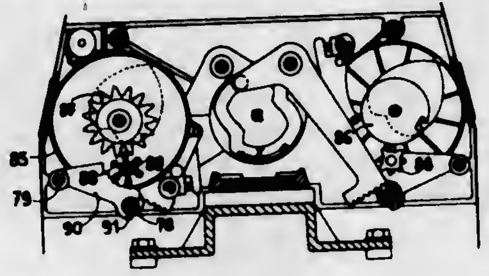
3,184,163
INDICATING AND CALCULATING APPARATUS

Henri Boutillon, Suresnes, France, assignor to Etablissements Boutillon S.A., Suresnes, France, a corporation of France

Filed June 13, 1963, Ser. No. 287,665
Claims priority, application France, July 13, 1962, 903,909
8 Claims. (Cl. 235—144)

1. In an indicating and calculating apparatus comprising a lower order number drum and a higher order number drum; a transfer mechanism for rotating the higher order number drum a predetemined incremental amount in response to a predetermined rotation of the lower order drum, the transfer mechanism comprising a segmental gear secured to the lower order number drum, a full tooth gear secured to the higher order number drum, and a movable transfer pinion operatively interconnecting said gears; and resetting means for resetting both drums to a

zero-indicating position comprising a first device operatively connected to the transfer pinion for shifting the transfer pinion between a first position in which the transfer pinion is in mesh with the full tooth gear and is capable of being engaged by the segmental gear during rotation of the lower order number drum and a second position in which the transfer pinion is partially in mesh with the

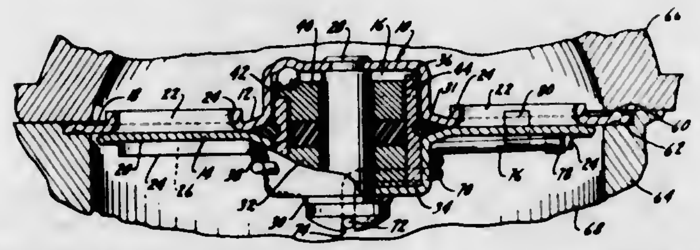


full tooth gear and is incapable of being engaged by the segmental gear, a second device operatively connected to the drums for rotating the drums to a zero indicating position, and means operatively interconnecting the first device and second device so that the second device rotates the drums to the zero indicating position after the first device has shifted the transfer pinion to said second position.

3,184,164

ROTARY VANE THERMOSTAT

Maurice D. McCormick, 308 Maple, Prospect Heights, Ill.
Filed Sept. 13, 1963, Ser. No. 308,905
14 Claims. (Cl. 236—34)



1. In a temperature responsive rotary thermostatic valve, a housing including a pair of opposed relatively rotatable cover members, means connecting said cover members together to prevent relative axial movement thereof, said means being fixed to one cover member and pivotally movable relative to the other cover member to permit relative rotation between said two cover members, each cover member having an outwardly directed annular surface, said surfaces being in contact with each other and each having a plurality of fluid openings, spring means fixed to one of said cover members and urging the other cover member in a direction to maintain said openings out of alignment with each other, a temperature responsive expandable mass within said housing, means responsive to expansion of said mass for causing relative rotation of said cover members to move said openings toward alignment, the expansion of said mass determining the amount of relative movement and the degree of alignment of said openings.

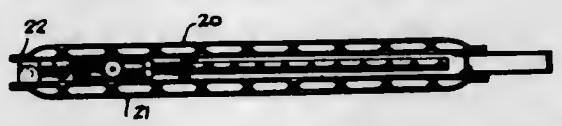
3,184,165

COMBINED RADIATOR AND BOILER

Frederick Carr, Birmingham, England, assignor, by mesne assignments, to Servotomic Limited, Aston, Birmingham, England
Filed June 21, 1963, Ser. No. 289,488
Claims priority, application Great Britain, June 23, 1962, 24,237/62 and 24,238/62
9 Claims. (Cl. 237—17)

5. A liquid heater and radiator comprising, in combination:

(*a*) two double-walled panels, the walls of each panel being spaced to define therebetween an interior space adapted to contain a liquid, each panel having a normally vertical outer wall;



(*b*) cooperating mounting means fixedly secured to each of said panels, the mounting means of said panels engaging each other and coupling said panels for relative movement toward and away from a position in which said outer walls are substantially parallel and opposite each other in spaced apart relation, and define therebetween a combustion space;

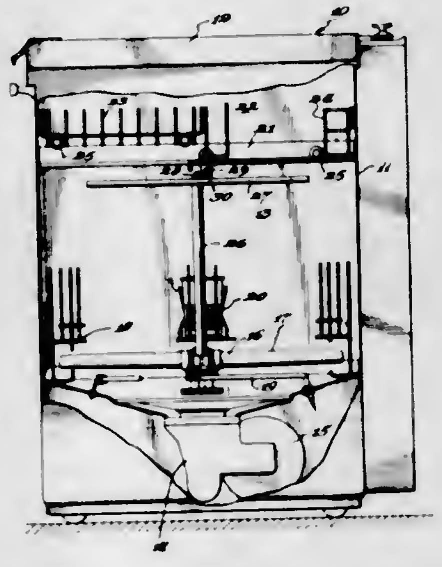
(*c*) a burner in said combustion space; and

(*d*) interconnecting means placing the interior spaces of said panels in communication during said relative movement of said panels and when said panels are in said position.

3,184,166

DISHWASHER

Donald V. Wood, Minneapolis, Minn., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,279
4 Claims. (Cl. 239—245)



1. In a dishwashing apparatus having means defining a washer chamber, and liquid delivering means in a lower portion of the chamber for delivering washing liquid thereinto, spray apparatus comprising: a conduit member in fluid transfer association with the liquid delivering means and extending upwardly therefrom to an upper portion of the chamber; spray means on an upper portion of the conduit member for delivering washing liquid therefrom into the upper portion of said chamber; support means connected to said spray means; and securing means engaging the support means for positionally maintaining the upper portion of the conduit member, said securing means comprising a plurality of spring clips releasably engaging said support means.

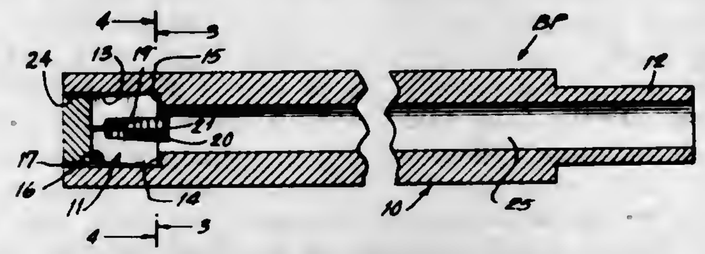
3,184,167

BLOW-PIPE FOR FABRICATING PLASTIC RESIN ARTICLES

Arion Mancuso, North Valley Stream, N.Y., assignor to Ilikon Corporation, Natick, Mass., a corporation of Delaware
Filed Feb. 6, 1964, Ser. No. 343,033
9 Claims. (Cl. 239—590)

1. A blow-pipe for fabricating hollow articles formed of plastic resin which blow-pipe comprises in combination:

a tubular body having an opening for connection to a source of gaseous medium under pressure and having an open outer end formed with a bore providing a circular wall, the body formed with a seat at the inner end of the bore;

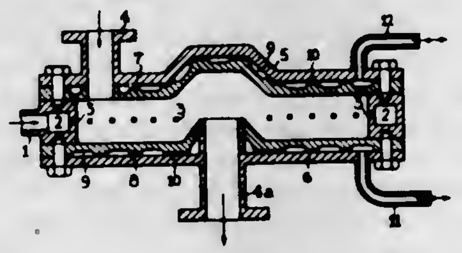


a head fitted within the bore of said body having a cylindrical surface at its outer end spaced from and facing the bore wall at the outer end of the bore to provide a continuous annular uniformly dimensioned passageway, the inner end of the head engaged against the seat of the bore, the head having a divergently tapered surface from the outer to inner end for effecting securement of said head at the inner end of the bore and against said bore seat, said head having passageway means therein for establishing fluid flow communication between said body member and said annular passageway.

3,184,168

APPARATUS FOR PNEUMATICALLY GRINDING DIVIDED SUBSTANCES

Erich Feld, Horst Patzer, and Werner Kleinlein, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
Filed Oct. 16, 1962, Ser. No. 230,826
Claims priority, application Germany, Oct. 20, 1961, F 35,171
9 Claims. (Cl. 241—39)



1. An apparatus for pneumatically grinding divided substances comprising a grinding apparatus having a grinding chamber and means to inject a grinding fluid under pressure around the periphery of said grinding chamber, wherein the covers of the grinding chamber are provided, at the sides which face the grinding chamber, with coverings of elastic synthetic material which are secured along their edges to the covers so that a hollow space is formed between the elastic synthetic material and the covers, and members are disposed for introducing compressed air into the hollow space and discharging it therefrom to produce a rhythmical motion of the coverings of synthetic material.

3,184,169

APPARATUS FOR PNEUMATICALLY PULVERIZING MATERIAL

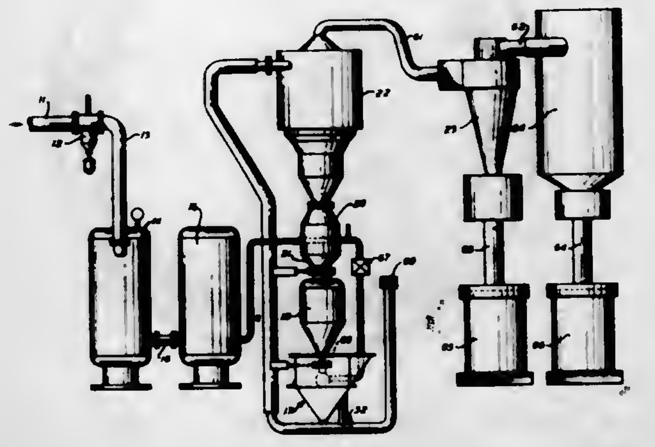
Lawrence S. Friedman, 9 Nymph Road, West Orange, N.J.; Ira L. Friedman, 500 S. Center St., Orange, N.J.; Kenneth C. Zagielski, 34 Osborne Terrace, Packanack Lake, N.J.; and Leo A. Adams, 208 Phelps Ave., Cresskill, N.J.
Filed Mar. 29, 1963, Ser. No. 268,907
7 Claims. (Cl. 241—40)

1. Apparatus for pneumatically pulverizing material comprising:

(*a*) a closed vessel defining a blast chamber, the interior surface of the blast chamber being fabricated of the material being pulverized therein,

(*b*) a blast nozzle extending into the blast chamber connected to a source of high pressure, air,

(*c*) the blast nozzle having an internal passage and an external surface in the blast chamber fabricated of the material being pulverized and passing therethrough,



(*d*) an impact shield in the blast chamber opposite the end of the nozzle, the surface of the impact shield opposite the nozzle being fabricated of material being pulverized thereagainst,

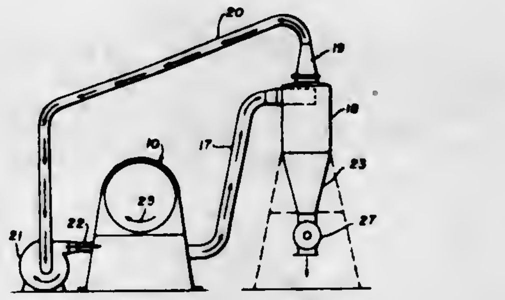
(*e*) means for introducing material to be pulverized into the nozzle and

(*f*) classifier means connected between the bottom of the blast chamber and the nozzle adapted to separate oversized particles of material from undersized particles, passing the oversized particles to the nozzle and the undersized particles to collection means.

3,184,170

GAS SWEPT PULVERIZER

John Kereszteay, Ottawa, Ontario, Canada, assignor to Universal Milling and Machinery Limited, Ottawa, Ontario, Canada
Filed Apr. 2, 1963, Ser. No. 269,925
Claims priority, application Great Britain, Apr. 10, 1962, 13,800/62
9 Claims. (Cl. 241—73)



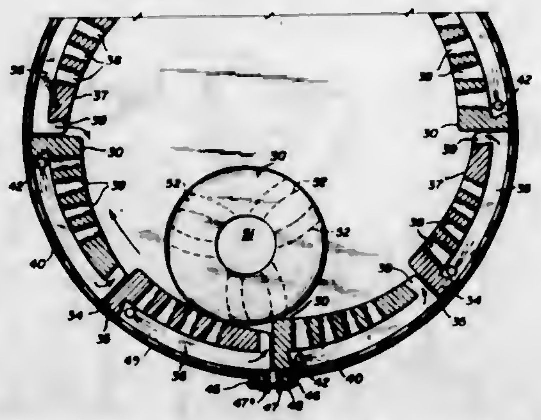
7. A pulverizing machine comprising a cylindrical housing, a cylindrical sizing screen mounted concentrically within said housing, a rotor having a plurality of striking blades for rotation in close proximity to said screen, said rotor being formed as an impeller to maintain a high velocity circulating gas flow within a comminuting zone bounded by the sizing screen together with a high pressure gradient across the screen, a cyclone separator, a first conduit connecting said housing with said cyclone separator, a suction blower, a second conduit connecting said suction blower with said housing to discharge a high velocity flow of air or other gas into said housing tangentially to said screen to travel around same before entering said second conduit, and a third conduit connecting said cyclone separator back to said suction blower to form a closed circuit.

3,184,171
SCREENING TYPE PERIPHERAL DISCHARGE MILL

Arthur Chester Daman, Denver, Colo., assignor to Denver Equipment Company, Denver, Colo., a corporation of Colorado

Filed June 18, 1962, Ser. No. 203,052

8 Claims. (Cl. 241—83)



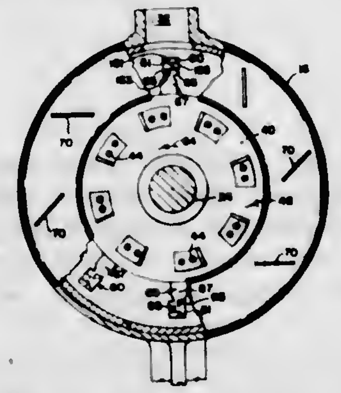
1. A grinding mill comprising a cylindrical drum mounted on a supporting structure for rotation about a substantially horizontal axis and having a head closing each of its ends, a feed trunnion extending into one said end, a plurality of segmental liners assembled to form a perforate, annular structure adjacent but spaced from the periphery of the drum and fitted between the beads, a second perforate, annular member exteriorly of the liner structure having screening portions in spaced relation thereto, partitioning means on the liners having a portion extending into the space between the annular members and defining therewith a plurality of separation chambers in circumferential arrangement about the drum, there being a passage at the trailing end of each chamber for conducting oversize reject to the interior of the drum, means in the forward end of each chamber for discharging a sluicing flow throughout the chamber, means for intermittently supplying sluicing liquid to the discharge means, the openings in the outer annular member being of a dimension to pass a predetermined, maximum-size material as the product discharge of the mill and to reject oversize, the openings in the liner members being larger than the openings in the outer annular member, and means for rotating said drum.

3,184,172
IMPACT MILLING APPARATUS

Coleman Dudley Fitz, North Caldwell, N.J., assignor to General Mills, Inc., a corporation of Delaware

Filed Mar. 24, 1961, Ser. No. 98,188

6 Claims. (Cl. 241—194)



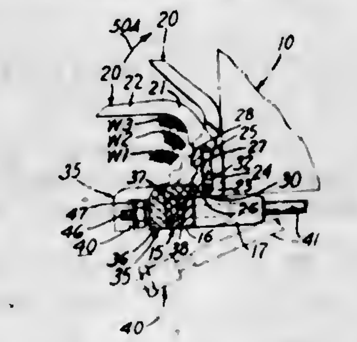
1. In an impact mill having an impact chamber with inlet and outlet means for admitting and discharging material to be pulverized, and a rotor means mounted within said chamber for rotation on a given axis, the improvement comprising impacting means on said rotor means for pulverizing the material admitted to said chamber in response to rotation of said rotor means around said axis, said impacting means including a plurality of impact hammers circumferentially spaced apart on said rotor means and movable circumferentially within said impact chamber when said rotor is actuated, each of said impact hammers including a radially extending supporting shank, means securing said shank to said rotor means, first and second radially spaced impact plates extending symmetrically from said shank and parallel to the rotor axis, said impact plates defining an opening between them and each being provided with an inclined impact surface having an angular orientation at the outer edge of its effective impact area adapted to deflect material from that surface toward said opening, and including a third impact plate on said shank, said third plate having an impact surface located rearwardly of the opening between said first and second impact plates for engagement by material passing through said opening.

3,184,173
STATOR WINDING EQUIPMENT

Richard W. Walling, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 17, 1962, Ser. No. 166,853

4 Claims. (Cl. 242—1.1)



1. For use on apparatus for winding slotted stator means of a dynamoelectric machine, a stator conductor placement structure, comprising, a stator support means having an interrupted angular groove and a plurality of substantially radially located cutouts therein for each stator side, a plurality of generally elbow-shaped finger means each having an anchor end portion to fit slideably in said cutouts of said support means and each having a slot and several notch-like recesses therein, a guide means carried by said support means in the angular groove in a position to have said guide means extend substantially transversely through the slot of each finger means held thereby to a predetermined range of movement inwardly and outwardly of said radially located cutouts, and a retainer means adapted to fit complementary to each stator support means and having an axially extending flange portion selectively engageable in said notch-like recesses of said finger means to maintain positioning thereof severally during placement of conductors at differing depths in stator means slots.

3,184,174
YARN-SPOOL WINDING MACHINE WITH AUTOMATIC SPOOL-EXCHANGING DEVICE

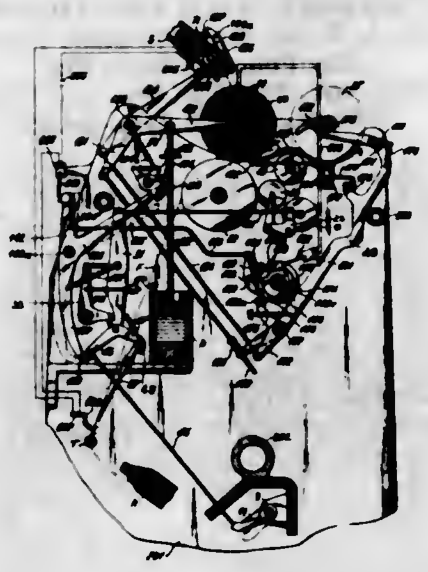
Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany

Filed June 19, 1963, Ser. No. 289,049

Claims priority, application Germany, June 22, 1962, R 32,971

10 Claims. (Cl. 242—35.5)

1. A yarn-winding machine, comprising a winding mechanism having a spool-core journalling means for accommodating a take-up spool to be wound, a core-supplying exchange mechanism for substituting a new core for a full spool on said journalling means, means for supplying yarn to be wound on said core, means for attachment of the yarn to a new core preparatory to winding the yarn thereupon, a sequencing control device having releasing means responsive to completion of a spool and being connected to said exchange mechanism and to said attaching means for controlling them normally to sequentially operate when a spool is completed, a sensing member responsive to presence of a remainder winding on the new core being substituted by said exchange mechanism, and control means connected to said sensing member and controlled thereby to prevent the yarn from being supplied to said attachment means when the new core has a remainder winding.

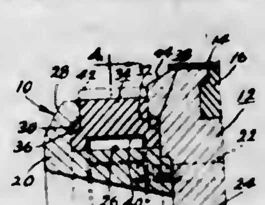


3,184,175
SELF-RELEASING COLLET NOSE

Cory P. Geen, Philadelphia, Pa., assignor to Industrial Devices, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 4, 1963, Ser. No. 313,832

10 Claims. (Cl. 242—46.5)



1. In combination, a winder collet, and a self-releasing collet nose, said nose comprising a nose piece extending axially outwardly from the collet, an annular resilient ring on said nose piece adapted for radial expansion upon rotation of the collet, said ring having an external diameter smaller than the diameter of said collet, and means limiting the radial expansion of the ring to prevent disengagement thereof from the nose piece, said nose being adapted for the starting of a strand and winding of coarse yarn upon said ring during acceleration of said collet and for the transfer of the strand to said collet when said collet reaches winding speed, the radial expansion of said ring upon rotation of said collet and radial contraction thereof upon stopping of said collet releasing the coarse yarn and permitting ready removal thereof from said ring upon stopping of said collet.

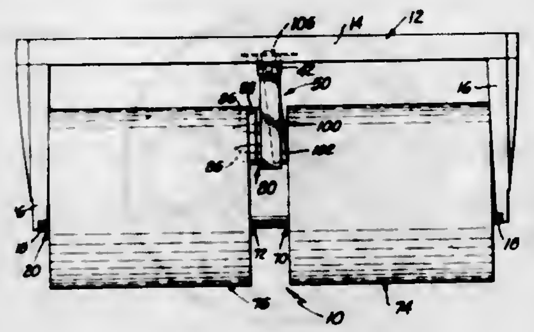
3,184,176
DUAL TOILET TISSUE DISPENSER

Council A. Tucker, Glendale, and Jack L. Perrin, Los Angeles, Calif., assignors to Towlsaver, Inc., Los Angeles, Calif., a corporation of California

Filed Oct. 1, 1962, Ser. No. 227,274

9 Claims. (Cl. 242—55.3)

8. In a dual toilet tissue dispenser adapted to maintain a first roll of toilet tissue in a dispensing location and a second roll of toilet tissue in a reserve location, the combination of: a mounting bracket adapted to permit said dispenser to be affixed to a supporting surface; a mounting spindle having dispensing and reserve locations thereupon for the reception, respectively, of said first and second rolls of toilet tissue; a latch on said mounting bracket; a latch bolt on said mounting spindle intermediate said dispensing and reserve locations and engageable with said latch to demountably maintain said mounting spindle in operative engagement with said mounting bracket; and detent means on said mounting spindle intermediate its extremities and engageable with said second roll of toilet tissue to prevent rotation of said second roll of toilet tissue until the substantial consumption of said first roll of toilet tissue.

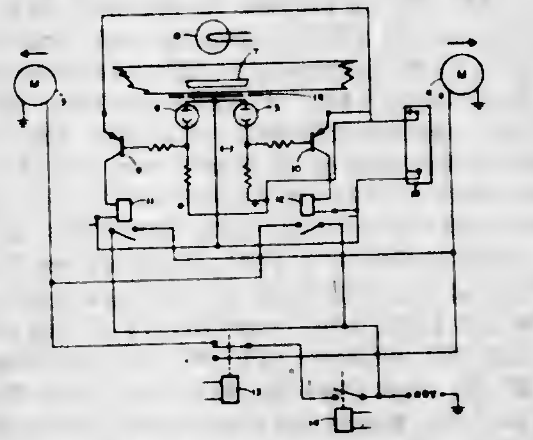


3,184,177
FILM ALIGNMENT AND BRAKING DEVICE

Jack W. Hannah, 653 Cherry St., Galion, Ohio

Filed Aug. 6, 1962, Ser. No. 215,028

4 Claims. (Cl. 242—55.12)

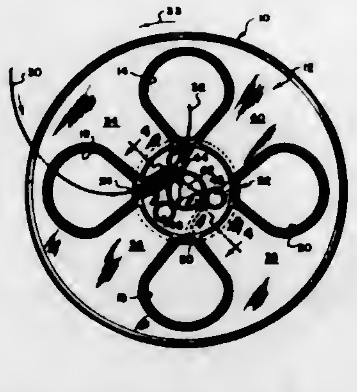


1. In an apparatus wherein a film strip is wound between two reels, each of said reels operatively connected to and rotated by a motor, each motor causing said film strip to move in one direction while the other motor drags idle, and the power to said motors is controlled by a means which stops the film strip in a generally desired location, the improvement which comprises means for automatically aligning said film strip at a precise position in said generally desired location, wherein said latter means includes a light source located on one side of said film strip, a registration slot having two extremities in the direction of travel of said film strip and having an ability to transmit light different from the remainder of said film strip, and two photocells located on the side of said film strip remote from said light source, said photocells being spaced apart a distance approximately equal to the distance between the extremities of said registration slot, means connecting said photocells to said motors for energization thereof, and means responsive to a variation in light on said photocells to counter a movement of said film strip in either direction with an opposite force from one of said motors, whereby the film is aligned in said precise position with the ends of said registration slot adjacent the photocells.

3,184,178

REELS

Alan H. Bodge, Los Angeles, Calif., assignor to Audio Devices, Inc.
Continuation of application Ser. No. 749,749, July 21, 1958. This application Feb. 1, 1963, Ser. No. 255,545
3 Claims. (Cl. 242—74)

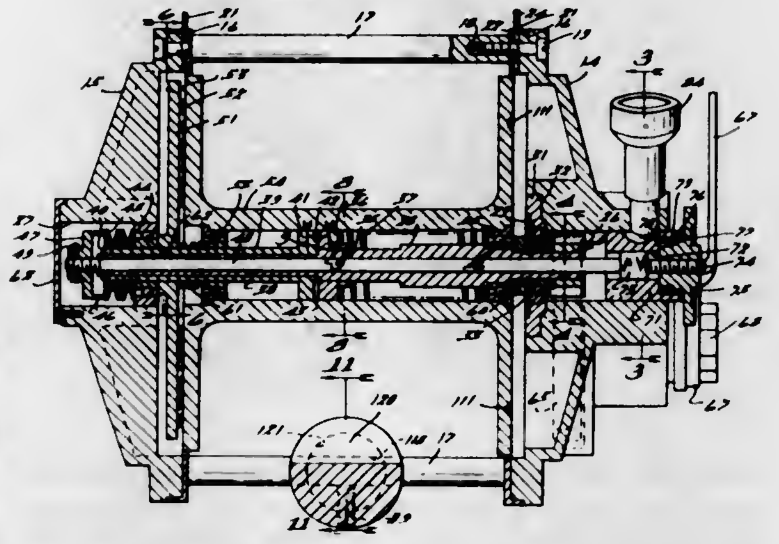


1. In a reel having a pair (12, 52) of spaced flanges opposed to each other and a relatively thin hub (22) disposed centrally therebetween for the winding and unwinding of tape (30) and the like, the interior core portion of the hub (22) being hollow and the exterior side portions of the hub core being defined by the side walls of the flanges, and in which a spindle hole (42) extends centrally and axially through the hub core of the side walls of both flanges (12, 52) for rotation of the reel and in which the hub core section of a flange side wall is provided with a hub core tape threading slot (24) for the insertion sideways of the tape when the reel is to be loaded with tape; the improvement comprising in combination therewith: at least one pair of spaced open windows (14, 16) is located in the first (12) of said flanges adjacent to and connecting with and extending outwardly from the hollow hub (22) toward the perimeter of said first flange (12); a spoke portion (34) of the flange (12) separates the pair of spaced open windows (14, 16); the bottoms of both windows (14, 16) and of the spoke portion (34) are formed of a succession of at least three spaced sections (148, 146, 144) of the rim portion of the hollow hub (22); the three sections of the rim portion of the hub have an axially-extending transverse rim slot (156, 154, respectively) at the bottom of each of said two windows (14, 16) for receiving the end portion of the tape (30) to be wound onto the rim of the hub; said first flange (12) has a hub core tape threading slot (24) through the core of the hub side wall section of the first flange (12) for the insertion sideways of the tape (30); the respective ends of the hub core slot (24) terminate at said transverse rim slots (156, 154) in the hub; the hub core tape threading slot (24) is disposed between the rim sections (148, 146, 144) of the hub and said spindle hole (42); the transverse hub rim slots (156, 154) terminate at their far outer ends by a solid side wall portion of the second flange (52) which acts as a stop wall for tape (30) to be inserted in the flange-hub core tape threading slot (24) and the transverse hub rim slots (156, 164); the flange-hub core tape threading slot (24) and the transverse hub rim slots (156, 154) are defined by a pair of spaced tape guiding inner and outer hub core slot walls (162, 116, respectively) extending between said pair of spaced open windows (14, 16) and transversely between the two flanges; the tape guiding inner and the outer hub core slot walls (162, 116) are integrally secured to the hub core side wall of at least one of the flanges; the outer hub core slot wall (116) defines the bottom portion of opposite spokes (34, 68) of the flanges between said transverse hub rim slots (156, 154) and between said pair of spaced open windows (14, 16); the ends of the outer wall are integrally secured to a hub rim section; and each hub rim section is, in turn, integrally secured to the inside of the flanges to give rigidity to the spokes and hence to the entire reel assembly.

3,184,179

FISHING REEL WITH FRICTION DRIVE

Garfield A. Wood, Jr., 4565 Sable Palm Road, Bay Pointe, Miami, Fla.
Filed Nov. 25, 1960, Ser. No. 71,767
5 Claims. (Cl. 242—84.45)



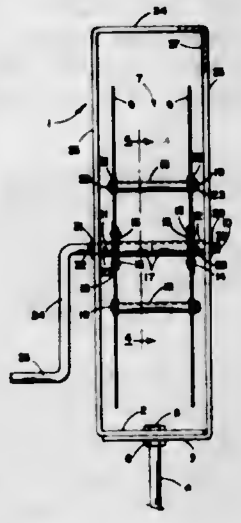
1. In a fishing reel, a spool, a housing encompassing said spool, shaft means journaled in said housing and supporting said spool for rotation, means rotatably driving said shaft means from one end thereof, a sleeve rotatably mounted on the opposite end of the shaft means having a ratchet head containing teeth facing the driving end of the shaft means, a ratchet head on said shaft in driving relation therewith and slidable longitudinally thereof having teeth matable with the teeth on the ratchet head of said sleeve, a spring about said shaft means for urging the ratchet head thereon toward the ratchet head of said sleeve, means connecting the opposite end of said sleeve to said spool in driving relation therewith, said connection means embodying a disk in driving relation with said sleeve, friction means between said disk and the adjacent face of the spool for producing a friction drive therebetween, said disk having teeth on the peripheral edge, a spring-pressed pawl for engaging one of said teeth to prevent the counterrotation of said disk, said shaft means being hollow, a rod extending through said shaft means from one side to the other of the housing, and spring means between said rod and said disk for applying a predetermined pressure thereto to produce frictional engagement with the spool.

3,184,180

GARDEN HOSE REELS

Robert E. Rockwell, 12012 National Blvd., West Los Angeles, Calif.
Filed May 22, 1962, Ser. No. 196,682
2 Claims. (Cl. 242—86)

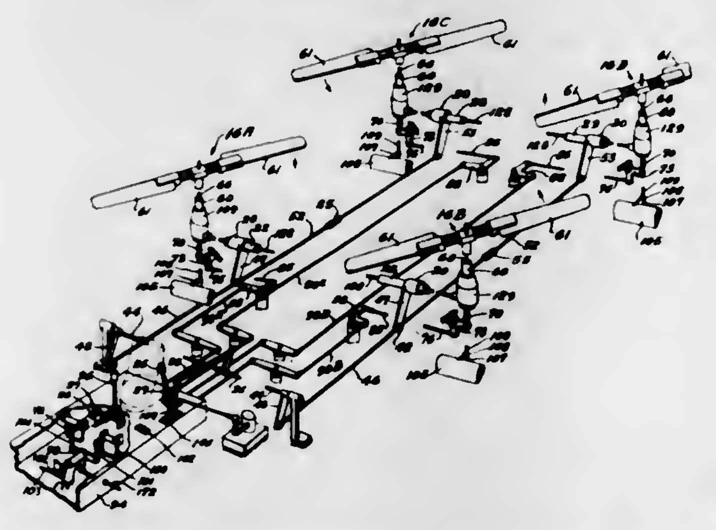
1. In a hose storing device, a combination including: a rectangular frame formed from a single strip of material, the two ends of the strip overlapping to produce a double thickness short side for the rectangular frame; a reel comprising two parallel discs and a shaft extending through the centers thereof and secured thereto, said discs spaced and joined by an open core structure concentric with said discs; said reel positioned between the long sides of said frame, said shaft extending through bearing holes so positioned in both of said long sides that the other short side of the rectangle will be sufficiently spaced from the edges of the discs to form a handle for carrying the device, one end of said shaft being formed into a bellcrank for rotating said reel; a round rod extending from said double-thickness short side intermediate the short side's two ends of extending parallel to the long sides of the rectangle and away from the reel, said rod passing through both thicknesses of the material forming said double-thickness short side, and threaded means for securing said rod to said double-thickness short side, said means comprising threads on at least a portion of the rod passing through said double-thickness side and a nut threaded on said portion for preventing longitudinal movement of said rod in at least one direction with respect to said double-thickness side, said rod having a second portion free from bearing members, keys and projections to provide a vertical axis for freely pivoting said reel within the ground when said second portion is inserted therein.



3,184,181

CONVERTIPLANE WITH CONTROL MECHANISM

David H. Kaplan, Huntington, N.Y., assignor to Convertawings, Inc., Amityville, N.Y., a corporation of New York
Filed July 8, 1959, Ser. No. 825,719
52 Claims. (Cl. 244—7)

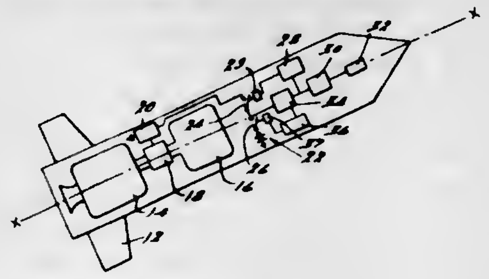


1. A convertiplane comprising a fuselage, a pair of wing means carried by the fuselage in spaced fore and aft position, each wing means including at least one wing and each wing having a leading edge and a chord, mounting means carried by the fuselage and mounting each wing means for pivotal movement to and from a generally horizontal position and a generally vertical position, wing operated means connected with the wing means to pivot the same, a pair of rotors carried by each wing means in laterally spaced relation and each rotor having blades, rotor mounting means mounting each rotor for rotation on the wing means on an axis through or adjacent to the chord of the wing means and ahead of the leading edge thereof, means mounting the blades for pitch change; pitch operation mechanism having four output means and having input means for collective and differential operation of the output means and collective and differential pitch change of the blades; means connected with the input means to operate the latter, output connecting means between the output means and the blades of the rotors, flaps pivotally mounted on the wing means, and flap depressing mechanism operable by pivoting of the wing means and connected with the flaps to depress the same in the transition of the wing means between horizontal and vertical positions.

3,184,182

PULSED THRUST VELOCITY CONTROL OF A PROJECTILE

Robert F. May, Birmingham, and David L. Dart, Pontiac, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Jan. 18, 1960, Ser. No. 3,139
5 Claims. (Cl. 244—14)

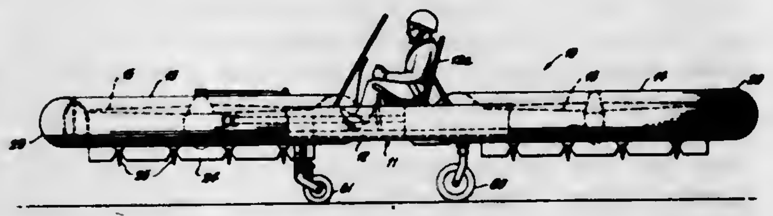


1. A velocity sustainer system for counteracting atmospheric drag on a projectile during its post boost phase and thereby allowing the projectile to fly a substantially elliptical locus comprising accelerometer means rigidly mounted on the projectile with its sensitive axis lying along the longitudinal axis of the projectile for measuring the inertial acceleration thereof due to engine thrust and atmospheric force along the longitudinal axis of the projectile, an electrically operable propulsion means for directing an accelerating force along the longitudinal axis of the projectile, first integrating means electrically coupled to said accelerometer and operable to provide an electrical output representative of velocity relative to a reference point on the locus, second integrating means electrically coupled to the output of said first integrating means and operable to provide an electrical output representative of displacement from the reference point on the locus, first and second switching means coupled in series and operatively connected to and controlling by their simultaneous operation the operation of said propulsion means, said first switching means operable responsive to a predetermined voltage output from said first integrating means and said second switching means operable responsive to a predetermined voltage output from said second integrating means.

3,184,183

FLYING PLATFORM

Frank N. Piasecki, Haverford, Pa., assignor to Piasecki Aircraft Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 15, 1962, Ser. No. 166,291
5 Claims. (Cl. 244—23)



1. A flying platform aerial vehicle of the vertical takeoff and landing type comprising a shallow, generally flat.

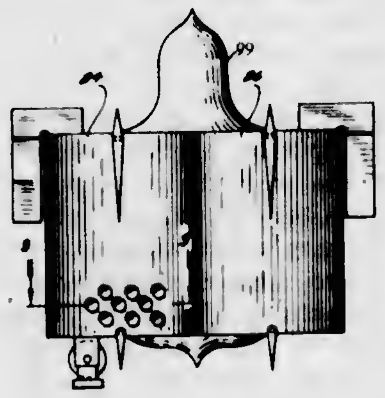
platform-like chassis elongated in the fore-and-aft direction, including a pair of ducted lift rotor units, one at the leading end and one at the trailing end of the chassis for lifting the vehicle and sustaining the same in the air, each of said lift rotor units comprising a rotor having plural blades radiating from a rotor axis and a shroud wall encircling the rotor on all sides and defining a circular duct within which the rotor rotates oriented to provide resultant airflow emanating from the duct which will produce a substantially vertical lift force, a pilot's station on said chassis lying between the pair of rotor unit ducts approximately in the plane of rotation of at least one of the rotors, power plant means for driving said rotors, means coupling said power plant means with the rotors to drive the rotors in oppositely related directions, said ducts each having a convexly curved annular inlet lip at the upper end thereof over which air is drawn upon rotation of the rotors to provide vertical and radial force components resulting from air flow along said lip, means located above each rotor including a tiltable spider member rotatable about the rotor axis and eccentrically connected to the rotor blades, and means controlled from said pilot's station for adjusting said spider meanes to select tilt positions to vary the cyclic pitch of the associated rotor for producing radial propulsive thrust components and tilting of the vehicle about its pitch and roll axes, and means controlled from said pilot's station for adjusting the spider members associated with each rotor to vary the differential collective pitch of the rotors for longitudinal control of the vehicle in flight.

3,184,184
AIRCRAFT HAVING WINGS WITH DIMPLED SURFACES

Harley A. Dorman, 2969 Montclair, Detroit 4, Mich., and Bruce A. Dorman, 430 Saratoga, San Antonio 13, Tex.

Filed June 4, 1962, Ser. No. 199,763

2 Claims. (Cl. 244—41)



2. An annular wing having a cambered cross section, said wing comprising a surface that is dimpled to form round, contiguous depressions whereby said surface provides a minimum degree of viscous shear of the ambient gaseous medium as said wing is moved through said medium in a direction substantially parallel to the plane of said surface, said surface normally having a portion parallel to the direction of airflow passing over it, said depressions being located on said surface portion, said rounded depressions each having a spherical form and being arranged uniformly in a regular pattern which comprises a first series of depressions at one axial station and located at a uniform distance from the leading edge of said wing, the depth of each of said depressions being less than half the largest transverse dimension thereof, and another series of similar depressions in an axial station directly adjacent said first station, each of the depressions in said second station being located intermèdiate two adjacent depressions of the first station at substantially equal distances therefrom the location of any three adjacent depressions defining an equilateral triangle.

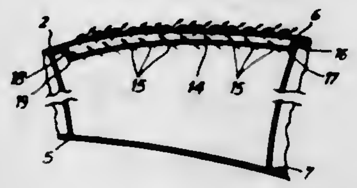
3,184,185
LIFT MODIFICATION FOR AIRCRAFT

Jean Marie René Brocard, 32 Rue La Fontaine, Paris, France

Filed Dec. 17, 1962, Ser. No. 245,014

Claims priority, application France, Mar. 16, 1962, 891,423; June 22, 1962, 901,584

2 Claims. (Cl. 244—42)



1. An aircraft, the external surface of which is provided, at least over a part called the blowing area, with a large number of orifices closely adjacent to one another forming nozzles whose direction is substantially tangential at each point to this blowing area in transverse and practically vertical planes, parallel to the direction of movement, through which orifices air taken from the interior of the said object is blown, the exit velocities of this blown air all having a moment in the same direction in relation to a central point of the said object, in each aforementioned transverse plane, wherein an internal panel parallel to the blowing area separates a volume of the general flow of blowing air and is equipped with multiple holes distributed to effect the outlet of the air in accordance with a law given in advance and tested by blowing experiments.

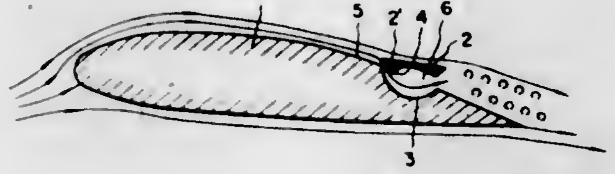
3,184,186
SPOILER

Minoru Ikai, Nishi-ku, and Kazuo Arashi, Kita-ku, Nagoya, Japan, assignors to Shin-Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

Filed Sept. 6, 1963, Ser. No. 307,235

Claims priority, application Japan, Sept. 20, 1962, 37/40,882

5 Claims. (Cl. 244—42)



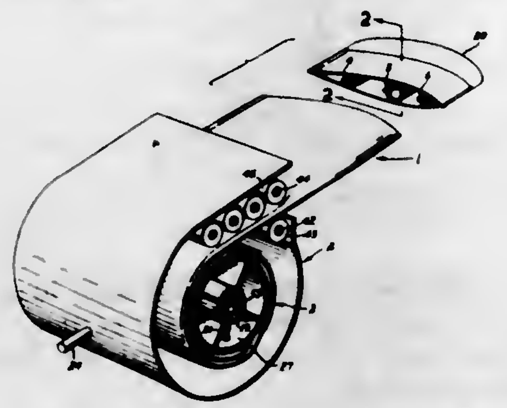
1. A spoiler for the wing of an airplane comprising means defining a recess in the upper surface of the wing of the airplane, a spoiler member, means pivotally connecting the spoiler member to the wing adjacent the end of the recess closest to the leading edge of the wing, said spoiler member having an upper surface with an outer contour corresponding to that of the wing such that the upper surface of the spoiler member is co-extensive with the upper surface of the wing when the spoiler is in lowered position, said spoiler defining a gap with said wing as the spoiler is raised, said gap being formed between the leading edge of the spoiler member and the upper surface of the wing, said spoiler member including a projection extending at least in part normally from the lower surface of the spoiler member at a location adjacent the leading edge of the spoiler member to forcedly separate the air current introduced through the gap between the spoiler member and the upper surface of the wing when the spoiler member is raised.

3,184,187
RETRACTABLE AIRFOILS AND HYDROFOILS

Peter Isaac, 9 Crown Hill Place, Apt. No. 410, Toronto, Ontario, Canada

Filed May 10, 1963, Ser. No. 279,519

9 Claims. (Cl. 244—43)



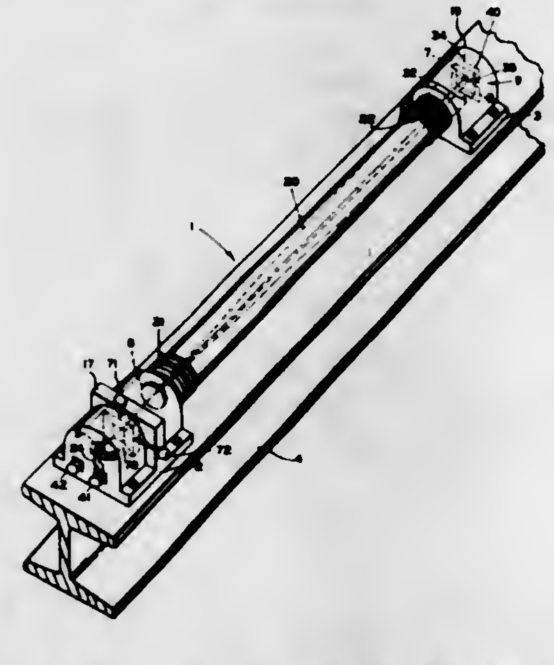
1. An inflatable fluidfoil combined with fluidfoil storage means from which said inflatable fluidfoil may be extended and retracted in a structurally rigid state, said inflatable fluidfoil at least including two resilient sheets which are predominantly flat and parallel to each other when said inflatable fluidfoil is in said fluidfoil storage means and dished outwardly from each other when said inflatable fluidfoil is inflated, edge joining means for joining opposite edges of said resilient sheets, collapsible spar means situated between said resilient sheets and oriented parallel to the longitudinal axis of said inflatable fluidfoil, said fluidfoil storage means at least including a reel on which said inflatable fluidfoil may be reeled and to which it is attached, housing means for supporting said reel, fluidfoil inflating and deflating means, and reel rotating means whereby said inflatable fluidfoil may be extended and retracted from said fluidfoil storage means.

3,184,188
STRESS SENSOR AND CONTROL SYSTEM FOR LIMITING STRESSES APPLIED TO AIRCRAFT

Francis Henry S. Rossire, Salisbury, Conn., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed June 19, 1961, Ser. No. 118,023

6 Claims. (Cl. 244—77)



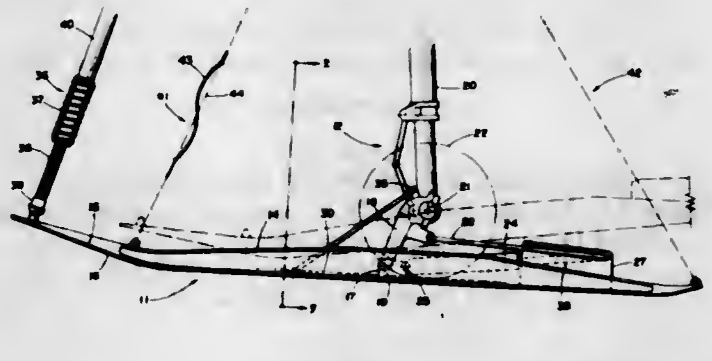
1. In a system for controlling an aircraft to prevent excessive damage of an aircraft wing spar, the combination comprising a sensor mounted on said spar for providing a signal corresponding to the deformation of said spar, said sensor including a light source and lens system mounted at one portion of the spar, and two photosensitive elements longitudinally spaced along said spar relative to said light source and lens system and being arranged so that when the spar is in normal position, light from said light source falls in equal amounts on both photosensitive elements and upon deformation of the spar from said normal position due to stress being applied to said spar, the light source and lens system are displaced relative to said photosensitive elements so as to cause the amount of light falling on one photosensitive element to increase and on the other photosensitive element to decrease, and means connected to the photosensitive elements to provide a differential stress signal proportional to the deformation of said spar.

3,184,189
DUAL PURPOSE RETRACTABLE UNDERCARRIAGE

George Ronald Jackson, Toronto, Ontario, Canada, assignor to The De Havilland Aircraft of Canada, Limited

Filed Mar. 15, 1963, Ser. No. 265,535

4 Claims. (Cl. 244—101)



1. In a retractable duel purpose undercarriage for use with aircraft the combination of: a retractable pedestal secured to said aircraft and including an axle thereon; at least one wheel rotatably supported on said axle; a ski including a pair of parallel pivot points thereon being situated at the centre of pressure of said ski and said ski defining a cutout to clear said wheel; a pivot link having one end rotatably supported on said axle and the other end pivotally supported at one of said pivot points on said ski; an actuator secured to the second said pivots on said ski and having a piston rod extending therefrom; means for guiding the free end of said piston rod along the length of said ski; a compression strut having one end pivotally secured to the free end of said piston rod and having the other end rotatably supported on said pivot link; a pair of check cables mounted at the forward end and the aft end of said ski and being anchored to said aircraft; a resilient trim strut secured between said aircraft and the forward end of said ski;, and means for operating said actuator whereupon shortening thereof said pivot link rotates about said axle thereby causing said ski to move upwardly and rearwardly, said wheel projecting through said cutout and below said ski.

3,184,190
WORKSHOP TOOL STAND

Russell B. Halfinger, North Haven, Conn., assignor of one-half to Robert T. Beebe, Woodbridge, Conn.

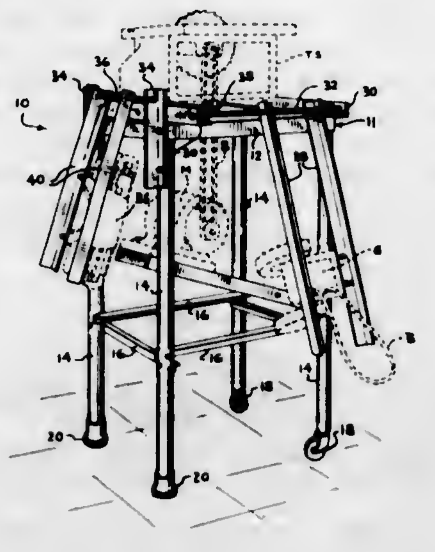
Filed Jan. 15, 1964, Ser. No. 337,789

6 Claims. (Cl. 248—13)

1. In a workshop tool stand for motor-driven tools,
- (*a*) means defining an open centered working surface and leg means supporting said working surface at an appropriate height above the floor;
- (*b*) a motor support stationed below said working surface;
- (*c*) pivot means adjacent at least one edge of said working surface;

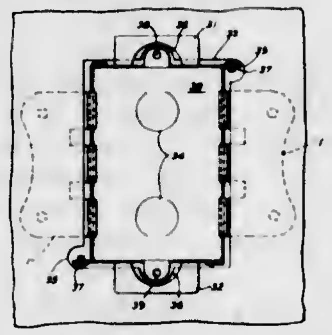
(*d*) a pair of tool rails supported on said pivot means and swingable thereabout in a plane perpendicular to said working surface from a position laterally alongside said stand to a position overlying said open-centered working surface and;

(*e*) provision on said rails for securing a tool thereto.



3,184,191
ELECTRICAL OUTLET BOX HOLDER

Vincent F. Esoldi, Stirling, N.J., assignor to Wej-Loc, Inc., West Orange, N.J., a corporation of New Jersey
Filed July 23, 1963, Ser. No. 297,145
10 Claims. (Cl. 248—27)

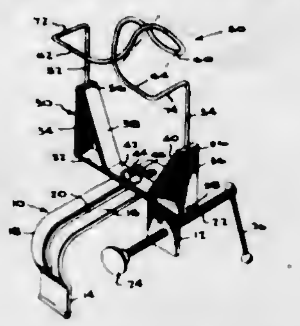


1. A fastener for affixing an electric switchbox to a hollow wall comprising a flat sheet of thin ductile metal having a length slightly longer than its width and being cut to define a back member along the width dimension and at least three substantially equal width legs spaced apart and set perpendicular to said back member, said fastener to be inserted back member first through the slotted opening included between the edge of a cut-out in said wall of the size of the outside dimensions of a switchbox to be affixed to said wall and the side of the switchbox, the outer legs of said fastener to be bent over the edge of said switchbox set flush with the outer surface of said wall while a center leg is pulled through said opening to deform said back member and said outer legs into wedging engagement between the back surface of said wall and a side of said switchbox, and the outer end of said center leg to be bent over the edge of said switchbox in the plane of said outer legs after being pulled to its limit.

3,184,192
FISHING ROD HOLDER

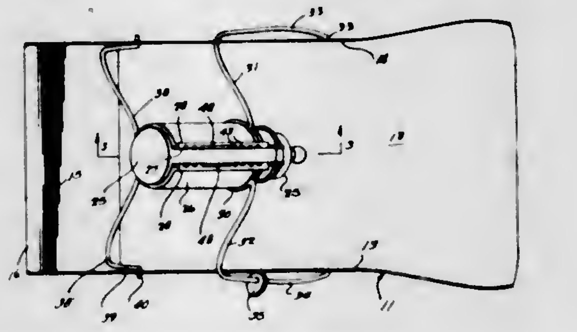
Harvey T. Hoerr, 122 State St., Pekin, Ill.
Filed Dec. 18, 1962, Ser. No. 245,591
1 Claim. (Cl. 248—42)

A holder for fishing rods and the like, comprising a clamp member of generally U-form, a saddle member interconnected with, and adjustably positionable along the clamp member, and a sling member carried by the saddle member, said saddle member being of generally U-form, with a bight and upright legs, diagonal braces between said legs and bight portion, said sling member comprising a single piece of spring wire with terminal leg portions carried by said upright legs, and a central looped portion with crossed ends, and intermediate portions connecting said crossed ends and said terminal leg portions, and perpendicular to each.



3,184,193
BOTTLE SUPPORT

Edmund W. Melvin, Box 241, Cotulla, Tex.
Filed May 15, 1964, Ser. No. 369,356
11 Claims. (Cl. 248—106)



1. A supporting assembly comprising:

a sleeve member adapted to receive a baby bottle slidably therein;

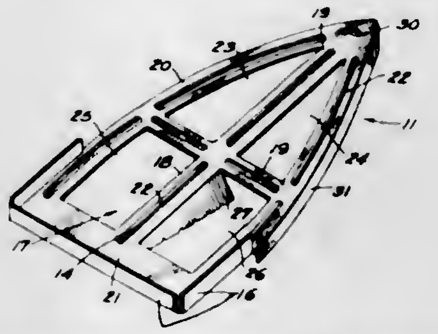
means engageable with the sleeve to adjustably secure the bottle therein against movement in one direction;

support means, having a central portion receiving and engageable with the sleeve member; and

the support means having depending portions extended to and interengaging with a subjacent support.

3,184,194
IRON REST

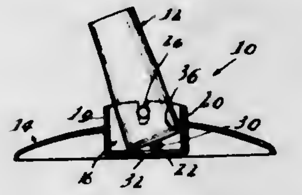
Mildred A. Beck, 104 W. 54th St., Chicago, Ill.
Filed Nov. 13, 1962, Ser. No. 236,841
5 Claims. (Cl. 248—117.2)



1. An iron rest, comprising: a base including a pair of substantially perpendicular intersecting cross members surrounded by perimetrical stripping shaped similar to the base of an iron thereby providing iron rest base heel and toe portions, and elevated ridges on said cross members and said stripping; upwardly extending flange structure bent from the outward edges of said perimetrical stripping forming the iron rest base heel portion to provide thereby a pocket area for receiving and holding the heel portion or an iron base set therein; legs bent downwardly from opposed edges of one of said cross members and arranged to set the iron rest base toe portion at an elevated position with relation to said iron rest base heel portion; and means bent downwardly from an edge of the other of said cross members and arranged to prevent tipping of the iron rest base toe portion from said elevated position.

3,184,195
SUPPORTING STRUCTURE FOR AN ADJUSTABLE APPLIANCE

John F. Wahl and Warren P. Wahl, Sterling, Ill., assignors to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois
Filed Mar. 8, 1963, Ser. No. 263,882
1 Claim. (Cl. 248—158)



Supporting structure for an adjustable appliance comprising:

a post member of generally rectangular cross section adapted to serve as a handle;

a detachable base member for said post member adapted to rest on a supporting surface, said base member of molded plastic material having wall portions and a bottom portion defining a recess to receive said post member and integral lateral portions extending from the exterior of said wall portions between the upper and lower edges thereof;

at least one wall portion of a pair of opposed wall portions having an interior groove extending downwardly from the upper edge;

a boss extending laterally from said post member and into said groove to serve as a pivot;

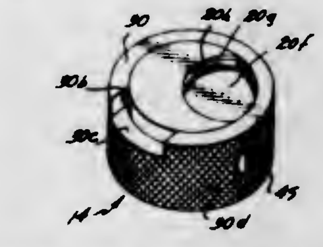
the other opposed wall portions spaced to have clearance with said post member when the latter is vertical;

means interlocking said post member and said bottom portion to hold said post member in vertical position;

said interlocking means disengageable whereby said post member is tiltable forwardly and rearwardly on said pivot to inclined positions limited by engagement of said post member with said other opposed wall portions, said post member engaging said wall portions in the regions thereof from which said lateral portions extend whereby said lateral portions impart strength to resist the strain imposed by said post member on said wall portions.

3,184,196
MOUNTING DEVICE

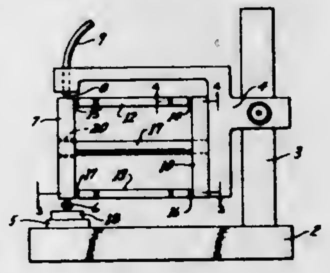
Harry D. Dent, 915 W. Walnut, Santa Ana, Calif.
Filed Apr. 20, 1964, Ser. No. 360,976
10 Claims. (Cl. 248—187)



1. A mounting device comprising in combination, a relatively stationary cylindrical member formed with a recess for receiving at least a portion of an object to be mounted thereon, said recess being formed to cause a predetermined amount of said portion to extend beyond the cylindrical surface of said stationary member, a tubular fastening member slidably mounted on said cylindrical stationary member and formed with cam means for engagement with said predetermined amount of said portion of said object, said fastening member being formed with an opening for alignment with said recess in said stationary member to permit insertion and removal of said portion in said recess, and biasing means urging said fastening member into a position where said cam means is in engagement with said predetermined amount of said portion.

3,184,197
SUPPORTING DEVICE

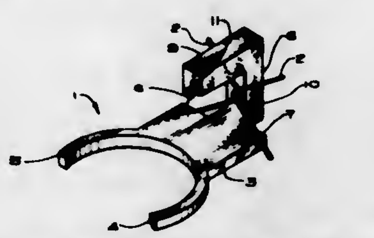
Willis Fay Aller, Dayton, Ohio, assignor to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
Filed Aug. 31, 1962, Ser. No. 220,692
6 Claims. (Cl. 248—204)



1. A supporting device comprising a support, a movable member spaced therefrom, and means for movably supporting the movable member comprising, a rigid connecting means spanning the major portion of said space, and a plurality of flexible rods of substantially uniform cross section arranged in sets with their axes parallel, one set of flexible rods being of equal effective length and arranged in a common plane and fixedly embedded in the connecting means and the support in holes of circular cross section, the second set of flexible rods being of equal effective length arranged in a common plane and fixedly embedded in the connecting means and the movable member in holes of circular cross section, and the spacing of said rods in each set being large compared to the effective length of the rods.

3,184,198
FENCE ENGAGING DEVICE

Eldon L. Morgan, 411 W. 70th St. Terrace, Kansas City 13, Mo.
Filed Oct. 19, 1962, Ser. No. 231,777
4 Claims. (Cl. 248—223)



1. A fence engaging device adapted to engage and be supported by the wire link fence having intertwined wires forming diamond shaped openings comprising,

a base portion,

a first wire engaging surface on said base portion,

a second wire engaging surface on said base portion, said first wire engaging surface being out of alignment with said second wire engaging surface,

a neck integral with said base portion positioned between and rearward of said wire engaging surfaces and extending upwardly from said base portion, and

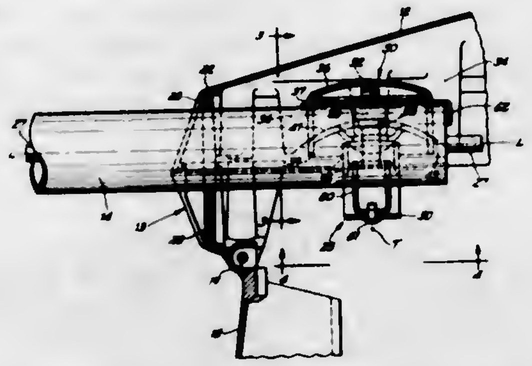
an arm extending forwardly from said neck,

said arm extending to a position forward of said wire engaging surfaces.

3,184,199

LUMINAIRE

Philip B. Clark, Hales Corners, and Edward R. Jablonski, South Milwaukee, Wis., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Jan. 15, 1963, Ser. No. 251,665
14 Claims. (Cl. 248—230)

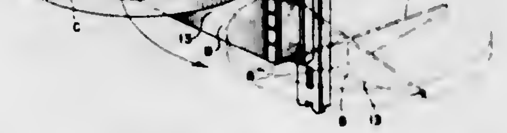


1. Slipfitter means for affixing a luminaire to a support member, said slipfitter means having longitudinal and transverse rotation axes, said luminaire including a housing portion having a first rotation means, said slipfitter means including a first clamping member having a second rotation means slidably engaging said first rotation means, one of said rotation means including arcuate surface means whose axis is coincident with said transverse axis, means for releasably securing said first clamping member to said housing portion so that said first clamping member may be affixed to said housing portion in a plurality of angular positions around said transverse axis, a second clamping member releasably secured to said first clamping member, said clamping members engaging the opposite sides of said support member whereby said luminaire may be releasably affixed to said support member for relative rotational movement about said longitudinal axis.

3,184,200

SWIVEL BRACKET

Thomas Michael McDonnell, 836 S. Ridgeland, Oak Park, Ill.
Filed Oct. 16, 1963, Ser. No. 316,701
1 Claim. (Cl. 248—240)



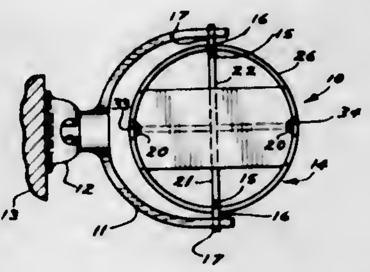
A swivel bracket and standard arrangement for supporting a shelf, comprising:

- (*a*) a vertically disposed standard having a flat wall presenting a plurality of transversely aligned, vertically spaced slots;
- (*b*) a shelf supporting bracket including a pair of interconnected vertical plates disposed at right angles to each other; and
- (*c*) a mounting member pivotally connected to an end of one of said plates on a vertical axis and rigidly and removably connected to said standard;
- (*d*) said member presenting on one side thereof a flat, vertical surface seated against an outer surface of the flat wall of said standard and having projecting from said flat surface a plurality of transversely aligned locking lugs spaced vertically from each other a distance equal to the distance between the slots of said standard and having on the lower extremities thereof downwardly extending projections spaced from said flat surface a distance substantially equal to the thickness of said flat wall to provide a rigid, removable, interlocking connection between the member and standard when the lugs of the former are positioned within the slots of the latter.

3,184,201

INSERT FOR BEVERAGE CONTAINER SUPPORT

Robert W. Smith, Mound, Minn., assignor to Aladdin Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 24, 1962, Ser. No. 225,507
3 Claims. (Cl. 248—311)

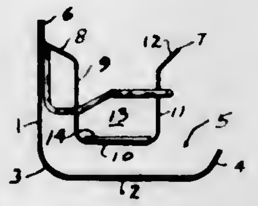


1. The combination with a beverage container support comprising a basket having a plurality of annular rings vertically spaced and attached to at least one pair of diametrically opposite upright parallel wire support members of: a false bottom for said basket comprising a thin, flexible substantially flat member made of a material having the properties of polyethylene, said flat member being extended between said upright support members of said basket and supported on one of said support rings, the end surfaces of said false bottom having slots provided therein receiving said upright support members.

3,184,202

ELECTRIC SHAVER RACK

Lloyd W. Thielfoldt, 2276 S. Palomares St., and Charles F. Snyder, 515 Miller Ave., both of Pomona, Calif.
Filed May 21, 1963, Ser. No. 281,949
3 Claims. (Cl. 248—314)



1. A rack means for an electric shaver and the like comprising a unit having a back wall with means to receive supporting screws and the like, a bottom wall integral with and extending from a lower portion of the back wall to provide a tray means, a pocket means supported by the unit and which pocket means is above the bottom wall and spaced from the back wall, and hook-like wire means extending laterally and forwardly from the back wall adapted to receive and support an electric conductor cord.

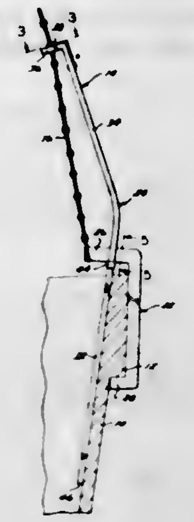
3,184,203

SUPPORT FOR FLANGED CONTAINER

Gus P. Steen, 4220 E. 1st St., Long Beach, Calif.
Filed Feb. 17, 1964, Ser. No. 345,198
5 Claims. (Cl. 248—318)

1. A support for a container having an outer marginal flange adjacent the upper edge thereof, said support comprising:

- a clamping member having an inwardly projecting upper portion and a lower portion adapted to engage the underside of an outer marginal flange of a container;
- an elongated, flexible suspension member connected at its lower extremity to the inner extremity of said upper portion of said clamping member and adapted to be fixed at its upper extremity to suitable supporting structure;

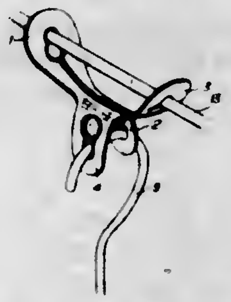


- and an elongated support member having a lower portion adapted to bear against the inner surface of a container and an upper portion upon which said suspension member is trained for slidable movement, said support member including means pivotally mounting said clamping member whereby the strain on said suspension member from the weight of a container tends to urge said lower portion of said clamping member into engagement with said outer marginal flange of a container, and tends to urge said suspenion member against said support member and pivot said support member upon said clamping member to urge said lower portion of said support member against an inner surface of a container.

3,184,204

SUSPENSION DEVICE

Hugo Dachinger, 56B Belsize Park Gardens, London, England
Filed Jan. 29, 1964, Ser. No. 340,871
Claims priority, application Great Britain, June 21, 1963, 24,849/63
5 Claims. (Cl. 248—323)

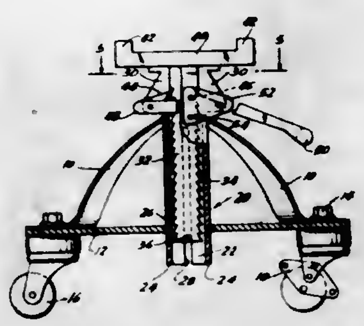


1. A suspension device for hanging a garment from a washing line, said device comprising an elongated normally flat element of flexible sheet material formed with a generally rectilinear slot therethrough of appreciable width extending parallel to the length of said element, said slot terminating adjacent and substantially equidistantly from the opposite longitudinal extremities of said element, said element having integral portions between the respective ends of said slot and the longitudinal extremities of said element, interconnecting the portions of said element on opposite sides of the slot for movement toward each other in the plane of said flexible sheet material, said element including parts projecting transversely outwardly from the opposite sides of said slot, said parts being located medially of the length of the slot and spaced from the ends of the slot, said parts being formed with apertures spaced from and relatively symmetrical to said slot for reception of a garment hanger hook, whereby a garment hanger supported in said apertures will urge the opposite side edges of said slot toward each other.

3,184,205

VERTICALLY ADJUSTABLE DOLLY

Leo Joseph Carpezzi, 3817 Fort Hamilton Parkway, New York, N.Y.
Filed Mar. 26, 1964, Ser. No. 354,913
15 Claims. (Cl. 248—352)

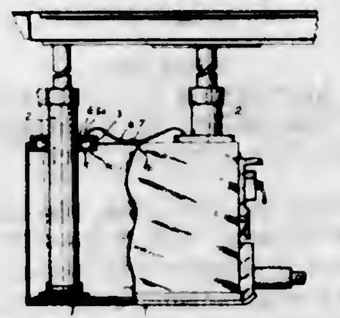


1. A vertically-adjustable dolly, of the character described, comprising an upright stand wider at its bottom and tapering toward its upper end, a sleeve supported on said stand in upright position at a midpoint thereof, a shaft disposed within said sleeve for vertical reciprocal movement therein, said shaft projecting above said sleeve and having a horizontally-disposed platform secured on its projecting end, said platform being of an area less than the area of the lower end of said stand, said shaft having a longitudinally-disposed toothed rack on each of the opposed sides thereof, the teeth of each said rack each having a downwardly-sloping upper face, a pawl uprightly tiltably supported by its lower end at an upper portion of said sleeve adjacent each of said racks in position for having its other end move in and out of engagement with said adjacent rack, means normally urging each of said pawls into engagement with the rock adjacent thereto, and manually-operable means for simultaneously moving both of said pawls out of engagement with the rack adjacent thereto.

3,184,206

SUPPORT UNITS ESPECIALLY FOR MINE ROOF

Michel Meriaux and Michel Lablache Combier, Wittelsheim, France, assignors to Mines Domaniales de Potasse d'Alsace, Mulhouse, Haut-Rhin, France, a French society
Filed Mar. 18, 1963, Ser. No. 265,706
Claims priority, application France, Mar. 20, 1962, 891,572, Patent 1,325,740
10 Claims. (Cl. 248—357)



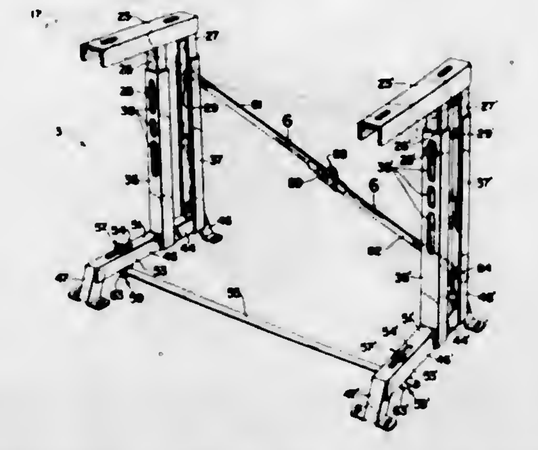
1. A support unit comprising a support element, a support structure defining an aperture which receives the support element, the support element being movable within the aperture relative to the support structure, a sealing-tight resilient deformable chamber located between the rim of said aperture and said support element and means for coupling the interior of said chamber with a source of fluid pressure to recenter said support element relative to said aperture after displacement of said element from a co-axial position relative to said aperture.

3,184,207
UNDERFRAME FOR SEWING MACHINE TABLE

Frederick R. Hermanns, Union, and Garry Coleman, Rutherford, N.J., assignors to The Singer Company, a corporation of New Jersey

Filed May 14, 1962, Ser. No. 194,232

1 Claim. (Cl. 248—413)



An underframe for use as part of an industrial type sewing machine table comprising in combination a pair of parallel horizontally disposed channel shaped lower cross-braces, each of said cross-braces having an apertured web and two flanges; a downwardly sloping foot depending from each end of each of said cross-braces, each of said feet comprising a channel portion having a web and two side flanges and an apertured floor engaging pad formed integral with the lower ends of each of said side flanges, the channel portion of said feet fitting within the channel of the cross-braces; and apertured channel shaped clamp positioned in the channel of each of said cross-braces, each of said clamps comprising a web and two apertured side arms; a threaded push out formed in each of the webs of said clamps; a treadle rod, opposite ends of which pass through the apertures in the side arms of said clamps; threaded screws passing through apertures in said cross-braces and threaded into the push outs in the webs of said clamps; a front and a rear channel shaped apertured lower leg extending upwardly from each of said cross-braces, a channel shaped upper leg telescopically positioned in each of said lower legs; a threaded push out formed in each of said upper legs; threaded screws passing through apertures in said lower legs and entering the threaded push outs in said upper legs; a horizontal channel shaped member carried on the upper ends of each pair of front and rear upper legs, said members being capable of supporting a table top; and an inclined two-piece apertured tie rod connecting the upper end of one of said lower legs to the lower end of another of said lower legs.

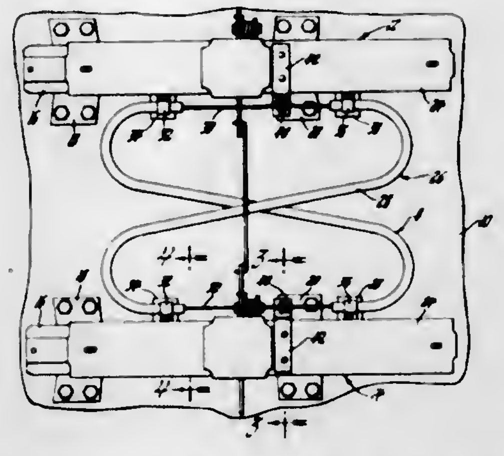
3,184,208
SEAT ADJUSTER SYNCHRONIZER

Akira Tanaka, Southfield, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 29, 1963, Ser. No. 284,115

8 Claims. (Cl. 248—429)

1. In a vehicle seat adjuster unit having a pair of spaced parallel adjusting mechanisms extending from front to rear of a vehicle body for moving a vehicle seat fore and aft relative to a vehicle floor, each mechanism having a fixed member secured to said floor and a movable member secured to said seat, said movable member being interconnected with said fixed member for coacting with said fixed member for moving said seat fore and aft, a control means for controlling simultaneous movement of said movable members of said mechanism comprising: a Bowden wire element interconnecting said mechanisms, said element having an outer casing and a wire movable relative to said casing, clamping means for securing said casing at two points to a corresponding member of each of said mechanisms, one of said secured points being at the front of said member and the other of said secured points being at the rear of said member, said wire having a portion thereof extending from said casing between said two secured points adjacent said members, a connecting pin for securing said extended portion of the wire to the other corresponding member of each of said adjuster mechanisms intermediate said secured points, said element extending from the front secured point of one mechanism to the rear secured point of the other for forming a continuous double-looped control means.

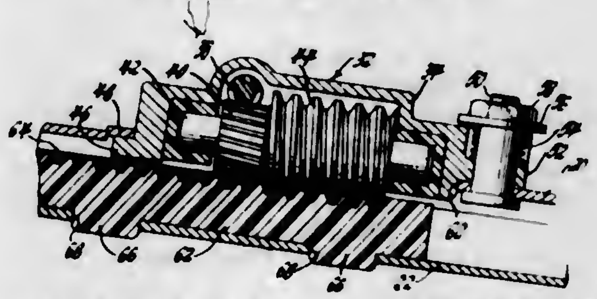


3,184,209
HORIZONTAL DRIVE MEANS FOR POWERED SEAT ADJUSTERS

Albert J. Colautti, Windsor, Ontario, Canada, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 10, 1963, Ser. No. 294,087

5 Claims. (Cl. 248—429)



1. In a vehicle body having a vehicle seat, a seat adjuster supporting said seat for fore and aft horizontal adjustment, a horizontal drive means for said seat adjuster having an upper track adapted to support said seat, a lower track secured to said vehicle body and engaging said upper track for supporting said seat and said upper track during generally horizontal fore and aft movement, a nut segment secured to said lower track, a drive worm rotatably and resiliently journalled in said upper track for movement therewith, spring means for biasing said drive worm into meshing engagement with said nut segment for longitudinal movement therealong during rotation of said drive worm whereby said upper track moves relative to said vehicle body thereby adjusting said seat fore and aft, and reversible power means operatively connected to said drive worm for selectively rotating said drive worm in opposite directions for driving said seat in fore and aft movement to selected adjustments.

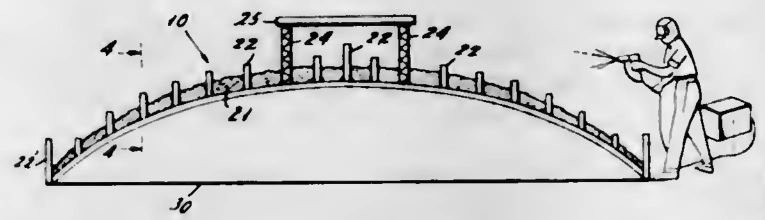
3,184,210
COLLAPSIBLE FORM JIG

Charles Fasnacht, Philadelphia, and Neil Worrall Burwell, Southampton, Pa., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 25, 1962, Ser. No. 204,935

1 Claim. (Cl. 249—53)

A collapsible antenna structure pattern comprising: a pre-shaped bag; said bag constructed to be inflated to form a prescribed antenna structure contoured surface; said surface adapted to provide a convex mold surface defining a paraboloid of revolution for the casting of an antenna reflector; said bag constructed of a flexible, non-elastic material, and air pressurized to accurately form said prescribed antenna structure contoured surface; said bag being sufficiently pressurized for said mold surface to support a reflector casting; a plurality of upstanding, substantially uniform height projections extending away from said convex mold surface; a plurality of depth indicating means individually seated on said projections and extending away from the antenna reflector surface to be cast, to indicate reflector casting thickness; said depth indicating means comprising posts of varying length indications to provide a tapered antenna structure; the cooperative seating of said depth indicating means and projections constructed to permit ready release, whereby a concave parabolic antenna structure molded to proper tapered distance may be readily removed.

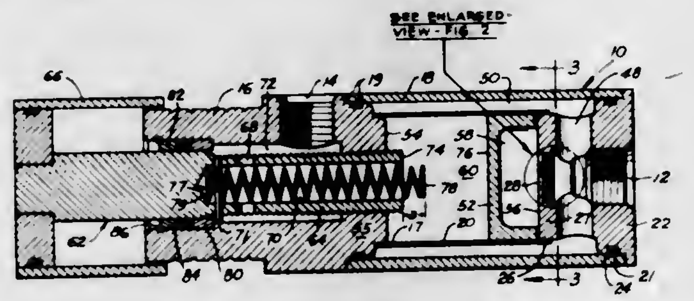


3,184,211
FLOW METERING VALVE

James R. Chapman, St. Joseph, and David B. Puryear, Stevensville, Mich., assignors to The Bendix Corporation, St. Joseph, Mich., a corporation of Delaware

Filed Dec. 31, 1962, Ser. No. 248,645

7 Claims. (Cl. 251—15)



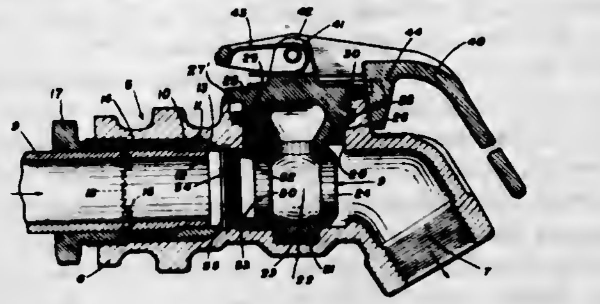
5. A flow metering valve comprising: a housing having a longitudinally extending cavity therein, a transverse wall at one end of said cavity, an inlet port communicating with said cavity, a longitudinally extending hollow member located within said cavity, said transverse wall forming one end wall of said hollow member, the outer surface of the longitudinal wall of said hollow member being spaced from the inner surface of said cavity thereby forming fluid passage means therebetween, an outlet port in said transverse wall, a movable wall located within said hollow member separating said hollow member into first and second variable volume chambers, said inlet port being communicated with said first chamber and said outlet port being communicated with said second chamber, a seat surrounding said outlet port for engagement by said movable wall, orifices in the longitudinal wall of said hollow member communicating said second chamber with said passage means, said outlet port comprising a tubular member received in said transverse wall and having a portion extending into said second chamber, a coil spring located within said tubular member and arranged to project into the second fluid chamber less than the distance said movable wall travels when said spring is seated in said tubular member.

3,184,212
ANGLE COCKS

Henry R. Billeter, Deerfield, Ill., assignor to Sloan Valve Company, Chicago, Ill., a corporation of Illinois

Filed Oct. 22, 1963, Ser. No. 318,026

10 Claims. (Cl. 251—105)



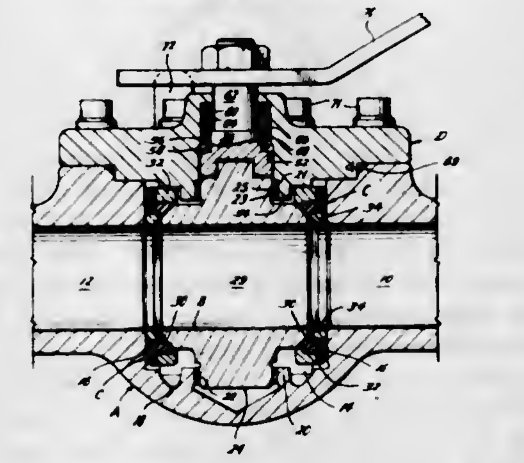
1. In an angle cock, a body having an inlet and an outlet flow passage therethrough and a ball valve member in said body for controlling said flow passage, said ball valve member rotatable in said body and having a bonnet thereon, an operating handle on said bonnet for rotating said ball valve member, a pair of oppositely disposed lugs on said bonnet, said angle cock body having oppositely disposed recesses formed therein to accommodate said bonnet lugs, a pair of oppositely disposed flanges formed in said angle cock body, said bonnet lugs adapted to be inserted in said body recesses and upon rotation of said bonnet, said bonnet lugs are moved under said flanges whereby said bonnet and ball valve member are locked in said angle cock body.

3,184,213
SEAT FOR TOP ENTRY BALL VALVE

Clifford E. Anderson, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Oct. 8, 1962, Ser. No. 229,016

9 Claims. (Cl. 251—172)

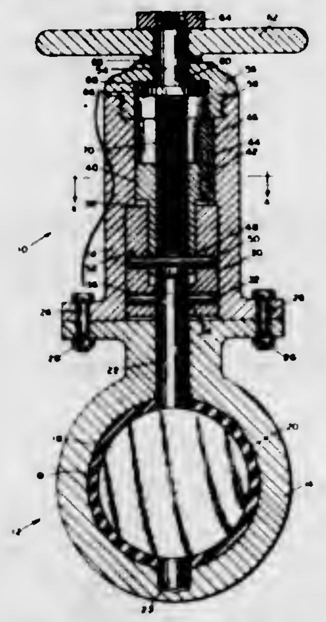


1. A spherical plug valve comprising a valve body having two axially aligned fluid passages forming inlet and outlet ports and an open-top valve chamber interposed between said passages, the walls defining said chamber including end walls surrounding said passages, a rotatable generally spherical valve member positioned in the valve chamber, said valve member having a passage which in the open position of the valve registers with the inlet and outlet ports to form the run of the valve, an operating stem extending through the opening of the chamber, an annular seat member formed of resilient material positioned between the valve member and an end wall of the valve chamber, said seat member having a face mass provided with a valve engaging surface contacting the spherical surface of the valve member, a surface axially outward of said valve engaging surface being relieved so as to be out of contact with the spherical surface of the valve member and thereby form an entry surface for the edge of the passage in the valve member

when it moves to the closed position and a surface normal to the run of the valve and a rear mass radially and axially removed from the face mass contacting the end wall, the rear mass being bifurcated and having two pressure actuatable leg portions, an annular metal retainer ring surrounding said seat member to afford it circumferential support, said retainer ring having a lip portion which is spaced from and projects in front of the face mass to limit the movement of the face mass when said mass is subjected to pressure forces tending to move the face mass axially inward along the surface of the spherical valve member, a flat retaining washer having a lip surrounding its inner circumference positioned between the seat member and the end wall, said lip on the upstream side deflecting the flow of lading from back of the seat to the face mass, a bonnet having a bore closing the opening of the valve chamber, the operating stem trunnioned in said bore, means attaching the bonnet to the body, means establishing a seal between the body and bonnet, and means to form a seal for said vertical bore.

3,184,214
CAM OPERATED VALVE

Ottis W. King, 455 S. 80th East Ave., Tulsa, Okla.
Filed Jan. 18, 1962, Ser. No. 167,040
10 Claims. (Cl. 251—229)



1. A valve having a valve body with a fluid passageway therethrough and a valve gate member rotatably positioned in said passageway, said gate member adaptable to close said passageway in one angular position relative to said passageway and to open said passageway when rotated to a different angular position, a stem member to which said gate member is supported and rotatably connected, an operator arranged to rotate said stem member and thereby said valve gate member, said valve operator comprising, in combination:

a tubular operator housing supported at one end thereof on said valve body with the tubular axis of said housing coincident with the axis of said valve stem member;

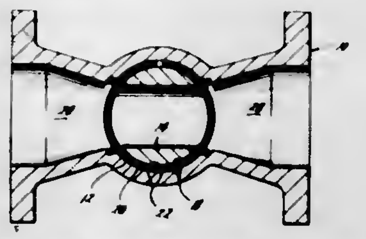
a tubular coupling member rotatably positioned in said tubular housing in the end thereof adjacent said valve body, said coupling member affixed to said stem member whereby the rotation of said coupling member rotates said stem member and thereby said valve gate member, said coupling member having at least one elongated spiraled slot formed in the side thereof;

a nut member slideably and non-rotatably supported within said housing, said nut member having a portion thereof telescopically extending within said coupling member and means for longitudinally positioning said nut member; and,

key means affixed to said nut member extending into each of said spiraled slots formed in said coupling member whereby longitudinal movement of said nut member relative to said coupling member rotates said coupling member and thereby said valve gate member to angularly position said valve gate member.

3,184,215
PLUG VALVE

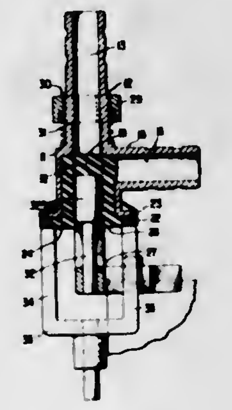
Clifford E. Anderson, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Original application Nov. 12, 1959, Ser. No. 852,577, now Patent No. 3,108,779, dated Oct. 29, 1963. Divided and this application Dec. 11, 1961, Ser. No. 158,279
1 Claim. (Cl. 251—309)



In a plug valve, a valve body having substantially rectangular inlet and outlet ports each having top, bottom and side edges and a bore normal to said ports, a sleeve in said bore, said sleeve having substantially rectangular inlet and outlet passageways each including top, bottom and side edges wherein only said side edges are defined by outturned lips which project beyond said bore and terminate interiorly of only the side edges of corresponding ports in said valve body.

3,184,216
RECIPROCATING VALVE ASSEMBLY

Ernest E. Lovell, Detroit, Mich., assignor to The Delman Company, Cookeville, Tenn., a corporation of Tennessee
Filed Aug. 10, 1962, Ser. No. 216,115
1 Claim. (Cl. 251—347)

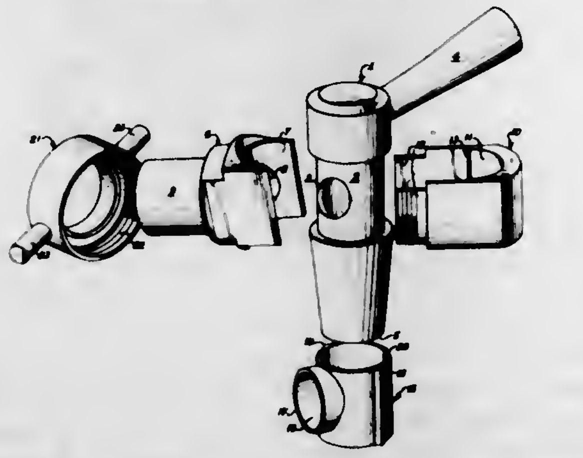


A reciprocating valve assembly comprising a generally cylindrical hollow valve body having a bore section with an outlet port, said valve body formed with tubular means defining an inlet passage having an inlet port open to said bore section, said inlet port and outlet port arranged normal to each other with said inlet port in axial alignment with and of a reduced diameter relative to said bore section, a cylindrical valve guidably positioned within said bore section, said valve being formed of a flexible material such as rubber and including a body engaging flange at one terminal end and an inlet port sealing surface at the other terminal end thereof, an apertured valve cap retainer mounted on the valve body and clamping thereagainst the flange of the valve in a sealing relation, a valve frame surrounding the valve body including a portion guidably receiving said tubular means, a valve stem rigidly secured at one end to the valve frame and

extended through said apertured retainer cap for attachment of the opposite end thereof to said flexible valve, resilient means positioned between the body and said guide portion to bias the inlet port against the sealing surface of the valve, and means for moving the valve body relative to the frame against said biasing means to yieldably extend the valve in an axial direction to separate the inlet port from the sealing surface whereby to open the valve.

3,184,217
VALVE CONSTRUCTION

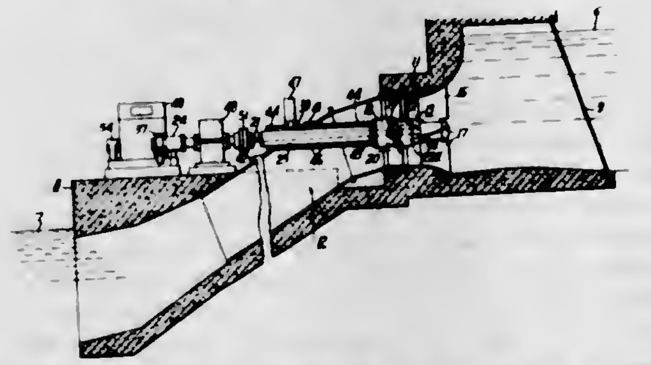
Frank Petrin, 41—10 Judge St., Elmhurst, N.Y.
Filed Oct. 5, 1962, Ser. No. 228,644
7 Claims. (Cl. 251—367)



1. A valve comprising a rotatable valve plug having an outer cylindrical ported bearing surface, a housing having a semi-cylindrical ported inner bearing surface formed to receive said outer bearing surface of said plug, a U-shaped member having a semi-cylindrical inner bearing surface formed to receive said outer bearing surface of said plug and having threaded legs, said U-shaped member being positioned with its legs straddling the side walls of the bearing surface of said housing and cooperatively forming with said housing an inner cylindrical bearing surface surrounding the outer cylindrical bearing surface of said valve plug, a flexible liner sleeve encircling said plug between said bearing surfaces to provide a seal, said liner sleeve having an opening registering with one of said ports and an integral lip extending into said port to maintain registry, a nut encircling said housing and engageable with said legs to draw said inner bearing surfaces together and a fluid passage through said housing in communication with the port on the housing bearing surface.

3,184,218
HYDRAULIC POWER INSTALLATION

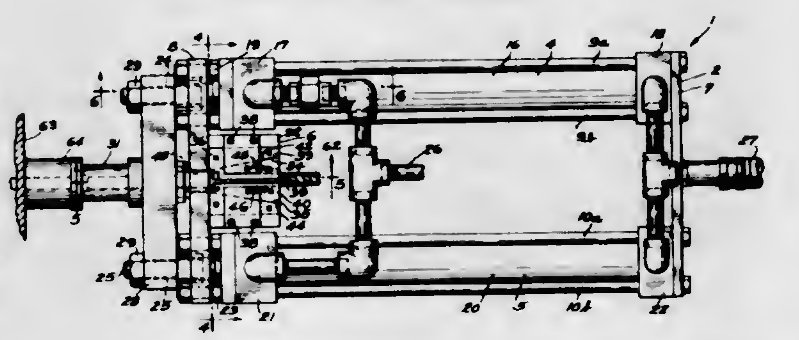
George C. Hochwalt and Howard A. Mayo, Jr., York, Pa., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Jan. 3, 1963, Ser. No. 249,145
3 Claims. (Cl. 253—31)



1. In a high power installation comprising a water confining passage having an upstream end at a higher level than the downstream end and including an upper surface portion, a turbine runner rotatably supported in the upstream end of said passage, a substantially horizontal shaft having an upstream end connected to said turbine runner and an opposite downstream end passing through said upper surface portion of the water confining passage, a cylindrical hollow shaft alley surrounding the runner shaft in spaced sealing relation therewith at opposite ends of said shaft, said shaft alley being supported in said upper surface portion of the water confining passage adjacent the downstream end of said shaft, said alley having an upstream surface upon which the flowing fluid impinges, and a downstream surface about which a low pressure pocket occurs, a plurality of apertures in said downstream surface providing communication between the interior of said alley and said low pressure pocket, means communicating with said interior of said alley and the adjacent atmosphere whereby atmosphere air can be drawn into said pocket, and a rotary machine supported above the level of said downstream end of said passage, in downstream relation to said runner and without said passage, said machine being connected in driven relation to said downstream end of said shaft.

3,184,219
TENSIONING UNITS

James S. Simms, 5301 W. Patterson Ave., Chicago, Ill.
Filed June 11, 1963, Ser. No. 286,991
10 Claims. (Cl. 254—29)



7. A tensioning unit for tensioning a cable extending through a collar member having a reduced end portion projecting axially outwardly from a larger intermediate portion, with gripping means mounted in said end portion in position to holdingly grip said cable therein when moved into said end portion, said tensioning unit comprising:

- (*a*) an elongated supporting frame,
- (*b*) two hydraulic cylinders
  - (1) mounted on said frame in parallel relation to each other, and
  - (2) having pistons therein reciprocable longitudinally of said frame between
    - (*a'*) an extended position and
    - (*b'*) a retracted position relative to said frame,
- (*c*) an abutment having
  - (1) an end portion abuttingly engageable with said intermediate portion of such a member in surrounding relation to said reduced end portion thereof,
  - (2) there being a passageway extending therethrough for the feeding of such a cable therethrough from said member,
  - (3) an actuator element
    - (*a'*) movably mounted in said passageway for reciprocation toward and away from said end portion, and
    - (*b'*) disposed in position in said passageway to engage said gripping means when said end portion of said abutment means is so abuttingly engaged with said intermediate portion, and

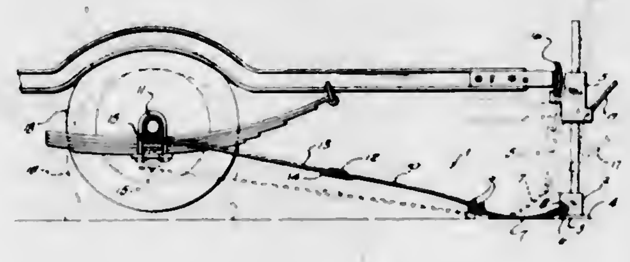
(4) spring means in said passageway and operatively engaged with said actuator element in position tc yieldingly urge said actuator element toward said member when said abutment means are so engaged with said intermediate portion,

(5) means for retaining at least a portion of said actuator element within said passageway,

(*d*) said abutment means being mounted on and movable with said pistons, and

(*e*) other gripping means mounted on and movable with said supporting frame in position to grip said cable on the opposite side of said abutment means from said member during movement of said pistons toward extended position, when said cable extends through said abutment means and is gripped by said other gripping means, and said abutment means is so engaged with said intermediate portion, to thereby tension said cable in said member and simultaneously yieldingly urge said first-mentioned gripping means toward gripping engagement with said cable.

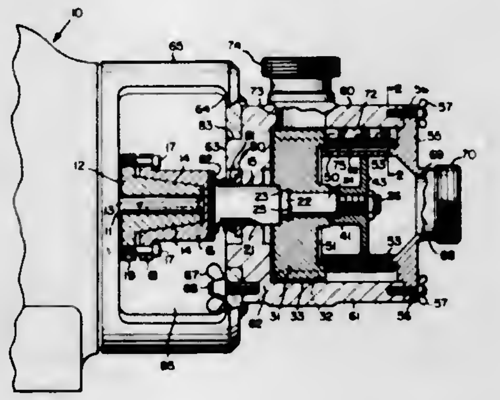
3,184,220
JACK HELPING DEVICE
Gerald E. Huggins, Battle Creek, Mich., assignor to Paul J. Diamante, Battle Creek, Mich.
Filed Sept. 20, 1963, Ser. No. 310,368
7 Claims. (Cl. 254—133)



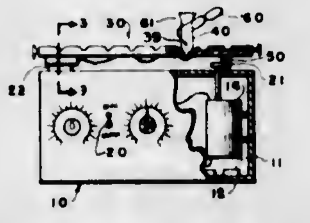
4. A device for applying lifting force to a vehicle axle, which is conventionally connected to the vehicle frame by resilient means, simultaneously with the independent application of a lifting force to said frame, which comprises an elongated relatively rigid arm means, a heavy leaf spring extending outward and upward from the end of, and in line with, said arm means, means rigidly anchoring the end of said rigid arm means to one end of said spring, a pocket means having an open top and closed bottom suitable for the reception of the lower end of a bumper jack, and means for pivotally joining one side of said pocket means to the end of said spring which is remote from the end of the latter which is rigidly connected to said arm means.

3,184,221
HOMOGENIZING APPARATUS
Harry W. Mould, Jr., Buffalo, N.Y., assignor, by mesne assignments, to Liberty National Bank and Trust Company, Buffalo, N.Y., a national banking association
Filed Jan. 23, 1962, Ser. No. 168,197
7 Claims. (Cl. 259—7)

1. Homogenizing apparatus comprising a housing having a chamber therein, rotary means in said chamber for pumping fluid therethrough from an inlet adjacent one end of said chamber to an outlet adjacent the opposite end thereof, at least two tubular elements nested in spaced, coaxial relation one within the other in said chamber and defining therebetween an annular passage extending axially of said chamber, the confronting peripheral surfaces of said tubular elements having peripherally spaced, axially extending grooves therein, the grooves in one of said surfaces being essentially coextensive with the grooves in the other of said surfaces, the inner tubular element having a plurality of peripherally spaced apertures therethrough adjacent one end only thereof, and the outer tubular element having a plurality of peripherally spaced apertures therethrough adjacent the opposite end only thereof, each of the apertures in said inner element communicating with ohe of the grooves in said inner element, and each of the apertures in said outer element communicating with one of the grooves in said outer element, means in said chamber operative to guide incoming fluid through the apertures in said inner element, so that the fluid will flow axially along said annular passage and out of the apertures in said outer element, and one of said tubular elements being operatively connected to said pumping means to rotate therewith relative to the other of said elements, whereby the edges of the grooves in said inner and said outer elements, respectively, cooperate to shear therebetween the fluid carried through said passage.

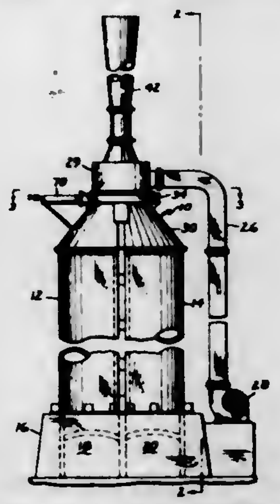


3,184,222
MIXING APPARATUS
Herbert I. Aronowitz, 50 4th St., North Arlington, N.J., and Jack L. Aronowitz, 1360 48th St., Brooklyn 19, N.Y.
Filed Jan. 8, 1962, Ser. No. 164,700
15 Claims. (Cl. 259—54)



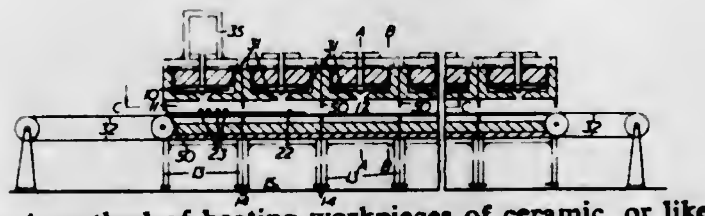
6. An apparatus, for supporting or holding containers of various shapes and sizes, for use in combination with drive means to impart relatively independent rotary motion and reciprocating motion to the said apparatus: said apparatus including a platform having a body portion comprising surface area and a perimeter, said drive means being adapted to impart a substantially rotary motion to one portion of the area of the said platform and a substantially reciprocating motion to another portion of the area of the said platform, said platform having at least one groove in the said surface area within the area of substantial reciprocal motion, together with at least one cup in the said surface area within the area of substantial rotary motion, said grooves being adapted to support or hold containers having a substantially rod-like shape, said cups being adapted to support or hold containers having curved portions, and said surface area of the platform being adapted to support containers having substantially flat bottom portions, together with means to selectively retain the said containers mounted on the said platform when desired.

3,184,223
GASEOUS FLOW REVERSAL VALVE
John J. Webber, Holden, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Feb. 20, 1963, Ser. No. 260,012
4 Claims. (Cl. 263—15)



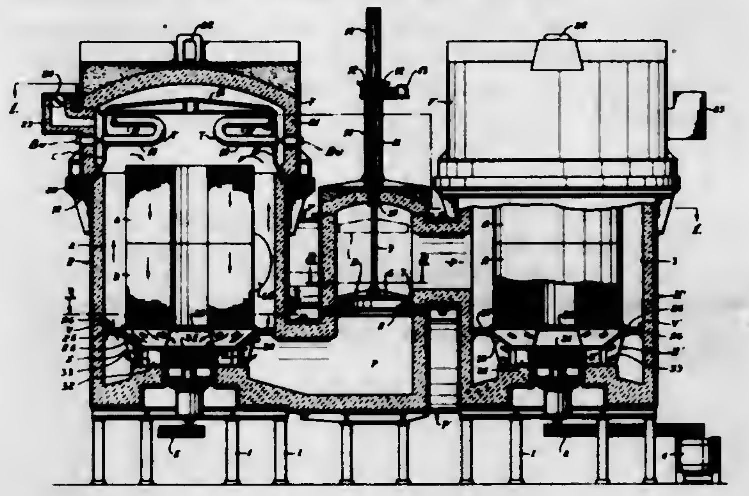
1. Means for changing and controlling the direction of gas flow in the flues of a regenerative furnace, said means comprising a first housing enclosing two substantially equal chambers, each of said chambers adapted to be placed in communication at its lower end with one of said flues and terminating at its upper end in an exhaust port, said exhaust ports in communication with a second housing enclosing air ejector means, said air ejector means in turn in communication at its upper end with a common exhaust stack, a combustion air duct having an inlet positioned intermediate said exhaust ports, a slide valve positioned within said second housing between said exhaust ports and said common exhaust stack for movement from a position covering said inlet and one of said exhaust ports to a position covering said inlet and said other exhaust port, the uncovered exhaust port remaining in communication with said common exhaust stack, said slide valve acting as means for connecting the exhaust port over which it is positioned to said air inlet, and means for passing air through said air ejector means in order to cool said second housing and indirectly to cool the slide valve contained therein while inducing an updraft in said common exhaust stack.

3,184,224
TUNNEL KILN AND METHOD OF OPERATION
Donald P. Shelley, Ravenswood, Airdale Road, Stone, England
Filed Oct. 4, 1963, Ser. No. 313,861
Claims priority, application Great Britain, Oct. 9, 1962, 38,117/62
13 Claims. (Cl. 263—28)



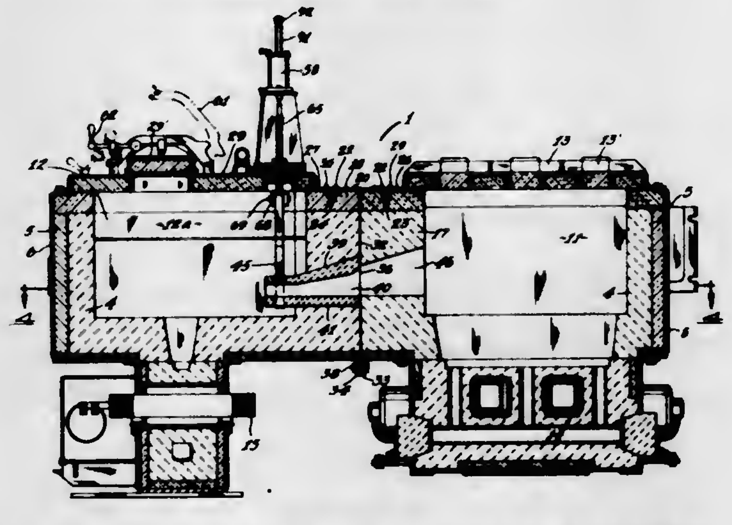
3. A method of heating workpieces of ceramic, or like material, in a kiln having a hearth, comprising the steps of creating a film of heated air under pressure over the surface of the hearth to support the workpieces slightly above the hearth, placing the workpieces on supporting batts, and continuously feeding the batts on to the hearth from both ends of the kiln in plural streams that are offset from each other, pushing the batts through the furnace by placing each batt in contact with the preceding batt, so that while supported by the pressurized air the batts are propelled by the incoming batts pushing forward those already in the kiln.

3,184,225
REGENERATIVE FURNACE
Lee Wilson, Rocky River, Ohio, assignor to Lee Wilson Engineering Company, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 8, 1963, Ser. No. 271,413
15 Claims. (Cl. 263—36)



13. In sealing means comprising a sealing trough and a flange member adapted to be moved into and out of sealing position in said trough, a body of fusible metal in said trough, a cooling fluid conducting conduit disposed in cooling relation to said metal in said trough, means for supplying cooling fluid to said conduit, and means, responsive to the temperature of said fusible metal in said trough, for controlling the flow of cooling fluid through said conduit whereby, when the temperature of said metal increases above a certain predetermined value said flow of cooling fluid will be increased and when said temperature falls below said value said flow will be decreased, said control means being adapted to control said flow of cooling fluid whereby said fusible metal is maintained at a temperature below its vaporization point.

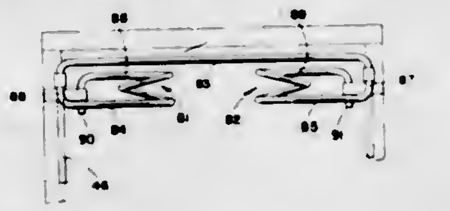
3,184,226
AUTOMATIC POURING FURNACE
Wilbur E. Shearman, Yardley, Pa., assignor to Ajax Magnethermic Corporation, Youngstown, Ohio, a corporation of Ohio
Filed June 6, 1961, Ser. No. 115,221
5 Claims. (Cl. 266—38)



1. A furnace comprising a pair of chambers arranged side by side adapted to contain molten metal, one of said chambers being a discharge chamber, an opening interconnecting said chambers affording a passage for molten metal to said discharge chamber from the other of said chambers, means operable for applying intermittent pressure from above the level of molten metal in said discharge chamber to intermittently discharge molten metal therefrom, a sliding valve member loosely fitted and mounted within said discharge chamber, control means adapted to

reciprocate the said valve means with respect to said opening to selectively substantially prevent the flow of molten metal between said chambers during the application of said pressure, the said pressure applied to the metal in the discharge cycle forcing the said valve means into contact with said passage surrounding the opening to assist in closing the said opening between the said chambers during the application of said pressure, the said valve means being subsequently reciprocated by said control means to permit the flow of molten metal through the said passage between the chambers.

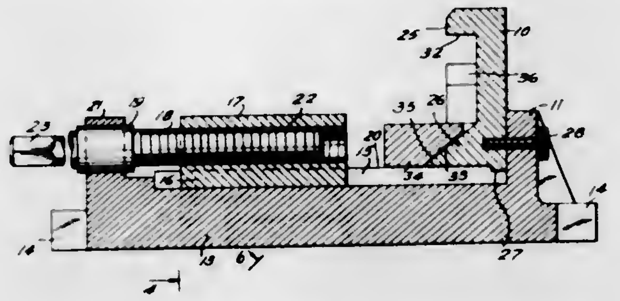
3,184,227
SEAT SPRING ARRANGEMENT
Charles S. Viall, Sr., 11313 Chadsey Drive, Whittier, Calif.
Continuation of application Ser. No. 127,619, July 28, 1961. This application Mar. 6, 1964, Ser. No. 350,100
11 Claims. (Cl. 267—108)



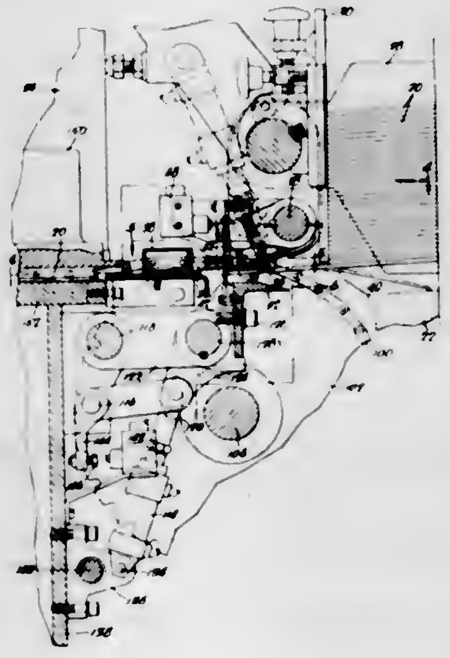
1. A seat cushion support comprising
a platform means adapted to support seat cushion means,
a fixed structure,
and spring means interconnecting said platform means and said fixed structure,
said spring means including at least two spring units for supporting said platform means with respect to said fixed structure,
each of said units including
a helical coil portion,
an upper leg
and a lower leg,
said upper leg extending laterally from one end of said helical coil portion to a position adjacent said platform means
and including a portion extending from said position inwardly with respect to the axis of said coil,
said lower leg extending laterally from the opposite end of said coil means to a position adjacent said fixed structure
and including a portion extending from said position inwardly with respect to the axis of said coil,
said portions of said upper and lower legs being substantially parallel, and extending in opposite directions,
means rigidly connecting said portion of said upper leg to said frame,
and means pivotally connecting said inwardly extending portion of said lower leg to said fixed structure.

3,184,228
MILLING MACHINE VISES AND THE LIKE AND AUXILIARY JAWS THEREFOR
Edmond Z. Chenette, Scribner Ave., Norwalk, Conn., and Leo E. Chenette, Clearwater, Fla.
Filed Oct. 26, 1962, Ser. No. 233,243
6 Claims. (Cl. 269—234)

1. A vise having auxiliary jaws in which the vise includes a base, a fixed jaw located at one end of the base, a movable jaw guidedly mounted on the base and a screw engaging said base and the movable jaw for moving said movable jaw toward and away from the fixed jaw by turning of said screw, said auxiliary jaws including an upwardly extending member having a laterally extending head at the upper end thereof constituting a fixed auxiliary jaw, a foot mounted on said base and affixed to said fixed jaw of the vise and supporting said member in upwardly extending relation, at least one shim constituting a movable auxiliary jaw disposed against said upwardly extending member and in alignment with said fixed auxiliary jaw, and a cam follower member carried by said base for movement longitudinally thereof and disposed between said foot and the movable jaw of the vise for camming said shim upwardly with the movement of the movable jaw of the vise toward the fixed jaw thereof for holding articles between said head and shim.

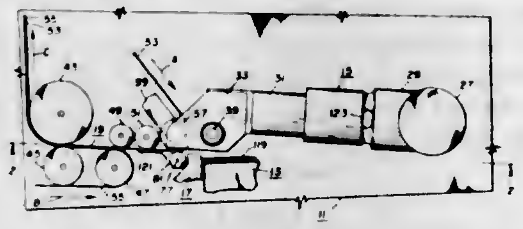


3,184,229
INTERMITTENT MOTION DRIVE MECHANISM
Hanspeter Weber, Haddonfield, N.J., assignor to Samuel M. Langston Company, Camden, N.J., a corporation of New Jersey
Filed Aug. 28, 1959, Ser. No. 836,682
9 Claims. (Cl. 271—3)



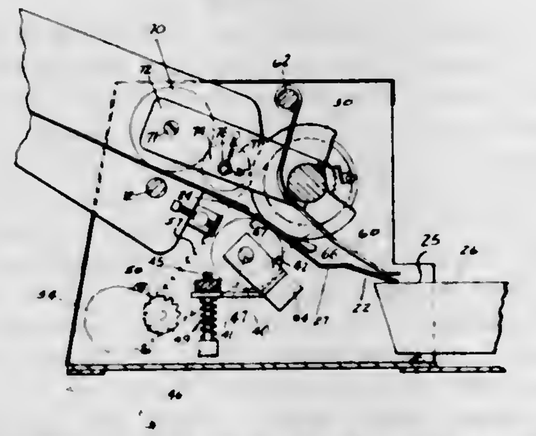
1. In a machine for performing working operations on blanks of material in successive stages at a plurality of spaced working positions, blank transfer means for sequentially and intermittently feeding blanks to and away from a work station, blank work means at said station for intermittently performing a work operation on a said blank in timed sequence with movement of said blank transfer means, blank discharge means for disengaging said blank at a discharge station and intermittent motion drive mechanism to start and index movement of said blank transfer means and stop the same automatically in timed sequence with the work stroke of said blank work means, means for selectively controlling the time cycle of intermittent movement by changing the rate of acceleration and thereby deceleration of movement without changing the work stroke time of the machine, said fluid motor being connected in a hydraulic circuit, pressure to said motor being variable whereby the rate of acceleration and deceleration of the drive means can be varied.

3,184,230
DOCUMENT FEEDING
Arnaldo Rolon, Irving, Tex., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 2, 1962, Ser. No. 227,914
10 Claims. (Cl. 271—11)



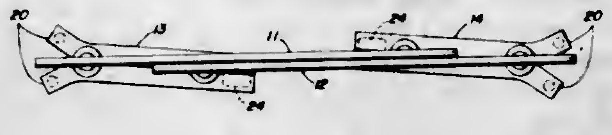
1. The combination which comprises:
(*a*) a document feeder arm mounted for oscillation about a first axis and including a tubular element reciprocably telescoped within said arm,
(*b*) drive means for moving the end of said element along a first closed path having a linear section,
(*c*) a roller mounted for movement in a second path forming a closed loop which is tangent to said linear section, and
(*d*) timing means coupled to said drive means to move said roller in said second closed path.

3,184,231
FACSIMILE TRANSMITTER SHEET FEEDING MECHANISM
Ralph Varrichio, Brooklyn, N.Y., assignor to Hogan Faximile Corporation, New York, N.Y.
Filed May 31, 1962, Ser. No. 199,045
4 Claims. (Cl. 271—36)



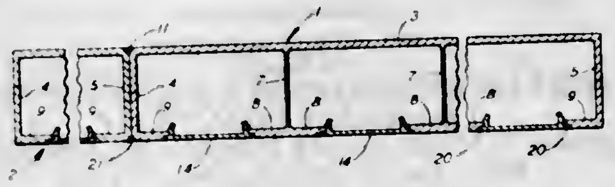
1. A facsimile transmitter sheet feeding mechanism comprising a frame, a paper guide tray inclined downwardly and adapted to receive a pile of singled sheets, the lower end of the guide tray forming its outlet, an extension for the bottom of the tray, the extension having an opening therein, a rotatable feed roller, a shaft journalled in the frame, the feed roller positioned with its periphery in alignment with the opening, a fixed retard roller positioned beneath the opening in alignment with the rotatable roller, the rotatable feed roller having a yielding paper engaging surface, the rollers closely positioned together, supporting means for the fixed roller, adjustment means to vary the position of the fixed roller, means for the release of the fixed roller providing rotatable adjustment thereof, and a spring member secured at one end to the outlet end of the tray and bifurcated to pass on both sides of the feed roller, a shoe for the spring member directed upwardly against the feed roller downstream side and extending under the feed roller and around the downstream side thereof outwardly of a center line between the axes of the feed and retard rollers so as to provide increased area of contact between a sheet of paper and said feed roller.

3,184,232
VARIABLE WIDTH LOW PARALLEL BAR
George P. Nissen, Cedar Rapids, Iowa, assignor to Nissen Corporation, Cedar Rapids, Iowa, a corporation of Iowa
Filed July 20, 1962, Ser. No. 211,169
7 Claims. (Cl. 272—63)



1. Parallel bar gymnastic apparatus comprising a pair of laterally spaced, horizontal bars, a base assembly supporting said bars above the floor in parallel relation to each other including both a pair of rigid, laterally spaced floor engaging base members extending transversely of said bars and means carried by said base assembly effective to permit optional adjustment of the spacing between said bars about two pairs of vertical axes, each pair of said axes being formed by a pair of pivots carried by and spaced on one of said base members transversely of said bars and affording pivotal movement of said base member relative to the other base member and to said bars, both pairs of said axes forming the corners of a horizontally disposed parallelogram, whereby said bars are maintained parallel regardless of adjustment of the spacing therebetween.

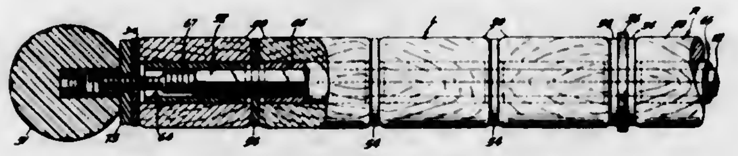
3,184,233
SECTIONED METAL SPRINGBOARD
Ronald Cook, Miami, Fla., assignor to R. E. Scott, San Jose, Calif.
Filed Apr. 16, 1962, Ser. No. 187,677
10 Claims. (Cl. 272—66)



1. A metal springboard comprising:
(*a*) an elongated, horizontally extending upper plate extending the length of said board;
(*b*) an elongated lower plate spaced below said upper plate in opposed relation thereto and in vertical registration therewith extending the length of said board;
(*c*) vertically disposed integral sidewalls integral with said upper and said lower plates along their corresponding longitudinally extending edges rigidly connecting said upper and said lower plates, cooperating with said upper and lower plates to provide the walls of an open ended tubular board;
(*d*) end plates secured over said open ends of said board;
(*e*) vertically disposed, horizontally spaced, parallel integral webs extending between said upper and lower plates each of which webs is integral with said upper and lower plates;
(*f*) the thickness of each of said webs being substantially uniform and less than the thickness of said upper plate.

3,184,234
FRICTION EXERCISE DEVICE HAVING GRIPPER ELEMENTS

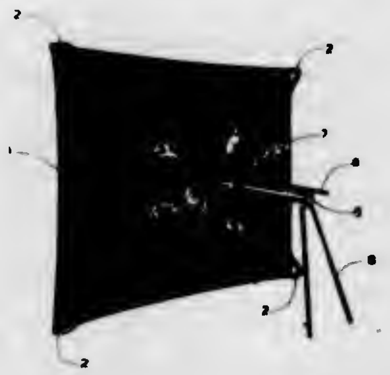
Albert Struble, 508 Irvington Road, Drexel Hill, Pa.
Filed Jan. 31, 1963, Ser. No. 255,252
4 Claims. (Cl. 272—68)



1. An exercising device comprising an elongated rod of non-circular cross section for the major part of its length, the terminal ends of said rod being threaded and of generally rectangular cross section, a plurality of sleeves of predetermined axial length having an axial bore therethrough conforming in cross section to the cross section of said rod mounted on said rod against rotation with respect thereto, a plurality of barrel-like short cylindrical gripping elements having an axial bore therethrough of circular cross section, each of said gripping elements being of a length greater than said sleeve and circumscribing said sleeve for rotational movement relative thereto, spacer means disposed between confronting ends of said gripping elements and engaging said gripping elements to provide a resistance to relative turning thereof, a knob mounted at each terminal end of said rod, each of said knobs having an internally threaded opening to mount the same at the terminal ends of said rod for adjusting axial movement along said rod for selectively varying the pressure applying relationship between said gripping elements and said spacer means thereby providing means for selectively varying the resistance to relative turning movement of said gripping elements and lock washers mounted on said rod between said adjustable knobs and the outer axial end faces of said gripping elements, each said lock washer having a rectangular shaped opening conforming generally to the cross section of the terminal ends of the rod to prevent relative turning movement of the lock washers relative to the rod for a given setting thereof thereby to provide substantially uniform resistance to relative turning of said gripping elements for said given setting.

3,184,235
PORTABLE COLLAPSIBLE BACKSTOP FOR BASEBALL PRACTICE

Lawrence W. Hilbrich, 608 Lafayette St., Griffith, Ind.
Filed Apr. 8, 1963, Ser. No. 271,248
7 Claims. (Cl. 273—26)



6. A portable collapsible backstop device comprising a first and a second member adapted to slide one in the other along a common axis, a plurality of support arms and means hinging them to said first member, a plurality of arm braces and means hinging each at one end to said second member and at the other end to one of the support arms, an operating lever and means hinging it to the first member, a toggle lever and means hinging it at one end to the operating lever and at the other end to the second member;

so constructed and arranged that the operating lever is adapted for manual operation to move the toggle lever which moves the second member relative to the first member, which in turn moves the arm braces and support arms between an inactive closed position and an open erect position;

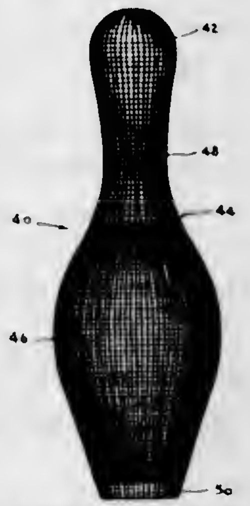
the closed position being with the first and second members extended relative to each other, the erected position being with the first and second members drawn partly together and the support arms spread wide;

support means attached in the erected position to the rear end of the cylinder;

and a ball-stopping member comprising a net which is attached by loops located on the peripheral winding of the net to net hooks on the outer ends of said support arms.

3,184,236
BOWLING PIN REINFORCING COVER

Charles F. Zens, Milwaukee, Wis., assignor to Zens Hosiery Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 19, 1962, Ser. No. 231,792
6 Claims. (Cl. 273—82)



1. A bowling pin reinforcing cover for use in the manufacture of plastic coated bowling pins comprising:

a knit fabric hollow elongated member having a crown portion and a body portion, said crown portion terminating in an open end to define an aperture which is relatively small in diameter in relation to the diameter of said body portion and which is adapted to engage the top of the crown of a bowling pin leaving exposed a small portion of said crown, the cover terminating in its entirety at said aperture whereby there is no projection of the cover beyond said aperture, said aperture being of a size (*a*) to permit air and gases which evolve during the manufacturing process to escape and insure a crown area free of voids and (*b*) to hold the plastic in the crown area during drying and thus insure a uniform thickness; and

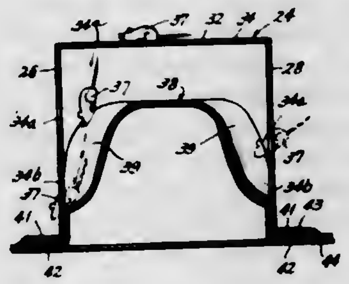
said body portion having a substantially greater amount of yarn per unit area than said crown portion and being so positioned as to cover the ball line of the bowling pin.

3,184,237
THREE-DIMENSIONAL GAME BOARD WITH APERTURES FOR ADVANCING OR REGRESSING THE PROGRESS OF A GAME PIECE

William Riva, 116 E. 95th St., New York, N.Y.
Filed Mar. 2, 1962, Ser. No. 176,950
5 Claims. (Cl. 273—134)

5. A game device comprising
(*a*) a three-dimensional hollow game structure,
(*b*) a game path winding about said structure,

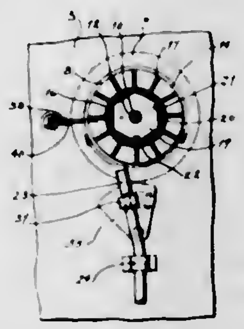
(*c*) said game path having a plurality of stations formed thereon along which a game marker is advanced by chance and a plurality of indicia of smaller steps along said path,
(*d*) several of said stations being formed for positively retaining the game piece thereon until the next chance to advance is had,



(*e*) other of said stations being provided with an entrance hole adapted to receive said game marker in the event the latter lands on said station by said chance,
(*f*) exit holes also disposed along said path,
(*g*) means disposed within said structure to define a plurality of channels,
(*h*) each of said channels being operatively associated with at least one of said entrance holes and at least one of said exit holes whereby the marker received by any of said entrance holes is repositioned by way of the channel cooperatively associated therewith to an exit station along said path.

3,184,238
FLUID-ACTUATED ROTATABLE CHANCE DEVICE

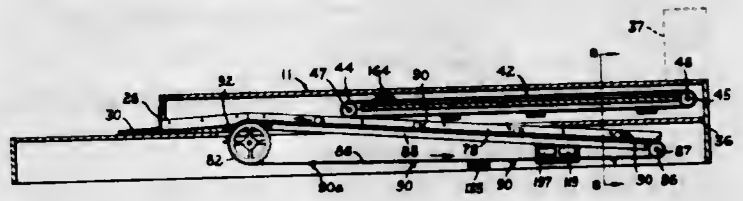
Frank S. Steudkowski, 409 N. 28th St., Belleville, Ill.
Filed Aug. 8, 1963, Ser. No. 300,881
3 Claims. (Cl. 273—142)



1. A game apparatus comprising a housing having a front wall, at least one aperture provided in said front wall, a transparent member provided in said aperture, a shaft engaged to each transparent member for extension inwardly of the housing front wall, a spinner wheel mounted on said shaft for free rotation thereabout, said spinner wheel having radially extending vanes, a source of fluid under pressure, a flexible fluid discharge tube connected at one of its ends to said source, the other end of said tube being presented adjacent the periphery of said spinner wheel, a slide plate engaged upon the inner face of said front wall for pivotal movement about a substantially horizontal axis, means engaging said fluid discharge tube to said slide plate spacedly from the discharge end of said tube, means for effecting selected movement of said slide plate for presenting the discharge end of said tube at one side or the other of said spinner wheel to effect rotation thereof in preselected direction by impingement upon the spinner wheel vanes of fluid discharged from said tube.

3,184,239
GOLF PUTTING DEVICE INCLUDING AUTOMATIC CYCLING MEANS AND BALL RETURN PUSHERS ON AN ENDLESS CHAIN

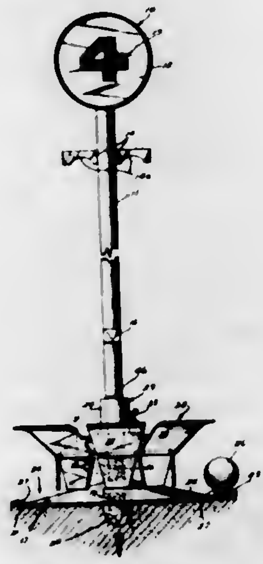
Marion F. Heuser, 4601 Hastings Drive,
Dayton 40, Ohio
Filed Apr. 25, 1962, Ser. No. 190,128
8 Claims. (Cl. 273—176)



1. An automatic golf putting game, comprising a playing surface having a side wall on each side and an end wall at one end thereof, an overrun opening extending across said one end between said playing surface and said end wall for receiving the ball, a hole for receiving the ball formed centrally in said playing surface near said one end, a putting surface positioned adjacent the opposite end of said playing surface and having sufficient area to permit the player to stand thereon and putt the ball toward said hole, guide table means for receiving balls from said overrun opening and said hole, a feed channel extending from said guide table to near said putting surface, said guide table means being slanted for movement of the balls toward said channel, an opening interconnecting said table means and said channel for passage of balls from said table means into said channel, a chain disposed adjacent said channel having a plurality of ball pushers mounted thereon for moving the balls along said channel toward said putting surface, feed control means effecting advancement of said chain for supplying one ball to said putting surface each time a ball rolls into said channel, and game control means for permitting the chain to advance a predetermined number of times each game.

3,184,240
PUTTING TARGET WITH GATES ADAPTED TO BE CLOSED AND OPENED BY A PUTTED GOLF BALL

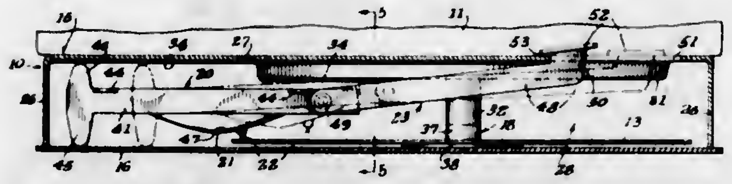
William W. Gleeson, 940 NE. 50th Court,
Pompano Beach, Fla.
Filed Dec. 28, 1962, Ser. No. 247,928
5 Claims. (Cl. 273—177)



3. In a putting device, a marker post, a cage on said post, a ring of gates on said cage, means holding the gates in open position, and each gate having an impact face adapted to be struck by a ball entering the cage and means to simultaneously close all the gates around the ball when an impact face is struck by a putted ball.

3,184,241
MANUAL RECORD PLAYER

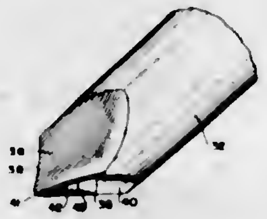
Homer E. Jones, Los Angeles, Calif., assignor to Violet Beverly May Jones, Los Angeles, Calif.
Filed Aug. 13, 1962, Ser. No. 216,531
2 Claims. (Cl. 274—14)



1. A record player comprising
(*a*) a case provided with a removable cover,
(*b*) a spindle journaled in said case to mount a disc record and provided with a hand crank for rotating the spindle and the record,
(*c*) a slide guided in said case to move freely toward and from the journal,
(*d*) means on the slide engaged with the cover thereof to support one end of the slide,
(*e*) a cone speaker carried by the slide and provided with a needle engaged in the sound track of the record and constituting a support for the opposite end of the slide, and
(*f*) manual means to raise the latter end of the slide to lift the needle off the record and to manually shift the slide to bring said needle into position to engage another part of the sound track upon manual release of said means from slide-raising position, which comprises: (1) a lever hingedly connected to the mentioned opposite end of the slide and protruding through a slot in the case, and (2) a pad on said protruding end of the lever disposed at an angle to the case, the lower end of said pad being in fulcrum engagement with the case, whereby pressure on the pad swings the lever on said fulcrum and causes lifting of the slide as aforementioned.

3,184,242
RECORDING STYLUS

Richard Marcucci and Isabel Capps Rainey, Brooklyn, N.Y., assignors to Capps & Co., Inc., Valley Stream, N.Y., a corporation of New York
Filed Apr. 19, 1963, Ser. No. 274,262
4 Claims. (Cl. 274—38)

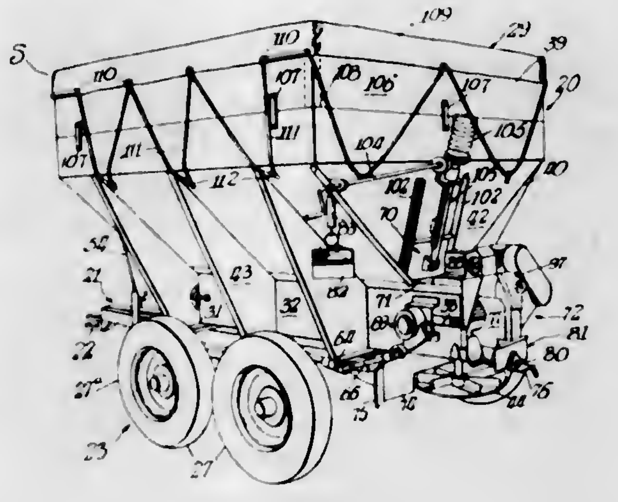


1. A recording stylus for cutting grooves in a record, said stylus having a generally concave cutting face, generally concave cutting edges bounding said cutting face on at least two sides thereof, and at least one burnishing facet on each said generally concave cutting edge.

3,184,243
FERTILIZER WAGON

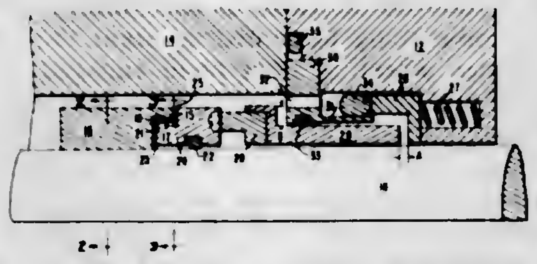
Richard F. Brisbin, Mount Vernon, and James H. McSkimming, Cedar Rapids, Iowa, assignors to Highway Equipment Company, Cedar Rapids, Iowa, a corporation
Filed Nov. 15, 1962, Ser. No. 237,870
3 Claims. (Cl. 275—6)

3. A fertilizer wagon, comprising an elongated frame equipped with hitch means at the front end thereof for coupling to a tractor, or the like, an undercarriage secured to said frame and equipped with a pair of front and a pair of rear wheels to permit rolling movement of said vehicle over the ground, said undercarriage including a main axle extending transversely of said frame and spaced longitudinally rearwardly of the center of the frame, a walking beam pivotally connected to said axle at each end thereof at a point centrally longitudinally of each beam, a stub axle adjacent each beam end rotatably supporting one of said wheels whereby said wheels are adapted to move vertically independently of said frame, a superstructure secured to said frame for housing fertilizer to be distributed and including transversely-extending, longitudinally spaced beam members connected to said frame, a box-like housing secured to said beam members and equipped with an open top, a body equipped with an open top and open bottom above said housing and defined by inwardly convergent side and end walls, the rear end wall being equipped with a discharge opening for fertilizer and a gate positionably mounted on said rear end wall for varying the size of said opening, discharge means for fertilizer in said body including a longitudinally-extending conveyor projecting through said opening below said gate, and a pair of spinners mounted for rotation below the projecting portion of said conveyor for imparting a lateral motion to fertilizer discharged by said conveyor, and power means for said discharge means including a power train coupled to one of said front wheel stub axles and to said conveyor adjacent said rear end wall, said train being secured to said frame at the rear train portion and floatingly related to said frame at the front train portion, and a second power train on said vehicle adapted to interconnect said spinners with a power take-off on said tractor whereby three independent instrumentalities are provided to regulate the discharge rate of fertilizer.



3,184,244
SHAFT SEAL

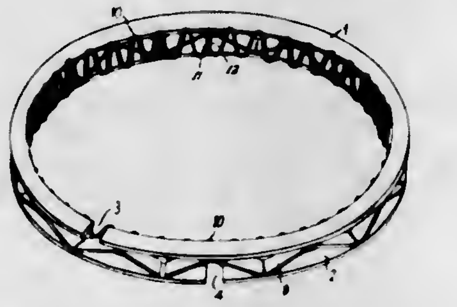
Frank R. Van Vleet, North Reading, Mass., assignor to A. W. Chesterton Company, Everett, Mass., a corporation of Massachusetts
Original application July 20, 1961, Ser. No. 125,512. Divided and this application Apr. 5, 1963, Ser. No. 270,874
3 Claims. (Cl. 277—83)



1. In a fluid pressure seal for a shaft rotating in a housing and having a cooperating sealing face carried by said housing, a segmented ring having a plurality of segments with a total angular extent of less than 360 degrees and means clamping said segments upon said shaft providing clearance between the ends of said segments, said segments providing aligning faces defining planar surfaces positioned in the same plane perpendicular to the axis of said shaft when clamped thereon, in combination with an integral unbroken ring spaced from the shaft and having a planar rotating sealing face at one end thereof and a planar aligning face parallel thereto at the other end thereof, said rotating sealing face defining a planar surface perpendicular to said shaft, said aligning faces on said segmented ring cooperating with said aligning face on said integral unbroken ring to establish said rotating sealing face in a plane perpendicular to the axis of said shaft, biasing means acting through said cooperating sealing face for continuously maintaining said aligning faces in contact with one another in the absence of fluid pressure applied to said rings, annular sealing means positioned between said integral ring and said shaft, means preventing relative rotation of said rings, said integral unbroken ring being thus connected to the shaft in a condition free of external stress with its said rotating sealing face in engagement with said cooperating sealing face establishing said sealing faces in a plane perpendicular to said shaft.

3,184,245
PISTON RINGS

Arthur John Woolcott, Lymington, Hampshire, England, assignor to Wellworthy Limited, Lymington, England, a British company
Filed Feb. 13, 1961, Ser. No. 88,744
Claims priority, application Great Britain, Feb. 19, 1960, 5,983/60
7 Claims. (Cl. 277—136)

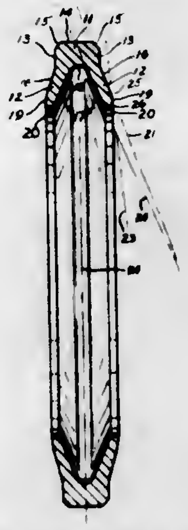


1. A composite piston ring arrangement comprising a pair of flat split sealing rings for location in a piston ring groove of a piston so that said rings abut the upper and lower lands of said groove, a first axially-corrugated strip-form expander spring located between said sealing rings to apply said rings to said upper and lower lands respectively and a second axially-corrugated strip-form expander spring located within said sealing rings, said second expander spring having shaped ends for respectively contacting an abutment in a piston-ring groove to apply mutually opposite pressures to the two ends of said second expander spring to cause said second expander spring to apply radially outward pressure to said sealing rings without said second expander spring being supported by the base of said groove.

3,184,246
STATIC FACE-TYPE FLOATING SEAL

Roger E. Kline, Costa Mesa, Calif., assignor, by mesne assignments, to Aerospace Components Corporation, Los Angeles, Calif., a corporation of California
Filed June 13, 1963, Ser. No. 287,699
1 Claim. (Cl. 277—168)

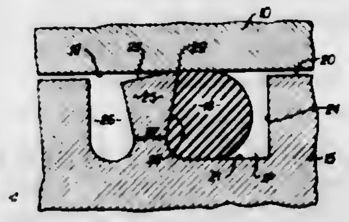
A sealed assemblage for retaining fluids under a wide range of pressure which comprises:
(*a*) a pair of elements to be sealed having confronting surfaces,
(*b*) a groove system cooperatively formed between said confronting surfaces,
(*c*) a sealing device having a hoop portion lying in floating clearance with the walls of said groove system,
(*d*) a pair of resilient flanges integral with and cantilevered divergent y and generally in a radial direction from the hoop portion,
(*e*) said flanges each having an outer and an inner surface defining in cross-section a continuous taper to the ends thereof,



(*f*) and a sealing surface forming a portion of said outer surface adjacent the end of each flange, and being angulated to a lesser degree than the remaining portion of said outer surface with respect to the general plane of the sealing device,
(*g*) said flanges lying under resilient compression between said confronting surfaces and said sealing surfaces lying respectively in substantially flat engagement therewith.

3,184,247
SEAL RING EXTRUSION PREVENTING DEVICE

Kurt Leutwyler, Buena Park, Calif., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Feb. 27, 1962, Ser. No. 175,932
10 Claims. (Cl. 277—170)

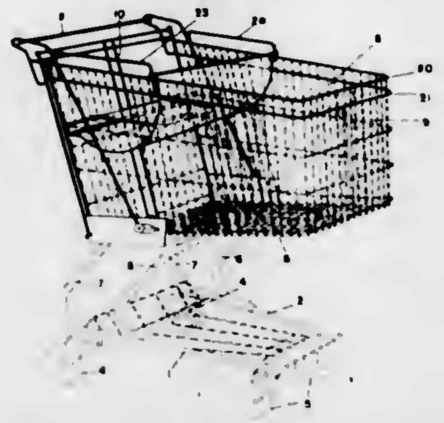


1. In a fluid pressure sealing structure: a first member having a sealing surface extending longitudinally of its axis; a second member having a ring groove therein confronting said surface, the sides of said groove extending transversely of the axis of said second member; one of said members surrounding said other member; a pliant seal ring in said groove engaging said surface to prevent fluid leakage between said members; said second member having a backing flange extending transversely of the axis of said second member and fixed thereto at the downstream side of said seal ring, the normal periphery of said backing flange having a close normal working clearance with the periphery of said sealing surface; said flange having a face inclined at an obtuse angle to said sealing surface and providing the downstream side of said groove, the side of said flange opposite said inclined face being free from support; said flange being made of such material and having a longitudinally extending root portion of such dimensions as to enable such flange to pivot about its root portion into contact with said sealing surface under the action of fluid pressure forcing said seal ring

axially against said inclined face before said fluid pressure can force said seal ring into the working clearance space between said flange periphery and sealing surface.

3,184,248
BABY SEATS FOR TELESCOPING GROCERY CARTS

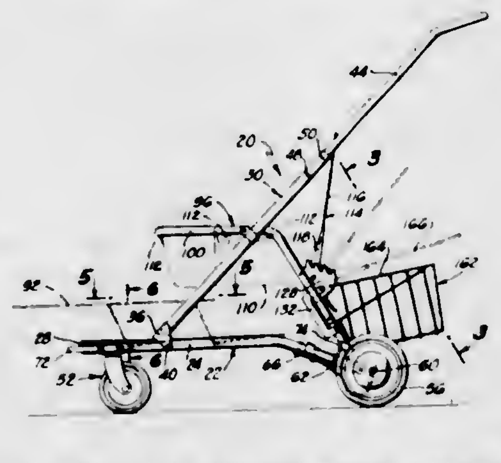
Ralph G. Hummer, Oklahoma City, Okla., assignor to Folding Carrier Corporation, division of Union Asbestos & Rubber Company, Oklahoma City, Okla.
Filed Nov. 29, 1962, Ser. No. 240,945
2 Claims. (Cl. 280—33.99)



1. In a seat structure for telescoping carts having a bottom wall, a front wall and side walls, a gate forming a rear wall of the cart, said gate being pivoted to the upper rear portion of the cart for movement from a generally upright position to a generally horizontal position, leg openings in the upper portion of the gate, longitudinally extending guide tracks mounted on the side walls at the rear portion thereof adjacent said gate mounting, stop means at each end of said guide tracks, a flexible seating structure fixed to a rod at its inner upper end, said rod having terminal portions secured about said guide tracks for slidable movement therealong, means supporting the other end of said flexible panel on said gate at the bottom marginal portions of said leg openings, and a panel forming a leg opening closure hingedly supported on said gate structure adjacent the bottom of said leg openings for movement to an upper position closing said leg openings to a lower position resting on said panel.

3,184,249
COLLAPSIBLE BABY STROLLER

Samuel M. Shone, Los Angeles, Calif., assignor to Babyline Furniture Corp., Los Angeles, Calif., a corporation of California
Filed Apr. 1, 1963, Ser. No. 269,630
9 Claims. (Cl. 280—36)



1. A collapsible baby stroller which comprises:

a U-shaped base frame having spaced parallel side members;

a U-shaped handle assembly comprising a pair of spaced parallel side members having the free ends thereof pivotally connected to opposed intermediate points along the parallel side members of said base frame;

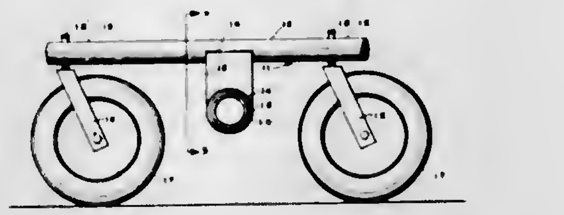
a U-shaped seat support frame comprising spaced parallel side members having the portions thereof adjacent the bight of said support frame disposed in spaced parallel relation to the parallel side members of said base frame and a second portion of the side members of the support frame extending downwardly toward the free ends of the parallel side members of said base frame, said support frame further including a connecting member disposed in parallel relation to said bight connecting the second portions of the side members of said support frame;

a rear U-shaped member comprising parallel leg members having the free ends thereof pivotally attached to the base frame adjacent the free ends of the parallel side members of said base frame; and

disengageable clamping means connecting the bight portion of said rear U-shaped member to said connecting member, said disengageable clamping means comprising an elongated channel secured to one of said members, an opening in the other of said members adjacent said elongated channel, an apertured flange positioned on said elongated channel, an arm pivotally supported upon said apertured flange and provided with a latch hook, said latch hook being positioned to be engageable within said opening, and an actuating lever on said arm and depending downwardly below said members so that upon actuation of said actuating lever said latch hook is removed from said opening so that said members are disengaged with respect to each other.

3,184,250
WHEEL MOUNTING ASSEMBLY FOR HARROW DRAW BARS

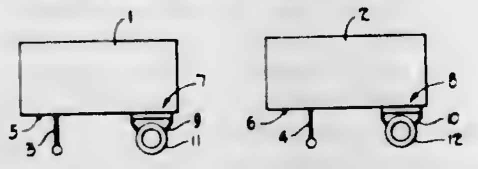
Rheinhard Bobrowski, Morris, Manitoba, Canada
Filed Dec. 21, 1962, Ser. No. 246,499
1 Claim. (Cl. 280—81)



A wheel mounting assembly for harrow draw bars comprising in combination with the main beam of said draw bar, a wheel support bar disposed at an angle to the main draw bar beam, one of said support bars adjacent each end of said draw bar main beam, and means mounting said wheel support bars on said draw bar main beam, and a ground engaging wheel mounted for castoring action adjacent each end of each of wheel support bars, one fore and one aft of said main beam, said means to mount each of said wheel support bars on said draw bar main beam comprising a sleeve freely mounted upon said draw bar main beam for rotation thereon, plate means connecting said wheel support bar and said sleeve whereby said wheel support bar overlies said draw bar main beam, and a collar on said draw bar main beam upon each side of said sleeve limiting sideways movement of said sleeve upon said draw bar main beam, said plate means including a pair of plates secured to said sleeve and extending upwardly therefrom in spaced and parallel relationship, the upper ends of said plates engaging and being secured to the sides of said wheel support bar substantially intermediate the ends thereof.

3,184,251
BOGIE EQUALIZER LOCK MECHANISM

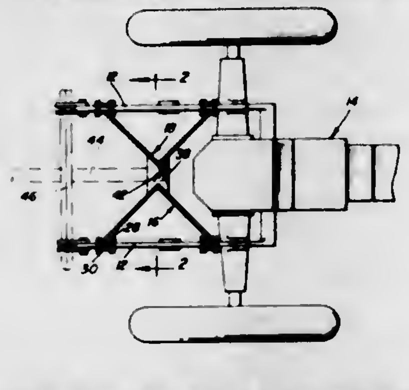
John J. Martin, Weatherly, Pa., assignor to Highway Trailer Industries, Inc., Edgerton, Wis., a corporation of Delaware
Filed Apr. 4, 1963, Ser. No. 270,719
5 Claims. (Cl. 280—104.5)



1. In trailer construction of the class described, in combination, a trailer frame, fore and aft bogies engaged with said frame, equalizer means connected to said bogies, and means to effect and maintain interengagement of certain of said equalizer means, comprising operating parts at one end of one of the bogies, reciprocable members at the adjacent end of the other of said bogies, one of said members having interlocking connection with one of the parts mentioned, operable by reciprocation thereof, the operating parts include a striker, the reciprocable members comprise a link means operatively connected at one end to equalizer instrumentalities, the other end of the link means having a dog connected thereto, the dog is arranged to interengage with said striker upon movement thereof to in turn effect movement of the link means aforesaid, and latch means on said bogies releasably engageable with the frame to maintain the members and parts in the interlocked position.

3,184,252
STABILIZER FOR TRACTOR LIFT ARMS

Hosea C. Cook, Rte. 4, Box 192, Loris, S.C.
Filed May 29, 1963, Ser. No. 284,206
6 Claims. (Cl. 280—474)



1. A stabilizer for a pair of spaced generally parallel tractor lift arms consisting of a pair of rigid units, each unit having two ends, said two ends being secured to a lift arm at longitudinally spaced points therealong, each unit formed so as to position an intermediate portion thereof, between the two ends, inwardly of the corresponding lift arm, the intermediate portions of both units being rigidly interlocked, each unit including an elongated angular bar, forming an angle when viewed in plan, the apex portion of which constitutes said intermediate portion, and connector means rigidly secured to and projecting outwardly from the apex portion of each bar and closely conforming to the apex portion of the other bar, and means releasably interlocking said connector means, said units being generally coplanar with the pair of lift arms.

3,184,253
ROLLER PUSHER CONNECTION FOR THE FRONT END OF A PUSHING TRACTOR

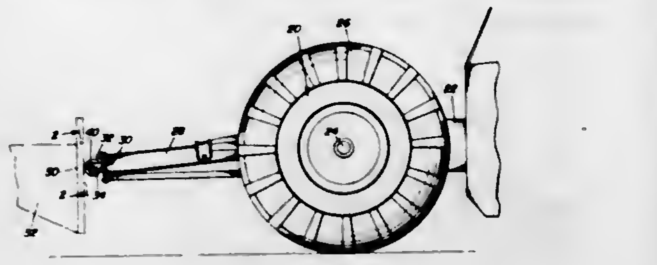
Charles A. Bratton, 5961 Germaine Lane, La Jolla, Calif.
Filed Sept. 4, 1962, Ser. No. 221,248
2 Claims. (Cl. 280—481)

1. In combination:

(A) a vehicle adapted to be pushed,

(1) having means extending horizontally therefrom in a direction of normal movement of the vehicle,

(*a*) a single axle arranged at right angles to said direction of normal movement and dis-



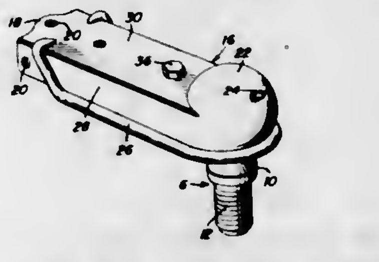
posed horizontally from the end of said means,

(*b*) bearings for supporting said axle,

(*c*) and a roller carried by said axle, said roller tapering to a larger diameter from opposite ends to midway of the length thereof.

3,184,254
BALL HITCH FOR CONNECTABLE VEHICLES

Albert S. Seeley, Centerville, Iowa (Box 17, Piano, Iowa)
Filed Mar. 6, 1964, Ser. No. 349,947
2 Claims. (Cl. 280—513)

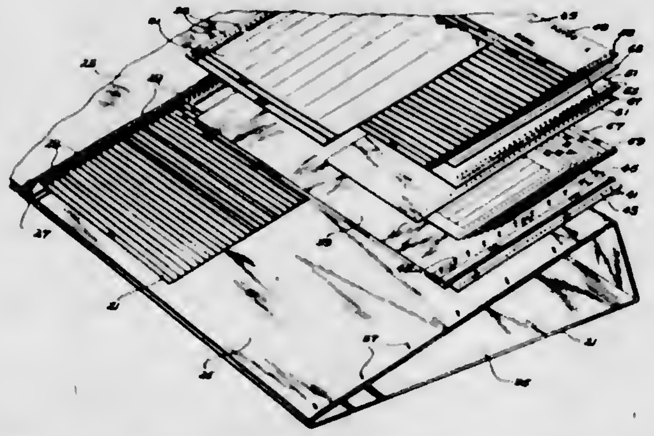


1. In combination, a first vehicle having an upstanding stationary ball-type coupling head; and an improved coupling device separably connectable with said ball-type head and comprising: an elongated open-bottom housing channel-shaped in cross-section and embodying a pair of longitudinally spaced parallel side walls joined at their top portions by a top wall, said housing having a leading end fashioned into and embodying a generally spherical open-bottom socket member for reception of said ball-type head, the trailing end of said housing embodying adapter means adapted to be operatively connected with a second vehicle which, in use, trails behind and is adapted to be pulled through the medium of said coupling device, and a readily applicable and removable abutment comprising a substantially rectangular clamping block located in the channel portion of said housing between the side walls and top wall, the cross-sectional thickness of said block corresponding to the cross-section of said channel portion and having a top wall contacting the underneath side of the top wall of the housing, the bottom wall being flush with the lower edges of the side walls of the housing, said block having a forwardly directed face, said face being recessed and contoured to provide a part-spherical seat oriented and coordinated with and having coacting contact with a cooperating surface of said head, and means assembling and maintaining said abutment block in its operative position in said channel portion, said means embodying a bolt passing through one of the housing walls and also through a bolt hole provided therefor in said block, the threaded shank of said bolt being exposed and having a retaining and adjusting nut and said nut being freely accessible, said channel being provided intermediate its ends with a transverse wall constituting an end thrust member, and jackscrews carried by said block and having headed ends engageable with said end thrust member.

3,184,255

BOOKKEEPING SYSTEM

Elliot Rohde, 7 Green Drive, Roslyn, N.Y.
Filed Aug. 31, 1960, Ser. No. 53,185
3 Claims. (Cl. 282—29)

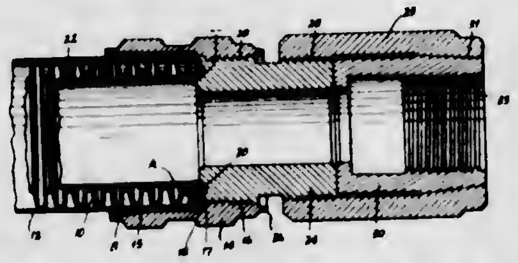


1. A bookkeeping binder folder for recording entries in multiple upon a plurality of business forms, comprising, in combination, a ring binder, having at a middle portion of the binder a plurality of rings which can be opened and closed, a first group of a plurality of business form papers in shingled relationship, the papers being adapted at a side thereof to be held by the binder rings and maintained in shingled relationship while being readily turnable, a second group of a plurality of papers of another business form, also in shingled relationship, with the same overlap as for the first set of forms, means substantially to a side of a middle portion of the binder, for holding the second set of shingled form papers on top of and in desired alinement with the first set, with the free ends of papers of one set near the held ends of papers of the other set, a third form also held by the side holding means, below the second form papers in alinement with them and reproducing means between papers of the different business forms so that an entry made on an upper paper of one form will be reproduced on lower papers of each of the other forms in desired position.

3,184,256

FLEXIBLE CONDUIT

Marshall G. Zavertnik, St. Louis, Mo., assignor to Killark Electric Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Jan. 9, 1961, Ser. No. 81,531
5 Claims. (Cl. 285—12)

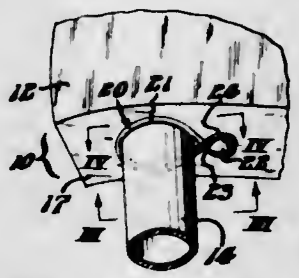


1. A flexible conduit device: comprising a metallic, impermeable, flexible tubular conduit, and a flexible metallic, tubular enclosing element around the conduit; a tubular end fitting at each end, each fitting having a bore in its first end larger than the enclosing element and terminating in a shoulder; a flange-like member disposed adjacent to said shoulder and extending radially inwardly from the entire periphery of said enclosing element and projecting across the ends of the conduit and enclosing element, for attachment thereto, and adapted to be fitted into the bore of the end fitting with its outer portion engaging against the shoulder, and having its inner portion of smaller diameter than the shoulder whereby the member extends inwardly of the walls of the fitting to present exposed faces toward both ends of the fitting, sealing means between the flexible conduit, the enclosing element, the flangelike member, and the walls of the bore of each end fitting; tubular adapters, means securing the first end of one adapter into the second end of each end fitting, the said end of the adapter having an end portion of a diameter to be engageable with the flange-like member, each adapter having attaching means on its second end for attachment to any one of a plurality of other fittings having complementary attaching means at their one end, and having various different attaching devices at their other end; and a selected one of such other fittings attached by said attaching means to each adapter.

3,184,257

FASTENER FOR FURNITURE

Frank J. Valtri, 542 13th Ave., Prospect Park, Pa.
Filed Jan. 16, 1963, Ser. No. 251,835
1 Claim. (Cl. 287—20)

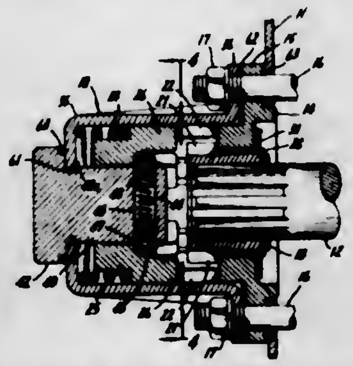


In tubular furniture, the combination of a cylindrical metal leg support, a back having a body cavity into which one end of the leg support is inserted, a single piece of wire fashioned into a hard steel wire fastener having a major loop embracing said leg support at its major circumference and substantially in surface engagement with the undersurface of the back body, said wire fastener having its two ends terminating outside the major loop and fashioned into opposing hook portions which overlap each other and form a small opening therebetween, and a tapered screw inserted through said opening and into said body undersurface to draw said major loop into tight binding engagement which said leg support and to prevent separation of said back and leg support, said screw having a major diameter greater than the width of the opening defined by the overlapping ends of said wire, said screw having a wide head with a flat underhead portion in engagement with the opposing hook portions.

3,184,258

VEHICLE LOCKING HUB

John M. Kapusta, Stickney, Ill., assignor to Cutlas Tool and Mfg. Co., Lyons, Ill., a corporation of Illinois
Filed Aug. 16, 1961, Ser. No. 131,883
2 Claims. (Cl. 287—53)

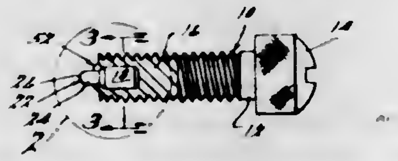


1. A hub for selectively locking a wheel on an axle comprising, in combination, a pair of interfitted annular members one secured to the axle and the other to the wheel, said members having axially extending lugs adapted to come into radial alinement upon relative rotation of said members, a housing surrounding said lugs and being secured to the outer one of said members, said housing having an opening alined with said axle, an annular locking element slidably fitted in said housing for movement axially of said members between locked and unlocked positions, said element having axially extending projections which closely interfit the lugs of one of said members in both the locked and unlocked positions of said element, said projections being formed to closely interfit the lugs on the other of said members when said locking element is advanced to its locked position between said members while the lugs of said members are in radial alinement, biasing means within said housing and bearing against said element to urge it toward its locked position, a control shaft rotatably extending axially through said annular locking element and projecting outwardly through said opening in said housing, said control shaft being rotatably mounted with respect to said locking element, a control knob secured to the end of said shaft outside said housing, a pair of diametrically opposed cam followers mounted in said control shaft within said annular locking element, a single spring member mounted within said control shaft between the cam followers and biasing said cam followers radially outwardly toward said locking element, said locking element having a pair of corresponding helical cam surfaces on the inner periphery thereof abutting said cam followers under the urging of said biasing means, said surfaces being formed to cam said locking element against said bias from locked to unlocked positions upon rotation of said control knob, said cam surfaces also having slight depressions at each end thereof so as to resiliently seat said cam followers under the urging of said spring member in both the locked and unlocked positions.

3,184,259

CARBIDE TIPPED ARTICLES AND METHOD FOR MAKING SAME

Einar R. Almdale, Ann Arbor, Mich., assignor to The Walmet Corporation, Pleasant Ridge, Mich., a corporation of Michigan
Filed Nov. 14, 1962, Ser. No. 237,492
7 Claims. (Cl. 294—86)



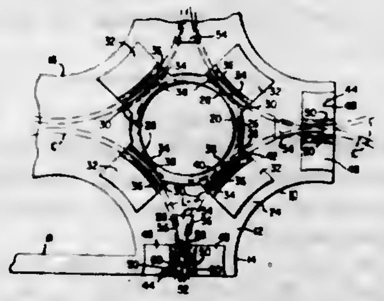
1. An article comprising a ferrous elongated body member, a cylindrical bore in said body member, a cemented carbide member having a body portion and a shank portion, said shank portion extending outwardly from said body portion and integrally united thereto by an abutment portion, said body portion positioned in said cylindrical bore so that the inner end of said body member is adjacent the bottom surface defining the inner extremity of said bore and said abutment portion is adjacent to the cylindrical wall defining the outer extremity of said bore, and a closure member integral with the said cylindrical wall in abutting surface engagement with said abutment portion of said cemented carbide member.

3,184,260

CARRIER FOR BEVERAGE CANS AND THE LIKE

Bela Horvath, Bridgeport, Conn., assignor to Plasti-Carrier, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Oct. 9, 1961, Ser. No. 143,770
8 Claims. (Cl. 294—87.2)

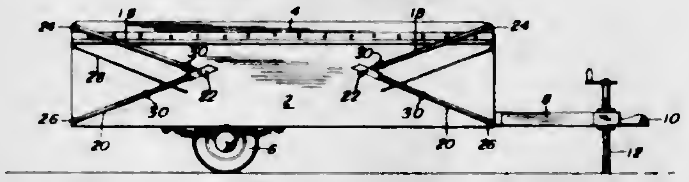
1. A carrier for a plurality of cans having circular tops with circular lips formed about the rims of the can tops comprising: a unitary thin generally planar body of soft pliable material; said body including a plurality of spaced finger openings; and said body including on one of its sides a plurality of groups of pairs of raised locking lugs and associated positioning lugs; each of said groups comprising a plurality of spaced pairs of flexible locking lugs and associated positioning lugs that are disposed to individually retain a can by engaging the can lip at least at three arcuately spaced locations over an arc of approximately ninety degrees, said locking lugs and positioning lugs having opposed spaced walls forming entranceways for the can lids, and said locking lugs having flexible locking flanges extending toward but short of their associated positioning lug wall, whereby cans may be individually mounted or removed from said carrier by being manually snapped on or off said carrier.



3,184,261

COLLAPSIBLE AND EXTENDABLE STANDARD

Charles H. Young, 10461 Glenwood, Osceola, Ind.
Filed Oct. 18, 1963, Ser. No. 317,321
5 Claims. (Cl. 296—26)

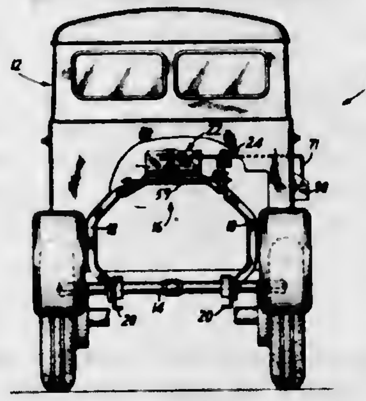


1. A collapsible and extendable standard which comprises an upper and lower support member pivotally joined by a locking sleeve, one of said support members being permanently affixed to one end of said sleeve the other of said support members being pivotally attached to said sleeve, said sleeve having a free end extending over said pivotally attached support member, the latter support member including a locking ring pivotally mounted thereon at a position such that the free loop thereof may be placed over the free end of said locking sleeve when said support members are in a position such that they are extensions of each other.

3,184,262

CAB MOUNTING DEVICE

Gerald E. Mintz, Emmaus, Pa., assignor to Mack Trucks, Inc., Plainfield, N.J., a corporation of New York
Filed Nov. 6, 1962, Ser. No. 235,661
8 Claims. (Cl. 296—35)



1. In a vehicle having a cab mounted pivotally with respect to the frame thereof, said frame including spaced-apart frame members, the combination therewith of cab mounting means, comprising a resilient mounting block

attached to each of the spaced-apart frame members and extending generally laterally from the frame members, a yoke spanning the spaced-apart frame members and connected to the opposite ends of each of said mounting blocks, releasable latch means on said cab, and means on said yoke cooperative with and receiving said releasable latch means for releasably securing the cab to said yoke, whereby floating vertical movement of said yoke and the cab is afforded.

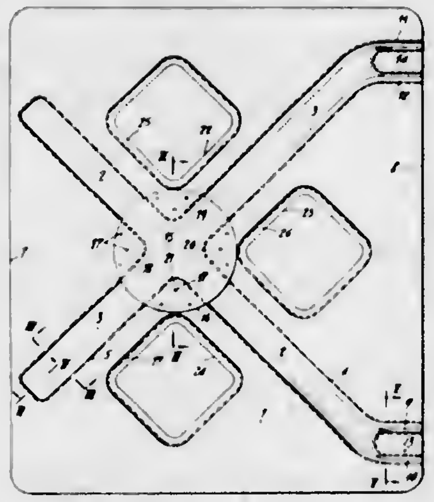
3,184,263
MOTOR VEHICLE DOOR PANEL STRUCTURE

Alain Edouard Plegat, Asnieres, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, France, a company of France

Filed Apr. 1, 1963, Ser. No. 269,239

Claims priority, application France, Apr. 25, 1962, 895,590, Patent 1,329,016

4 Claims. (Cl. 296—44)



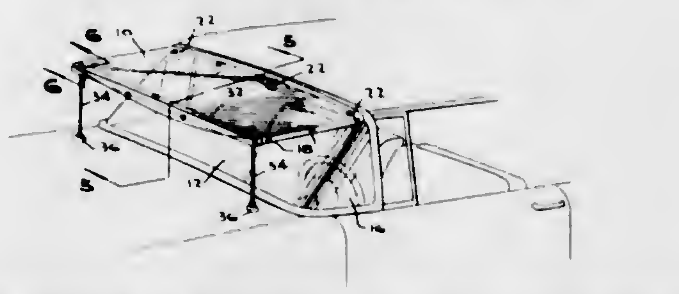
1. A door for a motor car body, comprising an outer and an inner sheet, said sheets having their edges secured together, said inner sheet being a substantially flat sheet having at least two protruding stiffening ribs formed in said flat sheet and integral therewith, said ribs crossing one with the other and protruding from one surface only of said sheet, and a small thin flat plate rigidly connected to said inner sheet on the flat surface thereof opposite to that from which said ribs are protruding, said small plate further covering at least a portion of said sheet where said ribs cross one another whereby the flat inner sheet, the ribs and said small plate enclose a hollow reinforced portion of said flat sheet.

3,184,264
WINDSHIELD PROTECTOR

James C. Ealey and Richard Ousley, Raceland, Ky., assignors of one-third to Charles B. Johnson, Russell, Ky.

Filed Feb. 15, 1963, Ser. No. 258,704

1 Claim. (Cl. 296—95)



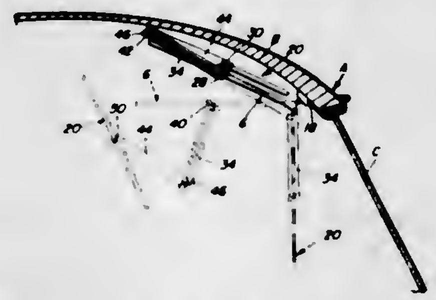
In combination, a windshield having a main transverse vertical portion having an upper edge, and a vehicle body portion extending forwardly from the lower edge of the windshield, a cover comprising a flexible sheet having a main portion substantially as wide as the windshield, the major portion of said main portion of the sheet being horizontally disposed and spaced above said body portion, said sheet main portion having a rear edge portion which is flexed upwardly relative to the main portion of the sheet, first means securing said rear edge portion to the main portion of the windshield at a location adjacent to and below the upper edge of the windshield main portion, said first securing means comprising a plurality of suction cups longitudinally-spaced on said windshield main portion and connected to the sheet by snap fasteners and second means secured to the said body portion and to the main portion of the sheet and retainably spacing the main portion of the sheet above said body portion, said second means comprising a normally horizontal beam, snap fastening means releasably connecting the forward edge of the main portion of said sheet to said beam, a plurality of standards having one of their ends fixedly secured to said beam at longitudinally-spaced intervals with the other ends of said standards depending therefrom, and a suction cup secured, respectively, to each lower end of said standards for releasable engagement with said vehicle body portion.

3,184,265
DUAL PURPOSE ANTI-GLARE SHIELDS

Rocco Calabrese, 34 W. Somerset St., Raritan, N.J.

Filed Nov. 28, 1962, Ser. No. 240,646

2 Claims. (Cl. 296—97)



1. In combination, a first flat-faced elongated panel, said panel being rigid, non-transparent and constituting a sun visor, means cooperable with and designed and adapted to adjustably mount said first panel on relatively stationary support means for cooperation with a relatively stationary windshield, said panel being provided at median portions of its respective transverse ends with axially aligned screw-threaded assembling and retaining studs, a second flat-faced elongated panel similar to the first panel but semi-transparent and provided at its respective transverse ends with outstanding screw-threaded studs similar to the first-named studs, and linkage for connecting the stud-equipped transverse ends of said panels together in assembled but relatively adjustable relationship, the linkage at each end comprising a first longitudinally slotted link, one end of said link being detachably and adjustably connected with a cooperating screw-threaded stud, and a second link, said second link being detachably and adjustably connected at one of its ends with the cooperating stud on the coacting end of said second panel, said second link being provided with a screw-threaded stud extending through a cooperating end portion of the slot in the first-named link and said stud being provided with an assembling and retaining nut.

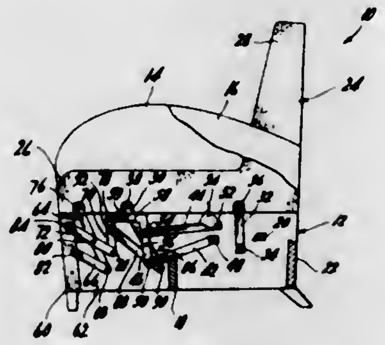
3,184,266
MULTIPLE POSITION RECLINING CHAIR

Fridtjof F. Schliephacke, Berlin-Schmargendorf, Germany, assignor to Anton Lorenz, Boynton Beach, Fla.

Filed Dec. 28, 1962, Ser. No. 248,105

10 Claims. (Cl. 297—89)

1. A multiple position reclining chair comprising a support frame, a body-supporting structure including a seat and back-rest mounted for movement through a first motion phase from an upright sitting position to an intermediate, tilted sitting position and through a second motion phase to a fully reclined position, a pair of spaced carrier links extending forwardly of said chair and pivotally mounted at their rear ends at spaced points on the support frame, an intermediate link extending between and pivotally connected to the forward ends of said carrier links, said intermediate link and carrier links constituting a four-bar linkage, means supporting said four-bar linkage in a stationary position during the first motion phase, front and rear guide means supporting the body-supporting structure and guiding the same for movement during the first motion phase, said front guide means including a front guide link pivotally mounted on the four-bar linkage and pivotally connected to the forward portion of the seat, said front guide link having an extension depending below its pivotal mount on said four-bar linkage, a leg-rest, a leg-rest linkage carrying said leg-rest, one link of said leg-rest linkage being pivotally mounted on said intermediate link at a mounting pivot, and an actuating link pivotally connecting said front guide link extension with said leg-rest linkage, said front guide link turning on the stationary four-bar linkage during the first motion phase to elevate the leg-rest to an extended position forwardly of the seat, said four-bar linkage and said front guide link being raised as a unit with the forward portion of the seat during the second motion phase to maintain the leg-rest in its extended position forwardly of the seat, said four-bar linkage being arranged to turn said intermediate link relative to the seat as the four-bar linkage is raised during the second motion phase, whereby to displace said mounting pivot and adjust the position of the extended leg-rest relative to the seat.

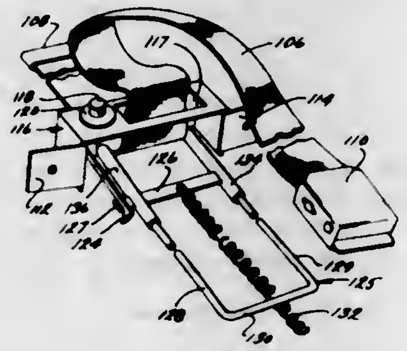


3,184,267
RETRACTING SEAT BELT ASSEMBLY

Richard K. Rumble, 1640 Laurel SE., Grand Rapids, Mich.

Filed Jan. 25, 1963, Ser. No. 254,553

1 Claim. (Cl. 297—388)



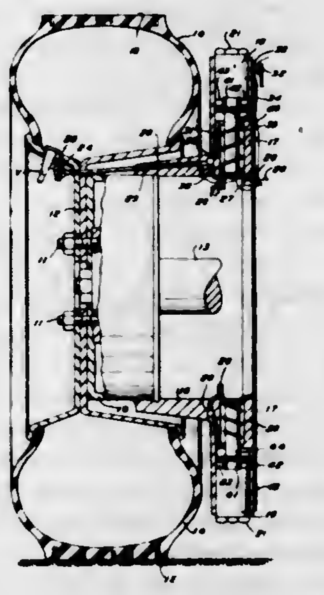
A retractable seat belt assembly, comprising: a housing having mounting means for attachment to the end of a vehicle seat with one side of said housing against the seat; an elongated U-shaped carriage guide means having the free ends of the parallel legs of the U secured to said housing; a carriage having a pair of sleeves slidably mounted on the legs of said U; said carirage having a first crosspiece; a retraction spring attached to said crosspiece and extending away from said housing to normally retract said carriage toward the closed end of said U; a second crosspiece on said carriage spaced toward said housing from said first crosspiece; a belt receiving opening in the top of said housing, oriented normal to the U-shaped guide means; a seat belt extending around said second crosspiece and out said opening, and having a buckle outside said housing; said opening being larger than said belt and smaller than said buckle; belt guide means adjacent said opening; a shiftable latch mounted inside said housing alongside said U; a latch engaging portion on said carriage shiftable into operative engagement with said latch; said latch being biased into a latching position and having a camming surface engageable with said portion to be shifted momentarily against its bias for latching engagement; a latch release having portions engageable with said latch to depress it against its bias for releasing said latch from said carriage; and said release extending out the top of said housing adjacent said opening for manual actuation thereof.

3,184,268
AUXILIARY TRACTION DEVICE FOR VEHICLES

Kenneth F. Blindenbacher, 325 W. Maple Ave., Merchantville, N.J., and Paul A. Reihmann, 6529 Collins Ave., Pennsauken, N.J.

Filed Nov. 6, 1963, Ser. No. 321,774

9 Claims. (Cl. 301—39)

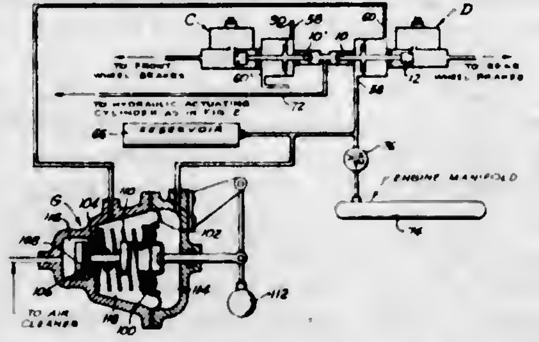


1. In an axle driven wheel for a vehicle, said wheel having a metal rim and an inflatable tire carried on said rim and having a road engaging tread, the combination therewith of auxiliary driving equipment for use in mud or on snow covered roads, said equipment including a support secured to said wheel laterally thereof and provided with a plurality of angularly spaced radially disposed cylinders, each of said cylinders having therein a radially outwardly expansible element with a road engaging end portion movable radially beyond said tread of said tire, resilient members in each of said cylinders for retracting said expansible elements radially inwardly, fluid pressure control means for said cylinders for effecting outward movement of said expansible elements including a fluid connection to the interior of said tire for pressure delivery therefrom and a solenoid controlled valve in said fluid connection for controlling fluid pressure application therefrom, locking members for each of said expansible elements and having locking arms engageable with the respective cylinders for holding said expansible members in their outer positions, and members for retracting said locking arms.

3,184,269
BRAKE BALANCING DEVICE FOR HYDRAULIC BRAKE SYSTEM

Robert R. Hager, South Bend, Ind., assignor to The Bendix Corporation, South Bend, Ind., a corporation of Delaware

Filed Oct. 19, 1961, Ser. No. 146,101
6 Claims (Cl. 303—6)



1. For a vehicle braking system having front and rear brakes:

a hydraulic fluid displacement means for developing hydraulic pressure for actuating said front and rear brakes;

a servomotor means operatively connected with said fluid displacement means and said rear brakes, which servomotor means includes a housing divided into a first, a second, and a third chamber for an input piston, an output piston and a pressure suspended piston, respectively, with means to integrally connect said pistons, the operative connection between the servomotor means and the means distributing hydraulic pressure to said rear brakes being arranged such that said hydraulic pressure is directed to said input piston;

a fluid pressure source in communication with one end of said third chamber on one side of said pressure suspended piston adjacent said input piston;

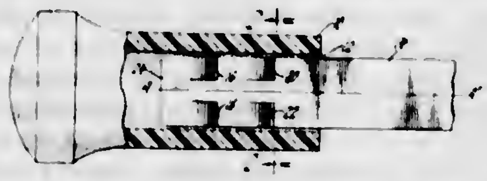
a control valve structure including a housing having a cavity therein including a first inlet connected to said fluid pressure source, a second inlet communicating with a pressure differing from said fluid pressure source, and a discharge port connected by appropriate means to said third chamber on the other side of said pressure suspended piston, said control valve structure further including a valve means including a pressure responsive member operatively arranged in said housing to control communication between said first or second inlets with said discharge port; and

a deceleration responsive means operatively connected to said valve means to normally allow communication of one of said inlets with said discharge port and arranged to prevent communication between said inlets and said discharge port before a transition of closing said inlet normally open to said discharge port and opening said second inlet to said discharge port.

3,184,270
HANDLE FASTENER

Joseph D. Ruhala, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 20, 1963, Ser. No. 266,529
2 Claims. (Cl. 306—41)



1. A handle fastener including:

a handle having a multi-sided recess therein;

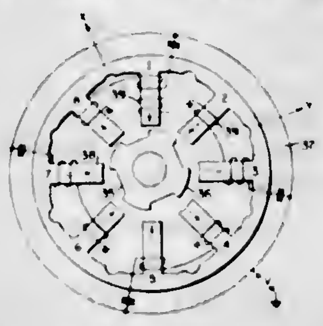
a multi-sided arm adapted to be inserted into said recess in said handle in more than one position, said arm having a longitudinal axis;

and means to lock said arm within said recess in said handle comprising a pair of locking flanges extending outwardly from opposite faces of said arm and disposed one above and one below said axis, each of said flanges terminating in an outer sharp edge adapted to engage the handle within the recess, said edges being substantially in a plane drawn normal to said axis, a pair of camming flanges located at a position on said arm spaced axially thereof from said locking flanges and extending outwardly from opposite faces of said arm, disposed one below and one above said axis, each of said camming flanges terminating in a sharp outer edge adapted to engage the handle within the recess, said camming flange edges being substantially in a plane drawn normal to said axis, said camming flanges extending from diagonally opposite points of said opposite faces from which said locking flanges extend, the effective width of the arm including said locking flanges being less than that of the arm including all of said flanges when said arm is inserted into said recess in a first position such that the locking flanges due to their effective width do not engage said recess while the effectively wider camming flanges will so engage the recess and cant the arm about said axis to a second position with respect to the handle thereby twisting the locking flanges into the sides of said recess and locking said arm to said handle.

3,184,271
SUPPORTS FOR ROTATING OR OSCILLATING MEMBERS

Philip J. Gilinson, Jr., Chelmsford, Mass., assignor, by mesne assignments, to Massachusetts Institute of Technology, a corporation of Massachusetts

Filed May 15, 1957, Ser. No. 659,395
7 Claims. (Cl. 308—10)



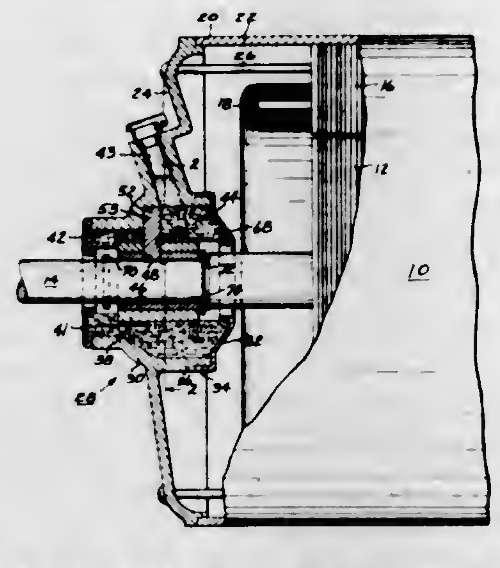
1. Microsyn apparatus comprising a stator having a multiple of four pairs of poles, a rotor having circular arcs equal in number to the pairs of poles, each arc spanning adjacent poles, primary coils on the poles arranged to direct fluxes inward and outward in the poles of each pair, a plurality of condensers to form with the primary coils a number of resonant circuits, means for energizing said circuits so that the rate of change of current in any coil with respect to the inductance of the coil is negative, whereby radial centralizing forces on the rotor are generated upon any departure of the rotor from a centralized position, and secondary coils on the poles to carry microsyn currents related to the angular position of the rotor.

3,184,272
LUBRICATING MEANS FOR A ROTATABLE DEVICE

Asa J. Ridgway, Jr., Bellefontaine Neighbors, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Filed Mar. 28, 1962, Ser. No. 183,103
5 Claims. (Cl. 308—132)

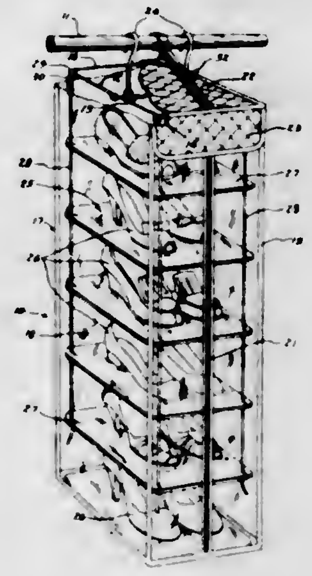
1. In a device including a bearing housing having wall portions defining a lubricant reservoir, a sleeve bearing connected in said housing and having a bearing surface therein, a lubricant access aperture extending through said bearing and connecting said bearing surface with said reservoir, and a shaft rotatably received in said bearing on said bearing surface, the combination therewith comprising a resilient wick member positioned in said housing with a portion thereof in said reservoir and another portion thereof in said aperture in direct engagement with said shaft for transferring liquid lubricant thereto from said reservoir, said wick member engaging and being partially compressed between a wall portion of said reservoir and said shaft to prevent displacement movement thereof, and a lubricating mixture substantially filling the remaining portion of said reservoir in lubricant transfer relation with said wick member for supplying liquid lubricant to said shaft through said wick member including a liquid lubricant and cellulose base fibers flowable and substantially non-separable when flowing under pressure.



3,184,273
SHELF BAG STABILIZER

Ronald S. Blough, Fairfield, Iowa, assignor to Universal Producing Company, Fairfield, Iowa, a corporation of Iowa

Filed Jan. 23, 1963, Ser. No. 253,420
2 Claims. (Cl. 312—6)



2. In combination,

(*a*) an elongated cylindrical support,

(*b*) a shelf bag having a wire top frame including at least one end section formed with an offset mid-portion and a center section, covering means enclosing said frame to define a storage area, and a shelf assembly fastened to said wire top frame and extended within the storage area, said covering means having a hole adjacent the offset mid-portion of said end section of the wire top frame,

(*c*) a pair of spaced hook means pivotally connected to said center section of the wire frame, said hook means extending over said support to connect the frame with the support,

(*d*) article supporting shelves suspended from said wire top frame,

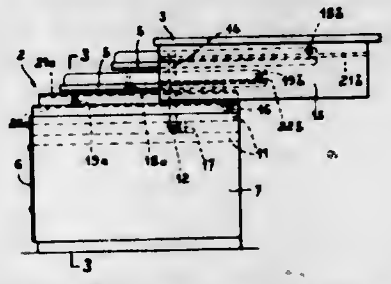
(*e*) an elongated reversely bent arm means having a curved apex and a pair of legs, each leg formed with an outwardly convex curved section which extends over said support, said apex extending about the offset mid-portion of said end section of the wire frame, and

(*f*) means connecting the legs on opposite sides of the support to clamp the curved section of each leg of said arm means on the support thereby providing a rigid arm for holding the wire frame in a substantially horizontal position, with said legs lying in planes extended laterally of and through said support to opposite sides of and reversely inclined relative to a plane extended diametrically of said support.

3,184,274
MULTIPLE-PLATFORM OFFICE DESKS

Joachim Mugnier, 24 Rue Carnot, Annecy, Haute-Savoie, France

Filed Jan. 4, 1963, Ser. No. 249,421
Claims priority, application France, Jan. 19, 1962, 42,215, Patent 1,311,027
3 Claims. (Cl. 312—196)



1. A multiple-platform desk comprising a stationary base formed with a horizontal first working platform; a horizontally movable member having a second working platform vertically spaced from and parallel to said first platform while being substantially coextensive therewith in a closed condition of said desk; mounting means adjacent said first platform and including first antifriction means interposed between said base and said member and located proximal to the rear edge of said base and carrying said movable member while enabling displacement thereof from a closed position wherein it overlies said first platform to an open position wherein said second platform projects rearwardly beyond said base while being supported by cantilever action thereon, said mounting means further including second antifriction means interconnecting said movable member and said support and affixed to said movable member at a forward edge thereof to prevent tilting of said second platform in the open position thereof; and at least one additional platform between said first and second platforms shiftably mounted on said movable member at the rear of said additional platform and on said base at the front of the additional platform.

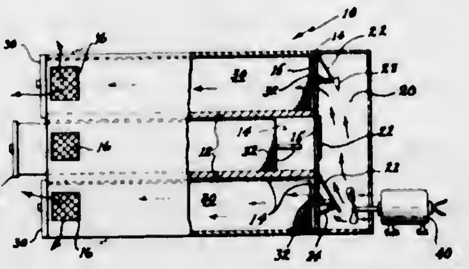
3,184,275
FORCED AIR COOLING OF ELECTRONIC EQUIPMENT

Colin D. Gardner, Glen Burnie, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed Oct. 25, 1963, Ser. No. 319,081
2 Claims. (Cl. 312—213)

1. An air cooled cabinet for electronic equipment, comprising: a cabinet housing; partitions of electrical shield-

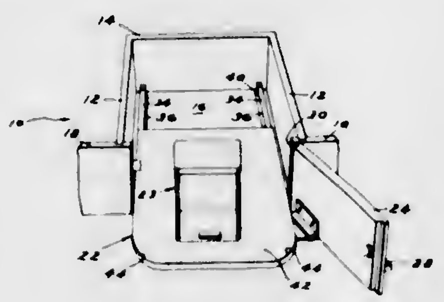
ing material in said housing to form pneumatically and electrically mateiral in said housing to form pneumatically and electrically separate compartments therein, said compartments each having inlet and outlet openings designed to pass a desired air flow therethrough, said outlet opening being in communication with the exterior of said cabinet housing; a plenum chamber communicating with said compartments through said inlet openings; flap valves hinged in said chamber over said inlet openings to swing down and close said inlet openings; drawers containing electronic equipment inserted into said compartment; plunger rods extending through said inlet openings from said drawers upon insertion into said compartments to push said flaps upward and open said inlet openings; and a forced air source for said plenum chamber causing a cooling circulation through said cabinet.



3,184,276

SLIDING SHELF DOOR STRUCTURE

Willis Eugene Billups, 20138 Revere, Detroit, Mich.
Filed Apr. 2, 1962, Ser. No. 184,278
1 Claim. (Cl. 312—274)

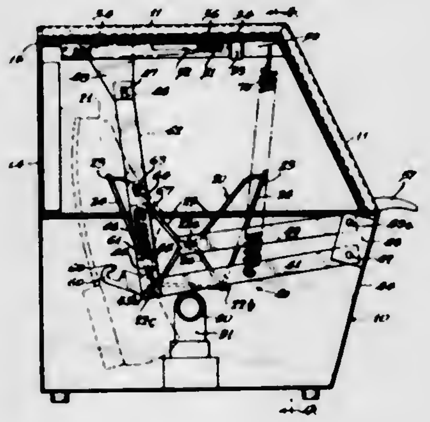


In a cabinet construction comprising a cabinet having an elongated recess through the front thereof and a door for the cabinet hinged for swinging movement about a vertical axis at one side of the recess: a pair of horizontal, laterally spaced parallel carriage tracks within said recess fixedly connected to the bottom of the cabinet and extending from front to rear of said recess, each of said tracks having a transverse channel-shaped cross-section and including a vertical web and a pair of laterally inwardly extending top and bottom horizontal flanges, an elongated substantially flat one piece carriage made from a plastic material disposed in the recess and arranged for horizontal forward and rearward movement into and out of the cabinet, said carriage including on the bottom surface thereof a pair of integral downwardly extending elongated parallel flanges spaced inwardly from the longitudinal edge portions of the carriage and extending forwardly and rearwardly, the flanges on said carriage extending into the space between said tracks and being located closely adjacent and parallel to said tracks with said longitudinal edge portions overlying the top flanges of said tracks, a front pair and a rear pair of laterally spaced rollers mounted on the respective flanges of said carriage, the rollers of each pair engaging the bottom flanges of said tracks, said pairs of rollers holding the longitudinal edge portions of the carriage above and spaced from the top flanges of said tracks, said rollers being arranged to roll on said bottom flanges lengthwise of said tracks upon movement of said carriage, means linking the door and said carriage whereby opening of the door withdraws said carriage forwardly from said recess and closing of the door returns said carriage rearwardly to said recess, said linking means comprising an elongated actuating arm connected on one end thereof to the inner surface of the door and extending into the space between said tracks beneath the bottom surface of said carriage when the door is closed, said carriage also including an integral downwardly facing trackway on the bottom surface thereof intermediate said flanges on said carriage, said trackway including a pair of laterally spaced downwardly extending elongated parallel side walls extending from one of the flanges of said carriage to a point closely adjacent the forward edge of the carriage, said one flange of the carriage being the flange closest to the hinged axis of the door, said trackway including only two portions namely an inner arcuate portion adjacent said one flange of the carriage of less than 90 degrees and an outer portion which is substantially straight and closed at the forward end thereof, a cam follower carried by the other end of said actuating arm for engagement with the side walls of said trackway, said cam follower and said arm being located closely adjacent said one flange when the door is closed, a front pair and a rear pair of guide bearings mounted at the outer sides of the flanges on said carriage for engagement with the webs of said tracks and holding the flanges on said carriage spaced laterally inwardly from said tracks, said guide bearings having their axes arranged substantially perpendicular to the axes of said rollers for guiding said carriage during lengthwise movement thereof, said front pair of bearings being near to but rearward of said front pair of rollers and said rear pair of bearings being near to but forward of said rear pair of rollers, said arm serving as a support for the forward end of said carriage when the carriage is moved outwardly of the recess to extend substantially beyond the recess of the cabinet.

3,184,277

SHOE SANITIZING DEVICE

Eric S. Stevens, Muskegon, Mich., assignor to
Brunswick Corporation
Filed Jan. 25, 1962, Ser. No. 168,606
20 Claims. (Cl. 312—276)

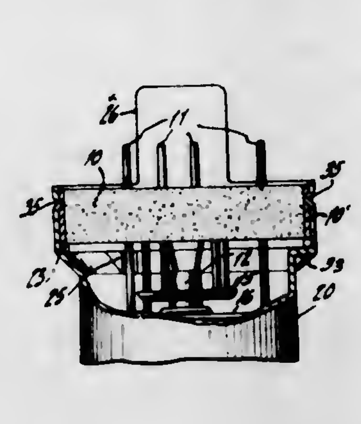


14. In a shoe sanitizing device, the combination of: the cabinet including a body and a closure; a shoe holding rack in said cabinet; means mounting said closure on said body for movement between open and closed positions and said rack for concurrent movement between a raised servicing position and a lowered sanitizing position, respectively, whereby said rack is moved between its lowered and raised poistion as said closure is moved between its closed and opened positions, respectively; and holding means for releasably retaining said closure in selected position.

3,184,278

METHOD OF MANUFACTURING ELECTRON DISCHARGE DEVICES

James F. Miller, Smoke Rise, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed May 29, 1961, Ser. No. 113,500
5 Claims. (Cl. 316—19)

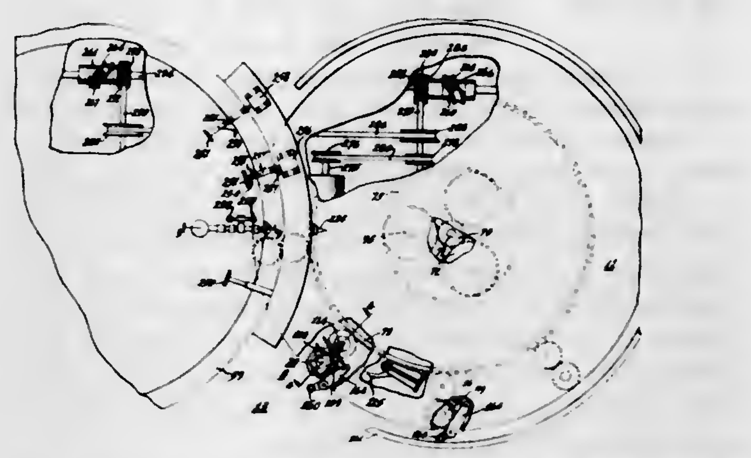


1. The method of manufacturing an electron discharge device having an envelope with a hollow base portion and having an insulating disc supporting an electrode mount assembly in said envelope, said disc being received within and sealed at its circular periphery to the inner wall of said base portion, said method comprising positioning a brazing ring within said envelope and adjacent to said inner wall, said brazing ring having an outer diameter substantially the same as the outer diameter of said disc, inserting said disc in contact with said brazing ring and within said base portion with portions of its circular periphery spaced from the inner wall of said base portion and with said electrode mount assembly in place, thereafter dimpling the wall of said base portion to hold said disc and said brazing ring in place, exhausting said envelope through the space between said disc and the inner wall of said base portion, and applying brazing heat to heat and melt said brazing ring to seal with a braze the periphery of said disc to the inner wall of said base portion of said envelope.

3,184,279

APPARATUS FOR SEALING AND EXHAUSTING

George A. Shaffer, Jr., Union, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Jan. 16, 1961, Ser. No. 82,949
14 Claims. (Cl. 316—31)



10. In apparatus for sealing and exhausting hollow articles, each article comprising an envelope having an outwardly extending exhaust tubulation and an envelope closure header, the combination of means for fusing the envelope of an article to be processed to its closure header, means including an exhaust head for exhausting said article, means for disposing said article into vertical registry with said exhaust head, and means acting in cooperation with said disposing means for transferring said article to said exhaust head, said transferring means comprising means for moving said article directly upwardly for insertion into said exhaust head, drive means for actuating said translating means, a plurality of linkages for coupling said drive means to said translating means, one of said linkages being coupled to another of said linkages through spring take-up means whereby only a predetermined portion of the motion transmitted from said drive means through said one linkage is conveyed to said other linkage, and an adjustable stop means for controlling said portion of said motion conveyed.

CHEMICAL

3,184,280

SOLID DYEINGS AND PRINTS ON POLYHYDROXYLATED MATERIALS

Werner Zerweck, Frankfurt am Main, Richard Fleischhauer, Frankfurt am Main, Fechenheim, and Heinz Bender, Bergen-Enkheim, Kreis Hanau, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main, Fechenheim, Germany, a company of Germany
No Drawing. Filed Jan. 30, 1962, Ser. No. 169,931
Claims priority, application Germany, Feb. 2, 1961, C 23,313
9 Claims. (Cl. 8—54.2)

1. A process for dyeing and printing a polyhydroxylated material of fibrous structure which comprises treating the polyhydroxylated material with an organic dye that contains at least one substituent radical having the formula

$$—NH—CO—C_2Hn—ZR'$$

in which

ZR' is a radical of the group consisting of alkanesulfonyl, cycloalkane sulfonyl, aralkanesulfonyl, arenesulfonyl, arenesulfinyl, arylthio and aryloxy, and

n is an integer of the group consisting of 2 and 4, and fixing the dye thereon by subjecting the thus treated polyhdroxylated material to the action of heat.

3,184,281

PROCESS FOR DYEING POLYOLEFIN ARTICLES

Yoshio Tsunoda, Tokyo, Toru Taneda, Ibaragi-shi, Kiyoshi Akamatsu, Itami-shi, and Kenichi Matsui, Hirakata-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
No Drawing. Filed Dec. 20, 1962, Ser. No. 245,978
Claims priority, application Japan, Feb. 2, 1962, 37/3,292
13 Claims. (Cl. 8—4)

1. In a process for dyeing shaped articles produced from polyolefin material selected from the group consisting of polyethylene, polypropylene and polybutene-1, said polyolefin being modified by the addition thereto of at least one substance selected from the group consisting of polyaminotriazoles, polytriazoles, polyethyleneimines, polyamides and epoxy resins, the improvement comprising treating said articles wtih a naphthalene compound having a naphthalene nucleus with a pair of hydroxyl and carboxyl groups adjacent to each other therein selected from the group consisting of 2-oxy-1-naphthoic acid, 3-oxy-2-naphthoic acid, 4-chloro-3-oxy-2-naphthoic acid, 4-methoxy-3-oxy-2-naphthoic acid and 8-chlor-2-oxy-1-naphthoic acid.

3,184,282

SINGLE PAD THERMAL PROCESS FOR DYEING TEXTILE FIBERS

John Elton Cole, Jr., and William Henry Gumprecht, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 11, 1963, Ser. No. 272,221
3 Claims. (Cl. 8—21)

3. A process for dyeing and printing fabrics, said fabrics consisting essentially of cellulosic and polyester fibers, in which process a member selected from the group consisting of a printing composition and a padding solution is applied to said fabric, said printing composition and said padding solution containing a member selected from the group consisting of an alkali-metal carbonate and an alkali-metal bicarbonate, a disperse dye and a dye containing a 2,3-dichloro-6-quinoxalinecarbonylamino group, followed by drying and heating the treated fabric for 45 to 90 seconds at a temperature of from 390° to 425° F., and washing the resulting dyed fabric.

3,184,283

PROCESS FOR APPLYING FIBER-REACTIVE DYES TO CELLULOSIC MATERIALS

John Elton Cole, Jr., and William Henry Gumprecht, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 14, 1963, Ser. No. 251,042
6 Claims. (Cl. 8—54.2)

1. A continuous process for dyeing cellulosic materials with a fiber-reactive dye containing a 2,3-dichloro-6-quinoxalinecarbonylamino group, said process being one wherein cellulosic material is (1) padded at a pH of from 6 to 7.8 with an aqueous solution of said fiber-reactive dye, (2) the padded material then being dried followed by (3) treating the dried material with an aqueous alkaline liquor, the alkali of said liquor being weaker than 5 grams per liter of sodium hydroxide and stronger than sodium bicarbonate, said liquor containing from 200 to 300 grams per liter of sodium sulfate followed by (4) steaming the resulting material from (3) and then (5) washing the resulting material of step (4).

3,184,284

DYE-PAD, HOT-CHEMICAL-TREATMENT DYEING PROCESS

Erik Kissa, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 11, 1963, Ser. No. 272,220
4 Claims. (Cl. 8—54.2)

1. A process for applying fiber-reactive dyes which contain a 2,3-dichloro-6-quinoxalinecarbonylamino group to cellulosic materials which process consists essentially of the following steps:

(1) the cellulosic material is padded with said fiber-reactive dye from an aqueous solution of said dye, said solution being maintained at a pH of from 6 to 7.8;

(2) the resulting dye-padded material is then treated for at least five seconds with an aqueous alkaline liquor consisting essentially of from 2 to 15 g./l. of sodium hydroxide and 200 to 300 g./l. of electrolyte selected from the group consisting of NaCl and Na_2SO_4, the temperature of said liquor being 160° to 218° F.;

(3) the dyed fabric of step (2) is then washed.

3,184,285

CONTINUOUS STABILIZATION OF WOOL WITH CHLORAMINES OR CHLORAMIDES AND A CHLORIDE-BROMIDE MIXTURE

Wilhelm Bitterli, Oberwil, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Mar. 26, 1962, Ser. No. 182,666
Claims priority, application Switzerland, Mar. 27, 1961, 3,618/61
9 Claims. (Cl. 8—127.6)

1. A continuous process for rendering wool fabric stable to felting and shrinking, which process comprises applying to the fabric for 10 to 60 seconds in an aqueous bath of latent reactivity, which bath has a pH value of 6.5 to 8.0 and contains as sole active ingredient a compound with the atomic grouping of the formula

$$N—Cl$$

selected from the group consisting of chloramines and chloramides, squeezing the fabric, transferring it continuously into a second aqueous bath having a pH value below 3 and containing alkali metal chlorides and alkali metal bromides, the alkali metal chlorides and alkali metal bromides supplying as sole active ingredients chloride and bromide ions, the amount of chloride ions being 50 to 400 times that of the bromide ions, treating the fabric in this bath from 20 to 180 seconds, and dechlorinating the treated fabric.

3,184,286

$Cs_2B_{12}H_{12}\cdot CsNO_3$ PRODUCT AND PROCESS FOR MAKING SAME

David C. England, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Feb. 17, 1961, Ser. No. 90,012
4 Claims. (Cl. 23—14)

1. A double salt of the formula

$$Cs_2B_{12}H_{12}\cdot CsNO_3$$

2. A process for the formation of $Cs_2B_{12}H_{12}\cdot CsNO_3$ which comprises bringing together the following reactants:

(1) a compound of the formula $M'_2B_{12}H_{12}$ wherein M' is a cation selected from the class consisting of hydrogen, ammonium, alkali metal, and N-substituted ammonium in which the substituents are hydrocarbon of 1–8 carbon atoms.

(2) a compound of the formula $M''NO_3$ wherein M'' is a cation selected from the class consisting of hydrogen and alkali metal, and

(3) a cesium salt selected from the class consisting of cesium halide, cesium carbonate, cesium sulfate, cesium phosphate, cesium hydroxide, cesium dodecahydrododecaborate and cesium nitrate,

in a solvent inert to the reactants, and isolatiing the resulting product.

3,184,287

PROCESS FOR THE PRODUCTION OF SODA ASH FROM UNDERGROUND TRONA DEPOSITS

Alan B. Gancy, Princeton, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 5, 1961, Ser. No. 143,099
4 Claims. (Cl. 23—63)

1. A method for preventing the formation of an insoluble dissolution barrier on the face of an underground trona deposit subjected to in situ solution mining and for the preparation of soda ash from trona solutions which comprises passing an aqueous solution of an alkali having a pH greater than sodium carbonate into an underground trona formation and along the face of the trona deposit, dissolving trona in situ from the exposed face of the deposit and preventing the formation of an insoluble dissolution barrier along the face of the deposit by use of said alkali in the dissolving solution to convert the sodium bicarbonate in the trona to a normal alkali carbonate and prevent the redeposition of sodium bicarbonate in the lattice network of insoluble material formed on the face of the trona deposit undergoing solution, withdrawing the pregnant carbonate solution from the underground formation, crystallizing sodium carbonate values from the solution, separating the crystals from the mother liquor, calcining the carbonate crystals to soda ash, adding an alkaline earth metal hydroxide to a portion of said mother liquor containing sodium carbonate whereby an alkaline earth metal carbonate is precipitated and the sodium carbonate is converted to sodium hydroxide and recycling the sodium hydroxide solution to the underground trona formation to dissolve more trona.

3,184,288

PRODUCTION OF IMPROVED ASBESTOS FIBER

Auguste Louis de Lisle, 6913 E. Cherry Lynn, Scottsdale, Ariz.

No Drawing. Filed Feb. 14, 1962, Ser. No. 173,121
8 Claims. (Cl. 23—110)

1. The method of treating asbestos fibers to remove contaminants therefrom which includes:

(*a*) the step of soaking the fibers in an ammonium chloride solution.

2. The method of treating asbestos fibers to remove contaminants therefrom which includes:

(*a*) the step of first treating the fibers with a dilute solution of hydrochloric acid to solubilize at least some of the lime content thereof, and then

(*b*) soaking such fibers in an ammonium chloride solution.

3,184,289

PROCESS FOR THE PREPARATION OF A PURIFIED POTASSIUM SILICATE SOLUTION

William L. Gray, North Augusta, S.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 19, 1962, Ser. No. 231,838
4 Claims. (Cl. 23—110)

1. In a process for producing a potassium silicate solution from a copper containing silica sand, in which the sand is fused with a potassium alkali to form a potassium silicate glass and the glass is dissolved in water to form a potassium silicate solution, the removal of copper from the potassium silicate solution by the steps comprising mixing with the copper containing potassium silicate solution from 0.01 to 0.1% by weight based on the weight of the silicate solution of a finely divided sulfide of a metal selected from the group consisting of zinc and cadmium, continuing such mixing for a time sufficient to allow intimate contact of the sulfide with the copper, thereafter separating the suspended copper containing solids from the solution, and recovering the potassium silicate solution.

3,184,290

METHOD OF PRODUCING CARBON BLACK

Merrill E. Jordan, Walpole, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Sept. 28, 1962, Ser. No. 227,075
10 Claims. (Cl. 23—209.4)

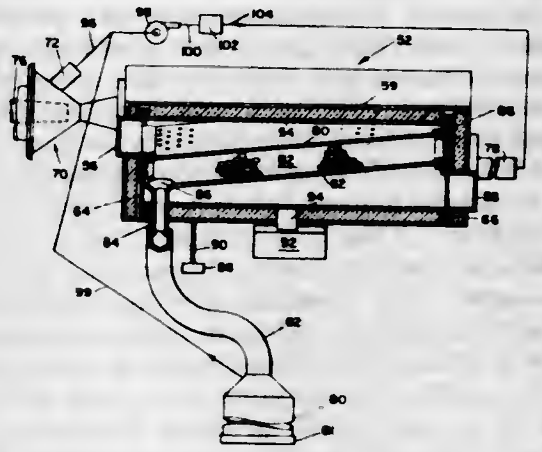
1. A process for producing carbon black by pyrolyzing a hydrocarbonaceous tar containing amounts of asphaltenes greater than about 25% by weight of said stock, comprising mixing said tar with from about 20 to about 600 parts per hundred parts of asphaltene in said tar of a substance chosen from the group consisting of HNO_3 and nitric oxides and thereafter pyrolyzing the tar at temperatures of at least 500° C.

3,184,291

MAINTENANCE OF A CATALYTIC EXHAUST PURIFIER

Willard R. Calvert, Ridley Park, Pa., assignor to Oxy-Catalyst, Inc., Berwyn, Pa., a corporation of Pennsylvania

Filed Mar. 8, 1963, Ser. No. 263,820
1 Claim. (Cl. 23—288)



A system for filling and emptying a catalytic exhaust purifier having a housing containing a pair of grids defining a catalyst pellet bed area comprising, means to vibrate the exhaust purifier, a mobile canister adapted to contain catalyst pellets, a flexible hose communicating with said bed area and with the canister to provide for the positioning of the canister for gravity flow selectively from the canister to the catalyst bed area on filling the purifier and from the bed area to the canister on emptying the exhaust purifier, a blower and means to selectively connect the blower to the housing to place the bed area under a negative pressure on filling the bed area to promote the flow of catalyst into the bed area and to connect the blower to the canister and the housing to place the canister under a negative pressure and the bed area under a positive pressure on emptying the bed area to promote the flow of catalyst from the bed area into the canister.

3,184,292

PROCESS AND COMPOSITION FOR DIFFUSION COATING REFRACTORY METALS AND PRODUCT PRODUCED THEREBY

Dimitri Argyriades, Secane, Pa., and Giles F. Carter, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 8, 1964, Ser. No. 381,212
20 Claims. (Cl. 29—197)

16. A refractory metal article having an oxidation resistant coating comprising a refractory metal alloy containing at least one diffused element selected from the group consisting of aluminum, silicon, and transition elements having 1 to 9 *d* electrons, said coating having increasing concentrations of said diffused elements and a transfer agent toward the outer portion thereof, said transfer agent being selected from the group consisting of calcium, strontium, and barium.

3,184,293

CARBONACEOUS SHAPES

Josiah Work, New Canaan, Conn., Robert T. Joseph, Richboro, Pa., and John H. Blake, Boulder, Colo., assignors to FMC Corporation, a corporation of Delaware

Filed May 24, 1960, Ser. No. 31,317
3 Claims. (Cl. 44—23)

1. Carbonaceous briquette constituted of carbonaceous material derived from coal and a tar binder, which car-

bonaceous briquette is (1) homogeneous, (2) reacts uniformly throughout its mass, (3) has a resistance to crushing in pounds per square inch determined by measuring the gauge reading at which a 1⅛ x ¾ inch cylinder crushes under hydraulic pressure applied to its flat surface of at least 3,000, (4) has a tumbler index value of from 90 to 98, (5) has a volatile combustible material content of below 3% by weight on an ash-free basis, (6) has a carbon content, on an ash and moisture-free basis of at least 95% by weight, (7) has a surface area of from 100 to 500 square meters per gram, determined by the standard Brunauer, Emmett and Teller method using nitrogen as the gas absorbed, (8) has a carbon to hydrogen ratio on a weight basis of from 82 to 114, (9) has a real density of from 1.70 to 2.1 (10) has a helium density of from 2.3 to 4 and a ratio of helium density to real density within the range of from 1.35 to 2.35, (11) has a reactivity with carbon dioxide of at least about 10, measured by the amount of a sample of the briquette sized to pass through a 20-mesh but retained on a 28-mesh screen, consumed in one hour in a stream of carbon dioxide at a temperature of 900° C., passed over the sample at a rate of 400 ml. per minute in a tube having an inside diameter of about 1 inch, and (12) has a reactivity with steam of at least about 20 measured by the amount of a sample of the briquette sized to pass through a 20-mesh but retained on a 28-mesh screen consumed in one hour in a stream of steam at a temperature of 825° C. passed over the sample at a rate of 133 ml. per minute in a tube having an inside diameter of about 1 inch.

3,184,294

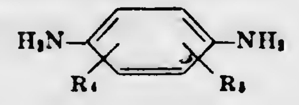
CONDENSATE POLYMERS, USES THEREOF, AND COMPOSITIONS CONTAINING SAID POLYMERS

Walter M. Chamot, Brookfield, Ill., assignor to Nalco Chemical Company, Chicago, Illl., a corporation of Delaware

No Drawing. Filed Aug. 30, 1960, Ser. No. 52,786

4 Claims. (Cl. 44—62)

1. A refined petroleum distillate fraction having a boiling point in excess of 380° F. containing a color stabilizing amount in the range of 0.00125 p.p.m. to 250 p.p.m. of a linear condensation polymer of a hydroxybenzaldehyde, an aliphatic aldehyde selected from the group consisting of formaldehyde and acetaldehyde, and an organic polyamine selected from the group consisting of (A) aliphatic diamines selected from the group consisting of an alkylene diamine of the formula $H_2N—R—NH—R_1$ wherein R is a member selected from the group consisting of a hydrocarbon alkylene group, said alkylene group containing 2–6 carbons, and wherein R_1 is a member selected from the group consisting of hydrogen, ethyl and hydroxyethyl, and a diamine of the formula $H_2N—R_2—X—R_3NH_2$ wherein R_2 and R_3 are alkylene groups having a total of 2–6 carbons and X is a member selected from the group consisting of sulfur and oxygen; (B) a phenylene diamine of the formula



wherein R_4 and R_5 are each a member selected from the group consisting of hydrogen and alkyl of 1–4 carbons; and (C) polyalkylene polyamines with at least one primary amino group, alkylene groups with 2–3 carbons each and 3–10 amino groups per molecule; said hydroxybenzaldehyde, said aldehyde and said organic polyamine being condensed in said linear condensation polymer at a mol ratio of said hydroxybenzaldehyde to said organic polyamine in the range of 1:0.5–1, respectively, and at a mol ratio of said aliphatic aldehyde to said polyamine in the range of 0.9–1.1:1, respectively.

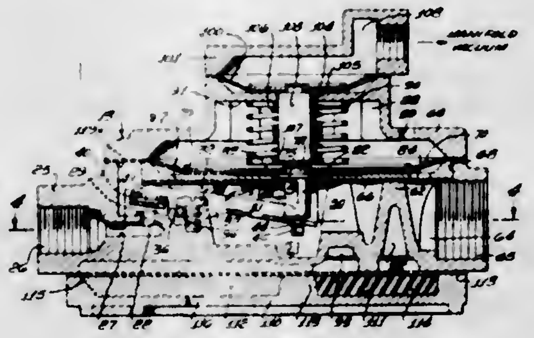
3,184,295

LPG FUEL SYSTEM FOR INTERNAL COMBUSTION ENGINES

Richard Baverstock, North Long Beach, Calif., assignor to Imperial Machine Products Co., South Gate, Calif., a corporation of California

Original application Oct. 16, 1959, Ser. No. 846,852, now Patent No. 3,123,451, dated Mar. 3, 1964. Divided and this application Oct. 17, 1960, Ser. No. 62,944

6 Claims. (Cl. 48—184)



1. In a vaporizer, the combination of: a heated metal base member having an inlet for liquid and an outlet for gas, said member having curved walls providing a labyrinth passageway leading to said outlet, an unheated metal cover plate for said member, an unheated flexible spongy disk interposed between said member and said cover plate and forming one boundary surface of said labyrinth passageway, the spongy disk having a rough porous surface to impede progress of droplets of liquid moving thereon toward the outlet, so that the droplets may be vaporized by contact with the gas before the droplets reach the outlet.

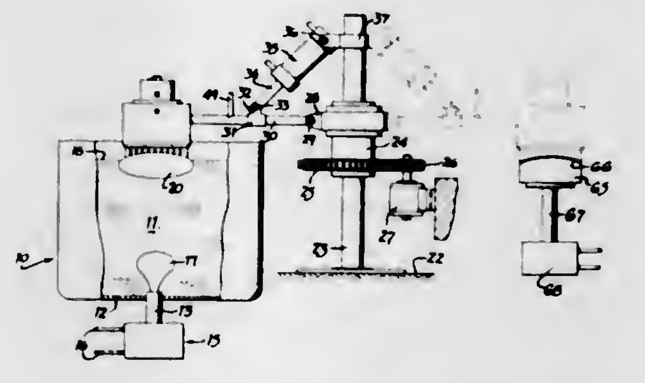
3,184,296

METHOD OF AND APPARATUS FOR MANUFACTURING PRESSED GLASS ARTICLES

Wilbur A. Schaich, Maumee, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed Mar. 12, 1963, Ser. No. 264,512

5 Claims. (Cl. 65—73)



1. In a method of making a pressed glass article, the steps of forming a bubble at the exposed surface of a body of molten glass, adhering the upper surface only of said bubble to a pick-up head, rupturing the bubble to retain on said pick-up head a thin layer of glass, transferring the head and the retained layer of glass to a pressing station, and pressing the layer of glass to a final configuration.

4. In an apparatus for making a pressed glass article, means providing a body of molten glass having an exposed upper surface, means for generating a gaseous bubble in said body of molten glass, a pick-up head having a perforate concavo-convex surface for contacting a surface of the bubble exposed at the molten glass surface, means for evacuating said pick-up head to adhere the surface of the bubble to the perforate surface of said head, shearing means carried by said head for shearing the adhered portion of said bubble from the remainder of said bubble, means supporting said head and the adherent portion of said bubble for movement, means for moving said head and said bubble portion to a pressing station, and means for pressing said bubble portion to a desired configuration while still supported by said head.

3,184,297

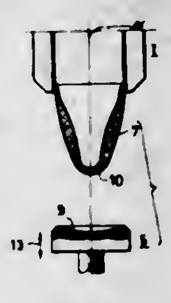
METHOD OF MECHANICALLY MANUFACTURING HOLLOW GLASS OBJECTS

Pieter van Zonneveld, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 30, 1961, Ser. No. 85,597

Claims priority, application Netherlands, Feb. 12, 1960, 248,387

4 Claims. (Cl. 65—78)



1. A method of manufacturing hollow glass objects comprising the steps, engaging one end of a pre-shaped glass body, supporting said body while elongating the other end by subsidence to form a parison, contacting sequentially the other end of said parison in a direction opposite the direction of subsidence and of different amplitudes to change the glass distribution in the parison, and puffing the parison into a hollow glass object having a substantially uniform wall thickness.

3,184,298

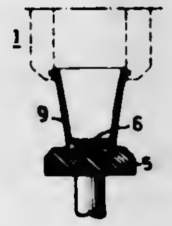
METHOD OF MANUFACTURING HOLLOW GLASS ARTICLES

Pieter van Zonneveld, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 8, 1960, Ser. No. 54,775

Claims priority, application Netherlands, Sept. 11, 1959, 243,274

3 Claims. (Cl. 65—80)



1. A method of forming hollow glass objects having a thick configured wall and an obliquely contiguous relatively thin wall comprising the steps of mechanically pressing a mass of molten glass for forming a cup like parison having a thick wall portion of substantially the final shape thereof, holding the upper extremities of said parison adjacent the open end of the cup thus formed, elongating said parison to subside said parison while contacting at least the said thick wall portion formed by pressing and elongating the thin wall portions of said object, and subsequently finally forming the elongated thin wall portion of said parison by blow moulding.

3,184,299

GLASS TEMPERING APPARATUS

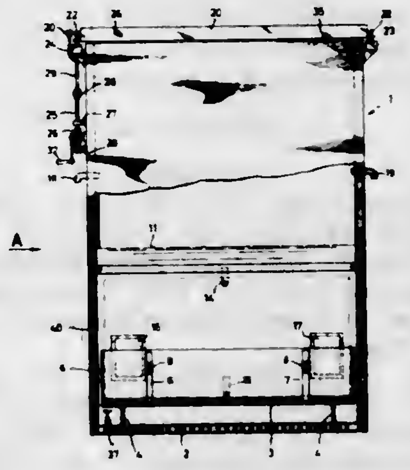
Erwin W. Wartenberg, Gablkopf 20, Stuttgart, Germany

Filed Aug. 8, 1960, Ser. No. 48,244

Claims priority, application Germany, Aug. 18, 1959, W 26,232

2 Claims. (Cl. 65—348)

1. An apparatus for tempering glass plates comprising, in combination, an upright container having a bottom wall and a peripheral wall and being open at the top thereof; a quenching liquid in said container partly filling the same so as to define between the liquid level and the top of the container a free space; heating means in said container below the level of the quenching liquid therein for heating said quenching liquid therein substantially up to its boiling point; heat-insulating means coordinated at least with said peripheral wall for substantially preventing any heat loss therethrough; means for suspending a hot glass plate to be tempered in said quenching liquid so that the latter completely surrounds said plate and so that a vapor layer will form about the hot glass plate suspended in said quenching liquid; cover means extending transversely over said open end of said container for substantially closing the same and including cooling means for cooling said cover means over the whole area of said open end so that vapors forming during suspension of a hot glass plate in the [illegible] quenching liquid will rise through said free space and will be condensed by contact with said cooled cover means and flow back in form of cooled condensate to mix at the bottom of the container with the remainder of the quenching liquid, whereby escape of quenching material in form of vapors from said container will be substantially prevented; and shielding means in said container for preventing contact of any cooled part of said quenching liquid with said hot glass plate.



3,184,300

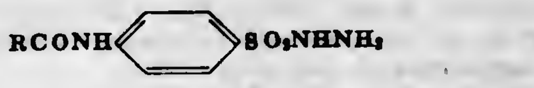
COMPOSITION AND METHOD FOR PROMOTING GROWTH AND PROTECTING PLANTS FROM DAMAGE BY PARASITIC PATHOGENS

Alan J. Lemin, Richland, and Arnolds Steinhards and Gerald A. Boyack, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Filed Apr. 7, 1958, Ser. No. 726,621

13 Claims. (Cl. 71—2.6)

1. A method of promoting the growth of plants which comprises treating the plants with a plant growth promoting amount of a N-lower-alkanoyl-sulfanilic acid hydrazide having the formula



wherein R is selected from the group consisting of hydrogen and alkyl containing from 1 to 4 carbon atoms.

3,184,301
METHOD FOR DESTROYING WEEDS

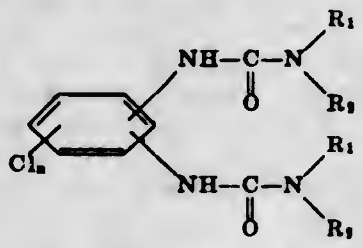
Henry Martin, Basel, and Hans Aebi, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Original application Aug. 29, 1960, Ser. No. 52,374. Divided and this application Nov. 9, 1962, Ser. No. 246,847

Claims priority, application Switzerland, Sept. 3, 1959, 77,754

6 Claims. (Cl. 71—2.6)

1. A method for destroying weeds which comprises applying to the area where the weeds are growing a herbicidal amount of an aromatic carbamic acid amide corresponding to the formula



in which R_1 represents a member of the group consisting of hydrogen and lower alkyl, R_2 represents lower alkyl, and *n* is a whole number of at the most 2.

3,184,302
PROCESS, REMOVAL OF OXYGEN AND ALUMINUM FROM METALS PREPARED BY ALUMINOTHERMIC AND SIMILAR PROCESSES

Carl J. Chindgren, Salt Lake City, Utah, assignor to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Jan. 24, 1963, Ser. No. 253,773

21 Claims. (Cl. 75—84)

(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A method for the preparation of a high-purity refractory metal from an impure refractory metal containing as impurities oxygen and a low percentage of alloyed aluminum comprising reacting the impure refractory metal with barium peroxide, metallic calcium and metallic aluminum and recovering a product of high-purity refractory metal containing very small amounts of oxygen and alloyed aluminum.

12. A method for the preparation of a high-purity refractory metal from an impure refractory metal containing as impurities oxygen and a high percentage of alloyed aluminum comprising reacting the impure refractory metal with barium peroxide and metallic calcium and recovering a product of high-purity refractory metal containing very small amounts of oxygen and alloyed aluminum.

3,184,303
SUPERCONDUCTIVE SOLDER

Allen W. Grobin, Jr., Stanfordville, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 31, 1960, Ser. No. 65,920

2 Claims. (Cl. 75—134)

1. A superconductive solder effective to connect superconductive thin films and operative at a superconductive temperature consisting of 50% indium, 20% lead, and 30% tin, by weight.

3,184,304
TUNGSTEN ALLOYS

George M. Andes, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 16, 1961, Ser. No. 96,075

10 Claims. (Cl. 75—134)

1. A high-temperature, oxidation-resistant alloy consisting essentially of about 20%–40% by weight of chromium, about 1%–25% by weight of titanium, and up to 10% by weight of a metal selected from the group consisting of iron, nickel, cobalt, and combinations thereof, the balance being essentially tungsten in an amount of at least 45% by weight.

3,184,305
TITANIUM BASE ALLOYS

Sidney W. Poole and John Savas, Canton, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

No Drawing. Filed Oct. 10, 1961, Ser. No. 144,070

5 Claims. (Cl. 75—175.5)

1. A titanium base alloy consisting essentially of about 7.5–8.5% aluminum, about 9.5–10.5% vanadium, 0.1–0.5% silicon, about 0.1–0.6% zirconium, the balance being commercial grade purity titanium.

3,184,306
FRICTION MATERIAL

Robert L. Fish, Shelton, Conn., assignor to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 2, 1962, Ser. No. 163,871

5 Claims. (Cl. 75—206)

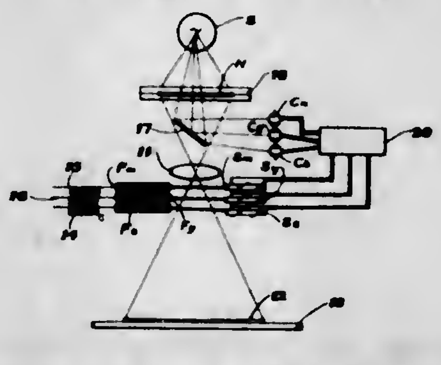
1. The method of making a high heat resistant, sintered, porous, friction material composition which comprises, mixing (A) a powdered metal selected from the group consisting of aluminum and magnesium with (B) a substantially stoichiometric amount of an oxide of a high melting point metal, and (C) a powdered high melting point metal, cold compacting this mix with pressure to form a handleable shaped compact, then heating this shaped compact to initiate an exothermic reaction whereby said first metal (A) is converted to its refractory oxide and said oxide (B) is reduced to its free metal, said high melting point additive (C) alloying with said free metal and being in an amount to provide a total free metal continuous matrix in the proportion of from at least 50% to about 75% by total volume, with said resulting refractory oxide being substantially uniformly dispersed therein.

3,184,307
METHOD AND APPARATUS FOR MAKING COLOR PRINTS

Edward K. Letzer, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Aug. 14, 1959, Ser. No. 833,763

8 Claims. (Cl. 96—23)



1. The method of making a color print from a color negative on a color print material which comprises the steps of illuminating said negative with a light source including the three primary colors, red, blue and green; projecting an image of said illuminated negative onto said color print material; individually and exclusively measuring the total integrated red, green and blue transmittances of said negative; terminating the red, green and blue exposures of said print material by individually inserting subtractive primary filters into the negative transmitted light beam ahead of said print material at intervals determined in accordance with the difference between said individually and exclusively measured integrated transmitances of said negative and corresponding integrated transmittances which in combination would print the negative substantially at a full density correction level; characterized in that said subtractive filters are inserted into the printing system beyond the point at which the measurements of the red, green and blue negative transmitttances are made in order to obain lowered color correction while maintaining substantially full density correction in the exposure by virtue of the fact that the non-major absorbencies of the filters are ignored in the determination of the time of exposure for each of the primary colors, whereas the non-major absorbencies of the filters act to reduce the intensity of the individual color exposures in accordance with the order in which said filters are moved into the negative transmitted light beam.

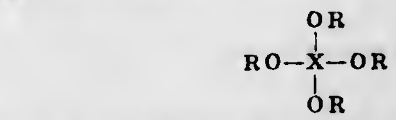
3,184,308
PROCESS FOR TREATING LEUCOCYANIDE DYE IMAGES AND PRODUCT THEREOF

Meyer S. Agruss, 2849 W. Sherwin Ave., Chicago, Ill.

No Drawing. Filed May 23, 1962, Ser. No. 196,897

13 Claims. (Cl. 96—27)

1. A process for treating leucocyanide dyes on a substrate, said dyes being convertible by exposure to short wave length radition from a colorless form to a colored form to render such dyes insensitive to such conversion upon short wave length radiation exposure comprising contacting said dye on said substrate with a tetra-ester having the formula:



$$RO-\overset{OR}{\underset{OR}{X}}-OR$$

in which X is selected from the group consisting of titanium, zirconium, hafnium and mixtures thereof, and R is an organic radical, to react said tetra-ester with said dye to provide a valence bonded complex.

3,184,309
NON-LIGHT SENSITIVE DYE TRANSFER RECEIVING BLANKS AND METHOD OF USING THEM

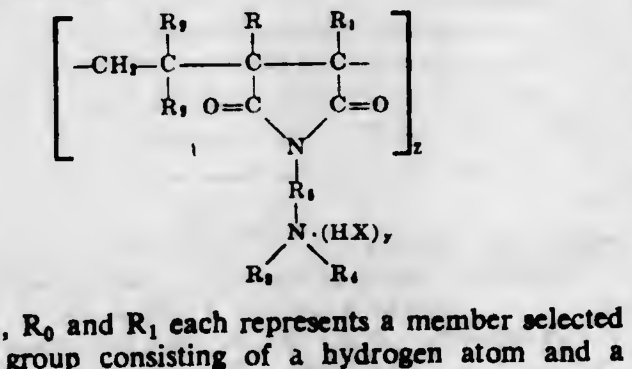
Louis M. Minsk and Hyman L. Cohen, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 29, 1962, Ser. No. 169,591

The portion of the term of the patent subsequent to Aug. 7, 1979, has been disclaimed and dedicated to the Public

10 Claims. (Cl. 96—29)

2. A method of preparing photographic images of high resolution comprising contacting in the presence of water (*a*) a photographic element containing at least one photographic dye image composed of a diffusible acid dye with (*b*) a dye imbibition printing blank consisting of a flexible sheet support and a layer consisting essentially of a hydrophilic colloid and an interpolymer containing at least 75 mole percent of units represented by the following general formula:



$$\left[-CH_2-\overset{R_0}{\underset{R_2}{C}}-\overset{R}{\underset{O=C}{C}}-\overset{R_1}{\underset{C=O}{C}}-\right]_z \qquad \underset{\underset{R_3\quad R_4}{N\cdot(HX)_y}}{\underset{R_5}{N}}$$

wherein R, R_0 and R_1 each represents a member selected from the group consisting of a hydrogen atom and a lower alkyl group, R_2 represents a member selected from the group consisting of a hydrogen atom, an alkyl group, a monocyclic aryl group and a carbalkoxyl group, R_3 and R_4 each represents a member selected from the group consisting of a lower alkyl group and together represent the atoms necessary to complete a heterocyclic ring selected from the group consisting of piperidine and morpholine, R_5 represents an alkylene group, *z* represents a positive integer greater than about 10, X represents the acid radical of a water-soluble monobasic acid, and *y* has a value from ½ to 1 times *z*, and diffusing said acid dye into said dye imbibition printing blank and adsorbing said acid dye upon said interpolymer.

3,184,310
REPRODUCTION LAYERS FOR PRINTING PLATES

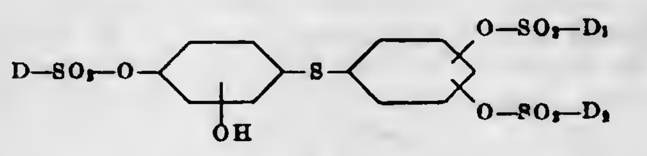
Gerhard Fritz, Wiesbaden, and Oskar Süs, Fritz Uhlig, and Wilhelm Neugebauer, Wiesbaden-Biebrich, Germany, assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J.

No Drawing. Filed Jan. 13, 1960, Ser. No. 2,110

Claims priority, application Germany, Jan. 21, 1959, K 36,769

6 Claims. (Cl. 96—49)

1. A compound having the formula



in which D, D_1 and D_2 are naphthoquinone-(1,2)-diazide groups.

3,184,311
FURCELLARAN AS AN ANTISTATIC AGENT FOR PHOTOGRAPHIC FILM

Wilho M. Salminen, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 9, 1962, Ser. No. 178,547

9 Claims. (Cl. 96—85)

1. A photographic film comprising a support having thereon a coating of furcellaran in an amount of 50 milligrams per square foot and also having thereon a light-sensitive silver halide emulsion layer to 1 gram per square foot.

3,184,312
PHOTOGRAPHIC EMULSIONS CONTAINING CARBOXYMETHYLATED PIGSKIN GELATIN

John W. Gates, Jr., William G. Lovett, and Paul E. Miller, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Nov. 14, 1958, Ser. No. 773,837. Divided and this application Aug. 22, 1962, Ser. No. 218,509

1 Claim. (Cl. 96—94)

A silver halide photographic emulsion comprising silver halide in a vehicle containing carboxymethylated pigskin gelatin as a substantial portion of the vehicle.

3,184,313
SILVER HALIDE EMULSION DESENSITIZED WITH A TETRAALKYL THIURAM DISULFIDE

William W. Rees and William H. Russell, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 19, 1962, Ser. No. 238,751

6 Claims. (Cl. 96—101)

1. A photographic silver halide emulsion which has been substantially desensitized to visible radiation by the addition thereto of from 2 to 75 mg. per mole of silver halide of a tetraalkyl thiuram disulfide.

3,184,314
METHOD FOR THE PRESERVATION OF SILAGE
Joseph G. Forest, Waverly, and Edward J. Czarnetzky, Chazy, N.Y., assignors to International Stock Food Corporation, Waverly, N.Y., a corporation of New York
No Drawing. Filed Apr. 20, 1962, Ser. No. 188,979
13 Claims. (Cl. 99—8)

8. The process for the preservation of silage, comprising uniformly incorporating therewith a preservative amount of a member selected from the group consisting of sodium sulfate, potassium sulfate and magnesium sulfate.

3,184,315
MANUFACTURE OF CHOCOLATE FLAVORED CONFECTIONS
Henry N. Wolf, Philadelphia, Pa., assignor of one-half to Dalris Company, Inc., Monmouth Junction, N.J.
No Drawing. Filed June 12, 1961, Ser. No. 116,261
4 Claims. (Cl. 99—23)

1. In a method of producing a chocolate flavored confection having a heterogeneous mixture of ingredients including chocolate liquor, sugar and water bound together in a solid composite especially suitable for utilization at low temperatures, the steps of mixing together said ingredients in such proportions as to limit the fat content of the mixture to less than 20 percent by weight and the moisture content to less than 8 percent by weight, heating the mixture to a temperature high enough but no higher than that required to melt the chocolate liquor so as to minimize the dissolution of the sugar while mixing to effect a heterogeneous mixture of ingredients, and compressing the mixture at a pressure great enough to bind the ingredients into said composite.

3,184,316
METHOD FOR PRODUCING A CANDY COATED MIXTURE OF NUT MEATS AND PUFFED CEREAL PARTICLES
Charles A. Doan and Winfred D. Lepley, Battle Creek, Mich., assignors to Kellogg Company, Battle Creek, Mich., a corporation of Delaware
No Drawing. Filed May 13, 1963, Ser. No. 280,140
5 Claims. (Cl. 99—83)

1. The method of forming a candy coated susbtantially non-segregating mixture of nut meats and puffed cereal particles which comprises pre-coating the nuts with an edible mutual binder for said nut meats and a subsequently applied candy coating and then applying a heated aqueous candy forming syrup coating to a mixture of puffed cereal particles and said pre-coated nut meats and uniformly mixing said ingredients to distribute the syrup.

3,184,317
CONTINUOUS PROCESS FOR THE MANUFACTURE OF HARD SWEET DOUGH
Meade C. Harris, Rutherford, N.J., and Elmore F. Maehl, deceased, late of Fanwood, N.J., by Eunice Maehl, legal representative, Fanwood, N.J., assignors to National Biscuit Company, a corporation of New Jersey
Filed Apr. 23, 1963, Ser. No. 275,165
11 Claims. (Cl. 99—90)

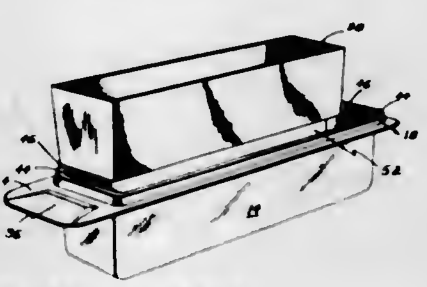
5. The continuous process of mixing the dough of hard-sweet goods which comprise as dry dough ingredients wheat flour and sugar, and as diluents, water and shortening, and other water soluble ingredients, said water being present in amount not exceeding 12% of the total dough composition, which comprises:

- (*a*) continuously feeding each of said dry dough ingredients, at a predetermined rate into a first mixing zone where said ingredients are agitated and mixed with a residence time between 1 and 30 seconds, at a temperature not exceeding 85° F.
- (*b*) continuously feeding said water and said water-soluble ingredients at a predetermined rate, into a common receptacle, whereby an aqueous slurry is continuously formed,
- (*c*) continuously feeding said shortening and said dry solid mix and said aqueous slurry into a second mixing zone, and mechanically agitating, whereby a uniform blend is achieved, at a temperature not exceeding 85° F., with a residence time between 1 and 30 seconds,
- (*d*) continuously discharging said blend to a kneading zone, continuously kneading said blend at a temperature not exceeding 106° F., whereby a uniformly hydrated dough is obtained with a residence time between 30 seconds and 3 minutes.

3,184,318
PROCESS FOR THE PRODUCTION OF A GRANULAR CHEESE PRODUCT
Maurice B. McCadam, Van Nuys, Calif., assignor of fifty percent to Charles M. Cunningham, Reseda, Calif., and two and one-half percent to William H. Mahr, Los Angeles, Calif.
No Drawing. Filed Oct. 10, 1961, Ser. No. 144,026
20 Claims. (Cl. 99—115)

1. A process for the production of a granular cheese product, comprising the steps of separating a bulk of natural cheese into discrete particles generally of the size of granular cheese particles, freezing the cheese particles, thawing said particles, and immediately upon surface thawing of said particles and during said thawing step, adding to said particles a moisture-absorbing amount of an edible powder.

3,184,319
LINED FOOD PACKAGE
Richard K. Fritsche, Fort Thomas, Ky., assignor to The Miami Margarine Company, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 27, 1962, Ser. No. 182,894
4 Claims. (Cl. 99—171)



1. A food package comprising:
- (A) a rigid plastic serving dish segment including a raised medial portion;
- (B) a plastic concave top segment opening downwardly and peripherally engaging said serving dish segment;
- (C) food supported directly on said raised medial portion of said serving dish segment inwardly of said concave segment, said food being selected from a group consisting of amorphous and non-amorphous products;
- (D) a removable liner surrounding said food, said liner being disposed only between the inner walls of said concave segment and said food; and
- (E) means sealing said segments.

3,184,320
CERAMIC PROTECTIVE COATING COMPOSITION
Harold J. Michael, Columbus, Ohio, assignor to North American Aviation, Inc.
No Drawing. Filed Dec. 8, 1964, Ser. No. 416,885
10 Claims. (Cl. 106—48)

1. A ceramic protective coating composition consisting of:

- (*a*) From 2% to 50% by weight of refractory oxide selected from the group consisting of the oxides of aluminum, cerium, chromium, cobalt, iron, manganese, molybdenum, nickel, niobium, silicon, tin, titanium, and vanadium, and
- (*b*) The balance a mixture of glass frits which each are fluorine-free and of less than 12% alkali metal oxide content by weight, which each are separately fritted, and which consists on a weight basis of:
  - (1) 35 to 80 parts of a first glass frit having a softening temperature in the range of 1100° F. to 1250° F., having a fusion flow value in the range of 7% to 22%, and having a thermal expansion coefficient in the range 3×10^{-6} to 5×10^{-6} inches per inch per degree Fahrenheit,
  - (2) 10 to 15 parts of a second glass frit having a softening temperature in the range of 1100° F. to 1250° F., having a fusion flow value in the range of 38% to 48%, and having a thermal expansion coefficient in the range of 5×10^{-6} to 7×10^{-6} inches per inch per degree Fahrenheit, and
  - (3) 10 to 50 parts of a third glass frit having a softening temperature in the range of 1100° F. to 1250° F., having a fusion flow value in the range of 60% to 75%, and having a thermal expansion coefficient in the range of 7×10^{-6} to 10×10^{-6} inches per inch per degree Fahrenheit.

3,184,321
REFRACTORY COMPOSITION AND METHOD
Russell Pearce Heuer, Villanova, and Alex Edward Fitzgerald, Narberth, Pa., assignors to General Refractories Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 5, 1962, Ser. No. 185,204
3 Claims. (Cl. 106—58)

1. A refractory composition suitable for mixing with water and spraying on and adhering to refractory walls of high temperature furnaces during furnace operation at elevated temperature, which consists essentially of a mixture of basic refractory of the class consisting of chrome ore, calcined magnesia and mixtures thereof containing in excess of 5% of calcined magnesia, and from 1 to 10% of the weight of the mixture of anhydrous sodium silicate having a mol ratio of $Na_2O:SiO_2$ of approximately one.

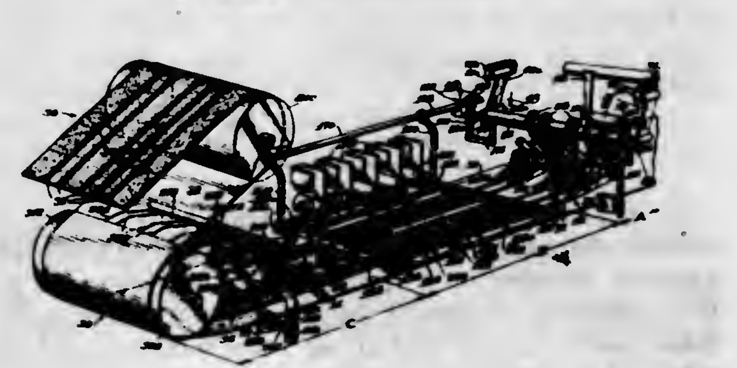
3,184,322
REFRACTORY
Kanaiyalal N. Parikh and Merton L. Van Dreser, San Jose, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
No Drawing. Filed Sept. 7, 1961, Ser. No. 136,437
19 Claims. (Cl. 106—59)

4. A refractory batch adapted to provide a dense, spinel-bonded refractory product upon firing and consisting essentially of a major proportion of nonacid grain material compatible with magnesium aluminate and a minor proportion of a finely divided admixture consisting essentially of finely divided alumina having a specific gravity of from 3.77 to 3.90 and adapted to cause decolorizing of malachite green solution in from 0.1 to 2.0 minutes, when 80 milligrams of said alumina are agitated gently with one milliliter of a solution containing 80 milligrams per liter of malachite green oxalate, and at least sufficient finely divided periclase to form magnesium aluminate with all of said alumina, said magnesium aluminate constituting from 5% to 20% of the total batch weight on the fired basis and from 1% to 5% based on the weight of said magnesium aluminate, of finely divided titania, and a chemical bonding agent.

3,184,323
SUSPENSION OF PIGMENTS AND OTHER PARTICLES
William Lindlaw, Westfield, N.J., assignor to The Baker Castor Oil Company, Bayonne, N.J., a corporation of New Jersey
Filed Mar. 3, 1964, Ser. No. 348,989
10 Claims. (Cl. 106—268)

1. A heat-stable composition of matter for use in modifying the rheological and suspension properties of nonaqueous fluid systems containing finely divided solid particles, which comprises a dispersion in an organic liquid vehicle compatible with paint of finely divided, modified, emulsifiable polyethylene wax having a melting point between about 200° F. and about 230° F., penetration hardness between about 1 and about 10, acid number between about 0 and about 5, and saponification number between about 9 and about 25, said composition being water-free, and said vehicle being in an amount ranging from about 40 to about 95 wt. percent, based on the weight of the total composition.

3,184,324
METHOD OF APPLYING GRANULES AND APPARATUS FOR DOING THE SAME
George Edward Ryckman, East Liverpool, Ohio, assignor to T-K Roofing Manufacturing Co., Chester, W. Va., a corporation of West Virginia
Filed Nov. 22, 1960, Ser. No. 71,019
9 Claims. (Cl. 117—19)

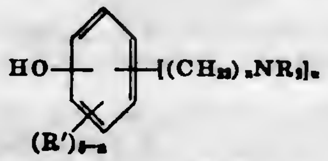


9. A method of continuously producing roofing material having thereon at least one stripe parallel to the edge of the roofing sheet, comprising continuously passing a fibrous web through a saturant, applying an adherent coating to the saturated fibrous web, dispensing stripe forming granules over a preselected stripe area of the coated web, maintaining the stripe forming granules in parallel register with the edge of the web by guiding dispensing means therefor by the edge of the web, depositing other granules over the unstriped area of the web, maintaining said other granules in parallel register with the stripe forming granules and the edge of the web by guiding depositing means for the other granules by the edge of the web, imbedding the stripe forming and other granules in the coated web to facilitate adhesion thereof to the web, and individually collecting in substantially uncommingled condition the stripe forming and other granules not adhered to the web by guiding individual collecting means therefor by the edge of the web.

3,184,325
COATING METAL WITH AN AMINOPHENOL OR AMINOALKYLPHENOL TREATED POLYOLEFIN POWDER
Lee O. Edmonds, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed May 1, 1961, Ser. No. 106,518
6 Claims. (Cl. 117—21)

1. A process for coating a metal surface with a polyolefin coating comprising coating the surface of powdered polyolefin with a compound selected from the group con-

sisting of aminophenols and aminoalkylphenols of the formula

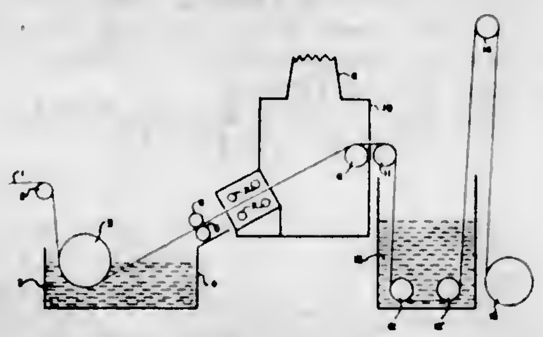


wherein R and R' are selected from the group consisting of hydrogen and an alkyl group containing from 1 to 3 carbon atoms, *x* is a number from 0 to 2, and *n* is an integer from 1 to 3, charging coated powdered polyolefin to a fluidized bed, heating said metal surface to a temperature sufficient to cause particulate polyolefin to adhere to said metal surface, and charging said heated metal surface into said fluidized bed.

3,184,326
COATING OF IRON AND STEEL

Alvin F. Prust, Warren, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed June 10, 1960, Ser. No. 35,326
12 Claims. (Cl. 117—51)

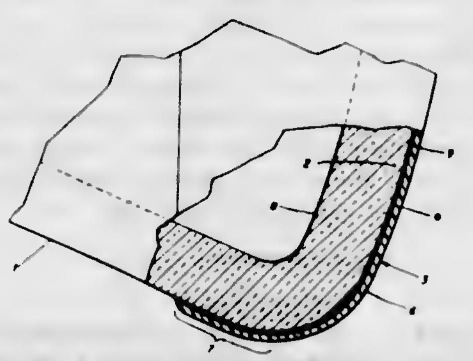


6. A process for applying an aluminum coating to a ferrous metal comprising the steps of applying a film of an aqueous solution to a ferrous metal surface, said solution consisting essentially of about 1.3–6.0 ounces of an alkali metal fluoride and about 1.3–6.0 ounces of a stannous salt per gallon of aqueous solution, said solution having a pH in the range of about 3.5–4.0, immediately thereafter evaporating the water from said solution, and then immersing said dried metal surface in a molten aluminum bath for a period sufficient to apply a coating of desired thickness.

3,184,327
IMPLOSION RESISTANT CATHODE RAY TUBES

Robert P. Anderson, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 17, 1962, Ser. No. 210,346
11 Claims. (Cl. 117—63)

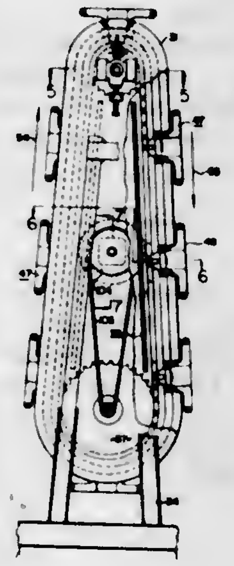


1. The process for making a highly adherent, wrinkle-free, strain-free, transparent, implosion proof television tube which comprises (1) applying to the face portion of the television tube an organosilicon priming agent, (2) applying a polymeric vinyl ester cushioning layer to the organosilicon primed glass, (3) applying a cellulosic gel lacquer to the cushioning layer, the said gel lacquer comprising (*a*) a cellulosic composition selected from the class consisting of cellulose acetate, cellulose butyrate, cellulose propionate, cellulose acetate butyrate, cellulose acetate propionate, and ethyl cellulose, (*b*) an inert swelling liquid for the cellulosic composition, and (*c*) a non-solvent aliphatic alcohol of at least two carbon atoms, the combined effect of (*b*) and (*c*) acting as a solvent mixture for the cellulosic composition and (4) submerging the coated cellulosic surface in an aliphatic alcohol for a time sufficient to remove at least 20 percent of the swelling agent present in the solvent mixture for the cellulosic composition.

3,184,328
METHOD AND APPARATUS FOR SPRAYING PAINT

Henry A. Wagner, Independence, Marvin D. Merritt, Streetsboro, and Robert M. Bokmuller, Independence, Ohio, assignors to The E. F. Hauserman Company, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 30, 1960, Ser. No. 79,871
13 Claims. (Cl. 117—105.3)

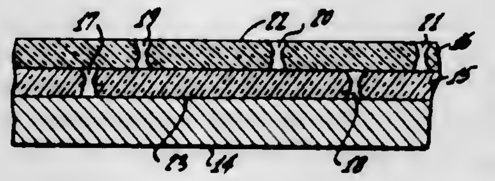


1. A method of spray painting a workpiece moving in a predetermined direction of travel comprising moving spray guns transversely of such direction and in a closed path, traversing the spray guns along such closed path, furnishing paint, air and like utilities to one of the spray guns, forwarding such utilities from gun-to-gun along the closed path of movement, and recovering from such one gun any unused utility.

3,184,329
INSULATION

Leslie L. Burns, Jr., Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 16, 1960, Ser. No. 76,288
7 Claims. (Cl. 117—106)



1. A method of producing a film of insulating material on a surface comprising the steps of evaporating a first layer of an insulating material onto the surface, in vacuum; raising the ambient pressure on the evaporated layer by admitting an inert gas; reducing the ambient pressure on the evaporated layer to that of a vacuum; and evaporating a second layer of the insulating material onto the first.

3,184,330
DIFFUSION PROCESS

Giles F. Carter, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 28, 1963, Ser. No. 268,540
8 Claims. (Cl. 117—114)

1. A process for diffusion-coating a ferrous metal article comprising immersing said article in a molten bath containing at least 10% by weight calcium and having incorporated therein at least one diffusing element selected from the group consisting of molybdenum, zinc, titanium, niobium, vanadium, zirconium, yttrium, cerium, and gallium, said bath being maintained at a temperature between 800° C. and the melting point of said article and withdrawing the diffusion coated article from said bath.

3,184,331
PROCESS OF DIFFUSION COATING

Giles F. Carter, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,540
15 Claims. (Cl. 117—114)

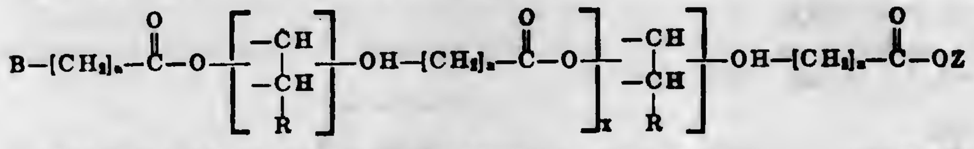
1. A process for the diffusion coating of a ferrous metal article comprising contacting said article with a substantially carbon free molten bath containing at least about 10% by weight of a metal transfer agent selected from the group consisting of calcium, barium, strontium, and magnesium and at least one diffusing element selected from the group consisting of chromium, nickel, manganese, and cobalt, said contacting being carried out at a temperature between about 800° C. and the melting point of said article.

3,184,332
TEXTILE MATERIALS TREATED WITH A LINEAR POLYMERIC ESTER

Michael R. Rachinsky, East Rutherford, N.J., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

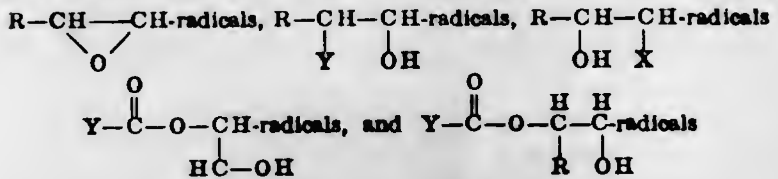
No Drawing. Filed Mar. 1, 1963, Ser. No. 262,180
7 Claims. (Cl. 117—139.4)

1. As an article of manfuacture, a textile fabric having uniformly distributed therethrough a polymeric substance comprising at least 0.5% by weight (based on the fabric) of a linear polymeric ester having the general formula:



$$B-[CH_2]_n-\overset{\overset{O}{\|}}{C}-O-\left[\begin{array}{c}-CH\\ |\\ -CH\\ |\\ R\end{array}\right]-OH-[CH_2]_n-\overset{\overset{O}{\|}}{C}-O-\Bigg]_x\left[\begin{array}{c}-CH\\ |\\ -CH\\ |\\ R\end{array}\right]-OH-[CH_2]_n-\overset{\overset{O}{\|}}{C}-OZ$$

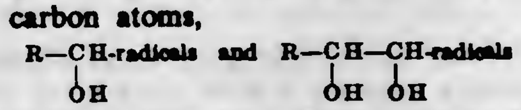
in which R is a substituent of the group consisting of hydrogen and alkyl radicals containing from 1 to 15 carbon atoms; *n* is a whole number from 0 to 20, inclusive; *x* is at least 1; B is a substituent of the group consisting of



$$R-\underset{\diagdown\, O\,\diagup}{CH-CH}\text{-radicals},\ R-\underset{Y}{\underset{|}{CH}}-\underset{OH}{\underset{|}{CH}}\text{-radicals},\ R-\underset{OH}{\underset{|}{CH}}-\underset{X}{\underset{|}{CH}}\text{-radicals}$$

$$Y-\overset{\overset{O}{\|}}{C}-O-\underset{\underset{\underset{R}{|}}{HC-OH}}{\underset{|}{CH}}\text{-radicals, and } Y-\overset{\overset{O}{\|}}{C}-O-\underset{R}{\underset{|}{\overset{H}{C}}}-\underset{OH}{\underset{|}{\overset{H}{C}}}\text{-radicals}$$

in which R has the same significance as set forth above, X is a halogen substituent, and Y is a substituent of the group consisting of hydrogen, straight and branched chain aliphatic hydrocarbon radicals containing from 1 to 15 carbon atoms,



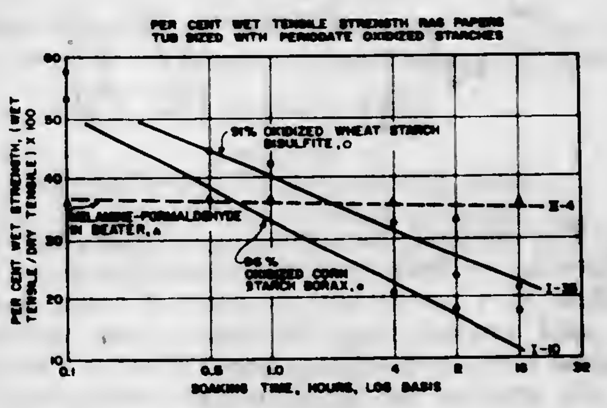
$$R-\underset{OH}{\underset{|}{CH}}\text{-radicals and } R-\underset{OH}{\underset{|}{CH}}-\underset{OH}{\underset{|}{CH}}\text{-radicals}$$

in which R has the same significance as set forth above; and Z is a substituent of the group consisting of hydrogen, hydroxyalkyl radicals containing from 1 to 15 carbon atoms, halohydroxyalkyl radicals containing from 1 to 15 carbon atoms, and alkali metal radicals.

3,184,333
WET-STRENGTH PAPER COMPRISING HIGHLY OXIDIZED PERIODATE OXYSTARCH AND PROCESS OF PREPARING THE SAME

John W. Swanson and Edward J. Jones, Appleton, Wis., and Charles L. Mehltretter, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Feb. 12, 1963, Ser. No. 258,090
3 Claims. (Cl. 117—156)



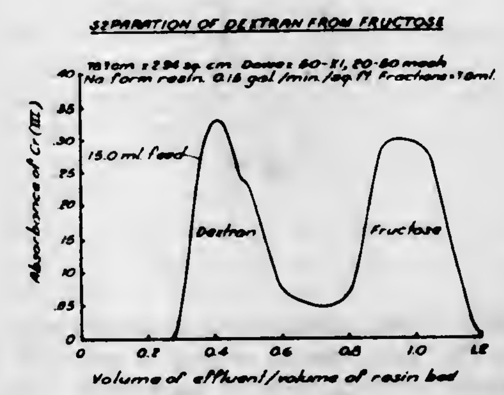
1. A process for improving the wet-strength of paper which comprises dispersing about from 5 to 10 percent by weight of substantially fully oxidized dialdehyde starch in an aqueous solution containing about from 1.2 to 3.6 percent by weight of borax based on the dry weight of the dialdehyde starch, heating the dispersion for about 30 minutes at a temperature of about 95° C., soaking paper in said dispersion, and then drying the paper.

3,184,334
SEPARATION OF DEXTRAN FROM FRUCTOSE USING ION EXCHANGE RESINS

Roger N. Sargent, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Apr. 30, 1962, Ser. No. 190,919
5 Claims. (Cl. 127—46)

1. A method for separating dextran from frustose by
(1) feeding to a water-immersed bed of water-swollen ion exchange resin particles of the group consisting originally of salt-form anion exchange resins and acid- and salt-form cation exchange resins
  (*a*) an aqueous solution of dextran and fructose to displace from the bed of resin an equal volume of water

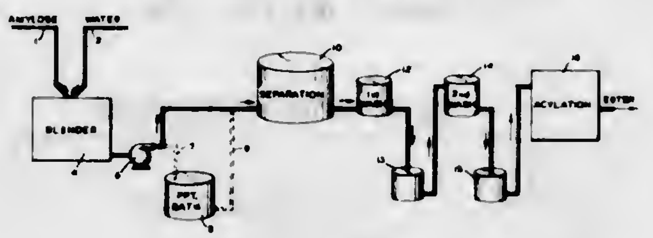


  (*b*) whereby the fructose is selectively sorbed by the water-swollen resin particles and
(2) feeding water to the resin bed to displace an effluent from the resin bed as a dextran-enriched fraction followed by a fructose-enriched fraction.

3,184,335
ACTIVATION OF AMYLOSE

Felix J. Germino, Peekskill, N.Y., and Raymond J. Mosky, Westport, Conn., assignors to American Machine and Foundry Company, a corporation of New Jersey

Filed Dec. 29, 1960, Ser. No. 79,427
13 Claims. (Cl. 127—71)



1. The method for activating retrograded amylose comprising partially swelling the amylose in an aqueous medium in a period not exceeding 4 hours, separating the solid amylose from the liquid phase, washing said amylose with a non-aqueous liquid which is a non-solvent for the amylose and separating the non-aqueous liquid from the amylose-liquid mixture to provide an amy:ose product of at least 30% solids.

3,184,336
METHOD OF CLEANING AQUEOUS SYSTEMS

John Phillip Murphy, 346 Morning View Ave., Akron 5, Ohio

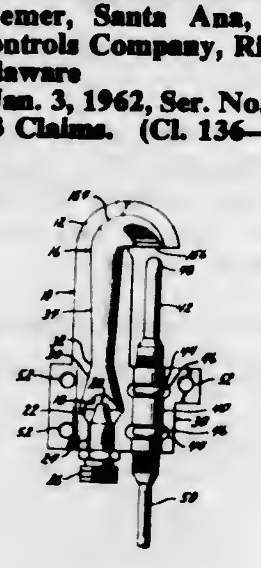
No Drawing. Filed Apr. 15, 1963, Ser. No. 272,874
6 Claims. (Cl. 134—22)

1. A method of cleaning and preventing the deposit and accumulation of mud in water pipes and accompanying water-systems carrying raw water containing mud which comprises treating the mud by adding to the raw water passing through the systems approximately 0.001 to 2000 parts by weight of a water-soluble, nonionic polymer of ethylene oxide per million parts by weight of the water; said water passing through said systems at a flow rate sufficient to carry the treated mud, and said polymer having an average molecular weight above 800,000.

3,184,337
PILOT BURNER CONSTRUCTIONS AND THE LIKE

Lambert F. Craemer, Santa Ana, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Jan. 3, 1962, Ser. No. 164,032
3 Claims. (Cl. 136—4)



1. A pilot burner comprising in combination, a pair of generally flat sheet metal members secured together to form a body portion, each of said sheet metal members having complementary depressions formed therein to produce a conduit for a fluid fuel formed in said body portion and having a primary air opening whose inlet edges lie in a plane and a fluid fuel outlet port parallel to said plane and defined by spaced edges of said sheet metal members and defining a parallel plane with the plane defined by said air inlet, the wall of said conduit converging from said inlet to form a Venturi throat downstream of said inlet and diverging from said Venturi throat to said outlet and curving adjacent said outlet, each of said sheet metal members having cutaway portions to form said air inlet, said sheet metal members having complementary depressions adjacent and upstream from said cutaway portions to form a fuel injection means supporting recess, and fuel injection means mounted on said body portion in said recess and projecting into said inlet, the walls of said sheet metal members adjacent to and downstream of said inlet being laterally spaced from said fuel injection means, said inlet edges being formed by said walls upstream from said fuel injection means and at the beginning of said converging portion of said conduit, whereby lint entering said primary air inlet will be entrained in the rapidly flowing fluid through said conduit to be incinerated at said burner port, said combination further comprising a laterally projecting support bracket on said body portion formed by extensions of said sheet metal members having complementary depressions to form a cylindrical recess in said support bracket, a thermocouple mounted in said cylindrical recess, and having a thermoelectric junction disposed adjacent said burner port, whereby the flame caused by combustion of fuel at said burner port will impinge on said thermoelectric junction.

3,184,338
FORMATION OF NEGATIVE ELECTRODES

Gustav A. Mueller, St. Paul, Minn., assignor to Union Carbide Corporation, a corporation of New York

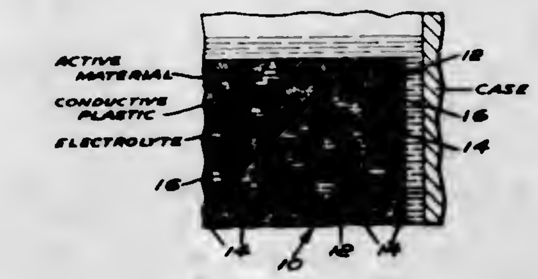
No Drawing. Filed Jan. 31, 1962, Ser. No. 170,258
4 Claims. (Cl. 136—75)

1. In a formation process for converting negative electrode stock consisting essentially of a conductive metal matrix the interstices of which are filled with an electrodeposited complex of cadmium hydroxide and nitrogenous compounds into a finished electrode ready for use in a galvanic cell, the improvement consisting essentially of the following order of steps; electrochemically charging said cadmium hydroxide in said complex to form spongy metallic cadmium, reducing the thickness of said conductive metal matrix to the desired size by the application of pressure, discharging said spongy metallic cadmium to form cadmium hydroxide, washing the thus formed electrode to remove said nitrogenous compounds, and drying said electrode.

3,184,339
BATTERY ELECTRODE

Grenville B. Ellis, 225 Main St., Easthampton, Mass.

Filed Apr. 10, 1962, Ser. No. 188,606
3 Claims. (Cl. 136—75)



1. A method of fabricating a battery electrode comprising mixing together discrete particles of conductive plastic and formed electrode active material in the proportion of about 5–20% plastic to about 95–80% active material, and molding the mixture into a porous unitary form by application of heat and pressure sufficient to join adjacent plastic particles.

3,184,340
ELECTRODE FOR ELECTROCHEMICAL DEVICE

Henri Georges André, Montmorency, France, assignor to Yardney International Corp., New York, N.Y., a corporation of New York

No Drawing. Filed June 5, 1961, Ser. No. 114,603
Claims priority, application France, June 9, 1960, 829,501
6 Claims. (Cl. 136—78)

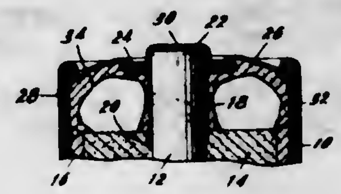
1. A method of substantially maintaining, upon repeated cycling, the capacity of a storage-battery cell having a positive electrode in the form of a porous body of active material, a negative electrode and an alkaline electrolyte selected from the group which consists of aqueous solutions of sodium hydroxide and potassium hydroxide permeating said electrodes, said method comprising the treatment of said positive electrode, just prior to its introduction into the cell, by the following steps:

(*a*) precipitating crystallized lithium hydroxide from an aqueous solution in the pores of said body;
(*b*) removing said body from said solution; and
(*c*) drying said body.

3,184,341
LEAK-RESISTANT DRY CELL

Thomas A. Reilly, Cleveland, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Filed July 12, 1962, Ser. No. 209,344
12 Claims. (Cl. 136—133)



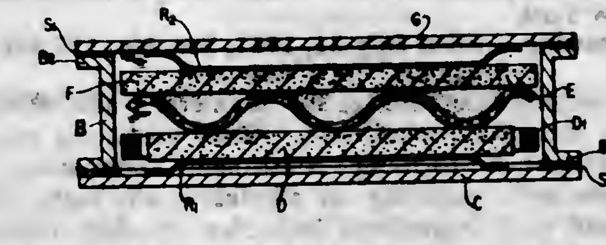
2. A leak-resistant dry cell comprising, in combination, a cupped electrode of a consumable metal containing depolarizer mix and electrolyte; a top closure for said cell having gas venting means therein, said top closure being spaced from said depolarizer mix, defining a free space therebetween, the surface of said depolarizer mix being exposed to said free space; a porous carbon electrode embedded within said depolarizer mix and extending into contact with said top closure; a liquid and gas impermeable sealing layer on adhered to and surrounding the surfaces of said porous carbon electrode normally exposed within said free space and a short distance below said surface of said depolarizer mix; and an inner seal below said top closure and overlying said liquid and gas impermeable sealing layer on said porous carbon electrode within said free space; said porous carbon electrode in conjunction with said gas venting means in said top closure providing a path for venting gas from said cell.

3,184,342
GAS-TIGHT CASINGS FOR POWER SOURCES OR OTHER TYPES OF ELECTROCHEMICAL CELLS

Guy Jean Louis Seibel, La Celle St. Cloud, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, Seine, France, a company of France

Filed Nov. 20, 1961, Ser. No. 153,522
Claims priority, application France, Dec. 2, 1960, 845,759
16 Claims. (Cl. 136—166)

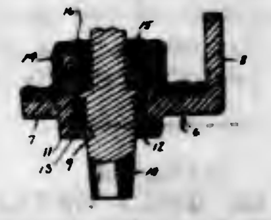
1. A sealed, gas-tight casing for an electrochemical power source containing electrodes comprising two conductive wall piece together defining a cup-like part and one of which is in electrical connection with an electrode, an insulating sealing weld of glass joining the two conductive pieces, and a conductive cover piece in electrical connection with another electrode united with the cup-like part with an electrically conductive sealing weld.



3,184,343
BATTERY COVER TERMINAL BOSS

John K. Shannon, 2028 63rd Place, Kenosha, Wis.

Filed Nov. 15, 1961, Ser. No. 152,473
2 Claims. (Cl. 136—168)



1. In a storage battery including a cover and battery terminal posts affixed thereto, said cover comprising a top wall with a depending peripheral flange, said top wall having battery terminal post openings therein, each opening having a seat, and each said seat having pressed thereon a gasket, a hollow boss completely surrounding said opening on the interior surface of said top wall, said boss extending a material distance beyond said gasket, a battery terminal post in each said opening, said gasket, and said hollow boss, said boss having a greater internal diameter than the diameter of said post thereby providing a dam for the retention of poured plastic material, and plastic material completely filling the space between said boss and said terminal post and extending over the end of said boss and the outside thereof and onto the inside surface of said top wall whereby more effective sealing of said terminal post to said cover is accomplished.

3,184,344
METHOD OF IMPROVING THE AGING CHARACTERISTICS OF STEEL

Paul Werthebach, Dortmund, and Willi Wrede, Dortmund-Kirchderne, Germany, assignors to Hoesch Aktiengesellschaft, Dortmund, Germany

No Drawing. Filed Feb. 14, 1963, Ser. No. 258,640
Claims priority, application Germany, Feb. 16, 1962, H 44,897
6 Claims. (Cl. 148—12)

1. A method of improving the aging characteristics of substantially aluminum-free steel, comprising the step of subjecting steel containing up to 0.01% aluminum and more than 0.001% nitrogen in an atmosphere consisting essentially of between 40% and 95.5% by volume of hydrogen gas, between 5% and 0.5% by volume of steam and up to 59.5% by volume of at least one gas selected from the group consisting of nitrogen gas and rare gases to a heat treatment at a temperature between a first temperature being the temperature of incipient decarbonization of said steel and a second temperature being 100° C. lower than said first temperature and for a period of time sufficient to substantially reduce the nitrogen content of said steel, whereby the aging characteristics of said steel are improved due to reduction of the nitrogen content thereof without substantially affecting the carbon content of said steel.

3,184,345
SUBMERGED ARC WELDING COMPOSITION

Zoltan E. Kerekes, Carteret, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 31, 1961, Ser. No. 127,880
9 Claims. (Cl. 148—26)

1. A welding composition for submerged arc welding of nickel and nickel base weld metals, consisting essentially of matrix forming constituents consisting of base ingredients including an alkaline earth metal carbonate and acid ingredients including titanium dioxide and alumina proportioned so as to be essentially neutral, a minor proportion of a silicate binder, and a minor proportion of a modifying material, said alumina being present in an amount sufficient to combine with the silicate to form a separate mullite phase having a slight excess of silica to lower the solidification temperature of the mullite to its eutectic temperature of 2800° F., said flux matrix having a solidification temperature slightly below that of the weld metal and said alumina further being present in an amount sufficient to react with said base and other acid ingredients of said matrix forming constituents so that the flux matrix has a pH factor ranging from approximately neutral to slightly basic.

3,184,346
GRAIN ORIENTED SHEET METAL HAVING A VANADIUM NITRIDE DISPERSION

Howard C. Fiedler, Niskayuna, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Original application Jan. 4, 1960, Ser. No. 60. Divided and this application Apr. 27, 1961, Ser. No. 105,899
1 Claim. (Cl. 148—31.55)

A polycrystalline sheet-like body having a majority of the constituent grains oriented in the (110)[001] direction consisting essentially of from 2 to 6 weight percent silicon, from about 0.05 to 0.15 weight percent vanadium, at least 0.002 weight percent nitrogen combined with said vanadium to form a vanadium nitride dispersion promoting said (110)[001] grain orientation direction within said sheet-like body, and the remainder substantially all iron.

3,184,347
SELECTIVE CONTROL OF ELECTRON AND HOLE LIFETIMES IN TRANSISTORS

Jean A. Hoerni, Los Altos, Calif., assignor to Fairchild Semiconductor Corporation, Palo Alto, Calif., a corporation of Delaware

No Drawing. Filed July 19, 1962, Ser. No. 211,132
2 Claims. (Cl. 148—33)

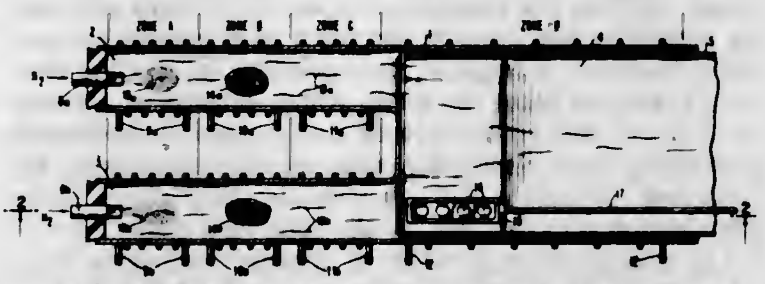
1. An improved NPN silicon transistor structure comprising an N-type collector, a P-type base, an N-type emitter, and gold dispersed substantially uniformly throughout the transistor structure with a concentration throughout the region of the collector adjacent to the collector-base junction of the order of the concentration of donor atoms therein and less than the concentration for compensation of the collector, whereby the transistor has a minimum switching time and high current gain.

3,184,348
METHOD FOR CONTROLLING DOPING IN VAPOR-GROWN SEMICONDUCTOR BODIES

John C. Marinace, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 30, 1960, Ser. No. 79,896
2 Claims. (Cl. 148—174)

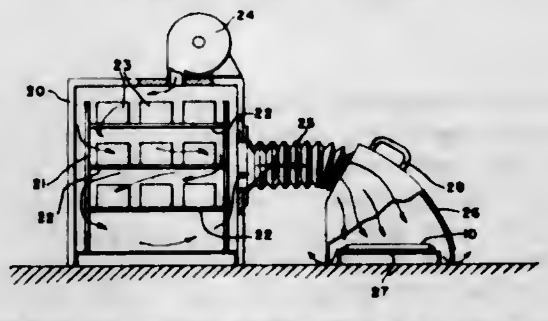
1. The method of producing semiconductor devices having a plurality of layers of semiconductor material with abrupt junctions therebetween which comprises, positioning a first source of semiconductor material with a suitable doping material and a transport element in a first temperature zone of one branch of a reaction container, positioning a second source of semiconductor material with a doping material that will produce a different degree or opposite type of doping and a transport element in a first temperature zone of a second branch of said reaction container; reacting each of said sources and respective transport elements so as to produce vaporous compounds; decomposing each of said vaporous compounds in a separate, second temperature, zone of each of said branches, thereby freeing said first and second sources of semiconductor material; producing a flow of carrier gas through each of said branches and into a third temperature zone to which said first and second branches are joined; and successively positioning a substrate in each of the separate second zones of each of said branches so as to deposit semiconductor material selectively thereon to produce a plurality of layers of differing conductivity.



3,184,349
HEAT TREATMENT OF PRECISION ALUMINUM ASSEMBLIES

Arthur Burwen, Wakefield, Mass., assignor to Ovitron Corporation, Newburgh, N.Y., a corporation of Delaware

Filed Apr. 8, 1963, Ser. No. 271,434
1 Claim. (Cl. 148—125)



A method of quenching cooling from an elevated temperature a complicated metal shape comprising an integrated assembly of thin and long strips of an age-hardenable aluminum alloy which shape is subject to distortion under normal quenching conditions which comprises, heating said metal shape to an elevated temperature corresponding to the solution temperature of said age-hardenable aluminum alloy, quench cooling said shape from said solution temperature by directing a massive flow of approximately 1000 cubic feet per minute of a refrigerated gaseous stream of temperature below 0° F. substantially simultaneously to all parts of said metal shape, and continuing said flow of refrigerated gas to substantially all parts of said metal shape until the metal shape has cooled to below its age-hardening temperatures.

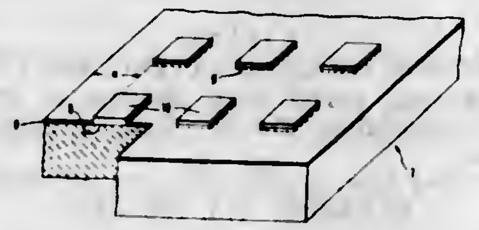
3,184,350
FLUOROCARBON COMPOUND USED IN MASKING OF EPITAXIAL GROWTH OF SEMICONDUCTORS BY VAPOR DEPOSITION

John C. Marinace, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 2, 1962, Ser. No. 184,206
6 Claims. (Cl. 148—175)

1. The process for simultaneously fabricating a plurality of semiconductor devices on a substrate comprising the steps of:

providing a monocrystalline substrate,
coating a major surface of said substrate with a fluorocarbon compound mask to define discrete device areas whereat additional semiconductor material is to be deposited.



and exposing said substrate to a decomposing vapor of a semiconductor halide compound whereby semiconductor material is epitaxially deposited in said discrete areas on said monocrystalline substrate.

3,184,351
LIQUID CHLORINATED ORGANIC COMPOUND SENSITIZING AGENTS

Thurber W. Royer, Arcadia, Jerome S. Brower, Pomona, and Nickolas Brunetz, La Mirada, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed Mar. 27, 1963, Ser. No. 268,483
23 Claims. (Cl. 149—2)

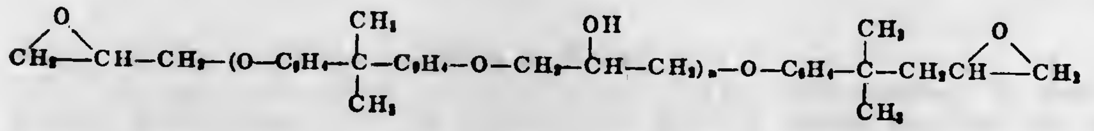
1. An explosive composition having an oxygen balance ranging from about −25 to about +25 consisting essentially of an inorganic oxidizer component and a sensitizer selected from the group consisting of a liquid chlorinated organic compound having the formula $R(Cl)_n$; and a mixture of a liquid chlorinated organic compound having the formula $R(Cl)_n$ with a compound selected from the group consisting of a hydrocarbon and a substituted hydrocarbon wherein R is selected from the group consisting of alkyl, aryl, cycloalkyl, aralkyl, alkaryl, and cycloalkyl aryl radicals and *n* is an integer from one to about 10.

3,184,352
SOLVENT PROCESS FOR PREPARING EPOXY-BASE PROPELLANTS

Walter S. Baker, Yucaipa, Calif., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Jan. 10, 1964, Ser. No. 337,107
8 Claims. (Cl. 149—19)

1. A process for preparing a solid propellant composition which comprises dissolving a diglycidyl ether consisting essentially of monometric molecules and corresponding to the formula



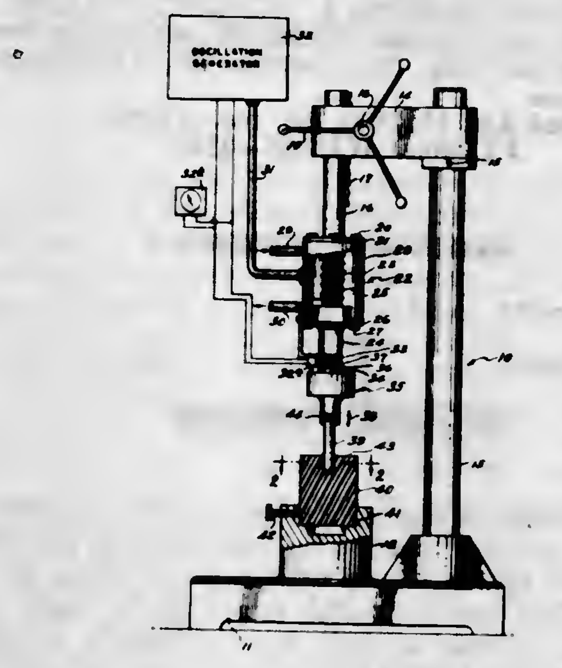
$$\overset{O}{CH_2—CH}—CH_2—(O—C_6H_4—\underset{CH_3}{\overset{CH_3}{C}}—C_6H_4—O—CH_2—\overset{OH}{CH}—CH_2)_n—O—C_6H_4—\underset{CH_3}{\overset{CH_3}{C}}—CH_2\overset{O}{CH—CH_2}$$

wherein *n* equals zero for more than 75% of the molecules and equals one for the remainder, in a low boiling organic solvent, adding an inorganic oxidant and one half of a stoichiometric amount of an aliphatic polyamine, the reactive groups of the said polyamine consisting of amino groups containing at least one replaceable hydrogen atom, homogenizing the mixture until the organic solvent has evaporated, pouring the mixture in molds and compressing at ambient temperature and finally heating the compressed mixture to a temperature between 60 and 100° C. for a period of 18 to 2 hours, the time of heating varying inversely with the temperature.

3,184,353
FASTENING TOGETHER OF MEMBERS BY HIGH FREQUENCY VIBRATIONS

Lewis Balamuth, New York, and Arthur Kuris, Riverdale, Bronx, N.Y., assignors to Cavitron Ultrasonics Inc., New York, N.Y., a corporation of New York

Filed Nov. 13, 1961, Ser. No. 151,871
14 Claims. (Cl. 156—73)



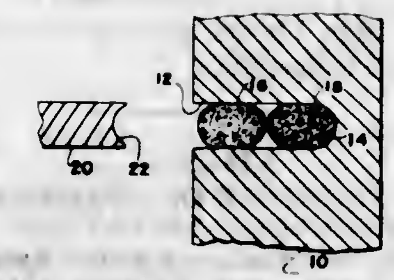
1. A method of securing a non-plastic element to at least one plastic, normally solid homogeneous member, comprising applying a static force to said element urging the latter into said plastic member, and simultaneously introducing vibrations into said element parallel to the direction of said static force and at a frequency of at least 1000 cycles per second and sufficient amplitude to cause said plastic member to flow only in the areas of contact of the latter with said element so that said element is made to penetrate to a predetermined extent into into said plastic member by said static force while avoiding any other change in the shape and physical properties of said plastic member, whereupon the vibrating of said element is discontinued to halt said flow of the plastic member and obtain secure bonding of the latter to said element penetrating therein.

3,184,354
METHOD OF SPLICING MULTIFILAMENT YARNS BY VIBRATORY TREATMENT

Fred P. Strother, Shawmut, Ala., assignor to West Point Manufacturing Company, West Point, Ga., a corporation of Georgia

Filed Feb. 28, 1962, Ser. No. 176,246
4 Claims. (Cl. 156—73)

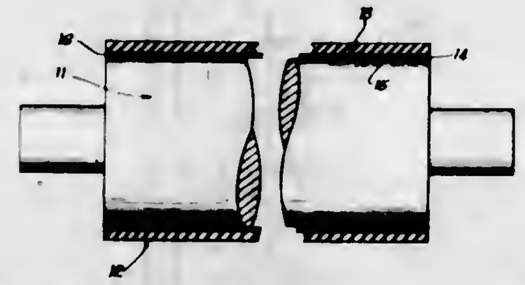
1. Method of splicing multifilament yarns comprising the steps of compressing the yarns between a tool and a



die, and simultaneously vibrating said tool at high frequency to soften, compact and bond the fibers of said yarns together.

3,184,355
METHOD OF MAKING A PRINTER'S ROLLER

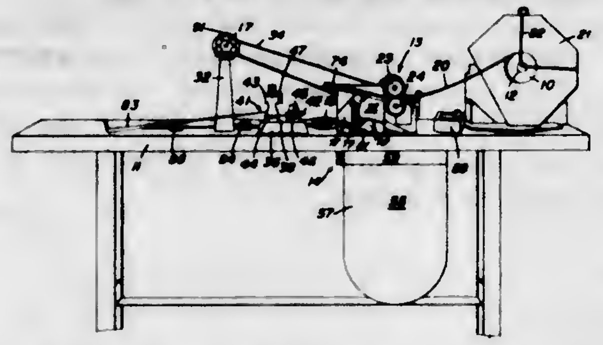
James K. Brown, Arlington Heights, Ill., assignor to Sam'l Bingham's Son Mfg. Co., Chicago, Ill., a corporation of Delaware
Filed Apr. 15, 1963, Ser. No. 272,903
2 Claims. (Cl. 156—154)



2. The method of making a printer's roller, comprising preforming an outer covering by vulcanizing an extruded rubber sleeve upon a knitted tubular cotton fabric sleeve lining stretched onto a mandrel, saturating the sleeve lining of said preformed covering with an adhesive, slipping said covering over a metal core and allowing said adhesive to set by drying, finish grinding and polishing the outer peripheral surface of said covering, and trimming the ends of said covering to conform to the length of said core.

3,184,356
METHOD FOR SLITTING AND SPLICING FILM

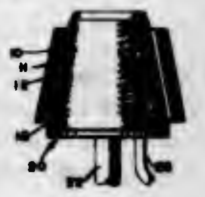
Warren H. Jackman and Robert H. Johanson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 17, 1961, Ser. No. 89,989
2 Claims. (Cl. 156—159)



1. The method for slitting a film of predetermined width advanced through a slitter into first and second strips, each having a start end and a finish end, and simultaneously splicing the end of a leader to the start end of the first strip, and the finish end of the first strip to the start end of the second strip for forming a single continuous film of one-half said predetermined width, comprising: slitting a film of predetermined width into first and second strips; winding a portion of said second strip onto itself and storing all of said first strip except its ends; placing one end of a leader and the start end of the second strip in side by side relation; placing the start end of the first strip in alignment with said leader, and the finish end of the first strip in alignment with the start end of the second strip; simultaneously splicing one end of the leader to the start end of the first strip, and the finish end of the first strip to the start end of the second strip; and winding the remaining portion of said second strip and said first strip and leader spliced thereto.

3,184,357
METHOD OF LAMINATING SHEATHS

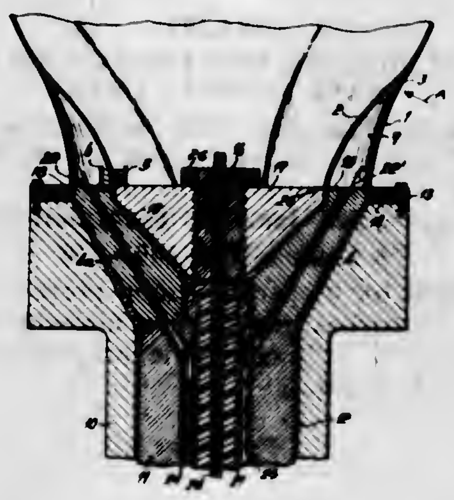
Peter D. Kaspar, Dover, Del., assignor to International Latex Corporation, Dover, Del., a corporation of Delaware
Filed Mar. 6, 1962, Ser. No. 177,769
10 Claims. (Cl. 156—165)



1. Method of applying a stretchable sleeve to the exposed surface of a rubber sheath positioned upon the inner surface of a hollow form which comprises placing said sleeve upon an inflatable bladder adapted to fit within said form, applying a layer of adhesive to at least one of the surfaces to be joined, inserting the bladder carrying the sleeve within the form to place the sleeve in spaced relation adjacent to said sheath, inflating the bladder thereby enlarging the stretchable sleeve and pressing it into contact with the sheath with the adhesive layer therebetween, and maintaining this relation until the enlarged sleeve is adhered to the sheath.

3,184,358
METHOD OF FORMING LAMINATED PLASTIC TUBING

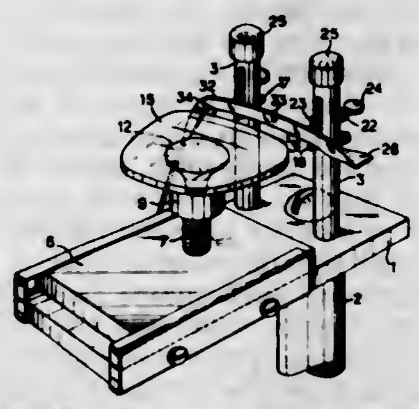
Kastulus Utz, Freising, Germany, assignor, by mesne assignments, to Multifol Patentverwertungs A.G., Chur, Switzerland, a corporation of Switzerland
Filed June 20, 1961, Ser. No. 118,313
12 Claims. (Cl. 156—244)



1. A method of producing laminated tubing, comprising extruding at least two tubular formations of different thermoplastic materials difficultly susceptible to bonding, coaxially and spacedly issuing said formations, said formations forming an outer and an inner formation and constituting the layers of the laminated tubing being produced, said outer formation enclosing said inner formation and having an inner face, said inner formation having an outer face, admitting a fluid pressure medium into the interior of said inner formation and thus expanding same to fuse together with said outer formation approximately along a circle a distance away from the place of issuance of both of said formations, portions of said inner and outer faces defining a temporary space of annular cross section, introducing a gas into said space, capable of reacting with at least one of said portions, reacting said gas with at least said one portion, and bonding together said portions with the aid of said fluid pressure medium.

3,184,359
APPARATUS FOR THE ASSEMBLY OF OPHTHALMIC LENSES IN SPECTACLE FRAMES

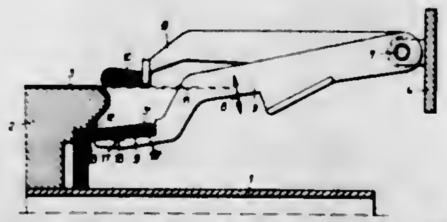
Georges Hector Emile Lissac, 8 Ave. Raphael, Paris, France
Filed May 14, 1962, Ser. No. 194,613
Claims priority, application France June 16, 1961, 865,156
6 Claims. (Cl. 156—349)



5. Apparatus for the assembly of ophthalmic lenses in spectacle frames by glueing, comprising a base, means attached to said base for setting and securing a spectacle frame, a slide formed on said base, a slider mounted in said slide, a vertical rod secured to the slider, a movable piece adapted for displacement along said rod, and a rubber suction cup for holding a lens mounted on one end of said movable piece, whereby sliding movement of the slider towards said setting and securing means presents a lens held by the cup into contact with the frame.

3,184,360
MACHINE FOR MAKING CARCASSES FOR PNEUMATIC TIRES

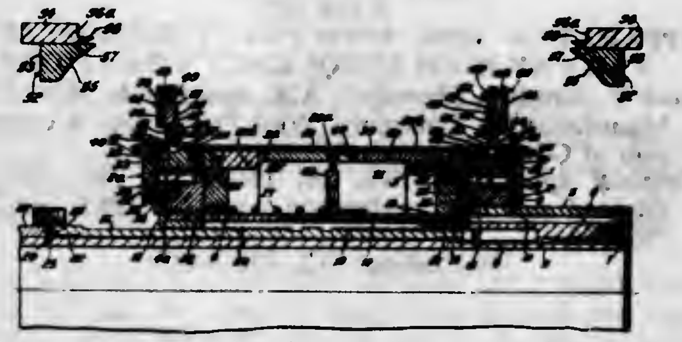
Heinrich Nädler, Kreis Neustadt am Rubenberge, and Hans Menell, Ahlem, Hannover, Germany, assignors to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany
Filed Oct. 8, 1962, Ser. No. 228,932
Claims priority, application Germany, Oct. 10, 1961, C 25,246
8 Claims. (Cl. 156—401)



1. A machine for making carcasses for pneumatic vehicle tires, which includes: a drum for receiving fabric layers to be formed into a carcass, and inner and outer annular gripper means arranged laterally of said drum and co-axial therewith and operable to grasp the marginal portion of fabric layers on said drum and to form the fabric layers about the adjacent lateral portion of said drum, at least one of said annular means including inflatable body means selectively inflatable for expanding said body means in conformity with the contour of the respective adjacent lateral portions of said drum following the forming of the fabric layers about the lateral portion of the drum thereby to form the said marginal portion of said fabric layer against the adjacent lateral portion of said drum, said body means being block-like in cross section and having a slit-like chamber therein for receiving pressure fluid to expand the body means.

3,184,361
APPARATUS FOR THE MANUFACTURE OF PNEUMATIC TIRES

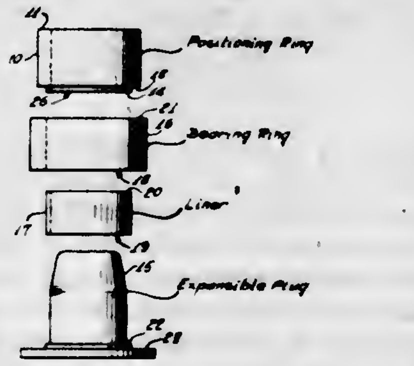
Bernard Charles Allitt, Sutton Coldfield, England, assignor to Dunlop Rubber Company Limited, London County, England, a British company
Filed Oct. 30, 1962, Ser. No. 234,039
Claims priority, application Great Britain, Nov. 27, 1961, 42,299/61
13 Claims. (Cl. 156—415)



1. Apparatus for the manufacture of pneumatic tires comprising a tire building drum having a pair of end members, a flexible inflatable cylindrical diaphragm attached at its end to the end members, one end to each end member, a plurality of collapsible intermediate rigid drum segments located between the end members and radially within the diaphragm to support the diaphragm in its cylindrical state in the uncollapsed state of the segments, the segments being mounted between the end members in pairs, said pairs lying side-by-side circumferentially of the drum and the segments of each pair lying end-to-end axially of the drum, the remote ends of the segments of each pair being pivotally mounted to the end members one end to each end member, and the adjacent ends of the segments being pivotally connected together for movement of the adjacent ends radially outwardly of the drum to collapse the segments radially outwardly upon axially inward movement of the end members, means for collapsing the intermediate segments and for moving the end members towards and away from each other, and means for connection to a source of pressurized fluid to inflate the diaphragm simultaneously with movement of the end members towards one another.

3,184,362
APPARATUS FOR BONDING AN ANNULAR LINER TO A BEARING RING

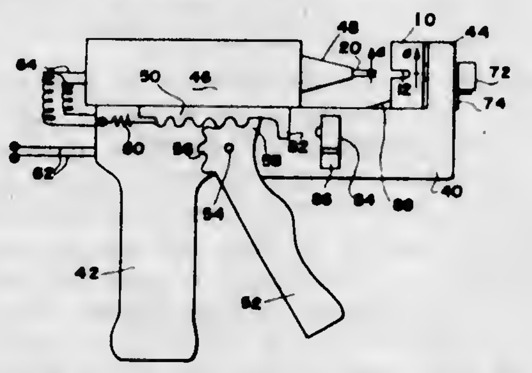
Leonard A. Litsky and James D. Skelly, New Britain, Conn., assignors to The Fafnir Bearing Company, New Britain, Conn., a corporation of Connecticut
Filed Mar. 20, 1961, Ser. No. 96,944
6 Claims. (Cl. 156—423)



1. In apparatus for bonding an annular liner having a bore of predetermined dimensions to the bore of a bearing member, an expansible element dimensioned to fit closely within the bore of said liner, and an axial positioning member for axially positioning said liner axially inwardly from one of the bearing members, adapted to fit radially between said expansible element and the bore

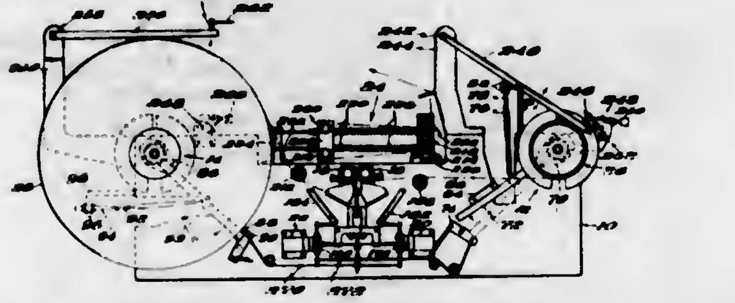
of said bearing member, and a force applying means to press the expansible element within the bore of said annular liner, said positioning member comprising an annular body member forming two abutment surfaces spaced apart relative to each other an axial distance corresponding to a predetermined relative axial location of one edge of said liner inwardly of the adjacent edge of said bearing member.

3,184,363
APPARATUS FOR SPLICING THERMOPLASTIC YARN BY HIGH FREQUENCY VIBRATIONS
Fred P. Strother, Shawmut, Ala., assignor to West Point Manufacturing Company, West Point, Ga., a corporation of Georgia
Original application Feb. 28, 1962, Ser. No. 176,246. Divided and this application Apr. 27, 1964, Ser. No. 362,574
10 Claims. (Cl. 156—433)



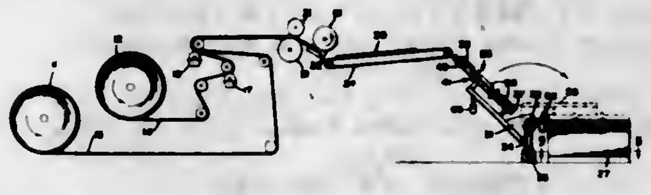
1. Apparatus for splicing yarns containing thermoplastic material comprising a die having a slot therein, the bottom of said slot being concave and substantially semi-cylindrical, a tool adapted to enter said slot, the face of said tool being concave, substantially semi-cylindrical, and generally complementary to the slot bottom, means for urging said tool into said die slot, and means for vibrating said tool at high frequency.

3,184,364
WEB SUPPLY APPARATUS
Richard A. Butler, Jr., 218 Middlesex Road, Brookline, Mass., and Norton T. Pierce, Concord, Mass.; said Pierce assignor to said Butler
Filed May 22, 1962, Ser. No. 196,760
8 Claims. (Cl. 156—504)



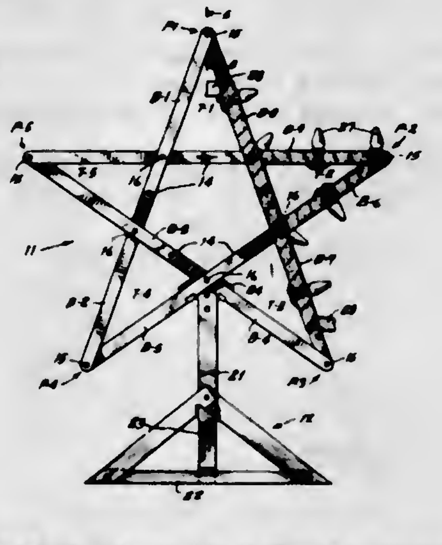
1. Web supply apparatus comprising a base, a pair of mandrels on the base, one for supporting a roll of running web and the other for supporting a roll of ready web, the leading end of the ready web carrying a length of pressure-sensitive adhesive tape, a pair of nip rolls formed with spaced apart web contacting diameters and with larger diameters in frictional engagement to cause both rolls to be driven continuously by the movement of the web, means for presenting the leading end of the ready web to the nip rolls, means for severing the running web, an accelerator for the ready web supply and a single actuating means energized in response to depletion of the running web roll to a predetermined size for rendering operative the web presenting means, the severing means, and the accelerator.

3,184,365
APPARATUS FOR MANUFACTURING HONEYCOMB
Edwin L. Rule, Berkeley, Calif., assignor to Hexcel Products Inc., Berkeley, Calif., a corporation of California
Filed Nov. 14, 1961, Ser. No. 152,350
9 Claims. (Cl. 156—548)



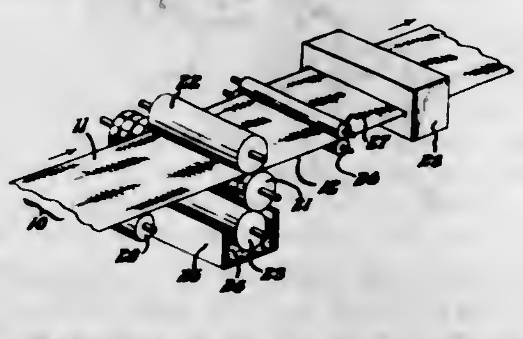
1. Apparatus for aligning the edges of cut sheets of materials to register with the sides of a stack constituting an unexpanded block of honeycomb comprising, in combination, an inverting device supported for movement between a retracted position and a position overlying a block of unexpanded honeycomb, means to move said inverting device between said positions, first guide means associated with said device to expect registry of one edge of a precut length of said material after it is deposited on said device, second guide means associated with said device angularly oriented with respect to said first guide means, and sheet engaging means operable as said inverting device moves from the retracted to said overlying position for engaging the cut sheet after it registers against said first guide means to move it transversely against said second guide means thereby to assure accurate registry of the cut sheet edges and the block edges after the cut sheet is deposited on the unexpanded block of honeycomb.

3,184,366
COLLAPSIBLE DISPLAY DEVICE
George Claude, 820 Brinsmade Ave., Bronx 65, New York, N.Y.
Filed Apr. 3, 1962, Ser. No. 184,717
6 Claims. (Cl. 161—14)



1. A collapsible frame for a display device adapted to be supported in an upright position comprising a plurality of bars of equal length arranged to provide a plurality of at least three symmetrically located triangles, each of said bars having a similarly placed aperture adjacent each end and another similarly placed aperture intermediate one end and a mid point of said bars, means for pivotally interconnecting a plurality of pairs of said bars at said intermediate apertures, whereby said pairs of bars have freely extending long ends and freely extending short ends in spaced substantially cross-shaped formations, means for serially interconnecting the long ends and short ends of said plurality of pairs of bars at said end apertures to form an interconnected frame having at each side thereof one of said bars with a freely extending long end and one of said bars with a freely extending short end, and means for connecting said side bar short ends together and said side bar long ends together at their end apertures, whereby said triangles are provided.

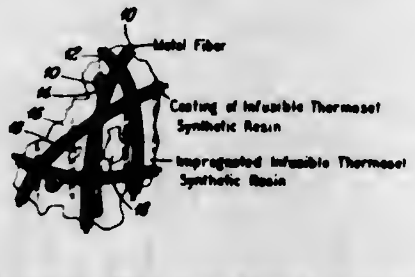
3,184,367
TUFTED PILE FABRIC AND METHOD OF MAKING SAME
William L. White, Wynnewood, Pa., assignor to Collins & Aikman Corporation, New York, N.Y., a corporation of Delaware
Filed May 8, 1963, Ser. No. 278,879
4 Claims. (Cl. 161—63)



1. A method of producing an ornamental pattern in the face of a loop pile fabric comprising saturating the pile yarns of the pile fabric with a lubricating material whereby the yarns are saturated across the face of the fabric in accordance with a predetermined pattern, tigering the loops of both saturated and unsaturated portions of the pile yarns in the face of the fabric simultaneously to open and draw the fibers of the pile yarns thereof out of the backing material, the tigering of the loops drawing the fibers of the saturated portions of the pile yarns considerably higher out of the backing material than the fibers of the unsaturated portions by virtue of the lubricating material.

2. The fabric made according to the method of claim 1.

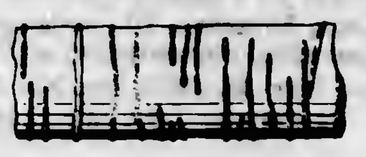
3,184,368
METAL FIBER CONTAINING STRUCTURES AND METHOD THEREFOR
Appy Juras, Detroit, Mich., assignor to Union Carbide Corporation, a corporation of New York
Filed Dec. 29, 1959, Ser. No. 862,476
9 Claims. (Cl. 161—157)


10
Metal Fiber
12
10
Coating of Infusible Thermoset Synthetic Resin
Impregnated Infusible Thermoset Synthetic Resin

1. A porous metal fiber-containing structure of uniform density comprising a mass of randomly oriented and uniformly distributed metal fibers ranging in length from about 0.010 inch to about 3 inches and in diameter from about 0.0001 inch to about 0.040 inch substantially completely coated with a uniformly adherent coating of an infusible thermoset synthetic resin sintered together at points of contact between adjacent metal fibers.

3,184,369
POLYESTER FILAMENTS HAVING IMPROVED FRICTIONAL CHARACTERISTICS
Edward Albert Haseley, Grifton, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 10, 1963, Ser. No. 293,996
5 Claims. (Cl. 161—179)

1. A substantially oriented synthetic linear condensation polyester fiber having a surface characterized by a series of randomly spaced, discontinuous circumferential ridges of sub-microscopic size occurring with a frequency between 10 and 130 ridges per millimeter along the length of the fiber, the fiber being free of diameter variations in excess of 5% of the base fiber diameter.



3,184,370
CERAMIC PROCESS AND PRODUCT
Daniel W. Luks, Frenchtown, N.J., assignor to Frenchtown Porcelain Company, Trenton, N.J., a corporation of New Jersey
No Drawing. Filed Nov. 23, 1959, Ser. No. 854,597
10 Claims. (Cl. 161—193)

1. A method for making a ceramic body which comprises forming an assembly comprising at least two basic integral, fired, ceramic sections and an intermediate integral, fired, ceramic bonding section, each of said basic and bonding sections having a glass phase and a crystalline phase, said bonding section being at least an order of magnitude thinner than the basic sections, having a glass phase miscible with the glass phase of the basic sections and having a maturing temperature below the maturing temperature of the basic sections and firing said assembly at a temperature sufficient to cause coalescence of said basic and bonding sections but insufficient to cause substantial deformation of the basic sections, and for a time sufficient for crystalline growth between said basic and bonding sections to occur.

6. A composite ceramic body comprising a plurality of integral, fired basic ceramic sections, and interposed between said basic sections, an integral, fired, ceramic bonding section, each of said basic and bonding sections having a glass phase and a crystalline phase, said bonding section being characterized in that it has a lower maturing temperature than said basic sections and is an order of magnitude thinner than the basic sections; there being a continuous glass phase and an intercrystalline structure connecting said basic and bonding sections.

3,184,371
FOAMED SILICATE STRUCTURES
Alois Seidl, Thurnstein, Germany, assignor to Wasag-Chemie Aktiengesellschaft, Essen, Germany
No Drawing. Filed Nov. 14, 1960, Ser. No. 68,637
Claims priority, application Germany, Mar. 3, 1960, W 27,376
9 Claims. (Cl. 161—193)

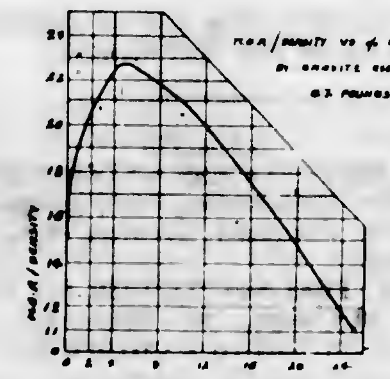
1. A method of producing molded shapes having excellent thermal, mechanical and acoustical properties comprising the steps of: forming a first mixture containing in parts by weight about one part alkali metal silicate, 0.02 to 0.7 part of inorganic fibrous silicate, and 2 to 10 parts of water; heating said mixture to about 140–360° C.; crushing said heated mixture to obtain particles of 0.1–10 mm.; heating said particles in a mold at 700–900° C. to obtain a foamed structure; and thereupon cooling the foamed structure to below the softening temperature thereby obtaining a rigid structure having excellent thermal, acoustical, mechanical and weathering properties.

7.. A foamed product produced by the method of claim 1, and further characterized as being of a highly porous water-tight silicate with a density of 0.15 to 0.3 g./cm.^{3}.

8. A sandwich composite laminate comprising a first sheet consisting of glass, a second sheet consisting of the foamed structure as described by claim 7, and a third sheet consisting of glass, said first and third sheets of glass enclosing said second sheet of foamed structure in sandwich-like relationship, and adhering to said foamed structure in multiple point contact.

3,184,372
FELTED INORGANIC FIBER PANEL

Ronald F. Cotts, Evanston, Ill., assignor to The Celotex Corporation, a corporation of Delaware
Filed Mar. 28, 1962, Ser. No. 183,093
4 Claims. (Cl. 162—145)



1. An interfelted, rigid, inorganic fiber, acoustical panel consisting essentially of 90 to 99.5% interfelted mineral wool fibers, 0.5 to 10% asbestos fibers and a starch binder, said starch binder including about 27% of non-swelling clay based on the combined weight of the fibers and being uniformly dispersed throughout said fibers.

3,184,373
FILLED PAPER CONTAINING A MIXTURE OF RESIN AND MUCILAGINOUS MATERIAL AS A RETENTION AID AND PROCESS FOR PRODUCING SAID PAPER

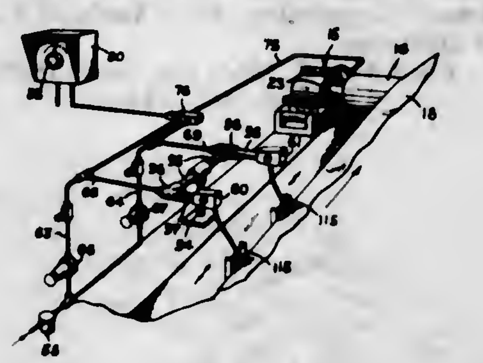
Hanns F. Arledter, Chillicothe, Ohio, assignor, by mesne assignments, to The Mead Corporation, a corporation of Ohio
No Drawing. Continuation of application Ser. No. 600,410, July 27, 1956. This application July 5, 1961, Ser. No. 121,827
The portion of the term of the patent subsequent to June 28, 1977, has been disclaimed
14 Claims. (Cl. 162—152)

1. A filled paper having a filler retention in excess of about 85% consisting of a water-laid interfelted fibrous web consisting of from about 10% to about 80% of filler particles, from about 90% to about 20% respectively of fibers, and a synergistic filler retention mixture of from about 0.1% to about 2% of a water-soluble mucilaginous material selected from the group consisting of mannogalactan and sodium alginate based on the soilds content of the paper, and from about 0.1% to about 2% of at least one water-soluble resin selected from the group consisting of polyethyleneimine, melamine formaldehyde, and urea melamine resins based on the solids content of the paper.

9. The process of preparing a filled paper having a filler retention in excess of about 85% comprising pumping an aqueous slurry consisting of water, from about 20% to about 90% of fibers, from about 80% to about 10% respectively of filler particles, and from about 0.1% to about 2% of a water-soluble mucilaginous material selected from the group consisting of a mannogalactan and sodium alginate based on the solids content of the paper to the headbox of a papermaking machine; adding from about 0.1% to about 2% based on the solids content of the paper of at least one water-soluble resin selected from the group consisting of polyethyleneimine, melamine formaldehyde, and urea melamine resins thereto with minimum agitation to form a synergistic filler retention mixture and to flocculate the fibers and filler particles; forming a paper web on the wire of the papermaking machine; and dewatering, drying, and calendering the web.

3,184,374
APPARATUS FOR OSCILLATING A TRAVELING WEB IN PAPER MACHINERY

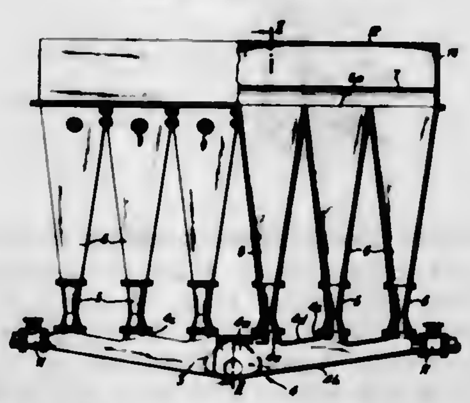
John H. Pearson, Watertown, N.Y., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed Sept. 24, 1962, Ser. No. 225,530
8 Claims. (Cl. 162—257)



1. In a web guide assembly for controlling the lateral position of a traveling web, the combination of actuating means for controlling the lateral position of the web, a pair of substantially identical control means responsive to the position of the web for said actuating means, the first of said control means being responsive to the lateral position of the web for effecting the movement of said actuating means to position the web in a first position, the second of said control means being responsive to the lateral position of the web for effecting movement of said actuating means to position the web in a second position spaced from said first position, and timer means for alternately connecting said first and second control means to said actuating means for continually shifting the web between said first and second positions.

3,184,375
PULP APPROACH FLOW SYSTEM FOR HEADBOXES OF PAPER-MAKING MACHINES

Peter Siegel, Niefern, Baden, Germany, and Jean Chleq, Paris, France, assignors to Gebr. Bellmer KG, Niefern, Baden, Germany, and Chleq, Frote & Cie, Paris, France, both firms
Filed Apr. 22, 1963, Ser. No. 274,444
Claims priority, application France, Apr. 21, 1962, 895,327
1 Claim. (Cl. 162—343)



An approach flow system for a headbox of a papermaking machine comprising in combination an admission conduit having a cross-section in the form of a triangle standing on a horizontal base side, the angles adjacent the base side being equal to each other, the admission conduit opening medially into a pulp distributing conduit of said system through a first vertical wall thereof, said conduit being rectangular in longitudinal section and including a second vertical wall in spaced opposed relationship to said first vertical wall, said second vertical wall being relatively close to said first vertical wall, said conduit including opposed top and bottom walls, said conduit being inclined upwardly from the medial portion thereof to opposite extremities, a plurality of outlet pipe connections connected to and projecting upwardly from said top wall. said pipe connection being in parallel spaced relationship and in substantially the same common horizontal plane, and a Venturi tube connected to each pipe connection and merging in a generally common opening into a headbox.

3,184,376
METHOD OF PRODUCING ANTISEPTIC COMPOSITION

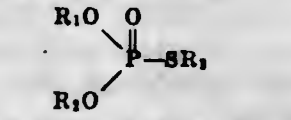
Werner J. Degoli, C.P. 208, Zurich 47, Switzerland
No Drawing. Filed Apr. 16, 1962, Ser. No. 197,558
8 Claims. (Cl. 167—14)

1. A method for the production of a stabilized solution which comprises mixing a compound selected from the group consisting of silver oxide, zinc oxide, copper oxide, and mixtures thereof with a different compound selected from the group consisting of silver oxide, zinc oxide, copper oxide, zinc sulfate, silver sulfate, copper sulfate and mixtures thereof, reacting the resulting mixture in water with a compound selected from the group consisting of sodium persulfate, potassium persulfate and mixtures thereof, and heating the reaction mass to a temperature up to about 80° C.

3,184,377
METHOD OF KILLING NEMATODES WITH THIOPHOSPHATES

Jack Hensel, Kansas City, Mo., and Paul C. Aichenegg, Prairie Village, Kans., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 12, 1961, Ser. No. 158,888
8 Claims. (Cl. 167—22)

1. A process of killing nematodes comprising subjecting said nematodes to a nematocidally effective amount of a compound having the formula



$$(R_1O)(R_2O)P(=O)-SR_3$$

where R_1 and R_2 are selected from the group consisting of alkyl, phenyl, alkyl phenyl and halophenyl and R_3 is selected from the group consisting of polyhalovinyl and di to tetrahaloethyl, the halo atoms of said compound having an atomic weight between 35 and 80 and not over one of said halo atoms of R_3 is in the 1 position.

3,184,378
INSECTICIDES

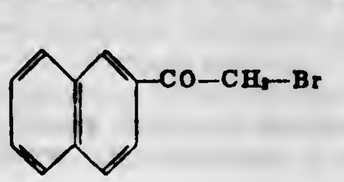
Robert M. Cole, Bryn Athyn, Pa., assignor to Lee Nusbaum, Philadelphia, Pa.
No Drawing. Filed Jan. 26, 1954, Ser. No. 406,348
2 Claims. (Cl. 167—24)

1. A solid insecticide comprising essentially in admixture a first ingredient comprising a 20% mixture of a pyrethrin and petroleum solvent and a second ingredient comprising crystalline para-di-chloro-benzene, the first ingredient comprising from .01% to .02% of the total.

3,184,379
METHOD OF CONTROLLING MICROORGANISMS

George E. Lukes, Irvington, N.Y., and Thomas B. Williamson, Santa Clara, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 13, 1962, Ser. No. 172,849
2 Claims. (Cl. 167—32)

1. A method of inhibiting the growth of microorganisms which comprises applying thereto a small but effective amount of a 2-halomethyl aryl ketone of the following formula:



3,184,380
STABILIZATION OF CONCENTRATED SUSPENSIONS OF PESTICIDE PARTICLES

Verle W. Woods, P.O. Box 574, Yakima, Wash.
No Drawing. Filed Apr. 1, 1963, Ser. No. 269,753
4 Claims. (Cl. 167—43)

1. A method of forming a stable suspension of a nonwater soluble organic pesticide which is (1) normally crystalline and insoluble in fat in the range of temperatures between 30 degrees and 130 degrees F. and (2) either soluble in fat at a temperature above 130 degrees F. or melts at a temperature below the boiling point of the suspending liquid, the temperature at which the pesticide becomes soluble in fat or melts being below its decomposition temperature, and (3) at a concentration in suspension which is capable of remaining in a fluid state suitable for agitation at all temperatures below that at which it either dissolves or melts, which comprises:

forming a liquid emulsion of fat in a water solution heavier than water alone;
introducing the solid pesticide into the emulsion;
grinding the solid pesticide in the emulsion to a fineness of the order of 5 to 15 microns, thereby adhering a coating of fat to the solids;
simultaneously agitating and heating the suspension above 130 degrees F. but below the boiling point of the suspending liquid until the solid particles disappear;
and then gradually cooling the suspension, while agitating it, to a temperature below 130 degrees F., thereby forming crystals within the fat globules of the suspension.

3,184,381
URINARY CALCULI TREATING COMPOSITIONS AND METHODS OF USING SAME

Harvey Ashmead, 719 E. Center, Kaysville, Utah, and Floyd R. Mencimer, 3424 Iowa Ave., Ogden, Utah
No Drawing. Filed Feb. 28, 1961, Ser. No. 92,147
8 Claims. (Cl. 167—53)

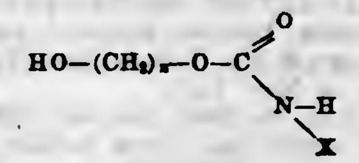
1. A composition for the prevention and treatment of urinary calculi in animals consisting of ethylenediaminetetraacetic acid, sodium tripolyphosphate, poly-n-vinyl-5-methyl-2-oxazolidone and carboxymethylcellulose.

3,184,382
METHOD OF PRODUCING TRANQUILIZATION BY HYDROXY - LOWERALKYL - N - SUBSTITUTED CARBAMIC ACID ESTERS

Joseph C. Calandra, Skokie, Ill., assignor to The Pure Oil Company, Palatine, Ill., a corporation of Ohio
Filed Aug. 12, 1963, Ser. No. 301,284
18 Claims. (Cl. 167—65)

1. The method of inducing tranquility in vertebrates which comprises administering about 150 to about 3300 mg./day of compounds of the group consisting of hydroxy alkyl esters of N-substituted carbamates of the formulae

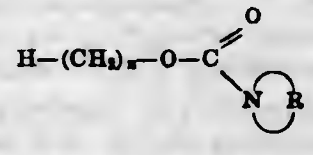
(I)



$$HO-(CH_2)_n-O-C(=O)-N(H)-X$$

wherein *n* is an integer of from 2 to 5 and X is a member of the group consisting of phenylalkyl and naphthalkyl having from 1 to 5 carbon atoms in the alkyl and

(II)



$$H-(CH_2)_n-O-C(=O)-N{<}R$$

wherein *n* is an integer of from 2 to 5 and R is divalent alkylene of 2 to 5 carbon atoms.

3,184,383
NEW DERIVATIVE OF GITOXIN, THE USE AND PREPARATION THEREOF

Christian Arthur Hupin, Koekelberg, Brussels, Belgium, assignor to Manufacture de Produits Pharmaceutiques A. Christiaens Societe Anonyme, Brussels, Belgium
No Drawing. Filed Nov. 21, 1963, Ser. No. 325,501
Claims priority, application Belgium, Nov. 28, 1962, 500,111
8 Claims. (Cl. 167—65)

2. A pharmaceutical composition in tablet form having a cardiotonic action and consisting essentially of pentaformylgitoxin, as active ingredient, and a tablet-forming carrier therefor, said tablet containing 0.2 milligram of the pentaformylgitoxin per 100 grams of tablet.

3,184,384
METHOD OF PRODUCING *BRUCELLA ABORTUS* VACCINE

Joseph W. Whalen, Zionsville, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 7, 1961, Ser. No. 136,453
6 Claims. (Cl. 167—78)

1. The method for producing a vaccine concentrate of *Brucella abortus* organisms which comprises preparing a sterile liquid nutrient medium consisting of an aqueous solution of yeast extract, sodium chloride, thiamine hydrochloride, a polypropylene glycol having a molecular weight of from about 1500 to 3000 as an antifoaming agent 2 percent by weight of glucose and about 3 percent by weight of a pancreatic enzyme hydrolysate of casein, seeding said solution with a suspension of organisms of strain 19 of *Brucella abortus*, agitating the resulting mixture and maintaining same at temperatures of 36°–38° C., while introducing sterile air below the surface of said mixture at the rate of at least 7 volumes of air per minute for each 10 volumes of liquid culture medium, maintaining the foregoing incubation conditions for a period of from about 20 to 40 hours and harvesting the resulting vaccine concentrate.

3,184,385
DRY, VITAMIN-ACTIVE PRODUCT AND PROCESS FOR PREPARING SAME

Lawrence A. Anderson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 16, 1961, Ser. No. 145,445
15 Claims. (Cl. 167—81)

1. A vitamin product in a dry, finely divided, free flowing solid state, the particles of which comprise a fat-soluble vitamin-active composition dispersed within a solid matrix consisting essentially of high viscosity, starch alumino-succinate ester.

3,184,386
PROLONGED ACTION MEDICINAL TABLETS

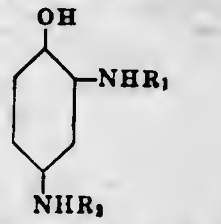
Douglas Stephenson, London, England, assignor to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York
Filed Aug. 29, 1962, Ser. No. 220,265
Claims priority, application Great Britain, May 2, 1958, 14,061/58
9 Claims. (Cl. 167—82)

1. A tablet capable of giving prolonged acting medication containing a substantially homogeneous mixture of (1) a medicament, (2) casein present in an amount of from 20 to 60 percent by weight of the mixture, and (3) a lipid of waxy consistency which is sparingly soluble in water, is slowly digestible in the digestive juices, is selected from the class consisting of fats, fatty acids and waxes, and is present in an amount of from 10 to 50 percent by weight of the mixture.

3,184,387
PROCESS FOR DYEING HAIR WITH SUBSTITUTED 2,4-DIAMINOPHENOLS

John Robert Seemuller, Maisons-Laffitte, Seine et Oise, France, assignor to L'Oreal, a corporation of France
No Drawing. Filed Dec. 7, 1959, Ser. No. 857,989
Claims priority, application France, Nov. 25, 1955, 703,367, Patent 1,137,922; Oct. 18, 1956, 57,825
5 Claims. (Cl. 167—88)

1. A process for dyeing live human hair which comprises: applying to the hair an aqueous solution as an oxidative dye stuff of a compound of the formula



wherein R_1 and R_2 are selected from the group consisting of hydrogen, lower alkyl and lower hydroxy alkyl, and at least one of R_1 and R_2 are other than hydrogen, thereafter said hair is aerated to promote the substantial oxidation of this compound before being rinsed.

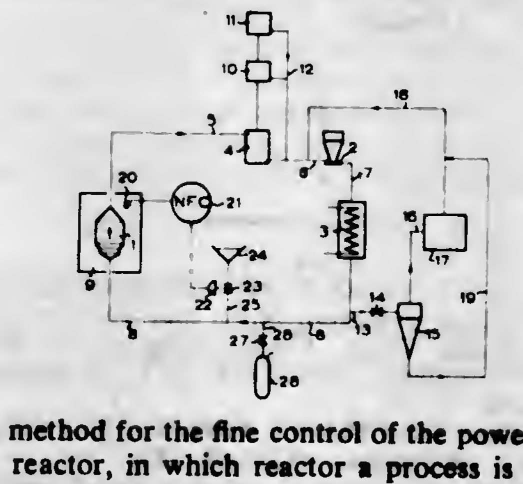
3,184,388
PROCESS AND PRODUCT FOR ARTIFICIALLY BROWNING THE SKIN

Gregoire Kalopissis, Paris, France, assignor to Societe Anonyme dite: L'Oreal, Paris, France, a French corporate
No Drawing. Filed July 24, 1961, Ser. No. 125,964
Claims priority, application France July 25, 1960, 833,916, Patent 1,307,259
10 Claims. (Cl. 167—90)

1. A process for imparting to the skin a brown shade having an appearance similar to that obtained by exposure to the sun's rays which comprises applying to the skin a composition containing at least 0.5% erythrulose in a diluent medium.

3,184,389
FINE CONTROL OF A SUSPENSION NUCLEAR REACTOR

Johannes A. H. Kersten, Arnhem, Netherlands, assignor to Stichting Reactor Centrum Nederland, The Hague, Netherlands
Filed Dec. 28, 1961, Ser. No. 162,818
Claims priority, application Netherlands, Dec. 30, 1960, 259,633
4 Claims. (Cl. 176—20)

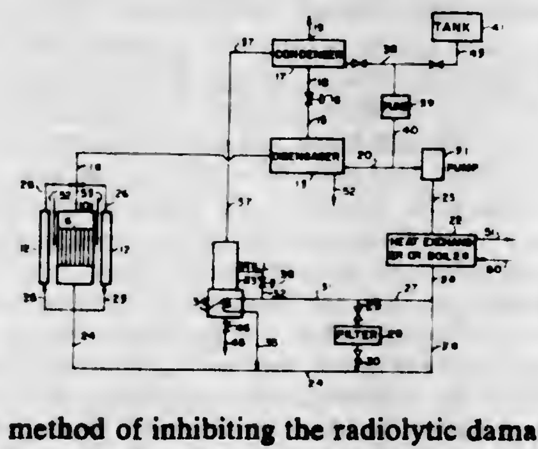


1. A method for the fine control of the power level of a nuclear reactor, in which reactor a process is established for a self-sustaining neutron chain nuclear fission reaction, the said reactor being a part of a system, said system comprising a nuclear fuel suspension of solid fissile material particles in water and a reactor assembly, said reactor assembly comprising a reactor-circuit and control apparatus, said reactor-circuit comprising the said nuclear reactor wherein critical conditions prevail and an external circuit including a heat-exchanger, wherein non-critical conditions prevail, the said nuclear fuel suspension circulating through said reactor-circuit, the improvement comprising gradually adding to the said circulating fuel suspension a small quantity of an aqueous solution of a base selected from the group consisting of sodium hydroxide and ammonia in an amount of 0.3 cc. of a 0.1 normal solution of the base per liter of circulating nuclear fuel suspension, said addition beginning as soon as abnormal fluctuations of the power level are measured, and ending as soon as the said abnormal fluctuation measurements have disappeared.

2. A nuclear reactor assembly, comprising a nuclear reactor constructed as a pressure vessel, having inlet and outlet for passing through the reactor a continuous stream of a suspension of solid fissile material in a liquid, the said pressure vessel surrounded by a neutron reflector and being of such a shape, that critical conditions therein will prevail if the said pressure vessel is completely filled with the said suspension of solid fissible material, an external circuit including a heat exchanger, wherein non-critical conditions prevail, the said external circuit connected to the inlet and outlet of the said pressure vessel of the nuclear reactor, a pump mounted in the said external circuit for the circulation of the said suspension through reactor and external circuit, a continuously operating neutron flux meter, situated within the measurable flux field of the reactor, a differential amplitude controller with a low pass frequency band width limit, which is coupled to the said meter and which is operatively connected to an automatic control valve in a conduit which connects a storage tank for electrolyte to the space for the circulating suspension.

3,184,390
STABILIZATION OF ORGANIC FLUIDS AGAINST RADIATION DECOMPOSITION AND SYSTEMS EMPLOYING SAME

James A. Ellard, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware
Filed Oct. 24, 1960, Ser. No. 64,437
14 Claims. (Cl. 176—38)

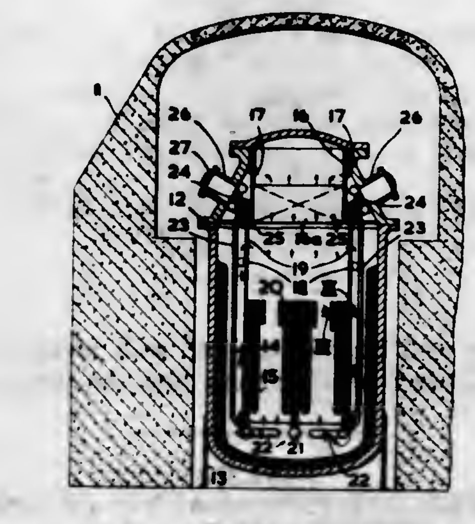


7. A method of inhibiting the radiolytic damage to nonfused ring polyphenyls under irradiation such as alpha, beta, X-rays, gamma-rays and neutrons at high temperature, which comprises adding to said polyphenyls a minor amount based on said polyphenyls of bitumens at least sufficient to inhibit the formation of residue from said polyphenyls, said bitumens being selected from the class consisting of asphalt, coal tar, and petroleum residuum.

3,184,391
BOILING WATER NUCLEAR REACTOR

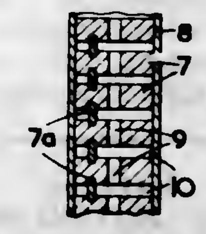
Stanley Hackney, Fearnhead, near Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed May 31, 1961, Ser. No. 113,734
Claims priority, application Great Britain, June 9, 1960, 20,403/60
8 Claims. (Cl. 176—54)

1. A nuclear reactor wherein a water coolant medium is evaporated by heat produced by a core of fuel elements, said reactor comprising a vessel enclosing a space wholly pervaded by said water coolant, a plurality of tubes which are spaced apart and each of which is disposed wholly within said space so as to be everywhere exposed externally to said water coolant wholly pervading said space, each of said tubes containing at least one of said fuel elements of said core and a liquid neutron-moderating heat transfer medium at a pressure to prevent boiling thereof.



3,184,392
FAST NUCLEAR REACTOR FUEL ELEMENTS

Leslie Reginald Blake, Thurso, Caithness, Scotland, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Aug. 17, 1960, Ser. No. 50,213
Claims priority, application Great Britain, Aug. 17, 1959, 28,021/59
8 Claims. (Cl. 176—67)



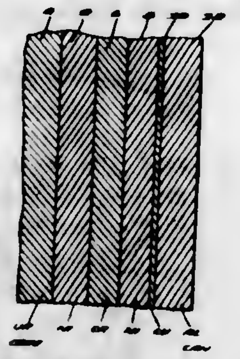
1. A fast reactor fuel element comprising a generally cylindrical nuclear fuel protective sheath defining an enclosed space, the sheath having a selected outer diameter from the range of between 0.1 to 0.4 inch and a corresponding wall thickness of at least one-tenth the selected outer diameter, the said sheath being of a nuclear fuel protective metal having a tensile strength and creep strength sufficient to withstand an internal pressure of at least 10,000 p.s.i. at a temperature of 600° C.; and nuclear fuel enclosed by and within said sheath and having a cross sectional shape to provide intimate contact of the fuel with said sheath over at least a major portion of the periphery of said shape, the fuel filling between 70% and 90% of the said space, 30% to 10% of the space being void in order to accommodate both expansion and fission products arising in said fuel on irradiation thereof.

3,184,393
FUEL ELEMENT FOR ATOMIC REACTORS

Walter Blomeyer, Hanau (Main), and Günther Schneider, Steinheim (Main), Germany, assignors to Nukem Nuklear-Chemie und -Metallurgie G.m.b.H., Wolfgang, near Hanau (Main), Germany
Filed Nov. 2, 1961, Ser. No. 149,717
Claims priority, application Germany, Nov. 4, 1960, N 19,114
3 Claims. (Cl. 176—82)

1. In a fuel element for atomic reactors comprising a fuel body consisting essentially of uranium, a can consisting essentially of aluminum, a first nickel solder layer

bonded to said body, a second nickel solder layer bonded to said can, and a layer consisting essentially of chromium between and bonded to both said nickel layers for retarding diffusion of aluminum into the uranium.



3,184,394
PROCESS FOR THE PREPARATION OF ENZYMES, TOXINS AND TOXOIDS

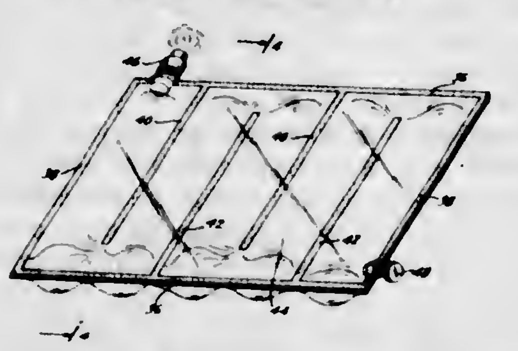
Rudolf Schmidtberger and Hans-Gerhard Schwick, Marburg (Lahn), and Wolfgang von Pölnitz, Frankfurt am Main, Germany, assignors to Behringwerke Aktiengesellschaft, Marburg (Lahn), Germany, a corporation of Germany

Filed June 4, 1962, Ser. No. 199,657
Claims priority, application Germany, Feb. 17, 1959, B 52,137
16 Claims. (Cl. 195—66)

1. A process for the preparation of enzymes of bacterial origin, which comprises desalting the crude solutions containing these active substances until an electric conductivity of at most 3.8 ms./cm. is obtained, adjusting the solutions to a pH value of 6 to 11, adsorbing the active substances on diethyl-amino-ethyl-cellulose and eluting the active substances at a pH value of 2 to 7 by means of a 0.1 to 0.5 molar salt solution of the group consisting of a phosphate buffer solution, an acetate buffer solution and a sodium chloride solution.

3,184,395
APPARATUS AND METHOD FOR CULTURING AEROBIC MICROORGANISMS

John H. Brewer, 425 Oak Lane, Towson 4, Md.
Filed Oct. 1, 1962, Ser. No. 227,231
6 Claims. (Cl. 195—80)



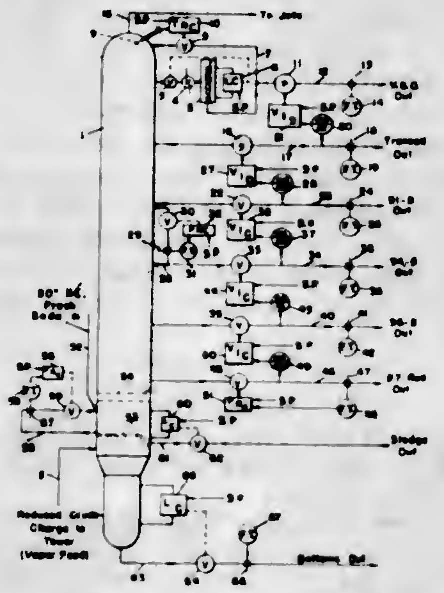
1. Apparatus for use in the culturing of aerobic microorganisms comprising an envelope made of two layers of relatively thin flexible thermoplastic material having sealing connection adjacent the edges thereof and having a plurality of heat seal partitions extending inwardly from opposite sides of the envelope in alternate relationship and extending only part way across the envelope so as to divide the interior of the envelope into a relatively elongated tortuous culture media chamber, both of said layers being impervious to the culture media and at least one of said layers being pervious to air and an inlet and an outlet for said culture media communicating with the said tortuous chamber adjacent respectively opposite ends thereof.

2. The method of culturing aerobic microorganisms comprising encasing culture media in an envelope providing an elongated tortuous chamber with both sides thereof being impervious to the culture media and with at least one side thereof being pervious to air, then after the media has been inoculated with aerobic microorganisms maintaining the assembly in a suitable thermal environment with the air pervious portion exposed to air to cause the microorganisms to grow and multiply and, when the microorganisms are growing and multiplying, slowly introducing culture media adjacent one end of the elongated tortuous chamber and withdrawing culture media at substantially the same rate adjacent the opposite end thereof.

3,184,396
VISCOSITY ANALYZER CONTROL SYSTEMS

Charles R. Armstrong, Broomall, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Oct. 30, 1961, Ser. No. 148,660
12 Claims. (Cl. 196—132)



1. In a control system for a fractionation process, a fractionation tower, means for continuously feeding a charge into said tower, means for continuously drawing off, from respective spaced points in said tower, a plurality of separate product streams, an analog computer having an information input and a signal output; viscosity measuring means receptive of a portion of one of said product streams for producting a signal proportional to the viscosity of said one product stream, means for automatically feeding said last-mentioned signal into said information input, means for feeding into said information input a manually-adjustable voltage proportional to the charge rate into said tower, and means controlled by said signal output for automatically regulating the draw-off rate of the adjacent product stream next above said one product stream.

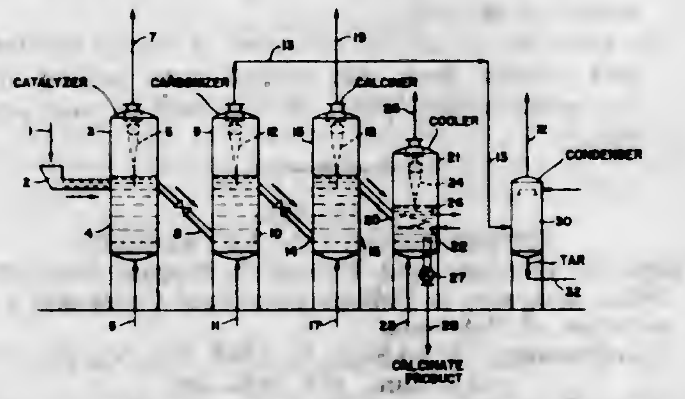
3,184,397
AMORPHOUS CARBONACEOUS MATERIAL

Josiah Work, New Canaan, Conn., Robert T. Joseph, Richboro, Pa., and John H. Blake, Boulder, Colo., assignors to FMC Corporation, a corporation of Delaware

Filed May 24, 1960, Ser. No. 31,316
2 Claims. (Cl. 202—35)

1. A particulate amorphous carbonaceous material derived from coal by heating the coal in particulate form in three stages consisting of: first, a catalyzing stage in which the coal is heated in the presence of oxygen to a temperature below that at which tar-forming vapors begin to be evolved; second, a carbonization stage in which the catalyzed coal particles from the first stage are heated to evolve tar-forming vapors therefrom and form reactive char particles; and third, a calcining stage in which the char from the second stage is heated to a still

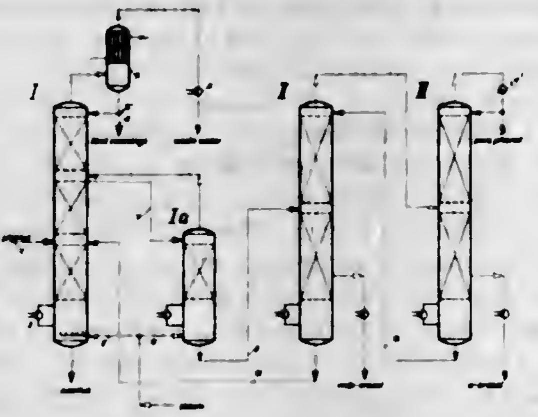
higher temperature to reduce the volatile content of the chair, this char constituting the said particulate amorphous carbonaceous material; the particles of which particulate amorphous carbonaceous material have (*a*) a carbon content on a moisture and ash free basis of at least 90% by weight; (*b*) a reactivity with carbon dioxide above 10% by weight measured by the amount of a sample of the carbonaceous material, sized to pass through a 20-mesh but retained on a 28-mesh screen, consumed in one hour in a stream of carbon dioxide at 900° C. passed over the sample at a rate of 400 ml. per minute; (*c*) a real density of from 1.6 to 2 grams per cubic centimeter; (*d*) a ratio of apparent helium density to real density within the range of from 1.3 to 2.5; (*e*) a surface area (BET nitrogen) of from 50 to 500 square meters per gram; (*f*) an orientation index factor within the range of from 1.2 to 2.8; (*g*) a carbon to hydrogen ratio on a weight basis of from 60 to 90; and (*h*) their surfaces susceptible to the formation of strong carbon to carbon bonds with carbon derived from a bituminous binder.



3,184,398
METHOD OF PROCESSING CRUDE PHENOLS

Richard Schumacher, Bad Homburg vor der Hohe, Karl Friedrich Lang, Ruppertshain, Taunus, and Emanuel Tengler, Castrop-Rauxel, Germany, assignors to Rutgerswerke-Aktiengesellschaft, Frankfurt am Main, Germany

Filed Sept. 27, 1961, Ser. No. 141,068
Claims priority, application Germany, Sept. 28, 1960, R 28,816
2 Claims. (Cl. 202—46)

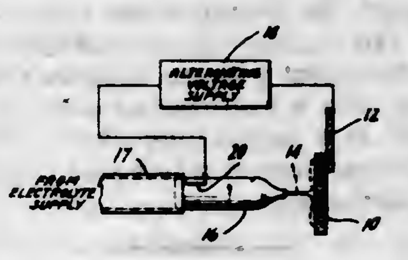


1. A method of purifying crude phenols from impurities which impart a persistently adhering foul odor to and cause discoloration of pure phenol obtainable from crude phenol by fractional distillation, essentially consisting of subjecting crude phenols to fractional distillation in a column having a head portion, a sump, and an intermediate part between said head portion and said sump, in order to substantially distill off the water from the crude phenol; introducing steam into the sump in a ratio of 2–6 parts by weight for 100 parts of crude phenol free from water; partially condensing the vapors escaping through the head of the column, at about 100° C., dividing the condensate thus formed into first running distillate and substantially water free reflux; reintroducing such reflux into the head of the column and discharging purified phenols from said intermediate part of the column.

3,184,399
ELECTROLYTIC ETCHING OF SEMICONDUCTORS UTILIZING A.C. BIAS

George L. Schnable, Lansdale, and John G. Javes, North Wales, Pa., assignors, by mesne assignments, to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

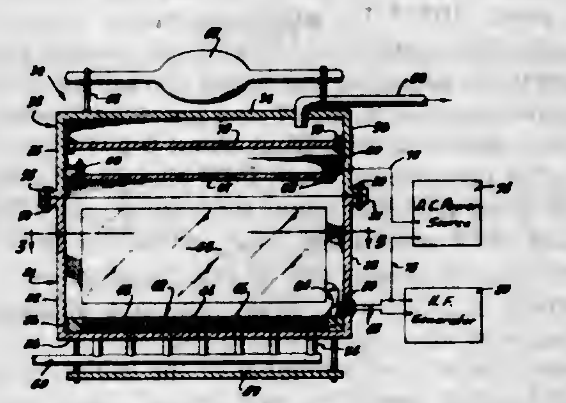
Filed Sept. 23, 1960, Ser. No. 58,086
9 Claims. (Cl. 204—143)



1. The method of electrolytically etching a body of N-type semiconductive material comprising applying to said body an electrolytic etchant forming with said body a rectifying connection which is responsive to the application of positive potential to said electrolyte with respect to said body to inject minority carriers into said body, and applying to said electrolyte a potential variation of alternating polarity with respect to said body, the durations of successive intervals in which said potential variation maintains said electrolyte negative to said body being substantially equal to or less than the minority-carrier lifetime characteristic of said material such that smooth and rapid etching is produced during said intervals.

3,184,400
APPARATUS FOR THE TREATMENT OF SUBSTANCES WITH ULTRASONIC VIBRATIONS AND ELECTROMAGNETIC RADIATIONS

Agatha C. Magnus, 430 La Loma Road, Pasadena, Calif.
Filed May 6, 1959, Ser. No. 811,496
2 Claims. (Cl. 204—193)



1. Apparatus for treating substances, comprising at least two ultrasonic transducers, means to mount the transducers at an angle with respect to each other whereby ultrasonic radiations propagated by the transducers will cross each other, means for exciting said transducers to emit ultrasonic radiations with the radiations emitted by one transducer being equal in frequency to the radiations emitted by the other transducer, and with the radiations crossing each other at their nodes, and a source of electromagnetic waves, means for actuating said source, said source being so disposed with respect to one of said transducers that some nodes of the waves from said source will coincide with points of intersection of the ultrasonic radiations.

3,184,401
PROCESS FOR PRODUCING HYDROGEN-ENRICHED HYDROCARBONACEOUS PRODUCTS FROM COAL

Everett Gorin, Pittsburgh, Pa., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Pennsylvania

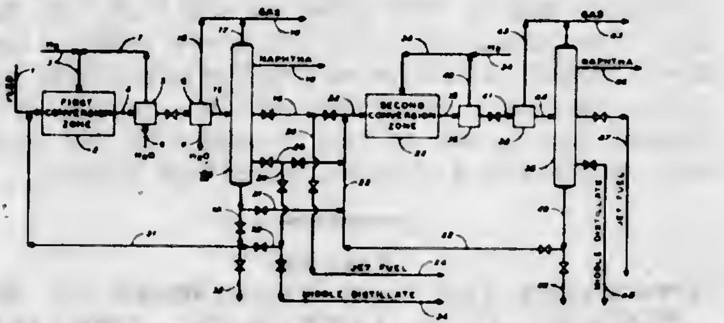
No Drawing. Filed Jan. 19, 1962, Ser. No. 167,431
3 Claims. (Cl. 208—8)

1. In a process for producing hydrogen-enriched hydrocarbonaceous products from coal wherein said coal is subjected to solvent extraction at a temperature between 300 and 500° C. to yield an ash-containing extract, at least a portion of which is subsequently catalytically hydrogenated to yield a hydrogen-enriched hydrocarbonaceous product, the improvement which comprises subjecting said extract, prior to any catalytic hydrogenation thereof, to treatment with an aqueous deashing reagent in admixture with a hydrogen-transferring hydrocarbonaceous liquid at a temperature above 250° C. but not above the temperature at which said coal was subjected to solvent extraction.

3,184,402
HYDROCRACKING PROCESS

Robert H. Kozlowski, Berkeley, Norman J. Paterson, San Rafael, and John W. Scott, Jr., Ross, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

Filed Apr. 8, 1964, Ser. No. 359,548
4 Claims. (Cl. 208—59)



1. In a two-stage process for producing valuable fuel products from a hydrocarbon feed selected from the group consisting of hydrocarbon distillates having an initial boiling point of at least 500° F. and an end point below about 1100° F. and hydrocarbon residua boiling above about 1050° F., which comprises converting in a first conversion zone from 10 to 50 vol. percent of said feed per pass to fractions boiling below the initial boiling point of said feed, said first zone being operated at about 550°–900° F., a space velocity from about 0.1–3.0 and a hydrogen partial pressure of 1000–2500 p.s.i.g., withdrawing an effluent from said first zone, separating said effluent into fractions in a separation zone, withdrawing from said separation zone at least one of said fractions as a product, converting in a second conversion zone at least one of said fractions at a conversion of at least 20 vol. percent per pass to products boiling below the initial boiling point of said fraction passed to said second zone, said second zone being operated at about 450°–850° F., a space velocity from about 0.2–5.0 and a hydrogen partial pressure of at least 350 p.s.i.g. with a catalyst comprising a hydrogenating-dehydrogenating component and an active acidic cracking component, withdrawing an effluent from said second zone and recovering the desired products from said effluent, the improvement which comprises:

(*a*) using as the catalyst in said first zone a catalyst comprising 4–10 wt. percent of a component selected from the group consisting of nickel and compounds thereof, and 15.5–30 wt. percent of a component selected from the group consisting of molybdenum and compounds thereof and a substantially non-acidic component essentially of alumina,

(*b*) withdrawing from said separation zone a naphtha fraction boiling between C_5 and 400° F., a middle distillate fraction boiling between about 400° and 650° F., and a bottoms fraction boiling above about 650° F.,

(*c*) recovering said naphtha fraction as a product,

(*d*) recovering a portion of said middle distillate fraction as a product,

(*e*) passing at least a portion of said bottoms fraction and the remainder of said middle distillate fraction to said second zone, said feed to said second zone being passed through the entire catalyst bed in said second zone, and

(*f*) recycling to said second zone at least a portion of said effluent from said second zone boiling above the initial boiling point of said feed to said second zone.

3,184,403
TWO-SECTION CATALYST BED

Lloyd E. Gardner and Robert J. Hogan, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 12, 1960, Ser. No. 55,128
1 Claim. (Cl. 208—89)

A catalytic bed especially suited for the hydrotreatment and hydrocracking of a heavy residual hydrocarbon stock which comprises a layer of cobalt molybdate on alumina catalyst and a layer contiguous therewith of HF-treated cobalt molybdate on alumina catalyst.

3,184,404
HYDROCRACKING OF HYDROCARBONS WITH A CATALYST COMPOSITE COMPRISING A TUNGSTEN COMPOUND AND A METAL COMPOUND FROM GROUP VIII ON AN ACTIVATED ALUMINA SUPPORT

Richard A. Flinn, Emmaus, Bruce K. Schmid, McCandless Township, Allegheny County, and Meredith M. Stewart, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Apr. 25, 1962, Ser. No. 189,985
8 Claims. (Cl. 208—112)

1. The process for hydrocracking a hydrocarbon feed stock which boils above about 300° F. and which is substantially free of asphaltic material to produce substantial amounts of lower boiling hydrocarbons, which process comprises contacting the hydrocarbon feed stock with hydrogen under hydrocracking reaction conditions in the presence of a catalyst comprising essentialy a member of the group consisting of tungsten oxide and sulfide mixed with a member of the group consisting of nickel, nickel oxide, nickel sulfide, palladium and palladium sulfide, which catalyst is composited with a major amount of an activated alumina prepared by calcining a substance which is predominantly composed of an aluminum hydroxide containing from 1.2 to 2.6 mols of water of hydration, said aluminum hydroxide being prepared by precipitation from a solution of an aluminum salt at a pH between 7 and 12, and drying to the above mentioned water of hydration content prior to substantial transformation to an aluminum hydroxide having a lower or higher water of hydration content and under conditions so as to prevent the formation of an aluminum hydroxide having a lower or higher water of hydration content.

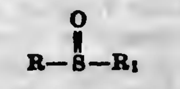
3,184,405
DESULFURIZING PETROLEUM WITH ALKALI AND DI-ALKYL SULFOXIDE

Charles O. Hoover, P.O. Box 4294, Corpus Christi, Tex.

No Drawing. Filed Mar. 13, 1964, Ser. No. 351,832
10 Claims. (Cl. 208—227)

1. A process for desulfurizing a mercaptan-containing petroleum oil stock, comprising, successively admixing

with said stock in the liquid phase in the following order (*a*) a strong alkali and (*b*) a di-alkyl sulfoxide having the general formula



$$R-\overset{\overset{O}{\|}}{S}-R_1$$

wherein R and R_1, either or both, is methyl-, ethyl-, or propyl-group, the addition of the di-alkyl sulfoxide being made without separation of reaction products from the oil stock-alkali admixture, and separating the treated oil from the resulting admixture.

3,184,406
SEPARATION PROCESSES

Alan Arthur Yeo and Roger Templeton Lewis Mowll, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a British joint-stock corporation

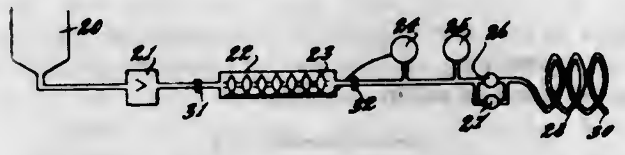
Filed Nov. 1, 1962, Ser. No. 234,720
Claims priority, application Great Britain, Nov. 3, 1961, 39,433/61
7 Claims. (Cl. 208—310)

1. A three stage absorption-purge-desorption process operated isothermally and isobarically in the vapor phase at a temperature in the range of 200–600° C. and a pressure within the range of 0–500 p.s.i.g. on a petroleum fraction feedstock boiling in the range C_4–400° C., said process using at least one fixed bed of a 5 A. molecular sieve absorbent, each bed having at least two inlet lines and at least two outlet lines, each line having at least one valve, the valves in the inlet lines being switched periodically to change the feedstock passing into the absorbent bed and the valves in the outlet lines being switched periodically to divert the effluent passing out of the absorbent bed from one outlet line to another and wherein during the changeover from desorption to absorption, the switching of the outlet valves is delayed beyond the switching of the inlet valves to an extent until 50 to 90% of the material present in the voids between absorbent particles when the inlet valves are switched is removed from the absorber before the outlet valves are switched and during all other changeovers the switching of the outlet valves is delayed for the same period as during the changeover from desorption to absorption, the purging medium employed in the purge step being an inert gas and at least one n-paraffin boiling below the initial boiling point of the feedstock being employed as desorbing medium.

3,184,407
BOILER COMPOSITION AND METHOD

Harry Lewis Kahler, Feasterville, and James Kenneth Brown, Huntingdon Valley, Pa., assignors to Betz Laboratories, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 16, 1962, Ser. No. 173,671
9 Claims. (Cl. 210—58)



1. A method of reducing chemical feed line deposits and increasing boiler water dispersive power of tannery waste product fed to boilers, which comprises cooking a solution of tannery waste liquor with a water soluble alkali, a water soluble phosphate and a water soluble silicate all present in said solution in quantities sufficient to throw down magnesia as a precipitate and form a tannery waste product having a content of MgO on the weight of the solids in the tannery waste product below 0.2% by weight, removing the precipitate and feeding the tannery waste product free from the precipitate along with other boiler chemicals including phosphate in a chemical feed line direct into the steam drum of a boiler.

3,184,408
HIGH TEMPERATURE STABILIZING LUBRICANT ADDITIVE

Ernest V. Wilson and Harry W. Rudel, Roselle, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 14, 1961, Ser. No. 159,457
5 Claims. (Cl. 252—32.7)

1. An improved marine turbine oil composition comprising a major proportion of a lubricating oil, from about 1 to about 3 wt. percent of an oil soluble cadmium salt of a dialkyldithiophosphoric acid having alkyl groups derived from secondary alcohols and containing from about 3 to about 20 carbon atoms per alkyl group with an average of at least 4.5 carbon atoms per alkyl group, and from about 0.05 to about 0.5 wt. percent of a monoester of a neo-structured trialkylolalkane of from 6 to 12 carbon atoms and of a carboxylic acid selected from the group consisting of saturated and unsaturated fatty acids of from 12 to 20 carbon atoms and alkyl mercaptoacetic acids having alkyl groups of from 9 to 18 carbon atoms.

3,184,409
HYDROCARBON COMPOSITIONS CONTAINING IODINE AS AN ANTIFRICTION AGENT

Michael J. Furey, Berkeley Heights, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Jan. 31, 1962, Ser. No. 170,249
2 Claims. (Cl. 252—33)

1. A lubricating oil composition comprising a major proportion of a mineral lubricating oil and a friction-reducing amount, within the range of 0.0009 to 0.09 wt. percent, of iodine.

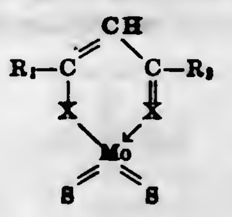
2. A composition according to claim 1, in which said iodine has a tendency to stain iron, and a material complexed with said iodine having the ability to reduce said tendency to stain, said material being selected from the group consisting of barium sulfonate, cadmium naphthenate, and oleic acid.

3,184,410
MOLYBDENUM COMPOUNDS AND LUBRICATING COMPOSITIONS CONTAINING THEM

Leslie Bretherick, Windsor, England, assignor to The British Petroleum Company Limited, London, England, a corporation of England

No Drawing. Filed Aug. 5, 1964, Ser. No. 387,786
Claims priority, application Great Britain, Aug. 20, 1963, 32,871/63
7 Claims. (Cl. 252—42.7)

1. A compound of formula



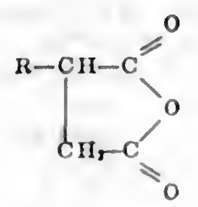
wherein R_1 and R_2 are aliphatic hydrocarbon radicals having 1–20 carbon atoms, and the X's are atoms selected from the group consisting of oxygen and sulphur, at least one of the X's being an oxygen atom.

6. A lubricating composition consisting essentially of a blend of a lubricating oil and a compound according to claim 1, the said compound being added in an amount sufficient to improve the lubricating properties of the composition.

3,184,411
LUBRICANTS FOR REDUCING CORROSION

Warren Lowe, Berkeley, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Sept. 28, 1962, Ser. No. 227,035
5 Claims. (Cl. 252—46.7)

1. A composition of matter comprising a major proportion of an oil of lubricating viscosity, and from 0.10% to 40% by weight of a product obtained by reacting (1) an alkenyl succinic anhydride of the formula



wherein R is an alkenyl radical having from 30 to 200 carbon atoms, with a polyalkylene polyamine of the formula

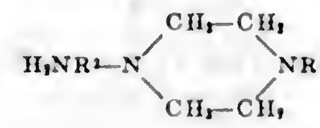
$$NH_2R'(NHR')_xNH_2$$

wherein R′ is a divalent radical selected from the group consisting of ethylene and propylene, and *x* is a number having a value from 1 to 10, the polyamine-anhydride mole ratio being 0.5:1 to 1:1, followed by (2) reacting the product of (1) with phosphorus pentasulfide at temperatures from 70° F. to 400° F., wherein the mole ratio of phosphorus pentasulfide to the reaction product of (1) is from 1:32 to 5:1.

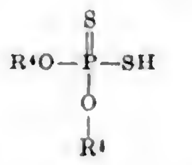
3,184,412
LUBRICANTS INHIBITED AGAINST OXIDATION

Warren Lowe, Berkeley, and Frank A. Stuart, Orinda, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Sept. 28, 1962, Ser. No. 227,037
4 Claims. (Cl. 252—46.7)

1. A lubricating oil composition comprising a major proportion of an oil of lubricating viscosity and from 0.1% to 40% by weight of a product obtained by (1) reacting an alkenyl succinic anhydride having from 50 to 200 carbon atoms in the alkenyl radical with a piperazine derivative of the formula



wherein R^2 is a divalent radical having from 1 to 3 carbon atoms and R^3 is selected from the group consisting of hydrogen and alkyl radicals having from 1 to 3 carbon atoms, wherein the piperazine-anhydride mol ratio is from 0.5:1 to 1:1, followed by (2) reacting the product of (1) with a dihydrocarbyl dithiophosphoric acid of the formula



$$R^4O-\overset{\overset{S}{\|}}{P}-SH \quad (-O-R^5 \text{ on } P)$$

wherein R^4 andR^5 are hydrocarbon radicals each having from 4 to 20 carbon atoms and having a combined number of carbon atoms from 10 to 40, wherein the mol ratio of the product of (1) to dithiophosphoric acid is from 1:1 to 1:4, said reaction (1) being carried out by heating at a temperature from about 220° F. to about 500° F., and said reaction (2) being carried out by heating at a temperature from about 150° F. to about 200° F.

3,184,413
POLYMERIC LUBRICATING OIL ADDITIVES CONTAINING IODINE AND USES THEREOF

Michael J. Furey, Berkeley Heights, and Philip Zaybekian, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed June 21, 1962, Ser. No. 204,043
2 Claims. (Cl. 252—56)

1. A lubricating composition comprising a major amount of lubricating oil and an iodinated copolymer of 300 to 500,000 molecular weight containing 10 to 90 wt. percent iodine in an amount of said copolymer sufficient to give an iodine concentration in said composition of 0.005 to 3.0 wt. percent iodine, said iodinated copolymer being formed by mixing iodine with a copolymer of alkyl fumarate ester and ester of vinyl alcohol and low molecular weight saturated fatty acid, said esters containing 4 to 30 carbon atoms and said copolymer being a lubricating oil additive.

3,184,414
CATALYST CARRIER AND METHOD OF PREPARATION THEREOF

Gerhard Koch and Karl-Hermann Koepernik, Hannover, Germany, assignors to Kali-Chemie Aktiengesellschaft, Hannover, Germany, a corporation of Germany
No Drawing. Filed Aug. 23, 1962, Ser. No. 218,847
Claims priority, application Germany, Aug. 26, 1961, K 44,588
8 Claims. (Cl. 252—455)

1. In a process of producing molded catalyst carrier bodies of high mechanical strength and high specific surface, the steps which comprise mixing a bentonite, the alkaline earth metal ions thereof being at least partly replaced by alkali metal ions selected from the group consisting of sodium ions and lithium ions, with hydrated alumina and an amount of water sufficient to permit molding of the resulting mixture, the proportion of bentonite to hydrated alumina being between about 1:0.25 and about 1:9, molding said mixture to molded bodies, drying said carrier bodies, and calcining the dried carrier bodies at a temperature between about 900° C. and about 1300° C.

3,184,415
CATALYST COMPOSITIONS CONSISTING OF GROUP IV METAL SALTS AND/OR OXIDES

Earl B. Huntley, Gibbstown, and Jurgen M. Kruse and John W. Way, Pitman, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Original application Mar. 17, 1961, Ser. No. 96,350, now Patent No. 3,141,902, dated July 21, 1964. Divided and this application Aug. 20, 1963, Ser. No. 303,423
6 Claims. (Cl. 252—461)

1. A catalyst having as the essential catalytic constituent a mixture of at least about 1% by weight of at least one lead salt selected from the group consisting of lead titanate, lead stannate and lead zirconate, and, as the remainder of said mixture, at least one oxide selected from the group consisting of lead oxide, titanium dioxide, zirconium dioxide and stannic oxide.

3,184,416
PRODUCTION OF ZIEGLER POLYMERIZATION CATALYSTS

Edward H. Mottus, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware
No Drawing. Filed May 22, 1958, Ser. No. 736,976
2 Claims. (Cl. 252—429)

1. A method of preparing a modified polymerization catalyst which comprises moxing trialkylaluminum with titanium tetrachloride in an inert organic liquid and adding water, the proportions being from 0.3 to 0.8 mole trialkylaluminum and 0.01 to 0.75 mole of water per mole of titanium tetrachloride.

3,184,417
METHOD OF PREPARING A COPPER MODIFIED NICKEL CATALYST COMPOSITION

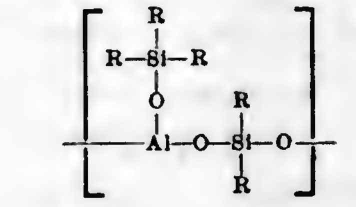
Eugene V. Hort, Westfield, N.J., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 29, 1960, Ser. No. 79,174
4 Claims. (Cl. 252—474)

1. A process for preparing a copper-modified nickel hydrogenation catalyst comprising mixing an aqueous solution of a copper salt with an amount of a water soluble inorganic alkaline hydroxide selected from the group consisting of alkali metal and alkaline earth metal hydroxides sufficient to yield a pH of more than 7 and insolubilize the copper salt in the form of suspended copper hydroxide, admixing the resulting aqueous suspension of copper hydroxide with a finely divided nickel catalyst, and treating the resulting admixture with gaseous hydrogen to deposit metallic copper on the nickel catalyst, the amount of said copper salt employed being sufficient to deposit on said nickel catalyst about 3 to 35% of metallic copper.

3,184,418
ALUMINOSILOXANE POLYMERS AND METHOD OF PREPARING SAME

William G. Woods and Marlowe L. Iverson, Anaheim, and Kiyoshi Kitasaki, Garden Grove, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
No Drawing. Filed June 29, 1962, Ser. No. 206,177
4 Claims. (Cl. 260—2)

1. A polymeric composition having a molecular weight of at least about 1000, consisting essentially of recurring units of the formula



where R represents a phenyl radical, said polymeric composition being soluble in non-polar organic solvents.

3,184,419
METHOD FOR THE PRODUCTION OF POLYURETHANE FOAMED MATERIAL

Peter Merriman, Edgbaston, Birmingham, England, assignor to Dunlop Rubber Company Limited, London County, England, a British company
Filed Feb. 3, 1959, Ser. No. 790,839
Claims priority, application Great Britain, Feb. 6, 1958, 3,837/58
7 Claims. (Cl. 260—2.5)

1. In the process of making a polyurethane foamed material wherein polyurethane forming reactants comprising

(1) a hydroxy terminated polyalkylene ether glycol having a molecular weight of at least 500

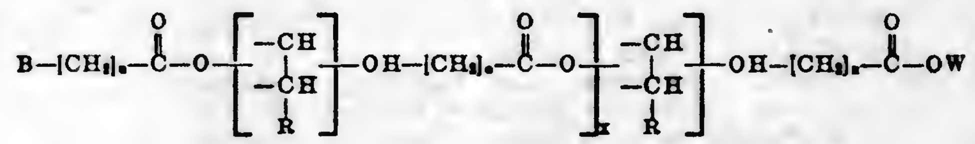
(2) an organic compound of the class consisting of polyisocyanates and polyisothiocyanates in an amount in excess of that required to react with the hydroxyl end groups of said polyol and

(3) water, are mixed and reacted to form a cellular polyurethane, the imprvoement which comprises reacting said polyalkylene ether glycol and said organic compound to form a prepolymer with end groups of the formula, —NCX where X is an atom selected from the group of atoms consisting of oxygen and sulphur and having a viscosity of from 10,000 to 30,000 centipoises at 20° C., continuously feeding said prepolymer and said water under pressure into a chamber together with liquefied carbon dioxide as substantially the sole inert added foaming agent in an amount of at least one percent by weight of the prepolymer, said carbon dioxide being under pressure in the liquefied state and at a temperature below that at which substantial reaction between the said prepolymer and the water takes place, stirring the resultant liquid mixture in the chamber, foaming the liquid mixture by releasing it from the chamber and thereby reducing the pressure in the liquid mixture and allowing the temperature of the foamed mixture to rise to convert it into an elastomer before substantial breakdown of the foam takes place.

3,184,420
POLYURETHANE FOAMS FROM POLYESTERS OF EPOXY ACIDS

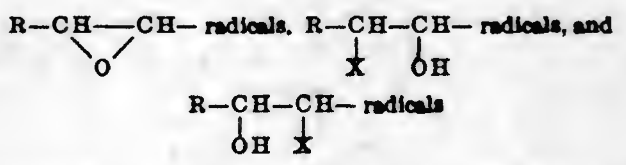
Karl Brack, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 28, 1962, Ser. No. 247,843
8 Claims. (Cl. 260—2.5)

1. A polyurethane foam comprising the foamed reaction product of an organic polyisocyanate, a blowing agent and a polyol containing at least 10% by weight of a linear polymeric ester having the general formula:



$$B-[CH_2]_n-\overset{\overset{O}{\|}}{C}-O-\left[\begin{array}{c}-CH\\ |\\ -CH\\ |\\ R\end{array}\right]-OH-[CH_2]_n-\overset{\overset{O}{\|}}{C}-O-\Big]_x\left[\begin{array}{c}-CH\\ |\\ -CH\\ |\\ R\end{array}\right]-OH-[CH_2]_n-\overset{\overset{O}{\|}}{C}-OW$$

in which R is a substituent of the group consisting of hydrogen and alkyl radicals; *n* is a whole number from 0 to 20, inclusive; *x* is at least 1; W is a substituent of the group consisting of hydrogen, hydroxyalkyl radicals and halohydroxyalkyl radicals; and B is a substituent of the group consisting of



$$R-CH\overset{O}{\frown}CH-\text{ radicals, } \underset{X}{R-CH}-\underset{OH}{CH}-\text{ radicals, and } \underset{OH}{R-CH}-\underset{X}{CH}-\text{ radicals}$$

in which R has the same significance as set forth above, and X is a halogen substituent.

3,184,421
POLYMERIC COMPOSITION PREPARED FROM CELLULOSE SULFATE AND ALKYL ACRYLATE AND TEXTILE MATERIAL COATED THEREWITH

John R. Caldwell and Edward H. Hill, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed May 24, 1961, Ser. No. 112,184
9 Claims. (Cl. 260—15)

1. The polymeric composition comprising an alkyl acrylate in which the alkyl radical is of 1–6 carbon atoms polymerized in an aqueous solution of 0.5–5.0% by weight, based on the weight of the alkyl acrylate, of a cross linking agent selected from the group consisting of

divinylbenzene, allyl acrylate and allyl phthalate, 20–75% by weight, based on the weight of the polymeric composition, of a water soluble salt of a sulfuric acid ester of cellulose, and 1–15% by weight, based on the weight of the cellulose ester, of a hardening agent selected from the group consisting of formaldehyde, trimethylolnitromethane, methylol-urea, and trimethylolmelamine.

3,184,422

RETARDING THE INCREASE IN VISCOSITY OF RECLAIMED RUBBER WITH SODIUM NITRITE

Ree Vilma le Beau Meyer, Frontenac, Mo., assignor to Midwest Rubber Reclaiming Company, East St. Louis, Ill., a corporation of Delaware

Filed May 10, 1961, Ser. No. 109,188

11 Claims. (Cl. 260—2.3)

1. The method of retarding the increase in viscosity of reclaimed rubber selected from the group consisting of natural rubber, a butadiene-styrene rubber and mixtures thereof, which comprises incorporating into said rubber not more than approximately 10% by weight, based upon the weight of the rubber, of a material selected from the group consisting of sodium nitrite; a mixture of diethylene glycol and sodium nitrite; and a mixture of glycol polymers and sodium nitrite.

3,184,423

PROCESS FOR THE MANUFACTURE OF POLYCONDENSATION PRODUCTS FROM UREIDOCARBOXYLIC ACID ESTERS

Paul Schlack, Leitershofen, near Augsburg, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 26, 1960, Ser. No. 45,273

Claims priority, application Germany, Aug. 1, 1959, F 29,079

14 Claims. (Cl. 260—21)

1. The method of making a film-forming polycondensation product which comprises reacting a member of the group consisting of aldehydes, α-chloroalkyl ethers, compounds having an N-methylol group, and compounds having an etherified N-methylol group, with a ureido-carboxylic acid ester of an hydroxy ester having at least two hydroxy groups on carbon atoms having hydrogen atoms also bound thereto and selected from the group consisting of esters of fatty acids and hydroxy-substituted fatty acids, said acids having a terminal hydrocarbon radical containing at least eight carbon atoms, said ureido-carboxylic acid ester having at least two primary amino groups.

3,184,424

METHOD OF MAKING A SYNTHETIC RUBBER LATEX EMPLOYING AN ALKALI POLYACRYLATE

Victor S. Chambers, Naugatuck, and Louis H. Howland, Watertown, Conn., assignors to United States Rubber Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 26, 1961, Ser. No. 140,697

8 Claims. (Cl. 260—29.7)

1. The method of making a synthetic rubber latex which comprises polymerizing at 0° C. to 15° C. an aqueous emulsion of synthetic rubber forming monomeric material containing 2 to 10 parts of a water-soluble soap of soap-forming monocarboxylic acid per 100 parts of synthetic rubber forming monomeric material to a latex of 60% to substantially complete conversion, and having present during conversion of at least 10% of the original synthetic rubber forming monomeric material 0.1 to 2 parts of alkali polyacrylate per 100 parts of the original synthetic rubber forming monomeric material, said synthetic rubber forming monomeric material being selected from the group consisting of butadienes-1,3 and mixtures of butadienes-1,3 with up to 70% of such mixtures of monoethylenic compounds which contain a $CH_2=C<$ group and are copolymerizable with butadienes-1,3.

3,184,425

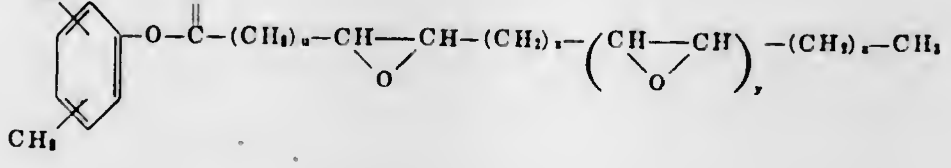
POLYVINYL CHLORIDE PLASTICIZED WITH EPOXY CONTAINING MONOCARBOXYLIC ACID ESTERS OF CRESOLS AND XYLENOLS

John J. Jaruzelski, Westfield, N.J., and Marjan Kolobielski, Pittsburgh, and Chester S. Sheppard, Edgewood, Pa., assignors to United States Steel Corporation, a corporation of New Jersey

No Drawing. Filed Oct. 6, 1961, Ser. No. 143,307

1 Claim. (Cl. 260—30.4)

As a new composition of matter, a polyvinyl-chloride resin and from 10 to 120 parts per 100 parts resin of a compound of the formula:



where R_1 is chosen from the group consisting of hydrogen and CH_3, where u is 2 to 20, x is 0 to 18, y is 0 to 1, z is 0 to 18 and when y is 0, x is 0.

3,184,426

POLYURETHANE ELASTIC FIBERS AND A METHOD OF PRODUCING THE SAME

Wilhelm Thoma, Leichlingen, and Heinrich Rinke, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 15, 1960, Ser. No. 22,392

Claims priority, application Germany, Apr. 17, 1959, F 28,238

12 Claims. (Cl. 260—30.8)

1. A process for preparing a spinning solution for the preparation of elastic polyurethane fibers which comprises heating in an inert solvent, said inert solvent being non-reactive with —NCO groups, (1) an isocyanate modified organic compound prepared by reacting (*a*) an organic compound containing active hydrogen containing groups as determined by the Zerewitinoff method and having a molecular weight of from about 500 to about 3000 with (*b*) an excess of an organic polyisocyanate sufficient to provide free NCO groups in said isocyanate modified organic compound, with (2) a member selected from the group consisting of polyhydric alcohols and polyamines, the quantity of which is insufficient to react with all of the isocyanate groups of said isocyanate modified organic compound and (3) an isocyanate polymerization catalyst, continuing the reaction until the solution is free of —NCO groups while adding to the viscous solution a solvent selected from the group consisting of dimethyl formamide, dimethyl acetamide and dimethyl sulfoxide.

3,184,427

METHOD FOR CURING ROOM-TEMPERATURE-VULCANIZING ORGANOPOLYSILOXANE RUBBER

James R. Russell and Edward Sweet, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

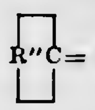
No Drawing. Filed Aug. 22, 1962, Ser. No. 218,497

20 Claims. (Cl. 260—37)

1. A method comprising reacting (A) a hydroxy-endblocked siloxane composed of units of the formula

$$R'_aSiO_{\frac{4-a}{2}}$$

(B) a silane of the formula $R'_bSi(ON=X)_{4-b}$ in an amount such that there is at least one $ON=X$ radical per silicon-bonded hydroxyl group in siloxane (A), (C) a carboxylic acid anhydride of the general formula AcOAc in an amount such that there are at least .66 mol of the carboxylic acid anhydride per $ON=X$ radical in the silane (B) and (D) magnesium oxide in an amount such that there is at least .33 mol of oxide (D) per $ON=X$ radicals in silane (B), in which components X is selected from the group consisting of radicals of the formula $R_2C=$ and

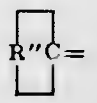


in which each R″ is selected from the group consisting of divalent hydrocarbon radicals and halogenated divalent hydrocarbon radicals, each R being a radical selected independently from the group consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, each R′ is a substituent selected independently from the group consisting of R radicals, cyanoalkyl radicals and hydrogen atoms, *a* has a value of from 1.9 to 2.1 inclusive, *b* has a value of from 0 to 1 inclusive, and Ac is a saturated aliphatic monoacyl radical derived from a carboxylic acid of at least 2 carbon atoms.

5. A composition consisting essentially of the reaction product of (A) a hydroxy-endblocked siloxane composed of units of the formula

$$R'_aSiO_{\frac{4-a}{2}}$$

(B) a silane of the formula $R'_bSi(ON=X)_{4-b}$ in an amount such that there is at least one $ON=X$ radical per silicon-bonded hydroxyl group in siloxane (A), (C) a carboxylic acid anhydride of the general formula AcOAc in an amount such that there are at least .66 mol of the carboxylic acid anhydride per $ON=X$ radical in the silane (B) and (D) magnesium oxide in an amount such that there is at least .33 mol of oxide (D) per $ON=X$ radical in silane (B), in which components X is selected from the group consisting of radicals of the formula $R_2C=$ and



in which each R″ is selected from the group consisting of divalent hydrocarbon radicals and halogenated divalent hydrocarbon radicals, each R being a radical selected independently from the group consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, each R′ is a substituent selected independently from the group consisting of R radicals, cyanoalkyl radicals and hydrogen atoms, *a* has a value of from 1.9 to 2.1 inclusive, *b* has a value of from 0 to 1 inclusive and Ac is a saturated aliphatic monoacyl radical derived from carboxylic acid of at least 2 carbon atoms.

3,184,428

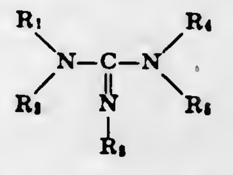
PREVENTION OF COLORED IRON COMPOUNDS IN ASBESTOS CONTAINING POLYVINYL CHLORIDE RESINS

Arthur C. Hecker, Forest Hills, Mark W. Pollock, Bronx, and Seymour Cohen, Brooklyn, N.Y., assignors to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of New York

No Drawing. Filed Apr. 17, 1961, Ser. No. 103,208

1 Claim. (Cl. 260—41)

A method of bleaching a discolored polyvinyl chloride resin composition containing a colored iron compound formed by heating the composition at an elevated temperature of about 150° C. in the presence of iron-containing asbestos which comprises blending with the discolored polyvinyl chloride resin composition an amount sufficient to lessen the intensity of the color of an organic compound having the formula:



wherein R_1, R_2, R_3, R_4 and R_5 each have from one to about twenty-four carbon atoms, and are selected from the group consisting of hydrogen, alkyl, alkenyl, aryl, alkylaryl, arylalkyl, cycloalkyl, hydroxyalkyl, cyano, amido, and acyl; and heterocyclic rings including the active group in the molecule wherein an of R_1, R_2, R_3, R_4 and R_5 are taken together.

3,184,429

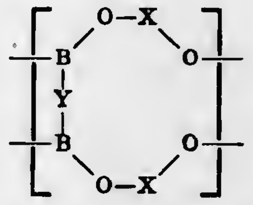
POLYMERIC ORGANOBORON COMPOUNDS

George W. Willcockson, Anaheim, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Jan. 31, 1962, Ser. No. 170,230

4 Claims. (Cl. 260—47)

1. Solid, thermally stable polymeric organoboron compounds consisting essentially of the recurring structural unit



where X is a radical selected from the group consisting of 1,3-phenylene, 1,4-phenylene and 4,4′-biphenylene, and Y is a radical selected from the group consisting of 1,3-phenylene and 1,4-phenylene, said units being linked through boron-oxygen bonds.

3,184,430

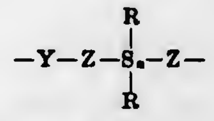
ORGANOTIN POLYMERS

Glenn R. Wilson, Cambridge, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 14, 1962, Ser. No. 194,642

18 Claims. (Cl. 260—47)

1. An organotin polymer consisting essentially of the repeating unit



$$-Y-Z-\overset{\overset{\displaystyle R}{|}}{\underset{\underset{\displaystyle R}{|}}{Sn}}-Z-$$

wherein Y is selected from the class consisting of arylene and alkylenearylenealkylene radicals of from 6 to 12 carbon atoms and such radicals having attached to nuclear carbon thereof an alkyl radical of 1 to 5 carbon atoms, Z is selected from the class consisting of oxygen and sulfur and R is a hydrocarbon benzenoid radical which contains from 6 to 12 carbon atoms and is free of olefinic and acetylenic unsaturation, said polymer having an average of from 10 to 1000 of the said repeating units.

3,184,431

PROCESS FOR THE PRODUCTION OF POLYCARBONATE RESINS USING TWO-STEP ADDITION OF CATALYST

Rudolph D. Deanin, West Hartford, Conn., and Joseph O. Berry, Jr., Randolph Township, Morris County, and Lloyd R. Moore, Parsippany Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 25, 1960, Ser. No. 71,412
6 Claims. (Cl. 260—47)

1. A process for the preparation of a polycarbonate resin which comprises (1) adding phosgene to an aqueous alkaline solution containing a di-monohydroxaryl-alkaline and an inert organic solvent which is immicible in the aqueous phase, (II) stirring the reaction mixture, (III) recovering the resulting polycarbonate resin, wherein the reaction is conducted in the presence of a catalytic amount of a quaternary ammonium compound as a catalyst, from 30 to 50 percent of said catalyst being present during the phosgenation reaction, and the remainder of said catalyst being added after completion of the phosgenation reaction.

3,184,432

PROCESS FOR THE PRODUCTION OF CYCLODODECANE DERIVATIVES

Günther Wilke, Mulheim (Ruhr), and Werner Pfohl, Hamburg, Germany, assignors to Studiengesellschaft Kohle m.b.H., Mulheim (Ruhr), Germany, a body corporate of Germany

No Drawing. Filed Oct. 23, 1958, Ser. No. 769,086
Claims priority, application Germany, Oct. 24, 1957, St 13,079
3 Claims. (Cl. 260—617)

1. Monocyclododecane derivatives having the formula $C_{12}H_{24-x}(CH_2OH)_x$, wherein x is an integer from 1 to 2.

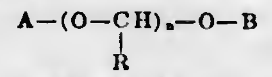
3,184,433

STABILIZED CRYSTALLINE POLYALDEHYDES HAVING 2–10 CARBON ATOMS PER MONOMER UNIT

Otto Franz Leopold Vogl, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 26, 1959, Ser. No. 836,070
4 Claims. (Cl. 260—67)

1. A thermally stable, crystalline polyaldehyde having the general formula



$$A-(O-\underset{\displaystyle R}{\underset{\vert}{C}}H)_n-O-B$$

where R is an alkyl radical of 1–9 carbon atoms, n is a positive integer such that the number average molecular weight of the said polyaldehyde is at least 20,000, and A and B are monovalent radicals having 1–10 carbon atoms and being selected from the group consisting of alkyls and alkane carbonyls, said polyaldehyde exhibiting a reaction rate constant for thermal degradation at 138° C. of less than 1% by weight per minute.

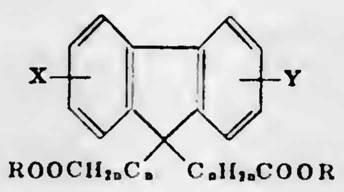
3,184,434

FLUORENE SULFONIC ACID CONTAINING DYEABLE POLYESTERS

Christian F. Horn, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Mar. 20, 1961, Ser. No. 96,675
5 Claims. (Cl. 260—75)

1. A linear polyester consisting of the condensation product of (1) an aliphatic glycol containing from 2 to 10 carbon atoms, (2) from 0.1 to about 10 mole percent, based on the total amount of dicarboxylic acid compounds present, of a sulfonated fluorene compound represented by the formula:



wherein X is a member selected from the group consisting of X′ and X″ groups; X′ is a member selected from the group consisting of a hydrogen atom and a Y′ group wherein Y′ is a member selected from the group consisting of an —SO_3H group and an —SO_3M group in which M is a member selected from the group consisting of lithium, sodium, potassium, rubidium, and cesium; X″ is a member selected from the group consisting of a hydrogen atom and an —$SO_3M'Z$ group wherein M′ is a member selected from the group consisting of beryllium, magnesium, calcium, zinc, strontium, barium, and tin; and Z is an acyloxy radical —OOCR″ in which R″ is a monovalent hydrocarbyl radical; Y is a member selected from the group consisting of a Y′ group and an —$SO_3M'Z$ group; R is a member selected from the group consisting of a hydrogen atom and an alkyl radical containing from 1 to 10 carbon atoms; and n is an integer having a value of 1 to 10, and (3) at least one different compound selected from the group consisting of the aromatic dicarboxylic acids and the dialkyl esters thereof.

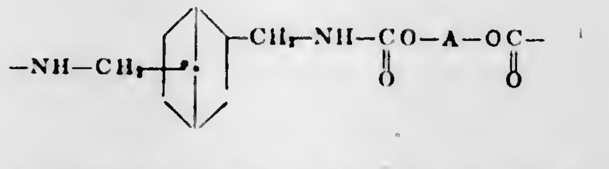
3,184,435

POLYURETHANES CONTAINING A NORBORNANE [NORCAMPHANE] NUCLEUS

John R. Caldwell and Winston J. Jackson, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 13, 1962, Ser. No. 237,314
6 Claims. (Cl. 260—77.5)

1. A resinous polyurethane substantially composed of the following repeating units:



wherein A represents a radical selected from the group consisting of divalent straight-chain alkylene radicals of 2–20 carbon atoms, divalent branched-chain alkylene radicals of 2–20 carbon atoms, phenylene, xylylene, and divalent alicyclic radicals selected from the group consisting of cyclohexylene, cyclohexylenedimethylene, norbornylene, norbornylenedimethylene and 2,2,4,4-tetramethylcyclobutylene.

3,184,436

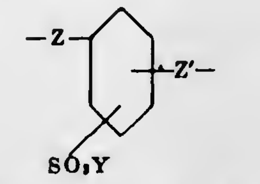
POLYCARBONAMIDES OF IMPROVED DYE AFFINITY HAVING THE BENZENE SULFONIC ACID SALT MOIETY AS AN INTEGRAL PART OF THE POLYMER CHAIN

Eugene Edward Magat, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

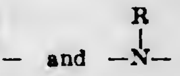
No Drawing. Filed Sept. 4, 1959, Ser. No. 838,027
28 Claims. (Cl. 260—78)

1. A novel, linear, fiber-forming polycarbonamide wherein recurring carbonamide linkages are an integral part of the polymer chain and containing as an integral part of the polymer chain at least about 0.75 mol percentage

based on the weight of the said polycarbonamide of units of the structure:



wherein the hexagon represents the benzene nucleus, —Z— and —Z′— are members of the class consisting of



$$-\overset{\overset{\displaystyle O}{\|}}{C}- \quad \text{and} \quad -\overset{\overset{\displaystyle R}{\vert}}{N}-$$

which may be separated from the benzene ring by —$(CH_2)_n$— radicals, n being an integer from zero to 6, R— is a member of the class consisting of hydrogen and lower alkyl, Y is a member of the class consisting of hydrogen, the ammonium radical, a metal of the first group of the periodic table and a metal of the second group of the periodic table and the radicals —Z— and —Z′— are relatively disposed in either the meta or para positions.

3,184,437

PRODUCTION OF BRANCHED AND CROSS-LINKED COPOLYMERS FROM OLEFINICALLY UNSATURATED MONOMERS CONTAINING THE N-NITROSOACYLAMINE GROUP

Adolf Hrubesch and Hans Craubner, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 8, 1960, Ser. No. 74,457
Claims priority, application Germany, Dec. 11, 1959, B 55,871
4 Claims. (Cl. 260—78)

2. A process for the production of branched and cross-linked copolymers which comprises: reacting N-nitroso-N-(2-ethylhexyl)-maleic acid monoamide having a molecular weight between 114 and 700 with methyl methacrylate at a temperature of from about —20° C. to about 180° C., the amount of N-nitroso-N-(2-ethylhexyl)-maleic acid monoamide being from about 0.1% to about 20% by weight of said methyl methacrylate.

3,184,438

POLYAMIDES OF ISOCYANURATE COMPOUNDS

Lee V. Phillips and William C. Francis, both of Overland Park, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 12, 1961, Ser. No. 144,587
9 Claims. (Cl. 260—78)

4. A polyamide of an organic diamine with tri-(beta-carboxyethyl)isocyanurate, said organic diamine being selected from the group consisting of aliphatic diamines, monocyclic aromatic diamines, and monocyclic heterocyclic diamines.

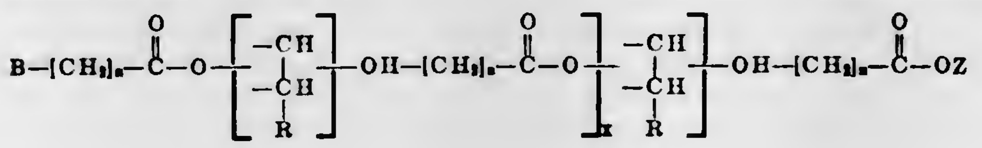
3,184,439

POLYESTERS OF EPOXIDIZED ALIPHATIC ACIDS AND CROSSLINKED PRODUCTS

Karl Brack, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

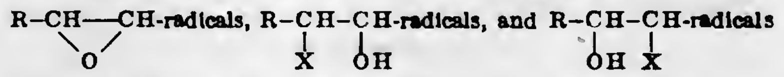
No Drawing. Filed Sept. 27, 1961, Ser. No. 141,020
13 Claims. (Cl. 260—78.4)

1. A linear polymeric ester compound having the general formula:



$$B-[CH_2]_n-\overset{\overset{\displaystyle O}{\|}}{C}-O-\left[\begin{array}{c}-CH\\ \vert\\ -CH\\ \vert\\ R\end{array}\right]-OH-[CH_2]_n-\overset{\overset{\displaystyle O}{\|}}{C}-O-\Big]_x\left[\begin{array}{c}-CH\\ \vert\\ -CH\\ \vert\\ R\end{array}\right]-OH-[CH_2]_n-\overset{\overset{\displaystyle O}{\|}}{C}-OZ$$

in which R is a substituent of the group consisting of hydrogen and alkyl radicals; n is a whole number from 0 to 20, inclusive; x is at least 1; Z is a substituent of the group consisting of hydrogen, hydroxyalkyl radicals, halohydroxyalkyl radicals, and alkali metal radicals; and B is a substituent of the group consisting of



$$R-\underset{\displaystyle O}{CH-CH}\text{-radicals, } R-\underset{\displaystyle X}{\underset{\vert}{C}}H-\underset{\displaystyle OH}{\underset{\vert}{C}}H\text{-radicals, and } R-\underset{\displaystyle OH}{\underset{\vert}{C}}H-\underset{\displaystyle X}{\underset{\vert}{C}}H\text{-radicals}$$

in which R has the same significance as set forth above, and X is a halogen substituent.

10. An insoluble, infusible, highly cross-linked polymeric composition comprising the reaction product of a linear polymeric ester compound of an epoxyalkanoic acid having the general formula as set forth in claim 1 with a polyfunctional cross-linking agent selected from the group consisting of polycarboxylic acids and anhydrides.

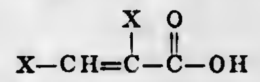
3,184,440

INTERPOLYMER COMPRISING ACRYLIC ACID, AN ACRYLIC ACID ESTER AND A MALEIC ANHYDRIDE DERIVATIVE AND A PROCESS OF PREPARATION

Rajendra N. Chadha, Silver Spring, Donald E. Jefferson, Greenbelt, and Frank X. Werber, Rockville, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed July 17, 1962, Ser. No. 210,593
17 Claims. (Cl. 260—78.5)

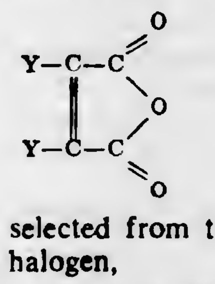
1. A composition comprising (A) an acrylic acid ester, (B) from about 1 to about 15% by weight of an aluminum compound selected from the group consisting of alkyl aluminum dihalide, alkyl aluminum sesquihalide, dialkyl aluminum halide, diaky aluminum hydride and triakyl aluminum, and (C) from about 0.05 to about 5% by weight of an acrylic acid of the formula



$$X-CH=\overset{\overset{\displaystyle X}{\vert}}{C}-\overset{\overset{\displaystyle O}{\|}}{C}-OH$$

wherein each X is selected from the group consisting of hydrogen and lower alkyl,

and (D) from about 0.2 to about 20% by weight of a maleic anhydride of the formula



wherein each Y is selected from the group consisting of hydrogen and halogen,

all percentages being based on the weight of the acrylic acid ester.

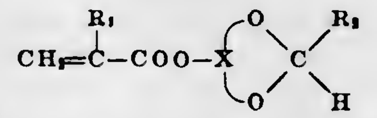
3,184,441

AIR-DRYING ESTERS OF 1,3-CYCLIC ACETALS

James Chen-Shang Fang, Springfield, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 6, 1959, Ser. No. 804,098
9 Claims. (Cl. 260—86.1)

1. An air-drying chemical compound represented by the formula:



wherein X is a trivalent hydrocarbon radical containing

3 to 20 carbon atoms, 2 to 5 of which are in the acetal ring, R_1 is selected from the class consisting of hydrogen and methyl and R_2 is a radical selected from the class consisting of vinyl and alpha-substituted vinyl.

7. An air-drying coating composition consisting essentially of at least about 20%, by weight, of at least one compound of claim 1.

3,184,442
PROCESS FOR POLYMERIZATION UTILIZING A ZIEGLER CATALYST PROMOTED BY CADMIUM, MERCURY, TIN OR LEAD

Roger M. Nagel, Pennington, and Malgonis Gabliks, New Brunswick, N.J., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed Apr. 10, 1961, Ser. No. 101,649

8 Claims. (Cl. 260—93.7)

1. A method for polymerizing alpha-olefins which comprise contacting said alpha-olefins with a catalyst comprising a trialkyl aluminum compound, a titanium polyhalide wherein titanium has a valence of 3 to 4 and a finely divided metal selected from the group consisting of cadmium, mercury, tin, and lead in a molar ratio of one mol of titanium polyhalide, 0.5 to 10 mols trialkyl aluminum and 0.1 to one mol of metal.

3,184,443
METAL-TITANIUM HALIDE CATALYSTS FOR OLEFIN POLYMERIZATION

Harry W. Coover, Jr., and Frederick B. Joyner, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 13, 1961, Ser. No. 102,660

The portion of the term of the patent subsequent to Nov. 29, 1977, has been disclaimed and dedicated to the Public

20 Claims. (Cl. 260—93.7)

1. In the polymerization of α-olefinic hydrocarbons containing 3 to 10 carbon atoms to form solid crystalline polymer, the improvement which comprises catalyzing the polymerization with a catalytic mixture containing a metal selected from the group consisting of sodium, lithium, potassium, magnesium and zinc, a halide of a transition metal selected from the group consisting of titanium, vanadium, zirconium, molybdenum and chromium, and an organophosphorus compound having the formulas $P(O)Y_3$ and PY_3 wherein each Y is selected from the group consisting of alkylamino and alkoxy radicals, the alkyl and alkoxy radicals containing 1 to 8 carbon atoms.

3,184,444
PROCESS FOR SEPARATION OF THE SOLVENTS FROM POLYETHYLENE FORMED IN HIGH-PRESSURE POLYMERIZATION OF ETHYLENE IN THE PRESENCE OF SOLVENTS AND FROM LOW-PRESSURE CIRCULATING GAS

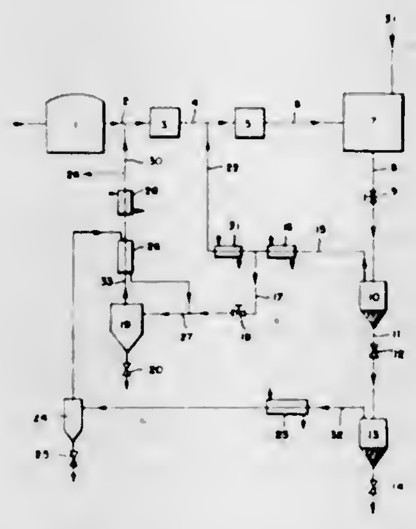
Hans Eilbracht, Ludwigshafen (Rhine), Helmut Pfannmueller, Mannheim, Rudi-Heinz Rotzoll, Ludwigshafen (Rhine), Friedrich Urban, Limburgerhof, Pfalz, and Wieland Zacher, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Dec. 4, 1961, Ser. No. 156,667

Claims priority, application Germany, Dec. 6, 1960, B 60,369

2 Claims. (Cl. 260—94.9)

1. A two stage process for removing solvent from polyethylene formed in the continuous high-pressure polymerization of ethylene at a temperature of between 150 and 400° C. and pressures of between 500 and 4000 atmospheres which comprises: passing the reaction mixture from the reaction vessel to a high-pressure separator held at a pressure of more than 150 atmospheres, said reaction mixture containing polyethylene, ethylene, and solvent, maintaining a predetermined level of polyethylene in said high-pressure separator, removing the bulk of the ethylene and solvent from the reaction mixture in said high-pressure separator and passing said ethylene and said solvent into a high-pressure gas cycle held at a pressure greater than 100 atmospheres; expanding said polyethylene from said high-pressure separator into a low-pressure separator, removing ethylene entrained by the polyethylene in dissolved form from the polyethylene together with solvent and passing said ethylene and said solvent into a low-pressure gas cycle, said polyethylene thereafter being removed in purified form from said low-pressure separator, said ethylene and said solvent in said low-pressure cycle passing to a gas cooler and into an atmospheric separator; separating the bulk of the solvent from said ethylene in said atmospheric separator, and cooling the residual gas consisting of ethylene and residual solvent in a countercurrent heat exchanger; passing said bulk of said ethylene and said solvent from said high-pressure separator in said high-pressure gas cycle to a cooler, further cooling the bulk of the ethylene from said cooler and passing said ethylene in said high-pressure cycle to a compressor where it is compressed to reaction pressure and passed once again to the reaction vessel; further cooling the residual ethylene and solvent in said high-pressure gas cycle and expanding said residual gas and solvent; mixing the gases including residual solvent from the low-pressure cycle with the gases including solvent from the high pressure cycle after the gases of the high pressure cycle have been expanded and passing said mixture of said gases and solvents to a low temperature separator wherein the solvent and gas are separated; passing separated gas from said low temperature separator into the countercurrent heat exchanger; and passing said separated gas to a precompressor and aftercompressor and then again to the reaction vessel.



3,184,445
CLARIFICATION OF GELATIN

Adolf W. Fogiel, Dearborn, and William R. Rose, Fowlerville, Mich., assignors, by mesne assignments, to American Agricultural Chemical Company, a corporation of Delaware

No Drawing. Filed Mar. 7, 1961, Ser. No. 93,840

5 Claims. (Cl. 260—118)

5. A method of clarifying gelatin which comprises forming an aqueous gelatin solution having a pH of about 5.5, admixing in said solution at a temperature in the range 100–130° F. freshly prepared aqueous dicalcium phosphate slurry less than about 10 minutes old and an aqueous solution of a water-soluble aluminum salt capable of yielding aluminum ions, permitting the resulting admixture to form tricalcium phosphate and permitting the resulting formed tricalcium phosphate to settle to yield a clarified aqueous gelatin solution.

3,184,446
HEIMIA ALKALOIDS

Jerry A. Weisbach, Cherry Hill, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation of application Ser. No. 272,527, Apr. 12, 1963. This application July 15, 1963, Ser. No. 295,205

2 Claims. (Cl. 260—236)

1. Lythrine, a crystalline substance analyzing for the empirical formula $C_{26}H_{29}NO_5$, being characterized by:

a melting point of 241–242° C.;

an optical rotation as follows:

$[\alpha]_D^{25°}=+40.6°$ (concentration=0.3% in chloroform);

an ultraviolet absorption spectrum in ethanol with the following maxima:

max. λ 260 mμ (log ε 408), and

max. λ 284 mμ (log ε 4.14);

an infrared absorption spectrum in a hydrocarbon oil with bands at the following wavelengths, expressed in microns: 2.72, 5.88 and 6.23;

X-ray diffraction data as follows (needles from methylene chloride-petroleum ether):

d (angstrom units)	I/I_1 (relative intensity)
10.10	75
9.00	75
8.30	45
6.70	65
6.20	45
5.79	100
4.60	95
4.20	90
4.10	90
3.85	65
3.70	50

a hydrochloride salt having a melting point of >300° C.; and

an acetate having:

a melting point of 172–173° C.;

an optical rotation: $[\alpha]_D^{25°}=+33.1°$ (concentration=0.75% in chloroform); and

infrared absorption bands at wavelengths of 5.59 and 5.87 microns.

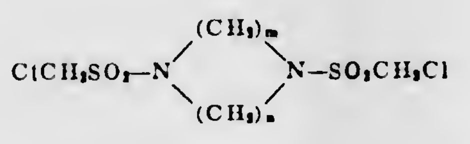
3,184,447
BIS-CHLOROMETHYLSULFONAMIDES OF CYCLIC DIAMINES

Leo A. Paquette, Portage Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 4, 1962, Ser. No. 242,070

4 Claims. (Cl. 260—239)

1. A compound of the formula:



wherein *m* and *n* are integers of from 2 to 3.

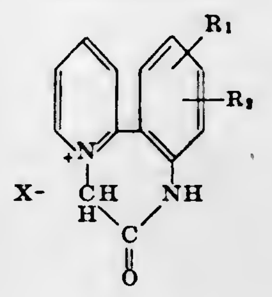
3,184,448
BENZODIAZEPINIUM COMPOUNDS

Peter Hsing-Lien Wei, Upper Darby, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 16, 1962, Ser. No. 230,995

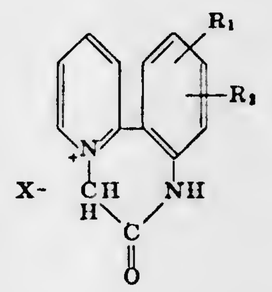
6 Claims. (Cl. 260—239.3)

1. A compound of the formula:

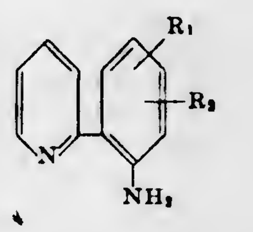


wherein R_1 is a member of the group consisting of hydrogen, halogen, lower alkyl and haloalkyl; R_2 is a member of the group consisting of halogen and hydrogen; and X^- is a halogen ion selected from the group consisting of chlorine and bromine.

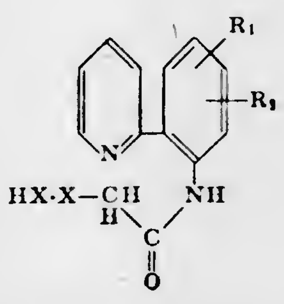
6. A process for preparing compounds having the formula:



wherein R_1 is a member of the group consisting of hydrogen, halogen, lower alkyl and haloalkyl; R_2 is a member of the group consisting of halogen and hydrogen; and X^- is a halogen ion selected from the group consisting of chlorine and bromine, which process comprises reacting in an inert solvent the 2-(o-aminophenyl)-pyridine having the formula:



wherein R_1 and R_2 are as hereinabove, with a monohaloacetyl halide of the formula XCH_2COX where X is selected from the group of chlorine and bromine to form the compound having the formula:



and then treating the latter compound with an alkali metal bicarbonate to produce the desired product.

3,184,449

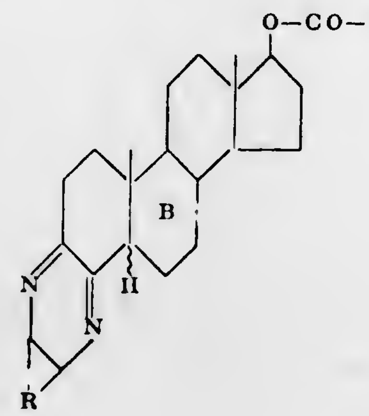
LIPID SOLUBLE ANTI-FOLIC MATERIAL AND METHOD OF PREPARING SAME

Thomas J. Bardos, Snyder, and Zislaw F. Chmielewicz, Williamsville, N.Y., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware

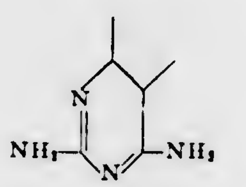
No Drawing. Filed Oct. 24, 1963, Ser. No. 318,496

12 Claims. (Cl. 260—239.5)

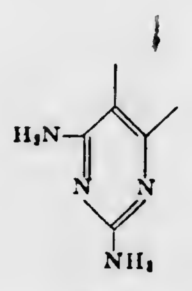
1. A compound having the formula



in which R is selected from the group consisting of



and



3,184,450

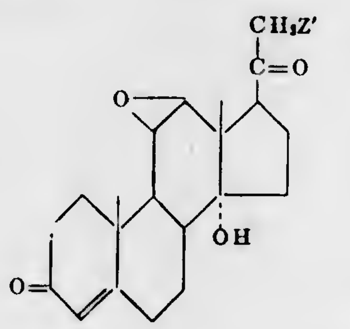
11β,12β-OXIDO-14α-HYDROXY-Δ⁴-PREGNENES

Patrick A. Diassi, Westfield, and Allen I. Laskin, Somerset, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 20, 1962, Ser. No. 203,736

4 Claims. (Cl. 260—239.55)

1. A compound selected from the group consisting of steroids of the formula



and the 1,2-dehydro derivatives thereof, wherein Z′ is selected from the group consisting of hydrogen, hydroxy and the acyloxy radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms.

3,184,451

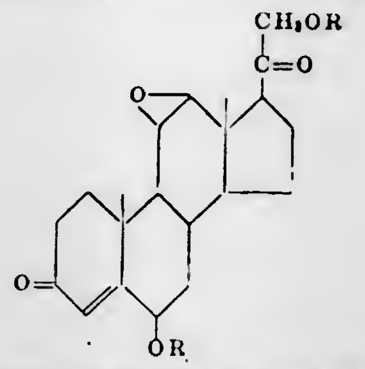
11β,12β-OXIDO-6β-HYDROXY-Δ⁴-PREGNENES

Patrick A. Diassi, Westfield, and Allen I. Laskin, Somerset, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed June 20, 1962, Ser. No. 203,737

3 Claims. (Cl. 260—239.55)

1. A compound selected from the group consisting of steroids of the formula



and the 1,2-dehydro derivatives thereof, wherein R is selected from the group consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms.

3,184,452

NEW AMINOALKOXY COMPOUNDS AND PROCESS FOR THEIR MANUFACTURE

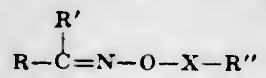
Jean Druey, Riehen, Kurt Eichenberger, Basel, Paul Schmidt, Therwil, and Alberto Rossi, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application Oct. 24, 1958, Ser. No. 769,321, now Patent No. 3,060,177, dated Oct. 23, 1962. Divided and this application July 24, 1962, Ser. No. 212,126

Claims priority, application Switzerland, Nov. 11, 1957, 52,520; Aug. 29, 1958, 63,405

21 Claims. (Cl. 260—240)

5. A member of the group consisting of therapeutically useful acid addition salts and lower alkyl quaternary ammonium salts of compounds of the formula:



$$R-\overset{R'}{\overset{|}{C}}=N-O-X-R''$$

in which R stands for a member selected from the group consisting of quinolyl, pyrazolyl, indolyl, pyridyl, N-methyl-indolyl, oxo-phenanthrolyl and 1-phenyl-2,3-dimethyl-5-oxo-2,5-dihydropyrazolyl-(4), R′ stands for the group —$(CH_2)_nH$ wherein *n* is an integer from 0 to 6, X stands for lower alkylene and R″ represents a member selected from the group consisting of di-(lower alkyl)-amino, pyrrolidino, piperidino, piperazino and morpholino.

3,184,453

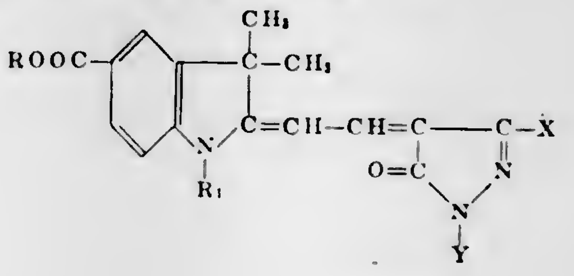
3-DIMETHYL-SUBSTITUTED INDOLINE DYESTUFFS

Roderich Raue, Leverkusen, Werner Muller, Cologne, and Oskar Weissel, Krefeld-Urdingen, Germany, and Max Coenen, deceased, late of Grulten, Germany, by Ruth Coenen, Gerda Coenen, Barbara Coenen, and Hella Coenen, heirs, all of Grulten, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Apr. 10, 1962, Ser. No. 187,149

6 Claims. (Cl. 260—240.4)

1. A compound of the formula



wherein R and R₁ each stand for a member selected from the class consisting of methyl and ethyl; X is a member selected from the group consisting of methyl, carbo lower alkylester, carbonamide and —COOH, Y is a member selected from the group consisting of hydrogen, phenyl, tolyl, monochloro phenyl, dichloro phenyl, nitro phenyl, amino phenyl, acetylamino phenyl and carboxy phenyl.

3,184,454

RECOVERY OF CEPHALOSPORIN C

Edward Penley Abraham and Guy Geoffrey Frederick Newton, Oxford, and Clifford William Hale, Clevedon, England, assignors to National Research Development Corporation, London, England, a British corporation

No Drawing. Filed Jan. 19, 1961, Ser. No. 96,633

Claims priority, application Great Britain, Jan. 25, 1960, 2,706/60

7 Claims. (Cl. 260—243)

1. A process for the recovery of Cephalosporin C from a clarified beer containing it and co-present Cephalosporin N which comprises acidifying the beer to convert the Cephalosporin N at least in part to its penillic acid and then separating Cephalosporin C from the beer so treated by lowering the pH of the beer to a value of from 2.8 to 4.0 by treatment with a cation exchange material containing strong acid groups in hydrogen form selected from sulfonate and phosphate groups and on which Cephalosporin C is not adsorbed, separating the cation exchange material from the acidified beer, treating the acidified beer with a strong anion exchange material in which the anion groups are the anions of a weak, volatile, lower saturated aliphatic monobasic acid to preferentially adsorb chloride and other inorganic anions but not the Cephalosporin C, said anion exchange material being used in such an amount as to be substantially saturated by said chloride and other inorganic anions thereby leaving the Cephalosporin C in the acidified beer.

3,184,455

ANTHRAQUINONE DYESTUFFS AND PROCESS FOR THEIR PRODUCTION

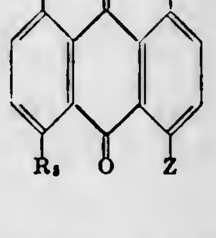
Rütger Neeff, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed July 12, 1961, Ser. No. 123,415

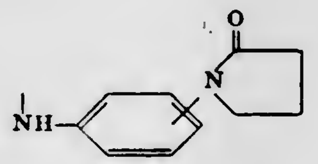
Claims priority, application Germany, July 14, 1960, F 31,664

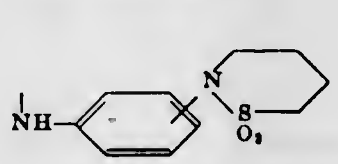
6 Claims. (Cl. 260—243)

1. A anthraquinone dyestuff of the formula

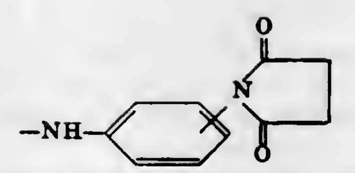


wherein R₁ is hydroxyl and Z is a member selected from the group consisting of





and



R₃ and R₄ represents a member selected from the group consisting of nitro, amino, and hydroxyl.

3,184,456

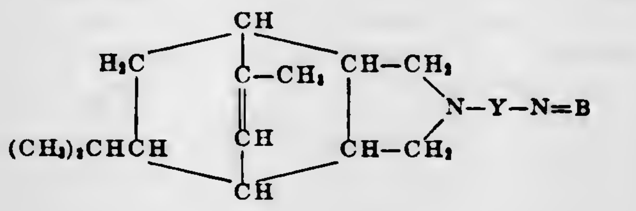
REDUCED MALEIMIDE ADDUCTS OF α-PHELLANDRENE

Raymond O. Clinton, East Greenbush, and Andrew John Manson, North Greenbush, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Sept. 12, 1960, Ser. No. 55,125. Divided and this application May 16, 1963, Ser. No. 281,020

8 Claims. (Cl. 260—247.5)

1. A compound of the formula



wherein Y represents lower-alkylene, and N=B represents a member of the group consisting of di-lower-alkylamino; dicycloalkylamino in which the cycloalkyl has from 5 to 6 ring members; N-(cycloalkyl)-lower-alkylamino in which the cycloalkyl has from 5 to 6 ring members; 1-pyrrolidyl; 1-piperidyl; hexamethyleneimino; C-lower alkylated 1-pyrrolidyl, 1-piperidyl and hexamethyleneimino; 4-morpholinyl; 1-piperazinyl; di(phenyl-lower-alkyl)amino; and N-(phenyl-lower-alkyl)-N-lower-alkylamino.

4. 2 - [2 - (4 - morpholinyl] - 4,7 - etheno - 5 - isopropyl - 8 - methyl - 3a,4,5,6,7,7a - hexahydroisoindoline.

3,184,457

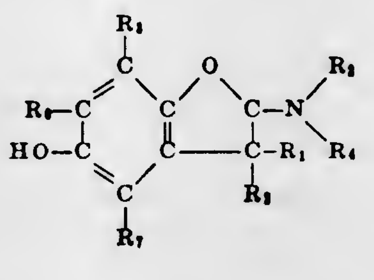
2-AMINOBENZOFURAN(2H)-5-OLS AND A PROCESS OF MAKING THEM

Kent C. Brannock and Herman S. Pridgen, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 12, 1963, Ser. No. 257,873

10 Claims. (Cl. 260—247.7)

2. A 2-aminobenzofuran(2H)-5-ol having the formula:



in which:

R₁, taken singly, is selected from the group consisting of hydrogen and lower alkyl;

R₂ taken singly, is lower alkyl;

R₁ and R₂, taken collectively, are bivalent hydrocarbon which together with the carbon atom to which they are attached form a fully hydrogenated hydrocarbon ring of 3 to 10 ring members;

R_3 and R_4, taken singly, are alkyl and, taken collectively, are bivalent groups which together with the nitrogen atom to which they are attached form a fully hydrogenated heterocyclic ring selected from the group consisting of piperidino, morpholino, thiamorpholino, and pyrrolidinyl;

R_5, R_6 and R_7, taken singly, are selected from the group consisting of hydrogen, phenyl and alkyl; and

R_5 and R_6, taken collectively, are the atoms necessary to complete the fused ring of naphthoquinone.

7. The compound 2-morpholino-3,3-dimethyl-benzofuran(2H)-5-ol, having the melting point 187–191° C.

3,184,458
PROCESSES FOR PRODUCING TRICHLOROISOCYANURIC ACID

Thomas C. Frazier, Jr., Hopewell, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Aug. 11, 1961, Ser. No. 130,936

4 Claims. (Cl. 260—248)

1. In a process for the production of trichloroisocyanuric acid involving reacting cyanuric acid with an aqueous solution of an alkali metal hydroxide to form a reaction mixture containing a tri alkali metal cyanurate, chlorinating said reaction mixture at a temperature within the range of from about −5° C. to about 45° C. to produce trichloroisocyanuric acid and by-product nitrogen trichloride, the improvement which consists in stripping said reaction mixture with an inert gas to remove said by-product nitrogen trichloride therefrom before recovering the trichloroisocyanuric acid.

3,184,459
3-(p-TRIAZINYLAMINO-PHENYL)-COUMARIN COMPOUNDS

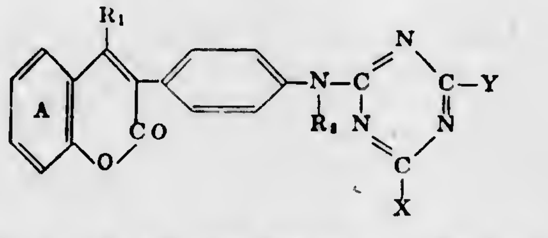
Edgar Siegel, Leverkusen, and Heinrich Gold, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed July 10, 1962, Ser. No. 208,953

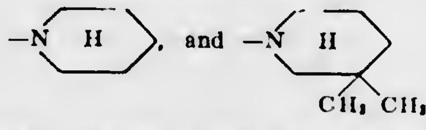
Claims priority, application Germany, Sept. 11, 1961, F 34,900

4 Claims. (Cl. 260—249.5)

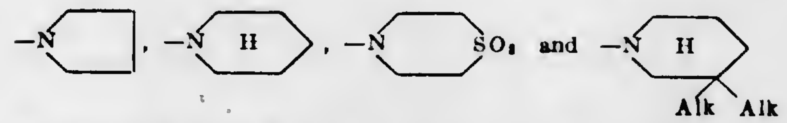
1. A compound of the formula



wherein R_1 and R_2 are members selected from the group consisting of hydrogen and lower alkyl; X is a member selected from the group consisting of chloro, lower alkoxy, amino, lower dialkylamino,



Y is a member selected from the group consisting of amino, alkyl-amino, di-lower-alkyl-amino, lower alkyl-cyclohexyl amino, dicyclohexyl amino, lower alkoxy,



wherein Alk is defined as lower alkyl; and the benzene nuclei, A, corresponding to the 7-position of the coumarin system, has a substituent grouping selected from the group consisting of hydrogen, methyl and chloro.

3,184,460
1-(ALKOXYPHENYLALKYL)-2-IMIDAZOLINONES, -2-IMIDAZOLIDINONES AND -2-PYRIMIDINONES

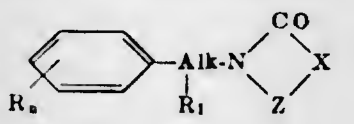
Antony M. Akkerman and Josephus F. Michels, Amsterdam, Netherlands, assignors to N.V. Nederlandsche Combinatie voor Chemische Industrie, Amsterdam, North Holland, Netherlands, a limited-liability company of the Netherlands

No Drawing. Filed Nov. 16, 1962, Ser. No. 238,276

Claims priority, application Great Britain, Nov. 17, 1961, 41,216/61

7 Claims. (Cl. 260—251)

1. A compound of the forumla:



in which

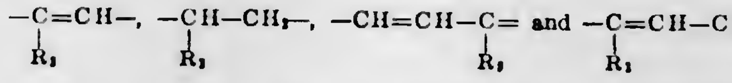
Alk is ethylene,

R_n is selected from the class consisting of methoxy at each of the 3 and 4 positions and methylenedioxy at the 3 and 4 positions,

R_1 is selected from the class consisting of a hydrogen atom and methyl,

X is selected from the class consisting of N=, when the ring is pyrimidinone, and N—R_2, in which R_2 is selected from the class consisting of a hydrogen atom and lower alkyl, and

Z represents a radical selected from the class consisting of



$$-\underset{R_3}{C}=CH-,\ -\underset{R_3}{CH}-CH_2-,\ -CH=CH-\underset{R_3}{C}=\ \text{and}\ -\underset{R_3}{C}=CH-CH=$$

in which R_3 is selected from the class consisting of a hydrogen atom and lower alkyl.

3,184,461
CERTAIN 2-(DIALKYLAMINO)PYRIMIDINE COMPOUNDS

Ralph E. De Brunner, Dayton, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,342

3 Claims. (Cl. 260—256.4)

1. 2-dialkylaminopyrimidine in which each alkyl has from 4 to 8 carbon atoms.

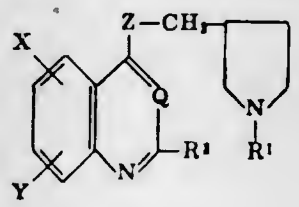
3,184,462
CERTAIN 4-SUBSTITUTED QUINAZOLINES

Homer C. Scarborough, Yao Hua Wu, and Rolland F. Feldkamp, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

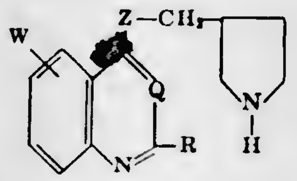
No Drawing. Filed Mar. 10, 1961, Ser. No. 94,710

10 Claims. (Cl. 260—256.4)

1. A compound selected from the group consisting of



and



wherein W is selected from the group consisting of hydrogen, methyl, and lower alkoxy; X is selected from the group consisting of hydrogen, halogen, methyl, and lower alkoxy; Y is selected from the group consisting of hydrogen and halogen; Z is selected from the group consisting of oxygen, imino, and methylimino; Q is nitrogen; R¹ is selected from the group consisting of lower alkyl, phenyl lower alkyl, lower alkylene, and hydroxy lower alkyl; R² is selected from the group consisting of hydrogen, hydroxy, methoxy, chlorine, methyl, and mercapto; R is selected from the group consisting of hydrogen, hydroxy, methoxy, and methyl; and the pharmacologically acceptable acid addition salts of said compounds.

3,184,463
1,4-BIS-(2-METHOXY-4-SUBSTITUTED-PHENOXY-ACETYL)PIPERAZINES AND METHOD OF MAKING SAME

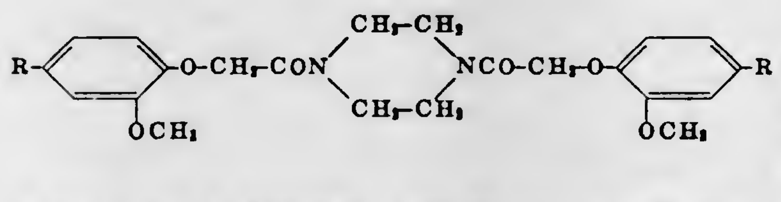
Tsutomu Irikura, 72 Shimura-Nakadaimachi, Itabashi-ku; Kuniyosi Masuzawa, 6333 2-chome, Tagaramachi, Nerima-ku; and Keigo Nishino, 32 3-chome, Ukimacho, Kita-ku, all of Tokyo, Japan

Filed June 18, 1963, Ser. No. 288,706

Claims priority, application Japan, Sept. 24, 1962, 37/41,851

3 Claims. (Cl. 260—268)

1. Compounds of the formula



in which each R is selected from the group consisting of allyl and n-propyl.

3,184,464
TETRAHYDRO-QUINOLINES AND TETRAHYDRO-ISOQUINOLINES

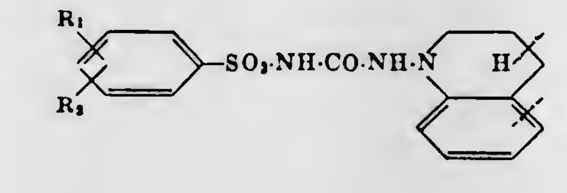
Erich Haack, Heidelberg, Adolf Hagedorn, Mannheim-Waldhof, Felix H. Schmidt, Mannheim, and Rudi Weyer, Frankfurt am Main Hochst, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany, a German corporation

No Drawing. Filed Sept. 11, 1962, Ser. No. 222,954

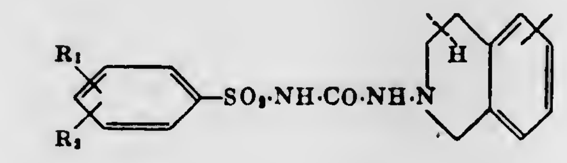
Claims priority, application Germany, Sept. 16, 1961, B 64,036

4 Claims. (Cl. 260—287)

1. A chemical compound selected from the group consisting of free bases and their non-toxic organic and inorganic acid addition salts, the free bases having the formulae:



and



wherein R_1 and R_2 each represents a member selected from the group consisting of hydrogen, lower alkyl, lower alkoxy, and halogen.

2. N_1 - (p - methyl -benzene - sulfonyl) - N_2 - (N-tetrahydro-quinolyl)-urea.

3,184,465
ALKENYL THIONOPHOSPHONIC ACID FLUORAMIDES

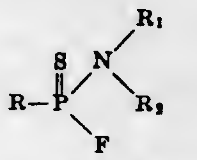
Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Mar. 1, 1960, Ser. No. 11,951

Claims priority, application Germany, Mar. 3, 1959, F 27,844

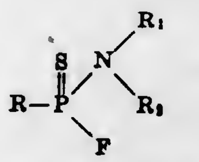
6 Claims. (Cl. 260—293.4)

1. A thionophosphonic acid ester fluoramide of the following formula



wherein R stands for alkenyl having up to 6 carbon atoms; R_1 stands for a member selected from the group consisting of alkyl having up to 6 carbon atoms and cyclohexyl; R_2 stands for a member selected from the group consisting of hydrogen and alkyl having up to 6 carbon atoms.

2. A thionophosphonic acid ester fluoramide of the following formula



wherein R stands for alkenyl having up to 6 carbon atoms; and R_1 with R_2 stands for a member selected from the group consisting of alkylene having 2 to 5 carbon atoms and $CH_2CH_2OCH_2CH_2$.

3,184,466
N-BETA AMINO BUTYRYL-INDOLINES

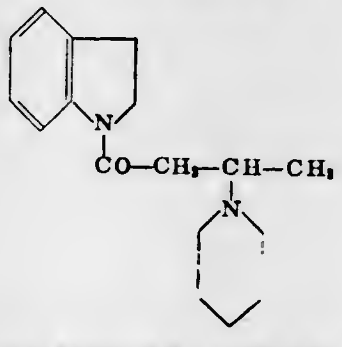
Ingeborg Hennig, Kelkheim, Taunus, and Ernst Lindner, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 15, 1961, Ser. No. 131,475

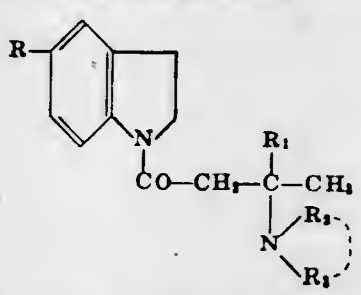
Claims priority, application Germany, Aug. 19, 1960, F 31,914

6 Claims. (Cl. 260—294)

5. The compound of the formula



6. A compound selected from the group consisting of (1) indoline derivatives of the formula



wherein R is a member selected from the group consisting of hydrogen and halogen, R_1 is a member selected from the group consisting of hydrogen and methyl, R_2 and R_3 are members selected from the group consisting of hydrogen and alkyl having at most four carbon atoms and, together with the nitrogen, are members selected from the group consisting of indoline, 5-halo-indoline, piperidine, pyrrolidine and morpholine; and (2) pharmaceutically acceptable acid addition salts thereof.

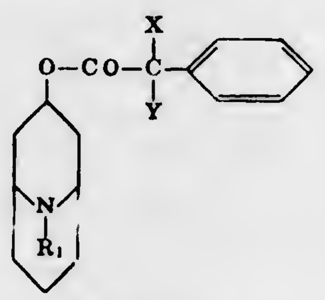
3,184,467
GRANATANOL-(3 BETA)-ESTERS

Otto Dold, Lampertheim, Hesse, Kurt Stach, Mannheim, and Wolfgang Schaumann, Mannheim-Waldhof, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany

No Drawing. Filed Oct. 17, 1962, Ser. No. 231,264

4 Claims. (Cl. 260—294.3)

1. A granatanol-(3β)-ester of the class consisting of the free base of the formula:



and its hydrochloride, wherein X is a member selected from the group consisting of hydrogen and hydroxyl, Y is phenyl and R_1 is a member selected from the group consisting of methyl and benzyl.

3,184,468
2,5-DI-[1′,3′,4′-OXDIAZOL-2-YL]THIOPHENE COMPOUNDS

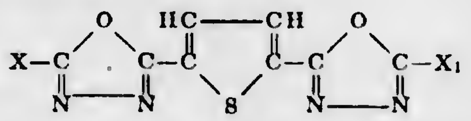
Adolf Emil Siegrist and Leonardo Guglielmetti, Basel, Erwin Maeder, Munchenstein, and Peter Liechti, Binningen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Apr. 23, 1963, Ser. No. 274,948

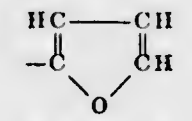
Claims priority, application Switzerland, May 4, 1962, 5,338/62

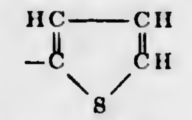
5 Claims. (Cl. 260—307)

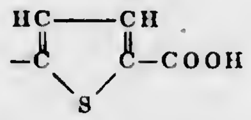
1. A compound of the formula

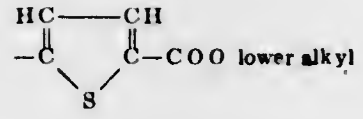


wherein X and X_1 each represents a member selected from the group consisting of

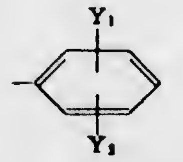
(1)


(2)


(3)


(4)


and

(5)


wherein Y_1 is a member selected from the group consisting of hydrogen, chlorine, alkyl and alkoxy, and Y_2 is a member selected from the group consisting of hydrogen, chlorine and alkyl.

3,184,469
PROCESS FOR PURIFYING γ-METHYL GLUTAMATE N-CARBOXY ANHYDRIDE

Yoshio Ishizuka, Yasuo Taneda, and Yasuhisa Ohno, Tokyo, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed July 23, 1963, Ser. No. 296,923

Claims priority, application Japan, July 31, 1962, 37/32,145

3 Claims. (Cl. 260—307)

1. A process for purifying optically active γ-methyl glutamate N-carboxy anhydride which comprises dissolving an optically active crude γ-methyl glutamate N-carboxy anhydride in 1,2-dichloroethane by heating the system to a temperature within the range from 40° C. to the boiling point of 1,2-dichloroethane and thereafter cooling the resultant solution to a temperature below 35° C. to recrystallize the purified product.

3,184,470
NEW TRIAZOLIDINES

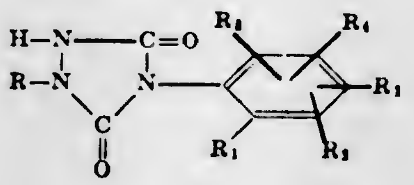
Heinrich Ruschig, Bad Soden, Taunus, Karl Schmitt, Gerd Driesen, and Leopold Ther, Frankfurt am Main, and Werner Pfaff, Hofheim-Marxheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 18, 1961, Ser. No. 124,815

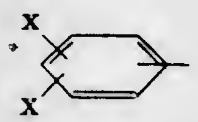
Claims priority, application Germany, July 20, 1960, F 31,700

6 Claims. (Cl. 260—308)

1. A compound selected from the group consisting of a compound of the formula



in which R is a phenyl group of the formula



in which X_1 and X_2 are members selected from the group consisting of hydrogen, halogen, methyl and methoxy, R_1 is a member selected from the group consisting of halogen, alkyl having from 1 to 4 carbon atoms, alkoxy having from 1 to 4 carbon atoms, phenoxy and benzyloxy, R_2 is a member selected from the group consisting of halogen, alkyl having from 1 to 8 carbon atoms, alkoxy having from 1 to 8 carbon atoms, hydroxyethoxy, cycloalkyl having from 5 to 6 carbon atoms, phenyl, p-ethoxy-phenyl, benzyl, benzhydril, benzyloxy, m-methoxy-benzyloxy, phenoxy and phenylmercapto, R_3 is a member selected from the group consisting of hydrogen, trifluoromethyl, halogen, alkyl having from 1 to 4 carbon atoms, alkoxy having from 1 to 4 carbon atoms, halogeno alkoxy having from 1 to 4 carbon atoms, alkoxyalkoxy having from 2 to 4 carbon atoms, nitro, acetyl, methyl-sulfonyl, ethylsulfonyl and phenylsulfonyl, R_4 and R_5 are members selected from the group consisting of hydrogen, methyl, methoxy and acetyl and R_2 and R_3 are further members of a methylenedioxy and a benzofurane ring, and nontoxic physiological compatible salts thereof.

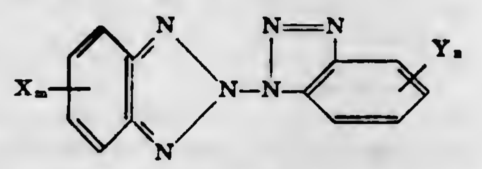
3,184,471
1,2′-BIBENZOTRIAZOLE COMPOUNDS AND THEIR PRODUCTION

Robert J. Harder, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 17, 1963, Ser. No. 252,057

8 Claims. (Cl. 260—308)

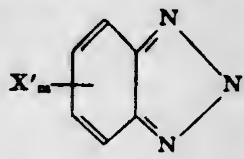
1. A compound of the formula:



wherein X and Y each represent a member of the group consisting of halogen of atomic number 9–35, nitro, alkyl of up to 18 carbons and the butadienylene group, which forms an extended aromatic ring with the benzo moiety to which it is attached; and *m* and *n* each represent a cardinal number of 0–2.

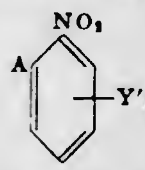
6. A process of preparing 1,2′-bibenzotriazoles which comprises:

(*a*) preparing a 2-aminobenzotriazole by boiling a mixture of hydroxylamine-O-sulfonic acid and a benzotriazole dissolved in aqueous alkali, said benzotriazole being of the formula



wherein X′ is of the group consisting of halogen of atomic number 9–35, alkyl of up to 18 carbons and the butadienylene group, which forms an extended aromatic structure with the benzo moiety to which it is attached, and *m* is a cardinal number of 0–2,

(*b*) reacting the 2-aminobenzotriazole with an o-halonitrobenzene of the formula

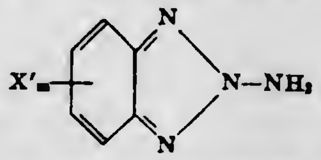


wherein A is halogen, Y′ is of the same group as X′, and *n* is a cardinal number of 0–2, in the presence of a hydrogen halide acceptor at a temperature of 125–250° C., thereby preparing a 2-(o-nitrophenylamino)benzotriazole,

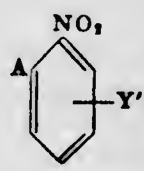
(*c*) reducing the nitro group of the benzotriazole from step (*b*) to an amino group, and

(*d*) diazotizing the 2-(o-aminophenylamino)benzotriazole from step (*c*).

8. In a process of preparing 1,2′-bibenzotriazoles, the step of reacting a 2-aminobenzotriazole of the formula



wherein X′ is of the group consisting of halogen of atomic number 9–35, alkyl of up to 18 carbons and the butadienylene group, which forms an extended aromatic structure with the benzo moiety to which it is attached, and *m* is a cardinal number of 0–2, with an o-halonitrobenzene of the formula



wherein A is a halogen, Y′ is of the same group as X′. and *n* is a cardinal number of 0–2, in the presence of a hydrogen halide acceptor at a temperature of 125–250° C.

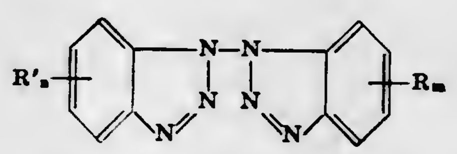
3,184,472
1,1′-BIBENZOTRIAZOLES AND THEIR PREPARATION

Rudolph A. Carboni, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 17, 1963, Ser. No. 252,058

11 Claims. (Cl. 260—308)

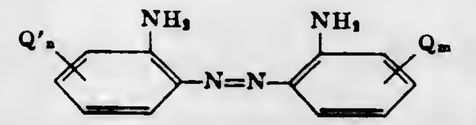
1. A compound of the formula



wherein R and R′ each represent a member of the group consisting of alkyl of up to 18 carbons, halogen of atomic number 9–35, sulfo, nitro, amino and hydrocarbonoylamido of up to 18 carbons; and each of *m* and *n* is a cardinal number of 0–3.

8. In a method of preparing 1,1′-bibenzotriazoles the step which comprises reducing the bisdiazonium salt prepared by;

tetraazotizing an o,o′-diaminoazobenzene of the formula



where Q and Q′ each represents a member of the group consisting of alkyl of up to 18 carbons, halogen of atomic number 9–35, sulfo, nitro and hydrocarbonoylamide of up to 18 carbons, and each of *m* and *n* is a cardinal number of 0–3, with at least one equivalent of a member of the group consisting of sulfur dioxide, copper-hydrobromic acid reagent and an azine derivative of an organic carbonyl compound at a temperature below 20° C.

10. A method of preparing a dibenzo-1,3a,4,6a-tetraazapentalene which comprises heating a compound of claim 1 up to at least its melting point, whereupon the compound decomposes with loss of nitrogen to form the corresponding dibenzo-1,3a,4,6a-tetraazapentalene.

3,184,473
IMIDAZOLINE DERIVATIVES

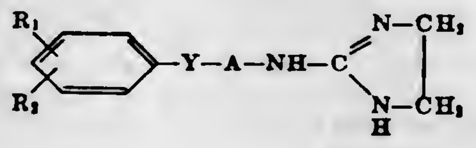
Graham John Durant, Welwyn Garden City, England, assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 6, 1963, Ser. No. 278,423

Claims priority, application Great Britain, May 14, 1962, 18,469/62

3 Claims. (Cl. 260—309.6)

1. A compound of the class consisting of a free base and its pharmaceutically acceptable, acid addition salts, the free base having the formula:



in which:

Y is a member selected from the group consisting of oxygen and sulfur;

A is alkylene of 2 to 4 carbon atoms having at least 2 carbon atoms separating the hetero atoms to which it is attached; and

R_1 and R_2 are members selected from the group consisting of hydrogen, halogen, lower alkyl and lower alkoxy.

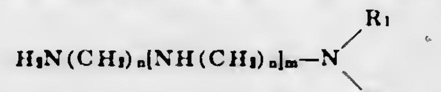
3,184,474
REACTION PRODUCT OF ALKENYL SUCCINIC ACID OR ANHYDRIDE WITH POLYAMINE AND POLYHYDRIC MATERIAL

Vincent P. Catto, Elizabeth, and Norman Tunkel, Perth Amboy, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 5, 1962, Ser. No. 221,447

7 Claims. (Cl. 260—326.3)

3. A mineral-oil-soluble reaction product prepared by refluxing a polyhydric material containing 4 to 18 carbon atoms selected from the group consisting of polyalkylene glycol, alkylene glycol and alkanol amines, with an acidic material selected from the group consisting of alkenyl succinic anhydride and alkenyl succinic acid wherein said alkenyl group contains 40–250 carbon atoms, for about 1 to 24 hours, adding polyamine of a formula:



$$H_2N(CH_2)_n[NH(CH_2)_n]_m-N\begin{matrix}R_1\\ R_2\end{matrix}$$

wherein *n* is 2 to 3, *m* is 0 to 4, and R_1 and R_2 are hydrogen, and refluxing for 1 to 24 hours while removing water of condensation, wherein 0.75 to 2.0 molar proportions of said polyhydric material and 0.75 to 2.0 molar proportions of said polyamine are used per molar proportion of said acidic material.

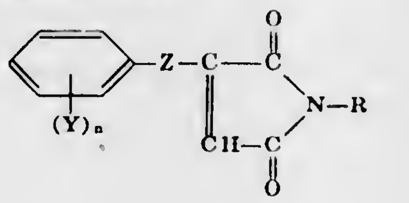
3,184,475
MALEIMIDES, MALEAMIDES AND FUMARAMIDES

Charles J. Eby, North Springfield, Va., and Erhard J. Prill, Des Peres, Mo., assignors to Monsanto Company, a corporation of Delaware

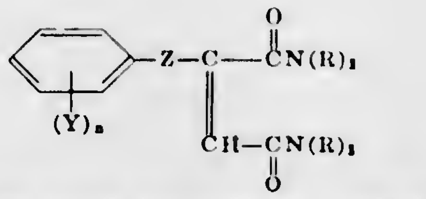
No Drawing. Filed Sept. 15, 1961, Ser. No. 138,256

8 Claims. (Cl. 260—326.5)

1. A compound selected from the class consisting of compounds of the formulas



and



wherein Y is selected from the class consisting of halogen atoms and lower alkyl, *n* is an integer from 0–5, Z is selected from the class consisting of S, SO and SO_2, and R is lower alkyl.

4. N-methyl-3-(p-chlorophenylthio)maleimide.

3,184,476
PROCESS FOR REMOVING ENDOGENOUS ACTIVATORS FROM PYRROLIDONE

Harold T. Wingfield, White Bear Lake, and Benji Oiye, West St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Sept. 5, 1961, Ser. No. 136,409

2 Claims. (Cl. 260—326.5)

1. The process for hydrolyzing 1-(1-pyrrolin-2-yl)-2-pyrrolidinone in 2-pyrrolidone containing the same to give 2-pyrrolidone which comprises the step of heating said 2-pyrrolidone containing 1-(1-pyrrolin-2-yl)-2-pyrrolidinone with from about 3 to about 25 percent by weight of water at a temperature in the range of from about 80° to 200° C. for a period ranging from about 15 minutes up to about 16 hours, longer periods being employed with lower temperatures and shorter periods with more elevated temperatures.

3,184,477
PROCESS FOR PREPARING INNER SULFONIUM SALTS

William Baird, John Woolley Batty, and Alexander Parkinson, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 31, 1962, Ser. No. 248,233

Claims priority, application Great Britain, Jan. 15, 1962, 1,355/62

12 Claims. (Cl. 260—327)

1. A process for the manufacture of an inner sulphonium salt which comprises reacting at a temperature between −50° C. and 50° C., an organic sulphide $R_3—S—R_4$ with an alkylene oxide selected from the group consisting of ethylene oxide, propylene oxide and butylene oxide and an acid component selected from the group consisting of carbon dioxide, sulphur dioxide, sulphur trioxide, acetic anhydride, propionic anhydride, maleic anhydride, succinic anhydride, acetyl and propionyl bromides and chlorides, the substituents R_3 and R_4 being selected from the class consisting of alkyl, alkenyl containing from 2–3 carbon atoms, phenyl, naphthyl, and radicals of the formula CHR_1CHR_2OH where R_1 and R_2 are selected from the class consisting of hydrogen and alkyl containing from 1 to 3 carbon atoms.

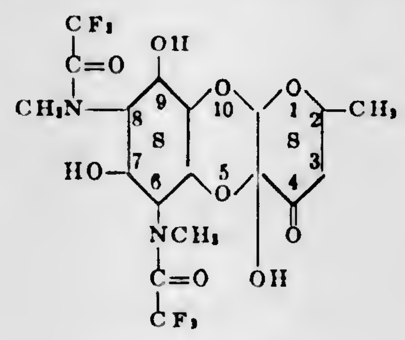
3,184,478
N,N′ - BIS(TRIFLUOROACETYL)ACTINOSPECTACIN AND THE 9-TRIFLUOROACETYL THEREOF

Robert D. Birkenmeyer and Herman Hoeksema, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 4, 1962, Ser. No. 184,954

2 Claims. (Cl. 260—340.3)

1. N,N′-bis(trifluoroacetyl)actinospectacin which has the formula



(1)

3,184,479
PROCESS FOR THE PREPARATION OF 2:5-FURANDICARBOXYLIC ACID

Erich Matter, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland

No Drawing. Filed Apr. 29, 1964, Ser. No. 363,603

Claims priority, application Switzerland, Mar. 7, 1961, 2,727/61

5 Claims. (Cl. 260—347.3)

1. Process for the manufacture of 2:5-furandicarboxylic acid by elimination of 3 molecular proportions of water from 1 molecular proportion of a tetrahydroxy-butane dicarboxylic acid of the formula

$$HOOC—(CHOH)_4—COOH$$

which process comprises first eliminating two molecular proportions of water from one molecular proportion of the tetrahydroxy-butane-dicarboxylic acid by heating the tetrahydroxy-butane-dicarboxylic acid in admixture with concentrated sulfuric acid in a first step at a temperature of 85 to 95° C., and in a second step at a temperature of 105 to 115° C., and then eliminating the third molecular proportion of water by heating the reaction mixture at a temperature ranging from 125 to 135° C.

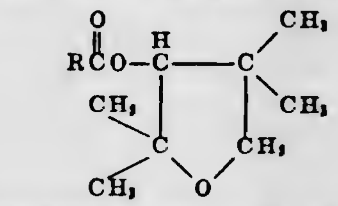
3,184,480
PROCESS FOR PREPARING ESTERS OF 2,2,4,4-TETRAMETHYL-TETRAHYDRO-3-FURANOL

Wayne V. McConnell and William H. Moore, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

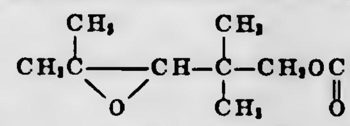
No Drawing. Filed Dec. 4, 1962, Ser. No. 242,055

8 Claims. (Cl. 260—347.4)

1. The process of preparing a tetrahydro-2,2,4,4-tetramethyl-3-furanol ester compound having the formula:



wherein R represents a member selected from the group consisting of alkyl having 1 to 21 carbon atoms, phenyl, tolyl, methoxyphenyl, ethoxyphenyl, xylyl, benzyl and phenethyl which comprises contacting a 3,4-epoxy-2,2,4-trimethylpentanol ester compound having the formula:



wherein R has the meaning previously assigned to it, with an acid catalyst.

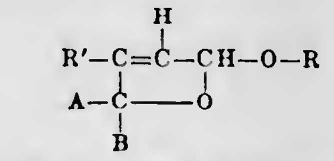
3,184,481
2-ALKOXY-5,5-BIS(HALOALKYL)-2,5-DIHYDROFURANS AND PREPARATION THEREOF

Horace R. Davis, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Feb. 16, 1962, Ser. No. 173,809

3 Claims. (Cl. 260—347.8)

1. A compound of the formula:



wherein each of A and B is a perhaloalkyl group of 1 to 6 carbon atoms fully substituted by halogen atoms selected from the group consisting of fluorine and chlorine, at least one of said halogen atoms on the α-carbon atoms being fluorine; R is alkyl of 1 to 8 carbon atoms and R′ is selected from the group consisting of hydrogen and lower alkyl.

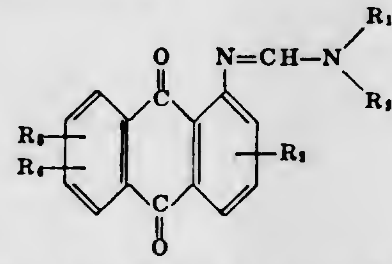
3,184,482
ANTHRAQUINONE FORMAMIDINES OF PRIMARY AMINES

Norbert Steiger, Nutley, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

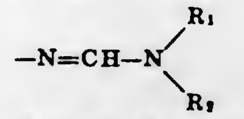
No Drawing. Filed Nov. 20, 1961, Ser. No. 153,715

8 Claims. (Cl. 260—378)

1. A compound selected from the group consisting of compounds of the formula



and acid addition salts thereof, wherein R_1 and R_2 are independently selected from the group consisting of hydrogen and lower alkyl; and R_3, R_4 and R_5 are independently selected from the group consisting of hydrogen, hydroxy and a moiety of the formula



$$-N=CH-N\begin{matrix}R_1\\ R_2\end{matrix}$$

wherein R_1 and R_2 have the same meaning as above.

3,184,483
UNSYMMETRICAL 4-HALOGENO-4′,4″-DIARYLAMINO-TRIPHENYL-METHANE DYESTUFFS AND PROCESS FOR THEIR MANUFACTURE

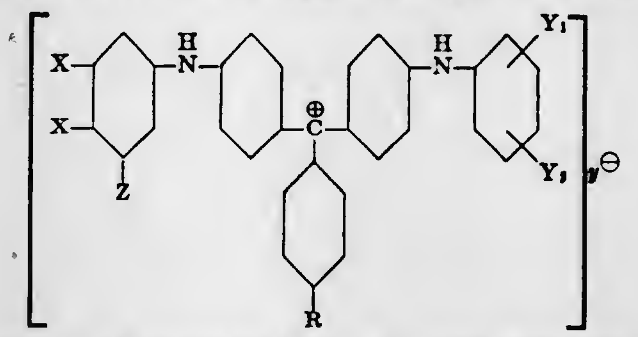
Ferdinand Quint and Gustav Schäfer, both of Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 26, 1962, Ser. No. 190,261

Claims priority, application Germany, May 3, 1961, F 33,831

10 Claims. (Cl. 260—393)

1. An unsymmetrical dyestuff having the formula



wherein one X stands for hydrogen and the other X stands for a member of the group consisting of a halogen atom, a lower alkyl, a lower alkoxy, phenoxy, phenylamino, nitro, sulfonamide, sulfanilide, and carboxylic acid lower alkyl ester group, Z represents a member of the group consisting of hydrogen and a halogen, R represents a halogen atom, Y_2 stands for a member of the group consisting of hydrogen, a halogen, a lower alkyl group, β-hydroxyethylsulfonyl group, cyano, sulfonic acid lower alkyl ester group and trifluoromethyl, Y_1 is hydrogen, and Y_1 and Y_2 together with the phenyl form α-naphthyl, and $y^{\ominus}$ represents a member of the group consisting of a chloride, bromide and iodide ion.

3,184,484
5,10-METHYLENE-19-NOR- AND 5,10-SECO-5,19-CYCLO-10-FLUORO-ANDROSTENES AND PREGNENES AND PROCESSES FOR THEIR PREPARATION

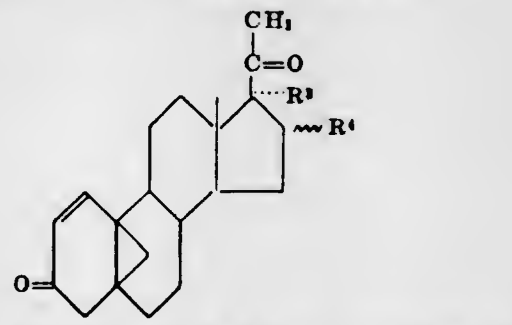
Lawrence H. Knox, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed June 11, 1963, Ser. No. 286,931

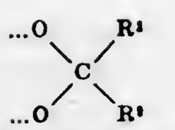
Claims priority, application Mexico, Aug. 28, 1962, 68,729; Dec. 10, 1962, 70,104; Dec. 21, 1962, 70,273

24 Claims. (Cl. 260—397.3)

4. A compound representing by the formula:



wherein R^3 is selected from the group consisting of hydrogen, hydroxyl and an acyloxy group containing less than 12 carbon atoms; R^4 is selected from the group consisting of hydrogen, α-methyl, β-methyl and α-hydroxy, and R^3 and R^4 taken together represent the grouping



wherein R^5 is selected from the group consisting of hydrogen and lower alkyl and R^6 is selected from the group consisting of hydrogen, lower alkyl, monocyclic aryl, monocyclic aralkyl and monocyclic alkaryl.

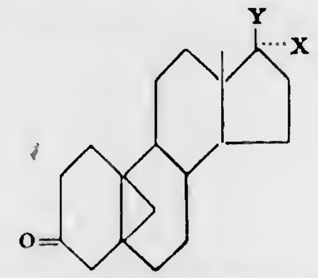
5. 5,10-methylene-19-nor-Δ^1-pregnene-3,20-dione.

3,184,485
5,10 - METHYLENE - 19 - NOR - ANDROSTANES, -ANDROSTENES AND -ANDROSTADIENES

Lawrence H. Knox, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed June 11, 1963, Ser. No. 286,913
Claims priority, application Mexico, Dec. 10, 1962, 70,104
19 Claims. (Cl. 260—397.4)

1. A compound represented by the general formula:



wherein X represents a member selected from the group consisting of hydrogen, a lower alkyl group, a lower alkenyl group and a lower alkinyl group, and Y represents a member selected from the group consisting of a hydroxyl group and an acyloxy group containing less than 12 carbon atoms.

3,184,486
17α-(3-SUBSTITUTED AMINOPROPYL)-17-HYDROXYESTRA-3-ONE-STEROIDS AND PROCESS FOR PREPARING SAME

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 21, 1963, Ser. No. 289,717
5 Claims. (Cl. 260—397.4)

1. A compound selected from the group consisting of 17α - (3-substituted-aminopropyl)-17-hydroxyestr-4-en-3-ones, 17α - (3-substituted aminopropyl)-17-hydroxyestr-5(10)-en-3-ones, and non-toxic acid addition salts thereof.

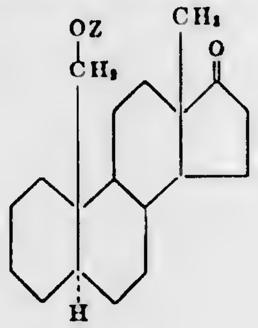
3. 17α - (3-diethylaminopropyl)-17-hydroxyestr-5(10)-en-3-one.

3,184,487
17-OXYGENATED 5α-ANDROSTAN-19-OLS AND ESTERS THEREOF

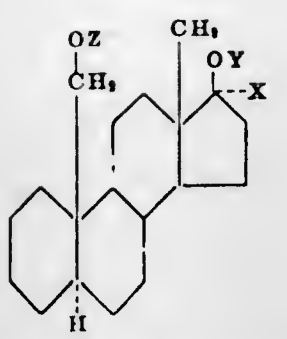
Raymond E. Counsell, Skokie, and Paul D. Klimstra, Northbrook, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 16, 1963, Ser. No. 309,287
13 Claims. (Cl. 260—397.4)

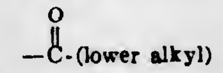
1. A member selected from the class consisting of compounds represented by the formulas



and

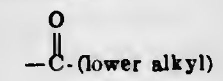


wherein X is selected from the group consisting of hydrogen and a lower aliphatic hydrocarbon radical, Y is hydrogen when X is a lower aliphatic hydrocarbon radical, Y is selected from the group consisting of hydrogen and



$$-\overset{\displaystyle O}{\overset{\|}{C}}\text{-(lower alkyl)}$$

radicals when X is hydrogen, and Z is a member of the class consisting of hydrogen and



$$-\overset{\displaystyle O}{\overset{\|}{C}}\text{-(lower alkyl)}$$

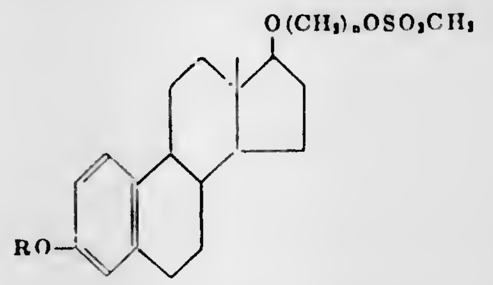
radicals.

3,184,488
PREPARATION OF NOVEL 3-LOWER ALKOXY-17-HYDROXY - ALKOXYESTRA - 1,3,5(10) - TRIENE METHANESULFONATES

Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 1, 1963, Ser. No. 320,836
3 Claims. (Cl. 260—397.5)

1. A compound having the formula:



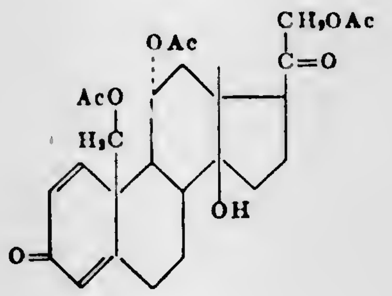
wherein R represents a lower alkyl group and *n* is from 2 to 3.

3,184,489
11α,19,21-TRIACETOXY-14-HYDROXY-Δ¹·⁴-14β-PREGNADIENE-DIONE(3,20)

Christoph Tamm, Riehen, Switzerland, assignor to Sandoz Ltd. (a/k/a Sandoz A.G.), Basel, Switzerland

No Drawing. Filed July 1, 1963, Ser. No. 292,070
Claims priority, application Switzerland, July 6, 1962, 8,143/62
1 Claim. (Cl. 260—397.45)

11α,19,21 - triacetoxy-14-hydroxy-$\Delta^{1,4}$-14β-pregnadienedione (3,20) having the formula



3,184,490
ORGANIC ALUMINIUM COMPOUNDS

Brian K. Davison, Didsbury, Manchester, England, assignor to Hardman & Holden Limited, Manchester, England, a British company

No Drawing. Filed Apr. 28, 1961, Ser. No. 106,183
Claims priority, application Great Britain, May 2, 1960, 15,302/60
2 Claims. (Cl. 260—414)

1. A method of making polymeric organic aluminium compounds, comprising reacting an aluminium alkoxide derived from an alcohol of 2–5 carbon atoms, with (*a*) water in an amount of from 0.5 mole to 1 mole per mole of aluminium alkoxide. (*b*) a substance selected from the group consisting of acetylsalicylic acid and p-aminosalicylic acid, and (*c*) a substance selected from the group consisting of oleic acid, stearic acid, benzoic acid, oleyl alcohol, stearyl alcohol, cetostearyl alcohol and castor oil, the substances (*b*) and (*c*) being present in a molar proportion between 19:1 and 0.5:1, and the amount of substances (*b*) and (*c*) being sufficient to enable at least the major part of the alkoxy groups of the alkoxide to be replaced.

3,184,491
PREPARATION OF 1-HALOMERCURI-2-ALKOXY-CYCLODODECA-5,9-CIS,TRANS-DIENE

Pierre Lafont and Michel Thiers, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

No Drawing. Filed Feb. 19, 1962, Ser. No. 174,241
Claims priority, application France, Feb. 23, 1961, 853,644
2 Claims. (Cl. 260—431)

1. Process for the preparation of a 1-halomercuri-2-alkoxy-cyclododeca-5,9-cis,trans-diene, which comprises reacting at room temperature, in the presence of an alkanol containing at most 5 carbon atoms, cyclododeca-1,5,9-cis, trans, trans-triene with a mercuric salt of a carboxylic acid, evaporating the greater part of the said aliphatic alcohol, contacting the acyloxy-mercuric cyclic compound thus obtained, at room temperature, with an aqueous solution of an alkali metal halide, and separating the precipitated organo-mercury compound from the reaction mixture.

3,184,492
PROCESS FOR THE PREPARATION OF SODIUM ALUMINUM METHOXY HYDRIDE

Marc Cole, Bayonne, N.J., assignor to Hoffmann-La Roche, Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 5, 1963, Ser. No. 256,257
4 Claims. (Cl. 260—448)

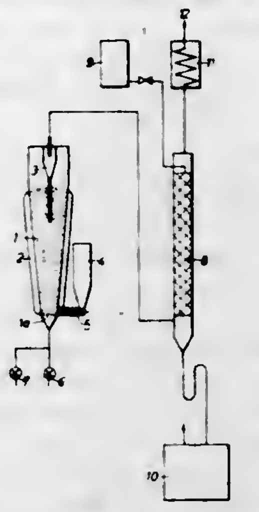
1. A process for the preparation of sodium aluminum methoxy hydride comprising reacting together sodium methylate, aluminum powder, and hydrogen.

3,184,493
PREPARATION OF POLYISOCYANATES

Heinrich Kunze, Cologne-Stammheim, and Otto Bayer, Julius Wehn, Werner Siefken, and Erich Klauke, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Dec. 11, 1959, Ser. No. 859,022
Claims priority, application Germany, Dec. 19, 1958 F 27,302
4 Claims. (Cl. 260—453)

1. A method for converting a polyurea having a molecular weight of from about 300 to 50,000 into an organic polyisocyanate which comprises suspending particles of the polyurea having a particle size of from about 60 microns to about 500 microns in a fluidized bed of inert particles suspended in a gas containing phosgene at a temperature of about 100° C. to about 300° C. whereby a gas containing an organic polyisocyanate is obtained, and separating the polyisocyanate therefrom by washing the gas with an inert organic solvent for the polyisocyanate which is a non-solvent for the remainder of the gas.



3,184,494
PROCESS FOR PRODUCING ORGANIC ISOCYANATES

Shozo Maeda, Nishinomiya-shi, Katsundo Yamori, Niihama-shi, and Hiroshi Kaminaka, Yao-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashi-ku, Osaka, Japan, a corporation of Japan

No Drawing. Filed Jan. 22, 1962, Ser. No. 167,945
Claims priority, application Japan, Feb. 1, 1961, 36/3,196
4 Claims. (Cl. 260—453)

1. A process for producing 2,4-tolylene diisocyanate, 2,6-tolylene diisocyanate, mixtures of 2,4- and 2,6-tolylene diisocyanates, 4,4'-diphenylmethane diisocyanate, 4,4'-biphenyl diisocyanate, 1,5-naphthylene diisocyanate, and tolyl isocyanates, which comprises a step of mixing a solution of a member selected from the group consisting of 2,4-tolylene-diamine, 2,6-tolylenediamine, mixtures of 2,4- and 2,6-tolylenediamines, 4,4'-diaminodiphenylmethane, benzidine, 1,5-naphthylenediamine, and o-, m-, and p-toluidines, in an inert solvent with phosgene in an amount of at least the stoichiometric amount and less than 2 times the stoichiometric amount, based upon the amount of the amine, nearly at below room temperature; a step of introducing phosgene into the resulting reaction mixture at a temperature of 60 to 80 degrees C., for at least four hours, thereby to convert the amine groups to the corresponding aromatic carbamyl chloride substantially completely; and a step of heating the suspension at a higher temperature to cause the decomposition of the aromatic carbamyl chloride to the corresponding aromatic isocyante.

3,184,495
PROCESS FOR THE PREPARATION AND RECOVERY OF TRIMETHYL PHOSPHITE AND DERIVATIVES THEREOF

Charles F. Baranauckas, Niagara Falls, Russell L. K. Carr, Grand Island, and James J. Hodan, Tonawanda, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Dec. 23, 1960, Ser. No. 77,812
36 Claims. (Cl. 260—461)

1. The process which comprises admixing methanol with a reaction mixture comprising trimethyl phosphite contaminated with its reactants and by-products from which it was made, and distilling from the reaction mixture a vapor phase containing trimethyl phosphite and methanol.

11. The process for recovering trimethyl phosphite which comprises admixing methanol, an aryl-substituted phosphite, and a small but effective amount of a basic

catalyst to yield a transesterification mixture containing trimethyl phosphite and a phenol, the proportion of methanol added being sufficient to co-distill with trimethyl phosphite present in the transesterification mixture under the distillation conditions thereafter employed, distilling said transesterification mixture to yield a vapor phase containing trimethyl phosphite and methanol, continuously adding methanol to the transesterification mixture as distillation progresses, collecting said vapor phase, and continuing said distillation, said methanol addition, and said collection until substantially all of said trimethyl phosphite has been separated from the transesterification mixture.

15. The process of claim 11 wherein said vapor phase containing trimethyl phosphite and methanol is contacted with sulfur to yield trimethyl phosphorothionate, and a vapor phase predominating in methanol.

20. The process for recovering trimethyl phosphite which comprises admixing methanol, an aryl-substituted phosphite, and a small but effective amount of a basic catalyst, heating the mixture to a temperature of between about 75 and 100 degrees Centigrade, to yield a transesterification mixture containing trimethyl phosphite and a phenol, the proportion of methanol added being sufficient to transesterify said aryl-substituted phosphite and to co-distill with the trimethyl phosphite present in the transesterification mixture under the distillation conditions thereafter employed, distilling said transesterification mixture to yield a vapor phase containing trimethyl phosphite and methanol, distilling said vapor phase to yield a methanol vapor phase depleted in trimethyl phosphite and a liquid phase of trimethyl phosphite depleted in methanol, recycling said methanol vapor phase to said transesterification mixture, continuing the distillation of said transesterification mixture and the recycling of said methanol vapor phase until substantially all of the trimethyl phosphite has been separated from the transesterification mixture, and recovering a liquid phase containing trimethyl phosphite.

3,184,496

PROCESS FOR THE PREPARATION AND RECOVERY OF TRIETHYL PHOSPHITE AND DERIVATIVES THEREOF

Charles F. Baranauckas, Niagara Falls, Russell L. K. Carr, Grand Island, and James J. Hodan, Tonawanda, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Feb. 27, 1961, Ser. No. 91,664

35 Claims. (Cl. 260—461)

1. The process which comprises admixing ethanol with a reaction mixture comprising triethyl phosphite contaminated with its reactants and by-products from which it was made, and distilling from the reaction mixture a vapor phase containing triethyl phosphite and ethanol.

10. The process of recovering triethyl phosphite which comprises admixing ethanol, an aryl-substituted phosphite, and a small but effective amount of a basic catalyst to yield a transesterification mixture containing triethyl phosphite and a phenol, the proportion of ethanol added being sufficient to co-distill with triethyl phosphite present in the transesterification mixture under the distillation conditions thereafter employed, distilling said transesterification mixture to yield a vapor phase containing triethyl phosphite and ethanol, continuously adding ethanol to the transesterification mixture as distillation progresses, collecting said vapor phase, and continuing said distillation, said ethanol addition, and said collection until substantially all of said triethyl phosphite has been separated from the transesterification mixture.

13. The process of claim 10 wherein said vapor phase containing triethyl phosphite and ethanol is contacted with sulfur to yield triethyl phosphorothionate, and a vapor phase predominating in ethanol.

18. The process for recovering triethyl phosphite which comprises admixing ethanol, an aryl-substituted phosphite, and a small but effective amount of a basic catalyst, heating the mixture to a temperature of between about 100 and 130 degrees centigrade, to yield a transesterification mixture containing triethyl phosphite and a phenol, the proportion of ethanol added being sufficient to transesterify said aryl-substituted phosphite and to co-distill with the triethyl phosphite present in the transesterification mixture under the distillation conditions thereafter employed, distilling said transesterification mixture to yield a vapor phase containing triethyl phosphite and ethanol, distilling said vapor phase to yield an ethanol vapor phase depleted in triethyl phosphite and a liquid phase of triethyl phosphite depleted in ethanol, recycling said ethanol vapor phase to said transesterification mixture, continuing the distillation of said transesterification mixture and the recycling of said ethanol vapor phase until substantially all of the triethyl phosphite has been separated from the transesterification mixture, and recovering a liquid phase containing triethyl phosphite.

26. The process of claim 18 wherein said liquid phase containing triethyl phosphite is reacted with an ethyl halide to yield diethyl ethylphosphonate and diethyl hydrogen phosphite.

3,184,497

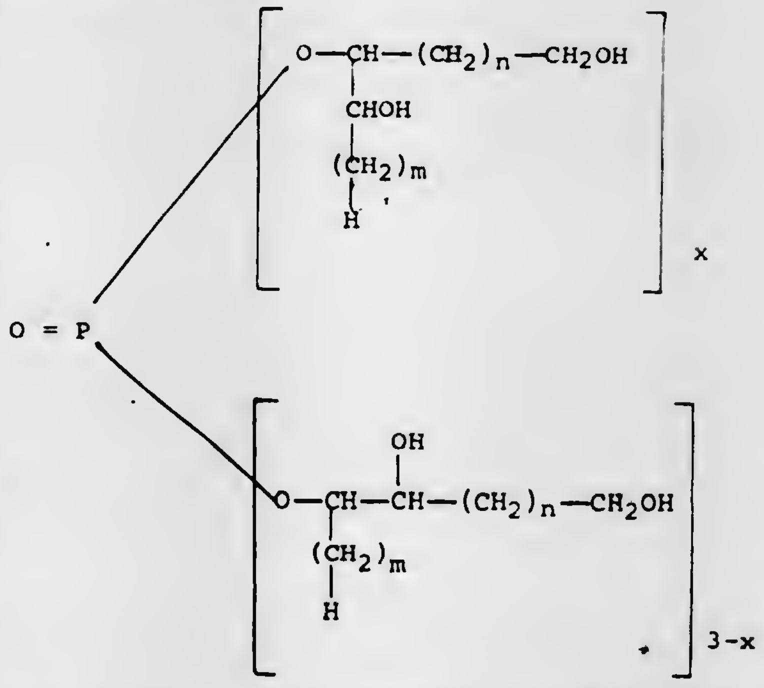
TRIS(DIHYDROXYALKYL) PHOSPHATES

Karl Brack, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 25, 1963, Ser. No. 267,816

3 Claims. (Cl. 260—461)

1. A tris(dihydroxyalkyl) ester of phosphoric acid having the formula



where m and n are whole numbers of from 0 to 10 and the sum of $m+n$ is from 3 to 14 and x is a whole number from 0 to 3.

3,184,498

PREPARATION OF ALKOXY-NAPHTHONITRILE

William A. Bolhofer, Frederick, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed May 10, 1962, Ser. No. 193,850

2 Claims. (Cl. 260—465)

1. In the method of preparing a lower alkoxy-naphthonitrile, the steps comprising:

(*a*) admixing lower alkoxy-tetralone and hydrogen cyanide while initially cooling and then warming to 20–25° C.,

(*b*) dehydrating the resulting lower alkoxy-tetralone cyanohydrin by the addition of a chlorinating agent selected from the group consisting of phosphorous oxychloride, phosphorous trichloride and thionyl chloride, in the presence of a solvent selected from the group consisting of pyridine and picoline, while cooling, and

(*c*) aromatizing the resulting dihydronaphthonitrile by dehydrogenating with an agent selected from the group consisting of sulfur and selenium in the presence of zinc, while heating to a temperature of 175–250° C.

3,184,499

REACTION PRODUCTS OF ALKYLDECABORANES AND DINITRILES

George J. Donovan, Boonton, Marvin M. Fein, Westfield, and Murray S. Cohen, Convent Station, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Aug. 24, 1961, Ser. No. 135,712

9 Claims. (Cl. 260—465.6)

1. A method for making a solid reaction product of a lower alkyl decaborane and a dinitrile which comprises heating a member selected from the group consisting of β,β' - oxydipropionitrile and dinitriles of the formula $N{\equiv}C{-}R{-}C{\equiv}N$, wherein R is a saturated unsubstituted aliphatic radical having from 1 to 8 carbon atoms, with from 0.1 to 10 molar parts of a lower alkyl decaborane per mole of dinitrile at a temperature between about 50° C. and about 150° C.

3,184,500

O-(β-ACYLOXYETHYL)-N,N-DIALKYLHYDROXYLAMINES

Bruno J. R. Nicolaus, Milan, Italy, and Emilio Testa, Vacallo, Tessin, Switzerland, assignors to Lepetit S.p.A., Milan, Italy

No Drawing. Filed Feb. 21, 1962, Ser. No. 174,671

Claims priority, application Great Britain, Feb. 22, 1961, 6,498/61

9 Claims. (Cl. 260—469)

1. O-(β-acyloxyethyl) - N,N - dialkylhydroxylamine of the formula:

$$\text{AcylOCH}_2\text{CH}_2\text{ONR}_2$$

wherein Acyl is selected from the group consisting of lower alkanoyl, benzoyl, phenylacetyl, diphenyl-acetyl, phenylcarbamyl, cinnamoyl and succinyl, R is lower alkyl, and their non-toxic quaternary addition salts with lower alkyl halogenides.

3,184,501

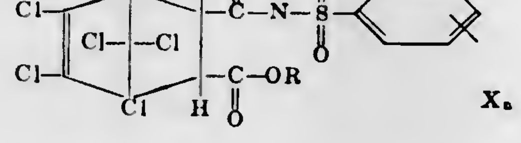
HEXACHLOROBICYCLIC SULFONAMIDES

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Apr. 3, 1961, Ser. No. 100,004

6 Claims. (Cl. 260—470)

1.



wherein X is selected from the group consisting of hydrogen, chlorine, bromine, nitro, lower alkyl, lower alkoxy and lower carboxamido; R is selected from the group consisting of alkyl containing from 1–14 carbon atoms, cyclopentyl and cyclohexyl; and *n* is an integer from 0 to 2.

3,184,502

PROCESS FOR THE PRODUCTION OF POLYAMINES

Erwin Müller, Otto Bayer, and Siegfried Petersen, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed June 29, 1961, Ser. No. 120,529

Claims priority, application Germany, July 9, 1960, F 31,626

6 Claims. (Cl. 260—482)

1. A method for making an aliphatic polyamine which comprises reacting —NCO groups of an aliphatic polyisocyanate with the —NH_2 group of amido sulphonic acid and thereafter hydrolytically splitting the resulting urea groups to form a polyamine.

3. A method for making an aliphatic polyamine which comprises reacting the —NCO group of the reaction product of a polyalkylene ether glycol and an aliphatic diisocyanate with the —NH_2 group of amido sulphonic acid and thereafter hydrolytically splitting the resultant urea to form a polyamine.

3,184,503

1-HALO-2-(N-ACYLCARBAMYLOXY)-3-ARYLOXY PROPANES

Manuel M. Baizer, Dayton, Ohio, assignor to S. B. Penick and Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Apr. 25, 1960, Ser. No. 24,250, now Patent No. 3,168,525, dated Feb. 2, 1965. Divided and this application July 10, 1962, Ser. No. 213,082

7 Claims. (Cl. 260—482)

1. 1 - halo - 2 - (N - acylcarbamyloxy) - 3 - substituted propanes wherein acyl is the acyl radical of an alkanoic acid containing from one to ten carbon atoms, inclusive, and wherein the 3-substituent is an aryloxy radical of the benzene and naphthalene series, any substituents on the aryl group being selected from the group consisting of lower-alkyl, lower-alkoxy, halo, nitro, amino and trifluoromethyl.

3,184,504

A-NOR-B-HOMO-$\Delta^{5(6)}$-ESTRENE-17β-OL-3-ONE AND 17β-ACYLOXY DERIVATIVES THEREOF

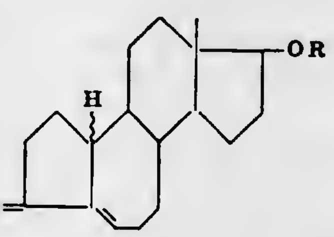
Georges Muller, Nogent-sur-Marne, and Jacques Martel, Bondy, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of France

No Drawing. Filed June 13, 1962, Ser. No. 202,094

Claims priority, application France June 19, 1961, 865,322; Jan. 8, 1962, 884,152

3 Claims. (Cl. 260—488)

1. A-nor-B-homo-$\Delta^{5(6)}$-estrene-3-ones having the formula



wherein R is selected from the group consisting of hydrogen and an acyl radical of an organic carboxylic acid selected from the group consisting of alkanoic acids, alkanedioic acids, hydroxy alkyl carboxylic acids, cycloalkyl carboxylic acids and phenyl carboxylic acids having 1 to 18 carbon atoms.

3,184,505
PROCESS FOR THE N-MONOACYLATION OF CYSTEINE
Tellis A. Martin and Coy W. Waller, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana
No Drawing. Filed June 18, 1962, Ser. No. 202,948
8 Claims. (Cl. 260—534)

1. The process which comprises reacting a cysteine compound selected from the group consisting of cysteine and the alkali metal and ammonium salts thereof in a solvent selected from the group consisting of water and reaction stable organic solvents miscible therewith with one chemical equivalent of an acylating agent selected from the group consisting of alkanoic acid anhydrides having up to 12 carbon atoms, and alkandioic acid anhydrides having up to 6 carton atoms, at from about −5 to +20° C., said process being conducted in the presence of at least one chemical equivalent of a neutralizing agent selected from the group consisting of the alkali metal and ammonium salts of acids having pKa values greater than 3.2 when said cysteine compound is cysteine.

3,184,506
PREPARATION OF CARBOXYLIC ACID CHLORIDES
Stuart H. Parker, Riverside Gardens, Wilmington, and Dennis D. Rudy, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 19, 1961, Ser. No. 125,080
8 Claims. (Cl. 260—544)

1. In the continuous process for converting an organic carboxylic acid to its corresponding carbonyl chloride by reaction with phosgene in the presence of from about 0.05 to 5 weight percent of dimethylformamide based on the reaction solvent and at a temperature in the range of 50° C. to 125° C., wherein said organic carboxylic acid is selected from the group consisting of C_8–C_{16} alkane carboxylic acid, C_3–C_8 alkane dicarboxylic acid, C_5–C_6 cycloalkane dicarboxylic acid and an aromatic carboxylic acid containing 1 to 3 carboxylic groups in which any substituent of the aromatic acid is selected from the group consisting of methyl, methoxy, chloro and nitro, the improvement of having unreacted carboxylic acid present at all times in the reaction zone and in the product stream leaving the reaction zone.

3,184,507
FLUORO-ACETYL UREAS
Otto Scherer, Frankfurt am Main, and Günter Schneider, Buchschlag, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed May 16, 1961, Ser. No. 110,347
Claims priority, application Germany, May 28, 1960, F 31,327
19 Claims. (Cl. 260—553)

1. A compound of the formula

$$FCH_2—CO—NH—CO—NHR$$

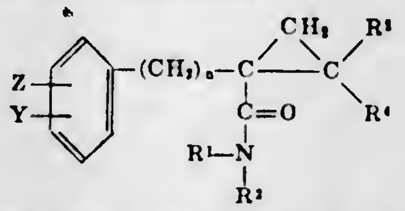
in which R represents a member of the group consisting of alkyl of 1 to 18 carbon atoms, allyl, benzyl, phenylethyl, cyclohexyl, chloroethyl, phenyl, chlorophenyl, nitrophenyl, lower alkyl phenyl, tolyl sulfonyl, monofluoroacetyl and monofluoroacetylamidomethyl.

3,184,508
CRYSTALLIZATION OF BIURET FROM BIURET-CONTAINING AQUEOUS SOLUTIONS SATURATED WITH UREA
Petrus J. C. Kaasenbrood, Sittard, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed Oct. 18, 1962, Ser. No. 231,592
3 Claims. (Cl. 260—555)

1. A process for making a purified aqueous solution of urea from an aqueous solution saturated with urea and containing biuret by removing the biuret which comprises first diluting and cooling said urea-saturated solution to such a degree that a suspension of urea crystals and crystals of a double salt of urea and biuret is formed, the total amount of water in the diluted aqueous solution being insufficient to dissolve all of said urea at the temperatures to which the solution is cooled, adding water to the crystal suspension to further dilute it with a sufficient amount of water that all the crystallized urea redissolves endothermically, with simultaneous withdrawal of heat from the solution, and then separating the biuret crystals which remain from the solution.

3,184,509
DERIVATIVES OF CYCLOPROPANE-CARBOXAMIDE
Richard P. Ploch, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
No Drawing. Filed July 23, 1962, Ser. No. 211,883
5 Claims. (Cl. 260—558)

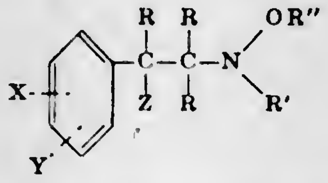
1. A compound of the formula:



wherein *n* is an integer selected from the group consisting of 1 and 2; Y is selected from the group consisting of hydrogen, hydroxy, lower alkyl of 1–4 carbon atoms, lower alkoxy of 1–4 carbon atoms, and halogen; Z is selected from the group consisting of hydroxy, lower alkyl of 1–4 carbon atoms, lower alkoxy of 1–4 carbon atoms, and halogen; R^3 and R^4 are selected from the group consisting of hydrogen, lower alkyl of 1–4 carbon atoms, phenyl, halophenyl, and naphthyl; R^1 is selected from the group consisting of hydrogen, alkyl of 1–6 carbon atoms, cycloalkyl of 3–6 carbon atoms, and hydroxyalkyl of 2–6 carbon atoms; and R^2 is selected from the group consisting of methyl when R^1 is hydrogen, hydrogen and methyl when R^1 is methyl, and hydrogen when R^1 contains more than one carbon atom.

3,184,510
N-ALKOXY-β-PHENYLETHYLAMINES AND β-HYDROXY-β-PHENYLETHYLAMINES
Joseph Levy, Paramus, N.J., assignor, by mesne assignments, to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Dec. 5, 1960, Ser. No. 73,550
13 Claims. (Cl. 260—570.6)

1. A compound of the class consisting of the N-alkoxy-beta-phenylethylamines represented by the formula

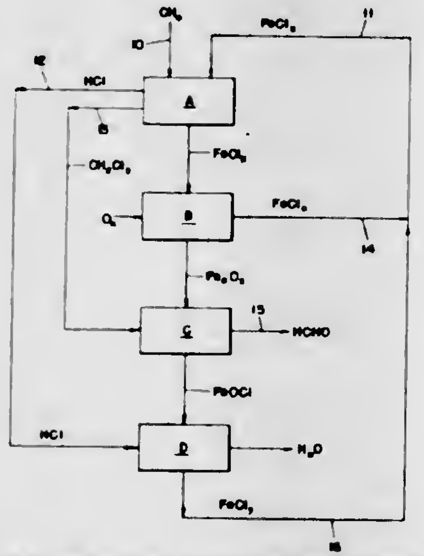


wherein X and Y are selected from the group consisting of hydrogen, hydroxyl, and methoxy groups; Z is selected from the group consisting of hydrogen and a hydroxyl group; R is selected from the group consisting of hydrogen and methyl; R′ is selected from the group consisting of hydrogen, methyl, ethyl, propyl and isopropyl; and R″ is selected from the group consisting of methyl, ethyl, propyl, and isopropy, and the salts of non-toxic acids.

3,184,511
PURIFICATION PROCESS FOR 4-ISOPROPYLAMINODIPHENYLAMINE
Morfydd Ann Bevan and John Mullan, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Aug. 3, 1962, Ser. No. 214,481
Claims priority, application Great Britain, Aug. 18, 1961, 29,866/61
6 Claims. (Cl. 260—576)

1. A process for the treatment of 4-isopropylaminodiphenylamine to destroy obnoxious impurities which comprises heating the isopropylaminodiphenylamine at a temperature between 20° C. and 250° C. with a member selected from the group consisting of sulphur and a sulphur-bearing substance containing loosely bound sulphur, said member being present in amounts of 0.001–10% by weight of said 4-isopropylaminodiphenylamine.

3,184,512
PREPARATION OF FORMALDEHYDE
Edgar Allan Blair, Drexel Hill, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Oct. 28, 1960, Ser. No. 65,804
3 Claims. (Cl. 260—604)



1. Method of preparing formaldehyde which comprises contacting methane with a ferric halide selected from the group consisting of ferric chloride and ferric bromide at a temperature in the range of 220–375° C. and with a ferric halide:methane molar ratio of 0.25:1 to 3.0:1, whereby halogenation of the methane occurs and the ferric halide is reduced to ferrous halide, separately recovering methylene halide and hydrogen halide from the reaction mixture, contacting the ferrous halide with oxygen to form ferric oxide and ferric halide, vaporizing the ferric halide from the oxide and returning the ferric halide to the halogenation step, contacting the ferric oxide at a temperature in the range of 220–375° C. with the methylene halide to yield formaldehyde while converting the ferric oxide to a basic ferric halide, contacting the basic ferric halide with the hydrogen halide recovered from said halogenation step to form ferric halide, and re-using the ferric halide in the halogenation step.

ERRATUM
For Class 260—617 see:
Patent No. 3,184,432

3,184,513
PRODUCTION OF HEXAMETHYLENE GLYCOL
William P. Moore, Jr., Chester, and Rob R. MacGregor, Hopewell, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Aug. 17, 1960, Ser. No. 50,200
6 Claims. (Cl. 260—635)

1. A process for the production of hexamethylene glycol, comprising reacting an aqueous solution containing propargyl alcohol witha free-oxygen-containing gas in the presence of cuprous chloride-ammonium chloride coupling catalyst to produce an aqueous mixture containing hexadiynediol and said catalyst, extracting the hexadiynediol from said aqueous mixture with n-hexanol to produce an n-hexanol extract containing hexadiynediol and an aqueous raffinate containing said catalyst, separating the n-hexanol extract from the aqueous raffinate and hydrogenating the hexadiynediol in said extract to produce hexamethylene glycol.

3,184,514
MANUFACTURE OF TRANS-1,2-DIHALOGENOETHYLENES
Kurt Sennewald, Knapsack, near Cologne, and Klaus Born, Hermulheim, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
No Drawing. Filed Jan. 31, 1961, Ser. No. 86,002
Claims priority, application Germany, Apr. 22, 1958, K 34,660
11 Claims. (Cl. 260—654)

1. In the process for the manufacture of trans-1,2-dihalogenoethylenes, by passing at least one substance selected from the group consisting of acetylene, monovinylacetylene and phenylacetylene through an aqueous catalyst solution of cuprous halide, cupric halide and at least one halide selected from the group consisting of alkali metal halides and alkaline earth metal halides in hydrohalic acid, at a temperature of between about 60° C. and 120° C. and under a pressure of between about 1.1 atmospheres absolute and about 3 atmospheres absolute, the improvement of maintaining the molar ratio of monovalent copper to bivalent copper in the catalyst solution at above 9:1 to about 23:1, and maintaining the hydrohalic acid concentration at 0.1 to 0.3 mol per liter of catalyst solution.

3,184,515
OXYCHLORINATION PROCESS
Siegfried E. Penner and Elbert M. De Forest, Wichita, Kans., assignors to Frontier Chemical Company, Division of Vulcan Materials Company, Wichita, Kans., a corporation of New Jersey
Filed Feb. 1, 1962, Ser. No. 170,399
12 Claims. (Cl. 260—658)

1. A process for oxychlorinating an unsaturated aliphatic compound selected from the group consisting of ethylenically unsaturated hydrocarbons containing 2 to 4 carbon atoms per molecule and their halogen substitution products containing 1 to 2 halogen atoms per molecule, which process comprises

forming a feed mixture consisting essentially of said compound, hydrogen chloride and an oxidizing gas selected from the group consisting of air and oxygen, the amount of oxygen in said mixture being in greater than stoichiometric proportion but not greater than 50% excess relative to the unsaturated compound present,

passing said feed mixture through a fixed bed of particles in a tubular reaction zone maintained at a pressure of at least 25 p.s.i.g. and having a ratio of external heat exchange surface to reaction volume of at least about 35 square feet per cubic foot, said fixed bed comprising a mixture of (*a*) a copper chloride catalyst supported on particles of a solid catalyst carrier and (*b*) particles of a solid inert diluent having a thermal conductivity of at least 8 B.t.u./hr./sq. ft./° F./ft., said mixture of particles containing at least 60 volume percent of diluent particles and correspondingly not more than 40 volume percent of catalyst bearing particles near the inlet end of said reaction zone and at least 60 volume percent of catalyst bearing particles and correspondingly not more than 40 volume percent of diluent particles near the outlet end of said reaction zone, thereby providing increased catalyst concentration in the direction of flow of the reactant gases,

cooling said reaction zone by indirect heat exchange with a liquid heat exchange medium, and thus maintaining said catalyst particles throughout said fixed bed substantially evenly at temperatures within the range of from 450° to 700° F.,

and withdrawing gaseous products from said reaction zone.

3,184,516
THIAPYRANS AND THEIR USE IN PREPARING POLYENES

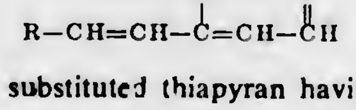
Albert J. Chechak and Charles D. Robeson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed July 27, 1960, Ser. No. 45,561

The portion of the term of the patent subsequent to June 26, 1978, has been disclaimed and dedicated to the Public

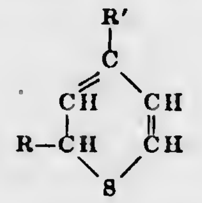
15 Claims. (Cl. 260—666)

1. The process which comprises reacting at a temperature in the range of −40° C. to 15° C. hydrogen sulfide and an unsaturated aldehyde having the formula

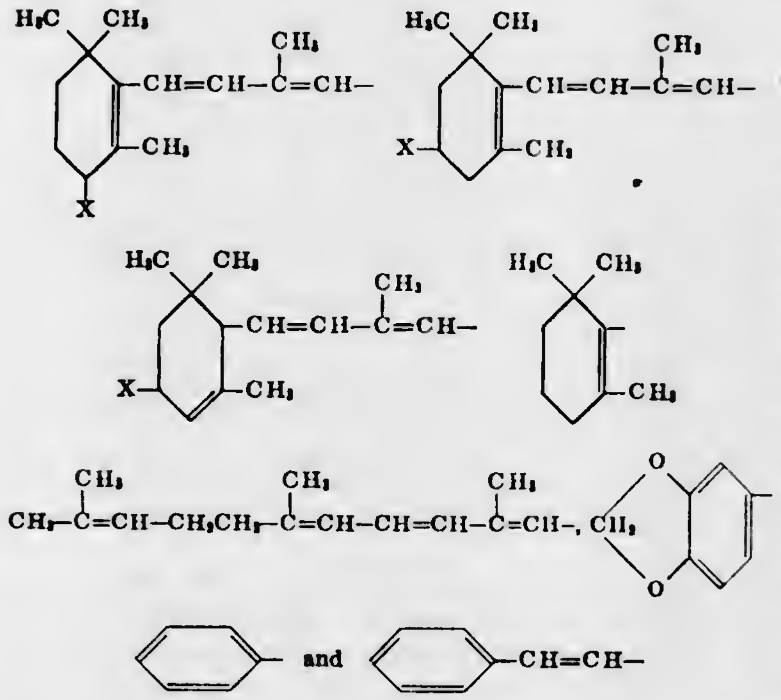


$$R-CH=CH-\overset{R'}{\overset{|}{C}}=CH-\overset{O}{\overset{\|}{C}}H$$

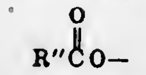
and forming a substituted thiapyran having the formula



wherein R′ is a methyl radical and wherein R is a monovalent organic radical having a formula selected from the group consisting of

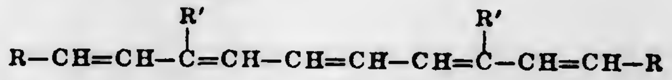


and wherein X is selected from the group consisting of hydrogen atoms, oxo radicals having the formula =O, alkoxy radicals and acyloxy radicals having the formula



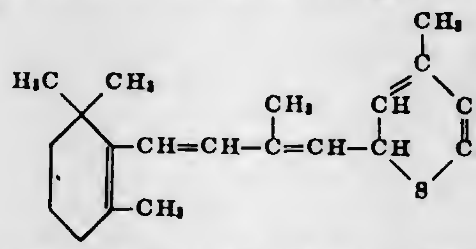
$$R''\overset{O}{\overset{\|}{C}}O-$$

wherein R″ is an alkyl radical, and thereafter desulfurating said substituted thiapyran at an elevated temperature in the range of 35° C. to 125° C. to form a compound having the formula



$$R-CH=CH-\overset{R'}{\overset{|}{C}}=CH-CH=CH-CH=\overset{R'}{\overset{|}{C}}-CH=CH-R$$

3. The process which comprises reacting vitamin A aldehyde with hydrogen sulfide at a depressed temperature in the range of −40° C. to 15° C. to form a sulfur-containing vitamin A derivative having the formula



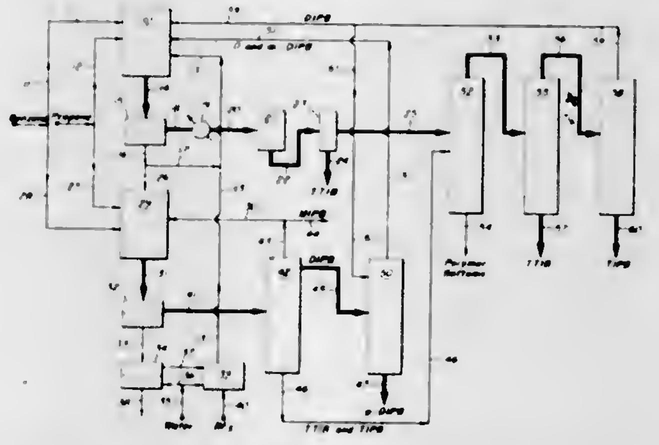
and thereafter desulfurating the said derivative at an elevated temperature in the range of 35° C. to 125° C. to form β-carotene.

3,184,517
ALKYLATION PROCESS FOR PREPARING PROPYLBENZENES

Robert J. Lee, Dolton, Ill., and Albert Becker, Jr., Midland, Mich., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Jan. 17, 1962, Ser. No. 168,308

9 Claims. (Cl. 260—671)



1. A process for the concurrent preparation and recovery of p-diisopropylbenzene and tetraisopropylbenzene by the propylation of benzene in a first and second propylation zone comprising conducting the benzene propylation in said first zone in the presence of fresh $BF_3 \cdot H_2O$ in an amount of from 0.25 to 1.0 mole per mole of aromatic hydrocarbon at a temperature in the range of from 0 to 100° C. with about 4 moles of isopropyl affording group reactant per mole equivalent of benzene reactant, feeding to said first zone propylene at a rate of less than 5 moles per hour and providing a contact time in said first zone of from about 1 to 10 hours; conducting in said second zone the propylation of benzene in the presence of modified $BF_3 \cdot H_2O$ catalyst, selected from the class consisting of a $BF_3 \cdot H_2O$ catalyst in addition with acid soluble oils, a $BF_3 \cdot H_2O$ catalyst in addition with a diolefin, and a

$$BF_3 \cdot H_2O$$

catalyst diluted with additional water, in the ratio of 0.25 to 1.0 mole per mole of aromatic hydrocarbon at temperature in the range of 25 to 75° C. with a mole ratio of isopropyl affording group in the range of about 1 to 2 per mole equivalent of benzene and feeding propylene to said second zone at such a propylene feed rate that there is no pressure buildup within said propylation zone; withdrawing the mixture of hydrocarbon and catalyst from said first propylation zone; separating from said first propylation mixture a stream containing $BF_3 \cdot H_2O$ and a first hydrocarbon stream; separating from said first hydrocarbon stream at least tetraisopropylbenzene and polymeric materials boiling above tetraisopropylbenzene; recycling to said first propylation zone at least a portion of the hydrocarbons from said first hydrocarbon stream, boiling below tetraisopropylbenzene; withdrawing from said second propylation zone a second mixture containing hydrocarbons and modified $BF_3 \cdot H_2O$ catalyst; separating said second propylation zone mixture into a modified $BF_3 \cdot H_2O$ containing stream and a second hydrocarbon stream; distilling a cumene fraction and a diisopropylbenzene fraction from said second hydrocarbon stream leaving as a bottom fraction hydrocarbons boiling above the diisopropylbenzene fraction; recycling at least a portion of the cumene to said second propylation zone; fractionating said diisopropylbenzene fraction to remove as a low boiling fraction a mixture lean in p-diisopropylbenzene and rich in m-diisopropylbenzene and also containing o-diisopropylbenzene leaving a p-dissopropylbenzene fraction containing from 93.5 to 96% para-isomer; and cycling the fraction lean in para-isomer to said first propylation zone.

3,184,518
INCREASED EFFICIENCY IN MOLECULAR SIEVE ADSORPTION SYSTEM

William W. Sanders, Crete, Ill., and Herbert G. Krane, Gary, and William F. Pansing, Munster, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed Aug. 22, 1960, Ser. No. 50,955

3 Claims. (Cl. 260—676)

1. A process for separating straight-chain hydrocarbons from a mixture comprising straight-chain hydrocarbons and non-straight-chain hydrocarbons which process comprises charging said mixture through a bed of molecular sieve adsorbent material having pore sizes of about 5 A. from an inlet end to an outlet end of said bed in the liquid state whereby straight-chain hydrocarbons from said mixture are adsorbed, thereafter charging a different boiling straight-chain hydrocarbon through said bed from said inlet to said outlet end in the liquid state thereby creating a first mass transfer front and straight-chain hydrocarbons from said mixture are desorbed from said bed preceding said first front and said different boiling straight-chain hydrocarbon adsorbed on said bed behind said first front recovering a first effluent from said bed comprising a mixture of said different boiling straight-chain hydrocarbon and said desorbed straight-chain hydrocarbons from said mixture, fractionating said first effluent into a first product consisting of said different boiling straight-chain hydrocarbon and a product consisting of said straight chain hydrocarbons from said mixture, charging additional said mixture through said bed from said inlet to said outlet thereby creating a second mass transfer front preceding said mixture to said bed and the adsorbed different boiling straight-chain hydrocarbon is desorbed before said second front and straight-chain hydrocarbons from said mixture are adsorbed behind said second front, recovering a second effluent consisting of said desorbed different boiling straight-chain hydrocarbon and said non-straight-chain hydrocarbons from said mixture from the outlet of said bed, fractionating said second effluent into a second different boiling straight-chain hydrocarbon fraction and as a product non-straight-chain hydrocarbon from said mixture, charging additional said different boiling straight-chain hydrocarbon through said bed from said inlet to said outlet before second mass transfer front passes completely through said bed, alternating the charging of said mixture and said different boiling straight-chain hydrocarbon through said bed from said inlet to said outlet thereby creating mass transfer fronts within said bed and preceding each charging of said mixture and said different boiling straight-chain hydrocarbon through said bed thereby desorbing of adsorbed hydrocarbon occurs before each front and adsorbing charged straight-chain hydrocarbon occurs behind each front, recycling said different boiling straight-chain hydrocarbon from said fractioning steps to the different boiling straight-chain hydrocarbons charge, and controlling the amount of said mixture charged in each charging of said mixture through said bed so that the amounts of said mixture in each charging are less than those amounts sufficient to provide passage of said mixture through said bed in the same composition as charged at said inlet.

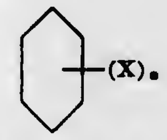
3,184,519
SEPARATION OF METHYL BROMIDE FROM ADMIXTURE WITH C_4 HYDROCARBONS

Cecil A. Newton and William H. Taylor, Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed June 29, 1962, Ser. No. 206,165

12 Claims. (Cl. 260—683.3)

1. A process for the preparation of unsaturated aliphatic hydrocarbons by dehydrogenation which comprises heating a mixture of an aliphatic hydrocarbon to be dehydrogenated and a bromine liberating catalyst at an elevated temperature in a dehydrogenation zone, to produce an effluent comprising C_4 unsaturated aliphatic hydrocarbon and methyl bromide, said methyl bromide being present in an amount of less than 25 mol percent based on the C_4 hydrocarbons present, and separating the methyl bromide by fractionally distilling said effluent while feeding to the distillation an aromatic contacting solvent, said aromatic contacting solvent having a dielectric constant at 25° C. of less than 9 and being a compound of the formula



wherein X is selected from the group consisting of CH_3, Cl, Br and NH_3 and *n* is a number from 0 to 2, with a purified aliphatic hydrocarbon stream being taken off overhead from the distillation and the methyl bromide being dissolved in the said organic contacting solvent taken off as a bottoms, and returning the said methyl bromide to the dehydrogenation zone as a catalyst.

3,184,520
CATALYTIC HYDRODEOXYGENATION PROCESS

Robert W. Roberts, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Oct. 16, 1962, Ser. No. 231,000

9 Claims. (Cl. 260—683.9)

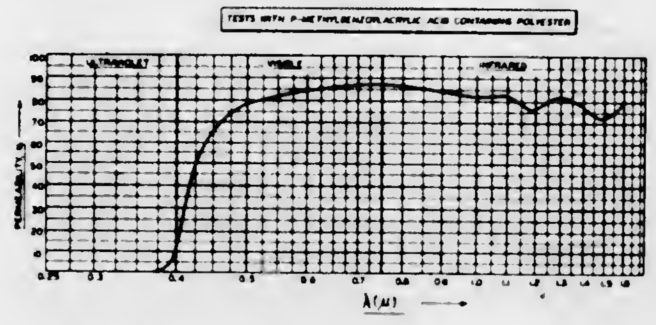
1. In a process for manufacture of a hydrocarbon product where an aluminum alkyl compound is subjected to a growth reaction with an olefin in a reaction medium comprising said hydrocarbon, and wherein the resulting growth product in said hydrocarbon is oxidized to produce a reaction product comprising aluminum alkoxides in said hydrocarbon, the improvement comprising the steps:

(*a*) removing aluminum compounds from the mixture containing hydrocarbons, aluminum compounds and oxygenated organic compounds, and

(*b*) reacting the aluminum-free product of step (*a*) with hydrogen under superatmospheric pressure and elevated temperature in the presence of a hydrogenation catalyst.

3,184,521
PROCESS FOR PREPARING A POLYESTER RESIN

Hubert Sauer and Elisabeth Kob, Letmathe, Westphalia, Germany, assignors to Rutgerswerke Aktiengesellschaft, Frankfurt am Main, Germany
Filed Aug. 7, 1962, Ser. No. 215,381
Claims priority, application Germany, Aug. 24, 1961, R 30,981
3 Claims. (Cl. 260—861)



1. A polyester resin consisting of the product of mixed polymerization and curing in the presence of a peroxide catalyst of a polyester dissolved in a monomeric liquid which is copolymerizable with said polyester; said polyester being the esterification product of (*a*) dicarboxylic acids selected from the group consisting of (1) unsaturated dicarboxylic acids and (2) mixtures of unsaturated and saturated dicarboxylic acids; (*b*) polyhydric alcohols and (*c*) 0.05–0.1 mol, for each mol dicarboxylic acid, of a benzoylacrylic acid derivative selected from the group consisting of p-ethylbenzoylacrylic acid and p-methylbenzoylacrylic acid.

3,184,522
BLENDS OF ETHYLENE POLYMER AND BUTYL RUBBER

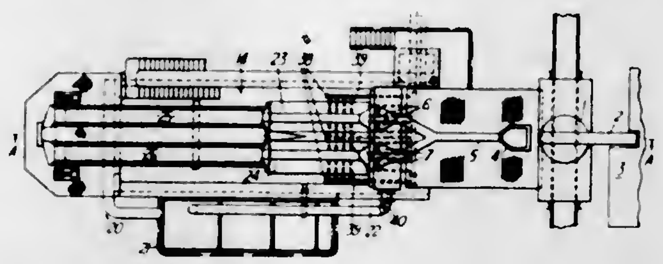
Walter T. Zagar, Midland Park, N.J., assignor to W. R. Grace & Co., a corporation of Connecticut
No Drawing. Filed Oct. 26, 1961, Ser. No. 147,751
10 Claims. (Cl. 260—889)

1. A composition consisting of (A) a mixture of polymers, said mixture containing (1) from about 60 to about 85% by weight of an ethylene copolymer having a density of from about 0.945 to about 0.970, a melt index of from about 0.1 to about 3.0 and containing at least about 95% of ethylene and up to about 5% another of an α-olefine copolymerized with the ethylene and (2) from about 15 to 40% by weight of butyl rubber containing 95–99% isobutylene and 1–5% of isoprene and having a molecular weight of from about 150,000 to about 600,000 and (B) from about 0.05 to about 5%, by weight based on said mixture, of a vulcanization accelerator for rubber selected from the group consisting of mercaptothiazoles, dithiocarbamates, bis(thiocarbamoyl) sulfides, guanidines, aldehyde-amine reaction products, xanthates, thioureas and mercaptothiazolines.

3,184,523
GRANULATION OF IRON

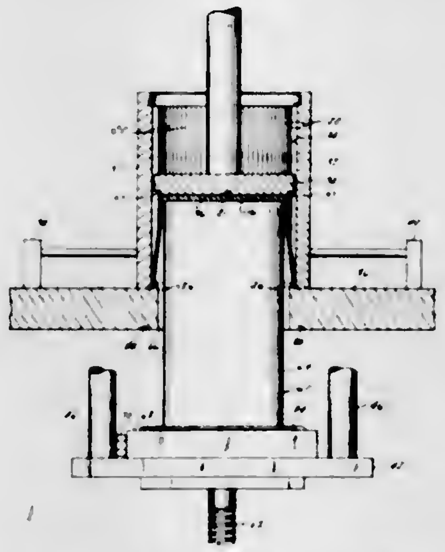
Hardy Eric Storr, Northampton, England, assignor to Stewarts and Lloyds Limited, Glasgow, Scotland, a British company
Filed Aug. 16, 1961, Ser. No. 131,801
Claims priority, application Great Britain, Aug. 16, 1960, 28,287/60
2 Claims. (Cl. 264—5)

1. A method of granulating iron comprising directing a stream of molten iron through the atmosphere, subjecting the molten iron stream to the action of jets of water to create a shower of hot iron particles and water, and collecting the falling shower in a vessel containing water through which the particles of the shower sink, wherein the water of the jets is at a temperature in the range 60° C. to 70° C., and the water in the vessel is maintained at a temperature in the range 80° C. to 95° C., so that the particles from the moment they are created are protected against chilling and cool slowly to form smoothly contoured or rounded or globular granules.



3,184,524
METHOD OF FORMING CONTAINERS

Carlton L. Whiteford, New Canaan, Conn., assignor to Poly-Pak Corporation of America, Springdale, Conn., a corporation of Delaware
Filed Oct. 1, 1963, Ser. No. 313,071
15 Claims. (Cl. 264—94)

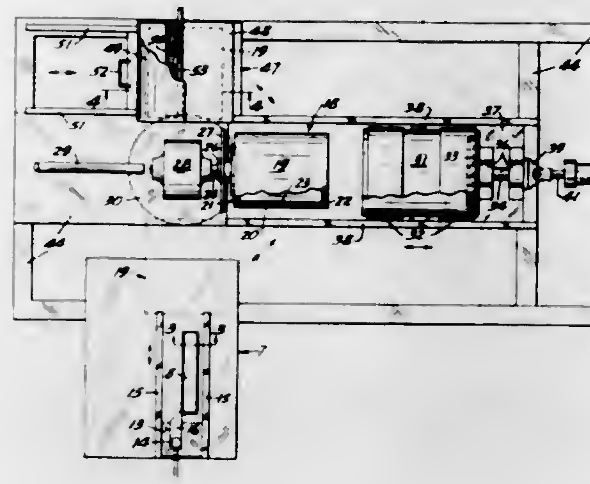


1. In the method of forming hollow articles of substantially multiaxially oriented synthetic plastic material, the steps comprising: molding a preform of an orientable synthetic plastic material; clamping said preform about its periphery adjacent one end of a mold cavity of the desired sidewall configuration; displacing the center portion of said preform inwardly of said mold cavity relative to the clamped periphery thereof while simultaneously applying compressive pressure thereto to effect lateral flow of the plastic material in the center portion and provide synthetic plastic material in the wall portion being formed between said clamped periphery and displacing center portion during the formation of said wall portion; and applying pressure to the interior of said preform after said displacement of the center portion to expand the preform into conformity with the wall of said mold cavity to form a hollow article, said displacement and pressure applications being conducted below the molten temperature and at orientation temperatures of said synthetic plastic material to effect molecular orientation during said displacement, lateral flow and expansion of said preform material.

3,184,525
METHOD OF MOLDING A FILM FROM A FLUORINE-CONTAINING RESIN

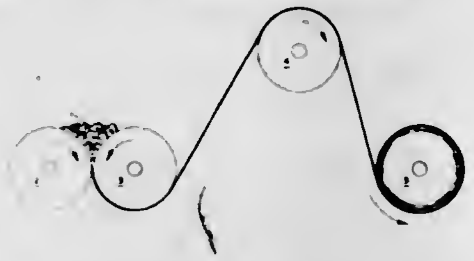
Glendon R. Brandt, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Oct. 31, 1961, Ser. No. 148,974
8 Claims. (Cl. 264—127)

1. A process for making film of fluorine-containing solid polymers which comprises evenly and uniformly distributing a powdered fluorine-containing solid polymer over the inside surface of a cylindrical molding drum, rotating said molding drum on its axis at a sufficiently high speed that the powder particles are stationary, heating said powdered polymer in said molding drum during the rotation of same to the film-forming temperature, thereafter cooling the polymer while still rotating said molding drum, and removing the resulting film from said molding drum.



3,184,526
MANUFACTURE OF POLYOLEFIN FILM

Eugene D. Klug, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 8, 1962, Ser. No. 171,854
4 Claims. (Cl. 264—175)

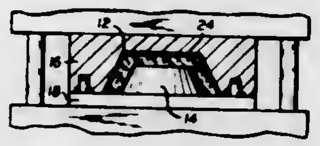


1. The method of producing a self-supporting film from a normally solid polyolefin which comprises feeding said polyolefin in the form of fine particles wet with an inert liquid organic diluent in the amount of 0.25 to 1.5 times the weight of the polyolefin into the nip formed by a pair of closely spaced rolls rotating on parallel axes in opposite direction and maintained at an elevated temperature below the melting point of said polyolefin but above the temperature at which said polyolefin is soluble in said diluent, thereby forming a continuous layer of said polyolefin adherent to one of said rolls, and then stripping said layer as a self-supporting film from the rolls, said diluent having a boiling point ranging from at least about 100° C. up to about 40° C. above the melting point of said polyolefin and being a solvent for said polyolefin to the extent of at least about 15% by weight at temperatures not more than about 50° C. below the melting point of said polyolefin and above, and being essentially a nonsolvent for said polyolefin at temperatures more than 80° C. below the melting point of said polyolefin.

3,184,527
SQUEEZE-COATING PROCESS

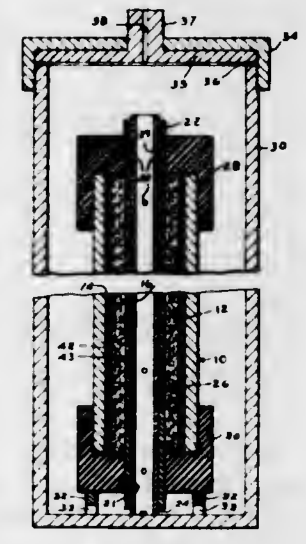
William K. Fischer, Woodbury, Conn., assignor to United States Rubber Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 5, 1962, Ser. No. 235,237
4 Claims. (Cl. 264—255)

1. A method of making a rigid, fiber-reinforced article having a smooth polyester resin surface substantially free of surface irregularities, this method comprising impregnating fibrous reinforcing material with a mixture of an unsaturated polyester and an ethylenically unsaturated monomer copolymerizable therewith, and subjecting said impregnated fibrous material to curing conditions for a time sufficient to partially cure said polyester and monomer to thereby form a dimensionally stable, fiber-reinforced, partially cured base, placing a mass of relatively viscous material comprising an unsaturated polyester and an ethylenically unsaturated monomer copolymerizable therewith on said base, and applying heat and pressure to said mass to thereby cause said mass to be squeezed such that it flows and forms a layer over the surface of said base, said heat and pressure being applied for a time sufficient to cure said layer and to complete the cure of previously partially-cured polyester and monomer in said base, to thereby effect a firm, tenacious bond between said layer and said base.



3,184,528
MOLDING TUBULAR BODIES

Marshall H. Norwalk, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Jan. 9, 1963, Ser. No. 250,330
18 Claims. (Cl. 264—314)

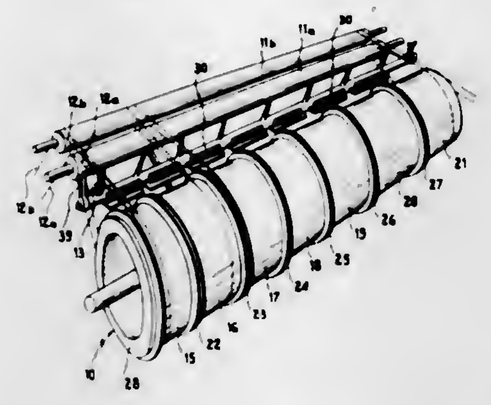


1. A method of molding tubular bodies from comminuted moldable material comprising providing a tubular mold member, coating the inner wall of said mold member with a film of low friction, dry lubricant, disposing against and over said lubricant film a support liner of thin, smooth surfaced, flexible material, disposing an elastic expandable tube in said mold member concentrically spaced inwardly from said liner to form an annular mold cavity therebetween, charging and confining comminuted moldable material in said cavity, subjecting said elastic tube to fluid pressure so as to cause said tube to expand and compress said moldable material between said liner and said tube to form a tubular body, removing said fluid pressure, ejecting said tubular body, with said support liner surrounding it, from said mold member prior to firing said tubular body to cause sintering thereof, and then firing said tubular body to cause sintering thereof.

3,184,529
PROCESS FOR THE CONTINUOUS PROCESSING OF SYNTHETIC YARNS

Giacinto Diotti, Milan, Italy, assignor to Studi e Brevetti Applicazioni Tessili, Milan, Italy, a limited-liability company of Italy
Filed Nov. 13, 1961, Ser. No. 151,769
Claims priority, application Italy, Nov. 12, 1960, 19,491/60
4 Claims. (Cl. 264—340)

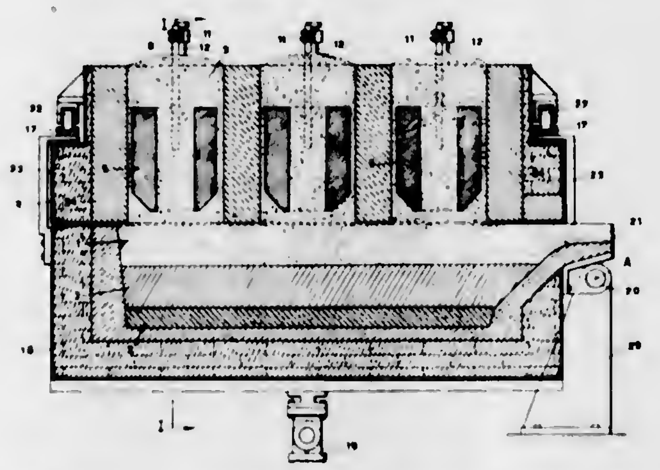
1. A process for the continuous processing of yarns, comprising looping a plurality of individual strands of yarn along essentially helical paths including a predetermined number of loops of each strand about a common cylindrical main surface, looping each individual strand about a separate individual cylindrical auxiliary surface associated with said cylindrical main surface, the several auxiliary surfaces each being at a different location in respect to said main surface causing all of said strands to progress continuously in their looped individual configurations, continuously applying treatments thereto while they are so progressing, causing said plurality of individual strands of yarn to guidedly loop about said common main surface in loops through guide passages including a predetermined number of guide passages, all said individual strands being in groups wherein the grouped strands are in mutual contacting relationship in each one of said guide passages.



ELECTRICAL

3,184,530
PROCESS FOR THE MELTING OF METALS, FOR EXAMPLE COPPER, AND AN ELECTRIC FURNACE FOR THE PERFORMANCE OF SAID PROCESS

Ilario Properzi, Via Cosimo del Fante 10, Milan, Italy
Filed Feb. 23, 1962, Ser. No. 175,225
Claims priority, application Italy, Mar. 4, 1961, Patent 649,374
7 Claims. (Cl. 13—23)



1. An electrical furnace for melting readily oxidizable metals in a reducing atmosphere, including in combination, a furnace body of refractory material, a melting basin recessed in the top surface of said furnace body, said melting basin adapted to receive a charge of metal to be melted, with said charge covered with an incoherent carbonaceous material, a movable roof of refractory material disposed above said melting basin means for horizontally transporting said roof in a linear path over the top surface of said furnace body, at least two vertical wells extending through said roof, a carbon electrode disposed coaxially in each said well and extending a substantial distance along the axial length thereof, each said electrode having a bottom portion terminating near the bottom of each said well and positioned over said melting basin, at least one metal member secured to and extending vertically from the top portion of each said electrode for securing said electrodes in place in said wells and providing terminal means for application of an electrical potential thereto, and an incoherent carbonaceous material disposed around each said electrode so as to completely fill each said well, so that current flow through said carbonaceous material results in heating to thereby melt said metal, with said carbonaceous material providing a reducing atmosphere and insulating said melted metal from oxidizing gases.

3,184,531
REFRACTORY MONOLITH OF PREFORMED GRAIN AND DEAD BURNED MAGNESITE

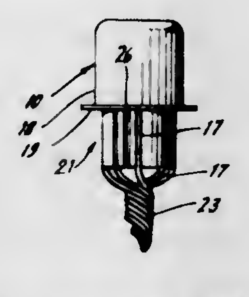
Donald Orr McCreight, Bethel Park, and Albert Lajos Renkey, Pittsburgh, Pa., assignors to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 10, 1963, Ser. No. 250,626
5 Claims. (Cl. 13—35)

1. As the lining of an induction furnace, a refractory monolith formed by ramming a tempered, size graded, refractory batch mixture which includes a coarse fraction and a fine fraction, said mixture consisting essentially of dead burned magnesite and preformed grain, said grain substantially all being in the coarse fraction of the batch and constituting about 10–40%, by weight, of the total weight of the batch, said grain including, by weight, the following constituents:

	Parts
Magnesium aluminate	50 to 70
Beta alumina	5 to 10
Calcium aluminate	15 to 25

3,184,532
ELECTRICAL COMPONENT AND METHOD OF ASSEMBLY

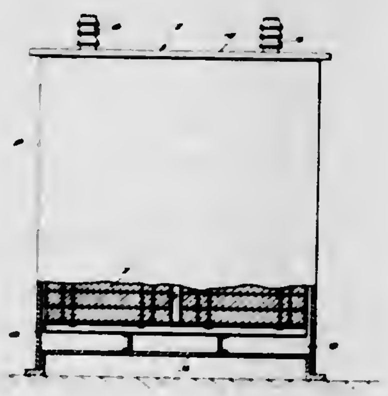
Frank T. Spera, Philadelphia, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 1, 1963, Ser. No. 262,164
6 Claims. (Cl. 174—1)



1. An electrical component assembly adapted for mounting by insertion into an aperture in a wiring panel, said assembly comprising: a component having a plurality of lead wires extending generally unidirectionally therefrom; mounting means having a centrally disposed opening and made of flexible and resilient, electrically insulative material having outwardly presented, longitudinally extending grooves in peripheral portions thereof and within which grooves said lead wires are disposed, an open central portion of said mounting means being presented away from said component, and free ends of said lead wires being twisted upon one another about an axis generally concentric with the axis of said insulative mounting means, whereby to maintain said wires within said grooves and to maintain said mounting means attached to said component.

3,184,533
METHOD AND APPARATUS FOR PREVENTING CARBON DEPOSITS IN ELECTRICAL APPARATUS CONTAINING ELECTRONEGATIVELY SUBSTITUTED DIELECTRIC FLUIDS

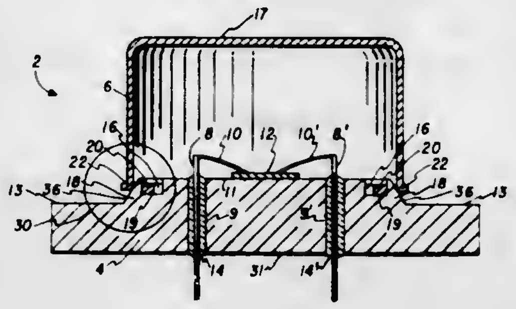
Bernhardt J. Eiseman, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 16, 1961, Ser. No. 131,858
20 Claims. (Cl. 174—17)



6. An electrical apparatus comprising, in combination, a closed, gas-tight container, an electric device therein having at least one conducting member from which an electrical discharge may occur, and an electronegatively substituted dielectric fluid mixture in said container and in contact with said conducting member, said electronegatively substituted dielectric fluid mixture consisting essentially of a carbon containing fluid selected from the group consisting of trihalomethane and C_1–C_6 saturated perhalohydrocarbon, wherein said halogen is of atomic number not more than 35 and having at least one fluorine atom, C_2–C_8 saturated perfluoroether, and C_3–C_{12} saturated perfluorotertiary amine, and from 1 to 50 mole percent of an oxidizing agent selected from the group consisting of sulfur dioxide, nitric oxide and nitrous oxide.

3,184,534
SEMICONDUCTOR DEVICE ENCLOSURE WITH WELD REINFORCING RING

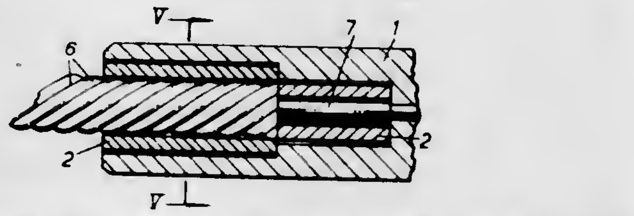
Arthur J. Jensen, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Nov. 24, 1961, Ser. No. 154,483
7 Claims. (Cl. 174—52)



4. A semiconductor device enclosure comprising a metallic plate having a raised solid platform thereon, a cylindrical can open at one end, said open end being hermetically sealed to said metallic plate, and a semiconductor device mounted within the enclosure upon said platform, said raised platform having a wall inwardly slanted from bottom to top and having a concentric annular slot near its periphery, a resilient metallic ring having an internal diameter greater than the internal diameter of said annular slot, said ring being press-fitted in said slot in snug relation to the outer wall thereof, and said cylindrical can being cold-welded at its open end to the wall of said raised portion, said ring exerting an outward pressure on the outer wall of said slot in response to inward pressure applied to the wall of said raised platform during the sealing of said can to said plate.

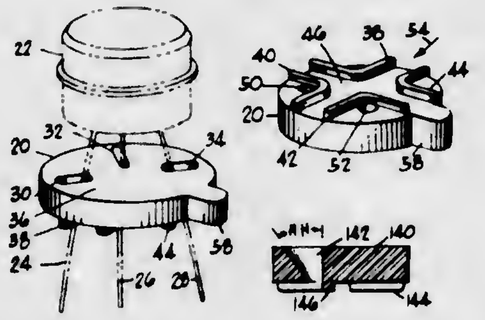
3,184,535
COMPRESSION CONNECTOR FOR JOINING WIRES

George Douglas Worthington, Kingston-on-Thames, England, assignor to Cable Covers Limited, London, England
Filed Dec. 31, 1962, Ser. No. 248,654
Claims priority, application Great Britain, Jan. 9, 1962, 1,029/62
1 Claim. (Cl. 174—90)



A cylindrical compression connector for joining ends of stranded wires consisting essentially of: a malleable metal outer sleeve having an axial circular cross sectional bore at each end of said sleeve and an intermediate circular cross sectional bore between and connecting the end bores, said intermediate bore being of lesser diameter than the diameter of said end bores and being provided with a wall portion of constricted tubular diameter at the middle thereof for accommodating separate strands of wire from opposite sides of the connector, first metal tubular sleeve inserts corresponding in outer diameter to the inner diameters of each of said end bores disposed in each of said end bores, second metal tubular sleeve inserts corresponding in outer diameter to the inner diameter of said intermediate bore being disposed in each end of said intermediate bore; each of said first and said second tubular inserts being formed with diametrically opposed longitudinal slots, one of said slots extending the whole length thereof and the other of said slots terminating short of the end to provide a land portion, the interior of each of said first inserts and said second inserts being roughened for gripping wires which extend through the inserts; the exterior of each of said tubular inserts also being roughened whereby cold-swaging compresses the outer sleeve against the roughened surfaces of the accommodated inserts and simultaneously grips the ends of the stranded wire along the roughened interior surfaces of said inserts while the stepped diameters between the outer axial bore portions and the intermediate bore portions accommodate individual pared back strands of said stranded wire ends in gripping engagement at the middle constricted wall portion.

3,184,536
ELECTRICAL COMPONENT MOUNTING PAD FOR PRINTED CIRCUIT BOARDS
Nathaniel R. Vincent, Santa Monica, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Dec. 26, 1962, Ser. No. 246,893
4 Claims. (Cl. 174—138)



1. A mounting pad for use with printed circuit boards and the like, comprising:

a wafer structure having a normally upper surface and a normally lower surface, and including

at least two openings in said upper surface arranged in a predetermined pattern, one of said openings being a slot having an end generally located on a central, radially inner circle and another end generally located on a central, radially outer circle,

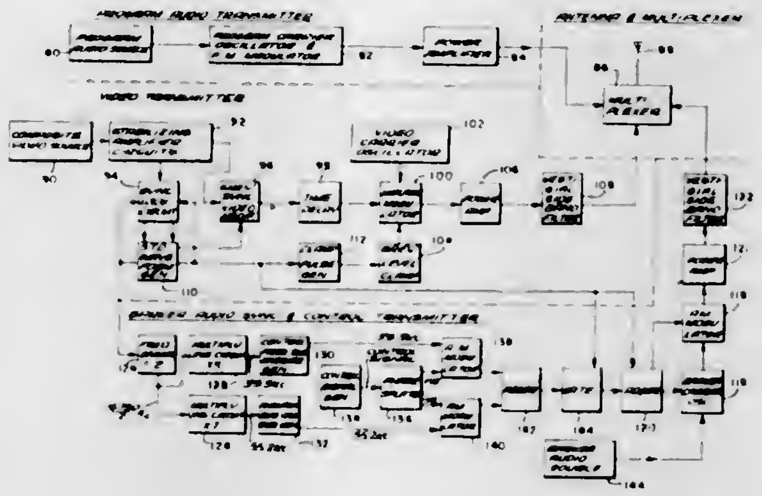
at least two corresponding apertures in said lower surface arranged in a pattern generally corresponding to the predetermined pattern in said upper surface, the aperture associated with said slot having one end generally located on a central circle disposed radially intermediate the circles on which the inner end and the outer end of said slot are respectively located and another end generally located on another circle disposed radially similar to one of the circles on which the inner and outer ends of said slot are respectively located, and

at least two passageways through said wafer structure respectively connecting said openings and said corresponding apertures, said passageway connecting said slot and corresponding aperture having an inner side joining the inner end of said slot to the inner end of said corresponding aperture and an outer side joining the outer end of said slot to the outer end of said corresponding aperture, one of said inner and outer sides being generally vertical and the other side sloping generally in a radical direction from said upper surface toward said lower surface at a predetermined angle relative to the vertical; and

a plurality of circumferentially spaced mounting feet extending as separate longitudinally curved ridges from said lower surface, at least two of said feet being curved with bights located closely adjacent to a part of respective peripheries of said apertures,

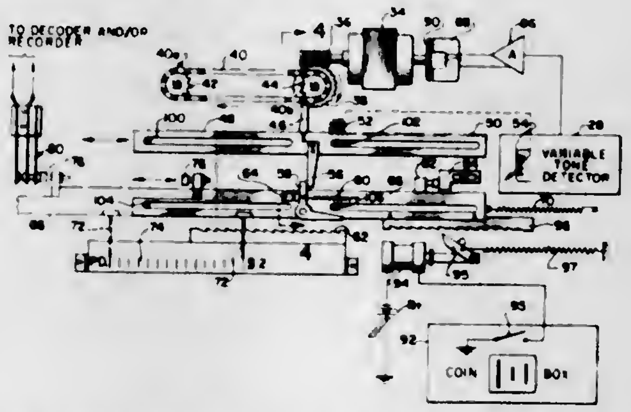
whereby an electrical lead passed through said passageway connecting said slot and corresponding aperture is guided by said sloping side and can be laterally displaced a predetermined maximum distance by said passageway, and said mounting feet provide firm and non-rocking support of said pad against the mounting surface of a printed circuit board, and aid in aligning and insulating the electrical leads emerging from said apertures.

3,184,537
SUBSCRIPTION-TELEVISION SYSTEM EMPLOYING SUPPRESSION OF SYNCHRONIZING SIGNALS
Patrick R. J. Court, Los Angeles, George Brownstein, Pacoima, Los Angeles, Abraham M. Reiter, Reseda, Los Angeles, and Phil H. Weiss, Panorama City, Los Angeles, Calif., assignors to Paramount Pictures Corporation, New York, N.Y., a corporation of New York
Filed Oct. 4, 1960, Ser. No. 60,410
28 Claims. (Cl. 178—5.1)



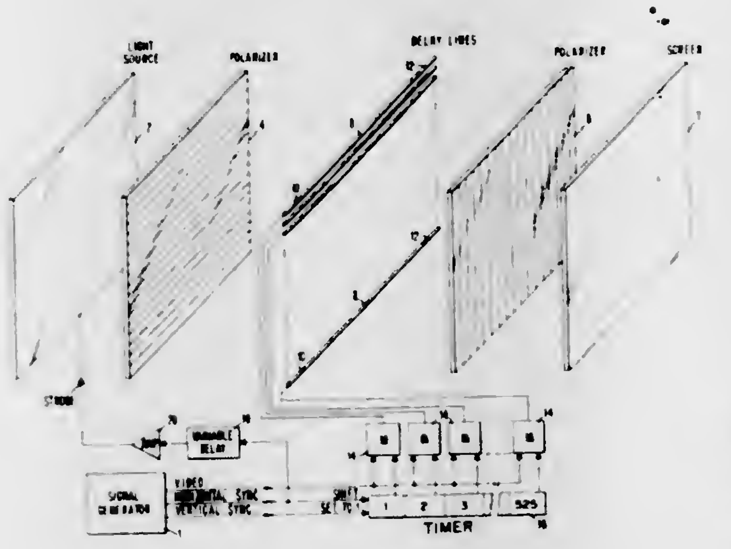
1. A television secrecy system comprising at a transmitter means for generating video signals having grey-level signals instead of composite blanking and synchronizing signals, means for generating the composite synchronizing signals for said video signals, means for generating a video carrier, means for modulating said video signal on said video carrier, means for generating an audio carrier, means for modulating said composite synchronizing signals on said audio carrier, and means for transmitting said modulated video and audio carriers; at a receiver means for receiving said modulated video and audio carriers, means for demodulating the composite synchronizing signals from said audio carrier, and means for inserting composite synchronizing signals in said video signals while modulated on its carrier responsive to said demodulated composite synchronizing signals.

3,184,538
PRICING APPARATUS FOR SUBSCRIPTION TELEVISION
Patrick R. J. Court, Los Angeles, Calif., assignor to Paramount Pictures Corporation, New York, N.Y., a corporation of New York
Filed Aug. 14, 1961, Ser. No. 131,135
6 Claims. (Cl. 178—5.1)



3. In a subscription-television system of the type wherein a price must be paid for viewing a program, said price being transmitted as a tone signal to a subscriber's receiver, apparatus at a subscriber's receiver comprising means for receiving said tone signal, a variable price indicator, means for varying said variable price indicator over its range of prices, and means responsive to said received signal to stop said means for varying at a position whereat said variable price indicator will indicate the price represented by said single signal.

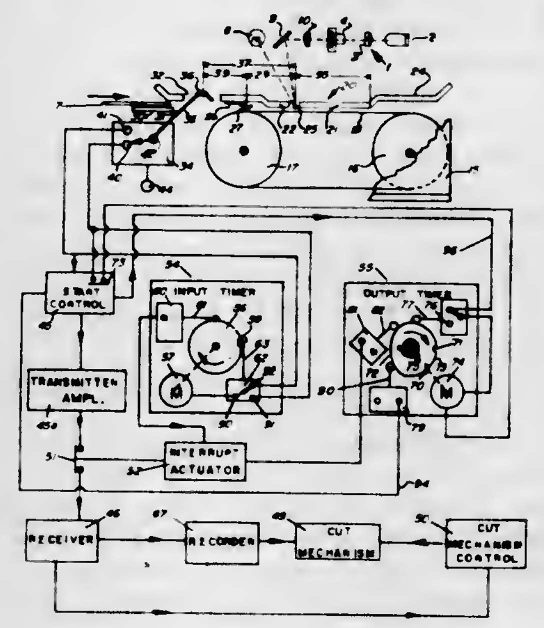
3,184,539
VISUAL DISPLAY DEVICE FOR PRESENTATION OF CONTINUOUS VIDEO DATA
Francis J. Thomas, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 2, 1961, Ser. No. 86,608
8 Claims. (Cl. 178—5.4)



4. An apparatus for producing a light pattern representative of input time-varying video data comprising, in combination: a strobable light source for producing light at a predetermined time-relationship with respect to the input data; polarization means oriented to ordinarily block the light from the light source; delay means responsive to the input data for selectively unblocking the light along portions of discrete linear regions, one region at a time in sequence, whereby a light pattern modulated in accordance with the input data is produced.

8. A television receiver comprised in combination: signal generating means for generating a plurality of video signals each containing intensity and color data for lines of the presentation and for generating timing signals in timed relationship to the video signals; selecting means responsive to said signal generating means having a plurality of outputs for each line of the presentation, one for each of said plurality of video signals for routing the appropriate portions of the video signals to the appropriate outputs; a plurality of electromechanical transducers, each responsive to an output of said selecting means, for generating mechanical disturbances dependent upon the amplitude of the output of the selecting means; a light source for generating a path of light under control of a timing means; a plurality of adjacently located sonic delay lines positioned within the path of light, each mechanically connected to a transducer for altering the polarization of the light passing through them in the regions of the mechanical disturbances that are generated by the associated transducer means; filter means; a first polarizer located in the path of the light beam on one side of the delay lines and a second polarizer located in the path of light on the other side of the delay lines and oriented to block the passage of the light that is not altered by a mechanical disturbance in a delay line.

3,184,540
CONTROLLED FACSIMILE COPY CUTTING MECHANISM
Gerald G. Murphy, Clifton, N.J., assignor to Hogan Faximile Corporation, New York, N.Y.
Filed May 31, 1962, Ser. No. 199,112
6 Claims. (Cl. 178—6)



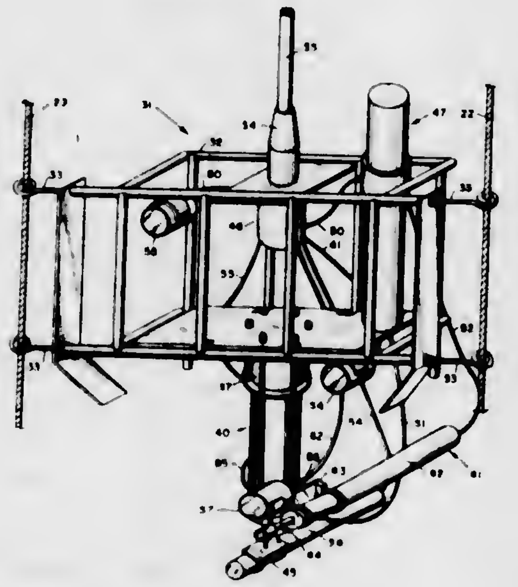
1. A controlled facsimile system comprising a transmitter including means for producing electric facsimile signals representative of subject copy, a recorder responsive to the facsimile signals, a recorder cut mechanism to separate recorder facsimile copy, a control mechanism for the cut mechanism adapted to be controlled by an interruption of the facsimile signal, a frame, rollers journalled in the frame, a feed belt carried by the rollers, a scanning plate extending generally parallel to the surface of the belt between the rollers, the plate including a central portion and leading and trailing end portions, the central portion in contact with the belt, the leading and trailing end portions spaced from the belt, means forming a scanning slot in the central portion of the plate and extending transversely with respect to the direction of travel of the belt, a spring member extending downwardly from the leading portion of the scanning plate, a gripping edge for the end of the spring member in releasable contact with the belt, the gripping edge spaced a predetermined distance from the scanning slot, means forming a feeding surface positioned in alignment with the surface of the belt adjacent the scanning plate and providing means for the introduction of subject copy between the belt and the scanning plate, means forming an opening in the feeding surface, a double poled timer control switch, an operating arm for the timer control switch extending through the opening in the feeding surface and positioned a predetermined distance ahead of the gripping edge, the operating arm adapted to be moved downwardly by contact with subject copy, the operating member in its upward position adapted to make contact with one of the poles of the timer control switch, and in downward position adapted to make contact with the other of the poles of the timer control switch, a control for the transmitter connected to said other of the poles of the timer control switch and operative upon the downward movement of the operating arm for the starting of the transmitter and the transmission of a carrier signal, a transmission interruptor switch in the output of the transmitter, a motor driven input timer connected to said other of the holes of the timer control switch and operative upon the downward movement of the operating arm, the input timer having two sequentially operating timing periods, the first of the input timer operating periods corresponding to the

time required for the subject copy to be carried by the belt from the gripping edge to the scanning slot, means in the input timer to effect a timed actuation of the transmission interruptor switch at the end of the input timer first operating period, stop means in the input timer operative for the stopping thereof after actuation of the transmission interrupter switch, reset means for the input timer, a motor driven output timer connected to said one of the poles of the timer control switch and operative upon the upward movement of the operating arm, the output timer having two sequentially operated timing periods, the first of the output timer operating periods corresponding to the time required for the subject copy to be carried by the belt from the point of release of the operating arm to the scanning slot, means in the output timer to effect timed actuation of the transmission interrupter switch at the end of the output timer first timing period, means in the output timer to effect actuation of the control for the transmitter for the stopping thereof at the end of the output timer second timing period, the reset means in the input timer actuated upon the upward movement of the operating arm and thereby initiating the second of the input timer periods corresponding to a period of time sufficient to ready the input timer for another sequence of operations whereby the carrier signal is interrupted at predetermined intervals dependent upon the receipt of subject copy by the transmitter, the interruption of the carrier signal controlling the cut mechanism of the recorder.

3,184,541

UNDERWATER TELEVISION CAMERA MOUNTING PROVIDING THREE DIRECTIONS OF MOVEMENT FOR THE CAMERA

Kenneth W. Foster, Houston, Tex., and Ronald L. Geer, Metairie, La., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 10, 1963, Ser. No. 250,604
5 Claims. (Cl. 178—6)



2. An apparatus for use in observing installations submerged in relatively deep bodies of water, comprising:

(*a*) a carriage adapted to be suspended in the body of water in close proximity to an installation to be observed;

(*b*) a television camera mounted on the carriage for pivotal movement with respect thereto about horizontal and vertical axes;

(*c*) motion-imparting means operatively engaging the carriage and camera to move said camera selectively about said horizontal and vertical axes;

(*d*) an extensible boom operatively engaging the carriage and camera to provide for extension of said camera with respect to the carriage and toward the portion of the installation to be viewed;

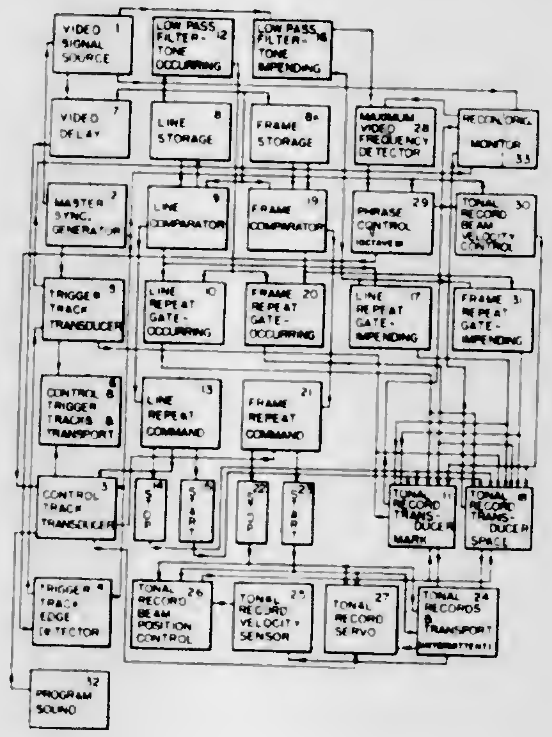
(*e*) actuating means fixedly mounted on said carriage for selectively extending said extendable boom; and

(*f*) lighting means carried by the carriage to illuminate the area of focus of said camera.

3,184,542

VIDEO RECORDING AND REPRODUCTION WITH REDUCED REDUNDANCY

David S. Horsley, 3929 Kentucky Drive, Hollywood, Calif.
Filed Mar. 15, 1961, Ser. No. 95,988
14 Claims. (Cl. 178—6.7)


VIDEO SIGNAL SOURCE 1
LOW PASS FILTER- TONE OCCURRING 12
LOW PASS FILTER- TONE IMPENDING 16
VIDEO DELAY 7
LINE STORAGE 8
FRAME STORAGE 8a
MAXIMUM VIDEO FREQUENCY DETECTOR 28
RECON/ORIG. MONITOR 33
MASTER SYNC. GENERATOR 2
LINE COMPARATOR 9
FRAME COMPARATOR 19
PHRASE CONTROL 29
TONAL RECORD BEAM VELOCITY CONTROL 30
TRIGGER TRACK TRANSDUCER 5
LINE REPEAT GATE-OCCURRING 10
FRAME REPEAT GATE-OCCURRING 20
LINE REPEAT GATE-IMPENDING 17
FRAME REPEAT GATE-IMPENDING 31
CONTROL & TRIGGER TRACKS & TRANSPORT 6
LINE REPEAT COMMAND 13
FRAME REPEAT COMMAND 21
CONTROL TRACK TRANSDUCER 3
STOP 14
START
STOP 22
START 23
TONAL RECORD TRANS-DUCER MARK 11
TONAL RECORD TRANS-DUCER SPACE 18
TRIGGER TRACK EDGE DETECTOR 4
TONAL RECORD BEAM POSITION CONTROL 26
TONAL RECORD VELOCITY SENSOR 25
TONAL RECORD SERVO 27
TONAL RECORDS & TRANSPORT 24
PROGRAM SOUND 32

1. The method of video recording which comprises the steps of

storing a sequence of video signal,

comparing said sequence with a subsequent equivalent sequence,

restricting the frequency band of said video signal,

recording non-duplicated sequences of the restricted signal,

forming and recording a control signal identifying omissions in said recording,

examining said video signal for the maximum frequency present during each said sequence,

forming a recording scan having a velocity related to said maximum frequency,

performing said recording of said restricted signal according to said scan velocity,

detecting each rapid excursion in said video signal,

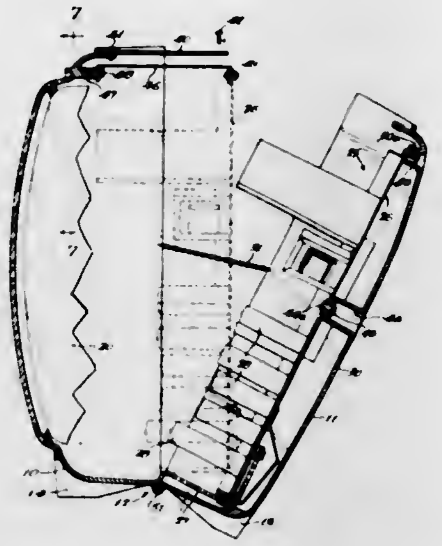
forming an other signal for each said rapid excursion and separately recording said other signal.

3,184,543

HINGEDLY JOINED TELEVISION CABINET THAT PROVIDES FOR FRONT AND REAR EXPOSURE OF COMPONENTS

Joseph A. Carlson, Glen Ellyn, and Dominick A. Massa, Arlington Heights, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware
Filed Feb. 23, 1961, Ser. No. 91,055
9 Claims. (Cl. 178—7.9)

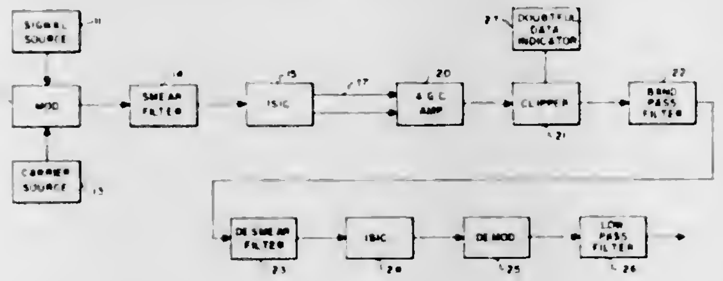
9. A cabinet for housing electrical equipment comprising, a pair of cabinet sections hingedly connected together for relative movement between open and closed positions, an internal mounting member for the electrical equipment hingedly connected to said cabinet sections and disposed generally upright within the cabinet, and releasable means accessible from the cabinet exterior for alternately connecting said member with either of said cabinet sections whereby one side or the other of said member is exposed when the cabinet is open.



3,184,544

NOISE AND DISTORTION REDUCTION IN COMMUNICATION SYSTEMS

Earl D. Gibson, Hyattsville, Md., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Oct. 12, 1961, Ser. No. 144,759
11 Claims. (Cl. 178—69)

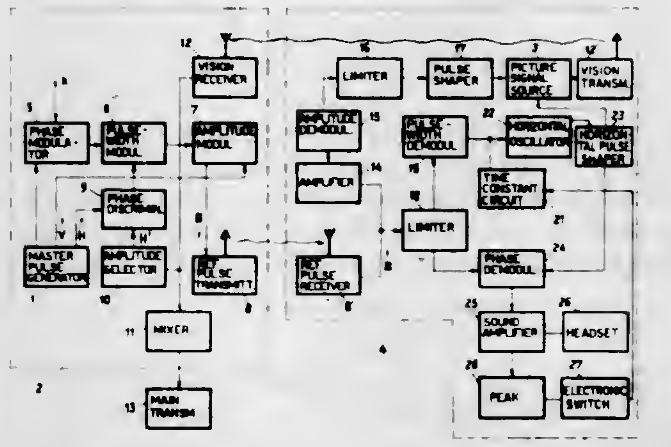


1. A communication system comprising a signal source, a first filter network connected to the output of said source having a delay which varies with frequency, means connected to said filter network for producing a plurality of time-spaced replicas of predetermined different relative amplitudes of the portion of the signal in each interval of a predetermined duration, means for superimposing each signal replica on the replicas of other signals in a plurality of adjacent intervals, means for transmitting the superimposed signal replicas, a receiving station connected to said transmitting means, said receiving station comprising a peak clipping circuit. a band pass filter connected to the output of the clipping circuit having a pass band encompassing the component frequencies of the signals, whereby said filter substantially eliminates frequency components outside the pass band, a second filter network connected to said band pass filter having a delay which varies with frequency inversely to that of said first filter network, and means for producing a plurality of replicas of predetermined different relative amplitudes of the received signal portions occurring in each predetermined time interval and for combining the replicas of different signal portions to reproduce the signals with a reduction of the distortion and noise superimposed by the transmitting means.

3,184,545

SYNCHRONIZING SYSTEM PICKUPS WITH TELEVISION INTERCOMMUNICATION PROVIDED BY PHASE MODULATION OF REFERENCE PULSES

Ernst Legler, Darmstadt, and Hubert Förster, Darmstadt-Eberstadt, Germany, assignors to Fernseh G.m.b.H., Darmstadt, Germany
Filed Apr. 17, 1962, Ser. No. 188,159
Claims priority, application Germany, May 12, 1961, F 33,904
11 Claims. (Cl. 178—69.5)



1. A television apparatus comprising, in combination, a master pulse generator with a horizontal synchronizing pulse generator and a vertical synchronizing pulse generator all situated at a central position; a phase discriminator measuring the phase difference of two signals applied to its two inputs and generating a control voltage at its output, said control voltage depending on said phase difference; a picture signal source situated at a remote position; a reference pulse generator generating rectangular reference pulses; a reference pulse transmitter transmitting said reference pulses from said central position to said remote position; a reference pulse receiver receiving said reference pulses at said remote position; means for synchronizing said picture signal source with said received reference pulses; a vision transmiter transmitting said picture signal to said central position; a vision receiver receiving said picture signal; a horizontal frequency separator splitting off the horizontal frequency pulses from said picture signal; a reference pulse modulator modulating the width of said reference pulses in accordance with said control voltage, further modulating the amplitude of said reference pulses by an information relating to the vertical synchronisation and still further modulating the phase of said reference pulses in accordance with sound signals to be transmitted from said central position to said remote position; connection means connecting one of said inputs of the phase discriminator with said horizontal synchronizing pulse generator; further connection means connecting the other input of said phase discriminator with the output of said horizontal frequency separator; additional connection means connecting the output of said phase discriminator with one input of said reference pulse modulator; and still further connection means connecting said vertical synchronizing pulse generator with another input of said reference pulse modulator.

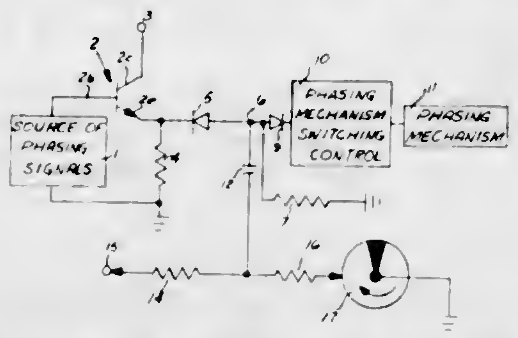
3,184,546

FACSIMILE COINCIDENCE PHASING CONTROL CIRCUIT

John W. Smith, Whitestone, N.Y., assignor to Hogan Faximile Corporation, New York, N.Y.
Filed May 31, 1962, Ser. No. 199,187
7 Claims. (Cl. 178—69.5)

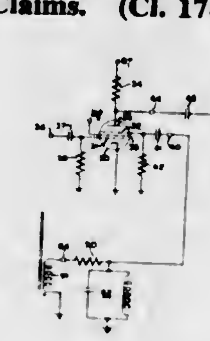
1. A facsimile coincidence phasing control circuit comprising a source of transmitter phasing pulses, a source of local pulses, means for comparing coincidence of the transmitted and local pulses including network junction

means, a discharge resistor connected to the network junction, a blocking diode, an input load resistor connected at one end in series with the blocking diode to the junction, means for applying the transmitter pulses across the input load resistor, means for applying the local pulses to the junction, and threshold blocking means connected to the junction and forming an output, whereby at coincidence of the transmitter and local pulses a phasing pulse is produced at the output.


SOURCE OF PHASING SIGNALS
PHASING MECHANISM SWITCHING CONTROL
PHASING MECHANISM
2
3
5
6
10
11
14
15
16
17

3,184,547
VERTICAL SYNC SEPARATOR CIRCUIT KEYED AT TWICE THE HORIZONTAL LINE RATE

Robert B. Dome, Geddes Township, Onondaga County, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 30, 1962, Ser. No. 241,302
6 Claims. (Cl. 178—69.5)

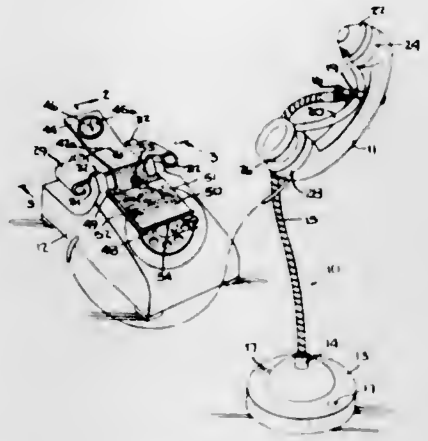


1. A television receiving apparatus having means for separating a vertical synchronizing signal from a composite synchronizing signal comprising: a source of a composite synchronizing signal having a waveform including recurring vertical synchronizing, horizontal synchronizing, and equalizing components; a blanking circuit having first and second input terminals and an output terminal; means coupling said composite synchronizing signal to said first input terminal; means providing a blanking signal having a waveform including enabling and inhibiting components, said inhibiting components occurring coincident in time with said horizontal and equalizing components; and means coupling said blanking signal to said second input terminal of said blanking circuit, said blanking circuit being responsive to said composite synchronizing signal and said blanking signal to produce a separated vertical synchronizing signal at said output terminal.

3,184,548
TELEPHONE ATTACHMENTS

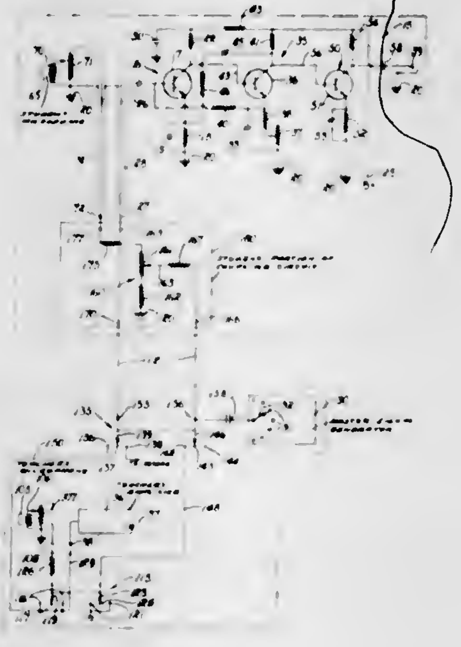
Lester S. Krulwich, 241 Central Park W., New York 24, N.Y.
Filed May 15, 1961, Ser. No. 110,237
1 Claim. (Cl. 179—148)

Attachments for a telephone instrument of the wall phone type having a base, a handset and a holder that opens and closes the circuit and is adapted to removably hold the handset comprising a holding base with an adjustable extension and means fastening the bottom of said extension to the holding base with means for securing the handset to the upper end of said extension, an elongated bar member with hook shaped end portions being bent downward and inward adapted to hook onto the holder, the bar being weighted so that normally gravitationally it depresses the holder, the bar being manually removable from the telephone base.



3,184,549
COUPLING CIRCUIT FOR A COMMUNICATION SYSTEM

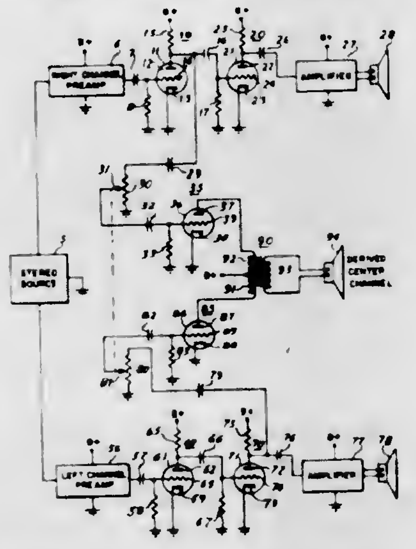
Clarence L. Auernheimer, Fresno, Calif., assignor to A.V. Electronics, Inc., Fresno, Calif., a corporation of California
Filed Feb. 2, 1961, Ser. No. 86,656
8 Claims. (Cl. 179—1)



2. In an educational communication system including a plurality of student stations, and master signal generator having a predetermined medium output impedance, each of said stations including a student amplifier having an input providing a substantially uniform low impedance and a microphone having an output of low impedance; a coupling circuit comprising resistance means individually connecting the microphone outputs to the inputs of their respecttive amplifiers in substantially impedance matched relationship; high impedance resistance-capacitance means individually interconnecting the output of the generator and the inputs of the amplifiers in substantially impedance means isolating the stations from each other to minimize transmission of student signals from one student station to another; and means individually connected to the high impedance means and to the generator for shorting out the signal applied to selected student amplifiers without affecting application of the generator signal to the other amplifiers.

3,184,550
STEREOPHONIC SYSTEM WITH DERIVED CENTER CHANNEL

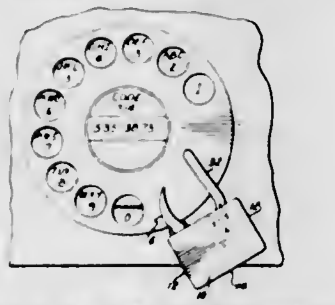
Max W. Rogers, Melrose Park, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware
Filed June 6, 1961, Ser. No. 115,138
5 Claims. (Cl. 179—1)



2. A stereophonic reproducing system comprising a stereophonic source for generating a left channel signal and a right channel signal; a left translation channel and transducer for translating said left channel signal and converting it to a corresponding acoustic signal; a right translation channel and transducer for translating said right channel signal and converting it to a corresponding acoustic signal; a center translation channel and transducer; said center channel including a pair of amplifying devices and transformer means connected in push-pull relationship; an input circuit for each of said amplifying devices; and means applying a portion of said left channel signal and said right channel signal to said input circuits, respectively, in a manner such that said signals are of opposite polarity.

3,184,551
AUTOMATIC TELEPHONIC TIMER

Joseph A. Curtis, Jr., 917 Cambridge St., Apt. A, Anaheim, Calif.
Filed Mar. 26, 1962, Ser. No. 182,333
3 Claims. (Cl. 179—7.1)

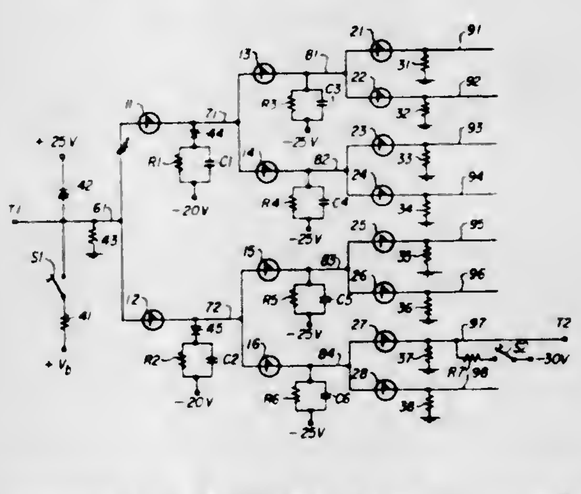


1. A timing device for use in automatically signalling the expiration of a predetermined length of time after a number has been dialed on a dial telephone which is provided with a dialing stop that partially extends over a dial on said telephone, including:

(*a*) a housing;
(*b*) first means for removably supporting said housing from a portion of said stop that is disposed to one side of said dial;
(*c*) a lever projecting from said housing that extends over said dial, which lever is at a higher elevation relative to said dial than said stop and normally occupies a first position where said lever will be contacted by a dialing implement prior to contact of said stop by said instrument, which lever also is capable of occupying a second position where it is in substantial vertical alignment with said stop;
(*d*) second means in said housing including a stem for movably supporting said lever;
(*e*) third means in said housing that at all times tend to move said second means and said lever in a direction to return said lever to said first position at a uniform rate;
(*f*) fourth means in said housing for regulating the rate at which said third means moves said second means and lever from said second position towards said first position;
(*g*) fifth means in said housing that audibly signals after said lever and second means have been moving from said second position toward said first position for a predetermined length of time;
(*h*) visual indicia on said lever; and
(*i*) a plurality of longitudinally spaced and numbered lines imprinted on the upper surface of said housing past which said lever moves in returning to said first position, with said indicia when in alignment with one of said numbered lines visually indicating the number of minutes said telephone has been used.

3,184,552
ELECTRONIC SWITCHING NETWORK

Max S. Macrander, Wheaton, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Mar. 20, 1961, Ser. No. 96,957
18 Claims. (Cl. 179—18)



1. A communication switching network comprising a plurality of bistable breakdown devices series-connected by links in stages to provide a plurality of transmission paths, each device having at least a first-polarity and a second-polarity electrode, with

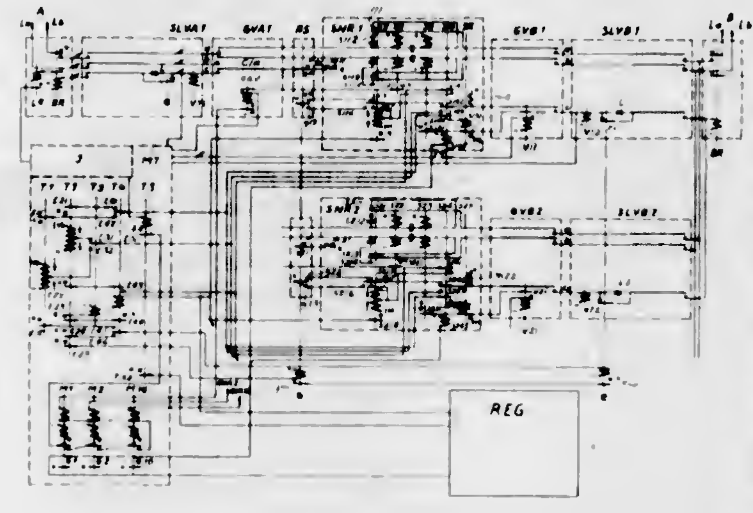
(*a*) a branching set of said devices having first-polarity electrodes connected in common to one link of a first group and second-polarity electrodes connected to separate links of a second group;
(*b*) a resistance-capacitance passive link marker individually connecting each second-group link to a bias source, which normally biases the links to the potential of the source;
(*c*) means connecting an end-marking potential source via a circuit including resistance to said one first-group link to cause one device of said set to break down to its low impedance state, thereby bringing said one first-group link to substantially the potential of the second-group bias source, which prevents break down of other devices of said set; said means being then effective to cause the capacitance of the second-group link marker to charge from said end-marking source to change the potential of the links at both sides of said one device;
(*d*) said means being effective to cause the charging of the second-group link marker to continue, upon the non-completion of a connection from the second-group link, until the potential at said one first-group

link causes another device of said set to break down, thereby again bringing the first-group link to substantially the potential of the second-group bias source, which reverse biases said one device and thereby restores it to the high-impedance state, and also prevents break down of other devices of said set.

3,184,553
CIRCUIT ARRANGEMENT FOR AUTOMATIC TELEPHONE EXCHANGES

John Carl Harold Björk, Hagersten, and Bengt Erik Backholm, Bandhagen, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Dec. 30, 1959, Ser. No. 862,963
Claims priority, application Sweden, Jan. 12, 1959, 256/59
7 Claims. (Cl. 179—27)

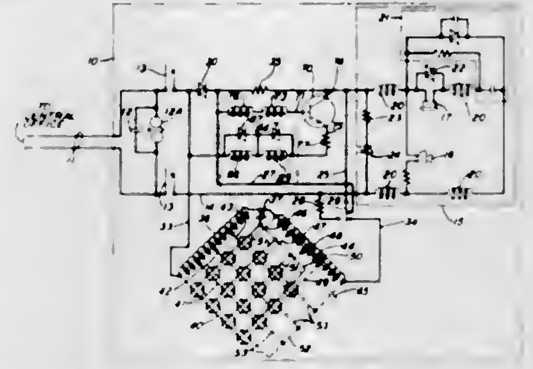


1. A circuit arrangement for an automatic private telephone exchange, including crossbar selectors, subscriber line circuit systems connected to a line terminal multiple through which each subscriber equipment is connectable to alternate selectors, at least one operator equipment, connecting relay sets for connecting a subscriber equipment, respectively, with another subscriber equipment and with said operator equipment, a marker for setting up connections through links including the connecting relay sets and at least two idle selectors in series, test wires belonging to each subscriber equipment and extending through said links for indicating by their potential condition the idle and busy conditions of a subscriber equipment, the one selector of said at least two selectors located nearest to the called subscriber equipment being held in operative condition through said test wire, and a cut-off relay in each subscriber equipment operated by the busy-indicating potential condition of the test wire for blocking the subscriber equipment against new calls, said circuit arrangement including a first direct connection in each link between said test wire and said busy-indicating potential and a second indirect connection between said test wire and said busy-indicating potential through a resistance, a rectifier in each test wire and a break contact short circuiting said rectifier to allow said busy-indicating direct connection potential through said line terminal multiple to be fed to a link through which the busy subscriber is called, and means for removing the short circuit of the rectifier in the link set up last thereby to release the selector located nearest to the busy subscriber equipment, said circuit arrangement furthermore comprising a waiting relay holding a calling link in connection with the equipment of a subscriber equipment momentarily occupied as long as it obtains direct connection potential but releases when obtaining only said indirect connection potential.

3,184,554
SUBSCRIBER CALLING APPARATUS

Larned A. Meacham, New Providence, and Fred West, Mendham, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 8, 1958, Ser. No. 759,474
18 Claims. (Cl. 179—84)



1. A telephone substation circuit comprising a pair of line terminals arranged to be connected over a telephone line to a telephone central office including a line battery supply and a calling signal receiver, a speech circuit connected to said line terminals, means in series with one line terminal for establishing a reference voltage at said substation when connected to the telephone central office, an oscillation generator including energy storing means normally connected across said reference voltage establishing means, a transistor including base, emitter and collector electrodes, said transistor connected to derive bias voltages from said reference voltage establishing means, a feedback path for said transistor, means coupling said oscillation generator to the feedback path of said transistor and switch means operative to discharge said energy storing means in a preselected frequency and to connect said transistor to the telephone line terminals whereupon an alternating calling signal is introduced into the telephone line.

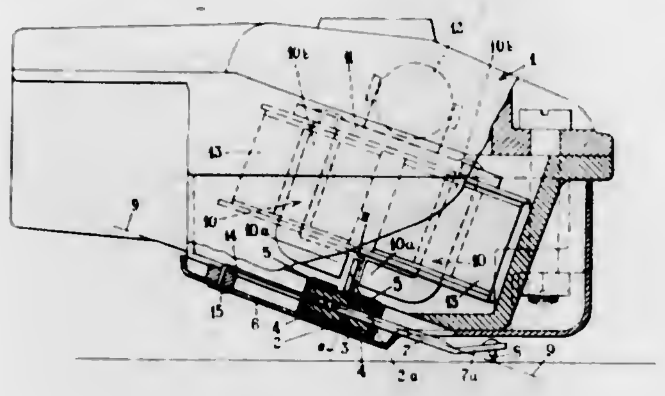
18. A selective electronic system comprising an exciting device for selectively producing simultaneous basic oscillations at a plurality of different frequencies within a predetermined band of frequencies, and a plurality of tuned secondary circuits, said secondary circuits including means for selectively causing said exciting device to produce oscillations of frequencies to which said secondary circuits are tuned within said predetermined band, said secondary circuits being coupled to said exciting device for selective and simultaneous excitation thereby, and said secondary circuits including means for causing said secondary circuits to operate in either of two stable states, one of which is oscillatory whereby said secondary circuits cause said exciting device to produce oscillations of frequencies corresponding to the frequencies to which said secondary circuits are tuned.

3,184,555
STEREOPHONIC ELECTROSTATIC PICK-UP

Thomas Stewart Marshall, Swindon, England, assignor to The Garrard Engineering & Manufacturing Company Limited, Swindon, England

Filed July 13, 1959, Ser. No. 826,584
Claims priority, application Great Britain, July 28, 1958, 24,234/58
5 Claims. (Cl. 179—100.41)

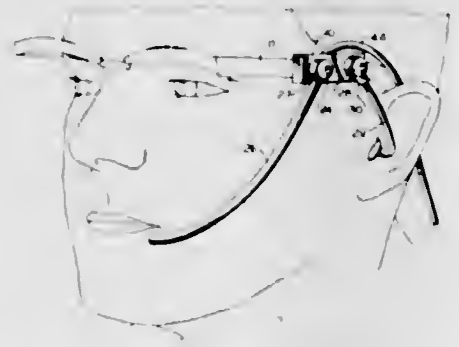
1. A phonograph pick-up for use with a record having two sound tracks in a single groove, the sound tracks being modulated in directions substantially perpendicular to each other; said pick-up comprising, in combination, a relatively elongated stylus lever; a stylus secured to said lever adjacent one end thereof to project laterally therefrom; a substantially flat transducer operating member, including a pair of perpendicularly related and substantially coplanar arms, said member being secured to said lever, substantially at the juncture of said arms, adjacent the opposite end of said lever with said arms lying in a plane substantially perpendicular to the length of said lever and each extending substantially parallel to the moduating direction of a respective one of the sound tracks; a pair of transducers each located adjacent the free end of, and in operative association with, a respective one of said arms; and means resiliently mounting said lever; said pick-up including a block on which said transducer operating member is mounted; said stylus lever being secured in and extending from said block; said resilient mounting means being operatively associated with said block.



3,184,556
MINIATURE HEADSET-MICROPHONE ADAPTED FOR USE WITH A MASK

Wallace Keith Larkin, Santa Cruz, Calif., assignor to Pacific Plantronics, Inc., a corporation of California

Filed Dec. 11, 1961, Ser. No. 158,463
6 Claims. (Cl. 179—156)



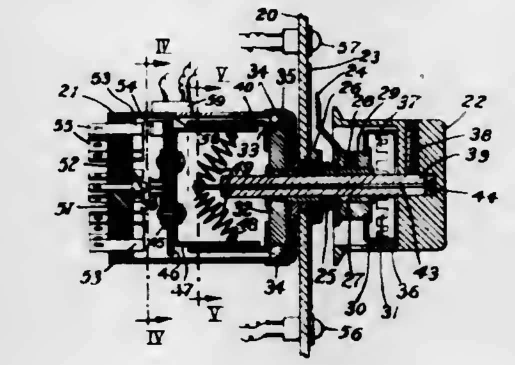
1. A miniaturized microphone headset employing a miniature microphone and a miniature receiver, comprising the combination of support means for detachably supporting the miniature microphone and the miniature receiver adjacent to the wearer's ear, a first acoustical tube, means for attaching one end of said first tube to said microphone and the other end of said first tube being adapted to be positioned adjacent to the wearer's mouth, a second acoustical tube, and means for attaching one end of said second tube to said receiver and the other end of said second tube being adapted to be plugged into the wearer's ear.

3,184,557
HEAVY DUTY ELECTRICAL ROTARY SWITCHES WITH PUSH-BUTTON SNAP-ACTION

Alexander Clarey, 610 W. 145th St., New York, N.Y.

Filed Feb. 8, 1963, Ser. No. 257,246
6 Claims. (Cl. 200—4)

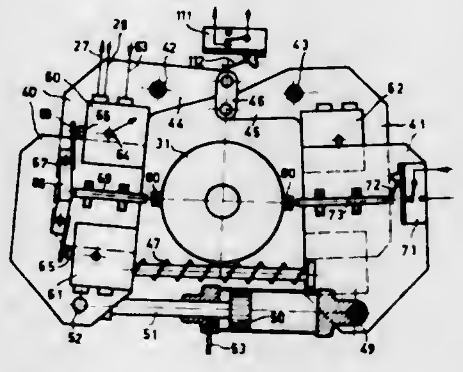
1. A heavy duty electric switch comprising a casing having a fixed header at an end thereof and an axis perpendicular to said header, a circular series concentric to said axis of electrically conductive blade contacts upstanding within said casing perpendicular to and fixed on said header, a rotor in said casing parallel to and opposed to said header and rotatable on said axis and having an electrically conductive mating contact thereon projecting perpendicularly therefrom toward the header and adapted to be located as the rotor is rotated to a selected position of rest with its said mating contact in spaced juxtaposition in alignment to a selected one of said fixed series of header contacts, a bracket fixed with respect to said rotor and rotatable and slidable therewith on said axis, a frame in and supported from said casing and rotatable on said axis but having a fixed position longitudinally of said axis, said frame slidably telescoping with said bracket thereby effecting simultaneous rotation of the frame and bracket on said axis, and means supporting said frame rotatably and non-slidably in said casing, said means providing a snap-action control for sliding said bracket and rotor axially in either direction and for rotating said frame and bracket.



3,184,558
ELECTRICAL SWITCHES FOR CONTROLLING A SEQUENCE OF DIFFERENT OPERATIONS

Thomas Thomann, Feldblumenstrasse 3, Zurich, Switzerland, Werner Cermak, Zurcherstrasse 14, Dietikon, Zurich, Switzerland, and Hans Schlafli, Haldenstrasse 49, Ultikon, Zurich, Switzerland

Filed June 12, 1961, Ser. No. 130,703
Claims priority, application Switzerland, June 13, 1960, 6,831/60
5 Claims. (Cl. 200—9)

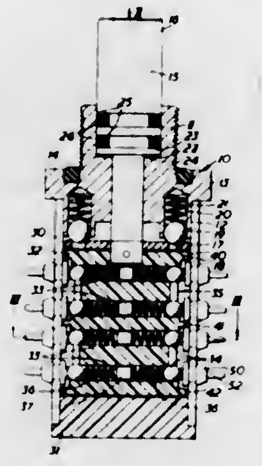


1. Apparatus for controlling a sequence of different operations, particularly in a chemical cleaning machine, comprising a drum switch having a control drum with cams thereon, a frame with side plates, a plurality of electric switches on the side plates, a sliding bolt for actuating each electric switch and mounted on the side plates, at least one side plate being pivotally mounted and movable into two positions and the distance of the plate from the axis of said drum being variable to permit the sliding bolts to be lifted off said cams of the drum switch on rotation of the latter, and at least one locking bolt on one of the side plates to engage the drum switch

to secure said drum switch from turning as long as the side plate is being moved towards the same.

3,184,559
MULTI-CONTACT ROTARY ELECTRIC SWITCH WITH RESILIENTLY BIASED CONDUCTIVE PINS

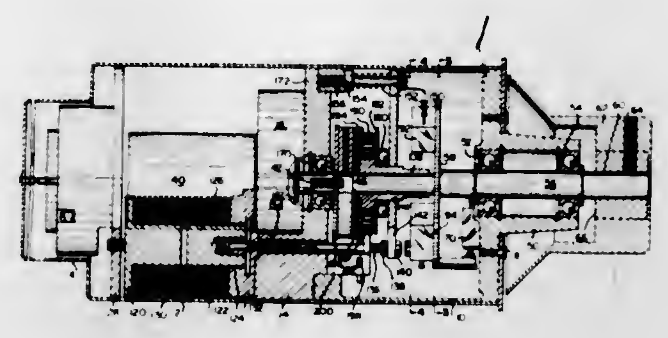
Robert Frederick Oxley, Priory Park, Ulverston, England
Filed June 5, 1961, Ser. No. 114,849
Claims priority, application Great Britain, June 7, 1960, 20,004/60
1 Claim. (Cl. 200—11)



A sealed miniature rotary switch comprising a housing including an open-ended cylindrical side wall member and end walls closing the open ends of said side wall member to form a closed cylindrical chamber, one of said end walls having means for securing said housing to a supporting panel, said side wall member having a plurality of apertures of circular section extending through it, the apertures being arranged in at least two spaced series, each said series comprising at least twelve apertures, the longitudinal axes of the apertures of each series lying in a common plane perpendicular to the longitudinal axis of said cylindrical side wall member and being radial with respect to the longitudinal axis of said cylindrical side wall member, each aperture containing a bushing, each said bushing having a base, a head portion too large to pass through the aperture and engaging the inner wall surface of said cylindrical side wall member around the aperture and a reduced portion which extends through the aperture and part of which projects outwardly beyond the outer wall surface of said cylindrical side wall member, each said bore having an elongated electrically conductive pin extending through it, each pin having a head portion engaging the head portion of the respective bushing, a circumferential enlargement lying within said part of the reduced portion of the respective bushing which projects beyond the outer wall surface of said cylindrical side wall member and expanding the said part to prevent radially inward movement of the respective bushing through the aperture in which it lies, and a terminal portion which extends radially outwardly beyond the radially outer end of the respective bushing; and a rotor including a rotary shaft mounted for rotation in the end wall of the housing having said securing means, sealing means sealing between said shaft and said end wall, a cylindrical rotor of insulating material rigidly secured to said rotary shaft within said closed cylindrical chamber, said closed cylindrical chamber and said rotary shaft and said rotor being coaxial, axially extending grooves in the outer cylindrical surface of said rotor, an elongated conductive member in each of said groove, and spring means urging said conductive members radially outwards of the rotor into selective contact with the heads of said pins.

3,184,560
DELAY TIMER

Paul R. Pittman, Jr., Dayton, Ohio, assignor to Globe Industries, Inc., Dayton, Ohio, a corporation of Ohio
Filed Apr. 19, 1962, Ser. No. 188,788
5 Claims. (Cl. 200—38)



1. Time delay means comprising, in combination:

an electric motor having an output shaft provided with a first drive means; an escapement drive shaft, a second drive means affixed to rotate with said drive shaft, said first and second drive means being in engagement with one another;

an escapement means driven by said second drive means whereby the drive shaft is permitted to rotate only at a precise constant speed;

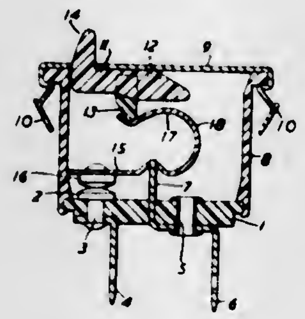
an electric switch;

switch actuating means for operating said switch at the end of a preselected timing interval; and

electromagnetic means for selectively coupling said drive shaft to said switch actuating means for operating same when said motor is activated.

3,184,561
TORSION SPRING ACTUATED SNAP ACTION ELECTRIC SWITCH

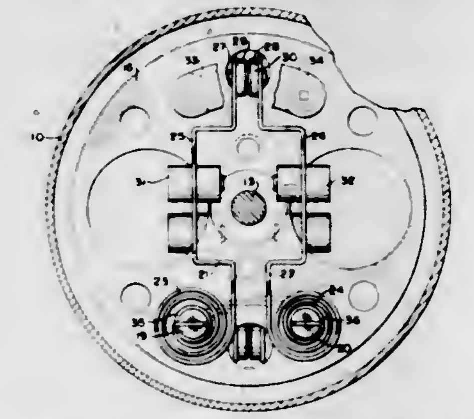
Clarence Willans Heath, Bleasby, Nottingham, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,406
Claims priority, application Great Britain, July 13, 1962, 27,089/62
3 Claims. (Cl. 200—67)



1. An electrical switch including a base having first and second stationary contacts mounted thereon, a movable contact, a one piece actuating element for effecting the movement of said movable contact out of engagement with said first stationary contact and a switch operating member engaging said actuating element, the former comprising a first arm pivotally supported by said second stationary contact acting as a fulcrum, and having said movable contact affixed to a free end thereof, a second arm in spaced superposed relation to said first arm and said base and having one end engaging said switch operating member and another end connected to said first arm by a resilient arcuate shaped portion, whereby depression of said switch operating member will cause said resilient arcuate portion to be placed in tension so as to store potential energy which is released after a predetermined movement of said switch operating member thereby effecting a rapid pivotal movement of said first arm about said second stationary contact and a disengagement of said movable contact and said first stationary contact.

3,184,562
SELF-COMPENSATING CENTRIFUGAL GOVERNOR

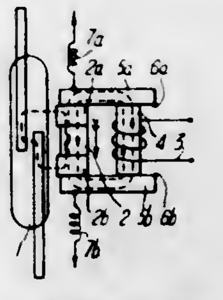
Edwin Ellner, Oxford, and Philip R. Burrows, Middlebury, Conn., assignors to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware
Filed Aug. 3, 1961, Ser. No. 129,018
8 Claims. (Cl. 200—80)



1. A centrifugal governor mechanism for performing a control function in response to the rotational speed of a shaft and in a manner substantially independent of external forces, comprising a mounting member fixed to the shaft for rotation therewith, a pair of control arm assemblies mounted on said mounting member and arranged with their effective masses symmetrically disposed with respect to a diametrical axis passing through the axis of rotation, each of said control arm assemblies being at one side of the mounting member for like free swinging movement toward and away from each other and having respective portions passing on opposite sides of said shaft, each of said control arm assemblies further having a free end portion movable toward and away from the other, resilient means urging said free end portions into contacting engagement and related to the effective masses of said contact arm assemblies in such manner as to accommodate like separating displacements of both of said free end portions under centrifugal forces resulting from rotation of said shaft and mounting member, each of said contact arm assemblies having an axis passing through the center of swinging movement thereof and the center of gravity thereof and positioned substantially at right angles to the direction of opening and closing movements of the free end portions thereof, the opening and closing movements of said free end portions being substantially colinear.

3,184,563
MAGNETICALLY CONTROLLED REED SWITCHING DEVICE

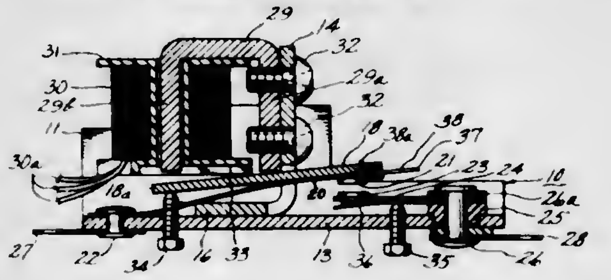
Edward Ronald Myatt, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 7, 1962, Ser. No. 222,146
Claims priority, application Great Britain, Sept. 21, 1961, 33,871/61
7 Claims. (Cl. 200—87)



1. An electrical switching device comprising a reed switch and associated magnetic flux system for selectively controlling the operation and restoration of said switch, the said magnetic flux system comprising a first flux source in flux linking relationship with said reed switch for generating magnetic flux of a magnitude insufficient to operate said reed switch, but sufficient to hold said reed switch operated, a selectively operable second flux source in flux linking relationship with said reed switch for generating magnetic flux and including correspondingly selectively operable armature means for magnetically shunting the said first flux source to operate the said switch, to hold the said switch operated, and to restore said operated switch in controlled sequence.

3,184,564
SHOCK PROOF RELAY

William D. Ryckman and William R. Jessup, Asheboro, N.C., assignors to General Electric Company, a corporation of New York
Filed Apr. 30, 1963, Ser. No. 276,928
7 Claims. (Cl. 200—87)



1. A relay comprising:

(*a*) a chassis providing a base and a pair of rigid upstanding side walls;

(*b*) a pair of relatively movable switch contacts supported by said chassis;

(*c*) an armature movably supported by said chassis for actuating one of said contacts;

(*d*) a magnetic frame positioned adjacent said armature to form a magnetic circuit therewith;

(*e*) a bobbin secured to the side walls of said chassis;

(*f*) a coil mounted on said bobbin for providing an electromagnetic force to said frame to magnetically attract said armature;

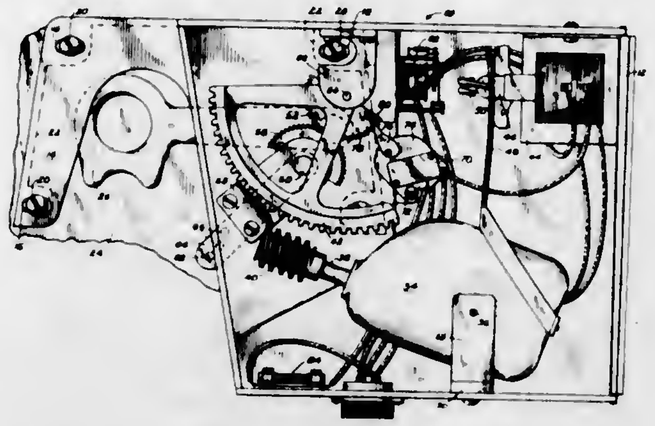
(*g*) means for supporting said frame from said chassis independently of said coil.

3,184,565
MOTOR DRIVEN APPARATUS FOR THE AUTOMATIC CLOSING OF A SWITCH

John Edward Schuster, Washington, D.C., assignor to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia
Filed Apr. 9, 1963, Ser. No. 271,754
6 Claims. (Cl. 200—92)

1. An electrical switch having an external shaft and manual operating means connected to said shaft, said manual operating means having a first rest position when said switch is open and a second rest position when said switch is closed, automatic switch closing apparatus cooperating with said switch, said apparatus comprising a driven gear, a lever mechanically connected to said driven gear and shaped to abut said manual operating means during automatic closing of said switch, a motor having a

shaft, a driving gear mounted on said shaft, means connected to said motor for engaging said driven gear and driving gear upon energization of said motor thereby rotating said driven gear and pivoting said lever to move said manual operating means from said first rest position towards said second rest position, means permitting overtravel of said manual operating means past said second rest position before said driven and driving gears become disengaged whereby said lever is forcibly separated from abutting engagement with said manual operating means when said last-named means returns to said second rest position.

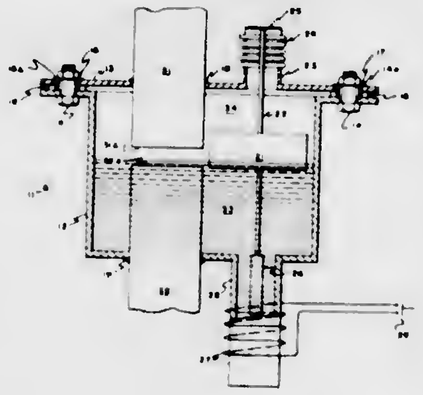


3,184,566

LIQUID DISPLACEMENT FLOAT SWITCH

Edward W. Kleinpeter, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Filed Mar. 30, 1961, Ser. No. 99,427
1 Claim. (Cl. 200—112)



An electrical switch comprising:

(1) container means being vapor proof and further comprising a bottom portion and a top portion when oriented vertically in its operable position, said bottom portion containing a liquid alloy consisting essentially of sodium and potassium, and the space thereabove being filled with an inert medium,

(2) said top portion further comprising nozzle means mounted so that its longitudinal axis extends in a vertical direction,

(3) said bottom portion further comprising a sump member extending in a vertical direction coaxially with said top portion nozzle means,

(4) conductor means further comprising at least two segments, one of said segments constituting a positive terminal and the other of said segments constituting a negative terminal, said segments projecting into said container means and being attached thereto in a fixed vertical spaced relationship so as to provide a space between the ends of said segments,

(5) bellow means mounted upon said top portion nozzle means,

(6) fluid displacing means positioned within said container means, said displacing means further comprising a guide rod operably oriented in a vertical direction with one of its ends extending into and connected to said bellow means mounted upon said top portion nozzle means, the other of its ends extending into said bottom portion sump member, the longitudinal axis of said guide rod being coaxial with the axes of said nozzle and sump,

(7) said guide rod fuurther comprising a ferro-magnetic member affixed to that end extending into said sump member, and

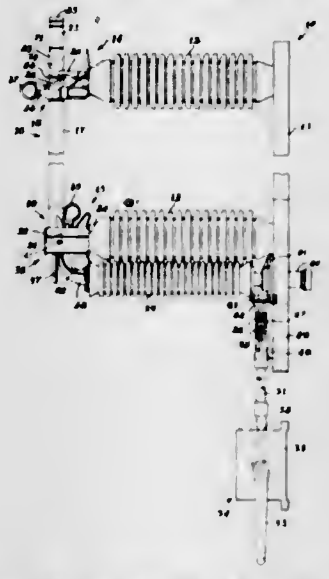
(8) electrical coil means positioned relative to said sump member such that upon being energized said ferromagnetic member by virtue of said bellow means is caused to move in a downward direction whereby said displacing means is immersed in said liquid conductor material so as to raise the level thereof and cause it to fill the space between the ends of said segments and establish continuity therebetween.

3,184,567

APPARATUS FOR TRIGGERING A DROPOUT FUSE COMPRISING A ROTATABLY MOUNTED TRIP ARM WHICH ENGAGES AN OPERATOR IN THE FUSE

William A. Gussow, St. Petersburg, Fla., assignor to S & C Electric Company, Chicago, Ill., a corporation of Delaware

Filed July 25, 1962, Ser. No. 212,236
9 Claims. (Cl. 200—114)



1. Apparatus for triggering a dropout fuse including a fuse tube latched at its upper end to an upper line terminal and pivoted at its lower end to a lower line terminal, a fusible element controlling the latch at said upper end and adapted on blowing to draw an arc and discharge the arc products through said lower end, trigger means to release said fusible element in its unblown state to unlatch said latch, and a rod-like operator movable endwise through said lower end upwardly into said fuse tube to trigger said trigger means for releasing said fusible element to interrupt the circuit and to unlatch the latch means at its upper end and permit it to swing downwardly to open position comprising, in combination:

(*a*) a support bracket extending laterally from said lower line terminal,

(*b*) trip arm means rotatably mounted at one end on said support bracket with its distal end normally out of the path of the arc products that flow from said lower end of said fuse tube on blowing of said fusible element and arranged to swing about an axis spaced from and extending transversely of the longitudinal axis of said dropout fuse and parallel to the plane of swinging movement of said fuse tube for engaging at its distal end said rod-like operator and moving it endwise upwardly into said fuse tube, and

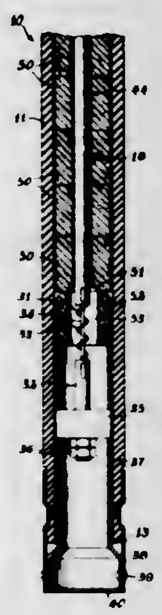
(*c*) means for rotating said trip arm to engage said operator.

3,184,568

CIRCUIT INTERRUPTER EMBODYING 2,4 DICHLORO BENZOIC ACID OR 3,4 DICHLORO BENZOIC ACID

Harold H. Fahnoe, Evanston, Ill., assignor to S. & C. Electric Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 1, 1962, Ser. No. 227,335
11 Claims. (Cl. 200—120)



1. An electric circuit interrupter comprising, in combination:

(*a*) means between which an arc is formed on interruption of the circuit, and

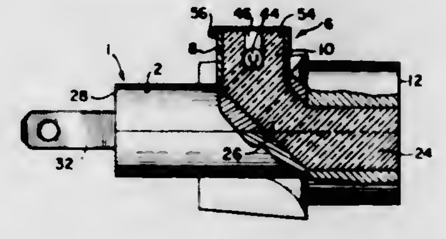
(*b*) means adapted to confine and extinguish said arc disposed along the path thereof from which an arc extinguishing medium can be evolved due to the heat of said arc for extinguishing it, the last named means being selected from the class consisting of 2,4-dichloro benzoic acid and 3,4-dichloro benzoic acid.

3,184,569

COMBINED PLUG RECEPTACLE AND CIRCUIT OVERLOAD PROTECTIVE DEVICE

Robert J. McLaren, 235 Foster Ave., Brooklyn, N.Y.

Filed Jan. 15, 1963, Ser. No. 251,628
6 Claims. (Cl. 200—121)



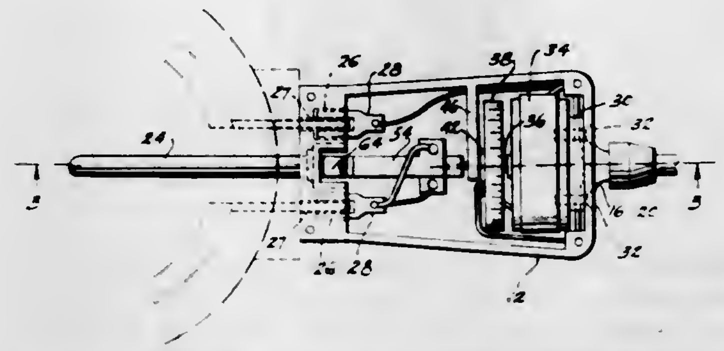
6. A plug receptacle comprised of a body having a central hollow portion; a top portion containing material of high internal light reflective character; a cavity within said top portion; a first end wall containing a pair of apertures therein; said material extending between said top portion and said apertures, said material appearing surfacedly of said first end peripherally of said apertures; elongate passages intermediate said apertures and said central hollow portion, said passages being formed through said material; a conductive strip within each said passage; a second end wall having a pair of contact members positioned thereat; a neon lamp mounted within said cavity; said conductive strips and contact members being connected in series with the line supply; said neon lamp being in shunt across the load side of the line, and a high resistive element in series with said neon lamp.

3,184,570

PLUG-TYPE DETACHABLE THERMOSTATIC-TIMER CONTROL UNIT FOR COOKING UTENSILS

William E. Gundelfinger, House Springs, Mo., assignor, by mesne assignments, to White-Rodgers Company, a corporation of Missouri

Filed Jan. 11, 1961, Ser. No. 82,071
2 Claims. (Cl. 200—136.5)



1. In a controlling connector plug for detachable connection with an electrically heated utensil, a hollow casing, a pair of socket terminals at one end of said casing adapted to receive prong terminals on a utensil for the mechanical and electrical connection of the plug to the utensil, a temperature sensing probe attached and extending from said one end of said casing for sensing the temperature of a utensil, and said probe including a member having a free end extending into said casing and movable in response to utensil temperature change, a flexible extension cord attached to the other end of said casing for connection with an A.C. power source, a synchronous timer motor in said casing and a circular cam rotated by said motor through a frictional driving connection, first and second switches in said casing, said first switch being a double throw switch having a double throw blade engageable by said cam when in a predetermined angular position, and said first switch having a first normally biased throw position when not engaged by said cam and a second throw position to which it is moved when engaged by said cam, said second switch being engaged by said free end of said probe member and having a cold position and a hot position, a main circuit in said casing connecting said socket terminals with said extension cord and including in series arrangement when completed said first switch when in its second throw position to which it is moved by said cam and said second switch when in its cold position, and a parallel circuit branch in said casing for energizing said synchronous motor including when completed said first double throw switch when in its normally biased throw position, and said casing having a slot opening in one wall thereof and said circular cam having a portion of its periphery projecting exteriorly of said casing through said opening to facilitate the selective positioning of said frictionally driven cam.

3,184,571

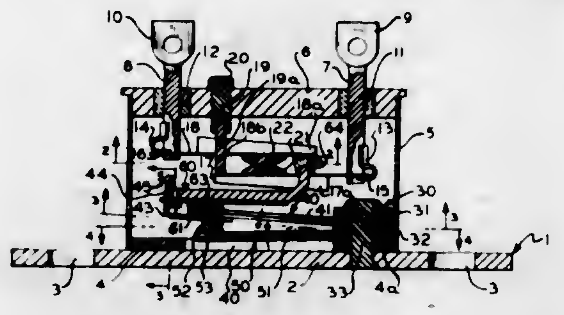
THERMOSTAT HAVING MOTION AMPLIFICATION AND SHOCK RESISTANCE

William C. Broekhuysen, New York, N.Y., assignor to G-V Controls Inc., Livingston, N.J., a corporation of New Jersey

Filed Jan. 22, 1962, Ser. No. 167,570
13 Claims. (Cl. 200—138)

1. A thermostat responsive substantially only to a variable environmental temperature including in combination a frame, two cantilever members each comprising a respective bimetallic element, having respective end portions rigidly secured to the frame and extending therefrom in generally face-to-face relationship, said members having respective portions, remote from their respective secured end portions, moved along generally parallel paths normal to the respective member faces by the re-

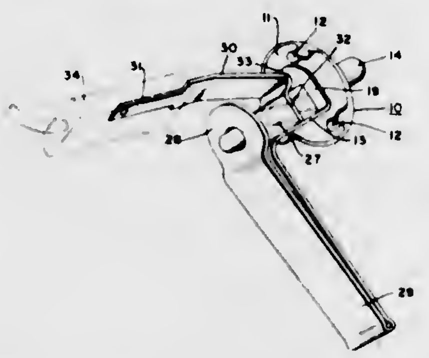
spective bimetallic elements in response to temperature change, the line between said remote portions forming a substantial angle with each of said paths, means for thermally exposing each of said elements substantially only to said environment temperature, a lever, having a first end pivoted to said remote portion of a first of said members and having a region intermediate its ends pivotally connected with said remote portion of the second member, extending along one of said members, and a pair of contacts moved relatively to each other by the second end of the lever.



3,184,572
SWITCH ASSEMBLY HAVING SELF-SUPPORTING STRUCTURE TO SIMPLIFY INTERFIT OF COMPONENT PARTS

Wilson H. West, Madison Heights, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 19, 1961, Ser. No. 146,181
5 Claims. (Cl. 200—159)

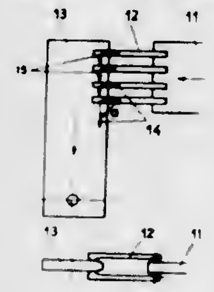


1. In a switch assembly having an unique interfit of component parts including an apertured base portion adapted for support such as by a door jamb, compartment frame and the like as well as including a plunger-like actuator means of insulating material at least partially in complementary mating fit with said base portion though movable reciprocably as to the base portion, improvement which comprises a male terminal means having a free blade end for engagement by female terminal means and having integral therewith a bifurcated barbed end to straddle the actuator means transversely in tightly fixed engagement at a location centrally of the actuator means as well as having an offset elbow-shaped contact portion in a location intermediate said blade end and said bifurcated barbed end, and a flat metal spring means looped into a generally L-shaped configuration between opposite ends thereof that fit the actuator means in locations axially on opposite sides of said bifurcated barbed end of said male terminal means, said metal spring means having one end against the base portion and having multiple purpose in wholly supporting the component parts as well as biasing the actuator means in a predetermined direction carrying said male terminal means including said offset elbow-shaped contact portion and resiliently maintaining alignment of parts assembled for predetermined intermittent engagement by said offset elbow-shaped contact portion against one end of said metal spring means for electrical energization between the base portion and female terminal means fitted to said free blade end of said male terminal means.

3,184,573
LAMINATED ELECTRICAL CONTACT ASSEMBLY

André Latour, Grenoble, France, assignor to Etablissements Merlin & Gerin, Grenoble, France

Filed Oct. 9, 1961, Ser. No. 143,861
Claims priority, application France, Oct. 13, 1960, 4,293, Patent 1,276,844
6 Claims. (Cl. 200—166)



1. An electrical contact assembly comprising a movable contact and a fixed contact,

a plurality of separate contact elements mounted in spaced substantially parallel relation on said fixed contact and constituting parallel paths for the electrical current in the closed position of the contacts,

said contact elements consisting each of two elongated resilient jaws,

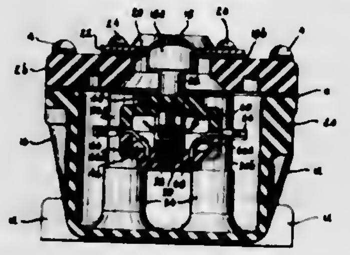
said movable contact consists of a movable blade disposed for engagement between said two elongated jaws of each of said contact elements in the closed position of the contacts,

said movable blade having a plurality of parallel spaced slits disposed relative to said contact elements to provide at least one slit extending in parallel relationship between two successive contact elements.

3,184,574
ELECTRIC SWITCH INCLUDING HOUSING AND CONTACT RETAINING MEANS

William G. Dennison, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Feb. 26, 1962, Ser. No. 175,669
10 Claims. (Cl. 200—168)



1. In an electric switch:

(*a*) an insulating housing comprising two portions, each having a cavity therein and an open end;

(*b*) at least one pair of stationary contact members, each of said stationary contact members comprising a terminal portion exterior of said housing and a contact portion within said housing;

(*c*) means within said housing for receiving and retaining the internal ends of said stationary contact members;

(*d*) means for securing said portions of said housing to one another with said stationary contact members clamped therebetween adjacent their terminal portions whereby said internal ends of said stationary contact members are rigidly held in said retaining means;

(*e*) an aperture in one of said housing portions;

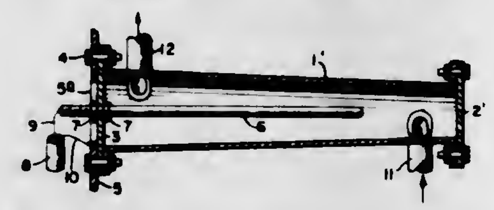
(*f*) an actuator comprising a movable contact carrying portion within said housing and an operating portion extending through said aperture exteriorly of said housing;

(*g*) and a movable contact mounted on said contact carrying portion of said actuator for bridging said stationary contact members.

3,184,575
APPARATUS FOR APPLYING HIGH FREQUENCY ELECTRICAL ENERGY TO LIQUIDS

Ralph G. Sargeant, 408 W. Windsor St., Lakeland, Fla.

Filed Mar. 28, 1963, Ser. No. 268,618
5 Claims. (Cl. 219—10.65)

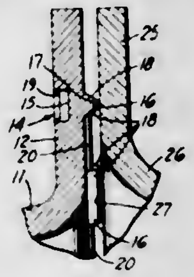


1. In the application of high frequency electrical energy to liquid materials, an electrode structure comprising an elongated, horizontally disposed, hollow chamber having conducting walls of circular cross section, an insulating disc closing one end of said chamber, an end wall closing the other end, a central rod conducting member extending axially thereof, so as to provide an open annular space between itself and said conducting walls, said rod member being substantially shorter than said chamber and supported at one end only on said insulating disc, means connecting said central electrode and said conducting walls with the poles of a high-frequency generator, an inlet pipe delivering tangentially into said annular space at a point adjacent said end wall, and beyond the end of said central rod member, and an outlet pipe extending from the upper side of said annular space at a point adjacent said insulating disc.

3,184,576
BALL JOINT ASSEMBLY

Dale G. Bazili and Vernon L. Pickering, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 26, 1962, Ser. No. 212,693
12 Claims. (Cl. 219—93)

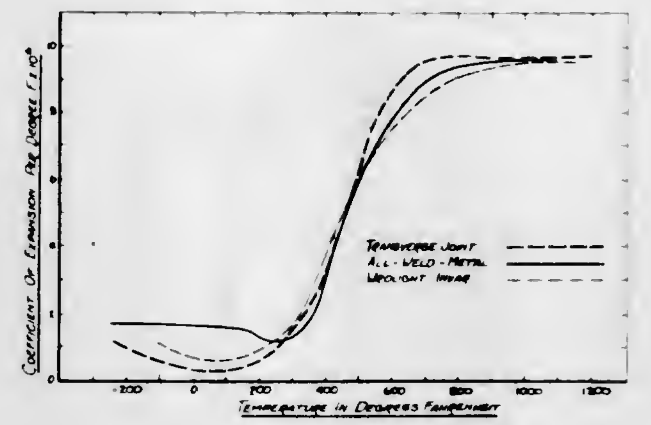


1. In a ball joint assembly including a cover portion and socket portion to be joined to each other, an improvement which comprises having a combination projection weld and seal therefor which includes lug-like weld projections at predetermined locations on at least one of the portions and each having a depth dimension greater than that of another longer though further more shallow embossed projecting portion also on at least one of the portions so as to bond and seal collectively during welding operation between the cover and socket portions with less power and less heat due to limited-area initial melting of said lug-like welding projections followed by melting of the embossed projecting portion during welding operation though sufficient heating occurs to fuse said projections and said projecting portion for bonding and sealing respectively as well as structurally between the cover and socket portions.

3,184,577
WELDING MATERIAL FOR PRODUCING WELDS WITH LOW COEFFICIENT OF EXPANSION

Charles E. Witherell, Bound Brook, N.J., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 18, 1963, Ser. No. 252,382
16 Claims. (Cl. 219—137)

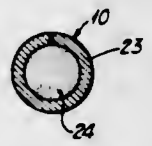


1. A filler metal for use in inert-gas arc welding containing, by weight, about 36% nickel, about 3% manganese, about 1% titanium, about 0.1% silicon, about 0.1% carbon, about 0.02% calcium with the balance, apart from incidental elements, essentially iron.

3,184,578
METAL TRANSFERRING PROCESS AND APPARATUS

Gus A. Albers, Houston, Tex., and William G. Schumacher, Hoffman Estates, Ill., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

Filed Apr. 13, 1962, Ser. No. 187,429
5 Claims. (Cl. 219—146)



1. A composite electrode for use in an electric arc metal transfer process comprising a tubular supporting member having the electrical characteristics of a bare wire and of no greater hardness than ordinary steel having uniformly associated therewith within the bore of said tubular member a granular mixture comprising between sixty-five and ninety percent by weight of a material having a hardness in excess of 8 Mohs and between ten and thirty-five percent by weight of a flux comprising slag-forming and arc-stabilizing materials of which at least about ten percent is said slag-forming material, the weight of said granular mixture being between twenty-five and seventy-five percent of the weight of said supporting member.

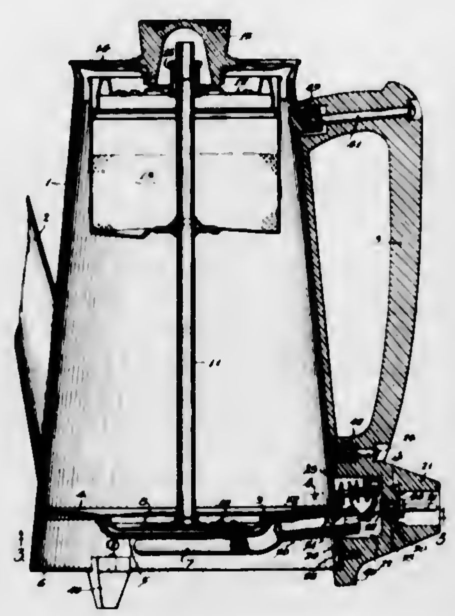
3,184,579
IMMERSIBLE ELECTRIC COOKING VESSEL

Chester H. Wickenberg, Elgin, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

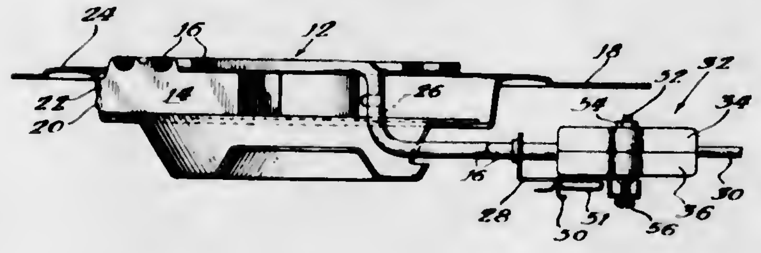
Filed Mar. 12, 1962, Ser. No. 178,958
10 Claims. (Cl. 219—441)

1. In a cooking device, a vessel, electrical heating means mounted adjacent the bottom of the vessel, water impervious hollow closure means positioned adjacent the side of the vessel, said closure means projecting laterally from the side of said vessel for a short distance as compared to its diameter, said closure means comprising a single piece integral member and being formed from an electrical and thermal insulating material, opening means formed in said closure means adjacent said vessel side,

water impervious sheath means for said heating means extending into said opening means and opening into said closure means but otherwise being closed, aperture means formed in said closure means, plug-in type electrical connector means mounted in said aperture means for energizing said cooking device, a switch in said closure means electrically connected to said connector means and heating means for controlling said cooking device, water impervious seals for said opening and aperture means whereby said cooking device is fully immersible in liquid for washing, said closure means being devoid of opening or aperture means other than the mentioned opening and aperture means, and said closure means being relatively small as compared to the size of said vessel.

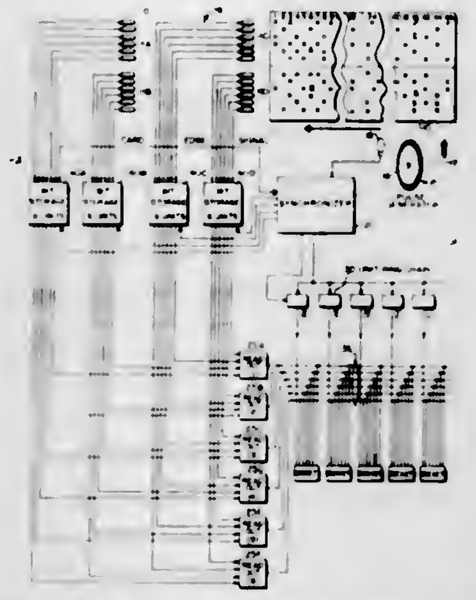


3,184,580
SURFACE UNIT DISCONNECT
Leroy C. Hanson, Elmhurst, Ill., assignor to Ferro Corporation, a corporation of Ohio
Filed Aug. 10, 1962, Ser. No. 216,171
1 Claim. (Cl. 219—451)



In combination with a surface heating element having a pair of juxtapositioned end portions provided with contacts at the terminal ends thereof, a mounting means comprising: an insulator block having a pair of apertures therein adapted to receive said contacts, second electrical contacts within said block adapted electrically to engage the first mentioned contacts upon insertion of said first mentioned contacts into said apertures, a plate extending between and connected to said end portions, said plate being provided with a resilient catch member having a flat surface area portion and a recurved portion, a latch secured to the insulator block and having a slot adapted to receive said portions and having a flat surface area positioned to engage the flat surface of said catch when the first mentioned contacts are inserted in said aperture, said recurved portion extending outwardly of said slot to provide a means for releasing the latch, and a ground connection on the insulator block adapted to be connected to ground, said ground connection being electrically connected to said latch.

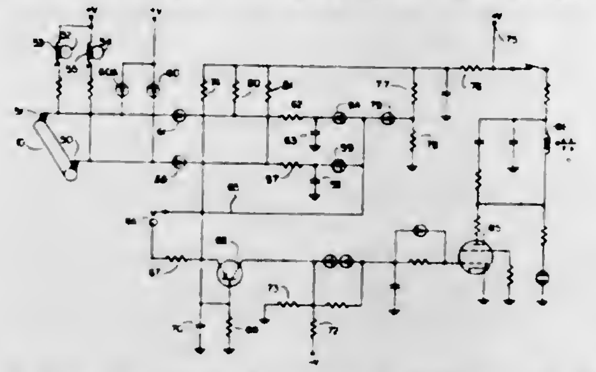
3,184,581
SYSTEM FOR CO-ORDINATING SYNCHRONIZING SIGNALS
Victor A. Willoughby, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 3, 1961, Ser. No. 100,144
8 Claims. (Cl. 235—61.11)



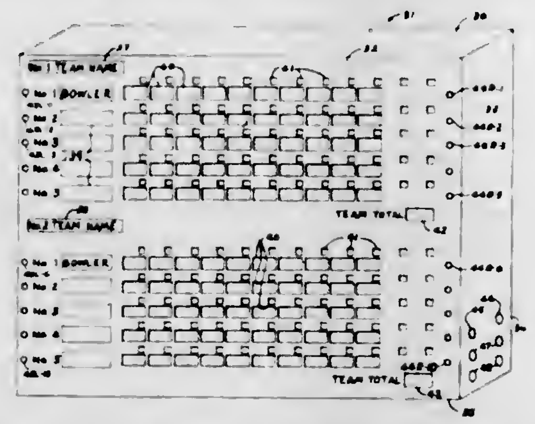
1. In a device for synchronizing a number of successive groups of signals with timing pulses to initiate parallel read-out of each group of signals, said groups of signals being derived from information encoded in successive columns on an information-bearing medium having means for identifying each number of groups of signals, the combination comprising a sensing station, means for continuously moving said medium through said sensing station, means arranged in said sensing station for deriving a group of signals from each column of encoded information on said medium, means for continuously generating periodic timing pulses, a predetermined number of said timing pulses being generated for the internal required to move each successive column on said medium past said signal-deriving means, means responsive to each signal in a group of signals for storing its respective signal, means including a number of units in accordance with said predetermined number of timing pulses and responsive to a corresponding number of successive control pulses derived from said timing pulses for providing a corresponding number of successive output pulses, any one of said output pulses being applied to said storing means for simultaneously releasing the stored signals therefrom before receipt of the next group of signals, means responsive to a signal derived from said identifying means for providing a control signal, said control signal being delayed in accordance with the relation of said identifying means to the first column on said medium, and control means normally inhibiting said timing pulses and responsive to said control signal for being rendered receptive to said timing pulses for producing said control pulses.

3,184,582
MONITOR CIRCUIT FOR A TABULATING CARD READER
Theodore Sapino, Framingham, Mass., assignor to Honeywell Inc., a corporation of Delaware
Original application Mar. 28, 1958, Ser. No. 724,554, now Patent No. 3,081,940, dated Mar. 19, 1963. Divided and this application June 22, 1962, Ser. No. 207,142
5 Claims. (Cl. 235—61.11)

1. A monitor circuit for a tabulating card reader comprising a pair of hole sensing brushes adapted to engage a grounded surface in the absence of a tabulating card or upon the presence of holes in a tabulating card, a bistable magnetic core circuit directly connected to said brushes and each adapted to have a core therein set by the presence of a grounding signal at the related one of said brushes, a transistor circuit having an emitter-collector circuit, bias means connected to said transistor to maintain said transistor effectively nonconducting in said emitter-collector circuit, a timing switch synchronously operated in connection with the sensing of tabulating cards, a second bias circuit, and means including said timing switch and one or the other of said brushes for effectively activating said second bias circuit on said transistor to render said transistor conducting in said emitter-collector circuit upon the presence of a predetermined conducting condition at one or the other of said brushes.



3,184,583
BOWLING GAME SCORING APPARATUS
Charles E. Bawtinheimer, 2805 Ronan St., Midland, Mich.
Filed May 25, 1961, Ser. No. 112,662
38 Claims. (Cl. 235—92)



1. Bowling game scoring apparatus comprising a number of pinfall registering devices corresponding in number to the number of frames to be played in said game; operating means connected at the beginning of the game to all of said devices; actuating means connected to said operating means and operable at the conclusion of each frame to actuate said operating means in accordance with the number of pins felled in such frame; normally inactive disabling means for each of said devices operable to disconnect said operating means from said devices in succession as the game progresses from frame to frame; and means connected to said disabling means operable at the conclusion of registering felled pins in each frame to activate the disabling means associated with such frame and disable its registering device.

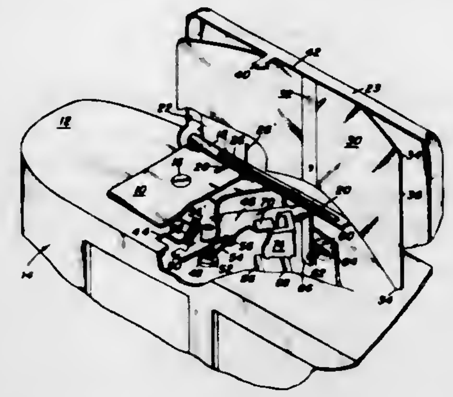
3,184,584
PHOTOGRAPHIC FLASH UNIT
John J. Bundschuh, Penfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 28, 1963, Ser. No. 261,661
Claims priority, application Germany, Aug. 29, 1962, K 42,347
4 Claims. (Cl. 240—1.3)

1. A photographic flash unit comprising:

(*a*) a support;

(*b*) a lamp socket mounted on the support for releasably accepting the base of a flash lamp;

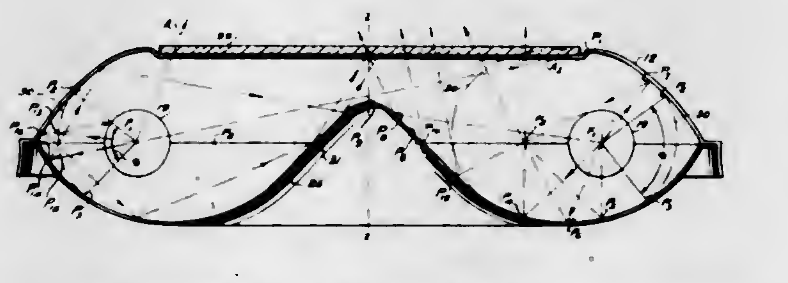
(*c*) a reflector, including a latch, hingedly mounted on the support and movable between an inoperative position and an operative position;



(*d*) a member, including a keeper and a lamp retention detent, mounted on said support for movement between a first position, in which said keeper is in position to engage said latch of said reflector when said reflector is in said inoperative position and said lamp detent is in position to engage the base of a flash lamp in said lamp socket and a second position, in which said keeper releases said latch of said reflector to allow said reflector to move to said operative position and said lamp detent is moved out of engagement with the base of said lamp to permit removal of said lamp from said lamp socket; and

(*e*) control means for moving said member between said first and second positions.

3,184,585
ILLUMINATING DEVICE
Auguste L. M. A. Rouy, Scarsdale, N.Y., assignor to The Ednalite Corporation, Peekskill, N.Y., a corporation of New York
Filed May 7, 1962, Ser. No. 192,674
6 Claims. (Cl. 240—2)



1. An illuminating device comprising

A. a circular plate of translucent, light dispersing material,

B. a circular light tube lying in a plane parallel to, and spaced from said plate and being concentric with the latter, and

C. means defining a reflecting surface of revolution extending from the periphery of said circular plate and enveloping said light tube, said reflecting surface of revolution being defined by a generatrix revolved about an axis perpendicular to said plate at the center of the latter, said generatrix including

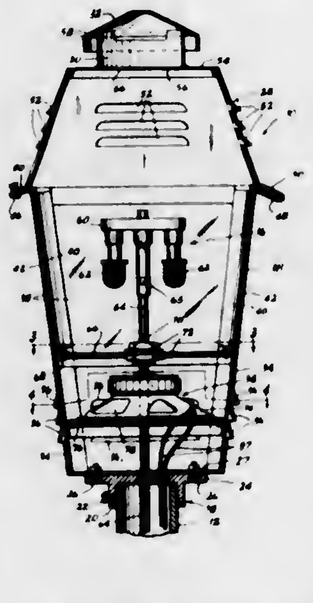
  (1) an outer part formed substantially as an arc of an ellipse having its major axis extending radially with respect to said axis with the radially outer focus of the ellipse located at said light tube, and

  (2) an inner part extending from said arc of an ellipse to said axis of revolution and formed substantially as a reversed curve, said inner part of the generatrix defining a mound-like central portion on said reflecting surface of revolution which is directed toward said plate

so that light rays emitted from said light tube in directions away from said plate are reflected by said surface so as to impinge on the plate and thereby effect homogeneous illumination of the plate with a high level of intensity.

3,184,586
GAS LANTERN AND LOUD SPEAKER HOUSING

Josef J. Hammes, St. Louis, and Basil E. Bickel, La Due, Mo., assignors to Lowell Manufacturing Company, Maplewood, Mo., a corporation of Missouri
Filed May 31, 1962, Ser. No. 198,917
7 Claims. (Cl. 240—2)

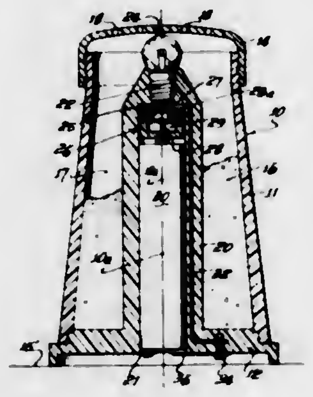


1. A housing for a loud speaker and gas light comprising:

(*a*) a base,
(*b*) means supporting a loud speaker within said housing above said base,
(*c*) a gas burner means supported within said housing above the loud speaker,
(*d*) conduit means passing from beneath the base upwardly through the center of the loud speaker to said gas burner for furnishing a supply of gas to said gas burner.

3,184,587
ILLUMINATED CONDIMENT SHAKER

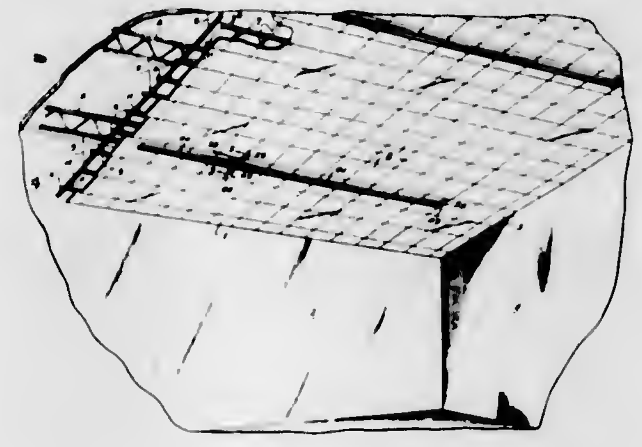
Louis Quijada, South Pasadena, Calif., assignor to Mark W. Lee, South Pasadena, Calif.
Filed Nov. 23, 1962, Ser. No. 239,629
7 Claims. (Cl. 240—6.46)



1. A shaker-type dispenser, comprising:
a hollow body enclosing a space to contain a quantity of material to be dispensed, said body having a base on which the dispenser is adapted to rest in an upright position and a wall section at its upper end having perforations through which the material can be dispensed when the body is tilted toward an inverted position;
a socket inside the upper portion of said body to receive a light and to position the light closely adjacent the perforated wall section;
a battery-receiving chamber within the body;
and circuit means to energize a light in said socket from a battery in said chamber including position-responsive switch means normally open when the dispenser is resting on said base and closing the circuit when the dispenser is tilted to dispensing position.

3,184,588
CEILING MOUNTED FLUORESCENT LIGHTING SYSTEM

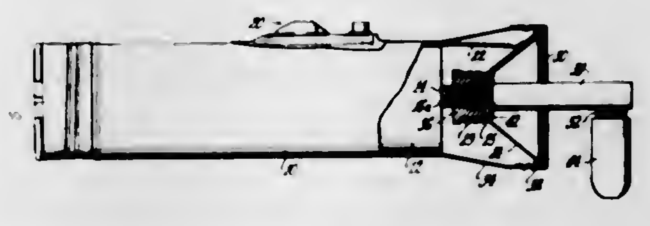
Eugene F. Gaines, Joplin, Mo., assignor to The Celotex Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 12, 1962, Ser. No. 223,023
7 Claims. (Cl. 240—9)



1. In a ceiling structure composed of modular nonmetallic acoustical panels, at least one of said panels having a hole in it, said hole being substantially smaller in each direction than either the length or the width of said panels, means for supporting said panels, paired fluorescent lamp receptacles, said receptacles each having a pillar portion and a base portion, said pillar portion providing a terminal for a fluorescent lamp tube, said base portion providing a terminal for connection with a power source, the base portion of said receptacles being disposed in part at least above the lower surface of said panels, means above the panels for supporting said base portion, and at least the pillar portions of said receptacles extending through said hole to fully expose its fluorescent tube terminal in spaced relation with and on the lower side of said panel.

3,184,589
FLASHLIGHT ATTACHMENT

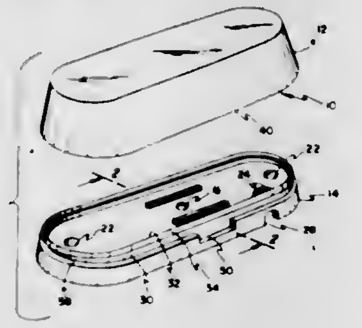
Alfred L. Gibbens, 2203 Nelson Ave., Redondo Beach, Calif.
Filed Apr. 8, 1963, Ser. No. 271,419
4 Claims. (Cl. 240—10.67)



1. An attachment head for functionally connecting to a portable tubular case containing a battery therein, individual lamps at alternate positions respectively within and without the case, and comprising in combination: a generally funnel-shaped support having an outer edge removably lodged within one end of said case posterior to an overlying window area, said funnel having a central, dependent neck containing socket means adapted to detachably retain a lamp in electrical contact with said battery; a generally annular attachment collar encircling and restrainingly overlying the outer edge of said support when the collar is secured to said case; a centrally apertured disk removably occupying said window area by means of said attachment collar, the aperture of which disk is disposed to transmit light from a lamp in said socket and alternately to supportingly embrace said longitudinal shaft when the latter is mounted in the socket and projecting outward through the aperture; a lens removably mounted in the aperture of said disk; and a longitudinal shaft having means for retention in said neck alternate to said lamp, in a position projecting outward beyond the end of said case and functionally carrying a generally terminal lamp at its outer end in electrical contact with said battery.

3,184,590
LENS AND LAMP BODY ASSEMBLY

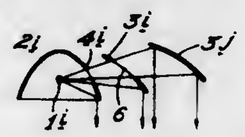
Robert I. Nagel, Skokie, Ill., assignor to Elastic Stop Nut Corporation of America, Union, N.J., a corporation of New Jersey
Continuation of application Ser. No. 216,538, Aug. 13, 1962. This application June 12, 1964, Ser. No. 374,578
8 Claims. (Cl. 240—11.2)



1. In an electric lamp housing having component parts including a base and a lens readily assembled with the base and disassembled therefrom, means for maintaining the lens assembled with the base, said means comprising:
a continuous annular groove means in one of said component parts;
a continuous annular projection means integral with the other of said component parts and projecting radially therefrom for engaging said groove means when the parts are in assembled relationship;
first and second continuous annular resilient means each integral with one of said parts, one said means carrying said groove means and the other of said means carrying said projection means, said first and second annular means normally projecting axially from their respective component parts and overlapping with one another when the parts are in assembled relationship for flexing radially away from one another and from their respective normal positions in response to axial movement of said parts toward said assembled relationship and returning toward said normal positions upon completion of such assembly such that the projection means will engage the groove means with sufficient interlocking force to maintain said parts in assembled relationship with at least one of said first and second annular means near enough to its normal position to preclude the maintenance of excessive deflection in said one means while the parts remain in assembled relationship.

3,184,591
PROJECTORS, MORE PARTICULARLY MOTOR VEHICLE HEADLIGHTS

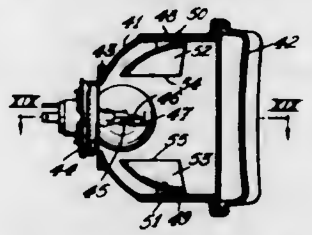
Pierre Cibié, 150 Ave. de Wagram, Paris, France
Filed July 19, 1957, Ser. No. 673,073
Claims priority, application France, Nov. 21, 1956, 726,051, Patent 1,160,871
2 Claims. (Cl. 240—41.35)



1. A light projector comprising a reflector having the shape of a paraboloid of revolution with a circular aperture, said reflector having a focus, a light source at said focus, said reflector enveloping said light source and collecting to a maximum light flux emitted by said source to reflect the light flux forwardly through the aperture to provide illumination, said reflector including a portion constituting a window which permits the passage therethrough of light, said window having an outline of generally rectangular form with substantial extent in both dimensions, an outer reflector supporting the first said reflector therewithin as a self-contained unit, said outer reflector presenting a relatively large apparent area of generally rectangular shape narrower in extent than the aperture of the reflector but laterally projecting therebeyond for reflecting light flux passing through the window in the inner reflector to increase the range of the projector while the overall size of the projector is restricted in one dimension to the diameter of the inner reflector, said outer reflector having the shape of a paraboloid of revolution with a focus coincident with the light source, said outer reflector having an outer contour corresponding in shape with that of the window in the inner reflector and being located behind the latter a distance related to the size of the window and the distance of the light source from the surface of the inner reflector to directly collect and reflect all of the directly emitted light flux from the light source which passes through the window in a direction parallel to the light flux reflected from the inner reflector, the outer reflector extending forwardly of the opening of the inner reflector to receive directly emitted light flux from the light source for reflecting the received light flux forwardly and parallel to the light flux reflected from the inner reflector.

3,184,592
PROJECTORS, MORE PARTICULARLY MOTOR VEHICLE HEADLIGHTS

Pierre Cibié, 150 Ave. de Wagram, Paris, France
Filed Apr. 13, 1961, Ser. No. 102,843
Claims priority, application France, Nov. 21, 1956, 726,051, Patent 1,160,871; Apr. 20, 1960, 824,729, Patent 77,538
4 Claims. (Cl. 240—41.35)



1. An enclosed self-contained headlight adapted for use in an automobile, said headlight comprising an outer reflector constituting a housing for said headlight, said outer reflector including a segment having the shape of paraboloid of revolution, said segment of said reflector having a focus, a source of light located at said focus whereby any light reaching said segment of said reflector will be reflected therefrom, said housing defining a sub-

stantially rectangular opening through which both reflected light from said reflector and direct light from said source may pass, a pair of inner reflectors supported from the outer reflector and diametrically located with respect to said light source, said inner reflectors consituting two segments of a paraboloid of revolution having a focus coincident with the light source and with the focus of the first mentioned segment of the outer reflector, said inner reflectors being operatively positioned within the outer reflector to define an opening through which light from the source will pass to the paraboloid segment of the outer reflector, said segment of said outer reflector having a surface extent sufficient to receive all of the light which passes the inner reflectors for reflecting the received light forwardly through the opening in the outer reflector, the inner reflectors being closely positioned to the source of light to collect, to a maximum, light emitted from said light source to provide efficient close-up illumination for said headlight, said segment of said outer reflector having a relatively large apparent area compared to the inner reflectors for providing wide range projection of reflected light concurrently with the light reflected by the inner reflectors, said headlight further comprising a second light source, the inner reflectors being an upper reflector and a lower reflector, means for illuminating only the upper reflector with the second light source, said upper reflector being supported from the outer reflector to project a beam of reflected light through the opening which is free from dark patches and light peaks.

3,184,593

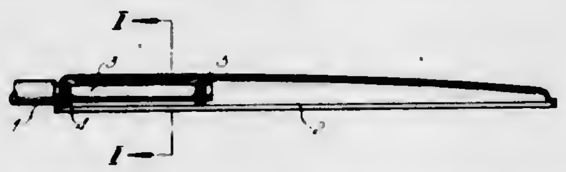
POLE-MOUNTED LAMP

Hubert Wiegelmann and Josef Müller, Neheim-Husten, Germany, assignors to Trilux-Lenze K.G., Neheim-Husten, Germany, a firm

Filed Nov. 8, 1962, Ser. No. 236,334

Claims priority, application Germany, Nov. 17, 1961, T 21,138

5 Claims. (Cl. 240—52)



1. A pole-mounted lamp comprising a lamp housing, said lamp housing including an integral wall portion, said wall portion defining a bushing, said bushing including a base portion adjacent said wall portion and an end portion terminating in the interior of said housing, said bushing being generally tubular, the end portion of said tubular bushing being formed with a plurality of spaced lugs, and means surrounding said bushings for clamping said bushing and the lugs thereof against an end portion of a pole lamp adapted for insertion through said opening and bushing.

3,184,594

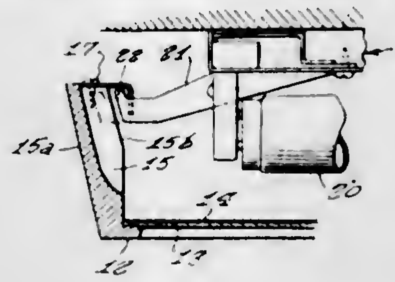
LIGHTING FIXTURE WITH INTERCHANGEABLE DIFFUSERS

Al L. Siegel, 2095 Central Drive N., East Meadow, Long Island, N.Y.

Filed Feb. 5, 1963, Ser. No. 256,294

3 Claims. (Cl. 240—78)

1. A lighting fixture with interchangeable ornamental diffusers, comprising in combination a support member adapted to be secured to a ceiling and provided with two pairs of oppositely extending spaced hooks, a frame formed with inclined sides and a bottom flange extending inwardly thereof said sides provided with two pairs of oppositely aligned slots removably receiving the respective hooks, two pairs of spaced angular brackets secured to the top portions of said sides above said slots respectively, each of said brackets having recesses removably engaging one of said hooks, an ornamental diffuser panel detachably positioned on said flange in spaced relation from said support, a translucent sheet detachably superimposed on said panel and means for securing a fluorescent lamp to said support intermediate the support and said sheet.



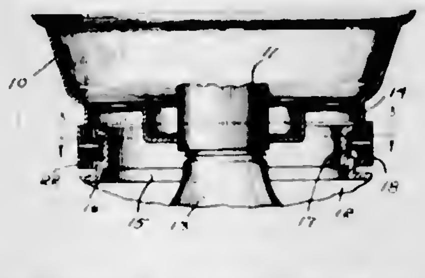
3,184,595

LIGHT FIXTURE

Fred E. Hooper, 272 Elm St., Biddeford, Maine

Filed Mar. 5, 1963, Ser. No. 262,909

3 Claims. (Cl. 240—128)



1. In a light fixture of the type that is for use with a shade having an external annular attaching shoulder, a housing member having a mouth to receive said shoulder, said mouth having a series of circumferentially spaced apertures, and a resilient contracting ring biased inwardly and encircling said mouth with its ends overlapping, said ring including a plurality of elements extending freely through said apertures and under said shoulder, the ring ends including outwardly projecting portions for digital engagement in drawing said ends towards each other to a predetermined extent to expand said ring, the expansion of said ring being such as to withdraw said elements from under said shoulder without withdrawing them through said apertures.

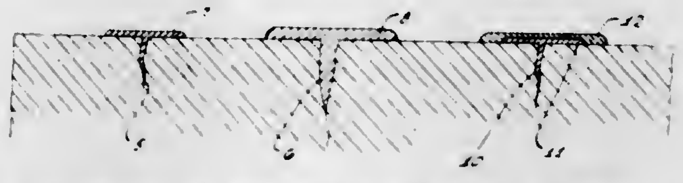
3,184,596

FLAW DETECTION METHOD USING A LIQUID SOLVENT DEVELOPER

James R. Alburger, 5007 Hillard Ave., La Canada, Calif.

Filed Oct. 10, 1961, Ser. No. 147,391

8 Claims. (Cl. 250—71)



2. The method of detecting surface flaws in a part comprising the steps of,

(*a*) immersing said part in an ultra-sensitive fluorescent penetrant;

(*b*) draining and emulsifying said part;

(*c*) washing said part thoroughly; and

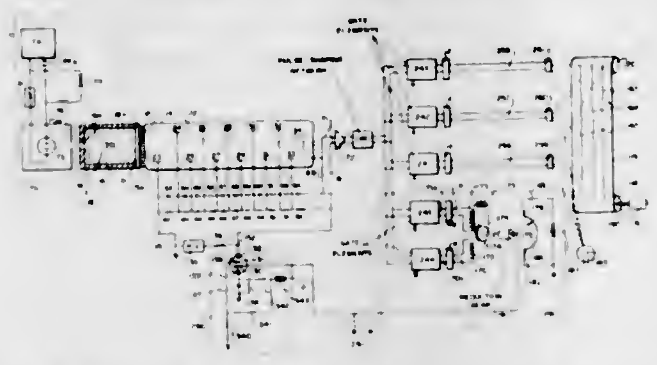
(*d*) immersing said part in polyethylene sorbitan monolaurate and then drying, to bring the operating point of the dye in said fluorescent penetrant from below the threshold of visibility to an operating point above the threshold of visibility.

3,184,597

STABILIZED SCINTILLATION DETECTOR

Serge A. Scherbatskoy, 804 Wright Bldg., Tulsa 3, Okla. Original applications Sept. 23, 1958, Ser. No. 762,890, and Aug. 17, 1959, Ser. No. 834,182, now Patent No. 3,089,955, dated May 14, 1963. Divided and this application Aug. 23, 1962, Ser. No. 218,992

11 Claims. (Cl. 250—71.5)



1. In a scintillation detector for detecting incoming radiation comprising quanta, a substance adapted to interact with said quanta and to produce characteristic light pulses as a result of such interaction, said characteristic light pulses having intensities respectively representing the energies of said quanta, a standard electric light source, means for feeding to said source electric energy in current pulses of predetermined magnitude and controlled repetition rate, producing thereby standard light pulses of uniform brightness exceeding that of said characteristic light pulses, a photoelectric system responsive to said characteristic light pulses and to said standard light pulses for producing current impulses having magnitudes representing the respective magnitudes of said characteristic light pulses and producing other current impulses representing the magnitudes of said standard light pulses, a controllable supply of voltage for energizing at least a part of said photoelectric system, and means responsive to changes in the magnitude of said other current impulses for controlling said voltage supply to maintain said system in calibration despite changes in sensitivity of said photoelectric system.

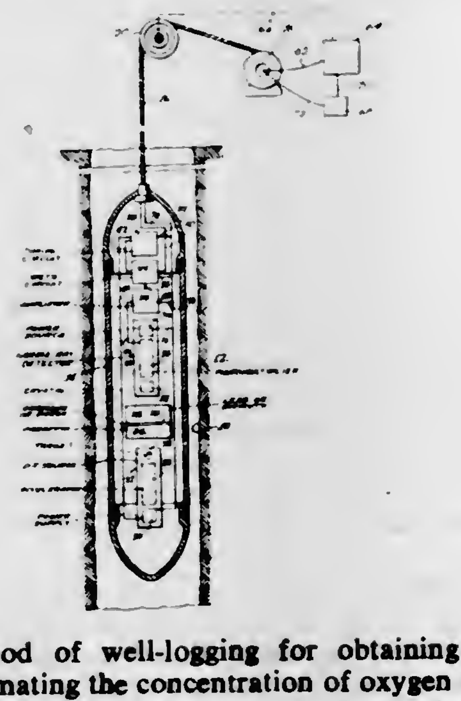
3,184,598

RADIOACTIVE WELL LOGGING METHOD

Charles W. Tittle, Indiana Township, Allegheny County, Pa., assignor, by mesne assignments, to Schlumberger Limited (Schlumberger N.V.), Houston, Tex., a corporation of the Netherlands

Filed May 17, 1954, Ser. No. 430,009

2 Claims. (Cl. 250—83.3)



1. A method of well-logging for obtaining data of value for estimating the concentration of oxygen in formations, comprising moving a source of pulsed fast neutrons of at least about 11 m.e.v. and a gamma-ray detector along a borehole, and measuring only the gamma-rays having about 6.13 m.e.v. energy that are detected during time intervals intermediate the neutron pulses and after substantial disappearance of the primary pulsed neutrons.

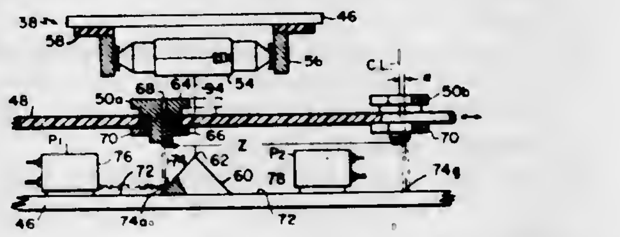
3,184,599

TABLE STOPPING DEVICE HAVING NULL SENSOR

Robert C. Benton, State College, Pa., assignor to Centre Circuits, Inc., State College, Pa., a corporation of Pennsylvania

Filed Aug. 13, 1962, Ser. No. 216,655

13 Claims. (Cl. 250—220)



1. The combination of a relatively fixed null sensor comprising longitudinally spaced apart photosensitive devices, a transversely disposed reflective object therebetween of prism shape and presenting a beam splitting knife edge, an illuminating bulb in vertically spaced apart confronting relation to the knife edge of the prism and disposed in the vertical plane of the photosensitive devices, and an intervening, longitudinally movable opaque strip between the bulb and prism, said strip carrying upstanding beam-guiding tube means establishing cooperation with the reflective object when precisely in the vertical plane of the knife edge, whereby the core of the light beam shines squarely on the edge so as to precisely split the beam from said bulb equally between the photosensitive devices, said upstanding beam guiding tube means comprising a plurality of equally spaced apart tubes carried by the opaque strip and having means of adjustment with respect to the strip so that the strip undergoes precisely uniform amounts of travel between the point where one tube shines light squarely on the edge and the points where each successive tube shines the light squarely on said edge.

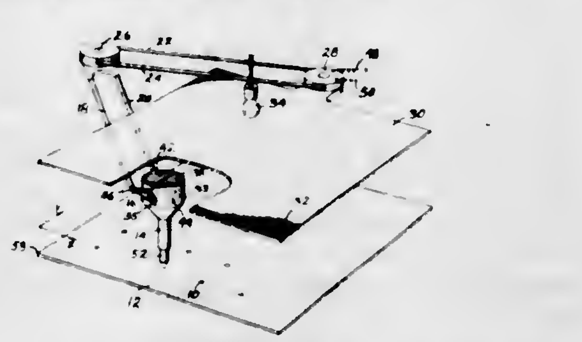
3,184,600

PHOTOSENSITIVE APPARATUS FOR MEASURING COORDINATE DISTANCES

John T. Potter, Center Island, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed May 7, 1963, Ser. No. 278,587

6 Claims. (Cl. 250—237)



1. Apparatus for measurement of the incremental distance along coordinate axes between a reference point and another point spaced therefrom which comprises,

means to define a first translucent plane mounted a predetermined distance above a second reference plane,

a first plurality of opaque gird lines in the first plane extending in one direction defining the direction of one coordinate axis, a second plurality of opaque grid lines in the first plane extending in another direction defining a different coordinate axis, the grid lines of each plurality being spaced apart by a predetermined distance,

a movable radiation sensor device having a housing with a third plurality of opaque grid lines extending in a direction parallel to one of the coordinate axes and a fourth plurality of opaque grid lines parallel to the other coordinate,

said housing being smaller than said predetermined distance between said first and second planes,

a pointed element connected directly to said housing so that the pointed element is moveable adjacent said second plane with said housing maintained adjacent said first plane,

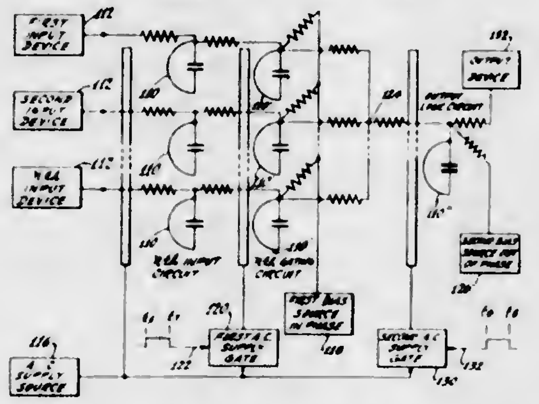
a radiation sensing element mounted within the housing on the opposite side of each of said third and fourth pluralities of opaque grid lines from said first and second opaque grid lines,

a radiation source means positioned to emit radiations past said first, second, third and fourth opaque grid lines,

means connected to said radiation sensing elements to generate a pulse output in response to modulation of the incident radiation by the interference pattern between the respective grid lines.

3,184,601
SWITCHING SYSTEMS

Walter F. Kosonocky, Newark, and Lubomyr S. Onyshkevych, Princeton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Oct. 16, 1958, Ser. No. 767,673
20 Claims. (Cl. 307—88)

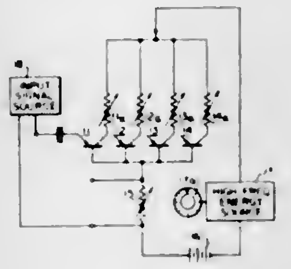


5. A switching system comprising a plurality of parametric oscillator circuits each having a first and a second control input and an A.C. supply input, each of said circuits initially being in a non-oscillating condition, means for applying a burst of A.C. signals to said A.C. supply inputs of all said circuits, and means for controlling the duration of said burst of A.C. signals to a given, maximum time interval, means for applying a first control signal of one phase to said first control input of all said circuits, and means for applying other control signals to said second inputs of all said circuits, certain of said other signals being of said one phase and the remaining of said other signals being of the phase opposite said one phase, whereby said circuits receiving said certain other signals change from said non-oscillating to an oscillating condition.

3,184,602
MULTISTABLE ELECTRICAL SWITCHING MEANS EMBODYING SEMICONDUCTORS

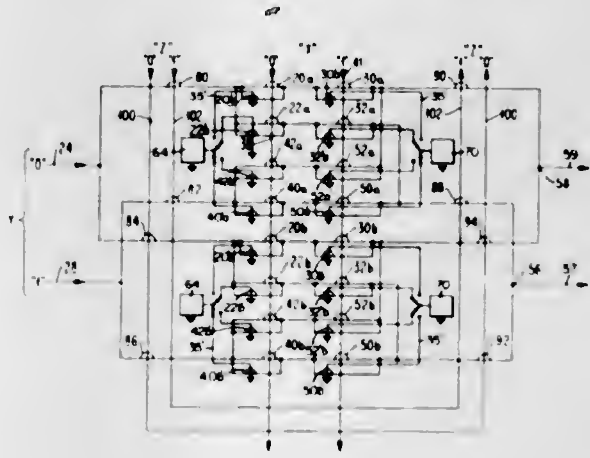
George Abraham, 3107 Westover Drive SE., Washington, D.C.
Filed Jan. 31, 1961, Ser. No. 86,262
14 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An electrical circuit having a composite voltage-current characteristic with a plurality of negative resistance regions comprising at least one plurality of individually operative semiconductor devices each having a significant internal impedance and each capable of exhibiting a negative resistance characteristic, a pair of terminals, means connecting each of said individually operative semiconductor devices in parallel across said pair of terminals, output load impedance means and means for energizing said devices serially connected across said pair of terminals to form a current conductive loop with said plurality of individually operative devices connected across said pair of terminals, such that each of said individually operative devices has a negative resistance characteristic of the short-circuit stable variety, each of said individually operative devices having a different negative resistance, the negative resistances of said devices being in such relation that a composite voltage-current characteristic is provided thereby, and control means connected to said electrical circuit for biasing said devices for operation at selected points on said composite voltage-current characteristic.



3,184,603
LOGIC PERFORMING DEVICE

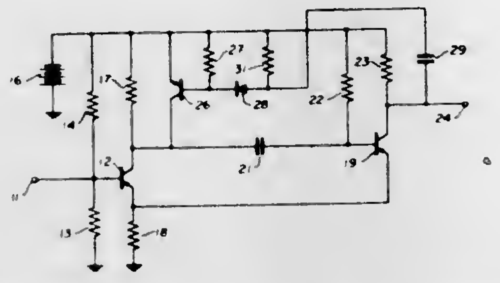
Leo Hellerman, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 23, 1961, Ser. No. 91,088
10 Claims. (Cl. 307—88.5)



1. A universal logic circuit comprising at least two sets of conductive paths, each conductive path of a set being connected to the other conductive path of the set through an associated interconductive path, a plurality of pairs of switching devices, one switching device in each pair being connected to a selected one of the conductive paths in a pair and the other switching device in a set being connected to the associated interconductive path of the selected conductive path, means for shunting one switching device in each pair of switching devices to arrange the circuit for a preselected logic operation, and means for supplying binary signals to the other switching devices in at least two of the switching pairs which perform the selected logic operation of the circuit.

3,184,604
HIGH-DUTY-CYCLE MULTIVIBRATOR

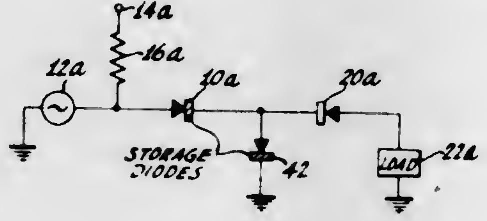
Duane O. Hale, Walnut Creek, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 31, 1961, Ser. No. 128,270
3 Claims. (Cl. 307—88.5)



1. A monostable multivibrator circuit, comprising, in combination, a normally non-conducting first transistor with a base adapted to receive input signals, a bias voltage supply connected to the base of said first transistor, a power supply, a discharge resistor connected from the collector of said first transistor to a first side of said power supply, a normally conducting second transistor, a capacitor connected from the base of said second transistor to the collector of said first transistor, a bias resistor connected from the base of said second transistor to the first side of said power supply, a load resistor connected from the collector of said second transistor to the first side of said power supply, an emitter resistance coupling the emitters of both of said first and said second transistors to a second side of said power supply, a normally non-conducting discharge transistor having an emitter and a collector connected across said discharge resistor, and a resistance-capacitance circuit connected from the collector of said second transistor to the base of said discharge transistor and having a time constant less than that of the circuit formed by said capacitor and load resistor.

3,184,605
PULSE GENERATOR CIRCUITS EMPLOYING STORAGE DIODES

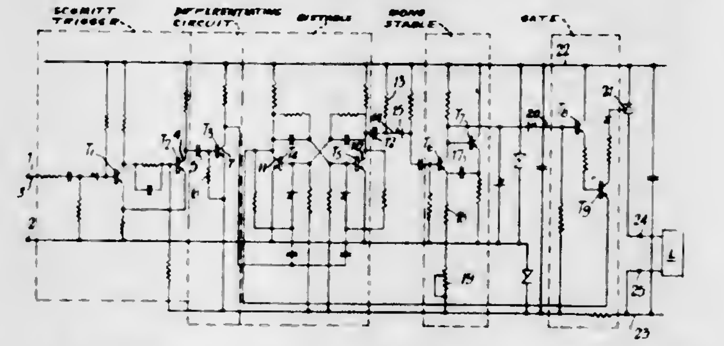
Gerald B. Herzog, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Sept. 21, 1961, Ser. No. 139,733
10 Claims. (Cl. 307—88.5)



1. In combination, a first active element which stores charge carriers; a second active element which stores charge carriers connected in series anode-to-cathode with the first active element; means for applying a sinusoidal voltage to the series circuit of said two active elements at a level to produce conduction through the two active elements; and an output circuit connected to the first active element, said circuit including an asymmetrically conducting element poled to conduct in its easier direction of current flow in response to the discharge of carriers by said second active element during a period after the carriers in the first active element have become exhausted.

3,184,606
FREQUENCY RESPONSIVE DEVICE WHEREIN OUTPUT IS PRODUCED WHEN PULSES IN PULSE-TRAIN EXCEED STANDARD PULSE-WIDTH

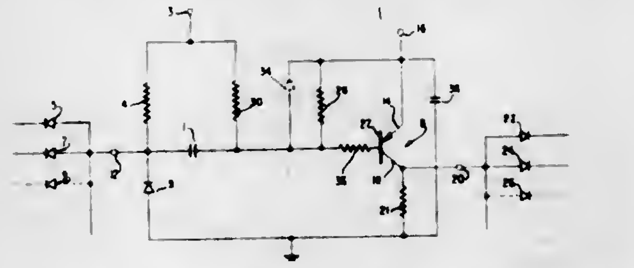
Raymond Edward Ovenden, St. Albans, and Robert F. S. Towner, Colney Heath, England, assignors to The De Havilland Aircraft Company Limited, Hatfield, Hertford, England, a company of Great Britain
Filed Apr. 26, 1962, Ser. No. 190,474
Claims priority, application Great Britain, April 27, 1961, 15,334/61
7 Claims. (Cl. 307—88.5)



1. A frequency responsive device comprising means responsive to the frequency of an electric input signal to derive trigger signals operable to control a bistable device to produce two trains of pulses the pulse length or duration of the pulses of which is a function of the frequency of the input signal, a monostable device responsive to the termination of each pulse of one pulse train to produce a reference pulse having a selected width or duration, a transistor circuit comprising a pair of transistors forming a super alpha connection, each transistor having a base electrode, a collector electrode and an emitter electrode, means for applying each reference pulse to the base electrode of one of said transistors, means for applying the pulse of the other of said two pulse trains to the emitter electrode of the other of said pair of transistors to derive from said transistor circuit an output signal when the duration of said reference pulse exceeds the duration of a pulse in said other pulse train, a load, and switch means responsive to said output signal to complete the circuit to said load.

3,184,607
CHARGE GATE

Harold R. Greene, New Shrewsbury, N.J., assignor to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey
Filed July 31, 1962, Ser. No. 213,633
14 Claims. (Cl. 307—88.5)



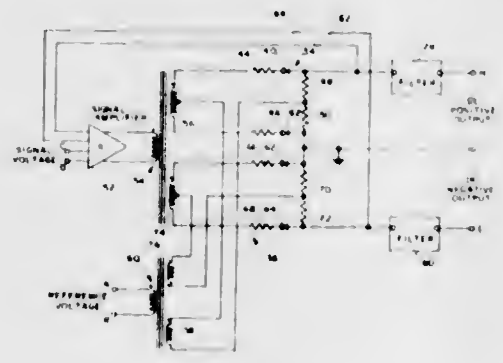
1. A charge gate comprising the combination of a transistor, a capacitor, an input circuit means including at least one information signal and at least one switching signal, and biasing means connected to said capacitor, said biasing means being coupled to the base of said transistor for normally maintaining said transistor nonconducting, logic gating means connected between said input circuit and said biasing means (1) for allowing, said capacitor to be charged from said biasing means which charge is initiated upon the simultaneous occurrence of said switching signals and said information signals and (2) thereafter for discharging said capacitor

at the termination of at least one of said signals, said capacitor being coupled between said logic gating means and said transistor and being of capacitive value for discharging substantially all of its charge through said transistor upon termination of said at least one signal, thereby to transfer said charge to said transistor to render said transistor conducting to provide an amplified transferred charge.

3,184,608
PRECISION PHASE SENSITIVE DEMODULATOR

Samuel Goldfarb, Morristown, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Aug. 24, 1962, Ser. No. 219,184
5 Claims. (Cl. 307—88.5)



1. A precision electronic phase-sensitive demodulator circuit comprising first and second half wave demodulator circuits, means for applying an A.C. signal voltage to each of said half wave circuits, means for applying an A.C. reference voltage to each of said half wave demodulator circuits having the same fraquency as but a greater amplitude than said A.C. signal voltage, said reference voltage gating said first half wave demodulator circuit on the first half of each cycle thereof and gating said second half wave demodulator circuit on the second half of each cycle thereof, said first half wave demodulator circuit producing a first A.C. output signal having the first half of each cycle following the signal voltage and the second half of each cycle blocked out, said second half wave demodulator circuit producing a second A.C. output signal having the second half of each cycle following the signal voltage and the first half of each cycle blocked out, the sum of said first and second output signals being in phase with and having the same waveform as said signal voltage, and negative feedback means for feeding back the sum of said first and second output signals to said means for applying the signal voltage to reduce the effect of non-linearities in said first and second half wave demodulator circuits.

3,184,609
TRANSISTOR GATED SWITCHING CIRCUIT HAVING HIGH INPUT IMPEDANCE AND LOW ATTENUATION

Seening Yee, Whitestone, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Aug. 27, 1962, Ser. No. 219,577
6 Claims. (Cl. 307—88.5)

1. A series switching circuit comprising in combination,

a three-terminal transistor having an emitter, a base, and a collector,

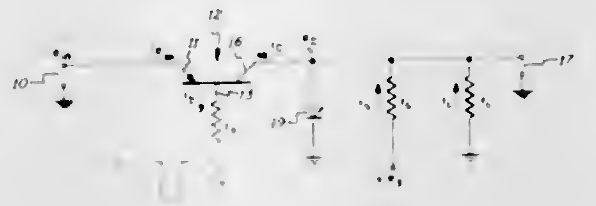
a source of switching control signals coupled to said base for controlling the conduction of said transistor,

a source of signals to be sampled coupled to one of the other of said terminals of the transistor and being of a polarity to forward bias the conduction path between said one terminal and base,

a load coupled to the remaining terminal of said transistor,

a source of substantially constant current coupled to said remaining terminal and being a polarity to forward bias the conduction path between said remaining terminal and base,

the polarities and magnitudes of the potentials of said sources being chosen to cause the collector current to be substantially equal to the base current when said transistor is conducting,

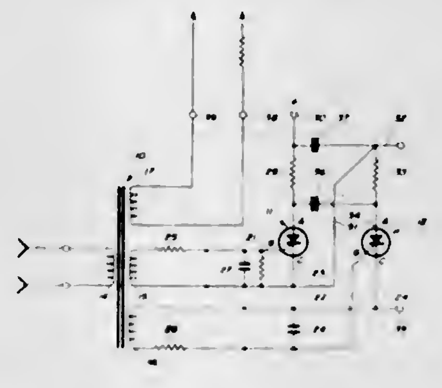


and a unidirectional current conducting device coupled between said remaining terminal and ground and poled for conduction only when said transistor is nonconducting.

3,184,610
POLARIZED SWITCHING DEVICE

John Eugene Davis, Baltimore, Md., assignor to The Bendix Corporation, Towson, Md., a corporation of Delaware

Filed Aug. 30, 1962, Ser. No. 220,496
3 Claims. (Cl. 307—88.5)



1. A switching device for controlling the direction of current from a voltage source through a load, comprising

a transformer having a core composed of saturable magnetic material of rectangular hysteresis characteristics,

an input winding on said core,

a pair of control windings on said core,

a pair of controlled rectifiers, said rectifiers each including anode, cathode and gate electrodes, said gate electrodes each receiving oppositely phased voltages from said control windings and rendering said rectifiers conductive for positive voltages,

an external voltage source having positive, negative, and common terminals,

means connecting the anode of one of said rectifiers to said positive terminal of said external voltage source,

means connecting the cathode of the other of said rectifiers to said negative terminal of said external voltage source;

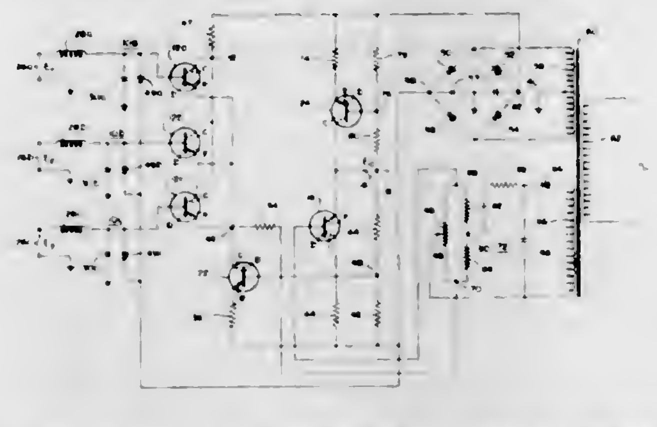
means connecting the cathode of said one rectifier and the anode of said other rectifier to provide an output terminal for connection to a load connected to said voltage source common terminal; and

commutating means connecting the anodes of said rectifiers for rendering a conducting one of said rectifiers non-conductive upon the application of positive voltage to the gate electrode of said other rectifier.

3,184,611
SIGNAL SELECTION CIRCUIT WITH CATHODE FOLLOWER TO COMPENSATE FOR TEMPERATURE CAUSED VOLTAGE DISTORTION

Jerome B. Brewster, Cleveland, and Harold H. Koppel, University Heights, Ohio, assignors to Bailey Meter Company, a corporation of Delaware

Filed Sept. 14, 1962, Ser. No. 223,789
5 Claims. (Cl. 307—88.5)

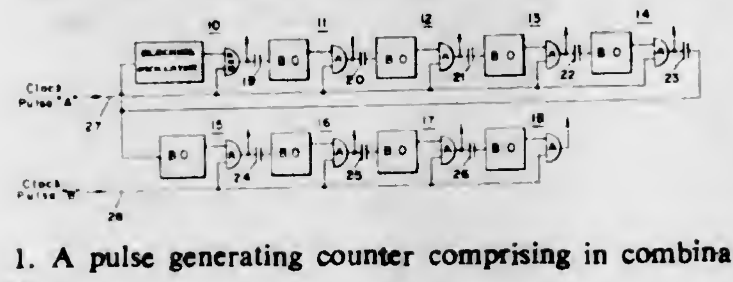


5. An auctioneering circuit for selecting the lowest magnitude signal from a plurality of signals, comprising; a plurality of input circuits for the input signals respectively; a PNP transistor connected in an emitter-follower circuit configuration in each of said input circuits, each transistor having a base electrode to which the input signal is applied, an emitter electrode connected to a first terminal and a collector electrode connected to a biasing voltage, the transistor in the input circuit subjected to the lowest magnitude signal being operative to establish a first signal combined algebraically with the base to emitter voltage drop of the transistor so subjected; and a compensating circuit including an NPN transistor also connected in an emitter-follower circuit configuration and having a base electrode to which said first potential is applied, an emitter electrode connected to an output terminal and a collector electrode connected to a biasing voltage, said compensating circuit being effective to establish an output potential at said output terminal equal to said first potential combined algebraically with the base to emitter voltage drop of said compensating transistor in a compensating sense with respect to the base to emitter voltage drop of said input transistor to compensate for temperature variations.

3,184,612
PULSE-GENERATING COUNTER WITH SUCCESSIVE STAGES COMPRISING BLOCKING OSCILLATOR AND "AND" GATE FORMING CLOSED AND OPEN LOOPS

Earl J. Petersen, Bountiful, Utah, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Oct. 10, 1962, Ser. No. 229,771
7 Claims. (Cl. 307—88.5)



1. A pulse generating counter comprising in combination,

a plurality of counting units connected to form an open loop and a closed loop wherein of said units includes an "and" gate having signal and pulse inputs and a signal output and a blocking oscillator having a signal output connected to the signal input of the "and" gate and a signal input connected to the signal output of the "and" gate of a next preceeding unit,

means providing a circuit connection from an intermediate "and" gate output in the series to the oscilator input of a preceding and initial unit of said series to form a closed loop followed by an open loop in said counter,

means for energizing the oscillators of said units,

means for simultaneously applying clock pulses to the "and" gate pulse inputs of said open loop,

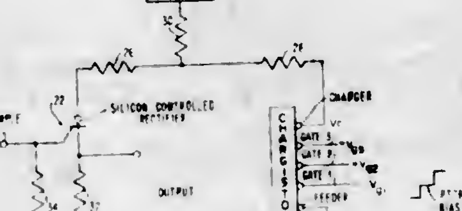
means for simultaneously applying to the "and" gate inputs of said closed loop clock pulses which opposed in phase the clock pulses applied to the "and" gate pulse inputs of said open loop, and

means for clamping the bottoms of said clock pulses to ground potential.

3,184,613
CHARGISTOR SWITCHING CIRCUIT

Murray J. Haims, Yonkers, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 18, 1962, Ser. No. 231,445
5 Claims. (Cl. 307—88.5)



1. A solid state switching circuit which comprises in combination

(*a*) a chargistor pentode having a negative transconductance region,

(*b*) a silicon controlled rectifier connected in parallel with said chargistor,

(*c*) a common load resistor having one terminal connected to a power supply and the other terminal connected to a common point between the chargistor and the silicon controlled rectifier,

(*d*) means supplying bias to the control gates of said chargistor to bias same at its maximum current point and

(*e*) input means connected to the control electrode of the silicon controlled rectifier for selectively enabling said rectifier to fire when sufficient potential appears across its anode and cathode.

3,184,614
TUNNEL DIODE COUNTER WITH DOUBLE COUNT CAPACITY PRODUCING STAIRCASE WAVEFORM HAVING BOTH ASCENDING AND DESCENDING STEPS

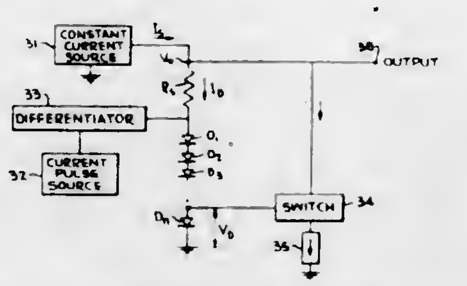
Edwin H. Harrison, Jr., Vienna, Va., assignor to the United States of America as represented by the Secretary of the Army

Filed Dec. 3, 1962, Ser. No. 242,025
3 Claims. (Cl. 307—88.5)
(Granted under Title 35 U.S. Code (1952), sec. 266)

1. An improved tunnel diode counter of the type having a plurality of series-connected tunnel diodes which are maintained at a predetermined bias by a bias current with all of the diodes initially at one stable voltage level, said tunnel diodes switching to their second voltage level successively in response to successive counting pulses of a predetermined magnitude which are applied to said diodes,

the improvement lying in improving the capacity and speed of said tunnel diode counters by the addition of circuitry comprising:

(*a*) means to derive one positive and one negative current pulse from each said counting pulses, the output of said deriving means being applied to said tunnel diode counter circuit,



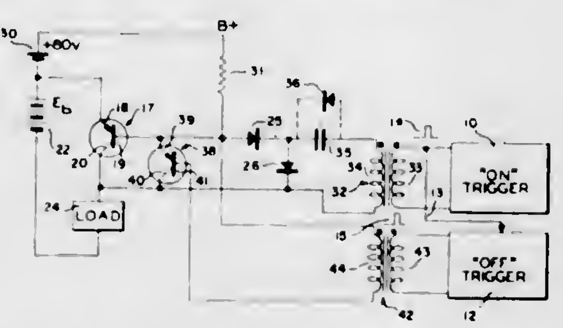
(*b*) means to change said bias current after predetermined number of said diodes have switched from a first value, where positive current pulses only are effective to successively switch said diodes from a first voltage level to their second voltage level, to a second bias level where said negative current pulses only are effective to switch said diodes from their second voltage level to their first voltage level.

3,184,615
PULSE MODULATOR WITH TRANSISTOR SWITCH

Joe V. Stover, Anaheim, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Jan. 14, 1963, Ser. No. 251,443

8 Claims. (Cl. 307—88.5)



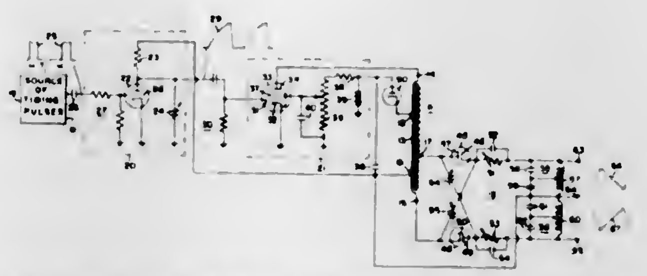
1. A transistor switching apparatus for controlling current flow between a direct-current source of potential and a load, said apparatus comprising a transistor including a base and two remaining elements, said transistor being connected from said direct-current source of potential to said load with said two remaining elements; first and second unidirectional conducting elements connected in the order named from said base of said transistor to said load, said first and second unidirectional conducting elements both being poled to allow normal current flow in a direction that is the same as the direction of current flow from said direct-current source of potential to said load and said second unidirectional conductor element having a critical potential below which current does not flow therethrough; means connected to said base of said transistor for normally biasing said transistor by an amount less than said critical potential to prevent current flow therethrough; means coupled across said second unidirectional conducting element for controllably increasing the voltage thereacross by an amount required to no less than exceed said critical voltage to allow base current for said transistor to flow thereby to initiate current flow between said direct-current source of potential to said load through said transistor; and means connected from said base of said transistor to said load for controllably shunting current flow past said first and second unidirectional conducting elements for a determinable interval of time thereby to cause said second unidirectional conducting element to revert to the non-conductive state whereby current flow through said transistor ceases at the end of said determinable interval.

3,184,616
HIGH LEVEL SAWTOOTH WAVEFORM VOLTAGE GENERATOR

William C. Bates, Clay, and Thomas T. True, Camillus, N.Y., assignors to General Electric Company, a corporation of New York

Filed May 24, 1962, Ser. No. 197,505

10 Claims. (Cl. 307—107)



8. An electrical apparatus for generating relatively high level balanced sawtooth voltage waveforms comprising: a transformer having a winding and a pair of input and output terminals connected thereto; a tap on said winding intermediate said output terminals; an amplifying device having a pair of input and output electrodes; a source of operating voltage; means connecting said transformer input terminals, said amplifying device output electrodes and said voltage source in series; a signal source providing an output voltage of frequency f_1 for causing the periodic establishment and collapse of a magnetic field of said transformer when coupled to the input electrodes of said amplifying device; means coupling said output voltage from said signal source to the input electrodes of said amplifying device; first and second parallel resonant circuits across each of which a relatively high level sawtooth voltage waveform is generated, said first and second resonant circuits each having a tuned frequency f_2; said frequencies f_1 and f_2 having the relation

$$f_1>f_2$$

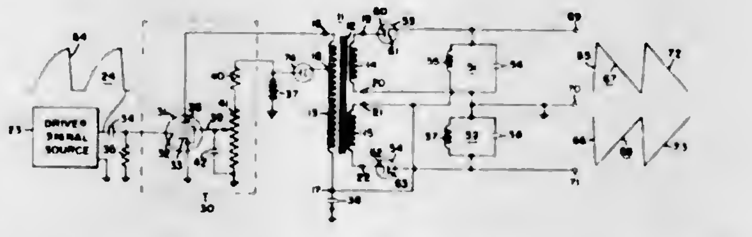
first means coupling said resonant circuit between a transformer output terminal and said tap; second means coupling said second resonant circuit between the other transformer output terminal and said tap; said first and second coupling means each including a diode having anode and cathode electrodes; said diodes poled for conducting during the collapse of said field; and means for reverse biasing said diodes during the establishment of said magnetic field.

3,184,617
HIGH LEVEL SAWTOOTH WAVEFORM VOLTAGE GENERATOR

Robert F. Wood, Baldwinsville, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 24, 1962, Ser. No. 197,520

5 Claims. (Cl. 307—107)



5. A balanced sawtooth voltage generator comprising: a transformer including a primary winding having a tap and a pair of input terminals and first and second secondary windings each having a pair of output terminals; first and second resonant circuits each having an inductance and a capacitance connected in parallel; first and second coupling diodes each having two electrodes; means connecting said first coupling diode in series with said first resonant circuit; means coupling said series connected first diode and first resonant circuit between said output terminals of said first secondary winding; means connecting said second coupling diode in series with said second resonant circuit; means coupling said series connected second diode and second resonant circuit between said output terminals of said second secondary winding: an electron discharge amplifying device having cathode, control and anode electrodes; a source of operating potential having positive and negative terminals; means connecting said negative terminal to said amplifying device cathode electrode; a damping diode having cathode and anode electrodes; means connecting said damping diode cathode to said primary winding tap; means connecting said potential source of positive terminal to said damping diode anode electrode; means connecting said amplifying device anode to one of said input terminals; a boost capacitor having first and second terminals; means connecting said first boost capacitor terminal to said other primary winding input terminal and to an electrode of each of said coupling diodes; means connecting said second boost capacitor terminal to said potential source of negative terminal; a source of a periodically recurring voltage; and means coupling said recurring voltage from said source to said amplifying device control electrode.

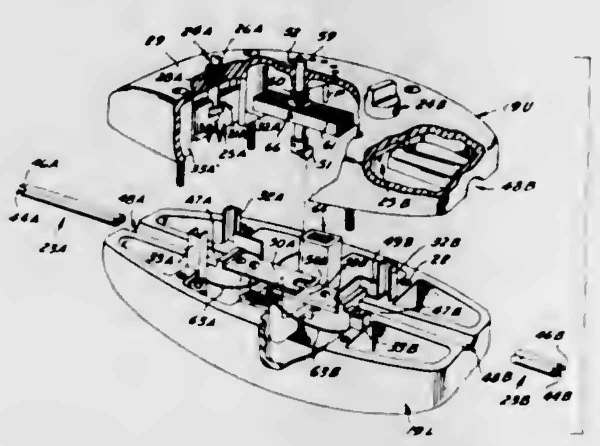
5

3,184,618
ELECTRIC CURRENT CONTROL APPARATUS

Lauri A. Laitinen, Palm Springs, Calif.
(34835 Ave. F, Yucaipa, Calif.)

Filed Mar. 20, 1961, Ser. No. 113,968

12 Claims. (Cl. 307—114)



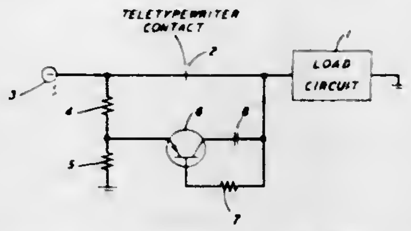
4. Electric current control apparatus, comprising: a housing provided with manually controllably operable wire-engaging means for physically and electrically engaging insulated electrical wire means at electrically spaced points; and manually adjustable, variable impedance, current-controlling means positioned within said housing and effectively connected in series with said wire-engaging means and said electrically spaced points for controlling alternating current flow therethrough, said current-controlling means including a variable impedance reactor comprising magnetic circuit means, winding means, a variable magnetic circuit portion, and physically manually controllably movable reluctance-varying means movably mounted adjacent to and in electromagnetically cooperable relationship with respect to said variable magnetic circuit portion for controllable reluctance-varying movement in a manner varying the effective reluctance of said magnetic circuit portion and correspondingly varying the impedance of said reactor.

3,184,619
CONTACT NOISE SUPPRESSOR

Herbert M. Zydney, New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 30, 1962, Ser. No. 220,481

6 Claims. (Cl. 307—134)



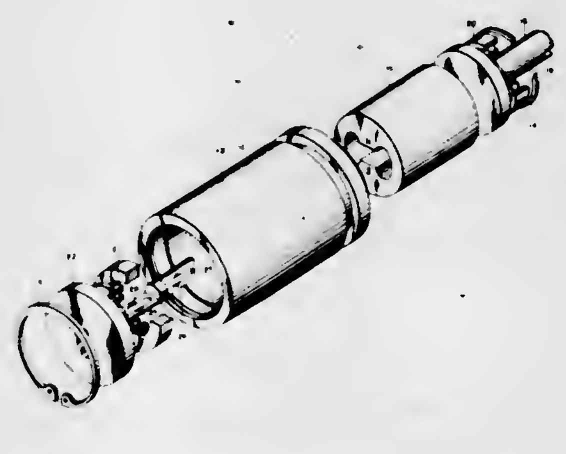
3. In a circuit for suppressing the effects of contact bounce, a load circuit, a source of fixed potential, a contact interconnecting said load circuit and said fixed potential, a capacitor connected to said load circuit, a current gate, means for providing a charging path for said capacitor including said contact and said current gate, means for providing the sole discharge path for said capacitor including said load circuit and said current gate, bias means coupled to said fixed potential for enabling said gate, and means coupled to said load circuit and responsive to the discharge of said capacitor for overcoming said bias means and thereby disabling said gate.

3,184,620
SOLID STATE SINE-COSINE SOURCE

Donald Leibowitz, Bronx, N.Y., Arthur E. Meixner, Hackensack, N.J., and Sol Gruber, Brooklyn, N.Y., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed May 4, 1962, Ser. No. 192,518

2 Claims. (Cl. 310—2)



1. A sine-cosine source, comprising in combination,

a cylindrical stator housing including end members having an axial opening through one of said end members;

rotor magnet means designed to rotate within said housing, said rotor magnet means being so constructed that opposing north and south poles face each other, are radially disposed, and are spaced from the axial center of said cylindrical housing;

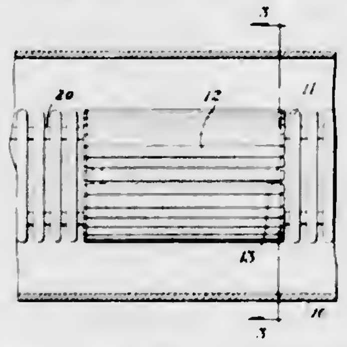
a rotor hub for coupling to said rotating means passing through said axial opening and coupled to said rotor magnet means to rotate said magnet means within said housing so that said north and south poles turn around the axial center of said housing;

an axial stator cylindrical supporting means rigidly affixed to said housing having first and second longitudinal diametrically cut surfaces, disposed at right angles to each other and located towards the center of the magnetic field formed by said poles;

a Hall generator axially disposed on each of said cut surfaces including excitation and output leads therefrom;
fastening means adapted to readily fasten and unfasten said end members to said housing; and
bearing means between said housing and said rotor hub and rotor magnet means to facilitate rotation thereof, whereby,
when said Hall generator input leads are properly excited, the rotation of said magnet means north and south poles around said Hall generators will provide a Hall voltage drop across said output leads corresponding to the sine and cosine of said rotating means.

3,184,621
HIGH VOLTAGE TERMINAL FOR TANDEM-TYPE CHARGED-PARTICLE ACCELERATOR

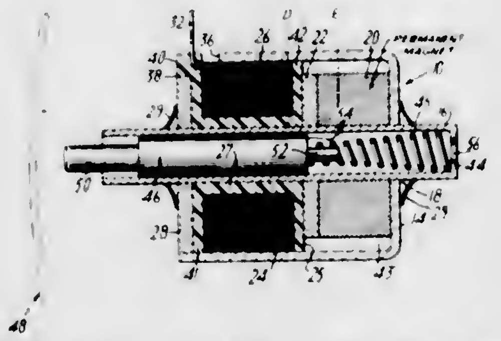
James Christofferson, West Newbury, Mass., assignor to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Filed Mar. 20, 1962, Ser. No. 181,049
2 Claims. (Cl. 310—6)



1. A tandem-type electrostatic generator adapted to generate voltages in the order of millions of volts comprising a pressure tank, and disposed therein, a high voltage terminal, a voltage gradient structure adapted to support said high voltage terminal in spaced relationship from said tank, and a charge belt system adapted to maintain a high electrical potential on said high voltage terminal, said high voltage terminal comprising at least two annular support members and a plurality of electrically interconnected tubular metallic members mounted thereon in closely spaced parallel relationship so as to form a cylindrical cage, said tubular metallic members being individually removable from said cage.

3,184,622
BELL STRIKER ASSEMBLY

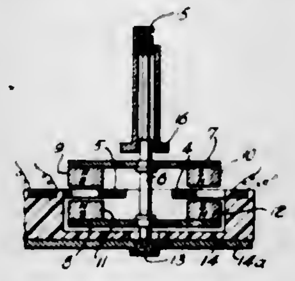
Walter E. Levine, Hamden, Conn., assignor to Edwards Company, Inc., a corporation of New York
Filed Aug. 1, 1960, Ser. No. 46,451
9 Claims. (Cl. 310—30)



1. A bell striker assembly comprising a cylindrical paramagnetic casing having an opening in one end thereof, a cylindrical electromagnet with an open circular bore positioned within said casing, a nonmagnetic tube extending through the bore of the electromagnet, a paramagnetic plunger slidably mounted in said tube, a first circular paramagnetic pole piece mounted on the tube in position against the face at one end of the electromagnet, a second circular paramagnetic pole piece mounted on the tube in position against the face at the second end of the electromagnet to close the open end of the casing, a slot positioned in the rim at the mouth of the casing which slot is constructed and arranged to receive the terminals of the winding of said electromagnet for connection to separate exterior conductors, whereby when electrical current is supplied to said electromagnet the magnetic flux generated by the electromagnet will pass through the casing and plunger within the tube to cause the plunger to reciprocate in the tube and whereby during operation a face at one end of the said plunger will be brought into proximity with the face of a pole piece at one end of the electromagnet to establish a magnetic gap between the two members.

3,184,623
MINIATURE ELECTRIC MOTOR

Frederic Marti and Georges Braunschweig, both of 165 Rue Numa Droz, La Chaux-de-Fonds, Switzerland
Filed Sept. 19, 1960, Ser. No. 56,885
3 Claims. (Cl. 310—36)



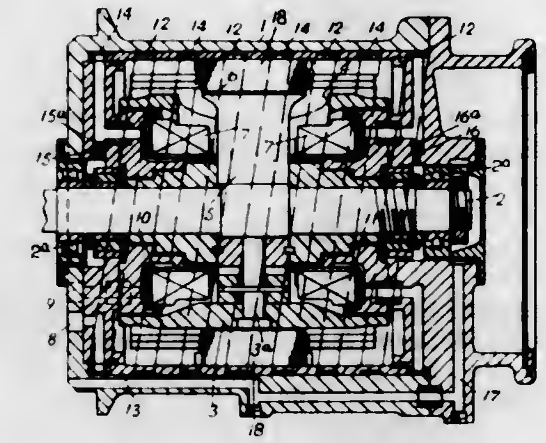
1. A small commutatorless electric motor comprising a stator, a pair of elongated pancake-like coils symmetrically positioned in a plane perpendicular to an axis of rotation through said stator, a rotor mounted for rotation along said axis and having a balanced parallel pair of cross-arms of magnetic material establishing a strong magnetic field perpendicular to said coils, and means to derive a voltage from one of said coils and to apply a suitable drive current to the other coil, said coils being oval in shape with their ends opposite each other and their sides lying approximately along radii from said axis, said cross-arms on each of their outer ends carrying small block-like permanent magnets of high coercive force, said magnets passing closely adjacent said coils when said rotor is driven, return paths for the flux from said magnets being provided by said arms, one of said coils being narrower than the other, the opening in said coils being narrower than the ends of said cross arms.

3,184,624
ARRANGEMENT OF COOLING CHANNELS IN A DYNAMOELECTRIC MACHINE

Henry Joseph Solomon, Stanmore, Middlesex, England, assignor to Rotax Limited, London, England
Filed Nov. 19, 1962, Ser. No. 238,447
Claims priority, application Great Britain, Nov. 28, 1961, 42,444/61
3 Claims. (Cl. 310—54)

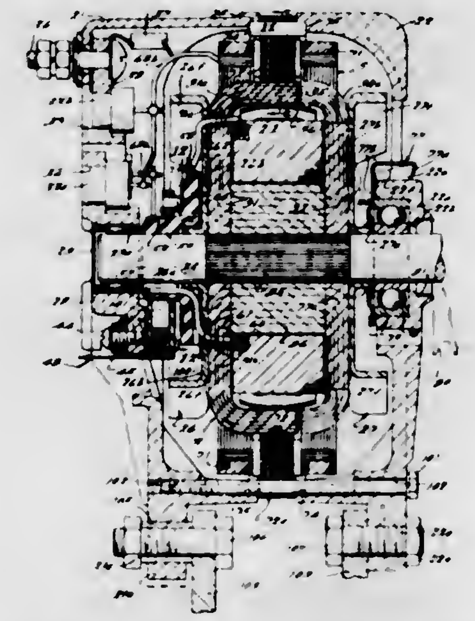
1. A dynamoelectric machine comprising in combination a casing, a stator carried by the casing, a shaft, bearings mounting the shaft for rotation within the casing, a field tube concentrically mounted about the shaft for rotation therewith, a spider formed from magnetic material, means mounting the spider on the shaft with its free ends located within apertures respectively in the periphery of the field tube in spaced relationship to the edges of said apertures, a pair of field windings surrounding the shaft at opposite sides of the spider, a lining having its external peripheral surface in contact with the internal peripheral surface of the casing, a pair of helically extending grooves formed in one of said contacting surfaces, a coolant inlet in the casing, a first chamber in the vicinity of one of the pair of windings, a second chamber

in the vicinity of the other of said pair of windings, a coolant outlet in the casing in communication with the first chamber, first passage means including one of said grooves interconnecting the inlet with the second chamber, and second passage means including the other of said grooves interconnecting the first and second chamber.



3,184,625
ALTERNATOR RECTIFIER UNIT

Glenn S. Farison, Southfield, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed May 2, 1960, Ser. No. 26,300
21 Claims. (Cl. 310—59)

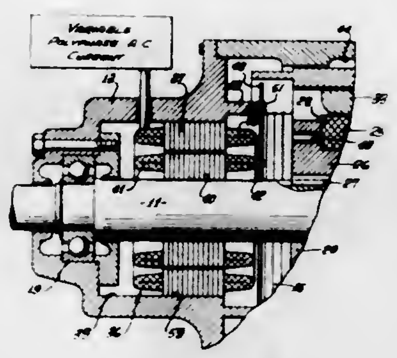


1. In an alternator-rectifier electric current generating system, an alternator comprising a rotor shaft, a rotor hub drivingly mounted on said rotor shaft, a magnetic field coil wound about said hub, rotor shaft mounted magnetizable poles adjacent said hub and field coil and arranged with portions thereof in abutting engagement with said hub to provide alternate positive and negative polarity poles adjacent the outer periphery of said field coil, and a pair of spaced rotor cooling fan means carried by said rotor shaft sandwiching said poles therebetween and having magnetizable portions in abutting engagement with each of said poles to provide a portion of the field coil induced magnetic flux path for said poles.

3,184,626
EDDY CURRENT CLUTCH AND POWER SUPPLY THEREFOR

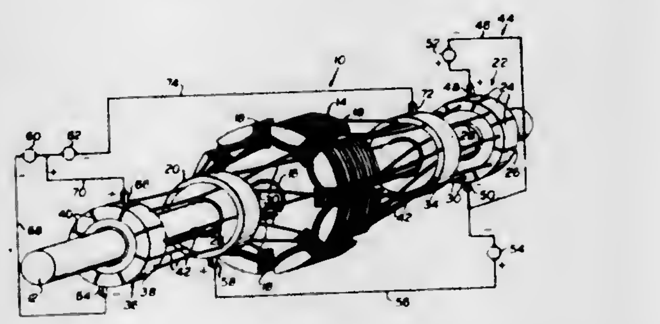
Frederick O. Luenberger, Los Angeles, Calif., assignor, by mesne assignments, to Emerson Electric Co., a corporation of Missouri
Filed Jan. 9, 1961, Ser. No. 81,459
2 Claims. (Cl. 310—96)

1. In an eddy current clutch: an input shaft; an output shaft; means supporting the shafts for independent rotation; an eddy current member carried by one of the shafts; a field structure having a winding and carried by the other of the shafts for inducing eddy currents in the eddy current member to establish a coupling between the shafts; a generator having a rotor structure carried by said other shaft and a stator structure cooperable with an electrical power source; said rotor structure having a winding connected to the winding of said field structure; said stator structure including means for creating field that rotates faster than the rated speed of the clutch, rotation of the said other shaft reducing the speed of the stator field with respect to the rotor.



3,184,627
ARMATURES FOR ELECTRICAL GENERATORS, MOTORS, AND THE LIKE

Anthony Sears, 88—00 Shore Front Parkway, New York, N.Y.
Filed Oct. 10, 1960, Ser. No. 61,539
2 Claims. (Cl. 310—137)



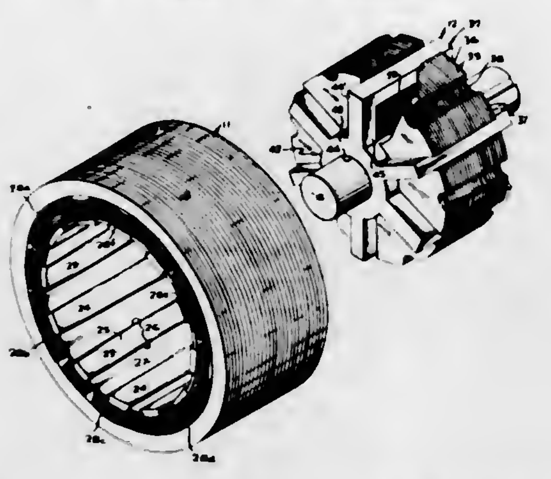
1. In an armature for an electrical generator or the like, a shaft, a core rotatable with said shaft, first and second electrically conductive structures each rotatable with said shaft and each including an endless unbroken electrically conductive member and an endless broken member having a plurality of circumferentially spaced electrically conductive segments and a first set of a plurality of electrically conductive wires wound about predetermined portions of said core, said plurality of wires of said first set being connected in parallel at one of their ends with the unbroken member of said first structure and at the other of their ends with a respective segment of said broken member of said first structure, a second set of a plurality of electrically conductive wires, said plurality of wires of said second set being connected in parallel at their opposite ends with the unbroken member and a respective segment of said broken member of said second structure, and electrical circuits for each of said first and second conductive structures respectively including contact means completing a circuit through said unbroken and broken members thereof, said core having a plurality of slots circumferentially spaced about the periphery thereof, and said wires being drum wound on said core in predetermined ones of said slots.

3,184,628
VARIABLE RELUCTANCE GENERATOR HAVING A ROTOR WINDING

Henry H. Hammerstrom, 4759 Mendota Ave., Los Angeles 42, Calif., and Lee B. Woodruff, 5132 Arlington Ave., Los Angeles 43, Calif.

Filed Apr. 2, 1962, Ser. No. 184,395

4 Claims. (Cl. 310—168)



4. The combination of a stator and a rotor mounted to turn relative thereto, said rotor including a shaft, a generally annular body of magnetic material disposed about said shaft and forming circularly successive rotor poles, said magnetic material also forming connecting portions of the rotor made of magnetic material extending between successive ones of said rotor poles and each defining a flux path along which magnetic lines of force flow from one rotor pole to another, said magnetic material of the rotor carrying conductive material forming windings on the rotor, said conductive material forming an inner sleeve disposed essentially annularly about said shaft radially between said shaft and said body of magnetic material and forming also a plurality of loops projecting generally radially outwardly from said sleeve at circularly spaced locations, individual ones of said loops forming with said sleeve an endless closed winding extending about one of said connecting portions of the magnetic material of the rotor and through which current may flow along a closed path extending first generally axially through said sleeve at the radially inner side of said connecting portion, then radially outwardly at one end of said connecting portion, then generally axially at the radially outer side of said connecting portion, and then radially inwardly and back to said sleeve at the second end of said connecting portion.

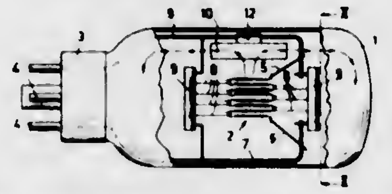
3,184,629
GAS-FILLED ELECTRIC LAMP WITH A GAS-DIRECTING SCREEN

Jan Willem van Tijen and Johannes Cornelis van der Tas, both of Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 20, 1961, Ser. No. 96,778

Claims priority, application Netherlands, Apr. 14, 1960, 250,599

3 Claims. (Cl. 313—33)



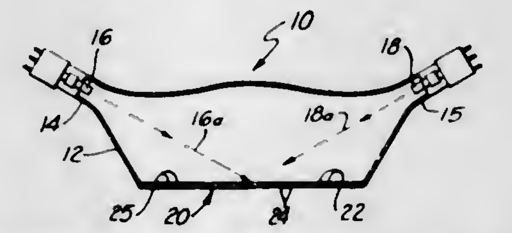
1. A gas-filled incandescent lamp which in its operating position is located with its longitudinal axis substantially horizontal; comprising a bulb, a filament in said bulb, electrically conducting stay wires supporting said filament, and a screen system for said filament having depending, solid screen strips at opposite sides thereof and a solid connecting part therebetween, said screen strips extending axially in said bulb and located on opposite sides of a vertical plane passing through said longitudinal axis of said lamp and said connecting part extending substantially parallel to the upper bulb wall, the upper ends of said screen strips being a relatively small distance from the adjacent bulb and forming a gap therebetween whereby the passage between the screen strips has a considerably smaller gas resistance than the passage through said gap adjacent to the upper ends of the screen strips.

3,184,630
THREE-DIMENSIONAL DISPLAY APPARATUS

Charles Willard Geer, 5369 Stillwater Drive, Los Angeles 56, Calif.

Filed July 12, 1960, Ser. No. 42,346

15 Claims. (Cl. 313—70)



1. A three-dimensional television screen in the form of a translucent sheet provided on one face with a multiplicity of vertical grooves coated with phosphors and on the opposite face with a multiplicity of aligned vertical corrugations formed on outwardly curved arcs, the spacing of the grooves and the widths of the opposed corrugations conforming and being below the resolving power of the human eye at a viewing distance.

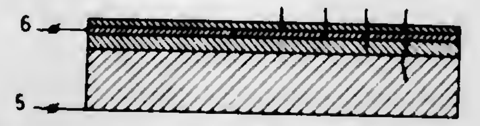
3,184,631
ELECTROLUMINESCENT ELEMENT WITH A NICKEL-IRON BASE

Hendrik Jacobus Maria Joormann, Gesinus Diemer, and Hendrik Anne Klasens, all of Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 1, 1961, Ser. No. 86,484

Claims priority, application Netherlands, Feb. 4, 1960, 248,088

11 Claims. (Cl. 313—108)



1. An electroluminescent element comprising a metal carrier and a glass-enamel layer in which the electroluminescent material is embedded and which is covered with a conductive layer on each side, the conductive layer on the side remote from the carrier being permeable to radiation emitted by the electroluminescent layer upon applying a voltage between the two conductive layers, wherein the metal carrier consists of nickel-iron having a composition of from 50% to 80% of nickel and from 50% to 20% of iron.

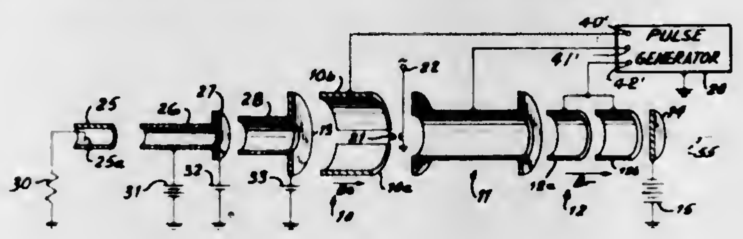
3,184,632
WAVE GENERATOR WITH TIME-VARIANT ELECTRIC POTENTIAL DISTRIBUTION

Gerhard E. Weibel, Manhasset, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Feb. 28, 1961, Ser. No. 92,243

4 Claims. (Cl. 315—7)

4. A wave generator comprising a cylindrical pumping chamber, said pumping chamber consisting of first and second circumferentially spaced semicylindrical sections; means for producing a first magnetic field, said first magnetic field being directed along the axis of said pumping chamber; means for injecting electrons into said pumping chamber, said electrons forming a rotating pencil-shaped cloud having an axis coinciding with the longitudinal axis of said pumping chamber; first voltage means for confining said electrons within said pumping chamber, said voltage means producing an essentially parabolic voltage distribution within said pumping chamber; means for applying an alternating voltage between said first and second semicylindrical sections, the frequency of said alternating voltage being selected so as to cause said electron cloud to spiral outward from the axis of said pumping chamber; a cylindrical radiation chamber, said radiation chamber consisting of first and second axially spaced cylindrical sections; a cylindrical separator chamber interposed between said pumping and radiation chambers; second and third voltage means coupled to said separator and radiation chambers respectively, said second and third voltage means together with said first voltage means producing a time-variant potential distribution within said chambers causing said electron beam to be displaced from said pumping chamber to said radiation chamber; and means for producing a second magnetic field, said second magnetic field being directed along the axis of said radiation chamber and causing said electron cloud to spiral toward the axis of said radiation chamber and emit high frequency energy.

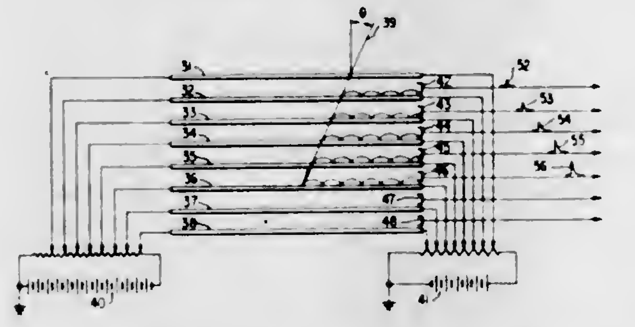


3,184,633
SEMICONDUCTIVE ELECTRON MULTIPLIER

Frederick A. White and William D. Davis, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Nov. 3, 1960, Ser. No. 67,002

3 Claims. (Cl. 315—12)



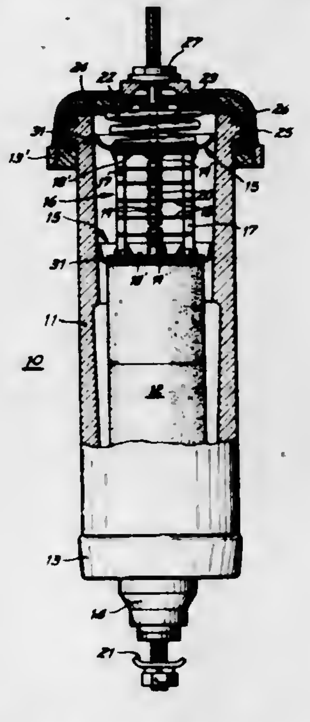
1. In an electron multiplier having two spaced parallel electrode, means for establishing a biasing field between said electrodes, means for establishing a longitudinal potential gradient along each of said electrodes whereby each of said electrodes has a relative positive potential and a relative negative potential end, means for establishing a magnetic field transverse to said biasing field and said longitudinal potential gradient, means for causing an electron emission at the relative negative potential end of one of said electrodes, and an electron collector adjacent the relative positive potential end of said electrodes, the improvement wherein at least said one of said electrodes consists entirely of a self-supporting slab of homogeneous semiconductor material having a length of about two centimeters and a resistivity of the order of 10^9 ohm centimeters at a temperature of about $-80°$ C., and said electrodes have a spacing of about one millimeter.

3,184,634
LIGHTNING ARRESTER WITH A RESILIENT SEAL BETWEEN THE GAPS AND RESISTIVE MATERIAL

Stanley S. Kershaw, Jr., Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed Jan. 13, 1961, Ser. No. 82,517

5 Claims. (Cl. 315—36)



1. An overvoltage protective device comprising an insulating housing having a cylindrical chamber therein, a negative resistance valve block and a plurality of spaced apart electrode members defining a spark gap structure in electrical series relation disposed within said chamber in radially spaced relation to the inner wall of said housing, means including a resilient disc member of greater diameter than said chamber disposed within said chamber between said valve block and said gap structure and deformed against said inner wall of said housing for physically isolating said valve block from said spark gap structure and for sealing between the portions of said chamber containing said valve block and said spark gap structure, whereby ionized gases generated in said spark gap structure cannot drift between said valve block and the walls of said housing and sparkover said valve block, said resilient member having an axial aperture therein, conductive plate members of smaller diameter than said chamber disposed on opposite sides of said resilient member, at least one of said plate members having an axially extending central portion protruding through said aperture in said resilient disc member and being electrically connected to the other conductive plate member, spring means within said chamber for axially urging said valve blocks and said spark gap structure against said plate members, said plate members providing electrical connection between said valve block and said spark gap structure and said resilient member centering said spark gap structure and said valve blocks within said chamber and absorbing transverse shocks to said lightning arrester housing.

3,184,635
ELECTROLUMINESCENT DISPLAY DEVICE

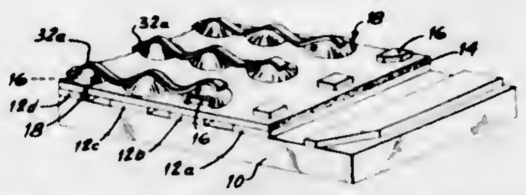
James A. O'Connell, Jr., Syosset, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed July 24, 1961, Ser. No. 126,014

11 Claims. (Cl. 315—71)

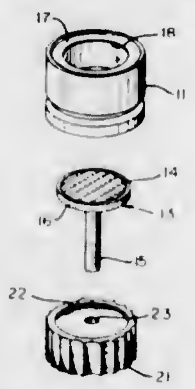
1. An electroluminescent device comprising a first array of parallel separated electrical conductors extending along a first direction; a second array of parallel separated electrical conductors extending along a second direction, a plane passed through said first array of parallel conduc-

tors being substantially parallel to a plane passed through said second array of parallel conductors: an electroluminescent layer interposed between said arrays; and a plurality of discrete spaced pillars interposed between one of said arrays and said electroluminescent layer, each of said pillars being composed of a symmetrically non-linear resistive core circumferentially surrounded by an electrically insulating coating.



3,184,636
COLD CATHODE

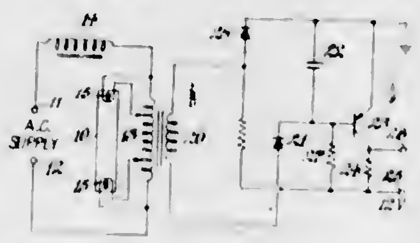
Burnell V. Dore, Sunnyvale, and Richard A. Hein, Palo Alto, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 15, 1961, Ser. No. 117,236
8 Claims. (Cl. 315—94)



1. An electron emission device comprising a metallic substrate, a barrier layer of semiconductor material formed on said substrate, an emission layer formed on said barrier layer, said emission layer comprising a combination of a conductor having a relatively low work function and an oxide of an alkali earth metal, a source of bias voltage, and means for connecting said source to said substrate and to said conductor for applying an electric field across the barrier layer.

3,184,637
LAMP MONITORING APPARATUS

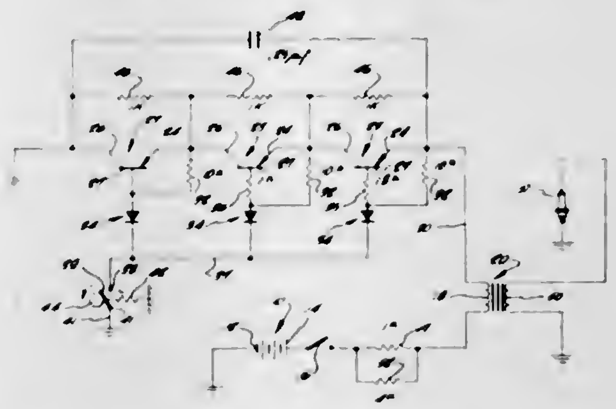
Peter Skinner, London, England, assignor to Decca Limited, London, England, a British company
Filed Dec. 10, 1962, Ser. No. 243,230
Claims priority, application Great Britain, Dec. 13, 1961, 44,545/61
5 Claims. (Cl. 315—129)



1. In a fluorescent lamp system having a fluorescent lamp with a transformer winding connected in shunt across the lamp and a ballast choke in series with the lamp in an alternating supply circuit, monitoring apparatus comprising an auxiliary winding inductively coupled to the lamp circuit to have an induced alternating signal of magnitude dependent on the relative potential distribution across the ballast choke and transformer winding, a rectifier arranged to produce a direct control signal of magnitude dependent on the magnitude of said induced alternating signal, an auxiliary supply source, an output circuit, and switch means controlled by said control signal and controlling the application of potential from said auxiliary supply source to said output circuit, said switch means being arranged to reduce the potential in the output circuit unless the control voltage corresponds to a potential distribution in the lamp circuit with substantially the full alternating supply voltage across the transformer.

3,184,638
SERIES STACKED TRANSISTORIZED IGNITION SYSTEM HAVING DIODES IN SERIES WITH THE BASES

Warren R. Wood, Palo Alto, Calif., assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed May 10, 1962, Ser. No. 193,765
4 Claims. (Cl. 315—206)

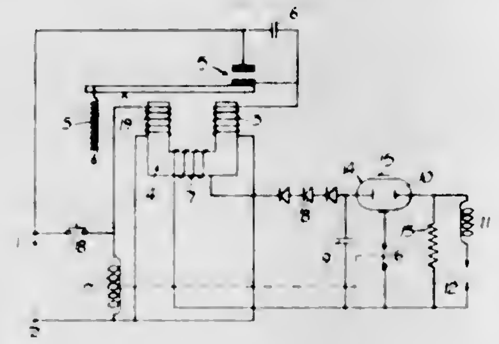


1. An improved ignition system for an internal combustion engine having spark plugs and distributor points for opening and closing a circuit in synchronization with engine operation, the system comprising a source of electrical power, an ignition transformer having a primary winding and a secondary winding, means connecting the secondary winding to the spark plugs, a plurality of transistors each having a base, emitter and collector and an emitter-base path, means connecting the transistors in series so the emitter of one is connected to the collector of an adjacent transistor, means connecting the transistors in series with the source of electrical power and the primary winding so the transistors control the flow of current through the primary winding, a separate biasing resistor connected across the base and emitter of each transistor, means connecting the biasing resistors in circuit with the source of power and distributor points to apply a pulsating voltage across the biasing resistors and control the flow of current through the transistors, a separate diode connected to and in series with the base of each transistor and the distributor points to isolate the transistors when the points open, and a separate dropping resistor connected in series with the base of each transistor between said base and the corresponding diode to limit base current flow, each of said biasing resistors and each of the corresponding ones of said dropping resistors being connected in series circuit with each other and with the corresponding emitter-base path to form a closed loop comprising a biasing resistor, a dropping resistor and the emitter-base path for each of said transistors.

3,184,639
SPARK IGNITION APPARATUS

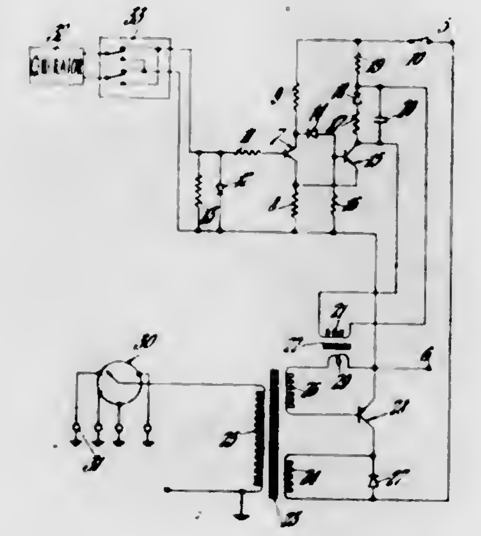
Norman Arthur Parish, Hemel Hempstead, England, assignor to Rotax Limited, London, England
Filed Oct. 2, 1961, Ser. No. 142,123
Claims priority, application Great Britain, Oct. 11, 1960, 34,823/60
2 Claims. (Cl. 315—209)

1. Spark ignition apparatus comprising in combination first and second terminals for connection to a D.C. source, a transformer having a primary winding and a secondary winding, a capacitor connected across said secondary winding in a series circuit including a rectifier, a control gap and a spark gap connected in a series circuit across said capacitor, means connecting one end of said primary winding to said second terminal, an interrupter through which the other end of said primary winding is connected to the first terminal, resilient means normally urging said interrupter to a closed position, means operable by electromagnetic forces derived from current flow in said primary winding for urging said interrupter towards its open position against the action of said resilient means, an additional winding having its ends normally connected to said first and said second terminal respectively, means responsive to current flowing in said additional winding for assisting the action of said resilient means, means for reducing the breakdown voltage of said control gap and means operable when the breakdown voltage of said control gap is reduced for disconnecting said additional winding from the first and second terminals, the frequency of operation of said interrupter being determined by the primary winding and said additional winding and said resilient means, and disconnection of said additional winding tending to maintain the spark rate substantially constant when the breakdown voltage of said control gap is reduced.



3,184,640
INTERNAL COMBUSTION ENGINE IGNITION SYSTEM WITH VARIABLE TIMING

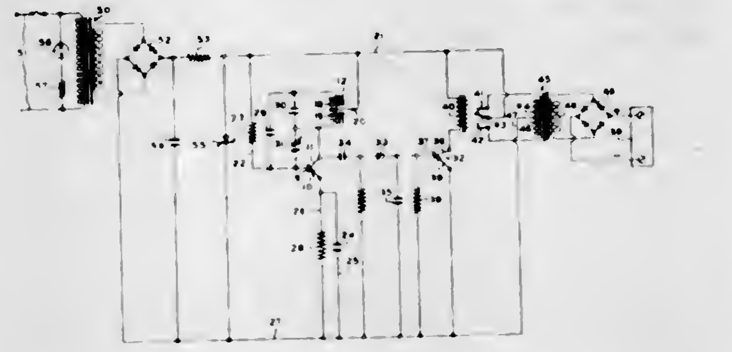
Norman Alfred Jukes, Walsall, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed July 6, 1962, Ser. No. 207,998
Claims priority, application Great Britain, July 12, 1961, 25,197/61
1 Claim. (Cl. 315—362)



An internal combustion engine ignition system comprising in combination a generator driven by the engine, said generator including first and second output terminals and producing between said output terminals during each revolution of the engine a predetermined number of electrical output signals, each output signal consisting of a first pulse of one polarity followed by a second pulse of the opposite polarity, a trigger circuit having first and second input terminals, a reversing switch through which said output terminals of said generator are connected to said input terminals of said trigger circuit, said trigger circuit normally occupying one stable state but being driven to a second state when one of said pulses in each of said signals is applied to the trigger circuit, a spark producing circuit connected to said trigger circuit, said spark producing circuit producing a spark each time said trigger circuit is driven to said second state, said trigger circuit reverting to said one state when the input to said trigger circuit from said generator is removed, and said reversing switch alternatively occupying a first position in which the first output terminal of the generator is connected to the first input terminal of the trigger circuit and the second output terminal of the generator is connected to the second input terminal of the trigger circuit, and a second position in which the first output terminal of the generator is connected to the second input terminal of the trigger circuit, and the second output terminal of the generator is connected to the first input terminal of the trigger circuit.

3,184,641
ELECTRICAL CIRCUIT FOR TRANSLATING A MECHANICAL VARIATION INTO AN ELECTRICAL VARIATION

Matthew H. Wojcik, Garfield, N.J., assignor to Merrick Scale Mfg. Company, Passaic, N.J., a corporation of New Jersey
Filed July 24, 1961, Ser. No. 126,056
9 Claims. (Cl. 317—5)

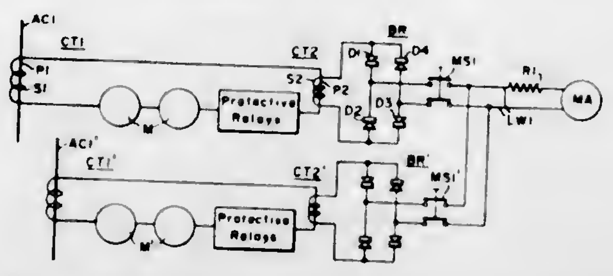


1. An electrical circuit for translating a mechanical variation of conductive material traveling in a fixed path into an electrical variation, including an oscillator electrically connected to both sides of a source of electricity and including a coil in proximity to the path of travel of the mechanical variation and said oscillator generating sinusoidal waves interrupted by the travel of the conductive material of the mechanical variation in proximity to the coil, a diode detector electrically connected in circuit with said oscillator to rectify and filter the frequency variation of the waves generated by the oscillator, an amplifier electrically connected in circuit with said diode detector, a sensitive relay electrically connected in circuit with the amplifier and energized and de-energized by said amplifier depending upon the degree of proximity between the conductive material of the mechanical variation and the coil, a saturable transformer electrically connected in circuit with said sensitive relay to produce a current flow in one direction when the relay is energized and a current flow in the opposite direction when the relay is de-energized, and a rectifier electrically connected to said transformer and constituting the output of the electrical circuit.

3,184,642
SEMICONDUCTOR OVERVOLTAGE PROTECTOR FOR OPEN-CIRCUITED CURRENT TRANSFORMER

John F. Reuther, Penn Hills, William F. Cruess, Monroeville, and Sheldon D. Silliman, Forest Hills, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 756,604, Aug. 22, 1958. This application May 12, 1961, Ser. No. 112,158
6 Claims. (Cl. 317—14)

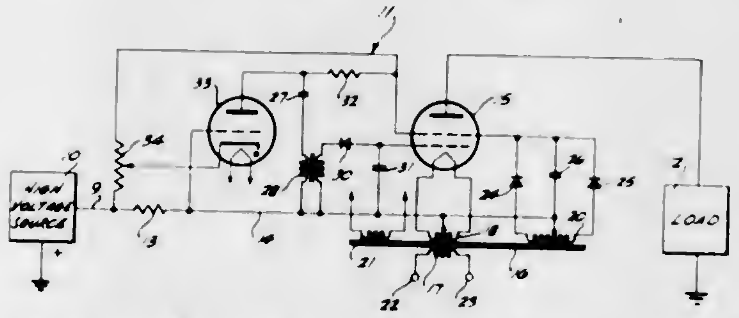


1. In combination; a current transformer having a primary for responding to current variations in a monitored conductor and having a secondary; a full-wave bridge rectifier comprised of a plurality of semiconductor diodes and having the input connected across the secondary and having an output; means including a switch for connecting the output to actuate a meter; at least two of said diodes having a predetermined breakdown voltage greater than the normal output voltage of the transformer and less than the predetermined transformer damaging overvoltage for permitting current flow in said secondary in both directions to prevent the occurrence of transformer damaging overvoltages when said switch is open.

3,184,643
HIGH VOLTAGE CONTROL CIRCUIT

Harold R. Schultz, Sr., Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Dec. 20, 1961, Ser. No. 160,863
6 Claims. (Cl. 317—22)



4. A control circuit circuit comprising:

(*a*) a high vacuum electron discharge device having a cathode, an anode and a control electrode, said device being normally conductive to provide a current path between the cathode and anode thereof, said device being responsive to a negative signal applied to the control electrode thereof to become nonconductive to interrupt said current path;

(*b*) means associated with said current path for providing a voltage in response to current flow therein;

(*c*) a thyratron having a cathode, an anode and a control electrode, said thyratron being normally nonconductive, the control electrode thereof being coupled to said means for providing a voltage, said thyratron being responsive to a predetermined voltage applied to the control electrode thereof to conduct current from the cathode to the anode thereof;

(*d*) an induction coil having a primary winding and a secondary winding, said primary winding having a first terminal connected to the cathode of said thyratron, said secondary winding having a first terminal connected to the cathode of said device and a second terminal connected through a diode to the control electrode of said device, said diode being poled to provide a negative signal at the control electrode of said device;

(*e*) a capacitor connected from the anode of said thyratron to a second terminal of said primary winding;

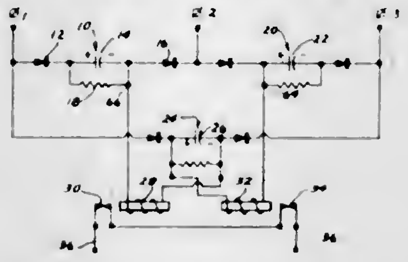
(*f*) means coupled to said capacitor for providing a charging potential thereto;

(*g*) and means coupled to the control electrode of said device for maintaining said negative signal thereat for a predetermined length of time following the application of said negative signal thereto.

3,184,644
POLYPHASE ELECTRORESPONSIVE APPARATUS

Jack C. Faglie, San Antonio, Tex., assignor, by direct and mesne assignments, to Electric Products Engineering Corp.

Filed Apr. 20, 1959, Ser. No. 807,539
24 Claims. (Cl. 317—46)

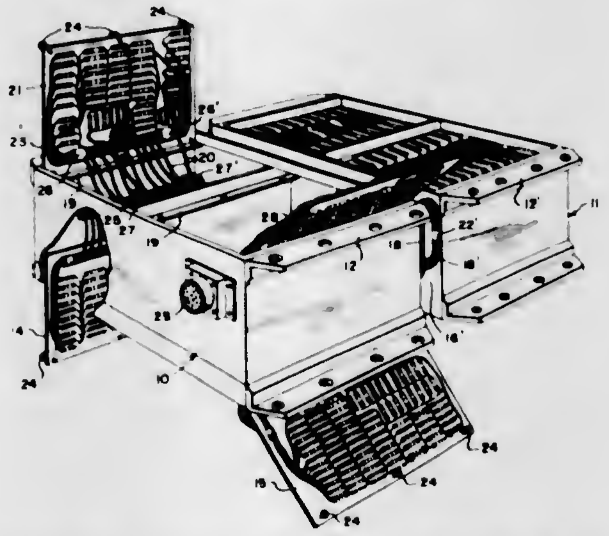


1. A three phase electroresponsive system comprising three phase conductors, a plurality of rectifying means respectively coupled to the three conductors, three impedances respectively electrically coupling the rectifiers, means for providing a load between each of said phase conductors, a filter capacitor across one of said impedances, the rectifying means providing voltages of like and opposite polarities to said impedances, two voltage responsive relays respectively connected between two impedances having the like polarity voltages thereon and two impedances having the opposite voltage polarities thereon wherein each of said conductors provides at least one rectified voltage to said relays.

3,184,645
ELECTRICAL CIRCUIT ASSEMBLY

Aaron J. Schaeffer, Farmingdale, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Mar. 24, 1960, Ser. No. 17,303
2 Claims. (Cl. 317—101)

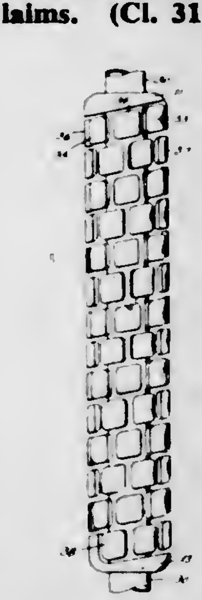


1. An electrical circuit assembly, comprising two mounting boards each supporting circuit components, means disengagably supporting said boards in overlying relationship, a plurality of flexible insulated conductors interconnecting the components on one of said boards with those on the other, said conductors extending from points along respective approximately parallel adjacent edges of said boards and being formed into a cabled section parallel to and between said edges, said flexible conductors and cabel section constituting sole hinging means between said mounting boards, for swinging movement of said boards out of overlying relationship when disengaged from said board supporting means.

3,184,646
HIGH VOLTAGE RECTIFIER STACK

Edward John Diebold, Palos Verdes Estates, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed June 6, 1960, Ser. No. 34,191
18 Claims. (Cl. 317—101)

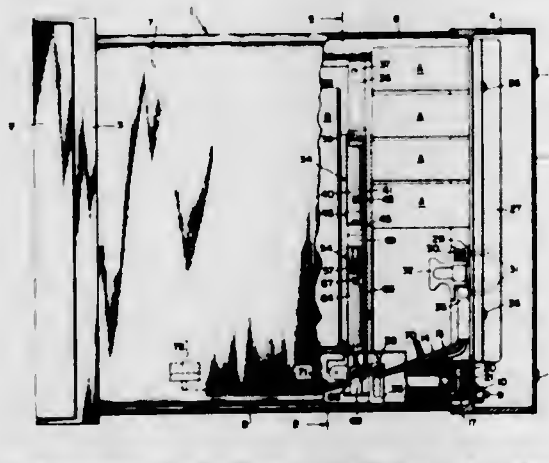


1. A high voltage rectifier stack; said high voltage rectifier stack comprising a plurality of individual cells connected in series with one another; each of said individual cells being supported on a common insulation member; said high voltage rectifier stack having a terminal conductor at either end thereof; and support means for supporting said stack from a grounded support structure; said support means being mechanically connected to said stack and having an insulating level sufficient to withstand high instantaneous transient voltages between either of said terminal conductors and said grounded support.

3,184,647
INSTRUMENT CASE

William P. Godley, Hatboro, Pa., assignor to Honeywell Inc., a corporation of Delaware

Filed Aug. 23, 1960, Ser. No. 51,316
7 Claims. (Cl. 317—101)

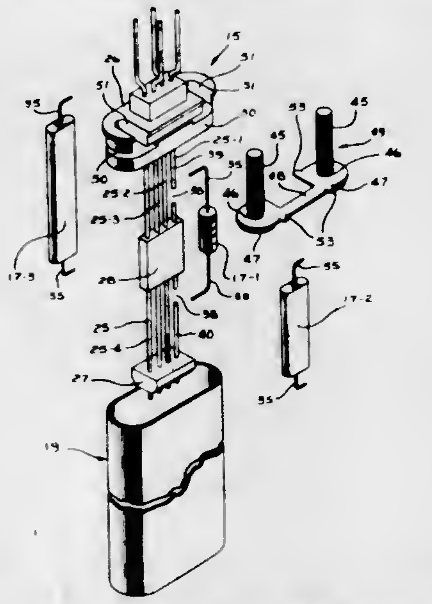


1. An instrument including, a rigid case, a chassis slideably mounted in said case, terminals mounted in said case, terminals mounted on said chassis, electric cables connected in said case and to said terminals on said chassis, and a conductor bridge surrounding and protecting portions of said cables and pivoted to said case and to said chassis and having a pivot intermediate the pivot between said conductor bridge and said case and the pivot between said conductor bridge and said chassis.

3,184,648
ELECTRICAL ASSEMBLIES

Donald R. Brown, Downers Grove, and Robert K. Campbell, Chicago, Ill., Edwin E. Leidich, Allentown, Pa., and Arthur M. Wagner, Du Page, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 22, 1961, Ser. No. 118,935
5 Claims. (Cl. 317—101)

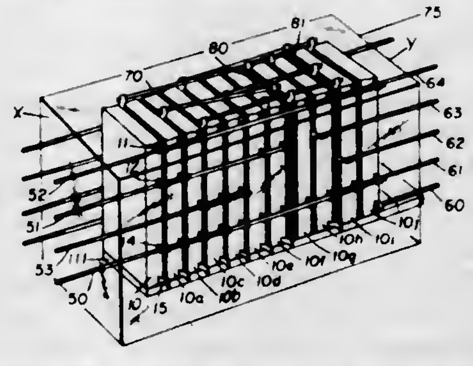


5. An electrical assembly comprising a metallic container having an open end, a block of dielectric material insertable into the open end of said container to close the container and be supported thereby, a plurality of wires embedded in and extending through said block with first portions of the wires disposed within said container and with second portions of the wires disposed without said container, a member having an enlarged portion secured to said block for attaching said block to a support, said block having a laterally disposed recess for receiving the enlarged portion of said member in a predetermined position therein in insulated relation to said wires and with the enlarged portion engaging said container and held thereby against movement relative to said block when said block is in said container, and an electrical component having leads bonded to said first portions of selected ones of said wires and supported thereby within said container.

3,184,649
MINIATURE CIRCUIT ASSEMBLY

Ernest C. Singletary, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 18, 1961, Ser. No. 132,481
8 Claims. (Cl. 317—101)

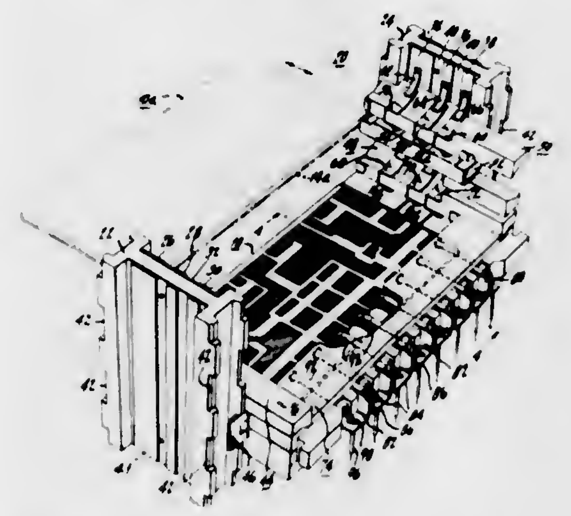


2. An article of manufacture which comprises a thin rectangular conductive sheet element, a rectangular cir-

cuit module having at least one lead extending from one edge thereof, said element having a plurality of tabs integrally formed therewith and extending in the plane thereof with one of said tabs in positional registration with said lead, a rectangular sheet insulator interposed between said element and said module, and a connection formed between said lead and said one of said tabs.

3,184,650
CIRCUIT SUPPORTING APPARATUS

Mario E. Ecker, Palmyra, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Dec. 20, 1961, Ser. No. 160,752
6 Claims. (Cl. 317—101)



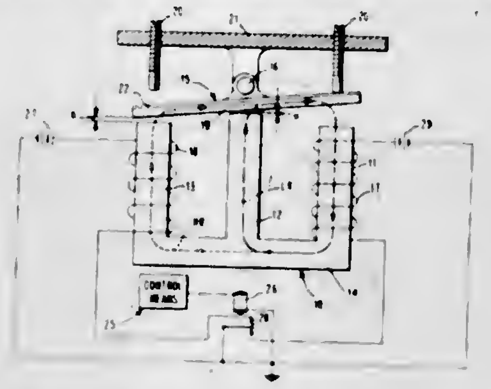
4. In apparatus of the type wherein an edge of a circuit board is inserted into a channel in a member for supporting said circuit board and for providing an electrical connection to the circuit on said board, said circuit board comprising a sheet of insulating material having a metal backing on one side and electrical circuitry on the other side, the combination therewith of

(*a*) a strip of metal formed with a plurality of similar Dutch bends into a plurality of shielded channels, said strip being disposed within said member,
(*b*) a separate contact extending from each of said shielded channels into said channel in said member and disposed to contact said metal backing of said circuit board, at least one wall of each of said shielding channels extending into said channel in said member and being formed with a slot therein to receive said board, and
(*c*) a second contact within each of said shielded channels and insulated therefrom, respectively, each of said second contacts being disposed to contact said circuitry on said board, said strip of metal and each of said second contacts comprising means to connect a source of electrical energy to said circuit, and said metal backing comprising means to shield said circuit when said metal backing is engaging at least one of said separate contacts.

3,184,651
DOUBLE-ACTING ELECTRO-MAGNETIC ACTUATOR

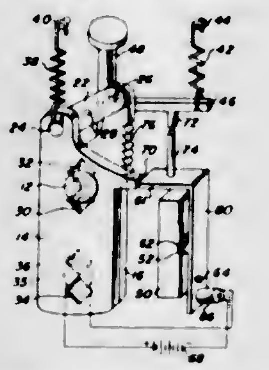
Chester A. Albosta, Johnson City, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 25, 1961, Ser. No. 105,366
5 Claims. (Cl. 317—155.5)

3. A double-acting electro-magnetic actuator of the type comprising an armature rockably mounted on a pivot adjacent the free end of the intermediate leg of an E-type core, characterized by the provision of two coils each in separate circuits and each being the only coil wound around a different one of the outer legs, said coils being so wound and said legs being so configured that upon selective energization of either one of the coils the flux induced in the energized outer leg splits up into two paths, the major portion of the flux going through a low reluctance path including the intermediate leg and base of the core and the armature to attract the armature, a lesser portion of the flux going through a higher reluctance path including the non-energized outer leg and the base and armature to oppose and substantially neutralize the residual flux remaining in the latter leg from previous energization of the other coil, the flux paths being such that when one outer leg is energized the flux will flow in one direction through such leg, and when the other outer leg is energized the flux will flow in said one direction through said other leg.



3,184,652
AUTOMATIC EXPOSURE CONTROL FOR PHOTOGRAPHIC CAMERAS

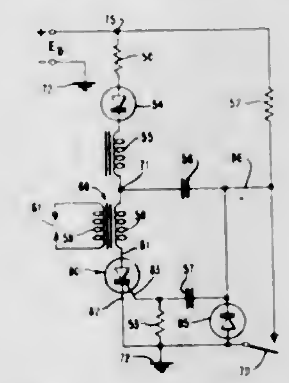
Charles M. Lee, Ralph E. Guenther, and Hubert Nerwin, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Original application July 17, 1959, Ser. No. 827,769, now Patent No. 3,027,818, dated Apr. 3, 1962. Divided and this application Feb. 1, 1961, Ser. No. 86,358
10 Claims. (Cl. 317—157)



1. In a camera having means for producing an electric current, a threshold-sensing magnetic toggle comprising: a block having a notch therein and a pair of permanent magnets spaced oppositely from said notch, a rocker having a pivoting edge adapted to cooperate with said notch and having a pair of magnetic portions disposed in cooperative relation with respective ones of said permanent magnets, said rocker being movable between a first and a second position and said permanent magnets being disposed to cause a first one of said permanent magnets to attract said rocker with greater magnetic force than the second of said permanent magnets for causing said rocker to be normally retained in said first position; means normally maintaining each of the magnetic portions of said rocker separated from the corresponding permanent magnet by a respective predetermined spacing when said rocker is in said first and in said second position; an electromagnet disposed in cooperative relation with one of the magnetic portions of said rocker to provide a magnetic field opposing said first permanent magnet when said electromagnet is energized; and means for electrically connecting said electromagnet and said current producing means, said rocker being moved to said second position whenever said electromagnet is energized by a predetermined threshold current sufficient to cause said electromagnet and said second permanent magnet to exert a magnetic attraction on said rocker greater than the attraction of said first permanent magnet.

3,184,653
SWITCHING CIRCUITS

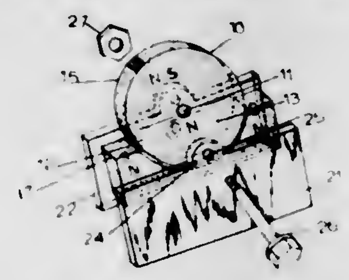
Jearld L. Hutson, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 6, 1960, Ser. No. 60,970
22 Claims. (Cl. 317—157.62)



1. In a switching circuit having a source of energizing potential, an electronic switching element having a pair of switching terminals and a control terminal, a capacitor interconnected between said control terminal and said source, means effective for applying an activating potential to said control terminal and charging said capacitor to condition said element to a conductive state at one time, and means in said circuit effective at another time for impressing the voltage produced by the charge on said capacitor upon said control terminal in a polarity to render said element non-conductive.

3,184,654
MAGNETIC HOLDING DEVICE

Ahmet K. Bey, 1923 W. 19th St., Chicago, Ill.
Filed June 14, 1962, Ser. No. 202,623
9 Claims. (Cl. 317—159)



1. A magnetic device comprising a permanent magnet with opposite poles disposed transversely of the longitudinal axis thereof; a permanently magnetized disc mounted for rotation of the circumference thereof in and out of said permanent magnet, said disc having North and South poles disposed on opposed faces of said disc, and a pair of pole plates mounted adjacent the polar faces of the permanent magnet whereupon rotation of said disc the pole plates can be selectively magnetized and depolarized.

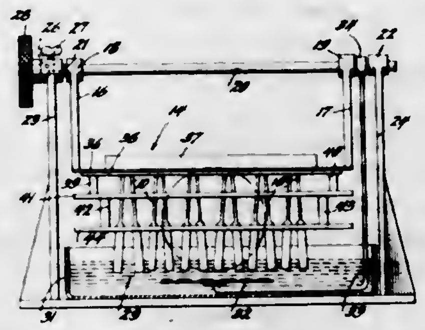
3,184,655
MAGNETIC HOLDING RACK

Ford Jay Brown, Kutztown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 10, 1963, Ser. No. 315,158
6 Claims. (Cl. 317—159)

1. In a magnetic rack for holding elongated paramagnetic elements,

a frame,

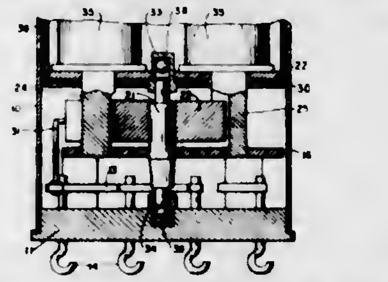
a series of magnets arranged along said frame with each alternate magnet being disposed with its north pole adjacent to the south pole of the next succeeding magnet, and



a bracket constructed of paramagnetic material mounted on and spaced from said frame, said bracket having a series of holes, each pair of which is associated with one of said magnets for receiving said paramagnetic elements whereupon the tips of each pair of elements are attracted toward each other and the trailing extremities are repelled from each other and against opposite walls of the associated holes.

3,184,656
RELAY ARMATURE BEARING ASSEMBLY

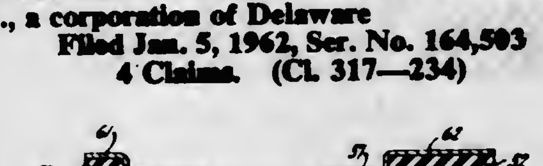
George S. Lychyk, Cicero, John M. Lord, Oak Park, and Wayne E. Neese, Chicago, Ill., assignors to Automatic Electric Laboratories Inc., Northlake, Ill., a corporation of Delaware
Filed Oct. 9, 1961, Ser. No. 143,701
3 Claims. (Cl. 317—197)



1. An armature bearing assembly for an electrical relay comprising: a pair of one piece sleeves each with an internal bearing surface, said sleeves being spaced from each other and mounted in said relay; a shaft having ends rotatably supported by said sleeves at said bearing surfaces thereof; a pair of steel balls positioned within said sleeves and in such relationship to the ends of said shaft to provide a thrust bearing therefor and also to size said sleeves for reception of the ends of said shaft; and an armature carried by said shaft.

3,184,657
NESTED REGION TRANSISTOR CONFIGURATION

Gordon E. Moore, Los Altos Hills, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Jan. 5, 1962, Ser. No. 164,503
4 Claims. (Cl. 317—234)

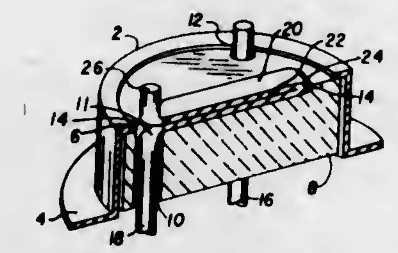


1. A semiconductor device comprising a body of semiconductor material having a surface, said body having alternating regions of opposite conductivity in a nesting relationship, each inner region separated from an adjacent surrounding region by a junction which extends to said surface and there completely surrounds the inner region, each successive inner region located eccentrically within

its surrounding region and forming a ledge in the surrounding region extending to the surface and projecting laterally to one side of the surrounded inner region, one of the surrounding regions being thinner in the ledge portion than in the portion thereof immediately adjacent and beneath its surrounded inner region, an insulating film covering said surface which leaves exposed an area of said surface aligned over the thinner ledge portion of the said one surrounding region and over its surrounded inner region, and separate conductive contacts overlying said surface in electrical ohmic connection with the exposed areas of each of said regions and overlying the insulating film at all other points.

3,184,658
SEMICONDUCTOR DEVICE AND HEADER COMBINATION

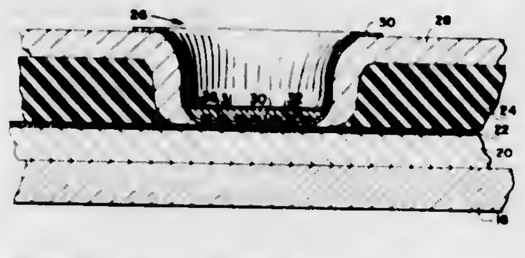
Clarence R. Littlepage, Jr., and Joseph V. Semon, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 22, 1962, Ser. No. 196,793
7 Claims. (Cl. 317—234)



1. A semiconductor device header comprising a metallic shell encasing a body of insulating material and a plurality of leads passing through said body and electrically isolated from said shell, one of said leads being bent at substantially a 90° angle to the portion of said lead passing through said insulating material and bent through a 180° angle to fold back upon said first-mentioned bent portion, terminating in a portion bent at substantially a 90° angle to said second bent portion and positioned in line with the portion passing through said insulating material, said first and second bent portions of said lead being flattened and embedded in a surface of said insulating material and having an exposed surface for mounting a semiconductor device thereon.

3,184,659
TUNNEL CATHODE HAVING A METAL GRID STRUCTURE

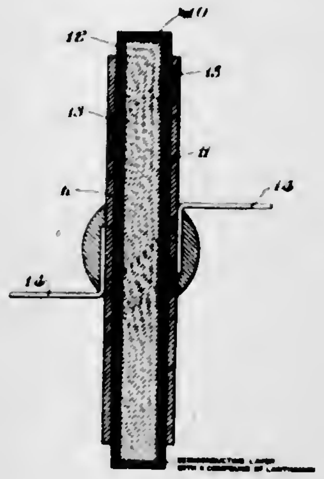
Julius Cohen, Brooklyn, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,600
8 Claims. (Cl. 317—238)



1. A tunnel cathode comprising
(*a*) a metal base,
(*b*) a thin insulating film having a thickness of not more than 100 angstroms formed on the surface of said metal base, said thin insulating film consisting of an air-grown oxide of said metal base,
(*c*) a thick insulating layer having a thickness greater than 100 angstroms deposited on the surface of said insulating film, said insulating layer having an aperture therein,
(*d*) a thin metal layer deposited in said aperture on the surface of said insulating film, and
(*e*) a metal grid in intimate contact with the surface of said thin metal layer.

3,184,660
CERAMIC CAPACITOR

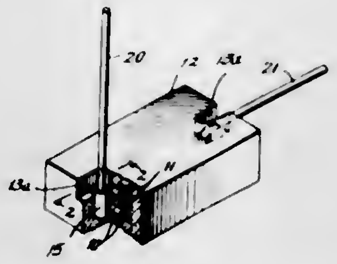
Preston Robinson, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Aug. 22, 1961, Ser. No. 133,097
1 Claim. (Cl. 317—258)



A ceramic capacitor comprising a dielectric body composed of a ceramic material selected from the group consisting of an alkaline earth titanate, an alkaline earth niobate, an alkaline earth tantalate and bismuth titanate, a surface of said body having a semiconducting layer integral with said ceramic material, a constituent of said layer being a compound of lanthanum; and an electrode covering less than the full area of the surface of the layer.

3,184,661
TERMINAL MEANS FOR ELECTRICAL COMPONENTS

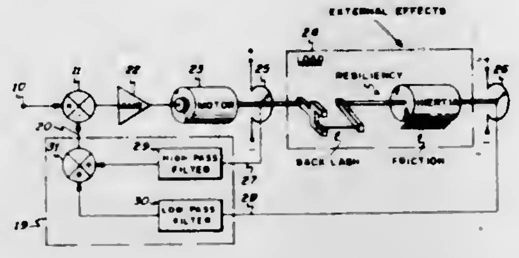
Barton L. Weller, Monroe, Conn., and Charles G. Horn, Jamaica, N.Y., assignors to Vitramon, Incorporated, Monroe, Conn., a corporation of Delaware
Filed Oct. 18, 1962, Ser. No. 231,344
8 Claims. (Cl. 317—261)



1. In an electrical component comprising a substantially rigid brittle monolithic fired body of thermo-shrinkable material having at least one electrical element embedded therein, said body being formed with a recess extending at least to said electrical element, and a terminal means disposed in said recess in said body for communicating said electrical element outwardly thereof; the improvement wherein said terminal means comprises a resilient sleeve of electrically conductive material open at both ends and having a melting point higher than the firing temperature of said body disposed in said recess and having electrical connection with said electrical element, said sleeve being held in said recess by the shrinking of the body therearound when said body is fired.

3,184,662
CLOSED LOOP SERVO SYSTEM WITH DUAL CHANNEL DEGENERATING FEEDBACK

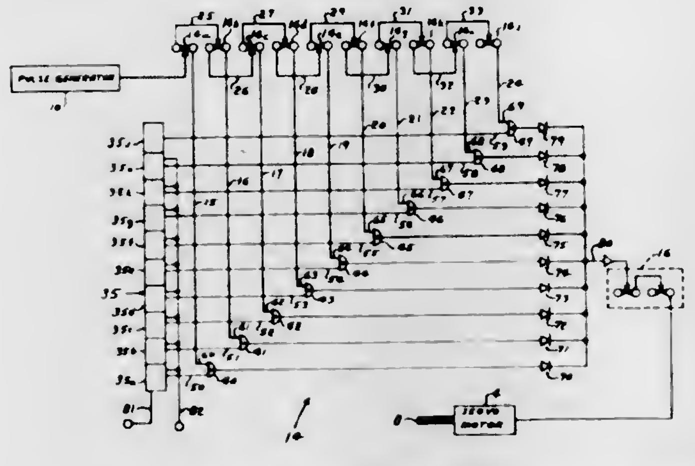
Richard A. Wallace, Phoenix, Ariz., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed July 9, 1962, Ser. No. 208,389
8 Claims. (Cl. 318—18)



1. In a servo system with a load having an input end and an output end, a motor connected to the input end of the load, means for providing an operating input to the motor, and feedback means for providing an input to the motor in opposing relation to the input of said input means including a first transducer producing a signal depending on the load output with frequency components in a range that includes a resonant frequency, a second transducer producing a signal depending on the load input with frequency components in a lower range overlapping the frequency range of the first transducer, and frequency selective means for combining and passing the signals of the transducers in a frequency range between upper and lower limits within the overlapping frequency range whose upper limit is below the resonant frequency that includes a frequency crossover region for passing signals of both transducers, a region between the lower limit and crossover region for passing the signal of the first transducer, and a region between the upper limit and the crossover region for passing the signal of the second transducer.

3,184,663
PLURAL PULSE RESPONSIVE MOTOR SYNCHRONIZING CONTROL SYSTEM WITH UNIFORM PULSE SPACING

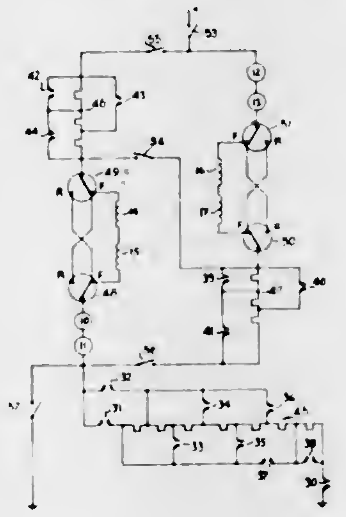
Harry W. Mergler, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed July 25, 1960, Ser. No. 45,143
3 Claims. (Cl. 318—39)



1. In a control system including first and second pulse-responsive servos to be operated in a predetermined relationship with respect to each other and each adapted to provide a unit of movement for each pulse applied thereto and wherein the pulses applied to the first servo are to be related to the pulses applied to the second servo by the factor f/A where f is the frequency of the pulses applied to the second servo and where A is the ratio of the movements of said servos to be effected by the pulses, pulse generating means for generating a first pulse train having a frequency Mf where M is a whole number, means for applying said pulse train of frequency Mf to said second pulse-responsive servo including a first dividing means for scaling the pulses applied thereto by the factor M, second circuit means for applying the pulses from said pulse generator to said first pulse-responsive servo including a binary multiplying circuit for multiplying the input pulses applied thereto by the factor $1/A$ and comprising output connections having individual pulse trains thereon which are respectively related in frequency and number of pulses to the pulses of the train applied to the input of the binary multiplying circuit by the factor $\frac{1}{2}^n$ where n is a whole number with n being different for each output connection, means for selecting and combining certain ones of said individual pulse trains to provide an output pulse train having a frequency and number of pulses related to the first train by the factor Mf/A, and second dividing means for scaling said output pulse train by the factor M, said first and second dividing means comprising a circuit having output pulses which are evenly spaced when evenly spaced input pulses are applied to the inputs of the circuits.

3,184,664
PLURAL MOTOR RAILWAY ACCELERATION CONTROL SYSTEM

Clarence V. Cunningham and Ira W. Lichtenfels, Erie, Pa., assignors to General Electric Company, a corporation of New York
Filed June 20, 1962, Ser. No. 203,858
7 Claims. (Cl. 318—58)

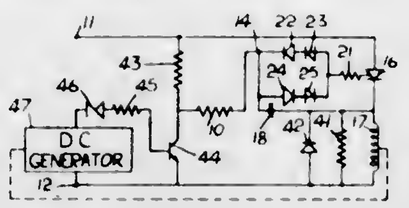


1. An electric railway control system for controlling one or more railway traction motors comprising:
(*a*) a sequentially operable switching controller having a range of cam positions over which cam actuated contactors are sequentially operated,
(*b*) a reversing contactor associated with each of said traction motors and operable between first and second circuit conditions for connecting the field windings of said motors for forward or reverse operation,
(*c*) cam means for actuating said reversing contactor,
(*d*) said cam means being operable to actuate said reversing contactor to said first circuit condition when said controller is in its off position, and
(*e*) latching means actuable between two positions to hold said reversing contactor in said first circuit condition against actuation by said cam means when said latching means is in one of said two positions and to release said reversing contactor to permit actuation to said second circuit condition by said cam means when said latching means is in the other of said two positions.

3,184,665
SEMI-CONDUCTOR DIRECT CURRENT CONTROL CIRCUITS

Maurice James Wright, Harborne, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Mar. 25, 1963, Ser. No. 267,645
Claims priority, application Great Britain, Mar. 28, 1962, 11,830/62
24 Claims. (Cl. 318—327)

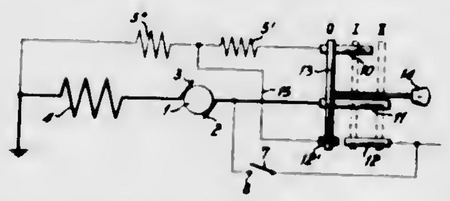


1. A semi-conductor direct current control circuit comprising in combination a switchable rectifier, said switchable rectifier having an anode, a cathode and a gate, and being switched on by a positive pulse applied between its gate and cathode, and being switched off by a negative pulse applied between its gate and cathode, a load in the anode-cathode circuit of the switchable rectifier, a firing circuit for the switchable rectifier, the firing circuit including a capacitor one side of which is connected to the cathode of the switchable rectifier and the other side of which is connected to the gate of the switchable rectifier through parallel circuits containing respectively a pair of oppositely connected four-layer diodes, each four-layer diode breaking down when the voltage across it exceeds a predetermined value, and then conducting until the voltage across it falls substantially to zero, means for charging the capacitor to one polarity, means for breaking down one of the four-layer diodes in the forward sense when the capacitor is charged to said one polarity, at which point the capacitor discharges through said one four-layer diode and the gate and cathode of the switchable rectifier to switch the latter on, means for charging the capacitor to the opposite polarity, means for breaking down the other four-layer diode in the forward sense when the capacitor is charged to said opposite polarity, at which point the capacitor discharges through said other four-layer diode and the gate and cathode of the switchable rectifier to switch the latter off, and means for preventing breakdown of either four-layer diode in the reverse direction by the voltage maintained across it by the capacitor.

3,184,666
DYNAMIC BRAKE FOR A COMPOUND MOTOR CONTROL SYSTEM

Kurt Groetzner, Stuttgart-Zuffenhausen, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed May 25, 1962, Ser. No. 197,738
Claims priority, application Germany, June 22, 1961, B 62,993
8 Claims. (Cl. 318—381)

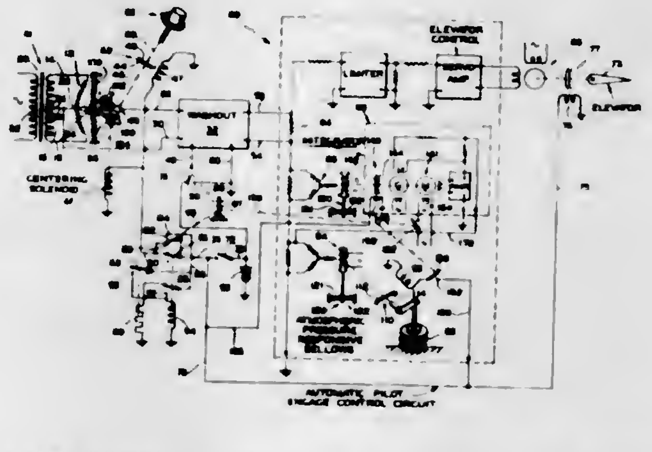


2. Dynamic brake for a compound motor control system, particularly suitable for the operation of windshield wipers on automotive and other vehicles, comprising, in combination, a source of direct current energy; a rotor and first and second brush means cooperating therewith; a series-exciter winding connected between one terminal of said source and said first brush means; shunt exciter means including a first shunt winding and a second shunt winding connected as a series-combination with each other, one end of said series-combination of shunt windings being conductively connected with said first brush means; and control switch means connected between the other terminal of said source, said shunt exciter means and said second brush means, said switch means including a group of contact means and a switching member, said group and said switching member being movable relative to each other between at least two positions, first contact means of said group being connected with said other terminal of said source, second contact means of said group being conductively connected with the other end of said series-combination of shunt windings and with said second brush means, and third contact means of said group being connected with the junction point between said first and second shunt windings, said switching member connecting in one of said positions of said switch means said first contact means with said second contact means for causing normal operation of the compound motor, while in the second position causing discontinuation of the motor operation said switching member connects said second contact means with said third contact means whereby said first shunt winding is short-circuited and said second shunt winding is connected in series with said rotor so as to act as a braking means electrically absorbing dynamic energy stored in said rotor after its disconnection from said source.

3,184,667
ALTITUDE SELECTOR SYSTEM FOR AUTOMATIC PILOT

Larry Kufert, Wayne, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Oct. 26, 1962, Ser. No. 233,363
10 Claims. (Cl. 318—489)



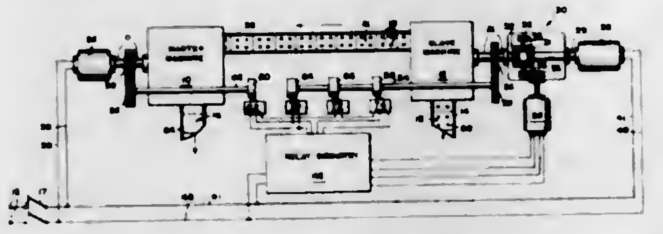
1. In an elevator controlling automatic pilot including means operable to adjust the elevator so as to maintain a selected altitude condition, a pitch controller operable in opposite senses from a null position to cause the automatic pilot to position the elevator so as to vary the flight altitude of the aircraft, operator-operative means for gradually rendering the pitch controller inoperative, and means responsive to operation of said operator-operative means for returning the said pitch controller to the null position upon the pitch controller being rendered inoperative.

3,184,668
MASTER-SLAVE PLURAL MOTOR SYNCHRONIZING SYSTEM

Alten E. Whitecar, Westville, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1963, Ser. No. 261,653
2 Claims. (Cl. 318—75)

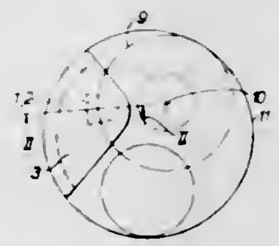
1. A synchronizing system for synchronizing the operating cycles of a slave machine and a master machine comprising a first motor for driving said master machine, a first cam arranged to be rotated by said first motor, a first switching means operable by said first cam, a differential transmission having its output shaft arranged to operate said slave machine, a second motor arranged to drive one input shaft of said differential transmission, second, third and fourth cams arranged to be rotated in response to rotation of said output shaft, second, third and fourth switching means operable by said second, third and fourth cams respectively, a reversible servomotor having its output shaft arranged to drive the other input shaft of said differential transmission, and fifth switching means operable to deliver power to said reversible servomotor selectively to operate said servomotor in either a forward or reverse direction, said fifth switching means being operable by said first and third switching means to deliver power to said servomotor when said third cam either leads or lags said first cam by a predetermined amount, said fifth switching means being operable to cause said servomotor to operate in forward direction when said fourth switching means is activated in one direction by said fourth cam and in a reverse direction when said fourth switching means is not activated by said fourth cam, and said fifth switching means being operable by said first and second switching means to remove operating power from said servomotor when said first and second cams are in phase coincidence.



3,184,669
HOROLOGICAL INSTRUMENT MOTOR

Graham Williams, Shurdington, Cheltenham, England, assignor to S. Smith & Sons (England) Limited, London, England, a British company

Filed Dec. 3, 1963, Ser. No. 327,670
Claims priority, application Great Britain, Dec. 19, 1962, 47,869/62
11 Claims. (Cl. 318—129)

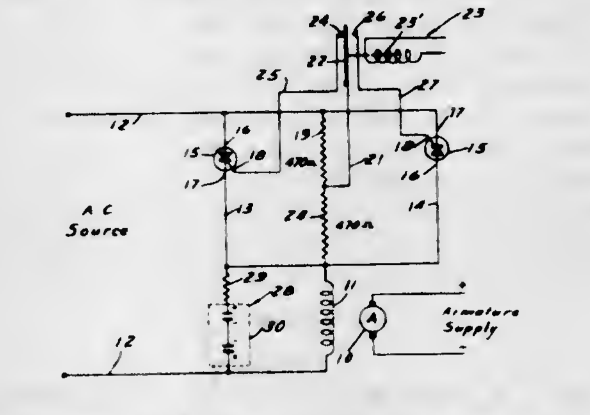


1. An oscillating motor for a horological instrument, comprising in combination an inertial member mounted for rotational oscillation about an axis, an assembly comprising at least one permanent magnet constructed from a magnetic material having an energy product not less than 5×10^6 gauss-oersteds and also comprising at least one member constructed of a high permeability magnetic material, said permanent magnet and said member being disposed relative to one another in said assembly so as to form a magnetic circuit having a gap through which magnetic flux passes, coil means carried by said inertial member, said assembly being so positioned that said coil means pass through said gap during the oscillations of said inertial member to induce voltage pulses in said coil means, and electric pulse generating means connected to said coil means and constructed to pass current pulses through said coil means in response to said voltage pulses, said current pulses and said magnetic flux interacting to produce impulses on said inertial member in the sense to maintain oscillations thereof.

3,184,670
CONTROL SYSTEM FOR REVERSING MOTOR ROTATION

Rollin A. Reynolds, Palos Verdes, Calif., assignor to Dyna Systems Inc., Torrance, Calif., a corporation of California

Filed Sept. 5, 1961, Ser. No. 136,090
4 Claims. (Cl. 318—300)

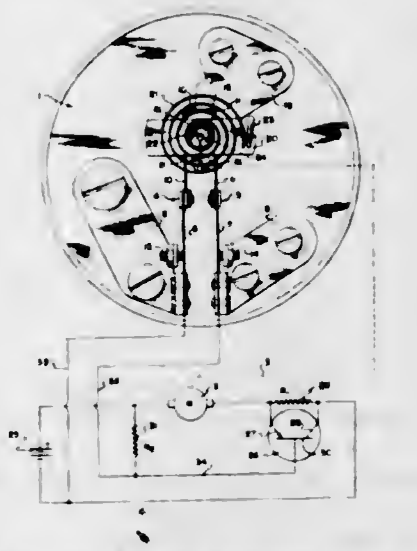


1. In a control system for reversing a direct current motor having an armature winding and a field winding, an alternating-current voltage source, resistor means connected in series with said field winding to said source, a pair of gate controlled rectifiers each having a control electrode, said rectifiers being connected in parallel inverse relation to each other and in parallel across said resistor means, and means for selectively connecting the control electrode of either rectifier with a point on said resistor having a positive gating potential when the field current is in a proper direction to pass through the selected rectifier in a forward direction.

3,184,671
MOTOR SPEED GOVERNOR CIRCUIT

William D. Riggs, Woodbury, Conn., assignor to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware

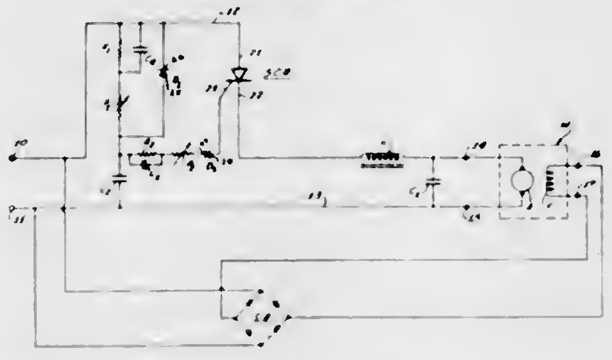
Filed Aug. 18, 1958, Ser. No. 755,709
1 Claim. (Cl. 318—325)



In a motor governor circuit, a power circuit comprising a power source, a transistor, including emitter, collector and base electrodes, a motor connected in series with said power source and transistor and adapted to be energized at a high level when said transistor is conductive, a by-pass resistor in parallel with the emitter and collector electrodes of said transistor and providing a circuit for energizing said motor at a low level when said transistor is non-conductive, said motor being connected in series in said power circuit between said emitter electrode and a first terminal of said power source, a first bias circuit for rendering said transistor conductive comprising governor switch contacts and a non-resistive circuit for connecting the base electrode of said transistor directly to the second terminal of said power source whereby to apply control voltage of a first relative polarity between said emitter and base electrodes, and a second bias circuit for rendering said transistor non-conductive comprising a bias resistor connected to said base electrode and to a bias point in said power circuit between said motor and said first terminal, the relative impedances of said by-pass resistor and motor being such, in relation to the impedance of said bias resistor and the base electrode leakage current of said transistor, that the voltage drop across the motor and between said emitter electrode and said bias point is greater, under normal operating conditions when said governor switch contacts are open, than the voltage drop across said bias resistor due to leakage current, to apply a control voltage of a second relative polarity between said emitter and base electrodes to render said transistor non-conductive when said governor switch contacts are open.

3,184,672
SCR POWER SUPPLY FOR MOTOR SPEED CONTROL SYSTEM

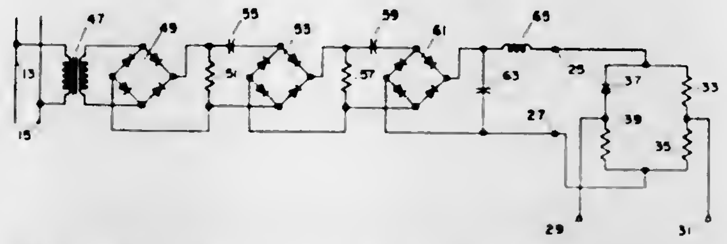
Raymond J. Mason, Lynwood, and Richard C. Cowgill, San Gabriel, Calif., assignors to Minarik Electric Company, a corporation of California
Filed Feb. 4, 1963, Ser. No. 255,990
6 Claims. (Cl. 318—345)



1. A regulated power supply for a direct current shunt motor comprising, in combination:
separate full-wave rectifier means adapted to be coupled to an alternating voltage source and to the field winding of the shunt motor for providing energy thereto during both positive and negative half-cycles of the applied alternating voltage wave;
a silicon-controlled rectifier having anode, cathode, and gate terminals;
a filter circuit including an inductance coil and a capacitor coupled together in series;
bilaterally conductive circuit means coupling one end of said filter circuit to said cathode of said silicon-controlled rectifier;
circuit means adapted for coupling the other end of said filter circuit, and said anode terminal of said silicon-controlled rectifier, across the alternating voltage source;
circuit means for coupling the motor armature in parallel across said capacitor;
and bias control means coupled to said gate terminal of said silicon-controlled rectifier and adapted to be coupled across the alternating voltage source;
the circuit action being such that driving energy is supplied to the motor armature during both the positive and the neagtive half-cycles of the applied alternating voltage wave, and during each negative half-cycle the mechanical load on the motor determines the amount of energy drawn from said capacitor into the motor armature and thereby changes the potential level at said cathode terminal of said silicon-controlled rectifier so as to precisely determine the point at which said silicon-controlled rectifier becomes conductive during the next succeeding half-cycle of the applied voltage wave.

3,184,673
VOLTAGE REGULATOR WITH FREQUENCY MULTIPLICATION DETECTOR MEANS

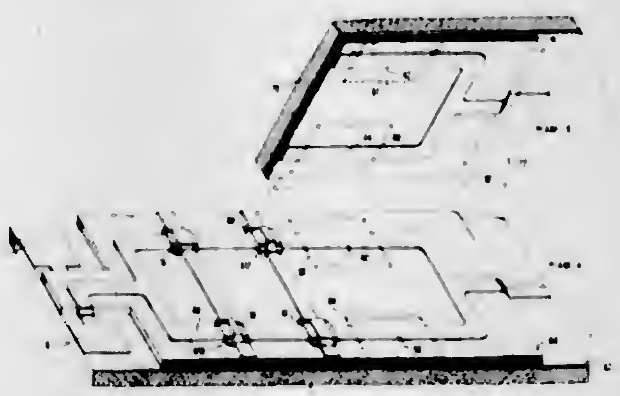
Joseph Grillo, New Milford, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 8, 1961, Ser. No. 157,986
4 Claims. (Cl. 322—28)



4. A voltage regulated system comprising:
an A.C. generator having a field winding and output terminals;
a transformer having a primary winding connected across said output terminals and a secondary winding inductively coupled to the primary winding;
a full wave rectifier having input and output terminals;
a bridge network having diagonally opposite input and output terminals, three arms of the bridge consisting of resistive impedances and the fourth arm consisting of a Zener diode having one electrode connected to one of the input terminals of the bridge network;
inductive impedance means coupling one of the output terminals of said rectifier to said one input terminal of the bridge network, the other rectifier output terminal being connected to the other input terminal of the bridge network;
capacitor means shunting the output terminals of said rectifier;
means including an amplifier coupling said field winding across the output terminals of said bridge net work; and
a plurality of frequency multiplication stages coupling the secondary windings of said transformer across the input of said rectifier, each of said frequency multiplication stages including a full wave bridge rectifier, a resistive impedance shunting the signal input path to said bridge rectifier, and capacitance means in series with said signal input path.

3,184,674
THIN-FILM CIRCUIT ARRANGEMENT

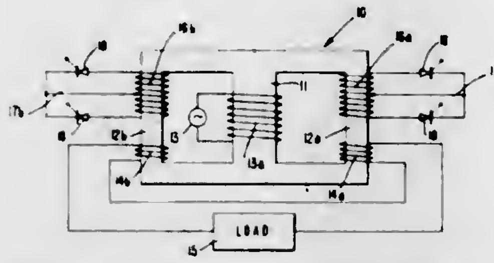
Richard L. Garwin, Scarsdale, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Aug. 21, 1961, Ser. No. 132,961
17 Claims. (Cl. 323—44)



1. A microminiature thin-film microstrip transmission line circuit comprising; at least first and second circuit portions; a segment of the strip conductor of the transmission line of said first portion extending in parallel relationship with a segment of the strip conductor of the transmission line of said second portion; ground planes associated with each of said transmission lines and areas of said ground planes being removed adjacent the parallel segments of said transmission lines.

3,184,675
GATED CONTROL FOR POWER CIRCUIT

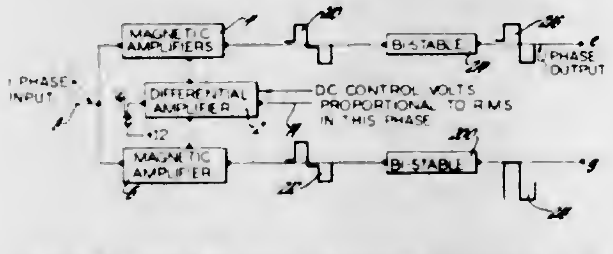
F Sutherland Macklem, 12 Gower Road, New Canaan, Conn.
Filed July 11, 1960, Ser. No. 42,145
7 Claims. (Cl. 323—50)



2. A gated control circuit comprising: a pair of flux loops having a common branch; a primary winding coupled to said common branch; means for connecting a source of electrical potential to said primary winding; a pair of output windings respectively coupled to said pair of flux loops; means for connecting a load across both of said output windings; a pair of center tapped control windings coupled respectively to said pair of flux loops; and a silicon controlled rectifier connected between each end of each control winding and the associated center tap, the pair of rectifiers associated with each control winding being oppositely poled.

3,184,676
STATIC INVERTER

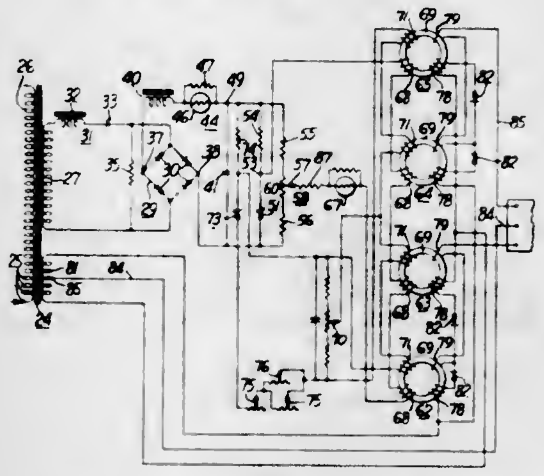
James A. Rodaer, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 15, 1961, Ser. No. 96,019
5 Claims. (Cl. 323—66)



1. In an alternating current system in which it is desired to maintain each separate phase voltage approximately the same each phase including two electrically conductive lines, a stabilizing control circuit comprising a feedback circuit for one phase connected to the output in which a D.C. voltage is developed that is proportional to the voltage in that phase, a differential amplifier connected to the feedback circuit, a source of electrical power and a voltage reference diode connected to said differential amplifier so that the voltage on the feedback circuit is constantly compared with a reference voltage to provide a pair of differential signal voltages moving in opposite directions as the feedback voltage changes, a plurality of magnetic amplifying means one connected in each electrically conductive line, said differential amplifying means being connected to each magnetic amplifying means to control the signal voltages passing therethrough to cause the pulse through one magnetic amplifying means to be initiated earlier in the cycle and through the other magnetic amplifying means later in the cycle, a bi-stable switching means connected to the output of each magnetic amplifying means and developing pairs of square wave stepped signals that move along the time base in opposite directions as the signals formed by the associated differential amplifier are applied, the combined output from adjacent bi-stable switching means connected to the output and forming output voltage pulses whose width or R.M.S. value changes but whose phase remains constant as the feedback voltage amplitude varies.

3,184,677
STATIC CONTROL PANEL

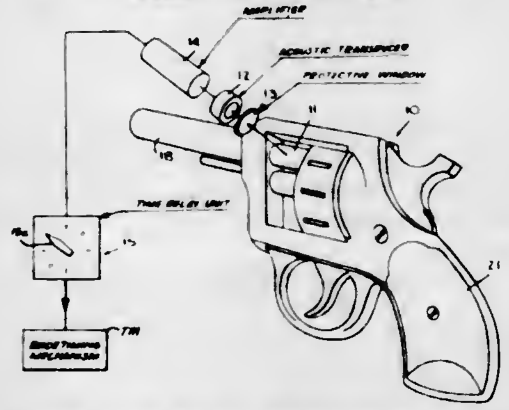
Julius E. Jacobsen, Wauwatosa, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Aug. 7, 1961, Ser. No. 129,819
8 Claims. (Cl. 323—89)



3. In a control system for supplying a signal to a motor that operates in response to the signal to adjust the voltage of an A.C. transmission line in a direction to reduce the signal: means connected to said line for providing an output voltage proportional to the line voltage; conversion means connected across said output for supplying a proportionate R.M.S. D.C. voltage; a first semiconductor means connected to said proportionate D.C. output for maintaining a constant reference voltage; means connected to the output of said reference voltage and the output of said proportionate D.C. voltage for providing an error signal varying in polarity in response to the direction of a difference between said two voltages; a magnetic amplifier having a signal winding connected to receive said error signal; a bias winding opposing the effect of energizing said signal winding in one polarity; a power winding for transmitting a signal to operate the motor in response to the effect of said signal winding in excess of said bias winding opposition; and a second semiconductor means connected across said conversion means for maintaining a constant bias current.

3,184,678
PISTOL CONTROLLED DEVICE FOR TIMING RACES INCLUDING A DIGITAL DELAY SYSTEM

Irving Roth, Williston Park, N.Y., assignor to Bulova Research and Development Laboratories, Inc., Woodside, N.Y., a corporation of New York
Filed Apr. 7, 1961, Ser. No. 101,563
1 Claim. (Cl. 324—68)

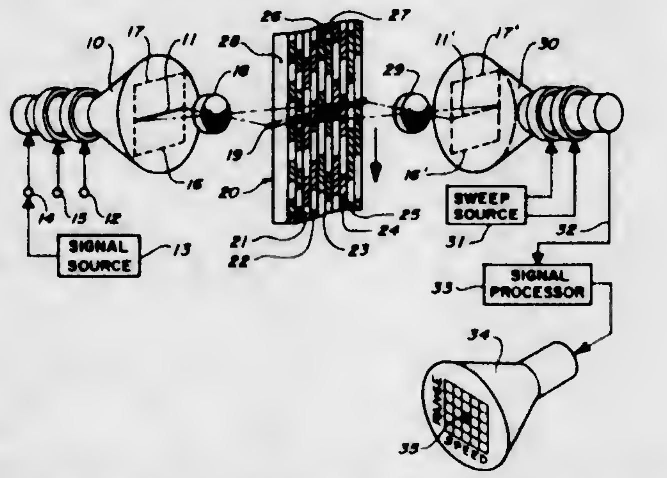


A race timing apparatus comprising a pistol removed a predetermined distance from a starting line sufficient to introduce a delay in the order of a tenth of a second between the pistol shot and the time the sound thereof reaches the starting line, a transducer mounted on said pistol and responsive to a shot therefrom to produce a control signal, a race timing mechanism, and a time delay device intercoupling said transducer to said mechanism to initiate the operation thereof at the same instant the sound of the shot traverses said distance and reaches the starting line removed from the pistol, said time delay device including an oscillator having a given frequency, a counter coupled to said oscillator to count the cycles thereof and to provide an output signal when a predetermined count is reached at said same instant to initiate the operation of said mechanism, and means responsive to said output signal to initiate the operation of said race-timing mechanism.

3,184,679
MULTI-PHASE SIGNAL PROCESSOR FOR LIGHT LINE OPTICAL CORRELATOR

Walter Kuehne, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 17, 1961, Ser. No. 145,718
9 Claims. (Cl. 324—77)



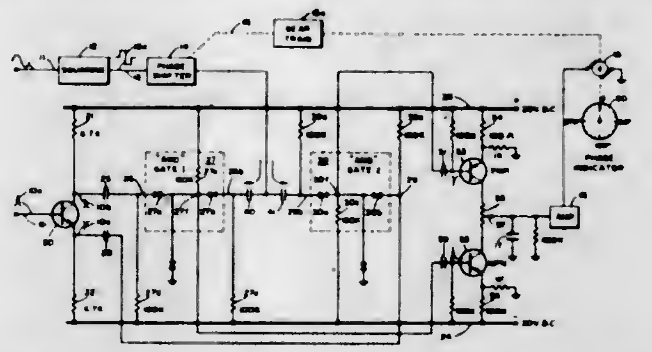
1. A system for determining the presence of certain frequencies in an input signal comprising means for generating a light line variable in intensity according to said input signal, a line of light-integrating areas exposed to said light line, light-modulating means interposed between said light line and said light-integrating areas, said light-modulating means being adapted to modulate each of a plurality of transversely-spaced segments of said light line, each of said segments being modulated at one of said certain frequencies and at a plurality of different phase relationships, means for sequentially sampling each of said light-integrating areas and deriving output signals therefrom, processing means connected to said sampling means to receive said output signals and adapted to produce a composite output for each of said segments, said composite signal having an amplitude independent of the phase of said input signal, and means for displaying said composite signals in sequence.

3,184,680
PULSE-SQUARE WAVE PHASE DETECTOR WITH POLARITY SENSING COINCIDENCE MEANS

Harold T. Bull, Pasadena, Calif., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed Apr. 25, 1960, Ser. No. 24,497
2 Claims. (Cl. 324—83)

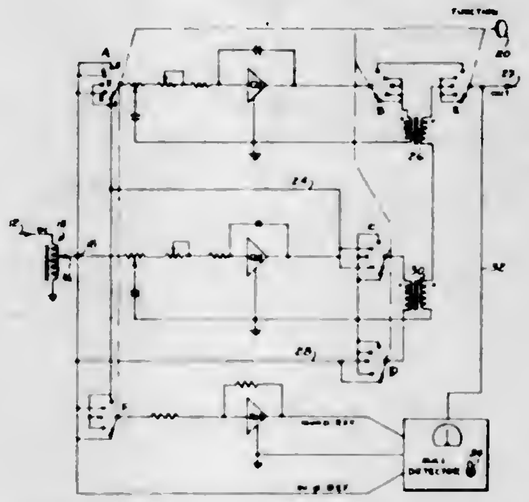
2. A system for measuring the phase relationship between two signals at least one of which alternates in polarity, said system comprising, sources for providing said two signals, means for generating in response to the relative polarities of said signals with respect to each other two series of pulses of, respectively, positive-going and negative-going voltages, an N-P-N type transistor and a P-N-P type transistor, two buses of different D.C. voltages of relatively opposite polarity with respect to ground, the emitter-collector circuits of said transistors being coupled in series between said buses, a storage condenser, said storage condenser being connected between the junction of said transistors and ground, and means for applying said series of pulses, respectively, to the bases of said transistors to alternately connect said condenser to either bus.



3,184,681
APPARATUS AND METHOD FOR THE GENERATION OF PURE QUADRATURE SIGNALS

Richard M. Bloniarz, Los Angeles, Calif., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 3, 1962, Ser. No. 214,543
9 Claims. (Cl. 324—83)



1. A quadrature generator for generating at output terminals thereof an A.C. output signal which is a replica of an A.C. input signal applied to input terminals thereof, but phase shifted precisely 90 electrical degrees, comprising:

(*a*) a pair of phase-shift amplifiers independently adjustable as to phase shift through the 90-degree shift value,

(*b*) switch means interconnecting said amplifiers selectively in cascade or in parallel between the input and output terminals of the generator, and

(*c*) a voltage null indicator connected to the output terminals of said generator.

3,184,682
LOW NOISE FREQUENCY CHANGING CIRCUIT

Daniel J. Healey III, Cockeysville, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Aug. 3, 1962, Ser. No. 214,774
4 Claims. (Cl. 325—435)

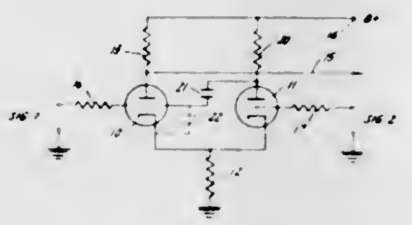
1. A low noise frequency changer circuit comprising:

a pair of triode emission components each having a control electrode and two conduction electrodes, one conduction electrode of each being coupled in common;

a load coupled to said common coupled conduction electrodes of the pair of triode emission components;

a load coupled to each of the other conduction electrodes of each triode emission component;

a voltage supply adaptable to be coupled across the load to said common coupled conduction electrodes and the loads to said other conduction electrodes;



a capacitive coupling between the other conduction electrode of one of said pair of triode emission components and the control electrode of the other of said pair of triode emission components the capacity of said compacitive coupling being substantially equal to the inherent capacity between the control electrode and the conduction electrode of said other triode emission component;

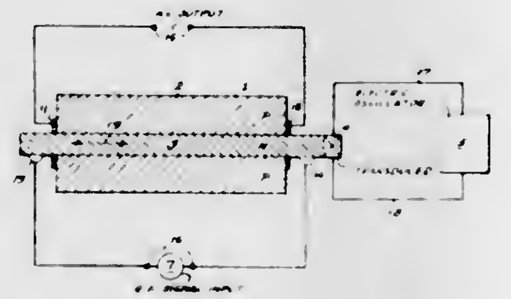
one frequency signal to be changed applied to the control electrode of said other of said triode emission components and another frequency signal applied to the control electrode of said one of said triode emission components; and

an output coupled to the other conduction electrode of said other triode emission component whereby the frequency signal applied to the control electrode of said other triode emission component is changed on the output thereof with a minimum of noise, said noise being minimized by the out-of-phase capacitive and common conduction terminal coupling of said one triode emission component with the other triode emission component.

3,184,683
MECHANICALLY EXCITED ELECTRONIC DETECTING ELEMENT

James J. Murray, 809 Hudson St., and John W. Dawson, Rte. 2, Box 181, both of Durham, N.C.

Filed Jan. 12, 1962, Ser. No. 165,970
6 Claims. (Cl. 325—487)
(Granted under Title 35, U.S. Code (1952), sec. 266)

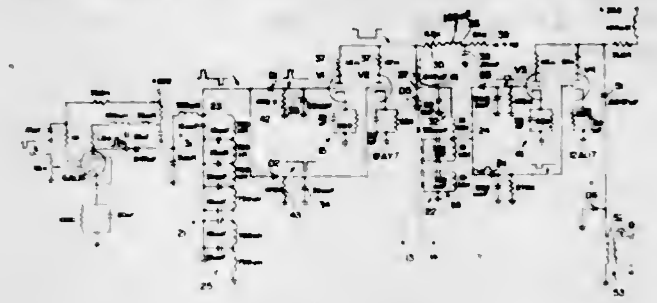


5. A semiconductor device comprising a pair of longitudinal bodies of different types of semiconductive material formed in the shape of a cylindrical bar with a core, means to impart relative motion between said bar and said core, means to provide an input signal to one of said longitudinal bodies whereby said signal, and relative motion between said longitudinal bodies, will result in an output signal from the other of said longitudinal bodies.

3,184,684
PULSE STRETCHER UTILIZING DELAY FURNISHING POLARITY INVERTING MEANS AND MEANS FOR COMBINING INPUT PULSE WITH SAME DELAYED AND INVERTED

Andrew Alford, Winchester, Mass.
(299 Atlantic Ave., Boston, Mass.)

Filed Apr. 25, 1962, Ser. No. 190,123
10 Claims. (Cl. 328—58)



1. An electrical circuit comprising,

delay means responsive to an input pulse of one polarity for furnishing a delayed pulse of opposite polarity,

combining means having an output and first and second inputs for providing an output signal related to the combination of signals applied to said first and second inputs,

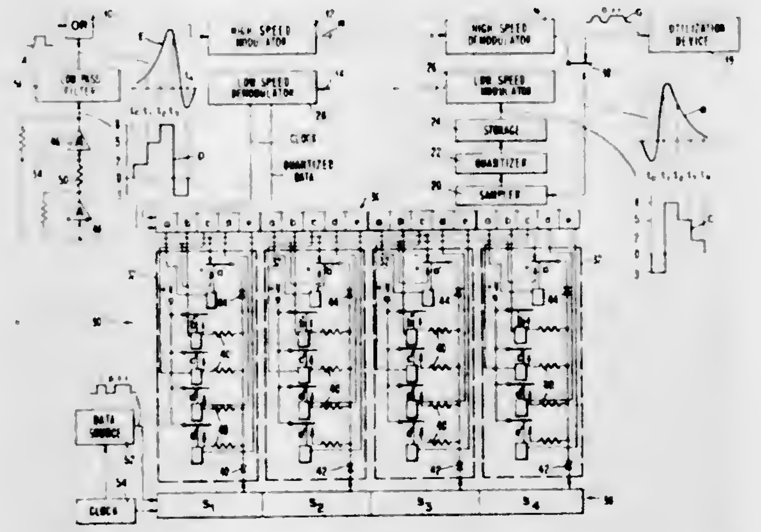
first polarity selective means for coupling said input pulse of only said one polarity to one of said first and second inputs,

and second polarity selective means for coupling said delayed pulse of only said opposite polarity to the other of said first and second inputs, said combining means providing as said output signal a pulse of duration corresponding substantially to the time interval embraced by an input pulse of said one polarity and the immediately following delayed pulse of opposite polarity.

3,184,685
WAVEFORM GENERATORS

Howard L. Funk and Leon Skarshinski, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 18, 1962, Ser. No. 245,543
9 Claims. (Cl. 328—61)



1. A waveform generator comprising

(*a*) a summing network,

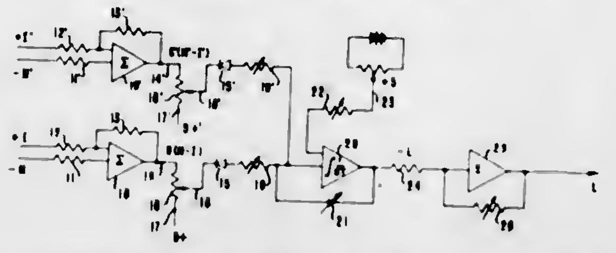
(*b*) a plurality of digital to analog converters having parallelly arranged outputs coupled to said network.

(*c*) a first shift register means for providing each of said converters with a digital representation of an analog signal, and (*d*) a second shift register means for selectively controlling the outputs of said converters to generate at said summing network a waveform composed of the signals supplied by each of said digital-to-analog converters.

3,184,686
OPTIMIZING CONTROLLER

Benjiman D. Stanton, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Aug. 28, 1961, Ser. No. 134,396
11 Claims. (Cl. 328—69)

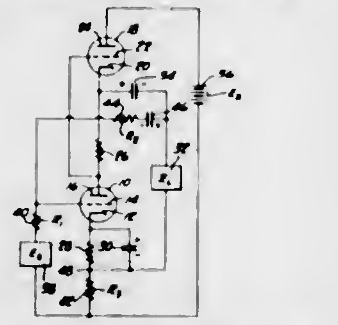


1. An apparatus for optimizing the operation of a process having a plurality of independently controlled manipulated inputs and at least one constrained variable dependent upon said inputs which comprises: means for measuring said constrained variable; means for comparing the measured value of said constrained variable with a preset value and producing a difference signal; means connected to receive said difference signal for producing an output signal which varies slowly in one direction when the difference signal indicates a favorable relation of the measured value in relation to said preset value and varies rapidly in the opposite direction when the difference signal indicates an unfavorable relation; means for controlling one of said inputs in accordance with said measured value and said preset value; and means connected to receive said output signal for controlling the other of said inputs independently of said one input.

3,184,687
PUSH-PULL POWER AMPLIFIER

Charles A. Wilkins, Mountain View, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed July 15, 1960, Ser. No. 43,091
3 Claims. (Cl. 330—70)

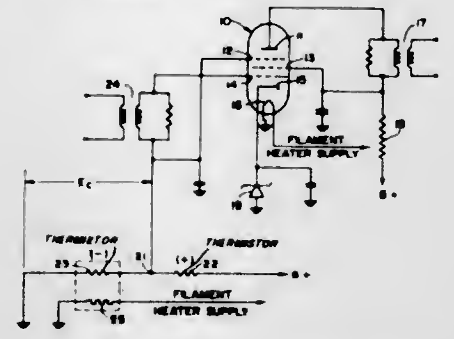


1. A single ended push-pull amplifier comprising: a first tube having at least a first anode, cathode and control grid; a second tube having at least a second anode, cathode and control grid, said cathodes each having a bias resistor coupled thereto, said first anode being coupled to said second cathode bias resistor; means for applying an input signal to said first control grid, said input signal applying means being coupled to a point of reference potential; means for applying an output signal from said first anode to the second control grid; means for applying a direct current voltage to said second anode; a feedback resistor coupled at one end to the end of the said first cathode bias resistor remote from the cathode and at the other end between said input signal applying means and the point of reference potential; a utilization means connected between said one end of said feedback resistor and the second cathode; and a negative feedback loop connected at one end between said utilization means and said second cathode and at the other end between said first grid and said input signal applying means.

3,184,688
TEMPERATURE COMPENSATED AMPLIFIER

Melvin F. Grahl and Keefer S. Stull, Jr., Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed July 13, 1961, Ser. No. 123,912
2 Claims. (Cl. 330—136)

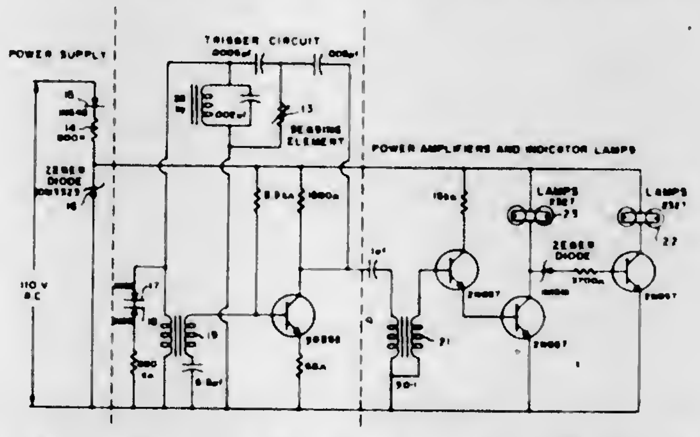


1. A single stage, temperature compensated, intermediate-frequency amplifier comprising a power supply, a pentode amplifier having an anode, a cathode, a control grid and a filament, an output coupling transformer connected to said anode and said power supply, a source of constant potential connected to said power supply, said cathode being connected to said source of constant potential, a first resistor and a second resistor connected in series across said power supply, said first resistor having a positive temperature coefficient of resistance, said second resistor having a negative temperature coefficient of resistance, an input coupling transformer connected to said control grid and to a point intermediate said first and said second resistors, a source of filament voltage connected to said filament, and a heater connetced across said source of filament voltage, said heater being in thermal conductive relationship with said second resistor, whereby the gain of said pentode amplifier is stabilized during variations in temperature of said first resistor and said second resistor.

3,184,689
OSCILLATOR WITH PHASE SHIFT START STOP CONTROLS

Ronald James Wylde, Epping Forest, R.F.D. 1, Annapolis, Md.

Filed Feb. 9, 1961, Ser. No. 88,236
6 Claims. (Cl. 331—117)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A selectively oscillating loop that oscillates only when the value of a variable impedance which is coupled to said oscillating loop is both above a lower set point and below an upper set point comprising:

a forward gain element, a feedback means coupled between said input and said output of said forward gain element;

means for establishing a frequency standard, said means being operably coupled to said feedback means;

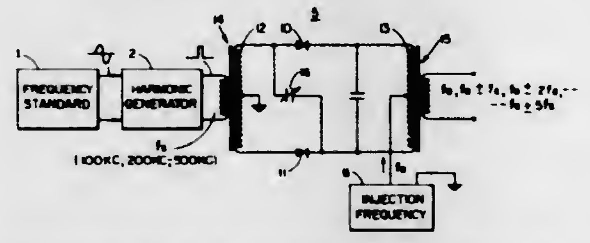
a variable impedance means variable through three ranges of impedance, said first range being below said first point, said second range being between said first point and said second point and said third range being above said second point;

whereby said variable impedance means forms a phase shifting means operable through a first, a second and a third consecutive phase range with said first, second and third phase range respectively corresponding to said first, second and third range of said variable impedance, said second range being the only range effective to maintain said feedback means and said forward gain means in oscillations by having the proper phase relationship.

3,184,690
SPECTRUM BALANCED MODULATOR

John E. Garland, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed July 28, 1961, Ser. No. 127,720
3 Claims. (Cl. 332—43)

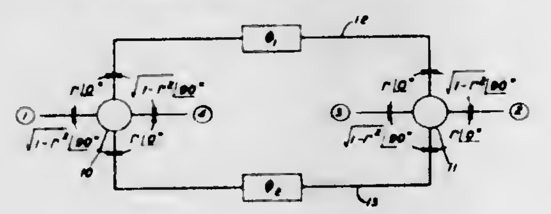


3. In combination in a balanced modulator, a center tapped input transformer winding, a center tapped output transformer winding, a first diode connected between corresponding first terminals of said windings, a second diode coupled between the remaining terminals of said windings, a carrier frequency source coupled between said center taps, a signal source coupled in push-pull across one winding, and a condenser of predetermined capacity coupled between the anode terminal of one diode and the cathode terminal of the other diode for producing a carrier frequency voltage of predetermined level across the terminals of said output transformer winding.

3,184,691
BRANCHING HYBRID COUPLER NETWORK USEFUL FOR BROADBAND POWER-DIVIDING, DUPLEXING AND FREQUENCY SEPARATION

Enrique A. J. Marcatili, Fair Haven, and Douglas H. Ring, Middletown Township, Monmouth County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 29, 1961, Ser. No. 155,660
8 Claims. (Cl. 333—11)

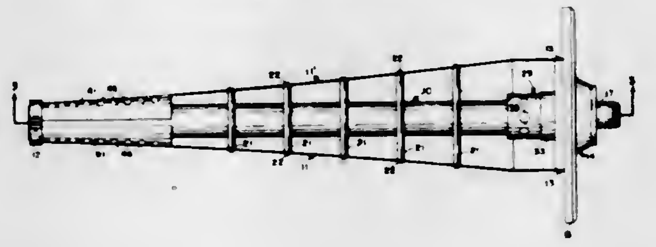


1. A broadband power-dividing network for electromagnetic wave energy having a power division ratio of unity comprising two substantially identical 3 db 90 degree hybrid junctions, each hybrid having two pairs of conjugate branches, first and second wave paths each of which connects one branch of one pair of conjugate branches of one hybrid junction to one branch of one pair of conjugate branches of the other hybrid junction, and a phase shifter located in one of said paths for introducing a relative time phase difference $\varphi=\pm\pi(\frac{1}{2}+2n)$ to wave energy propagating therethrough with respect to wave energy propagating through the other of said paths, where n is an integer.

3,184,692
POWER ABSORBING COAXIAL TERMINATION COMPRISING SLAB LINE STRUCTURE WITH PLANE OUTER PLATES HAVING INWARDLY CURVED END PORTIONS

Goro R. Tahara, Sunnyvale, Calif., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

Filed July 2, 1962, Ser. No. 206,598
3 Claims. (Cl. 333—22)

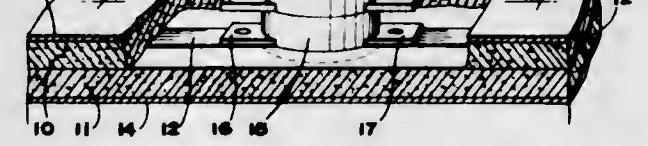


1. A microwave energy dissipating apparatus including an inner conductor comprising an elongated resistor, an outer conductor structure comprising a pair of continuous, convergent plates disposed at opposite sides of the resistor, means connecting the convergent ends of the plates to one end of the resistor, said plates being substantially plane so as to form a slab line structure, the edge portions of said plates adjacent said convergent ends being inwardly curved so that the edges of one of said end portions face the corresponding edges of the other of said end portions, said facing edges being spaced from each other to form two continuous gaps between corresponding edges of each of said end portions.

3,184,693
LIQUID DISPLACEMENT ELECTRIC CIRCUIT FORMING DEVICE

Donald H. Lanctot, Malibu, Calif.; Jeanette Lanctot, executrix of Donald H. Lanctot, deceased, assignor to Lantronics, Inc., Santa Monica, Calif., a corporation of California

Filed Jan. 12, 1962, Ser. No. 165,785
4 Claims. (Cl. 333—24)



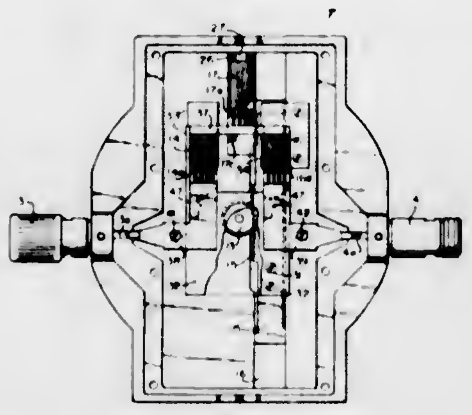
1. A liquid displacement switch for use in a high frequency stripline center conductor of elongated rectangular shape, comprising, in combination: a body member having a generally rectangularly shaped channel, the central portion of said channel including a recessed area; a given quantity of electrically conducting liquid disposed in said recessed area; flat elongated rectangular shaped strip terminals extending into opposite ends of said channel normally out of contact with said liquid at their inner ends and adapted to have their outer ends connected into said stripline center conductor; a diaphragm positioned over said channel; and force means for applying a force against said diaphragm in a direction to displace said liquid throughout said rectangular channel to effect a bridging connection between said strip terminals, which bridging connection is dimensioned substantially similarly to said

strip terminals whereby losses and reflection are minimized for high frequency energy passed through said stripline center conductor.

3,184,694
PRECISION VARIABLE COAXIAL ATTENUATOR

Bruno O. Weinschel, Bethesda, Md., assignor to Weinschel Engineering Co., Inc., Gaithersburg, Md., a corporation of Delaware

Filed May 20, 1963, Ser. No. 281,576
3 Claims. (Cl. 333—81)



1. A high frequency variable T-pad attenuator for a wide range of frequencies from D.-C. to the gc. range, comprising

(*a*) input and output coaxial cable connector means each having a central inner conductor and an outer ground conductor coaxial therewith and insulated therefrom;

(*b*) a conductive casing to which the outer ground conductors of said connector means are mechanically and electrically connected;

(*c*) two variable resistor elements within said casing, connected in series between the central conductors of said connector means;

(*d*) a variable shunt resistor element within said casing, connected between the common series connection of said two series of resistor elements and said conductive casing;

(*e*) a single control means for simultaneously increasing the resistance value of each of said series resistors and decreasing the value of said shunt resistor, and vice versa;

(*f*) each of said resistors being thin film resistors lying substantially in a common plane;

(*g*) a microwave stripline between each of said central conductors and one of said series resistors, each said stripline lying substantially in said common plane, and having a tapered connection to its associated conductor;

(*h*) said control means comprising manually settable means having scale reference means for indicating the setting position thereof, a movable mechanical support member driven in a fixed path by said manually settable means, and means carried by said support means for varying the setting of said series resistors and said shunt resistor as the support means is moved in said fixed path;

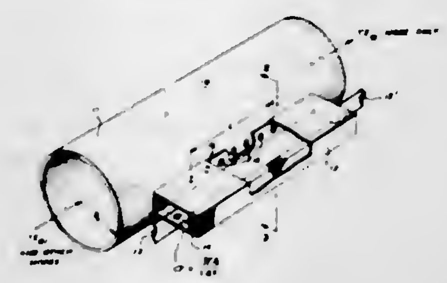
(*i*) and drive means between said control means and said mechanical support means comprising a rack and pinion for moving said support means in a straight line; and

spring-biased contact finger means respectively supported by and in electrical contact with each of said striplines, said series resistors being carried by said mechanical support means for motion therewith relative to said contact means and each in contact with its respective contact means.

3,184,695
CIRCULAR ELECTRIC MODE FILTER

Hans-Georg Unger, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 1, 1960, Ser. No. 66,588
6 Claims. (Cl. 333—98)

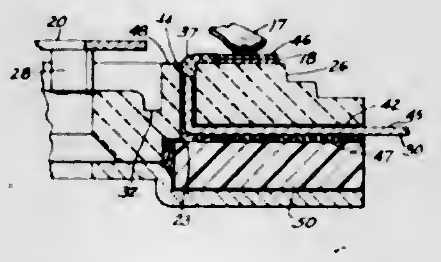


1. In combination, a first transmission path capable of supporting electromagnetic wave energy in a plurality of circular electric wave modes within the desired range of operating frequencies, the phase constant of a selected one of said wave modes in said first path being β_1, a second transmission path capable of supporting wave energy within said operating range in a preselected noncircular mode also with a phase constant β_1 extending longitudinally coextensive with a portion of said first path, means including spaced apertures for coupling wave energy propagating in said first path as said selected circular electric wave mode into said second path as said preselected noncircular mode, said coupling means having a coefficient of coupling C with a given amplitude versus frequency characteristic, and means including electrically lossy material for attenuating wave energy propagating in said second path, said lossy material forming the effective boundary of said second transmission path which is transversely opposite said coupling means, said lossy material effecting an attenuation constant α in said path having a frequency characteristic producing a ratio of attenuation constant α over coupling coefficient C approximately equal to 2 over said operating range.

3,184,696
VARIABLE RESISTOR

Charles C. Snyder, Osceola, Ind., assignor to CTS Corporation, Elkhart, Ind., a corporation of Indiana

Filed Mar. 26, 1962, Ser. No. 182,218
5 Claims. (Cl. 338—174)

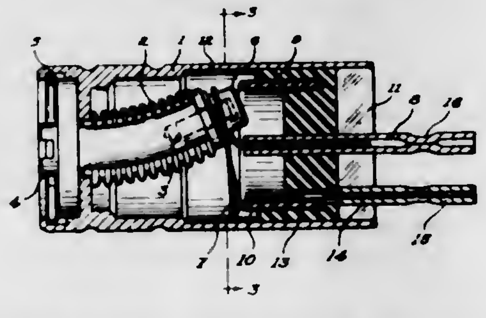


1. In a variable resistance control, the combination of an electrically nonconducting circular base having a top surface and a bottom surface parallel thereto, means defining a continuous annular path extending around the periphery of the top surface of the base, an arcuate resistance element having its opposite ends spaced from each other and disposed on the means defining the annular path, a rotatable shaft associated with the circular base, the resistance element lying in a plane perpendicular to the axis of the shaft, wiper means carried by the shaft for wiping contact with the arcuate resistance element intermediate the ends thereof, the circular base provided with an opening having one end communicating with the top surface thereof and disposed within the means defining the annular path and positioned to one side of the resistance element so as to be outside the path of travel of the wiper means, said opening being adjacent one end of the resistance element, a cavity provided in the base and communicating with the bottom surface of the base and with the other end of the opening, the opening and the cavity forming an L-shaped passage between the top and bottom surfaces of the base, an L-shaped metal terminal having one leg thereof positioned in the opening and the other leg thereof positioned in the cavity, a conductive material disposed in the opening and electrically connecting the one leg of the L-shaped terminal to said one end of the resistance element, and a nonconductive material disposed in the cavity for securing the other leg of the L-shaped terminal to the circular base.

3,184,697
HERMETICALLY SEALED POTENTIOMETERS

Raymond W. Sargent, Burlington, Vt., assignor to Samarius, Incorporated, Derby, Conn., a corporation of Connecticut

Filed Aug. 28, 1962, Ser. No. 219,874
5 Claims. (Cl. 338—175)

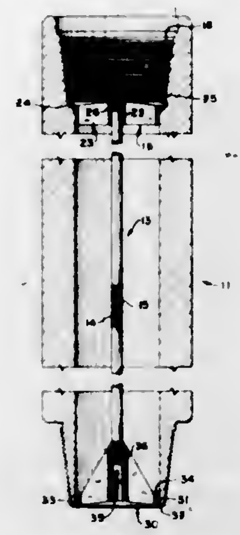


1. A potentiometer comprising a body member having a bore therein; a crank-like shaft member extending into said bore from one end thereof, said shaft member having an outer end portion substantially coaxial with said bore and having an inner end portion offset with respect to the axis of said bore, said outer end portion of said shaft member being rotatably mounted upon said body member adjacent said one end of said bore and being adapted to be rotated by associated rotating means, said inner end portion of said shaft member being adapted to orbit freely about the axis of said bore when said shaft member is rotated; a fluid-tight bellows member of relatively flexible material disposed about said shaft member from said one end of said bore to said inner end portion of said shaft member, said bellows member being bonded about the periphery of one end thereof to said body member in hermetically sealed relationship therewith adjacent said one end of said bore, the other end of said bellows member being sealed inwardly of said bore from the inner end portion of said shaft member and thus cooperating with said body member to provide a hermetic seal at said one end of said bore; a generally annular resistance element mounted coaxially in said bore and having electrical conducting means communicating with the exterior of said body member, said conducting means being hermetically sealed within said body member; sealing means providing a hermetic seal for said bore adjacent the other end thereof; and a unitary contact member of electrically conductive resilient material, said contact member being rotatably engaged with said other end of said bellows member and having a portion thereof extending generally radially from said other end of said bellows member and formed in a wiper arm biased in resilient contact with said resistance element, said contact member having one end thereof rotatably journaled within an electrical conducting means centrally positioned within said bore and communicating with the exterior of said body member, said contact member conducting means being in hermetically sealed relationship with said body member.

3,184,698
DRILL STRING TRANSMISSION CIRCUIT

Robert H. Kolb and Tom R. Reinhart, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed June 26, 1962, Ser. No. 205,409
3 Claims. (Cl. 339—16)

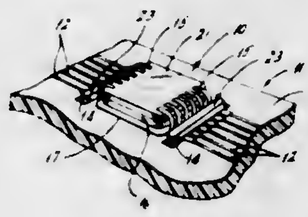


1. A transmission cable for a drill string comprising:
a drill string formed from a plurality of sections;
a single conductor disposed in the center of each section of the drill string, said conductor having a male fitting disposed adjacent one end of each section and a spring-loaded female connector disposed adjacent the other end of each section; and
a removable centralizing means disposed in each end of each section, one of said centralizing means in each section fixedly retaining the male fitting and the other of said centralizing means in each section fixedly retaining the female connector of the conductor within the section in which the centralizer is mounted, said pair of centralizing means in each section of said drill string engaging the respective ends of the section to maintain said conductor under tension and substantially centralized within each section.

3,184,699
MOUNTING MEANS FOR ELECTRICAL COMPONENTS

Frank T. Spera, Philadelphia, Pa., assignor to Philco Corporation, Philadelphia, Pa., a corporation of Delaware

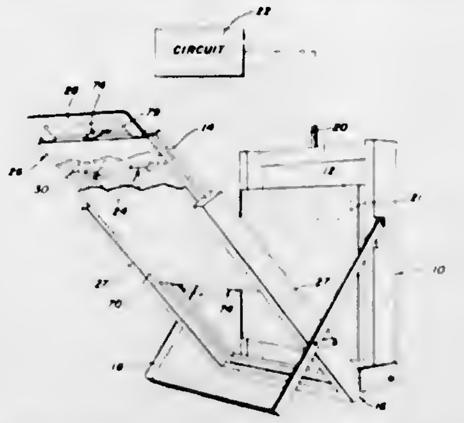
Filed Apr. 2, 1963, Ser. No. 270,104
6 Claims. (Cl. 339—17)



1. In electrical apparatus, the combination comprising: a wiring panel having apertures extending therethrough; electrical component means having generally U-shaped lead wires extending therefrom and into said apertures, each leg portion of each said lead wire being disposed adjacent a corresponding side wall of the one of said apertures into which it extends; electrically insulative spacer means extending into said apertures and forcibly urging said leg portions apart and toward the mentioned side walls of said apertures; and wiring circuit terminal means electrically connected with said leg portions of the lead wires.

3,184,700
PATCHBOARD ASSEMBLY

Arthur J. Burke, Oakland, and John W. Aquadro, Wayne, N.J., assignors to The Richardson Scale Co., Clifton, N.J., a corporation of New Jersey
Filed Dec. 29, 1961, Ser. No. 163,145
2 Claims. (Cl. 339—18)

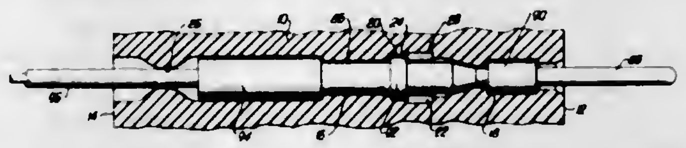


1. In a patchboard assembly having a fixed insulating terminal panel provided with a plurality of spaced conductive terminals adapted to be connected to an electrical circuit, and a movable jumper board formed with a plurality of apertures and being selectively shiftable to an operative position in side-by-side relationship with said panel where said apertures align with said terminals, said jumper board having a substantially flat jumper mounting surface facing oppositely from said panel; a cover removably secured only to said jumper board on the side thereof opposite from said panel to form a substantially confined space with said jumper board, a resilient pad carried by said cover and being disposed in said confined space to provide a flat deformable surface facing said jumper mounting surface and extending in substantially parallel relation thereto; a plurality of jumpers mounted in a selected pattern on said jumper board and being free of interlock therewith, each of said jumpers comprising: a pair of parallel spaced apart conductive contact pins slidably extending through separate ones of said apertures for contact with aligning ones of said terminals in substantially perpendicular relationship to said jumper mounting surface, abutment shoulders on said contact pins engaging said jumper mounting surface to limit the displacement of the jumper inwardly toward said panel, a rigid insulating crosspiece bridging and fixedly joining said contact pins as a unit and being disposed in said confined space, a wire embedded in said crosspiece and electrically interconnecting said contact pins, said crosspiece having a flat surface contained in a plane extending normal to the axes of said contact pins and abuttingly engaging said resilient pad, the spacing of said surface of said pad from said jumper mounting surface being slightly less than the spacing of said surface of said crosspiece from said jumper mounting surface to enable the application of a uniformly distributed pressure to said crosspiece by mounting said cover on said jumper board for retaining each of said jumpers in place with said abutment shoulders engaging said jumper board and said contact pins intimately contacting associated ones of said terminals.

3,184,701
CONTACT-POSITIONING STRUCTURE FOR A RESILIENT CONNECTOR INSULATOR

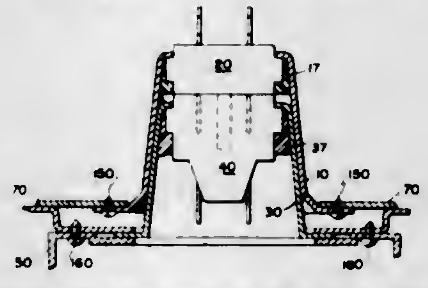
Roger H. Ellis, Arcadia, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Sept. 25, 1961, Ser. No. 140,580
7 Claims. (Cl. 339—59)

1. An electrical connector insulator which comprises a body of resilient insulation material having a plurality of parallel contact terminal-receiving bores extending entirely therethrough, and a contact-positioning web composed of insulation material bonded within said body said contact-positioning web comprising a plurality of annular substantially rigid stop members and a plurality of bridging members, said stop members presenting stop shoulders in the respective bores intermediate the ends of the bores which are engageable against opposed shoulders on respective contact terminals inserted in said bores to limit axial movement of the contact terminals in one direction in the bores.



3,184,702
ELECTRICAL CONNECTOR APPARATUS

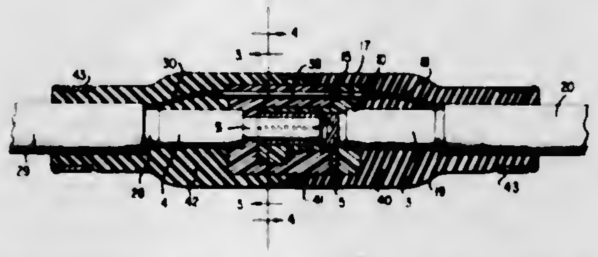
Howard J. Tenniswood, Adrian, Mich., assignor to Revco, Inc., Deerfield, Mich., a corporation of Michigan
Filed Nov. 1, 1962, Ser. No. 234,755
5 Claims. (Cl. 339—66)



1. Electrical connector apparatus comprising a first element having a cavity formed therein, the inner surface of said cavity defining a first truncated pyramid; a second element having a projection, the outer surface of said projection defining a second truncated pyramid adapted to be inserted into and mate with said cavity; means supporting said elements to allow relative lateral centering movements between said projection and said cavity comprising flange means on one of said elements extending normally with respect to the direction of insertion and bearing surface means adapted to receive said flange means and confine movement of said flange means in said normal direction; an electrical plug means supported by one of said elements; and an electrical socket means supported by the other of said elements and positioned to receive said plug means when said projection is inserted into said cavity.

3,184,703
MULTIPLE WIRE CONTROL CABLE CONNECTOR

Robert A. Piscitello, New London, and Arthur Petit, Hadlyme, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 2, 1962, Ser. No. 234,959
3 Claims. (Cl. 339—88)

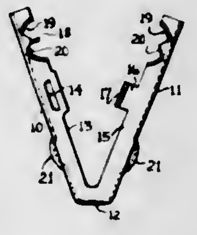


3. In a multiple wire cable connector assembly, having first and second cable terminals, a first and second set of control wires carried by said terminals, male and female connector members adapted to be telescopingly engaged and locked by rotational movement, said male connector having a cylindrical portion including a plurality of externally directed circumferentially located key members and locking lugs, said female connector having a hollow cylindrical body including slotted portions for receiving the key members and locking lugs of said male connector, said slotted portions including offset cutaway areas for receiving the locking lugs of said male connector member upon relative rotation between said connector members, means for assembling and locking said cable terminals and said control wires in electrical contact comprising:

- (*a*) means for obtaining electrical contact between said first and second cable terminals and said first and second sets of control wires upon axial telescoping of said connector members,
- (*b*) means for maintaining electrical contact between said control wires throughout the rotational locking movement including arcuate spring leaf contacts connected to one of said first and second sets of control wires,
- (*c*) and detent means carried by the abutting surfaces of said connector members for preventing rotational movement therebetween when rotated to the locking position.

3,184,704
TERMINAL CONNECTOR

Eugene B. Raymond, Skokie, and Leslie L. Schiller, Niles, Ill., assignors to Triple A Specialty Co., Chicago, Ill., a corporation of Illinois
Filed Nov. 19, 1963, Ser. No. 324,672
2 Claims. (Cl. 339—97)



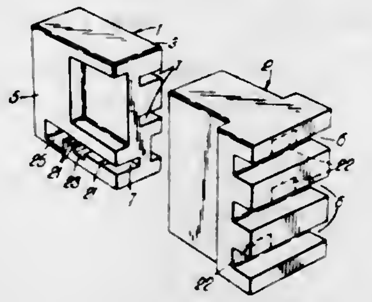
1. A terminal connector of the class described comprising

- (*a*) a blank of material formed to provide elongated complementary sections each substantially semi-circular in cross section and having corresponding end portions flexibly connected together, said sections normally diverging from said point of connection to receive therebetween an end portion of a cable having a conductor core, said sections adapted to be pressed together to fixedly embrace therebetween said end portion of said cable,
- (*b*) a pair of oppositely disposed flexible fingers having pre-formed latching heads formed on opposite long edges of one of said sections and adapted to extend into the other of said sections when said sections are pressed to embrace said end portion of said cable,
- (*c*) said other section having a pair of oppositely disposed slots formed in the opposite long edge portions thereof and into which said latching heads snap when said sections embrace said end portion of the cable to latch said sections in said embracing position,
- (*d*) and means carried by one of said sections and contacting said conductor core when said sections are in latched embracing position on said end portion of said cable.

3,184,705
ELECTRICALLY INSULATING HOUSINGS

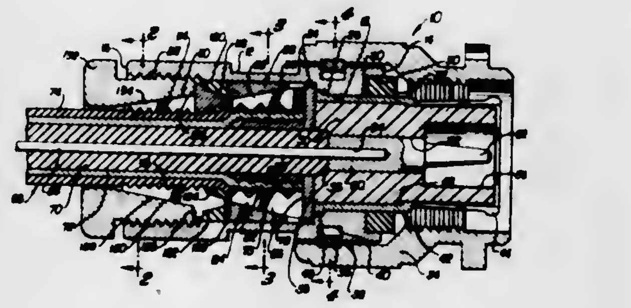
Luciano Obert and Wladimiro Teagno, Turin, Italy, assignors to AMP Incorporated, Harrisburg, Pa.
Filed Dec. 14, 1962, Ser. No. 244,632
Claims priority, application Italy, Dec. 22, 1961, 19,010
2 Claims. (Cl. 339—176)

1. A bipartite electrically insulating housing carrying a pair of electrical connectors, at least one of which being a generally rectangular flag connector, said housing including a male part formed with a plug portion having generally rectangular connector-receiving cavity extending longitudinally of the plug portion, said rectangular cavity being open at its narrow cross-sectional dimension for its full connector-receiving length to the side wall of said male part and receiving said flag connector edgewise through said side wall, said housing further including a female part having a socket recess to receive the plug portion with the socket covering the plug portion cavity and having a cavity opening to the recess and cooperating with the cavity in the plug portion to define a passageway through the housing, the other connector of said pair being disposed in the cavity of the female part with the pair of connectors interengaging in said passageway.



3,184,706
COAXIAL CABLE CONNECTOR WITH INTERNAL CRIMPING STRUCTURE

Stuart R. Atkins, Lynnfield, Mass., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Sept. 27, 1962, Ser. No. 226,496
14 Claims. (Cl. 339—177)

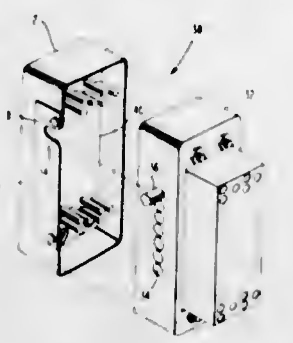


1. An electrical connector member for attachment to an end of a coaxial cable having a center conductor, a dielectric layer surrounding the center conductor and a flexible tubular outer conductor surrounding the dielectric layer, said connector member comprising a tubular body having front and rear ends, said end of the cable being receivable within the tubular body from the rear, a support ferrule within the body and engageable over the dielectric layer of the cable and inside of the end of the outer conductor of the cable, a crimping ring within the body comprising a sleeve of deformable metal having a larger diameter than said support ferrule, said crimping ring being engageable in surrounding relationship about the support ferrule with the end portion of the outer cable conductor positioned between the crimping ring and support ferrule, a radially contractible crimping ferrule disposed outside of said crimping ring and inside of said body, stop means in the body limiting forward movement of the crimping ferrule with respect to the body, axially movable cam means in the body engaged with said crimping ferrule, forward axial movement of said cam means camming the crimping ferrule radially inwardly to crimp the crimping ring radially in-

wardly to compress the outer cable conductor against the support ferrule, and means connected to the body for moving said cam means forwardly in the body.

3,184,707
UNIVERSAL RECEPTACLE SHELL CODING DEVICE

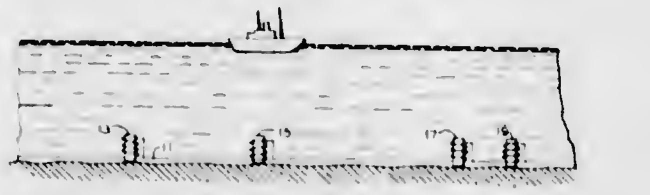
Ralph S. Anderson, Havertown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 23, 1963, Ser. No. 310,524
2 Claims. (Cl. 339—186)



1. A codable universal receptacle shell assembly comprising a first receptacle shell for housing a first electrical connector: comprising a back plate and a wall forming an integral unit, said wall having a front edge spaced apart from said back plate; said shell having an aperture in said wall, said aperture extending from said front edge of said wall towards said back plate; a coding plate having a leading edge and a trailing edge and proportioned to fit over the aperture in said shell wall, said coding plate having a coding notch therein, said coding notch extending from said leading edge of said coding plate towards said trailing edge; means to connect said coding plate to said shell over said aperture, whereby said leading edge of said coding plate and said front edge of said wall are aligned and said coding notch in said coding plate is positioned over at least a portion of said aperture in said wall; a second receptacle shell for housing a second electrical connector, said second shell being capable of fitting within said first shell to permit mating of said first and second electrical connectors; said second shell comprising a back plate and a wall forming an integral unit, said second shell having a plurality of apertures in its wall for accepting a coding pin; and a coding pin inserted into one of said apertures to match the coding notch of said first shell, to permit mating of only similarly coded first and second receptacle shells.

3,184,708
ELECTRICAL GUIDANCE SYSTEM FOR SHIPS

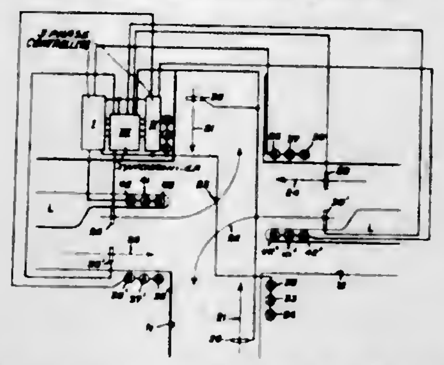
William H. Bussey, Rockford, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 3, 1960, Ser. No. 26,662
4 Claims. (Cl. 340—4)



1. A submarine piloting cable having disposed therealong at various substantially spaced locations magnetic poles, the disposition of said poles among said locations being uniquely arranged whereby the longitudinal position of each location along said cable can be determined by sensing the poles at as few as two succeeding locations.

3,184,709
TRAFFIC SIGNAL SYNCHRONIZING SYSTEM AND APPARATUS

Arthur E. Hilliker, Pulaski, N.Y., assignor to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York
Filed July 27, 1961, Ser. No. 127,215
5 Claims. (Cl. 340—37)

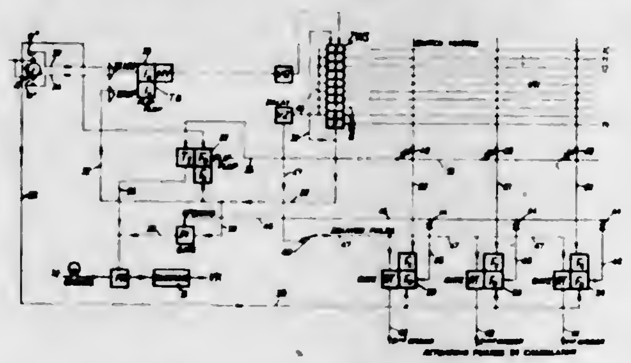


1. A traffic control system for the intersection of a main street and cross street, each of said streets having a traffic lane for traffic progressing straight through said intersection, each approach to said intersection on said main street having a turning traffic lane, the traffic movement on said straight through lane and turn lane for each approach on said main street being non-conflicting, the traffic movement on said turning lanes being non-conflicting, the traffic movement on said straight through lanes of said main street being non-conflicting, the traffic movement on said through lanes of said cross street being conflicting with all of said movements on said main street, the traffic movement on each through lane of each approach of said main street being conflicting with the traffic movement on the turn lane of the opposite approach of said main street, detection means and signal means associated with each of said lanes, the signal means for two of said conflicting lanes on said main street being controlled by a first sequential controller, the signal means for the other two of said conflicting lanes on said main street being controlled by a second sequential controller whereby said first and second controllers may simultaneously present a right of way signal display sequence to any two of said non-conflicting lanes in response to actuation of the detection means associated with said lanes, said controllers being interconnected to jointly present a right of way signal display sequence to said cross street lanes in response to actuation of the detection means associated with said cross street lanes, synchronizing means interconnected with said first and second controllers and with the detection means for each movement and being operable to synchronize the detection means for any two of said non-conflicting lanes on said main street receiving the right of way signal display by connecting the detector means for said non-conflicting movements in parallel whereby said right of way signal display will be maintained for a predetermined maximum to said non-conflicting lanes in response to repeated actuation of the detection means associated with only one of said non-conflicting lanes during and after the actuation of detection means associated with certain of said conflicting lanes.

3,184,710
METHOD AND ARRANGEMENT FOR CHECKING THE OPERATIVE CONDITION OF A CONTACT MATRIX

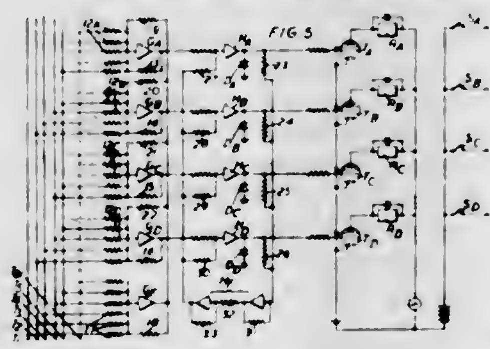
Günter Martens, Schliersee, Upper Bavaria, Germany, assignor to Kienzle Apparate G.m.b.H., Munich, Germany
Filed Apr. 3, 1961, Ser. No. 100,072
Claims priority, application Germany, Apr. 4, 1960, 40,339
11 Claims. (Cl. 340—146.1)

4. In combination with a contact matrix arrangement serving a calculating device and having a plurality of input lines in parallel array, and a plurality of output lines in parallel array intersecting all of said input lines with connector contacts arranged at the intersection points, respectively, and capable of being independently and selectively changed between open and closed condition, each of said connector contacts representing a digit different from the others of said connector contacts and comprising a single input line and a single output line, first checking means for determining whether all of the contacts are in open condition and including read-out means for introducing read-out pulses into all the input lines, respectively, and relay means for controlling an emergency circuit, connected with the plurality of output lines and actuatable by an output pulse appearing at any output line upon introduction of read-out pulses into all the input lines, provided that any contact associated with said output line is in closed position; and second checking means for determining whether in all of said output lines at least one contact is in closed condition and including a plurality of storage means each connected with a different one of the output lines for storing output pulses appearing at the respectively connected output line upon introduction of read-out pulses into all the input lines, provided that the contact associated with the particular output line is in closed condition, and circuit means connecting said plurality of storage means with said relay means and including gate means connected between said readout means and said relay means for actuating the latter by one of the read-out pulses, said gate means being open only when at least one of said storage means has no output pulse stored therein, said circuit means including means responsive to signals actuating said relay means for blocking the output lines of said matrix arrangement so that after actuation of the relay means by either the first or the second checking means further operation of the matrix arrangement can be stopped.



3,184,711
RECOGNITION APPARATUS

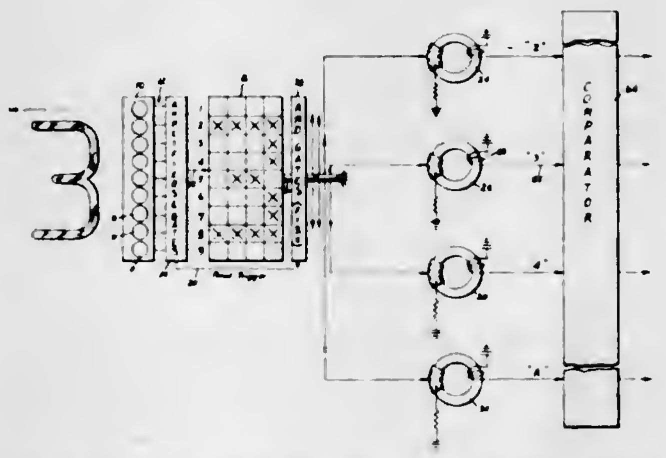
Wilfred Kenelm Taylor, Chiswick, London, England, assignor, by mesne assignments, to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 17, 1959, Ser. No. 840,743
Claims priority, application Great Britain, Sept. 18, 1958, 29,982/58
13 Claims. (Cl. 340—146.3)



1. Recognition apparatus comprising a matrix of light sensitive transducers, means for projecting on to said matrix an image of a pattern to be recognised, a plurality of adding devices, one for each class of pattern to be recognised, means for connecting at least one different set of transducers with each said adding device, each said set being associated with a different pattern class, a plurality of amplifiers respectively receiving output from said adding devices, a plurality of pattern responsive devices, respectively receiving output from said amplifiers, and means operating on all said amplifiers for suppressing output therefrom except that one providing the largest output.

3,184,712
CORE CORRELATION MATRIX READER

Arthur W. Holt, Silver Spring, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed June 6, 1961, Ser. No. 115,256
3 Claims. (Cl. 340—146.3)



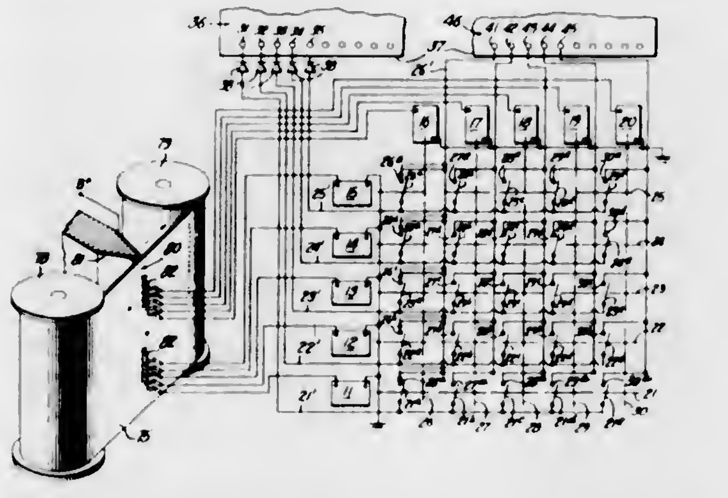
1. In an optical character reading machine having an examination device provided with means for examining the elemental areas of an unknown character and its background, and means responsive to said examining means for providing outputs which correspond to the optical densities of said elemental areas, the improvement comprising conductors connected to said output providing means, magnetic correlation means to provide criteria with which an examined character represented by the outputs on selected conductors is correlated to ascertain the identity of the examined character, said magnetic means including a magnetic core for each character, a set of said conductors connected by windings with a core for one character, additional sets of said conductors including at least some conductors which are different from those of the other sets connected by windings with the remaining cores so that the criteria for each character is established by the selection of conductors and their windings on said cores, said outputs on said conductors inducing magnetic fields about said cores of a strength corresponding to the degree of match between an unknown examined character and the particular conductors of said sets associated with each core, and flux responsive means connected with said cores to provide comparison signals on which to base a decision as to the identity of the unknown character.

3,184,713
CHANGEABLE STORAGE DEVICE FOR STORING PROGRAM REPRESENTING PATTERNS OF CONNECTIONS

Adrian W. Standaart, Winston-Salem, N.C.
Filed Nov. 8, 1960, Ser. No. 68,109
5 Claims. (Cl. 340—147)

1. In a data storage system, a changeable storage device for storing program-representing patterns of connections between entry and exit hubs of entry and exit sections of an electronic computer program panel or the like wherein the stored patterns may be readily changed into

other desired patterns, comprising a plurality of contacts disposed in a network arrangement of two distinct groups of multicontact sets of contacts arranged along intersecting perpendicular and parallel axes forming a grid pattern, the sets of one group each including a plurality of first contacts supported for movement from a normal position to a displaced position along a first set of parallel axes, a plurality of second contacts each paired with a different one of said first contacts supported for movement along a second set of axes and perpendicular to and intersecting said first set of axes from a normal position disposed in the path of movement of its paired first contact spaced out of contact therewith between the normal and displaced positions thereof and a displaced position laterally offset from the path of movement of its paired first contact, the number of multicontact sets of said first contacts corresponding to the number of entry hubs in said entry control panel section, each of said sets having a number of first contacts connected in common to a different one of the entry hubs and corresponding to the number of exit hubs in the exit control panel section, the number of multicontact sets of said second contacts corresponding to the number of exit hubs in said exit sections, each having a number of second contacts corresponding in number to the number of entry hubs and connected in common to a different one of the exit hubs, means responsive to distinctive control signals for activating selected ones of said sets of first and second contacts along their respective axes of movement in timed relation to dispose any selected one of said second contacts in the return path of movement of its paired first contact from the displaced to the normal position thereof when the paired first contact occupies its displaced position, and means for shifting the selected first contact into circuit-making engagement with its paired second contact and maintaining such paired contacts in circuit-making condition upon deactivation of the means responsive to said distinctive control signals.



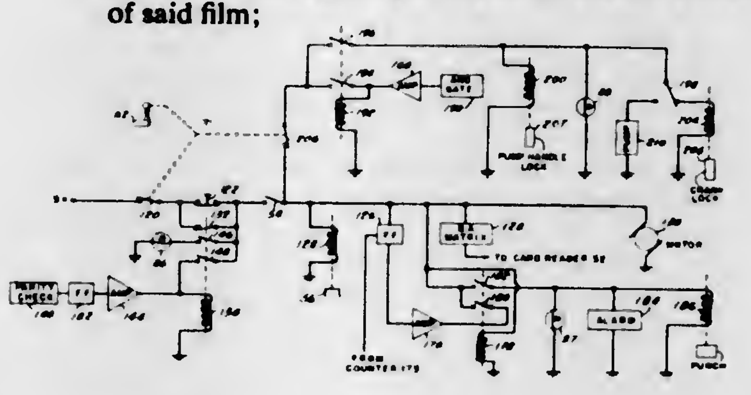
3,184,714
APPARATUS FOR USE WITH A CREDIT CARD
Herbert L. Brown, Jr., and John D. Helms, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Apr. 15, 1963, Ser. No. 272,974
2 Claims. (Cl. 340—149)

1. Vending apparatus for use with an identification card having an identification number that comprises:

(*a*) A card reader for receiving an identification card and reading the number on said card;

(*b*) A memory for storing a plurality of identification numbers with which the identification number on said card is to be compared, said memory comprising a film mounted on a light transmitting cylindrical drum and having two parallel spiral information channels defined thereon, one channel having shaded areas denoting the presence of timing pulses, the other channel having shaded areas which indicate the preesnce of a binary 1 and clear areas indicating the presence of a binary 0, the arrangement of such shaded and clear areas on said other channel representing the stored identification numbers in binary code;

(*c*) Readout means for reading said memory, said readout means comprising:
- (1) Two lamps mounted to direct light through the drum on which said film is mounted and a photosensitive element mounted in opposed relationship to each of said lamps;
- (2) A lead screw for supporting said drum;
- (3) Means for adjustably mounting said lamps and photosensitive element for the light beam from one lamp to pass through said one channel to impinge on one photosensitive element and the light beam from the other lamp to pass through said other channel to impinge on the other photosensitive element;
- (4) A motor; and
- (5) Gear means coupling said motor to said drum to drive said drum along the length of said lead screw and cause said light beams to traverse said channels;
- (6) Said photosensitive elements being effective to produce electrical signals responsive to the interruption of said light beams by shaded areas of said film;



(*d*) Comparator means for comparing the number read by said card reader against each of the numbers read by said readout means and producing an output responsive to coincidence between the number read by said reader and one of the numbers read by said readout means, said comparator means comprising:
- (1) A shift register having a number of stages equal to the number of binary bits in a binary number representing one of the digits of the identification number;
- (2) Pulse means coupled to the photosensitive element receiving light that passes through said other channel to produce electrical potentials representative of the binary bit read and its complement and apply same to the first stage of said shift register;
- (3) Clock pulse means coupled to the photosensitive element receiving light that traverses said one channel for producing clock pulses responsive to the electrical signal produced by said photosensitive means as the light is interrupted by the shaded areas of the channel;
- (4) Means coupling the output of said clock pulse means to said shift register to shift the information stored in said shift register one stage responsive to the presence of a clock pulse;
- (5) Means coupling the output of said clock pulse means to a counter which produces an output pulse responsive to application of a number of inputs equal to the number of binary bits in a binary number;

- (6) A comparison circuit having a number of stages equal to the number of binary bits in the binary number;
- (7) Means for applying the binary information stored in said shift register to said comparison circuit;
- (8) Means for applying the binary bits produced by said card reader and the complement of such binary bits to said comparison circuit;
- (9) Said comparison circuit being effective to produce an output pulse responsive to coincidence between the binary number produced by said card reader and the binary number stored in said shift register;
- (10) Means for connecting the output of said comparison circuit to the input of a normally disabled amplifier;
- (11) Means for connecting the output of said counter to control the condition of said amplifier;
- (12) Said amplifier being momentarily enabled only resopnsive to an output pulse from said counter;
- (13) Second counter means connected to the output of said amplifier for receiving and storing a pulse responsive to said comparison circuit producing an output when said amplifier is enabled;
- (14) Said second counter means being effective to produce an output indicative of coincidence between the identification number on said card and one of the identification numbers stored in said memory responsive to the storage of a number of pulses equal to the number of digits in said identification number; and
- (15) Means effective resopnsive to output pulses from the first mentioned counter for sequentially applying power to the rows of switches in said card reader and resetting said second counter means responsive to receiving a number of pulses from the first mentioned counter equal to the number of digits in an identification number;

(*e*) Means effective following the comparison of said number on said card with all of the numbers stored in said memory without indication of coincidence for indicating lack of concidence;

(*f*) The presence of a valid card being indicated by one of coincidence or lack of coincidence between the number on said card and the numbers stored in said memory; and

(*g*) The presence of an invalid card being indicated by the other of coincidence or lack of coincidence between the number on said card and the numbers stored in said memory.

3,184,715
SWITCHING CIRCUIT FOR MONITORING SIGNALS ON A PLURALITY OF PARALLEL SIGNAL LINES
Paul E. Stuckert, Katonah, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 30, 1960, Ser. No. 79,643
7 Claims. (Cl. 340—166)

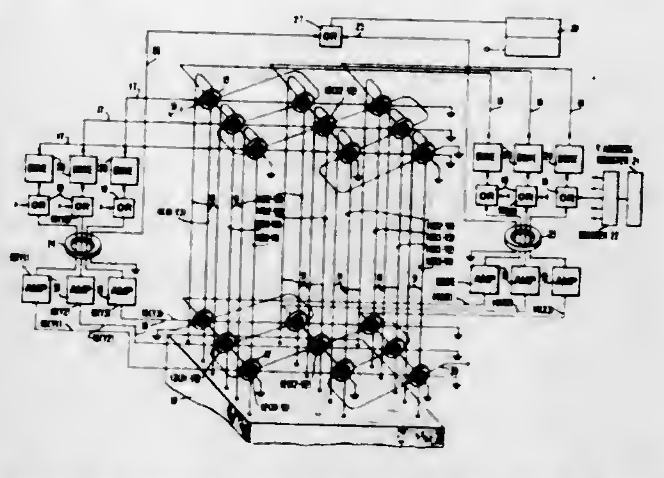
6. The combination of

(*a*) a plurality of signal-bearing lines;

(*b*) means for detecting a predetermined signal status on each of said signal lines, and operative to produce an individual manifestation of such detection for each said line;

(*c*) means for detecting the presence of a plurality of said manifestations;

(*d*) a plurality of encoding instrumentalities combinatorially energized in response to each such manifestation, such that a different combination of instrumentalities is energized for each separate manifestation;

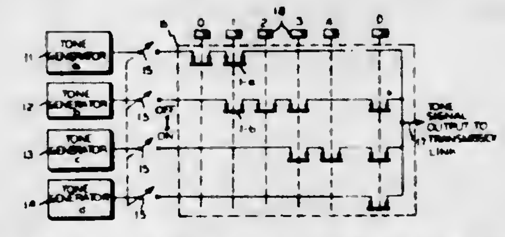


(*e*) decoding means operative responsive to the combinatorial energization of said instrumentalities to produce an output response on one of a plurality of output lines;

(*f*) means coupling each of said output lines with a corresponding one of said signal lines;

(*g*) and means responsive to said means for detecting the presence of a plurality of manifestations for rendering said decoding means inoperative to produce an output response.

3,184,716
GUARDED TONE SIGNALLING
William B. Smith, Jr., Baltimore, Md., assignor to The Bendix Corporation, Towson, Md., a corporation of Delaware
Filed Apr. 20, 1961, Ser. No. 104,360
14 Claims. (Cl. 340—171)

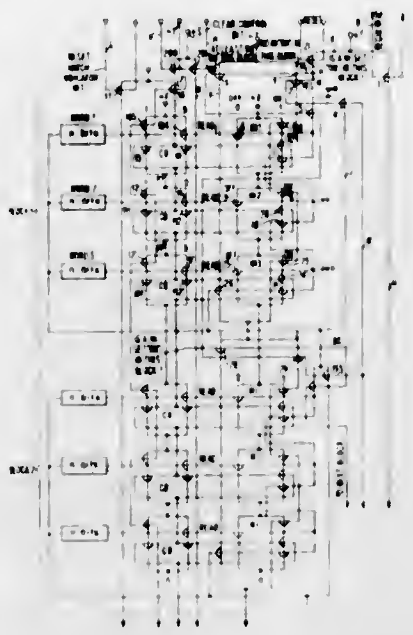


1. A code communication system comprising means for simultaneously transmitting a group of distinct frequencies, character transmission means for terminating during a character interval transmission of predetermined combinations of said frequencies corresponding to the respective code representation of each of said characters, means for receiving all frequencies of said group, normally unresponsive means for registering said characters in accordance with said combinations, and means responsive to the termination of reception of one or more but less than all of the frequencies of said group for causing said normally unresponsive means to register said combinations for a predetermined time interval within said character interval.

3,184,717
ASSOCIATIVE MEMORY LOW TEMPERATURE FAST READ CIRCUIT
Floyd A. Behnke, Ruby, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 17, 1962, Ser. No. 188,152
5 Claims. (Cl. 340—173.1)

1. An associative memory readout system comprising an array of word registers in a memory,
- a match indicator bit associated with each word register and settable to its ON state when its associated word register matches a key word in an interrogation register but maintained in its OFF state when a mismatch occurs,

means for grouping said word registers and match indicator bits into individual blocks,



and means for reading out the matched words of said memory in blocks,

the presence of matching words in a first block of words inhibiting the readout of words in subsequent blocks.

3,184,718

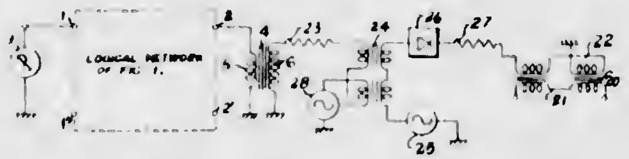
INFORMATION HANDLING SYSTEMS

Jacques Albin, Chaville, Alice Maria Recoque, Sartrouville, and André Michel Richard, Paris, France, assignors to Societe d'Electronique et d'Automatisme, Courbevole, France

Filed Apr. 8, 1957, Ser. No. 651,203

Claims priority, application France, May 3, 1956, 713,805

9 Claims. (Cl. 340—174)



1. A binary data processing system making use of temporary registrations of the information bits therein on saturable magnetic cores for processing therebetween according to logical operations, comprising, a saturable magnetic core circuit for effecting each of the logical processing operations, and a transfer network for collecting the resulting signal from each magnetic core circuit and transferring it to a data processing system including at least one further saturable magnetic core circuit, each of the magnetic core circuits for effecting the logical processing operations including a pair of saturable magnetic cores and at least one read-out winding on each core, the said read-out windings of the cores being connected in series between an alternating current source and the primary winding of an output transformer having a saturable magnetic core, said pair of magnetic cores each having a control winding thereon for receiving a unidirectional current and being saturable at a lower value of coercive current than the core of said transformer, and each one of the said transfer networks including a secondary winding of the said output transformer, a unidirectional current circuit controlled from the magnetic condition of the core of the said transformer, and including at least one control winding of a magnetic core forming a part of a logical network of the system and through which passes the said unidirectional current from the said circuit of the transfer network.

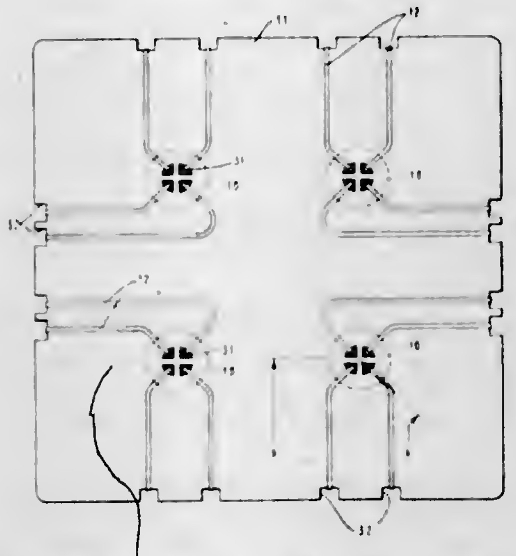
3,184,719

MOLDED CORE PLANE

Norwood K. Perkins, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 24, 1958, Ser. No. 782,925

7 Claims. (Cl. 340—174)



5. In a magnetic memory device, the combination comprising a plurality of magnetic cores, a molded insulating support plate for said cores having a plurality of perforations in groups of four perforations per group and channels connecting said perforations, each of said groups of perforations being bridged by a cross of insulation material in said plate to define four sector shaped perforations with the arcuate outer walls of said perforations coinciding with the internal diameter of one of said magnetic cores, each of said cores being positioned around one of said groups of perforations and coinciding axially with the center of said group of perforations and lying within said plate below both surfaces of said plate and below the lowermost portions of said channels in said plate, and electrically conductive material in said channels and through said perforations and cores to provide circuit patterns in the surfaces of said plate and extending through said perforations to provide winding circuits linking said cores.

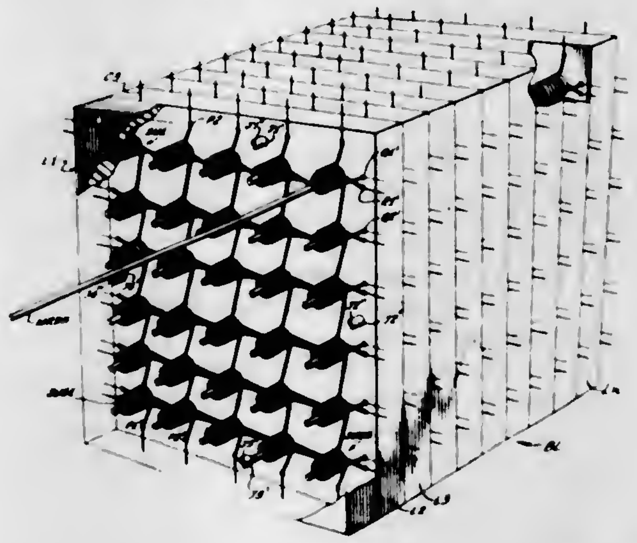
3,184,720

SEMI-PERMANENT INFORMATION-STORE DEVICES

Donal A. Meier, Inglewood, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Apr. 6, 1960, Ser. No. 20,494

3 Claims. (Cl. 340—174)



1. A three-dimensional information-store solenoidal-coil rod matrix comprising in combination: a plurality of substantially similar plates, each plate comprising a two-

dimensional array of spaced-apart solenoidal-coil units and a hardened thermosetting synthetic resin in which said solenoid coil units are embedded, each solenoid-coil unit being comprised of at least first and second single layer plural-turns solenoidal coils wound one over the other around a respective perpendicular bore provided in the plate, means cooperating with guide holes provided in the hardened resin of each plate for securing the plates together in aligned fashion with each solenoid-coil unit in each plate having its respective bore aligned with the bores of correspondingly positioned solenoid-coil units in the other plates, the thickness of each plate being chosen so that correspondingly positioned solenoid-coil units in adjacent plates are spaced apart from one another, and a plurality of slender magnetic rod devices inserted into the aligned bores so as to pass through respectively positioned solenoid-coil units for inductive cooperation therewith, the solenoid-coil units in each two-dimensional array being arranged in a plurality of rows and columns, the first coils of solenoidal-coil units in the same row being connected in series and the second coils of solenoid-coil units in the same column being connected in series, the first coils and the series connections therebetween provided in each row all being integrally formed of a single length of a conductor, and the second coils and the series connections therebetween provided in each column all being integrally formed of a single length of a conductor, the manner in which the first and second coils are wound on each solenoid unit being such that the conductor forming the innermost coil is received at a predetermined bottom level and progresses upwardly to a predetermined upper level to form a single layer plural-turns coil, the conductor at the top of the innermost coil being sharply bent down to said bottom level with the conductor in contact with the turns of the innermost coil, the short length of bent down conductor so formed being approximately perpendicular to the plate and after reaching said bottom level being again sharply bent so as to run approximately parallel to the plate to the next solenoid-coil unit where it is formed into the next in line innermost coil in the same manner, the outermost coil of each solenoid-coil unit being wound over both the innermost coil and its perpendicular short length of bent down conductor.

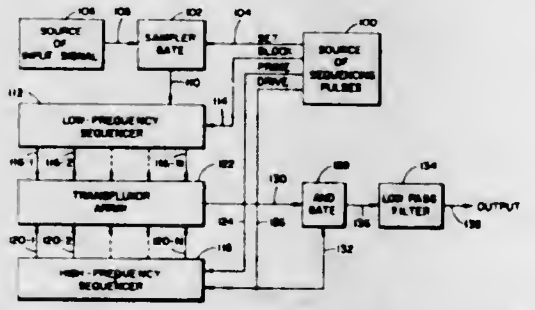
3,184,721

WAVEFORM TIME COMPRESSION SYSTEM

Marvin A. Stern, Rochester, N.Y., assignor to General Dynamics Corporation, Rochester, N.Y., a corporation of Delaware

Filed July 5, 1960, Ser. No. 40,813

13 Claims. (Cl. 340—174)



7. A waveform time compression system comprising an array of N individual transfluxors, where N is a first given integer, output means in cooperative relationship with said transfluxors, a source of input wave signal, a source of sequencing pulses for producing as respective first, second, third, and fourth outputs therefrom periodic block, set, prime, and drive pulses, respectively, said block and set pulses, respectively, occurring at a first frequency, said prime and drive pulses, respectively, occurring at a second frequency equal to *n* times said first frequency, where *n* is a second given integer, said block, set, prime, and drive pulses being phased with respect to each other to provide following each *n*th drive pulse a block pulse followed by a set pulse followed by a prime pulse followed by the $(n+1)$th drive pulse, a sampling gate coupled to said source of input wave signal and to said source of sequencing pulses for producing an output therefrom in response to each set pulse having an amplitude proportional to the instantaneous amplitude of said input wave signal at the time of occurrence of each set pulse, a low-frequency cyclically-operated sequencer coupled to said sampling gate, said source of sequencing pulses and to said array of transfluxors for applying in sequence each block pulse in cooperative relationship with each individual transfluxor, respectively, to erase any formation previously stored therein and for applying in sequence each output from said sampling gate in cooperative relationship with each individual transfluxor, respectively, to store therein the information contained in that output from said sampling gate, a high-frequency cyclically-operated sequencer coupled to said source of sequencing pulses and to said array of transfluxors for applying in sequence each prime and each drive pulse, respectively, in cooperative relationship with each individual transfluxor, respectively, to control the non-destructive readout of the information stored therein and to effect in response thereto the inducing in said output means of an output signal containing the information stored therein.

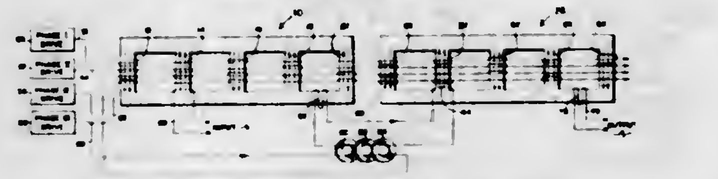
3,184,722

MAGNETIC SHIFT REGISTER

John T. Franks, Jr., Akron, Ohio, assignor to Goodyear Aerospace Corporation, a corporation of Delaware

Filed Dec. 14, 1961, Ser. No. 159,343

9 Claims. (Cl. 340—174)



9. In a binary storage and shift register circuit the combination of

a first and a second magnetic core each having a plurality of leg portions defining separate flux paths,

an input means coupled to one of the leg portions of the first core to provide the circuit with a bit of information by setting a flux pattern in said one leg portion,

conductor coupling means coupling another leg portion of the first core with one of the leg portions of the second core for transferring an output pulse from the first core to the second core,

drive means linked with the leg portions of both cores to sequentially shift said flux patterns to adjacent leg portions in said first core and thence to leg portions in said second core with said shifting always being against an opposed flux pattern in the adjacent leg portions,

bias means linked to the leg portions to selectively prevent switching of the flux patterns therein to thereby prevent reverse flow of information, and

output means coupled to a leg of the second core for sensing a flux change therein when said flux pattern is shifted thereto.

3,184,723

LOGIC DETECTOR CIRCUIT

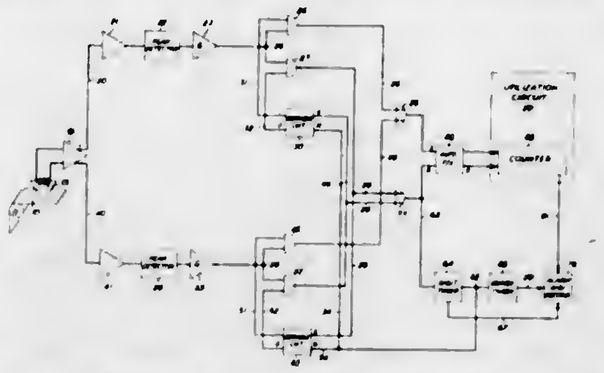
Frank M. Goetz, Franklin Square, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 29, 1960, Ser. No. 79,444

8 Claims. (Cl. 340—174.1)

1. A logic detector circuit for recorded binary information comprising transducer means for deriving a

full cycle waveform from said recorder information, means for separating said waveform into first and second portions, first means for detecting the signal peaks of said first portions of said waveforms, second means for detecting the signal peaks of said second portions of said waveform, information means having two output states, first steering means connected between said first detection means and said information means, second steering means connected between said second detection means and said information means, means operatively connected to said first and second detecting means for deriving clock signals from said recorded information, timing means responsive to each of said clock signals for defining a predetermined interval of time, and means actuated by said timing means for selectively controlling said first and second steering means, whereby signals from said first and second detecting means place said information means in one of its two output states corresponding to said recorded information.

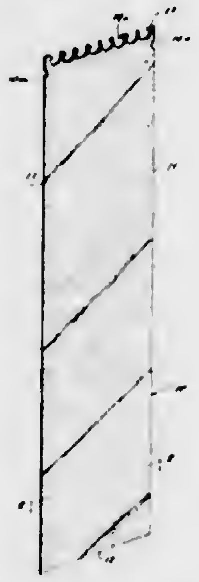


3,184,724
RANDOM-ACCESS INFORMATION STORAGE DEVICE UTILIZING FLEXIBLE RECTANGULAR MAGNETIC STRIPS

Eugene H. Irasek, Los Angeles, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed July 14, 1961, Ser. No. 124,169

2 Claims. (Cl. 340—174.1)



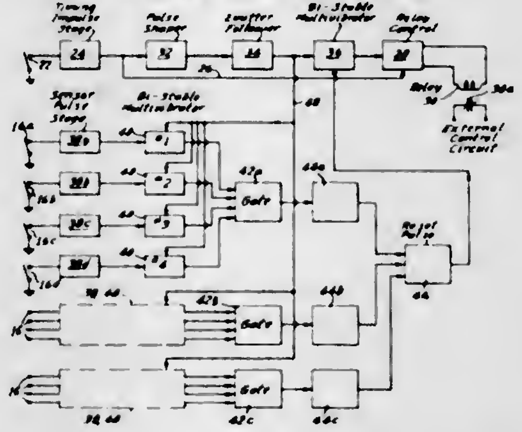
1. In a random access storage system having a predetermined plurality of rotatable selector rods arranged alongside and parallel to one another in a common plane and a pair of rotatable suspender bars located on opposite sides of said rotatable selector rods and spaced from said common plane, a plurality of flexible rectangular magnetic data-storage strips vertically suspended from said selector rods and said suspender bars and cooperating therewith so that only one of said strips can be released for free fall at a time depending upon the selective orientation of said selector rods, each strip having a pair of opposite flat surfaces, a pair of parallel side edges and a pair of end edges, the pair of side edges of each strip having a length many times greater than the end edges, one of the end edges of each strip being provided with a unique binary-coded configuration of undercut edge indentations for cooperation with said selector rods, and the pair of parallel side edges of each strip being provided with a pair of opposed side indentations for cooperation with said suspender bars and located relatively close to but spaced from the end edge containing said undercut edge indentations, each strip being formed of a flexible material having a flexible layer of conductive material uniformly disposed on one flat surface thereof for dispersing electrostatic charges and a layer of magnetic material uniformly disposed on the opposite flat surface thereof, and a protective layer of durable material uniformly disposed over the magnetic layer.

3,184,725
MACHINE MONITORING APPARATUS

Martin Siegel, Roslyn, N.Y., and Seymour Zelnick, Toms River, N.J., assignors to Weldotron Corporation, Newark, N.J., a corporation of New Jersey

Filed June 8, 1961, Ser. No. 115,804

13 Claims. (Cl. 340—213)



11. In a machine cycle operation monitoring system, control means for controlling the operation of the machine, a device having a control connection to said control means, said device having a first state to condition the control means for machine operation and a second state to condition the control means for interrupting machine operation, means arranged to shift the device into said second state once in each machine cycle and to concurrently override said device by conditioning said control means for machine operation for a predetermined time interval, and monitoring means adapted to operate during each machine cycle prior to the expiration of said time interval and in turn operable, upon the operation thereof, to restore said device to said first state whereby, so long as said monitoring means operates during each machine cycle prior to the expiration of said time interval, the device will be restored thereby to said first state thereof to in turn maintain said control means conditioned for machine operation after the expiration of said time interval to permit commencement of the succeeding machine cycle.

3,184,726
RECOVERABLE MONITORING CIRCUIT WITH PERMANENT INDICATION

Leroy L. Hellgren, San Jose, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed July 24, 1962, Ser. No. 212,176

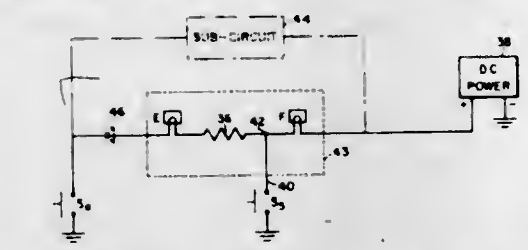
6 Claims. (Cl. 340—223)

1. In a circuit having at least a pair of switches and a D.C. power source, an analyzer comprising;

(*a*) a pair of self-grounding indicators, each of which produces a permanent indication when it operates to ground itself upon the application thereto of the potential of the said D.C. power source;

(*b*) a first one of the indicators and a first one of the switches connected in series with one another across the D.C. power source;

(*c*) a second one of the indicators, a resistor and a second one of the switches connected in series with one another across said first switch;



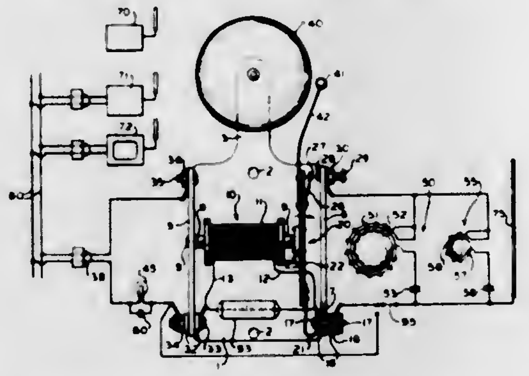
(*d*) said resistor having a resistive value such as to prevent operation of the second indicator when both switches are closed simultaneously, whereby operation of the first indicator only will indicate that the first switch closed before or simultaneously with the second switch and operation of both indicators will indicate that the second switch closed before the first switch.

3,184,727
ALARM SYSTEM

Benjamin F. Miessner, Miami Shores, Fla., assignor to Miessner Inventions, Inc., Miami Shores, Fla., a corporation of New Jersey

Filed Sept. 10, 1962, Ser. No. 222,331

10 Claims. (Cl. 340—227)



4. In a temperature- or fire-alarm system, a buzzer connectible across a source of voltage and comprising an electromagnet, a vibratable armature system attractable by the electromagnet, a pair of contacts, the armature system constituting a means supporting one of said contacts, means external to the armature system supporting the other of said contacts, a thermally deflectible element comprised in one of said supporting means whereby the contact supported by that one supporting means is subject to displacement by said thermally deflectible element, said element being thermally coupled substantially only to ambient temperature, said contacts being open at normal ambient temperatures but being initially closed by said thermally deflectible element upon ambient-temperature change to a predetermined ambient temperature, and circuit means interconnecting said contacts and said electromagnet whereby said vibratable armature system repetitively opens and closes said contacts after the initial closing of said contacts at the predetermined ambient temperature.

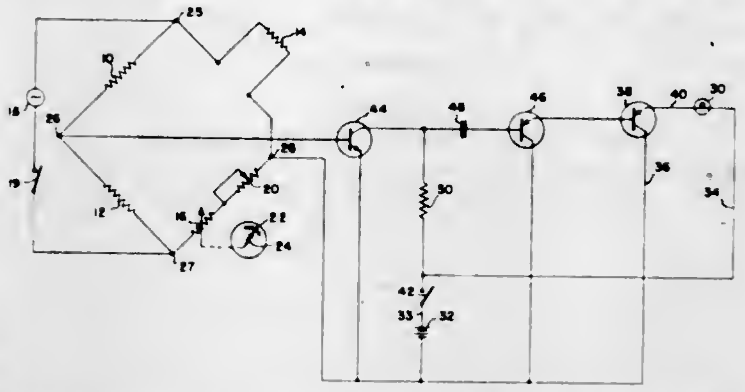
3,184,728
NULL BALANCING INDICATOR

Donald J. Hart, Merion, and Joseph Jaffe, Gladwyne, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 26, 1962, Ser. No. 182,206

7 Claims. (Cl. 340—233)

1. A circuit containing a Wheatstone bridge, said bridge including means providing a resistance the magnitude of which varies in response to variations in temperature and a variable resistor for balancing said bridge, a signal generator for supplying a signal of a predetermined frequency across said bridge, illuminating means connected to said bridge so as to vary in intensity at said predetermined frequency only so long as said bridge is unbalanced, said frequency being such that the variations of intensity of said illuminating means are detectable by the human eye, and means for illuminating said illuminating means at constant intensity when said bridge is balanced by said variable resistor.

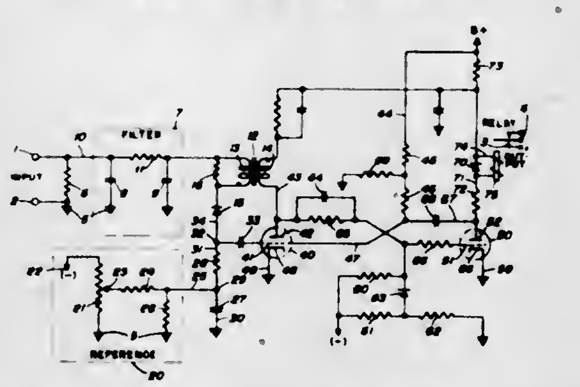


3,184,729
SIGNAL DEVIATION DETECTOR

David D. Freedman, Pennsauken, and William J. Hess, Medford, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Jan. 26, 1962, Ser. No. 169,150

1 Claim. (Cl. 340—248)



A signal monitoring device comprising:

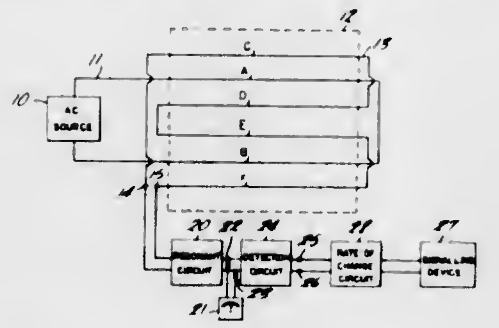
a pulse transformer having a primary and a secondary winding, each of said windings having first and second terminals, the signal to be monitored appearing at said first terminal of said primary winding;

an adjustable reference signal source;

a diode having an anode and a cathode, one of said anode and said cathode connected to said reference source, and the other of said anode and said cathode connected to said second terminal of said primary winding, said reference signal source providing an unblocking bias for said diode if the signal to be monitored is of lesser value than the reference signal source when said anode is connected to said reference source, and if the signal to be monitored is of greater value than the reference signal source when said cathode is connected to said reference source;

a plate-coupled monostable multivibrator, said multivibrator comprising a first and a second electron control valve, said first electron control valve having a grid-trigger terminal and a plate coupling feedback loop, said loop including said terminals of said secondary winding connected in series and including feedback from said first and said second control valves, and said grid-trigger terminal operatively connected to said one of said anode and said cathode of said diode, said first electron control valve being biased to normally conduct as a first stage of the multivibrator, said second electron control valve normally not conducting, and said second valve having an output electrode connected to an output load to be controlled by the flow of current through said output electrode to provide an indication of the relative magnitude of the monitored signal.

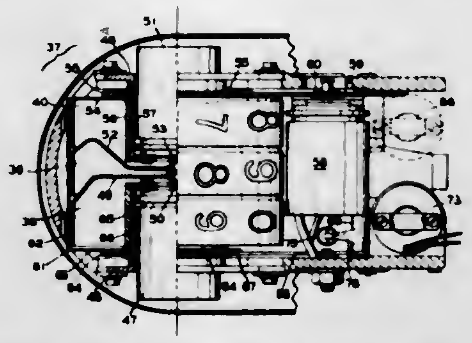
3,184,730
INTRUSION DETECTION SYSTEM
Robert H. Irish, 1900 Newkirk Ave., Brooklyn 26, N.Y.
Filed July 30, 1962, Ser. No. 213,380
7 Claims. (Cl. 340—258)



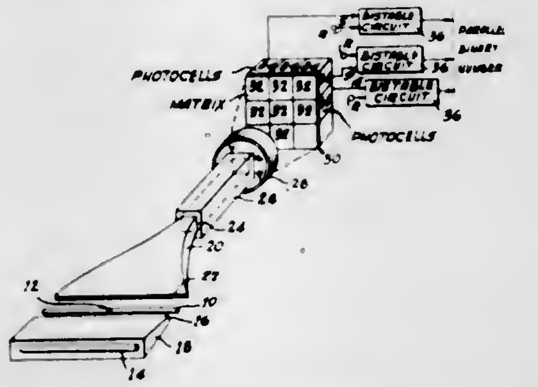
1. An intrusion detection system, comprising, in combination, a source of alternating current operating at a selected frequency, a primary circuit loop of electrically conductive attenuated material connected to the source of alternating current, a secondary circuit loop of electrically conductive attenuated material, an intermediate closed loop of electrically conductive attenuated material disposed between the primary loop and the secondary loop, said intermediate loop having a section inductively coupled to a section of the primary loop and a section inductively coupled to a section of the secondary loop, said loops being arranged in a predetermined normal array across an area to be protected from intrusion, said array comprising sections of the loops having a predetermined spaced apart relationship such that displacement of a section of a loop by more than a predetermined distance is required by the attempted intrusion of a predetermined type of intruder to gain access to the area to be protected, said array having loop sections in substantially parallel relationship, thereby providing inductive coupling between said loop sections, and circuit responsive means coupled to the output of the secondary loop and adapted to be responsive to changes in the output voltage of said secondary loop caused by physical displacement of said inductively coupled sections to more than a predetermined distance.

3,184,731
DISPLAY APPARATUS HAVING DRUM INDICATORS, CONTROLLED BY INDIVIDUAL SYNCHRONOUS MOTORS
Milton Brown, Glen Rock, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Continuation of application Ser. No. 389,390, Oct. 30, 1953. This application Sept. 1, 1961, Ser. No. 137,937
2 Claims. (Cl. 340—315)

1. For use in an electrical indicator control system, a drum indicator comprising a frame, a series of three coaxial rotatable drums bearing indicia thereon and mounted on the frame, and drum rotating apparatus arranged to bring selected indicia into viewing position, including a synchro mounted on the frame at one end of the series and extending into one of said drums, said synchro having a rotor engaging one of the drums, another synchro mounted on the frame at the other end of the series and extending into another of said drums, said other synchro having a rotor engaging another drum, a third synchro having a rotor and a drive element engaging the rotor of the third synchro with the third drum, a window through which the indicia of said drums may be visible, a shutter member pivotally mounted concentrically with said drums and normally positioned relative to said window so as to completely shield said indicia from view through said window, motor means carried by said frame, and a source of electrical energy to effectively energize said motor means upon the indicator control system being in an operative condition, said motor means connected to the shutter member and arranged to cooperate with the indicia bearing drums so as to shift said member out of said normal shield position in response to the effective energization of said motor means so that said selected indicia on said drums are thereupon rendered effective and visible through said window so long as the indicator control system continues in said operative condition.



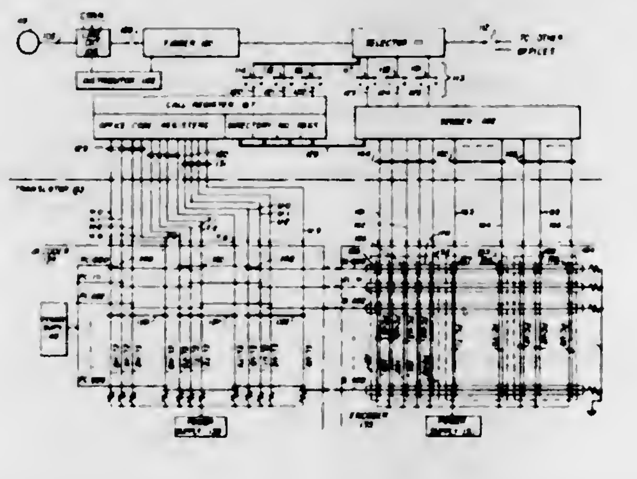
3,184,732
COMPUTER CIRCUIT
Harold E. Haynes, Haddonfield, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Apr. 15, 1960, Ser. No. 22,632
8 Claims. (Cl. 340—347)



1. An arrangement for transforming the position of an indication along a line into a digital quantity in parallel binary form comprising, in combination, a fixed optical matrix including a plurality of cells each representing a different power of two and each including substantially opaque and substantially transparent areas; and means responsive to the position of said indication for simultaneously projecting light onto the same restricted portion of each cell to produce optical outputs from the cells manifesting a binary number indicative of the analog quantity, said means including a fiber optics transducer which, at one end, comprises a line of fibers positioned parallel to the line along which said indication occurs, and at the other end is in the form of a two dimensional array of fibers.

3,184,733
TRANSLATOR EMPLOYING PHOTOCONDUCTIVE PANELS AND ELECTROLUMINESCENT PANELS
Joseph M. Bernstein, Bensenville, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Dec. 14, 1960, Ser. No. 75,696
3 Claims. (Cl. 340—347)

1. A translator for translating markings on a plurality of address conductors into corresponding markings on a plurality of output conductors, said translator comprising: an electroluminescent panel and a photoconductive panel positioned in parallel planes and in close proximity to each other, said electroluminescent panel having on one side thereof reference electrode means, and on the opposite side thereof a plurality of first-coordinate electrodes each connected to one of said address conductors, so that upon application of a marking potential to one of said address conductors a potential difference is set up between the corresponding first-coordinate electrode and said reference electrode means, causing a line of light to be emitted by said panel along said first-coordinate electrode, and said photoconductive panel having a plurality of second-coordinate electrode pairs thereon, each of the first electrodes of each said second-coordinate pair being connected to one of said output conductors, each of the second electrodes of each said pair being connected to a certain potential, the electrodes of each said pair being spaced from each other so as to normally have a relatively high electrical impedance between them, and said translator also comprising a plurality of physically separate, individually exchangeable masking strips, one for each address, said strips interposed between said panels, each said strip adjacent and extending along a corresponding one of said first-coordinate electrodes, each said first-coordinate electrodes independently associated with only one of said addresses and each said strip having a plurality of apertures therein for selectively allowing the light emitted along the corresponding line to impinge on predetermined ones only of said pairs of second-coordinate electrodes, so as to produce a relatively low impedance between the electrodes of said predetermined pairs and thereby mark the corresponding output conductors with said certain potential.



3,184,734
DIGITAL-TO-ANALOG CONVERTER
William J. Uren, Phoenix, Ariz., and Charles H. Propster, Jr., San Jose, Calif., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 92,234, Feb. 28, 1961. This application June 25, 1962, Ser. No. 206,131
10 Claims. (Cl. 340—347)

8. In a digital-to-analog converting system having a register for selectively distributing a group of digital signals to one of a plurality of digital-to-analog converters and a means for coupling output signals from said register in parallel to a selected digital-to-analog converter, each digital-to-analog converter having a plurality of bistable relay circuits, each bistable relay circuit being operatively associated with a given digital signal of a group of digital signals, each of which is assigned a different order of value, said operative association being such that each corresponding relay circuit may be energized when its associated digital signal is a voltage signal at a first potential of a given polarity with respect to a reference potential and be de-energized when said associated digital signal is a voltage signal at said reference potential, an output terminal of each bistable relay circuit being connected to a load, each of said bistable relay circuits comprising:

a relay having a coil and a transfer contact operatively associated with first and second contacts, said transfer contact being spring-biased to make an electrical connection with said first contact when said coil is de-energized;

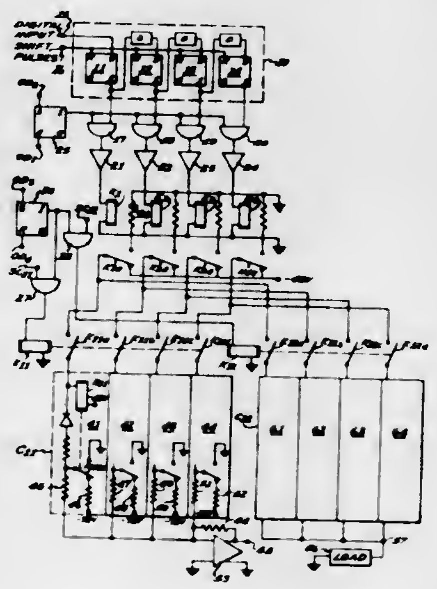
means for connecting a first terminal of said coil to a source of reference potential;

means for connecting to said first contact a first source of potential of a polarity opposite to said given polarity with respect to said reference potential;

means for connecting to said second contact a second source of potential of said given polarity;

a resistor for coupling said transfer contact to said output terminal;

means for momentarily translating a digital signal to a second terminal of said coil; means for electrically coupling said transfer contact to said second terminal of said coil, said means including a unidirectional current-conducting device so poled as to permit current to flow through it to said coil when said coil is energized, whereby said coil remains energized after a digital signal at said first potential is translated to said second terminal of said coil, and to prevent current from flowing through it to said coil when said coil is de-energized, whereby said coil remains de-energized, whereby said coil remains energized after tential is translated to said second terminal of said coil.

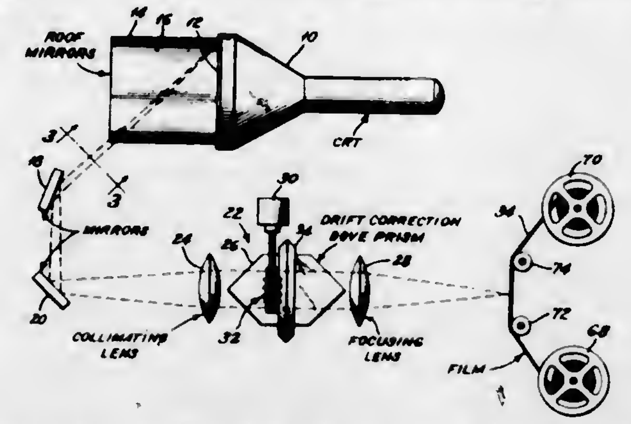


3,184,735
OPTICAL SYSTEM FOR AIRBORNE GROUND MAPPING RADAR APPARATUS
Aubrey I. Chapman, Jr., and Bob E. Martel, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 747,012, July 7, 1958. This application Oct. 9, 1962, Ser. No. 230,801
20 Claims. (Cl. 343—5)

1. An optical system comprising a cathode ray tube for displaying time-shared traces, and means for converting said time-shared traces into collinear alignment prior to imaging.

7. An optical system for an airborne radar mapping device comprising a cathode ray tube for displaying parallel line trace images representing received radar

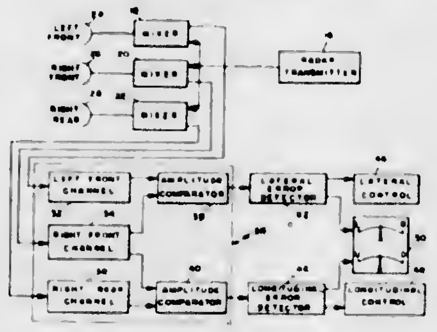
signals, means for converting said parallel line trace images into a single continuous line sweeping out from a



central point, and means for recording said single continuous line.

3,184,736
ATTITUDE SENSING BY AMPLITUDE COMPARISON OF MULTIPLE RADAR BEAMS

Charles J. Badewitz, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Nov. 28, 1962, Ser. No. 240,609
7 Claims. (Cl. 343—5)



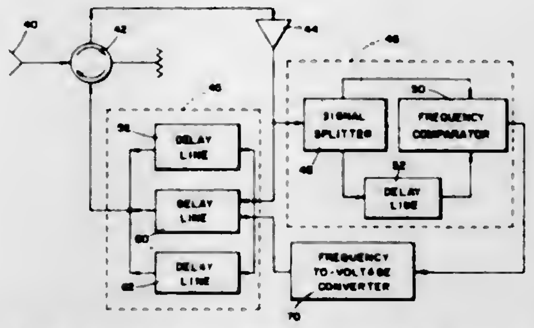
1. A method of sensing vehicle attitude relative to terrain comprising the steps of:
- radiating electromagnetic beams in at least three different fixed downward directions relative to the normal attitude of the vehicle;
- receiving each beam reflected along the same path as radiated;
- comparing the amplitudes of the separate beams; and deriving from the comparative amplitudes the attitude of the vehicle relative to the terrain surface reflecting the beams.

3. In a radar system for a vehicle including a transmitter and a receiver, the combination comprising:
- antenna means radiating signals in at least three different, fixed downward directions relative to the normal attitude of the vehicle, each radiated signal being reflected and received along the same path as radiated;
- means for sensing amplitude equality and difference between the reflected signals; and means for deriving from the comparative amplitudes the attitude of the vehicle relative to vertical.

3,184,737
RADAR SYSTEM

Claude H. Child, Paramount, Calif., assignor to North American Aviation, Inc.
Filed Mar. 28, 1963, Ser. No. 268,814
4 Claims. (Cl. 343—6.8)

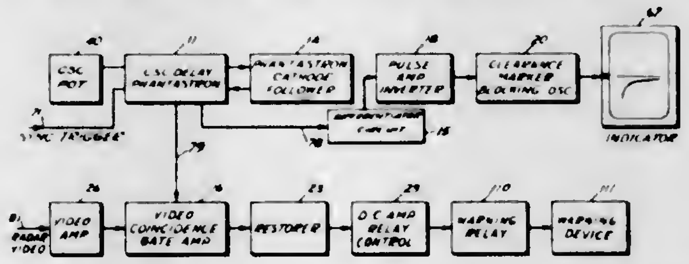
4. In cooperation with a pulsed radar system, transponder means for generating a pulse-position-coded acceleration signal comprising
- A first delay line responsive to a signal received from said radar system for providing a fixed time delay thereof equal to the pulse repetition period of said radar system;
- A frequency comparator responsive to both said received signal and the output of said first delay line for generating a signal frequency indicative of the frequency difference therebetween;



- Analog frequency-to-voltage converter means coupled to the output of said comparator for providing an analog voltage having an amplitude indicative of said frequency difference; and
- Voltage-controlled delay means responsive to said received signal and having a control input operatively coupled to the output of said converter means for delaying said received signal by an amount corresponding to the relative acceleration between a transmitter of said radar system and said transponder.

3,184,738
OBSTACLE WARNING COMPUTER

John D. Hague and Richard L. Lundberg, Indianapolis, Ind., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 30, 1959, Ser. No. 824,139
8 Claims. (Cl. 343—7)
(Granted under Title 35, U.S. Code (1952), sec. 266)



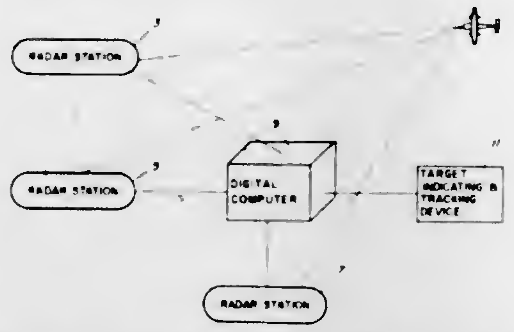
1. A computer comprising: an input for a signal representative of the cosecant of a variable angle; an input for a time reference pulse; means coupled to said inputs for utilizing said signal and reference pulse to produce a gating pulse and to produce an output pulse at a time with respect to said reference pulse which is proportional to said cosecant; indicator means coupled to receive the output pulse of said means for utilizing, for producing a presentation representative of the relation of said proportional time to said variable angle; coincidence circuitry coupled to receive said gating pulse of said means for utilizing and an input for signals representing energy reflections; and a monitor coupled to said coincidence circuitry, whereby said monitor is activated upon concurrence of a gating pulse and a signal representing energy reflections.

3,184,739
METHOD OF TRACKING RADAR TARGETS IN PRESENCE OF JAMMING

Frederick Franklin, Morristown, and Paul K. Glloth, Whippany, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 14, 1960, Ser. No. 62,814
2 Claims. (Cl. 343—15)

1. A method of tracking the position of a plurality of targets in the presence of jamming, said method comprising the steps of:

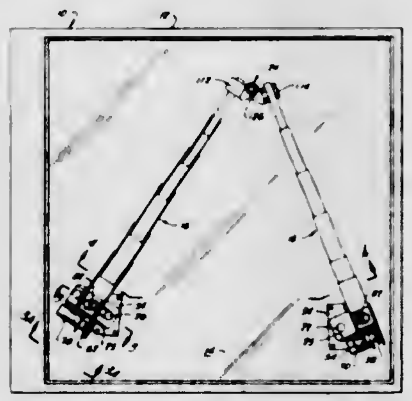
- (*a*) simultaneously determining the bearings of each of the targets from three different points;



- (*b*) computing the points of intersection of said bearings to determine the unique target positions;
- (*c*) and utilizing this positional information to track each target.

3,184,740
POSITION INDICATING AND COURSE PLOTTING DEVICE

William B. Huckabay, Sherman N. Oatman, and William H. Parker, Dallas, Tex., assignors, by mesne assignments, to Rayflex Exploration Company, Richardson, Tex., a corporation of Texas
Filed Feb. 15, 1962, Ser. No. 173,525
8 Claims. (Cl. 343—15)

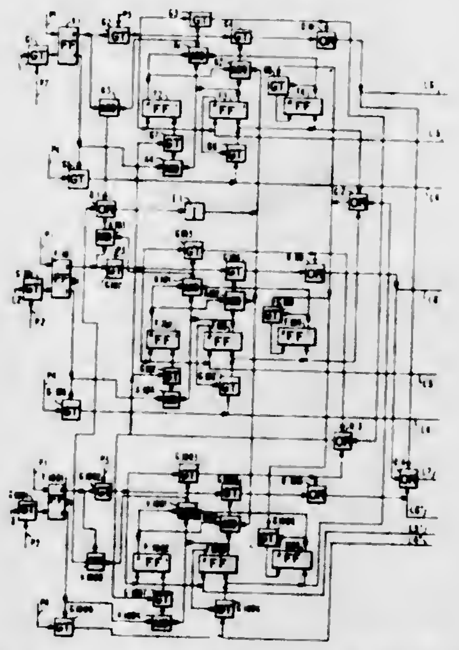


1. A device for continuously indicating the position of a station moving relative to first and second targets of known locations comprising:
- first and second telescopic arms each pivotally supported at one end thereof for pivotal movement about first and second pivotal axis representing the positions of the first and second targets respectively, each of said arms being comprised of a plurality of nesting channel members, each of the channel members having an elongated web portion and a flange extending along each side of the web, the flanges of adjacent nesting channel members having pairs of facing surfaces, each pair of facing surfaces having a pair of aligned groove bearing races, one bearing race being in each of the surfaces, and bearing means in each pair of aligned groove bearing races;
- station reference means pivotally interconnecting the ends of the first and second arms remote from said pivotal axis;
- servo means mounted on said first telescopic arm for moving the station reference means to a point spaced from the first axis a distance proportional to the momentary distance between the station and the first target; and
- servo means mounted on said second telescopic arm for moving the station reference means to a point spaced from the second axis a distance proportional to the momentary distance between the station and second target, whereby the position of the station relative to the first and second targets will continuously be indicated by the position of the station reference means relative to the first and second pivotal axis, respectively.

4. In a position indicating system for a mobile station, the combination of:
- a map;
- a cathode ray tube having an intensity grid and two sets of deflection plates and arranged to project images on the map;
- means for moving the cathode ray tube relative to the map in accordance with changes in position of the station;
- an object detection system on the station for scanning the area around the station and detecting objects in the vicinity of the station, said detection system producing cathode ray tube deflection signals oriented in a given direction and cathode ray tube intensity signals representative of objects in the vicinity of the station;
- means connecting the object detection system to the intensity grid of the cathode ray tube to reproduce on the map images of objects relative to the station; and
- means for feeding the deflection signals from said object detection system to the deflection plates on the cathode ray tube in accordance with changes in the position of the cathode ray tube to maintain the images of said objects oriented with respect to the map.

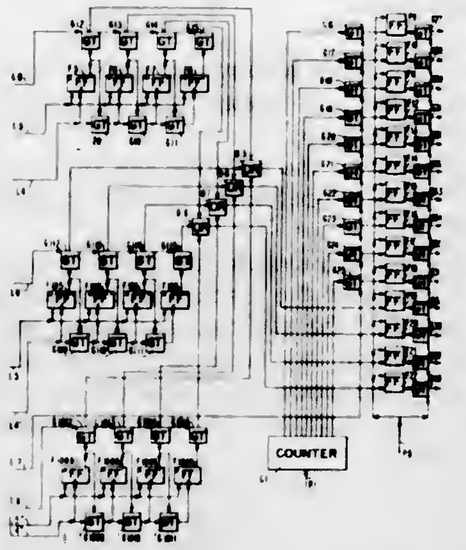
3,184,741
SELECTIVE DATA TRANSFER SYSTEM

Robert D. Buck, Saugerties, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Mar. 17, 1960, Ser. No. 15,763
8 Claims. (Cl. 343—17.1)

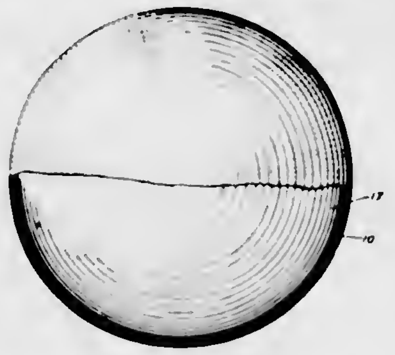


6. An input system for data processing apparatus which comprises means to concurrently provide a plurality of trains of data signals,
- the signals in each train being indicative of a radar target echo,
- means to sense the signals in each train,
- means to provide signals indicative of the source of the trains of signals,
- transfer means operative on termination of each train as sensed by said sensing means to transfer to said apparatus signals indicative of the content and source of that train of signals,
- and control means operative upon termination of any one of said trains of signals to prevent the transfer to said apparatus of signals corresponding to any other train sensed by said sensing means concurrently

with said one train that said sensing means indicates is already longer than said one train at the time of translation to said apparatus of said content and source signals corresponding to said one train.



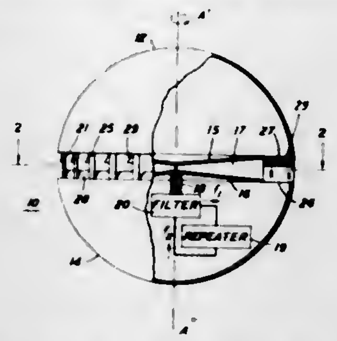
3,184,742
BALLOON COMMUNICATION SATELLITE
Cassius C. Cutler, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 22, 1960, Ser. No. 77,700
2 Claims. (Cl. 343—18)



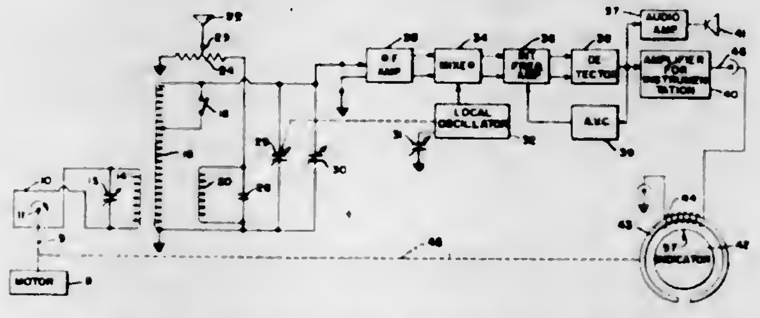
1. A satellite vehicle for use as a passive repeater in a communication system comprising a first envelope of pliable material inflatable as a spherical balloon in orbit and a second envelope of pliable material inflatable in orbit to form a sphere concentric with said first envelope when inflated and of diameter exceeding that of said first envelope to minimize initial contact between said envelopes when inflated in orbit, but to permit frictional contact when the outer envelope is deformed, the material of said second envelope being coated with a conductive layer to reflect radio waves, said material also conducting heat radiation more readily than said first envelope.

3,184,743
ANTENNA STRUCTURES FOR COMMUNICATION SATELLITES
Arthur B. Crawford, Fair Haven, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 7, 1961, Ser. No. 94,081
4 Claims. (Cl. 343—100)

3. An antenna system for a satellite structure having circular symmetry in at least one plane comprising a multiplicity of conductively bounded waveguides of square cross-section disposed about the circumference of said plane with the longitudinal axes of said guides extending radially with an inner end of each extending toward the center of said structure, means for feeding said inner ends of each of said guides with electromagnetic wave energy for radiation from the other end thereof, and a ninety degree differential phase shifter disposed in each of said guides.



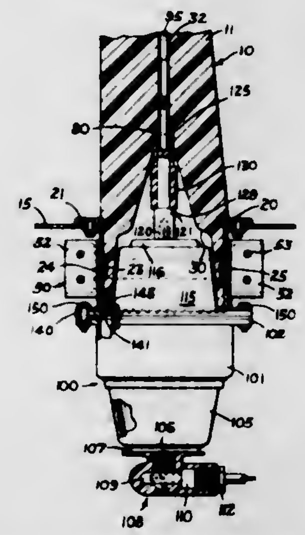
3,184,744
AUTOMATIC RADIO DIRECTION FINDER
Richard H. Benedict, 3965 Sedgwick Ave., Bronx, N.Y.
Filed Feb. 1, 1963, Ser. No. 255,608
7 Claims. (Cl. 343—118)



1. A radio direction finder system for indicating the bearing of a station transmitting a signal comprising means having a directive characteristic for receiving said transmitted signal, means for rotating said receiving means to receive the transmitted signal modulated in amplitude in accordance with the directive characteristic and the rotation of the receiving means, means connected to said receiving means for detecting the amplitude modulated signal produced thereby, indicator means comprising a movable indicating device having magnetically responsive means mounted thereon for positioning said device, bearing means mounted on said indicator means to hold said indicating device while permitting rotation thereof, a solenoid including a core and a coil for producing magnetic flux to react with said magnetically responsive means to position said movable indicating device, means connected to said solenoid for rotating it in synchronism with the rotating receiver means, said solenoid core being generally C-shaped and positioned to form a magnetic flux path around said magnetically responsive means as said solenoid is rotated whereby the effect of the terrestial magnetic field on said magnetically responsive means is reduced, means connecting said detecting means to said coil and applying said amplitude modulated signal thereto whereby said solenoid produces magnetic flux in accordance with said signal to position the movable indicator device to indicate the bearing of the station.

3,184,745
ANTENNA MAST MEANS HAVING ELASTOMERIC SEAL BETWEEN ANTENNA AND TRANSMISSION LINE FEED
Charles F. Betcher, Fort Lauderdale, Fla., assignor to Dayton Aircraft Products, Inc., Fort Lauderdale, Fla., a corporation of Ohio
Filed July 11, 1962, Ser. No. 209,080
8 Claims. (Cl. 343—705)

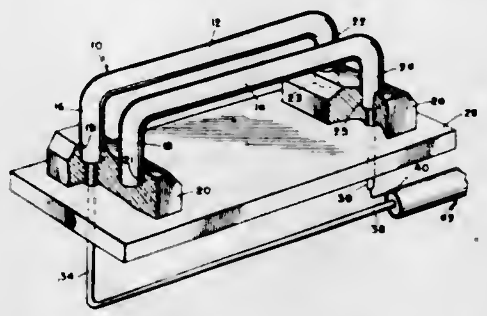
1. A high altitude antenna mast for supporting a long wire antenna and providing an electrical connection thereto, comprising an insulating supporting body adapted for mounting in extending relation from the surface of an aircraft and having means in the outer end thereof forming an electrical connection with an antenna wire, means in said body defining a cavity, an electrical conductor in said body extending from said antenna wire connecting means and terminating at a terminal connector portion at said cavity, an electrical feed-through member removably received in said cavity and having a cooperating terminal connector on an inner end thereof electrically engageable with said connector portion, elastomeric seal means between said feed-through member and said body in surrounding relation to said feed-through member adjacent said inner end thereof and supported in air-sealing relation to said connector by said feed-through member, and feed-through member retaining means joining said body at said cavity securing said member in engagement with said seal means holding said seal means in axial compression in said air-sealing relation protecting said electrical connection from exposure to low pressure air at high altitudes.



6. A high altitude antenna mast for supporting a long wire antenna and providing an electrical connection thereto, comprising an insulating supporting body adapted for mounting in extending relation from the surface of an aircraft and having means in the outer end thereof forming an electrical connection with an antenna wire, means in said body defining a cavity, an electrical conductor in said body extending from said antenna wire connecting means and terminating at a terminal connector member at said cavity, a lightning arrester removably received in said cavity and having a cooperating terminal connector on an inner end thereof electrically engageable with said connector member, elastomeric seal means between said arrester and said body formed in surrounding air-sealing relation to said connector, and arrester retaining and sealing means joining said arrester to said body at said cavity securing said arrester within said cavity and compressing said seal means in air-sealing relation at said electrical connection and also forming an air-tight seal with said cavity for holding said cavity isolated from exposure to low pressure air at high altitudes.

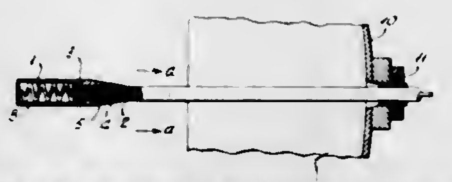
3,184,746
DOUBLE LOOP ANTENNA
Maurice George Chatelain, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed May 15, 1961, Ser. No. 150,108
5 Claims. (Cl. 343—742)

4. A double loop antenna comprising:
a first one-quarter wave U-shaped member having a first end and a second end;
a second one-quarter wave U-shaped member having a first end and a second end;
an electrically conductive plate;
means for positioning said first and second members parallel but spaced apart from each other, and perpendicular to said plate, said positioning means comprising insulating mounting blocks having two end-receiving sockets therein, each block having the first end of one member and the second end of said other member positioned in sockets thereof;



a first feed wire connected to said first end of said first member;
and a second feed wire connected to said first end of said second member.

3,184,747
COAXIAL FED HELICAL ANTENNA WITH DIRECTOR DISK BETWEEN FEED AND HELIX PRODUCING ENDFIRE RADIATION TOWARDS THE DISK
Alfred Käch, Nussbaumen, Aargau, Switzerland, assignor to Patelhold Patentverwertungs- & Elektro-Holding, A.G., Glarus, Switzerland
Filed Sept. 21, 1962, Ser. No. 225,249
Claims priority, application Switzerland, Oct. 6, 1961, 11,600/61
12 Claims. (Cl. 343—840)

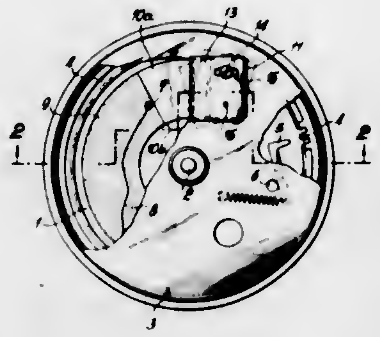


1. A directional antenna comprising in combination:
(1) a cylindrical wire helix,
(2) a coaxial feeder having an inner conductor and an outer conductor,
(3) a radial coupling link connecting one end of said helix inner conductor,
(4) a parasitic antenna disk disposed at the junction between said helix and said inner conductor, said disk being connected to said outer conductor and extending radially from the helix axis to an outer diameter substantially equal to be mean diameter of said helix, and
(5) said coupling link and at least a portion of the adjoining first turn of said helix being substantially parallel to and spaced from said disk by a distance of the order of the diameter of the helix wire, whereby said disk acts as a director producing a directional radiation characteristic of said antenna in the direction from the free end of said helix towards said disk.

3,184,748
ERASING ARRANGEMENT FOR RECORDING DEVICES
Felix Muller and Norbert Helmschrott, Schwenningen (Neckar), Germany, assignors to Kienzle Apparate G.m.b.H., Villingen, Black Forest, Germany
Filed Feb. 18, 1963, Ser. No. 259,037
Claims priority, application Germany, Feb. 22, 1962, K 45,968; Dec. 5, 1962, K 48,388
10 Claims. (Cl. 346—21)

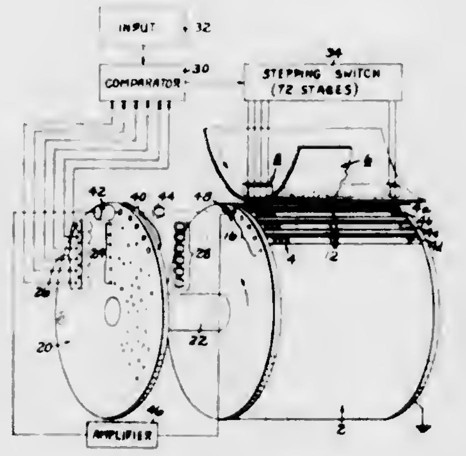
1. In a recording device, in combination, a support; a layer of a deformable and moldable substance located on said support; recording means engaging said layer so that upon relative movement between said support and said

recording means, said recording means deforms said layer to form a distinguishable recorded track; and erasing means including a flexible foil lying substantially flat on said layer over an area covering a portion of said recorded



track for forming a smooth surface on said layer during relative movement between said support on one hand, and said recording means and said erasing means on the other hand whereby said track is erased.

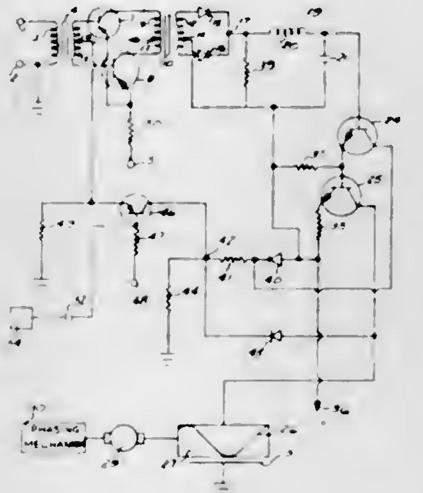
3,184,749
ELECTROSTATIC DRUM PRINTER
Hans F. A. Groth, King of Prussia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 13, 1962, Ser. No. 173,063
12 Claims. (Cl. 346—74)



2. An electrostatic drum printer comprising a rotary drum bearing a plurality of character electrodes, said character electrodes being arranged in longitudinally extending rows with the rows spaced from each other circumferentially about the drum, a plurality of elongated electrodes carried by the drum, each elongated electrode extending longitudinally between a pair of rows of character electrodes and being spaced closer to one row of character electrodes than to the other row of the pair, and means electrically insulating said elongated electrodes from all said character electrodes.

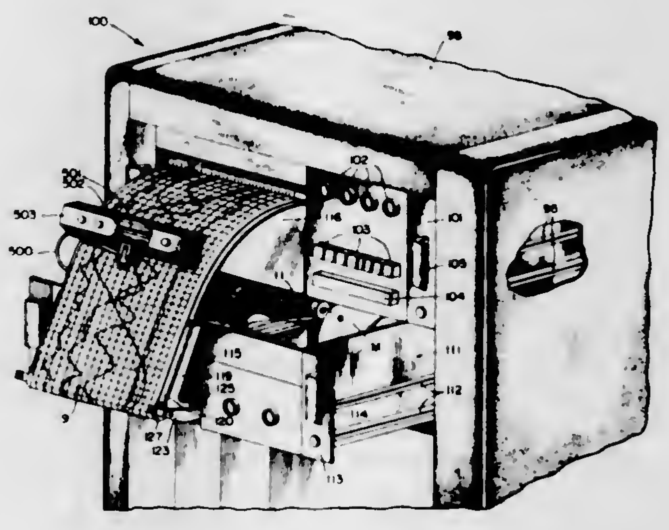
3,184,750
ELECTROLYTIC FACSIMILE RECORDER APPARATUS
John W. Smith, Whitestone, N.Y., assignor to Hogan Faximile Corporation, New York, N.Y.
Filed May 31, 1962, Ser. No. 199,046
12 Claims. (Cl. 346—74)

2. Electrolytic facsimile recorder apparatus comprising input means to receive video electric signals, a pair of amplifying transistors connected in cascade each having a base, an emitter and a collector, a pair of cooperating electrodes adapted to receive an electrolytic recording medium therebetween, the input connected between the base and the emitter of the first transistor, the electrodes connected in series with a power supply, and an emitter



feedback resistor connected between the emitter and the collector of the second transistor in series with the power supply, whereby a feedback loop is provided through the feedback resistor and the transistors to the base of the first transistor.

3,184,751
RECORDER
Richard S. Kampf, Denver, Colo., assignor to Honeywell Inc., a corporation of Delaware
Filed Nov. 27, 1962, Ser. No. 240,307
4 Claims. (Cl. 346—108)

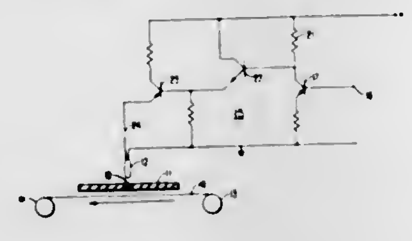


1. Oscillographic recording apparatus including,
supporting means for said apparatus,
a supply spool supported by said supporting means to support a roll of record material responsive to radiant energy,
a latensifying platen,
pivot means located adjacent one end of said platen and pivotally securing said platen to said supporting means,
drive means supported by said supporting means to move said record material through a recording plane, in which a record trace is formed on said record material, and thence over said platen,
a drawer slideably supported by said supporting means adjacent said platen,

---

a front platen supported by said drawer,
a roller pivotally mounted on said latensifying platen adjacent the opposite end thereof and engaging said front platen to cause said latensifying platen to pivot about said pivot means as said drawer is withdrawn relative to said supporting means,
a take-up spool supported by said drawer to receive said record material from said latensifying platen, and
take-up drive means supported by said drawer to drive said take-up spool to wind said record material thereon,
said latensifying platen and said front platen forming a substantially continuous support for said record material when said drawer is withdrawn relative to said supporting means.

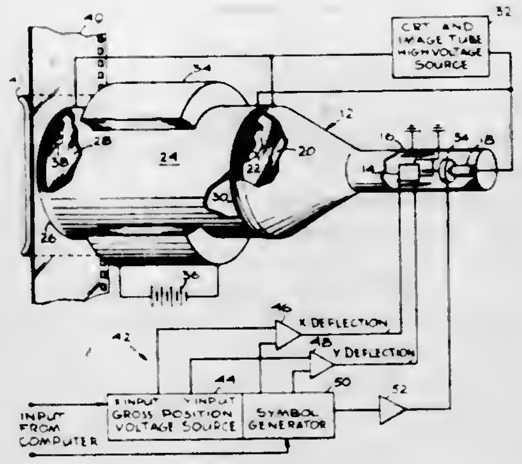
3,184,752
VARIABLE AREA RECORDING APPARATUS AND METHOD
Charles E. Weller, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 21, 1963, Ser. No. 252,911
3 Claims. (Cl. 346—108)



1. An apparatus for recording a fluctuating electrical signal to provide a variable area record of said electrical signal, said apparatus comprising:
a light means having a controllable intensity;
a recording medium having a photographic emulsion on at least one surface thereof, said emulsion having a saturation value exceeded by the intensity of the light means;
a focusing means disposed to focus a circular image onto the recording medium, said light means being disposed adjacent said focusing means;
drive means disposed to move said recording medium and said light means relative to each other; and
circuit means coupled to said light means to control the intensity thereof in response to variations in the magnitude of said electrical signal.

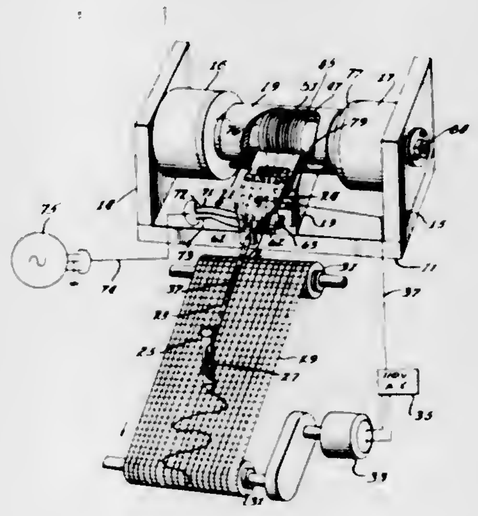
3,184,753
APPARATUS FOR EXPOSING PHOTOSENSITIVE MATERIAL
Robert A. Koster, Los Angeles, Calif., assignor, by mesne assignments, to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Nov. 5, 1962, Ser. No. 235,181
15 Claims. (Cl. 346—110)

1. Apparatus comprising:
means for intermittently exciting, a first photo-luminescent material, having a first emission spectrum and and relatively long persistence characteristics for providing a first light image substantially continuously in response thereto;
photoemissive means arranged to receive light from said first light image and responsive thereto to provide a similar electron image; and
a second photoluminescent material having a second emission spectrum and relatively short persistence



characteristics being substantially continuously responsive to said electron image to provide a second light image.

3,184,754
RECORDING OSCILLOGRAPH
Velkko K. Peltola, Chicago, Ill., assignor to Illinois Testing Laboratories, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 26, 1962, Ser. No. 247,022
11 Claims. (Cl. 346—112)



1. Apparatus for establishing a record of the variations of an electrical signal which comprises, a scribe member for establishing said record, a non-magnetic, cylindrical form member, mounting means for mechanically linking said form member to said scribe member, a first, magnetically permeable core member disposed interiorly of said cylindrical member and coaxially therewith, a magnetically permeable shell member disposed exteriorly of said non-magnetic form member and coaxially with said first core member, and magnetizing means connected in series magnetic circuit with said shell member and said core member for establishing a magnetic flux path having a gap extending radially between said core member and said shell member for linking said cylindrical form member, means mounting said cylindrical form member for movement along an axis common with said core member and said shell member, a winding disposed about said form member, and means for applying said electrical signal in circuit with said winding, whereby said scribe mem-

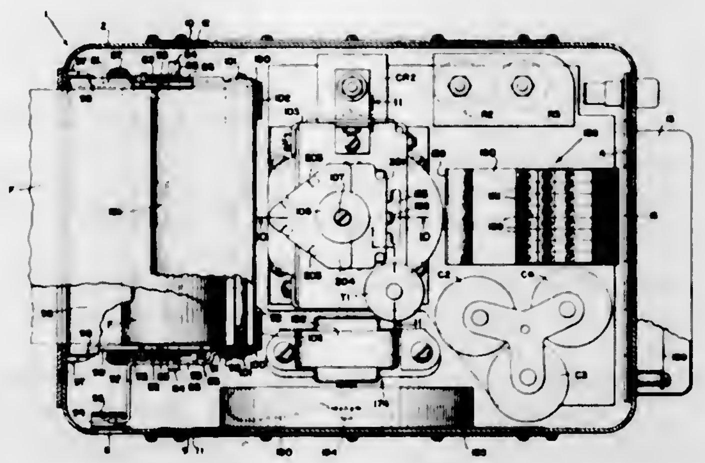
ber is urged to move transversely to the direction of magnetic flux passing radially through said gap upon application of said signal to said winding.

3,184,755
RECORDING APPARATUS

John P. Mahoney, Wheatridge, and Richard S. Kampf, Denver, Colo., assignors to Honeywell Inc., a corporation of Delaware

Original application Feb. 7, 1957, Ser. No. 638,729. Divided and this application Aug. 18, 1961, Ser. No. 134,551

4 Claims. (Cl. 346—136)



1. In a recorder, means for supplying recording medium, including, a shaft adapted to have the recording medium rolled thereon, a housing having at least one vertical wall having an open-ended slot therein adapted to receive a portion of said shaft therein, a spring biasing said shaft for movement along said slot toward the open end thereof, and a drive roller extending across the open end of said slot so as to engage said roll of recording medium and to drive it off said roll.

DESIGNS

MAY 18, 1965

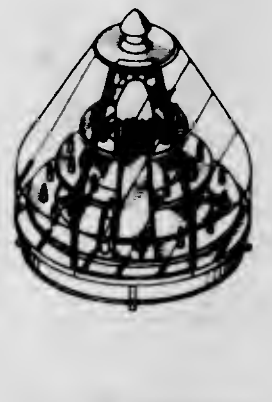
201,119
SPOOL HOLDER

Alphonso E. Marcocchio, 1120 S. Crescent Drive, Los Angeles, Calif.

Filed May 16, 1963, Ser. No. 74,913

Term of patent 14 years

(Cl. D3—19)



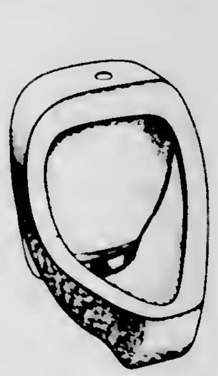
201,120
URINAL

E. Peter Robare, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 30, 1963, Ser. No. 76,809

Term of patent 14 years

(Cl. D4—5)



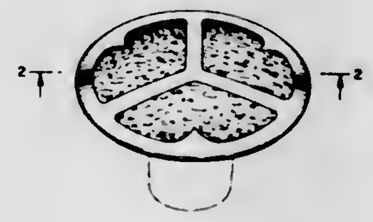
201,121
KNOB FOR DOORS, DRAWERS AND THE LIKE

Don Heyer, Fullerton, Calif., assignor to Hyer Hardware Mfg. Co., Anaheim, Calif., a corporation of California

Filed July 8, 1963, Ser. No. 75,694

Term of patent 14 years

(Cl. D10—8)



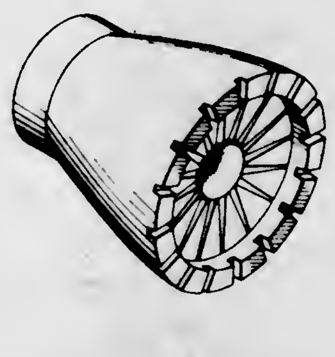
201,122
CABINET KNOB

Henry Ross Escalette, Claremont, Calif., assignor to Ajax Hardware Manufacturing Corp., City of Industry, Calif., a corporation of California

Filed Nov. 4, 1963, Ser. No. 77,272

Term of patent 14 years

(Cl. D10—8)



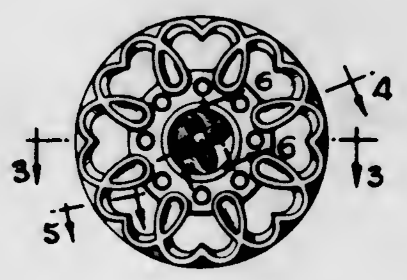
201,123
KNOB

La Verne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Illinois

Filed Oct. 16, 1964, Ser. No. 82,208

Term of patent 14 years

(Cl. D10—8)



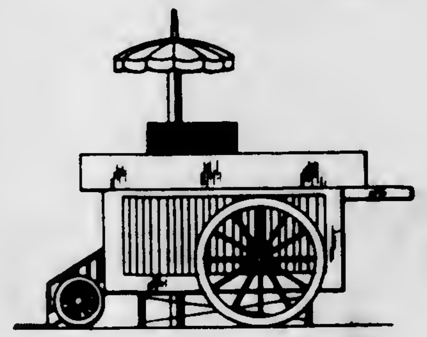
201,124
ROADSIDE RESTAURANT

Anthony J. Rupolo, 118 Pine Neck Ave., Patchogue, N.Y.

Filed June 17, 1963, Ser. No. 75,371

Term of patent 14 years

(Cl. D13—1)



201,125

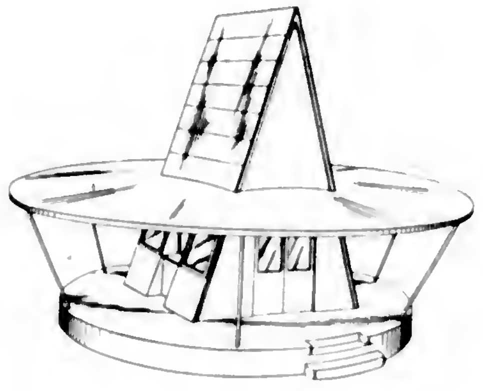
RESTAURANT

Edward J. von Gund, 3600 Wilshire Blvd., Bradbury, Calif.

Filed May 8, 1964, Ser. No. 79,896

Term of patent 14 years

(Cl. D13—1)



201,126

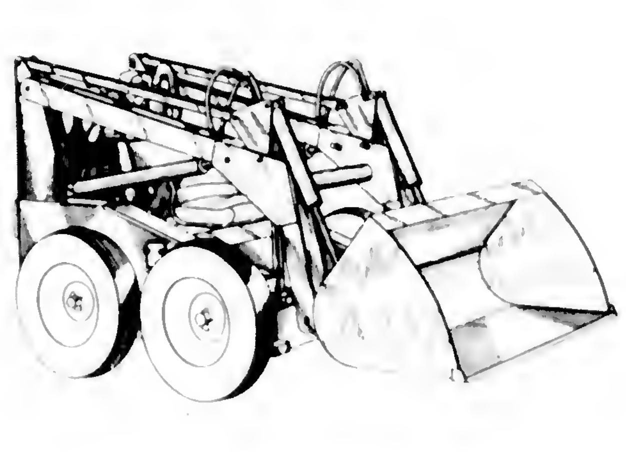
LIFT TRUCK

Orlando W. Kromer, Minneapolis, Minn., assignor to Erickson Power Lift Trucks, Inc., a corporation of Minnesota

Filed Aug. 25, 1964, Ser. No. 81,437

Term of patent 14 years

(Cl. D14—3)



201,127

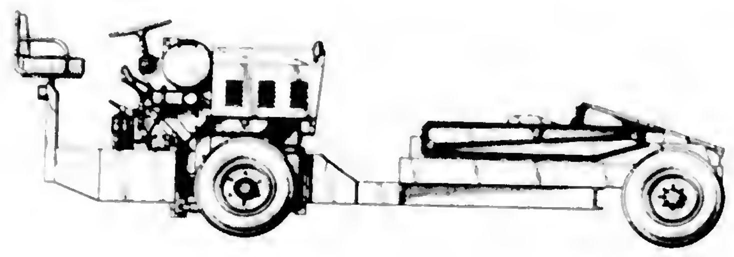
ARTICULATED TRACTOR

Henry G. Geer, Minneapolis, Minn., assignor to Erickson Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Oct. 16, 1964, Ser. No. 82,199

Term of patent 14 years

(Cl. D14—3)



201,128

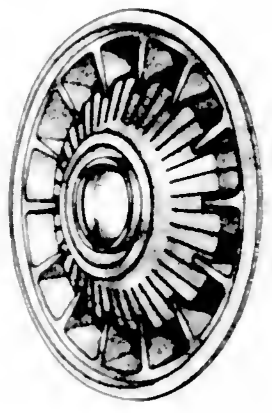
WHEEL COVER

Stanley R. Wilen, Huntington Woods, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 8, 1964, Ser. No. 81,648

Term of patent 7 years

(Cl. D14—30)



201,129

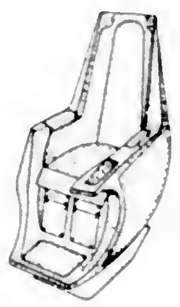
CHAIR

Irwin Solomon, 33822 Sleepy Hollow Lane, Livonia, Mich.

Filed Sept. 19, 1963, Ser. No. 76,643

Term of patent 14 years

(Cl. D15—3)



201,130

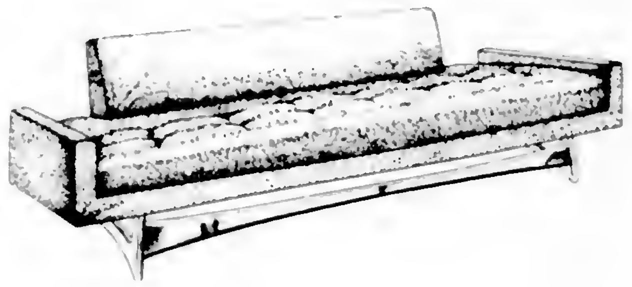
SOFA

Adrian M. Pearsall, Forty Fort, Pa., assignor to Craft Associates, Inc., Wilkes-Barre, Pa., a corporation of Pennsylvania

Filed Apr. 14, 1964, Ser. No. 79,483

Term of patent 14 years

(Cl. D15—11)



201,131

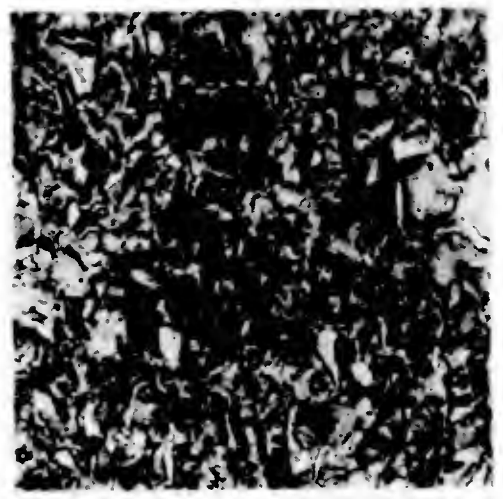
FLOOR TILE

Arthur W. Hopkins, Cornwall, N.Y., and Marlin L. Steely, Mendham, N.J., assignors to The Flintkote Company, New York, N.Y., a corporation of Massachusetts

Filed Nov. 7, 1963, Ser. No. 77,329

Term of patent 14 years

(Cl. D18—2)



201,132

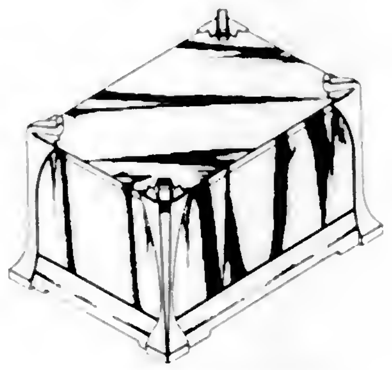
URN

Walter Lawrence, Los Gatos, Calif., assignor to Gordon H. Lawrence, San Jose, Calif.

Filed Apr. 27, 1964, Ser. No. 79,696

Term of patent 7 years

(Cl. D19—1)



201,133

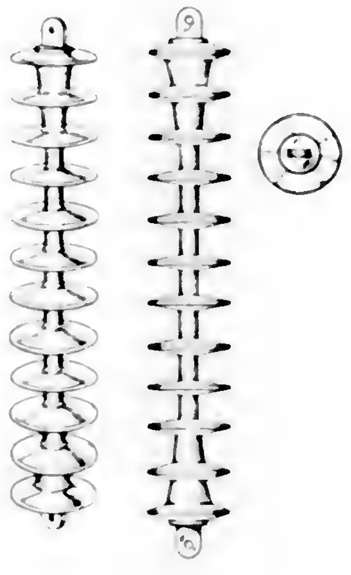
ELECTRICAL STRAIN INSULATOR OR SIMILAR ARTICLE

Fred C. Vose, Severna Park, Md., assignor to General Electric Company, a corporation of New York

Filed May 18, 1964, Ser. No. 80,024

Term of patent 14 years

(Cl. D26—10)



201,134

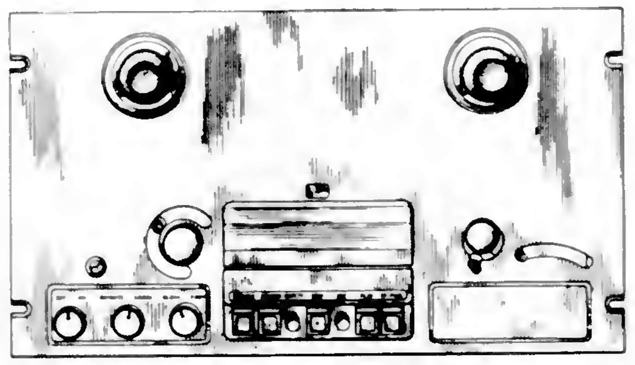
TAPE RECORDER DECK

Howard R. Cederberg and William C. Bortzfield, Tulsa, Okla., assignors to Midwestern Instruments, Inc., Tulsa, Okla., a corporation of Oklahoma

Filed Jan. 27, 1964, Ser. No. 78,369

Term of patent 14 years

(Cl. D26—14)



201,135

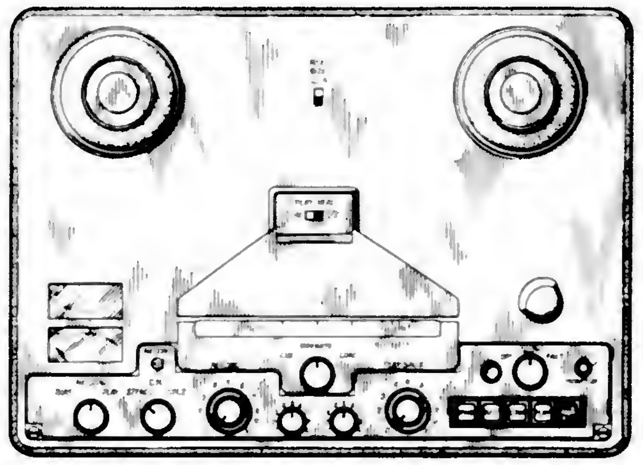
TAPE RECORDER DECK

Robert C. Henderlong and Larry W. Smith, Tulsa, Okla., assignors to Midwestern Instruments, Inc., Tulsa, Okla., a corporation of Oklahoma

Filed Jan. 27, 1964, Ser. No. 78,370

Term of patent 14 years

(Cl. D26—14)



201,136

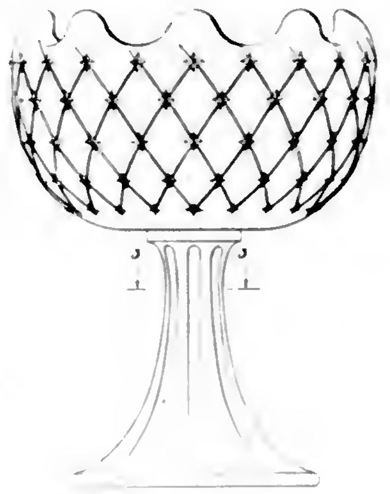
FLOWER VASE OR SIMILAR ARTICLE

Arthur L. Harshman, Dunkirk, Ind., assignor to Indiana Glass Company, Dunkirk, Ind., a corporation of Indiana

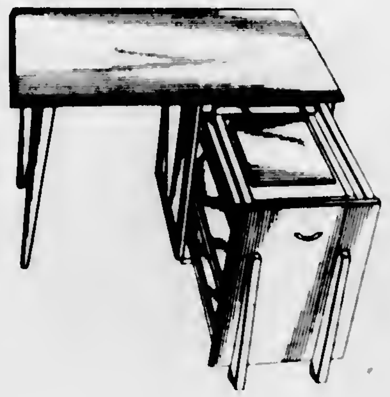
Filed Jan. 28, 1964, Ser. No. 78,389

Term of patent 14 years

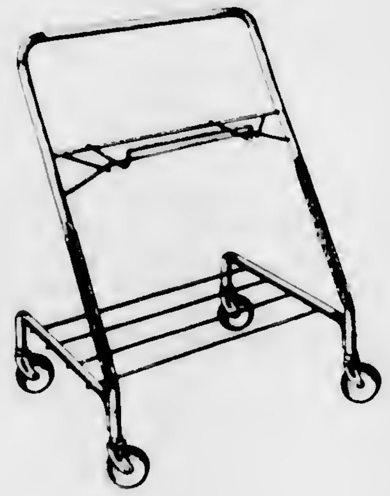
(Cl. D29—28)



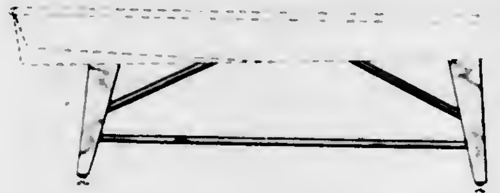
201,137
DESK
Anthony De Witt Glover, Box 4093, Austin, Tex.
Filed Oct. 26, 1962, Ser. No. 72,272
Term of patent 14 years
(Cl. D33—7)



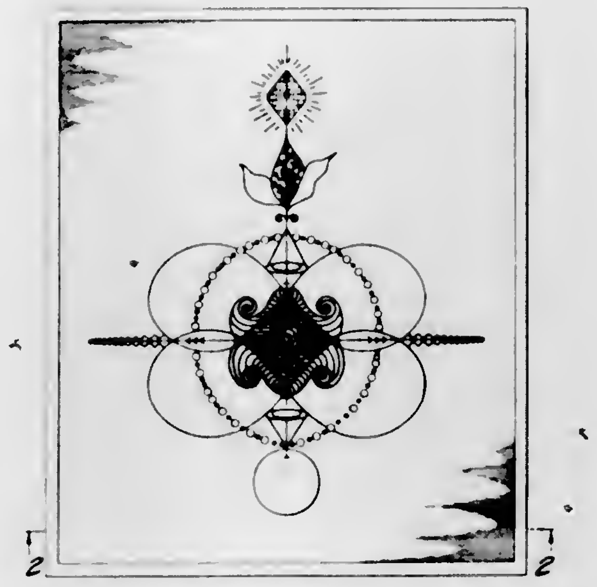
201,138
PORTABLE TELEVISION STAND
Walter P. Myers, 2958 W. Carroll Ave., Chicago, Ill.
Filed Jan. 2, 1964, Ser. No. 78,024
Term of patent 14 years
(Cl. D33—14)



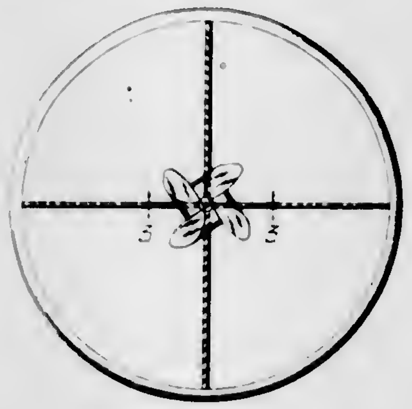
201,139
BILLIARD TABLE OR THE LIKE
Robert I. Anderson, Spring Lake, George E. Schaefer, Muskegon Heights, and Robert C. Kelley, Muskegon, Mich., assignors to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 17, 1964, Ser. No. 82,661
Term of patent 14 years
(Cl. D34—3)



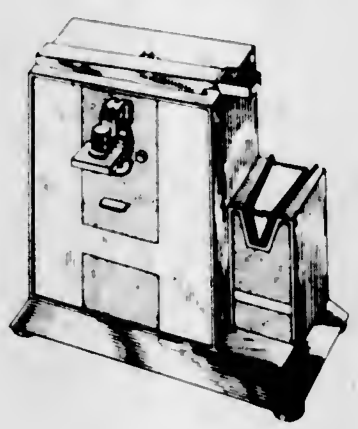
201,140
GAME PUZZLE BOARD
Jeanne Harris, 1844 Palmas, San Marino, Calif.
Filed July 22, 1964, Ser. No. 80,961
Term of patent 14 years
(Cl. D34—5)



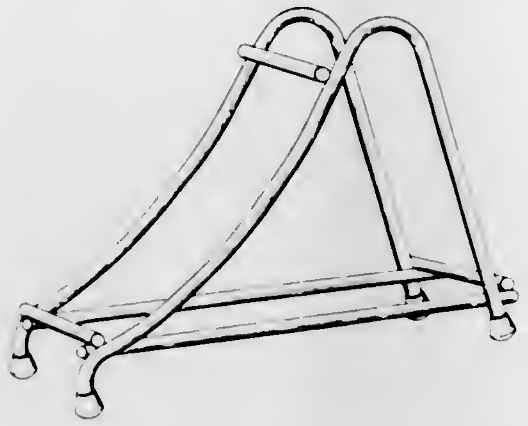
201,141
AERIAL TOY
James W. Harp, South Gate, Calif.
(4950 E. Florence Ave., Bell, Calif.)
Filed Sept. 2, 1964, Ser. No. 81,557
Term of patent 14 years
(Cl. D34—15)



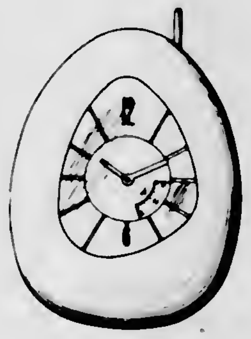
201,142
COMBINED POWER OPERATED CAN OPENER AND KNIFE SHARPENER
Henry J. Talge, Kansas City, Mo., assignor to Rival Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed Mar. 23, 1964, Ser. No. 79,115
Term of patent 14 years
(Cl. D37—1)



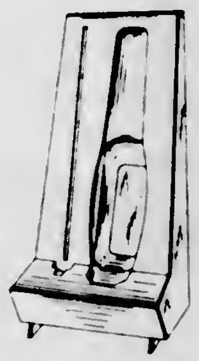
201,143
WHEEL STOP
John J. Vigilante, 83—23 77th Ave., Glendale, N.Y.
Filed Sept. 22, 1964, Ser. No. 81,825
Term of patent 14 years
(Cl. D41—1)



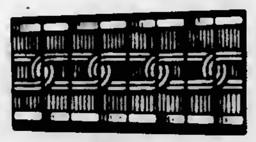
201,144
ALARM CLOCK
Claude Vuille, Fribourg, Switzerland, assignor to Derby S.A., Canton, Switzerland
Filed 27, 1964, Ser. No. 78,809
Term of patent 14 years
(Cl. D42—7)



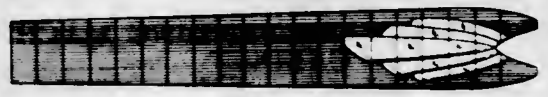
201,145
HOLDER FOR ELECTRICALLY POWERED KNIFE OR THE LIKE
Richard B. Hall, Cincinnati, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Aug. 28, 1964, Ser. No. 81,493
Term of patent 14 years
(Cl. D44—29)



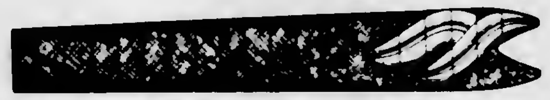
201,146
LINK CHAIN FOR A BRACELET OR THE LIKE
Emil Rodriguez, New York, N.Y., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed July 14, 1964, Ser. No. 80,849
Term of patent 7 years
(Cl. D45—4)



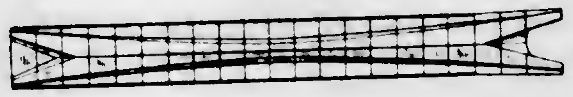
201,147
LINK CHAIN FOR A BRACELET OR THE LIKE
Dan Werner, New York, N.Y., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed Jan. 6, 1965, Ser. No. 83,291
Term of patent 7 years
(Cl. D45—4)



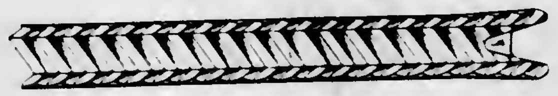
201,148
LINK CHAIN FOR A BRACELET OR THE LIKE
Dan Werner, 924 West End Ave., New York, N.Y.
Filed Jan. 6, 1965, Ser. No. 83,304
Term of patent 7 years
(Cl. D45—4)



201,149
LINK CHAIN FOR A BRACELET OR THE LIKE
Emil Rodriguez, Corbera de Llobregat, Spain, assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed Jan. 14, 1965, Ser. No. 83,447
Term of patent 7 years
(Cl. D45—4)

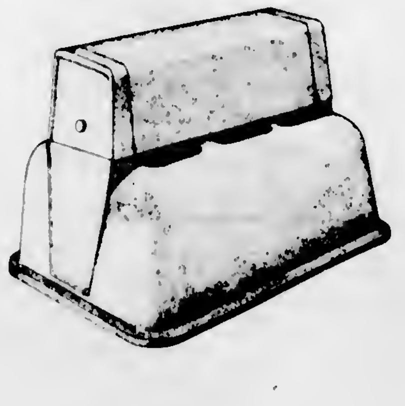


201,150
LINK CHAIN FOR A BRACELET OR THE LIKE
Emil Rodriguez, Corbera de Llobregat, Spain, assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed Jan. 14, 1965, Ser. No. 83,448
Term of patent 7 years
(Cl. D45—4)



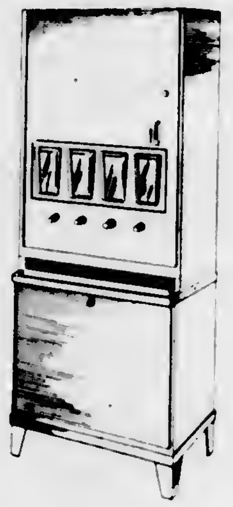
201,151
HOUSING FOR MERCURY ARC LAMPS AND THE LIKE

Donald L. Jackson, Moundsville, W. Va., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 24, 1963, Ser. No. 77,915
Term of patent 14 years
(Cl. D48—20)



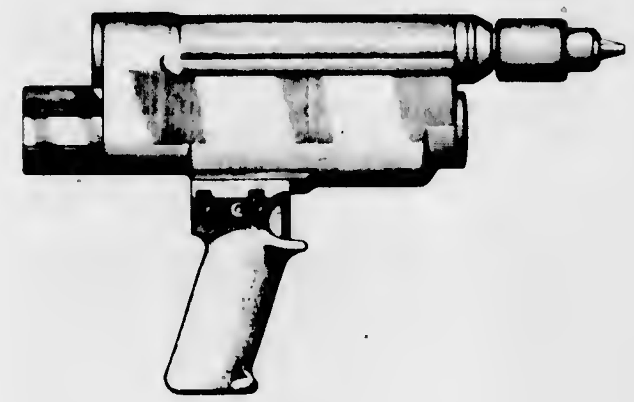
201,152
COIN-CONTROLLED VENDING MACHINE CABINET

Ford Se Bastian, Bala-Cynwyd, Pa., assignor to Coffee Chef Corporation, Bala-Cynwyd, Pa., a corporation of Pennsylvania
Filed Jan. 31, 1964, Ser. No. 78,445
Term of patent 14 years
(Cl. D52—3)



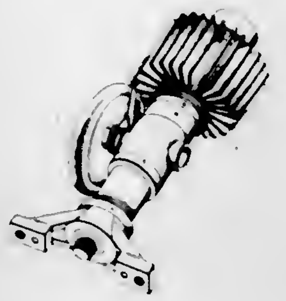
201,153
PORTABLE ELECTRIC POWER DRILL

William A. Douglas, South Pasadena, Calif., assignor to The Mira Corporation, Los Angeles, Calif., a corporation of California
Filed May 8, 1964, Ser. No. 79,884
Term of patent 14 years
(Cl. D54—14)



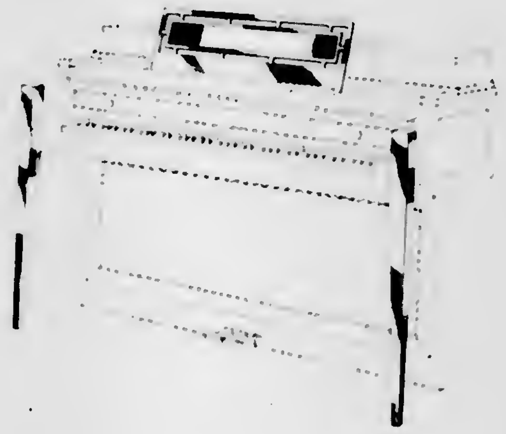
201,154
POWER UNIT FOR ACTUATING VALVES OR THE LIKE

Paul O. Huston, Bloomfield, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 13, 1964, Ser. No. 79,459
Term of patent 14 years
(Cl. D55—1)



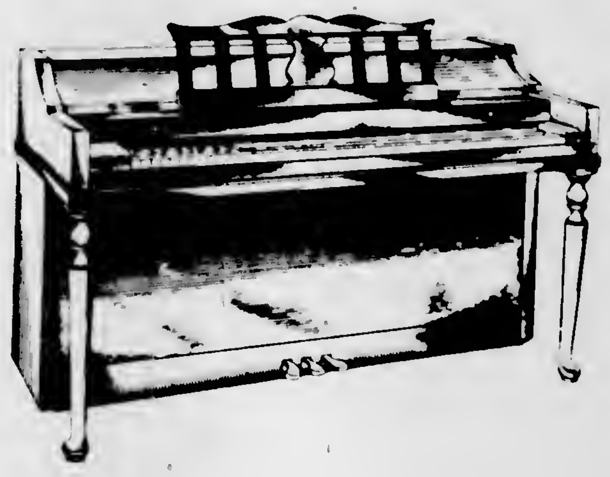
201,155
PIANO

Wilbur M. Day, Kenwood, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 3, 1963, Ser. No. 76,848
Term of patent 14 years
(Cl. D56—9)



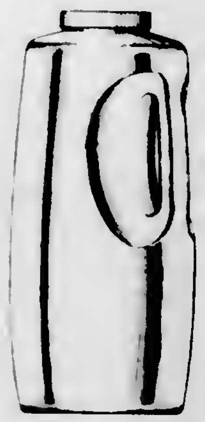
201,156
PIANO CASE

Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 20, 1964, Ser. No. 82,723
Term of patent 14 years
(Cl. D56—9)



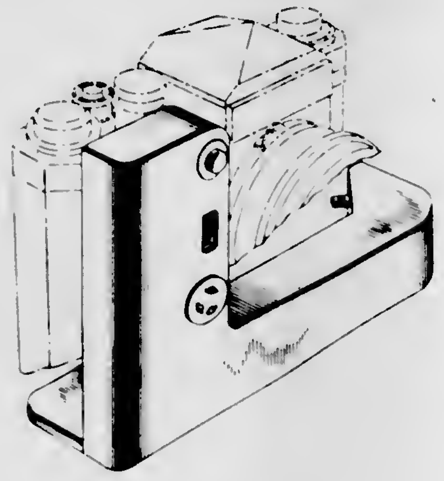
201,157
JUG

Chester A. Harlow, Mountainside, N.J., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 9, 1964, Ser. No. 79,425
Term of patent 14 years
(Cl. D58—5)



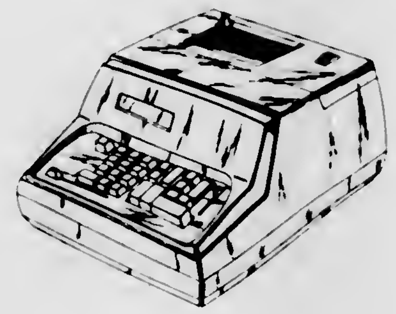
201,158
BATTERY PACK FOR A MOTOR-DRIVEN CAMERA

Hugo L. Wessels, Miami, Fla.
Filed Sept. 1, 1964, Ser. No. 81,545
Term of patent 7 years
(Cl. D61—1)



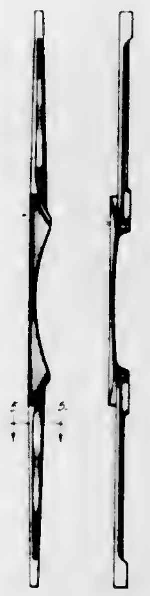
201,159
CALCULATING MACHINE

Chester J. Abend, Camillus, and Thomas E. Hanson, Syracuse, N.Y., assignors to SCM Corporation, a corporation of New York
Filed Apr. 20, 1964, Ser. No. 79,591
Term of patent 14 years
(Cl. D64—11)



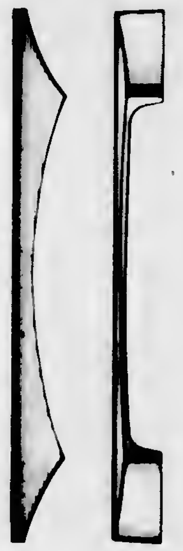
201,160
CABINET DOOR HANDLE

Jonathan F. Morgan, Glen Ellyn, Ill., assignor to General Electric Company, a corporation of New York
Filed Oct. 5, 1964, Ser. No. 82,032
Term of patent 14 years
(Cl. D67—3)



201,161
CABINET DOOR HANDLE

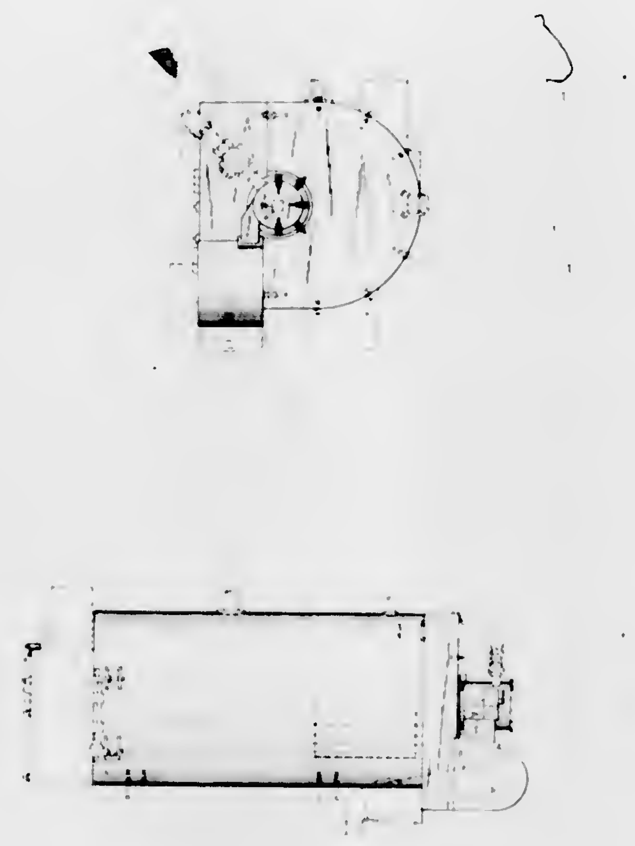
Jonathan F. Morgan, Glen Ellyn, Ill., assignor to General Electric Company, a corporation of New York
Filed Oct. 5, 1964, Ser. No. 82,040
Term of patent 14 years
(Cl. D67—3)



201,162
BOILER

Sam N. Craig and Franklin L. Van Reed, Reading, Pa., assignors to Orr & Sembower, Inc., Reading, Pa., a corporation of Pennsylvania

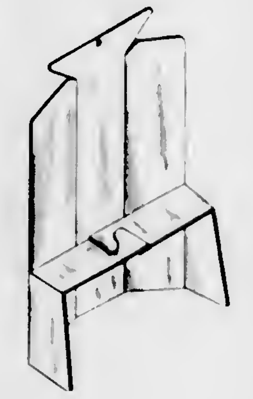
Filed Dec. 5, 1960, Ser. No. 63,118
Term of patent 14 years
(Cl. D76—1)



201,163
COUNTER DISPLAY CARD

Arnold H. Kossoff, 67 Metropolitan Ave., Brooklyn, N.Y.

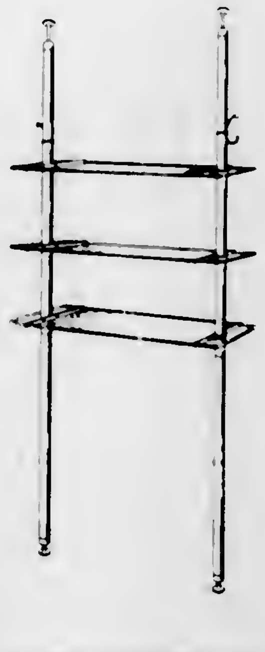
Filed Mar. 16, 1964, Ser. No. 79,006
Term of patent 14 years
(Cl. D80—9)



201,164
POLE SUPPORTED SHELVING UNIT

Richard Sylvan, Chicago, Ill., assignor to Queen Manufacturing Co., Inc., Chicago, Ill., a corporation of Illinois

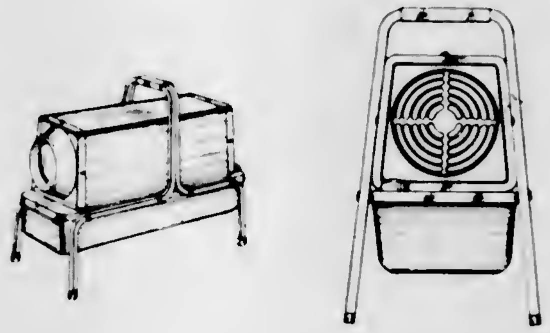
Filed June 26, 1963, Ser. No. 75,533
Term of patent 14 years
(Cl. D80—10)



201,165
PORTABLE HEATER

Eugene C. Briggs, Dayton, Ohio, assignor to Master Consolidated, Inc., Dayton, Ohio, a corporation of Ohio

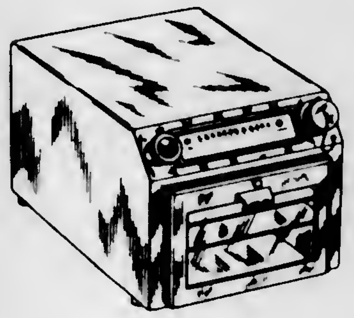
Filed Nov. 26, 1963, Ser. No. 77,565
Term of patent 14 years
(Cl. D81—10)



201,166
PORTABLE GAS STERILIZER

Frank E. Power, 23 Sunset Road, Ashland, Mass.

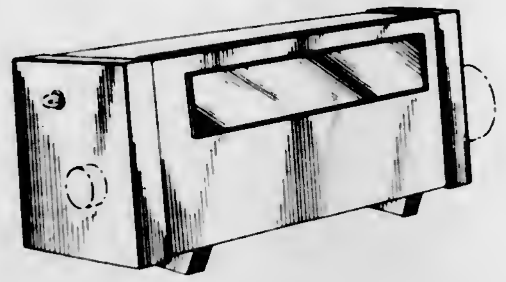
Filed Oct. 2, 1964, Ser. No. 81,998
Term of patent 14 years
(Cl. D83—1)



201,167
INCUBATOR

Francis Bert Gower III, Chicago, Ill., assignor to Michael Reese Research Foundation, a nonprofit corporation of Illinois

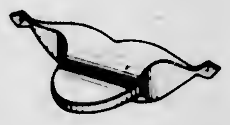
Filed Oct. 9, 1964, Ser. No. 82,121
Term of patent 14 years
(Cl. D83—1)



201,168
LIP ROUGE APPLICATOR

Arnold T. Milton, Scarsdale, and Daniel Bednarczuk, Flushing, N.Y.; said Bednarczuk assignor to said Milton

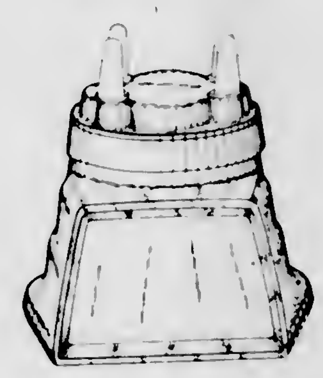
Filed Nov. 21, 1963, Ser. No. 77,532
Term of patent 14 years
(Cl. D86—10)



201,169
ELECTRIC BLENDER BASE

Paul O. Rawson, Trumbull, Conn., assignor, by mesne assignments, to Dynamics Corporation of America, New York, N.Y.

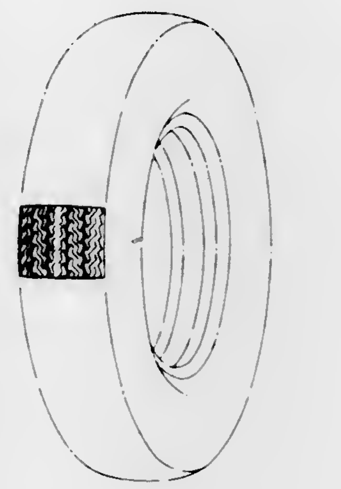
Filed Aug. 24, 1964, Ser. No. 81,419
Term of patent 14 years
(Cl. D89—1)



201,170
TIRE

Frank S. Vukan, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

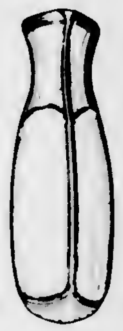
Filed Nov. 13, 1964, Ser. No. 82,585
Term of patent 14 years
(Cl. D90—20)



201,171
HANDLE FOR MANUAL TOOLS SUCH AS SCREW DRIVERS OR THE LIKE

Raymond G. Knudsen and Robert E. Badger, Kenosha, Wis., and Peter Langmack, Brooklyn, N.Y., assignors to Snap-On Tools Corporation, Kenosha, Wis., a corporation of Delaware

Filed June 7, 1961, Ser. No. 65,505
Term of patent 14 years
(Cl. D93—4)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 18TH DAY OF MAY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Akeireb, David. Premium holding package. Re. 25,781, 5–18–65, Cl. 206—47.
- Borg-Warner Corp. : *See—*
  - Robins, James D., and Curtis. Re. 25,784.
- Brooks, Eugene H., to Continental Gin Co. Lint cotton cleaner with by-pass. Re. 25,780, 5–18–65, Cl. 19—203.
- Continental Gin Co. : *See—*
  - Brooks, Eugene H. Re. 25,780.
- Curtis, Richard A. : *See—*
  - Robbins, James D., and Curtis. Re. 25,784.
- Dupre, Eugene J. : *See—*
  - La Bore, Leonard J., and Dupre. Re. 25,778.
- Electrolux, Aktiebolaget : *See—*
  - Grubb, Gunnar A. Re. 25,782.
- Giaimo, Edward C., Jr., to Radio Corp. of America. Electrostatic printing. Re. 25,779, 5–18–65, Cl. 95—1.7.
- Grubb, Gunnar A., to Electrolux, Aktiebolaget. Absorption refrigeration apparatus. Re. 25,782, 5–18–65, Cl. 62—236.
- La Bore, Leonard J., and E. J. Dupre, to Minnesota Mining and Mfg. Co. Non-slip structures. Re. 25,778, 5–18–65, Cl. 161—116.
- Minnesota Mining and Mfg. Co. : *See—*
  - La Bore, Leonard J., and Dupre. Re. 25,778.
- Radio Corp. of America : *See—*
  - Giaimo, Edward C., Jr. Re. 25,779.
- Robbins, James D., and R. A. Curtis, to Borg-Warner Corp. Combination laundry and dry cleaner apparatus. Re. 25,784, 5–18–65, Cl. 68—4.
- Young, Timothy T. J. Drive mechanism for a bicycle or the like. Re. 25,783, 5–18–65, Cl. 280—258.

LIST OF PLANT PATENTEES

- Anderson, Frederic W., to Kim Bros. doing business as Reedley Nursery. Apricot tree. 2,515, 5–18–65, Cl. 39.
- Champion, Jack H. Bougainvillea plant. 2,516, 5–18–65, Cl. 54.
- Friends of Foster Garden, Inc. : *See—*
  - Green, Ted. 2,514.
- Green, Ted, to Friends of Foster Garden, Inc. Bougainvillea plant. 2,514, 5–18–65, Cl. 54.
- Kim Bros. : *See—*
  - Anderson, Frederic W. 2,515.
- Rasmussen, Ross H. Bluegrass plant. 2,513, 5–18–65, Cl. 88.
- Reedley Nursery : *See—*
  - Anderson, Frederic W. 2,515.

LIST OF DESIGN PATENTEES

- Abend, Chester J., and T. E. Hanson, to SCM Corp. Calculating machine. 201,159, 5–18–65, Cl. D64—11.
- Ajax Hardware Mfg. Corp. : *See—*
  - Escalette, Henry R. 201,122.
- American Radiator & Standard Sanitary Corp. : *See—*
  - Robare, Peter E. 201,120.
- Amerock Corp. : *See—*
  - Clayton, La Verne E. 201,123.
- Anderson, Robert I., G. E. Schaefer, and R. C. Kelley, to Brunswick Corp. Billiard table or the like. 201,139, 5–18–65, Cl. D34—3.
- Badger, Robert E. : *See—*
  - Knudsen, Raymond G., Badger, and Langmack. 201,171.
- Baldwin, D. H., Co. : *See—*
  - Day, Wilbur M. 201,155.
  - White, Winsor D., Jr. 201,156.
- Bednarczuk, Daniel : *See—*
  - Milton, Arnold T., and Bednarczuk. 201,168.
- Bortzfield, William C. : *See—*
  - Cederberg, Howard R., and Bortzfield. 201,134.
- Briggs, Eugene C., to Master Consolidated, Inc. Portable heater. 201,165, 5–18–65, Cl. D81—10.
- Brunswick Corp. : *See—*
  - Anderson, Robert I., Schaefer, and Kelley. 201,139.
- Cederberg, Howard R., and W. C. Bortzfield, to Midwestern Instruments, Inc. Recorder deck. 201,134, 5–18–65, Cl. D26—14.
- Clayton, La Verne E., to Amerock Corp. Knob. 201,123, 5–18–65, Cl. D10—8.
- Coffee Chef Corp. : *See—*
  - Se Bastian, Ford. 201,152.
- Craft Associates, Inc. : *See—*
  - Pearsall, Adrian M. 201,130.
- Craig, Sam N., and F. L. Van Reed, to Orr & Sembower, Inc. Boiler. 201,162, 5–18–65, Cl. D76—1.
- Day, Wilbur M., to D. H. Baldwin Co. Piano. 201,155, 5–18–65, Cl. D56—9.
- Derby S.A. : *See—*
  - Vuille Claude. 201,144.
- Dominion Electric Corp. : *See—*
  - Hall, Richard B. 201,145.
- Douglas, William A., to The Mira Corp. Portable electric power drill. 201,153, 5–18–65, Cl. D54—14.
- Dynamics Corp. of America : *See—*
  - Rawson, Paul O. 201,169.
- Erickson Corp. : *See—*
  - Geer, Henry G. 201,127.
- Erickson Power Lift Trucks, Inc. : *See—*
  - Kromer, Orlando W. 201,126.
- Escalette, Henry R., to Ajax Hardware Mfg. Corp. Cabinet knob. 201,122, 5–18–65, Cl. D10—8.
- Flintkote Co., The : *See—*
  - Hopkins, Arthur W., and Steely. 201,131.
- Geer, Henry G., to Erickson Corp. Articulated tractor. 201,127, 5–18–65, Cl. D14—3.
- General Electric Co. : *See—*
  - Morgan, Jonathan F. 201,160.
  - Morgan, Jonathan F. 201,161.
  - Vose, Fred C. 201,133.
- General Motors Corp. : *See—*
  - Wilen, Stanley R. 201,128.
- Glover, Anthony D. Desk. 201,137, 5–18–65, Cl. D33—7.
- Goodrich, B. F., Co., The : *See—*
  - Vukan, Frank S. 201,170.
- Gower, Francis B., III, to Michael Reese Research Foundation. Incubator. 201,167, 5–18–65, Cl. D83—1.
- Hall, Richard B., to Dominion Electric Corp. Holder for electrically powered knife or the like. 201,145, 5–18–65, Cl. D44—29.
- Hanson, Thomas E. : *See—*
  - Abend, Chester J., and Hanson. 201,159.
- Harlow, Chester A., to Olin Mathieson Chemical Corp. Jug. 201,157, 5–18–65, Cl. D58—5.
- Harp, James W. Aerial toy. 201,141, 5–18–65, Cl. D34—15.
- Harris, Jeanne. Game puzzle board. 201,140, 5–18–65, Cl. D34—5.
- Harshman, Arthur L., to Indiana Glass Co. Flower vase or similar article. 201,136, 5–18–65, Cl. D29—28.
- Henderlong, Robert C., and L. W. Smith, to Midwestern Instruments, Inc. Tape recorder deck. 201,135, 5–18–65, Cl. D26—14.
- Heyer, Don, to Hyer Hardware Mfg., Co. Knob for doors; drawers and the like. 201,121, 5–18–65, Cl. D10—8.
- Hopkins, Arthur W., and M. L. Steely, to The Flintkote Co. Floor tile. 201,131, 5–18–65, Cl. D18—2.
- Huston, Paul O., to The Singer Co. Power unit for actuating valves or the like. 201,154, 5–18–65, Cl. D55—1.
- Hyer Hardware Mfg., Co. : *See—*
  - Heyer, Don. 201,121.
- Indiana Glass Co. : *See—*
  - Harshman, Arthur L. 201,136.
- Jackson, Donald L., to Sylvania Electric Products Inc. Housing for mercury arc lamps and the like. 201,151, 5–18–65, Cl. D48—20.
- Jacoby-Bender, Inc. : *See—*
  - Rodrigues, Emil. 201,146.
  - Rodriques, Emil. 201,149.
  - Rodrigues, Emil. 201,150.
  - Werner, Dan. 201,147.
- Kelley, Robert C. : *See—*
  - Anderson, Robert I., Schaefer, and Kelley. 201,139.
- Knudsen, Raymond G., R. E. Badger, and P. Langmack, to Snap-On Tools Corp. Handle for manual tools such as screw drivers or the like. 201,171, 5–18–65, Cl. D93—4.
- Kossoff, Arnold H. Counter display card. 201,163, 5–18–65, Cl. D80—9.
- Kromer, Orlando W., to Erickson Power Lift Trucks, Inc. Lift truck. 201,126, 5–18–65, Cl. D14—3.
- Langmack, Peter : *See—*
  - Knudsen, Raymond G., Badger, and Langmack. 201,171.

- Lawrence, Gordon H.: *See*—
  - Lawrence, Walter. 201,132.
- Lawrence, Walter, to G. H. Lawrence. Urn. 201,132, 5–18–65, Cl. D19—1.
- Marcocchio, Alphonso E. Spool holder. 201,119, 5–18–65, Cl. D3—19.
- Maater Consolidated, Inc.: *See*—
  - Briggs, Eugene C. 201,165.
- Midwestern Instruments, Inc.: *See*—
  - Cederberg, Howard R., and Bortsfield. 201,134.
  - Henderlong, Robert C., and Smith. 201,135.
- Milton, Arnold T., and D. Bednarczuk; said Bednarczuk assor. to said Milton. Lip rouge applicator. 201,168, 5–18–65, Cl. D86—10.
- Mira Corp., The: *See*—
  - Douglas, William A. 201,153.
- Morgan, Jonathan F., to General Electric Co. Cabinet door handle. 201,160, 5–18–65, Cl. D67—3.
- Morgan, Jonathan F., to General Electric Co. Cabinet door handle. 201,161, 5–18–65, Cl. D67—3.
- Myers, Walter P. Portable television stand. 201,138, 5–18–65, Cl. D33—14.
- Olin Mathieson Chemical Corp.: *See*—
  - Harlow, Chester A. 201,157.
- Orr & Sembower, Inc.: *See*—
  - Craig, Sam N., and Van Reed. 201,162.
- Pearsall, Adrian M., to Craft Associates, Inc. Sofa. 201,130, 5–18–65, Cl. D15—11.
- Power, Frank E. Portable gas sterilizer. 201,166, 5–18–65, D83—1.
- Queen Mfg. Co., Inc.: *See*—
  - Sylvan, Richard. 201,164.
- Rawson, Paul O., to Dynamics Corp of America. Electric blender base. 201,169, 5–18–65, Cl. D89—1.
- Reese, Michael, Research Foundation: *See*—
  - Gower, Francis B. 201,167.
- Rival Mfg. Co.: *See*—
  - Talge, Henry J. 201,142.
- Robare, Peter E., to American Radiator & Standard Sanitary Corp. Urinal. 201,120, 5–18–65, Cl. D4—5.
- Rodriguez, Emil, to Jacoby-Bender, Inc. Link chain for a bracelet or the like. 201,146, 5–18–65, Cl. D45—4.
- Rodriques, Emil, to Jacoby-Bender, Inc. Link chain for a bracelet or the like. 201,149, 5–18–65, Cl. D45—4.
- Rodriguez, Emil, to Jacoby-Bender, Inc. Link chain for a bracelet or the like. 201,150, 5–18–65, Cl. D45—4.
- Rupolo, Anthony J. Roadside restaurant. 201,124, 5–18–65, D13—1.
- Schaefer, George E.: *See*—
  - Anderson, Robert I., Schaefer, and Kelley. 201,139.
- SCM Corp.: *See*—
  - Abend, Chester J., and Hanson. 201,159.
- Se Bastian, Ford, to Coffee Chef Corp. Coin-controlled vending machine cabinet. 201,152, 5–18–65, Cl. D52—3.
- Singer Co., The: *See*—
  - Huston, Paul O. 201,154.
- Smith, Larry W.: *See*—
  - Henderlong, Robert C. 201,135.
- Snap-On Tools Corp.: *See*—
  - Knudsen, Raymond G., Badger, and Langmack. 201,171.
- Solomon, Irwin. Chair. 201,129, 5–18–65, Cl. D15—3.
- Steely, Marlin L.: *See*—
  - Hopkins, Arthur, and Steely. 201,131.
- Sylvan, Richard, to Queen Mfg. Co., Inc. Pole supported shelving unit. 201,164, 5–18–65, Cl. D80—10.
- Sylvania Electric Products Inc.: *See*—
  - Jackson, Donald L. 201,151.
- Talge, Henry J., to Rival Mfg. Co. Combined power operated can opener and knife sharpener. 201,142, 5–18–65, Cl. D37—1.
- Van Reed, Franklin L.: *See*—
  - Craig, Sam N., and Van Reed. 201,162.
- Vigilante, John J. Wheel stop. 201,143, 5–18–65, Cl. D41—1.
- Von Gund, Edward J. Restaurant. 201,125, 5–18–65, Cl. D13—1.
- Vose, Fred C., to General Electric Co. Electrical strain insulator or similar article. 201,133, 5–18–65, Cl. D26—10.
- Vuille, Claude, to S. A. Derby. Alarm clock. 201,144, 5–18–65, Cl. D42—7.
- Vukan, Frank S., to The B. F. Goodrich Co. Tire. 201,170, 5–18–65, Cl. D90—20.
- Werner, Dan, to Jacoby-Bender, Inc. Link chain for a bracelet or the like. 200,147, 5–18–65, Cl. D45—4.
- Werner, Dan. Link chain for a bracelet or the like. 201,148, 5–18–65, Cl. D45—4.
- Wessels, Hugo L. Battery pack for a motor-driven camera. 201,158, 5–18–65, Cl. D61—1.
- White, Winsor D., Jr., to D. H. Baldwin Co. Piano case. 201,156, 5–18–65, Cl. D56—9.
- Wilen, Stanley R., to General Motors Corp. Wheel cover. 201,128, 5–18–65, Cl. D14—30.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 18TH DAY OF MAY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- ACF Industries, Inc.: *See*—
  - Anderson, Clifford E. 3,184,213.
  - Anderson, Clifford E. 3,184,215.
  - Gibson, Earl D. 3,184,544.
  - Terlecky, Boris, and Krause. 3,183,853.
- AMP Inc.: *See*—
  - Obert, Luciano, and Teagno. 3,184,705.
- A.V. Electronics, Inc.: *See*—
  - Auernheimer, Clarence L. 3,184,549.
- Aaron, Maurice. Tank flushing apparatus. 3,183,526, 5–18–65, Cl. 4—47.
- Abraham, Edward P., G. G. F. Newton, and C. W. Hale, to National Research Development Corp. Recovery of cephalosporin C. 3,184,454, 5–18–65, Cl. 260—243.
- Abraham, George. Multistable electrical switching means embodying semiconductors. 3,184,602, 5–18–65, Cl. 307—88.5.
- Accumulateurs Fixes et de Traction (Societe Anonyme), Societe des: *See*—
  - Seibel, Guy J. L. 3,184,342.
- Adams, Leo A.: *See*—
  - Friedman, Lawrence S. and I. L., Zagielski, and Adams. 3,184,169.
- Adler, Franklin P., to Pullman Inc. Load retainer. 3,183,855, 5–18–65, Cl. 105—369.
- Admiral Corp.: *See*—
  - Rogers, Max W. 3,184,550.
- Aebi, Hans: *See*—
  - Martin, Henry, and Aebi. 3,184,301.
- Aerojet-General Corp.: *See*—
  - Royer, Thurber W., Brower, and Brunetz. 3,184,351.
- Aerospace Components Corp.: *See*—
  - Kline, Roger E. 3,184,246.
- Aerpat A.G.: *See*—
  - Sellers, Gose B. 3,183,586.
- Agfa Aktiengesellschaft: *See*—
  - Kremp, Rudolf, and Kaden. 3,183,769.
- Agnew, Albert B., 33⅓% to W. B. Jaspert. Refractory furnace linings. 3,183,625, 5–18–65, Cl. 50—157.
- Agruss, Meyer S. Process for treating leucocyanide dye images and product thereof. 3,184,308, 5–18–65, Cl. 96—27.
- Aichenegg, Paul C.: *See*—
  - Hensel, Jack, and Aichenegg. 3,184,377.
- Ajax Magnethermic Corp.: *See*—
  - Shearman, Wilbur E. 3,184,226.
- Ajax Mfg. Co., The: *See*—
  - Ehlert, William A. 3,183,699.
  - Kull, Albert R. 3,183,532.
  - Kull, Albert R. 3,183,533.
- Akamatsu, Kiyoshi: *See*—
  - Tsunoda, Yoshio, Taneda, Akamatsu, and Matsui. 3,184,281.
- Akkerman, Antony M., and J. F. Michels, to Combinatie Voor Chemische Industrie Nederlandsche, N.V. 1-(alkoxyphenylalkyl)-2-imidazolinones, -2-imidazolidinones and -2-pyrimidinones. 3,184,460, 5–18–65, Cl. 260—251.
- Aladdin Mfg. Co.: *See*—
  - Smith, Robert W. 3,184,201.
- Albers, Gus A., and W. G. Schumacher, to Chemetron Corp. Metal transferring process and apparatus. 3,184,578, 5–18–65, Cl. 219—146.
- Albers, Teunis. Automatic spray washing device for cows. 3,183,890, 5–18–65, Cl. 119—159.
- Albin, Jacques, A. M. Recoque, and A. M. Richard, to Societe d'Electronique et d'Automatisme. Information handling systems. 3,184,718, 5–18–65, Cl. 340—174.
- Albosta, Chester A., to International Business Machines Corp. Double-acting electro-magnetic actuator. 3,184,651, 5–18–65, Cl. 317—165.5.
- Alburger, James R. Fluorescent flaw detection method using a liquid solvent developer. 3,184.596, 5–18–65, Cl. 250—71.
- Alexander, Richard B., to National Tile & Mfg. Co. Apparatus for making ceramtic bodies and ceramic composition for use therewith. 3,183,573, 5–18–65, Cl. 25—142.
- Alford, Andrew. Pulse stretcher utilising delay furnishing polarity inverting means and means for combining input pulse with same delayed and inverted. 3,184,684, 5–18–65, Cl. 328—58.
- Alford, Bryan C., to The De Havilland Aircraft of Canada, Ltd. Charging valve for oleo pneumatic aircraft landing struts. 3,183,931, 5–18–65, Cl. 137—612.1.
- Alleman, Benjamin D. Variable speed device. 3,184,021, 5–18–65, Cl. 192—58.
- Allen, Alton K. Free piston oscillator. 3,183,792, 5–18–65, Cl. 92—33.
- Allen, Charles S., Jr. Device for blowing a large bubble containing a plurality of small bubbles. 3,183,621, 5–18–65, Cl. 46—6.
- Allen, Kenneth M., and C. H. Harper, to Allen-Harper, Inc. Reciprocating conveyors. 3,184,044, 5–18–65, Cl. 198—221.
- Allen, Robert J.: *See*—
  - Boyd, James W., and Allen. 3,184,133.
- Allen-Harper, Inc.: *See*—
  - Allen, Kenneth M., and Harper. 3,184,044.
- Aller, Willis F., to The Sheffield Corp. Supporting device. 3,184,197, 5–18–65, Cl. 248—204.
- Allied Chemical Corp.: *See*—
  - Deanin, Rudolph D., Berry, and Moore. 3,184,431.
  - Frazier, Thomas C., Jr. 3,184,458.
  - Moore, William P., Jr., and MacGregor. 3,184,613.
- Allis-Chalmers Mfg. Co.: *See*—
  - Heckenkamp, Edward B., Johansen, and Plate. 3,183,977.
  - Hochwalt, George C., and Mayo. 3,184,218.
  - Jacobsen, Julius E. 3,184,677.
- Allitt, Bernard C., to Dunlop Rubber Co. Ltd. Apparatus for the manufacture of pneumatic tires. 3,184,361, 5–18–65, Cl. 156—415.
- Almdale, Einar R., to The Walmet Corp. Carbide tipped articles and method for making same. 3,184,259, 5–18–65, Cl. 294—86.
- Alquist, Henry E., and E. E. Kleinmann, to J. J. Worten. Fluid handling apparatus. 3,183,940, 5–18–65, Cl. 138—106.
- Alzani, Franco, and G. Ceroni, to Arturo Ansaloni del Dr. Edo Ansaloni. Laterally retractable agricultural implement. 3,183,978, 5–18–65, Cl. 172—38.
- Ambrozaitis, John J., to Consolidated Electronics Industries Corp. High speed reset counter. 3,184,162, 5–18–65, Cl. 235—139.
- American Agricultural Chemical Co., The: *See*—
  - Fogiel, Adolf W., and Rose. 3,184,445.
- American Can Co.: *See*—
  - Farrell, Robert A., and Skowronski. 3,183,800.
- American Flange & Mfg. Co., Inc.: *See*—
  - Pentesco, Walter J. 3,184,101.
- American Hoist & Derrick Co.: *See*—
  - Fox, Robert P. 3,184,006.
- American Home Products Corp.: *See*—
  - Wei, Peter H.-L. 3,184,448.
  - Wendt, Gerhard R., and Ledig. 3,184,486.
  - Wendt, Gerhard R., and Ledig. 3,184,488.
- American Machine and Foundry Co.: *See*—
  - Germino, Felix J., and Moshy. 3,184,335.
  - Jensen, Preben W. 3,183,754.
- American Metal Works, Inc.: *See*—
  - Halstrick, Robert T. 3,183,861.
- American Optical Co.: *See*—
  - Koester, Charles J. 3,183,763.
- American Planter Co.: *See*—
  - Reed, Theron J. 3,184,036.
- American-Saint Gobain Corp.: *See*—
  - Insolio, Thomas A. 3,183,747.
  - Pirlot, Edmond A. 3,184,070.
- American Type Founders Co., Inc.: *See*—
  - Sausele, George J. H. 3,183,817.
- Ampex Corp.: *See*—
  - Wilkins, Charles A. 3,184,687.
- Anchor Steel and Conveyor Co.: *See*—
  - Czarnecki, Adolph. 3,184,039.
- Anders, Archie, to James H. Rhodes & Co. Floor pad holder. 3,183,542, 5–18–65, Cl. 15—246.
- Anderson, Clifford E., to ACF Industries, Inc. Seat for top entry ball valve. 3,184,213, 5–18–65, Cl. 251—172.
- Anderson, Clifford E., to ACF Industries, Inc. Plug valve. 3,184,215, 5–18–65, Cl. 251—309.
- Anderson, Eugene J.: *See*—
  - Stuller, Frank G., Gums, and Anderson. 3,184,034.
- Anderson, Lawrence A., to Eastman Kodak Co. Dry, vitamin-active product and process for preparing same. 3,184,385, 5–18–65, Cl. 167—81.
- Anderson, Ralph S., to Sperry Rand Corp. Universal receptacle shell coding device. 3,184,707, 5–18–65, Cl. 339—186.
- Anderson, Robert P., to General Electric Co. Implosion resistant cathode ray tubes. 3,184,327, 5–18–65, Cl. 117—63.
- Andes, George M., to E. I. du Pont de Nemours and Co. Tungsten alloys. 3,184,304, 5–18–65, Cl. 75—134.
- Andre, Henri G., to Yardney International Corp. Electrode for electrochemical device. 3,184,340, 5–18–65, Cl. 136—78.
- Anglemyer, Alfred A. Fetal extractor. 3,183,911, 5–18–65, Cl. 128—353.
- Aquadro, John W.: *See*—
  - Burke, Arthur J., and Aquadro. 3,184,700.
- Aquamatic Inc.: *See*—
  - Whitlock, Robert A., and Pillote. 3,183,933.
- Aquaval Specialties, Inc.: *See*—
  - Duchin, Paul J. 3,183,924.
- Arashi, Kazuo: *See*—
  - Ikai, Minoru, and Arashi. 3,184,186.
- Argue, Donald D., and J. D. Stauffer, to General Electric Co. Apparatus for coating metals. 3,183,605, 5–18–65, Cl. 34—68.
- Argus Chemical Corp.: *See*—
  - Hecker, Arthur C., Pollock, and Cohen. 3,184,428.

Argyriades, Dimitri, and G. F. Carter, to E. I. du Pont de Nemours and Co. Process and composition for diffusion coating refractory metals and product produced thereby. 3,184,292, 5–18–65, Cl. 29—197.
Ariedter, Hanns F., to The Mead Corp. Filled paper containing a mixture of resin and mucilaginous material as a retention aid and process for producing said paper. 3,184,-373, 5–18–65, Cl. 162—152.
Armco Steel Corp.: *See*—
Schnedler, Paul E. 3,183,718.
Armstrong, Charles R., to Sun Oil Co. Viscosity analyzer control systems. 3,184,396, 5–18–65, Cl. 196—132.
Arneson, Edwin L., to The Federal Paper Board Co. Article carrier. 3,184,102, 5–18–65, Cl. 220—113.
Aronowitz, Herbert I. and J. L. Mixing apapratus. 3,184,-222, 5–18–65, Cl. 259—54.
Aronowitz, Jack L.: *See*—
Aronowitz, Herbert I. and J. L. 3,184,222.
Arturo Ansaloni del Dr. Edo Ansaloni: *See*—
Alzani, Franco, and Ceroni. 3,183,978.
Asahi Kasei Kogyo Kabushiki Kaisha: *See*—
Tsunoda, Yoshio, Taneda, Akamatsu, and Matsui. 3,184,-281.
Aschauer, George R., to Twin Disc Clutch Co. Hydrojet propulsion unit for water craft. 3,183,878, 5–18–65, Cl. 115—16.
Aschauer, George R., to Twin Disc Clutch Co. Centrifugal clutch having an output controlled supplementary clutching force. 3,184,024, 5–18–65, Cl. 192—103.
Aschauer, George R., to Twin Disc Clutch Co. Centrifugally operated actuating mechanism. 3,184,025, 5–18–65, Cl. 192—105.
Ashman & Hart Pty. Ltd.: *See*—
Gravenor, Neville W. 3,184,017.
Ashmead, Harvey, and F. R. Mencimer. Urinary calculi treating compositions and methods of using same. 3,184,-381, 5–18–65, Cl. 167—53.
Astrupgaard, Svend, and K. Hedegaard, to G. M. Pfaff, AG. Method and apparatus for sewing a binding on a garment. 3,183,869, 5–18–65, Cl. 112—140.
Atkins, Stuart R., to International Telephone and Telegraph Corp. Coaxial cable connector with internal crimping structure. 3,184,706, 5–18–65, Cl. 339—177.
Atlantic Refining Co., The: *See*—
Dunlap, Henry F., and Kern. 3,183,655.
Atlantic Research Corp.: *See*—
Schuster, John E. 3,184,565.
Atlas Copco Aktiebolag: *See*—
Wicklund, Sven E. 3,183,902.
Audco Ltd.: *See*—
Hoyle, Edgar, and Floyd. 3,183,925.
Audio Devices, Inc.: *See*—
Bodge, Alan H. 3,184,178.
Auernheimer, Clarence L., to A.V. Electronics, Inc. Coupling circuit for a communication system. 3,184,549, 5–18–65, Cl. 179—1.
Auguste, Robert: *See*—
Campbell, Roule R., and Auguste. 3,183,810.
Automatic Electric Laboratories, Inc.: *See*—
Bernstein, Joseph M. 3,184,733.
Lychyk, George S., Lord, and Neese. 3,184,656.
Macrander, Max S. 3,184,552.
Automotive Products Co. Ltd.: *See*—
Chouings, Leslie C. 3,183,671.
Ellis, Frederick E., and Standbridge. 3,183,742.
Preece, Robert. 3,183,882.
Averill, Eugene F., and H. E. Straub, to Titus Mfg. Corp. Selective air discharge pattern slot diffusers. 3,183,821, 5–18–65, Cl. 98—40.
Aydelott, Boyd T. Pusher-type conveyor. 3,184,041, 5–18–65, Cl. 198—168.
Azoplate Corp.: *See*—
Von Meister, Frederick W., and Fritz. 3,183,832.
Babb, Alfred W.: *See*—
Greaves, Melvin J., Babb, and Dicks. 3,184,037.
Babcock & Wilcox Ltd.: *See*—
Worley, Norman G. 3,183,970.
Babyline Furniture Corp.: *See*—
Jacobs, Robert V., and Siegel. 3,183,528.
Shone, Samuel M. 3,184,249.
Bachmann Bros., Inc.: *See*—
Crowther, Arthur H. 3,184,058.
Backholm, Bengt E.: *See*—
Björk, John C. H., and Backholm. 3,184,553.
Badewitz, Charles J., to The Ryan Aeronautical Co. Attitude sensing by amplitude comparison of multiple radar beams. 3,184,736, 5–18–65, Cl. 343—5.
Badger, Joe G., to Sarkes Tarzian Inc. Television tuner. 3,183,726, 5–18–65, Cl. 74—10.8.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See*—
Eilbracht, Hans, Pfannmueller, Rotzoll, Urban, and Zacher. 3,184,444.
Hrubesch, Adolf, and Craubner. 3,184,437.
Baermann, Walter P. Background panel structure. 3,184,074, 5–18–65, Cl. 211—135.
Bailey Meter Co.: *See*—
Brewster, Jerome B., and Koppel. 3,184,611.
Bailey, Theodore L. Yieldable caster. 3,183,544, 5–18–65, Cl. 16—18.
Bain, William: *See*—
Beeren, Franciscus H. J., and Bain. 3,184,158.
Baird, William, J. W. Batty, and A. Parkinson, to Imperial Chemical Industries Ltd. Process for preparing inner sulfonium salts. 3,184,477, 5–18–65, Cl. 260—327.
Balzer, Manuel M., to S. B. Penick and Co. 1-halo-2-(N-acylcarbamyloxy) 3-aryloxy propanes. 3,184,503, 5–18–65, Cl. 260—482.
Baker Castor Oil Co., The: *See*—
Lindlaw, William. 3,184,323.
Baker, Eugene E., to Halliburton Co. Full flow packer cementing shoe. 3,183,974, 5–18–65, Cl. 166—141.
Baker, James K., to West Virginia Pulp and Paper Co. Wrapper. 3,184,145, 5–18–65, Cl. 229—40.
Baker Oil Tools, Inc.: *See*—
Leutwyler, Kurt. 3,184,247.
Baker, Robert A.: *See*—
Skeel, Ray C. 3,183,575.
Baker, Walter S., to United States of America, Army. Solvent process for preparing epoxy-base propellants. 3,184,352, 5–18–65, Cl. 149—19.
Baker, William E., to Standard-Thomson Corp. Actuator apparatus. 3,183,720, 5–18–65, Cl. 73—368.3.
Balamuth, Lewis, and A. Kuris, to Cavitron Ultrasonics Inc. Fastening together of members by high frequency vibrations. 3,184,353, 5–18–65, Cl. 156—73.
Baldwin-Lima-Hamilton Corp.: *See*—
Brown, Edwin C., and Woolman. 3,184,076.
Bank of American National Trust and Savings Association: *See*—
Campbell, Rouel R., and Auguste. 3,183,810.
Bankers Trust Co.: *See*—
Nyman, William F., Jr., Mason, Noonan, Niederauer, and Livingston. 3,183,770.
Bannister, Clyde E. Fluid motor. 3,183,787, 5–18–65, Cl. 91—266.
Barakauskas, Edward J., to United States of America, Navy. Water injection for ejection performance boost. 3,183,904, 5–18–65, Cl. 124—11.
Baranauckas, Charles F., R. L. K. Carr, and J. J. Hodan, to Hooker Chemical Corp. Process for the preparation and recovery of trimethyl phosphite and derivatives thereof. 3,184,495, 5–18–65, Cl. 260—461.
Baranauckas, Charles F., R. L. K. Carr, and J. J. Hodan, to Hooker Chemical Corp. Process for the preparation and recovery of triethyl phosphite and derivatives thereof. 3,184,496, 5–18–65, Cl. 260—461.
Barley, Leo D.: *See*—
Haywood, Russell L., and Barley. 3,183,749.
Barlow, Cecil R., to Fuller Co. Hatch cover assembly. 3,183,874, 5–18–65, Cl. 114—202.
Barnett, Alvin D. Take-off machines. 3,184,040, 5–18–65, Cl. 198—165.
Barr, William H. Calibrated air duct valve. 3,183,930, 5–18–65, Cl. 137—610.
Barringer, Gordon L.: *See*—
Offensend, Glenn W., Swing, and Barringer. 3,183,816.
Barron, William J., to Graphic Electronics, Inc. Thrust bearing means for electronic engraving machines. 3,183,745, 5–18–65, Cl. 82—11.
Barsamian, Ernest M.: *See*—
Collins, Samuel C., and Barsamian. 3,183,908.
Bartolucci, Edgar O., to Interstate Boochever Corp. Merchandise display assembly and structural unit for use therewith. 3,184,073, 5–18–65, Cl. 211—132.
Baskell, Raymond C., to Jenkins Bros. Assembly method. 3,183,587, 5–18–65, Cl. 29—451.
Bates, William C., and T. T. True, to General Electric Co. High level sawtooth waveform voltage generator. 3,184,616, 5–18–65, Cl. 307—107.
Bathurst Containers Ltd.: *See*—
Knecht, John E. 3,184,129.
Batty, John W.: *See*—
Baird, William, Batty, and Parkinson. 3,184,477.
Baverstock, Richard, to Imperial Machine Products Co. LPG fuel system for internal combustion engines. 3,184,295, 5–18–65, Cl. 48—184.
Bawtinheimer, Charles E. Bowling game scoring apparatus. 3,184,583, 5–18–65, Cl. 235—92.
Bayer, Otto: *See*—
Müller, Erwin, Bayer, and Petersen. 3,184,502.
Kunze, Heinrich, Bayer, Wehn, Siefken, and Klauke. 3,184,493.
Baynes, Gene P.: *See*—
Reinsch, Earl W., and Baynes. 3,184,001.
Bazill, Dale G., and V. L. Pickering, to General Motors Corp. Ball joint assembly. 3,184,576, 5–18–65, Cl. 219—93.
Beachler, Edward D., to Beloit Iron Works. Drying hood with movable plenum construction. 3,183,607, 5–18–65, Cl. 34—122.
Beck, Louis. Motor-driven geared pump. 3,184,124, 5–18–65, Cl. 222—333.
Beck, Mildred A. Iron rest. 3,184,194, 5–18–65, Cl. 248—117.2.
Becker, Albert, Jr.: *See*—
Lee, Robert J., and Becker. 3,184,517.
Beckman Instruments, Inc.: *See*—
Sundstrom, Karl E. 3,183,764.
Beebe, Robert T.: *See*—
Halfinger, Russell B. 3,184,190.
Beeren, Franciscus H. J., and W. Bain, said Bain assor. to said Beeren. Garment cutting machine and method. 3,184,158, 5–18–65, Cl. 234—3.
Behnke, Floyd A., to International Business Machines Corp. Associative memory low temperature fast read circuit. 3,184,717, 5–18–65, Cl. 340—173.1.
Behringwerke Aktiengesellschaft: *See*—
Schmidtberger, Rudolf, Schwick, and Von Poinits. 3,184,-394.
Bell, Alan, to Foster Wheeler Corp. Heat exchangers. 3,183,-969, 5–18–65, Cl. 165—160.
Bell Punch Co. Ltd.: *See*—
Sparrow, Vernon W. 3,184,160.
Bell Telephone Laboratories, Inc.: *See*—
Crawford, Arthur B. 3,184,743.
Cutler, Cassius C. 3,184,742.
Goetz, Frank M. 3,184,723.
Marcatili, Enrique A. J., and Ring. 3,184,691.
Meacham, Larned A., and West. 3,184,554.

Bell Telephone Laboratories, Inc.: *See*—Continued
Unger, Hans-Georg. 3,184,695.
Zydney, Herbert M. 3,184,619.
Bellmar KG, Gebr.: *See*—
Siegel, Peter, and Chleq. 3,184,376.
Beloit Corp.: *See*—
Larson, Robert W. 3,183,949.
Larson, Robert W. 3,183,951.
Larson, Robert W. 3,183,952.
Larson, Robert W. 3,183,954.
Moore, Lawrence A., and Gilbank. 3,183,826.
Beloit Iron Works: *See*—
Beachler, Edward D. 3,183,607.
Bender, Heinz: *See*—
Zerweck, Werner, Fleischhauer, and Bender. 3,184,280.
Bendix Corp., The: *See*—
Brown, Milton. 3,184,731.
Chapman, James R., and Puryear. 3,184,211.
Davis, John E. 3,184,610.
Fischer, Fred R., and Zilkowski. 3,183,694.
Goerke, Frederick E., and Reichard. 3,183,994.
Hager, Robert R. 3,184,269.
Henneman, John W. 3,183,917.
Hosford, Norman F. 3,183,678.
Kellogg, Paul T. 3,184,015.
Kufert, Larry. 3,184,667.
Rossire, Francis H. S. 3,184,188.
Schultz, Harold B. 3,183,995.
Schultz, Harold B., Fulmer, and Tuszynski. 3,183,670.
Smith, William B., Jr. 3,184,716.
Tyler, Henry P. 3,183,845.
Winge, Joan L., and Dombeck. 3,184,008.
Benedict, Richard H. Automatic radio direction finder. 3,184,744, 5–18–65, Cl. 343—118.
Benson, Carl F., and J. H. Cowles, to The Torrington Co. Overrunning clutch and cage therefor. 3,184,020, 5–18–65, Cl. 192—45.
Benton, Robert C., to Centre Circuits, Inc. Table stopping device having null sensor. 3,184,599, 5–18–65, Cl. 250—220.
Benzel, Howard A. Boat mooring device. 3,183,877, 5–18–65, Cl. 114—230.
Berg, Robert A., to Weyerhaeuser Co. Display carton and display package. 3,184,046, 5–18–65, Cl. 206—45.14.
Berge, Kenneth H., to Clark Equipment Co. Hydraulic control system for moving clamping members on a lift truck laterally, independently of each other, and simultaneously in the same and opposite directions. 3,184,088, 5–18–65, Cl. 214—653.
Berghgracht, Marius: *See*—
Boone, Joseph. 3,183,641.
Boone, Joseph. 3,193,797.
Bergstrom, Eric V. Easy slide caster. 3,183,545, 5–18–65, Cl. 16—42.
Bernstein, Joseph M., to Automatic Electric Laboratories, Inc. Translator employing photoconductive panels and electroluminescent panels. 3,184,733, 5–18–65, Cl. 340—347.
Bernz O Matic Corp.: *See*—
Webster, Milo E. 3,184,118.
Berry, Joseph O., Jr.: *See*—
Deanin, Rudolph D., Berry, and Moore. 3,184,481.
Bester, Karl. Transducer assembly for transformation of small forces into pneumatic pressures. 3,183,918, 5–18–65, Cl. 137—85.
Betcher, Charles F., to Dayton Aircraft Products, Inc. Antenna mast means having elastomeric seal between antenna and transmission line feed. 3,184,745, 5–18–65, Cl. 343—705.
Betz Laboratories, Inc.: *See*—
Kahler, Harry L., and Brown. 3,184,407.
Beuchat, Georges. Swimmer's foot-fin with thrust-accelerating device. 3,183,529, 5–18–65, Cl. 9—309.
Bevan, Morfydd A., and J. Mullan, to Imperial Chemical Industries Ltd. Purification process for 4-isopropylaminodiphenylamine. 3,184,511, 5–18–65, Cl. 260—576.
Bey, Ahmet K. Magnetic holding device. 3,184,654, 5–18–65, Cl. 317—159.
Bickel, Basil E.: *See*—
Hammes, Josef J., and Bickel. 3,184,586.
Bidlack, Jerald D., to Cadillac Gage Co. Adaptive gain servo actuator. 3,183,785, 5–18–65, Cl. 91—20.
Bielfeldt, Robert H.: *See*—
Prindle, William L., Bielfeldt, and Surdell. 3,184,087.
Billeter, Henry R., to Sloan Valve Co. Angle cocks. 3,184,-212, 5–18–65, Cl. 251—105.
Billi, Walter, to Montecatini Societa Generale per l'Industria Mineraria e Chimica. Absorption refrigerating system. 3,183,680, 5–18–65, Cl. 62—112.
Billups, Willis E. Sliding shelf door structure. 3,184,276, 5–18–65, Cl. 312—274.
Bingham's Sam'l, Son Mfg. Co.: *See*—
Brown, James K. 3,184,355.
Birkenmeyer, Robert D., and H. Hoeksema, to The Upjohn Co. N,N'-bis(trifluoroacetyl)actinospectacin and the 9-trifluoroacetyl thereof. 3,184,478, 5–18–65, Cl. 260—340.3.
Birkett, Earl. Pen assembly device. 3,183,582, 5–18–65, Cl. 29—200.
Bisch, James L., to United States of America, Army. Mine clearing snake. 3,183,835, 5–18–65, Cl. 102—19.
Bitterli, Wilhelm to Ciba Ltd. Continuous stabilization of wool with chloramines or chloramides and a chloride-bromide mixture. 3,184,285, 5–18–65, Cl. 8—127.6.
Bjerum, Verne G. Packing brace. 3,184,048, 5–18–65, Cl. 206—46.
Björk, John C. H., and B. E. Backholm, to Telefonaktiebolaget L. M. Ericsson. Circuit arrangement for automatic telephone exchanges. 3,184,553, 5–18–65, Cl. 179—27.
Black-Clawson Co., The: *See*—
Pearson, John H. 3,184,374.

Blackman, Calvin C., to Lee Wilson Engineering Co., Inc. Apparatus for surface coating of strip metal or the like. 3,183,888, 5–18–65, Cl. 118—49.5.
Blackmer Pump Co.: *See*—
Brunson, Virgil A., and Vanden Hoek. 3,183,839.
Blair, Edgar A., to Sun Oil Co. Preparation of formaldehyde. 3,184,512, 5–18–65, Cl. 260—604.
Blake, John H.: *See*—
Work, Josiah, Joseph, and Blake. 3,184,293.
Work, Josiah, Joseph, and Blake. 3,184,397.
Blake, Leslie R., to United Kingdom Atomic Energy Authority. Fast nuclear reactor fuel elements. 3,184,392, 5–18–65, Cl. 176—67.
Blakiston, James T., and D. L. Burdorf, to Leach Corp. Tape transport. 3,184 132, 5–18–65, Cl. 226—181.
Blindenbacher, Kenneth F., and P. A. Reihmann. Auxiliary traction device for vehicles. 3,184,268, 5–18–65, Cl. 301—39.
Block, Alfred E., to Block & Anderson Ltd. Method of producing duplicating master sheets. 3,183,833, 5–18–65, Cl. 101—149.4.
Block & Anderson Ltd.: *See*—
Block, Alfred E. 3,183,833.
Blomeyer, Walter, and G. Schneider, to Nukem Nuklear-Chemie und-Metallurgie G.m.b.H. Fuel element for atomic reactors. 3,184,393, 5–18–65, Cl. 176—82.
Bloniarz, Richard M., to The Singer Co. Apparatus and method for the generation of pure quadrature signals. 3,184,681, 5–18–65, Cl. 324—83.
Blough Ronald S., to Universal Producing Co. Shelf bag stabilizer. 3,184,273, 5–18–65, Cl. 312—6.
Bobrowski, Rheinhard. Wheel mounting assembly for harrow draw bars. 3,184,250, 5–18–65, Cl. 280—81.
Bobst, J., and Son S.A.: *See*—
Kury, Josef. 3,183 827.
Bode, Harald E. W., to The Wurlitzer Co. Rigidized reed bar. 3,183,759, 5–18–65, Cl. 84—402.
Bodge, Alan H., to Audio Devices, Inc. Reels. 3,184,178, 5–18–65, Cl. 242—74.
Boehringer, C. F., & Soehne G.m.b.H.: *See*—
Dold, Otto, Stach, and Schaumann. 3,184,467.
Haack, Erich, Hagedorn, Schmidt, and Weyer. 3,184,-464.
Bokmuller, Robert M.: *See*—
Wagner, Henry A., Merritt, and Bokmuller. 3,184,328.
Bolhofer, William A., to Merck & Co., Inc. Preparation of alkoxynaphthonitrile. 3,184,498, 5–18–65, Cl. 260—465.
Bolinger, George N., to Sta-Rite Ginnie Lou, Inc. Hair ornament with a resilient attaching clip. 3,183,915, 5–18–65, Cl. 132—47.
Boone, Joseph, to M. Berghgracht. Process and device for the production of a multiply tube and bag manufactured from such tube. 3,183,797, 5–18–65, Cl. 93—8.
Boone, Joseph, to M. Berghgracht. Semi-automatic apparatus for the opening, filling and sealing of bags. 3,183,-641, 5–18–65, Cl. 53—190.
Borchardt, Paul R.: *See*—
Mettenleiter, Michael W., Borchardt, and Dindial. 3,183,967.
Boreen, Stuart W., and J. W. Healy, to Dasa Corp. Reversible power and manual drive. 3,183,735, 5–18–65, Cl. 74—472.
Borisof, Bernard, to Friden, Inc. Photographic composing device. 3 183,812, 5–18–65, Cl. 95—4.5.
Born, Klaus: *See*—
Sennewald, Kurt, and Born. 3,184,514.
Bosch, Robert, G.m.b.H.: *See*—
Groetzner, Kurt. 3,184,666.
Wood, Warren R. 3,184,638.
Boschen George B. Sub-surface irrigation system. 3,183,-674, 5–18–65, Cl. 61—13.
Boudot, William D., to Richards Industries, Inc. Convertible gate valve with removable housing section. 3,183,926, 5–18–65, Cl. 137—270.
Bourquard, Fernand, to Commissariat a l'Energie Atomique. Supersonic compressors. 3,184,152, 5–18–65, Cl. 230—127.
Boutillon, Henri, to Boutillon S.A., Etablissements. Indicating and calculating apparatus. 3,184,163, 5–18–65, Cl. 235—144.
Boutillon S.A., Etablissements: *See*—
Boutillon, Henri. 3,184,163.
Bowen, Tom, to S. Smith & Sons (England) Ltd. Drawing instruments. 3,183,593, 5–18–65, Cl. 33—27.
Bowman, Hyman D. Adjustable sliding side jaw wrench with stop means thereon. 3,183,744, 5–18–65, Cl. 81—165.
Boyack, Gerald A.: *See*—
Lemin, Alan J., Steinhards, and Boyack. 3,184,300.
Boyd, James W., and R. J. Allen, to Packaging Corp. of America. Carton construction. 3,184,133, 5–18–65, Cl. 229—2.5.
Brack, Karl, to Hercules Powder Co. Polyurethane foams from polyesters of epoxy acids. 3,184,420, 5–18–65, Cl. 260—2.5.
Brack, Karl, to Hercules Powder Co. Polyesters of epoxidized aliphatic acids and cross-linked products. 3,184,439, 5–18–65, Cl. 260—78.4.
Brack, Karl, to Hercules Powder Co. Tris(dihydroxyalkyl) phosphates. 3,184,497, 5–18–65, Cl. 260—461.
Brackett, Donald L., to Mahaska Industries, Inc. Feeding system. 3,184,109, 5–18–65, Cl. 222—64.
Bradford, Paul C., to Shell Oil Co. Settler. 3,184,065, 5–18–65, Cl. 210—519.
Brainard, Edward C. II, to Braincon Corp. Recording thermograph. 3 183,717, 5–18–65, Cl. 73—343.5.
Braincon Corp.: *See*—
Brainard, Edward C., II. 3,183,717.
Brandon, Richard N., and W. W. Solley, to Reynolds Metals Co. Carrying case for bottle cartons and the like. 3,184,-095, 5–18–65, Cl. 220—21.

Brandt, Glendon R., to Minnesota Mining and Mfg. Co. Method of molding a film from a fluorine-containing resin. 3,184,525, 5–18–65, Cl. 264—127.
Brandt, Glendon R., to Minnesota Mining and Mfg. Co. Molding apparatus. 3,183,554, 5–18–65, Cl. 18—26.
Brandt, Herbert. Method and apparatus for controlling the temperature and humidity of a regenerative air-heater. 3,183,961, 5–18–65, Cl. 165—2.
Brannock, Kent C., and H. S. Pridgen, to Eastman Kodak Co. 2-aminobenzofuran(2H)-5-ols and a process of making them. 3,184,457, 5–18–65, Cl. 260—247.7.
Bratton, Charles A. Roller pusher connection for the front end of a pushing tractor. 3,184,253, 5–18–65, Cl. 280—481.
Braunschweig, Georges: *See*—
Marti, Frederic, and Braunschweig. 3,184,623.
Brayer, Henry E., deceased (by J. M. Brayer, executrix), and W. P. Ewald, to Eastman Kodak Co. Automatic rewind projector. 3,184,130, 5–18–65, Cl. 226—11.
Brayer, Jean M.: *See*—
Brayer, Henry E., and Ewald. 3,184,130.
Bretherick, Leslie, to The British Petroleum Co. Ltd. Molybdenum compounds and lubricating compositions containing them. 3,184,410, 5–18–65, Cl. 252—42.7.
Brewer, John H. Apparatus and method for culturing aerobic microorganisms. 3,184,395, 5–18–65, Cl. 195—80.
Brewer Pharmacal Engineering Corp.: *See*—
Marmor, Adrian, and Colburn. 3,183,834.
Brewster, Jerome B., and H. H. Koppel, to Bailey Meter Co. Signal selection circuit with cathode follower to compensate for temperature caused voltage distortion. 3,184,611, 5–18–65, Cl. 307—88.5.
Brichard, Edgard, to Glaverbel, S.A. Intermediate frame for double glass panels. 3,183 560, 5–18–65, Cl. 20—56.5.
Briggs, George R., and R. Shahbender, to Radio Corp. of America. Magnetic memory. 3,183,579, 5–18–65, Cl. 29—155.5.
Brisbin, Richard F., and J. H. McSkimming, to Highway Equipment Co. Fertilizer wagon. 3,184,243, 5–18–65, Cl. 275—6.
Brisson, Louis C. Lever actuated brake. 3,184,010, 5–18–65, Cl. 188—78.
British Petroleum Co. Ltd., The: *See*—
Bretherick, Leslie. 3,184,410.
Yeo, Alan A., and Mowll. 3 184 406.
Brocard, Jean M. R. Lift modification for aircraft. 3,184,185, 5–18–65, Cl. 244—42.
Broekhuysen, William C., to G-V Controls Inc. Thermostat having motion amplification and shock resistance. 3,184,571, 5–18–65, Cl. 200—138.
Bros Inc.: *See*—
Ferris, Edmund A. 3,183,650.
Brower, Jerome S.: *See*—
Royer, Thurber W., Brower, and Brunetz. 3,184,351.
Brown Citrus Machinery Corp.: *See*—
James, Donald R. 3,183,955.
Brown, Donald R., R. K. Campbell, E. E. Leidich, and A. M. Wagner, to Western Electric Co., Inc. Electrical assemblies. 3,184,647, 5–18–65, Cl. 317—101.
Brown, Edwin C., and G. Woolman, to Baldwin-Lima-Hamilton Corp. Auxiliary axle for vehicles. 3,184,076, 5–18–65, Cl. 212—145.
Brown, Ford J., to Western Electric Co., Inc. Magnetic holding rack. 3 184,655, 5–18–65, Cl. 317—159.
Brown, George R., and E. J. Fry, to Yarnall-Waring Co. Control torque and motion device through a wall. 3,183,727, 5–18–65, Cl. 74—17.8.
Brown, Harry W., Sr., to The National Acme Co. Hydraulic feed mechanism with means to control same. 3,183,534, 5–18–65, Cl. 10—105.
Brown, Herbert L., Jr., and J. D. Helms, to Texas Instrument Inc. Apparatus for use with a credit card. 3,184,714, 5–18–65, Cl. 340—149.
Brown, Jack F.: *See*—
Wilshin, Frank W., Brown, and Marsh. 3,173,748.
Brown, James K., to Sam'l Bingham's Son Mfg. Co. Method of making a printer's roller. 3,184,355, 5–18–65, Cl. 156—154.
Brown, James K.: *See*—
Kahler, Harry L., and Brown. 3,184,407.
Brown, Milton, to The Bendix Corp. Display apparatus having drum indicators controlled by individual synchronous motors. 3,184,731, 5–18–65, Cl. 340—315.
Brownscombe, Philip J., to Eugene Dietzgen Co. Photographic reproduction machines. 3,183,767, 5–18–65, Cl. 88—24.
Brownstein, George: *See*—
Court, Patrick R. J., Brownstein, Reiter, and Weiss. 8,184,537.
Brueder, Antoine, to Andre Citroen, Societe Anonyme. Variable pressure means coopeerating with the steering shaft of vehicles. 8,183,992, 5–18–65, Cl. 180—79.2.
Brunetz, Nickolas: *See*—
Royer, Thurber W., Brower, and Brunetz. 3,184,351.
Brunson, Virgil A., and H. L. Vanden Hoek, to Blackmer Pump Co. Pump control. 8,183,839, 5–18–65, Cl. 103—21.
Brunswick Corp.: *See*—
Stevens, Eric S. 3,184,277.
Buccicone, Dario, to Bucciconi Engineering Co., Inc. Bundle turning machine. 3 184,079, 5–18–65, Cl. 214—1.
Bucciconi Engineering Co., Inc.: *See*—
Bucciconee Dario. 3 184,079.
Bucher, Siegfried. Pack board. 3,184,128, 5–18–65, Cl. 224—25.
Buck, Robert D., to International Business Machines Corp. Selective data transfer system. 3,184,741, 5–18–65, Cl. 343—17.1.
Buckeye Molding Co.: *See*—
Robinson William H. 3,184,090.
Buckman, Kenneth E., to General Motors Corp. Liquid filter. 3,184,063, 5–18–65, Cl. 210—130.
Budd Co., The: *See*—
Buyze, Edwin K., and Vansteenkiste. 3,183,999.
Budzich, Tadeusz: *See*—
Pitt, Arnold, and Budzich. 3,183,844.
Bull, Harold T., to General Dynamics Corp. Pulse-square wave phase detector with polarity sensing coincidence means. 3,184,680, 5–18–65, Cl. 324—83.
Bulova Research and Development Laboratories, Inc.: *See*—
Roth, Irving. 3,184,678.
Bundschuh, John J., to Eastman Kodak Co. Photographic flash unit. 3,184,584, 5–18–65, Cl. 240—1.3.
Bunker-Ramo Corp., The: *See*—
Koster, Robert A. 3,184,753.
Burdorf, Donald L.: *See*—
Blakistone, James T., and Burdorf. 3,184,132.
Burkee, Arthur J., and J. W. Aquadro, to The Richardson Scale Co. Patchboard assembly. 3,184,700, 5–18–65, Cl. 339—18.
Burns, Leslie L., Jr., to Radio Corp. of America. Insulation. 3,184,329, 5–18–65, Cl. 117—106.
Burroughs Corp.: *See*—
Groth, Hans F. A. 3,184,749.
Burroughs Wellcome & Co. (U.S.A.) Inc.: *See*—
Stephenson, Douglas. 3,184,386.
Burrows, Philip R.: *See*—
Ellner, Edwin, and Burrows. 3,184,562.
Burt, F. N., Co., Inc.: *See*—
Rosenburg, Charles W., Jr. 3,184,142.
Burwell, Neil W.: *See*—
Fassnacht, Charles, and Burwell. 3,184,210.
Burwen, Arthur, to Ovitron Corp. Heat treatment of precision aluminum assemblies. 3,184,349, 5–18–65, Cl. 148—125.
Bury, Jack, to Kaywood Corp. Hinge and closure assemblies for windows and the like. 3,183,547, 5–18–65, Cl. 16—129.
Bush, Vannevar, and J. A. Hastings, to Merck & Co., Inc. Device for inhalation aerosol. 3,183,907, 5–18–65, Cl. 128—208.
Bussey, William H., to United States of America, Navy. Electrical guidance system for ships. 3,184,708, 5–18–65, Cl. 340—4.
Butler, Henry J., to Dunlop Rubber Co. Ltd. Disc brakes. 3,184,004, 5–18–65, Cl. 188—73.
Butler, Richard A., Jr., and N. T. Pierce; said Pierce assor. to said Butler. Web supply apparatus. 3,184,364, 5–18–65, Cl. 156—504.
Butterworth Mfg. Co.: *See*—
Zimmerli, Kurt. 3,183,690.
Buyze, Edwin K., and R. H. Vansteenkiste, to The Budd Co. Split housing spot type disk brake. 3,183,999, 5–18–65, Cl. 188—18.
Byrd, Charles R., and D. H. Walston, to Western Electric Co., Inc. Apparatus for testing a plurality of associated devices. 3,183,599, 5–18–65, Cl. 33—174.
CTS Corp.: *See*—
Snyder, Charles C. 3,184,696.
Cable Covers Ltd.: *See*—
Worthington, George D. 3,184,535.
Cabot Corp.: *See*—
Jordan, Merrill E. 3,184,290.
Cadillac Gage Co.: *See*—
Bidlack, Jerald D. 3,183,785.
Cain, William A., Jr., to Elgen Mfg. Corp. Method for securing a flexible strip to metal strips. 3,183,701, 5–18–65, Cl. 72—181.
Calabrese, Rocco. Dual purpose anti-glare shields. 8,184,265, 5–18–65, Cl. 296—97.
Calandra, Joseph C., to The Pure Oil Co. Method of producing tranquilisation by hydroxyloweralkyl-N-substituted carbamic acid esters. 3,184,382, 5–18–65, Cl. 167—55.
Caldwell, John R., and E. H. Hill, to Eastman Kodak Co. Polymeric composition prepared from cellulose sulfate and alkyl acrylate and textile material coated therewith. 3,184,421, 5–18–65, Cl. 260—15.
Caldwell, John R., and W. J. Jackson, Jr., to Eastman Kodak Co. Polyurethanes containing a norbornane norcamphane nucleus. 3,184,435, 5–18–65, Cl. 260—77.5.
California Research Corp.: *See*—
Koslowski, Robert H., Paterson, and Scott. 8,184,402.
Lowe, Warren. 3,184,411.
Lowe, Warren, and Stuart. 3,184,412.
Callen, Eugene. Toy bombs. 3,183,623, 5–18–65, Cl. 46—200.
Calvert, Willard R., to Oxy-Catalyst, Inc. Maintenance of a catalytic exhaust purifier. 3,184,291, 5–18–65, Cl. 23—288.
Campbell, Robert K.: *See*—
Brown, Donald R., Campbell, Leidich, and Wagner. 3,184,648.
Campbell, Rouel R., and R. Auguste, to Bank of American National Trust and Savings Association. Automatic angle control device for panoramic camera. 3,183,810, 5–18–65, Cl. 95—16.
Canada Lighter & Plastics Ltd.: *See*—
Farkas, Francis. 3,183,552.
Candlin, James E., Jr., and W. Van Der Sluys, to Pullman Inc. Fifth wheel stand for railroad cars. 3,183,854, 5–18–65, Cl. 105—368.
Capaul, Raymond W., to Forty-Eight Insulations, Inc. Acoustical structural panel. 3,183,996, 5–18–65, Cl. 181—33.
Capellaro, David F.: *See*—
Kapany, Narinder S., Capellaro, and Ostensen. 8,183,815.
Capps & Co., Inc.: *See*—
Marcucci, Richard, and Rainey. 8,184,242.
Carboni, Rudolph A., to E. I. du Pont de Nemours and Co. 1,1′-bibenzotriazoles and their preparation. 3,184,472, 5–18–65, Cl. 260—308.
Carlo, Julius R. Produce bagging apparatus. 8,183,648, 5–18–65, Cl. 53—261.

Carlson, Joseph A., and D. A. Massa, to Warwick Electronics Inc. Hingedly joined television cabinet that provides for front and rear exposure of components. 3,184,543, 5–18–65, Cl. 178—7.9.
Carlton, Raymond R., to Omark Industries, Inc. Saw chain. 3,183,948, 5–18–65, Cl. 143—135.
Carpezzi, Leo J. Vertically adjustable dolly. 3,184,205, 5–18–65, Cl. 248—352.
Carr, Frederick, to Servotomic Ltd. Combined radiator and boiler. 3,184,165, 5–18–65, Cl. 237—17.
Carr, Russell L. K.: *See*—
Baranauckas, Charles F., Carr, and Hodan. 3,184,495.
Baranauckas, Charles F., Carr, and Hodan. 3,184,496.
Carrier Corp.: *See*—
Moakley, William A., Jr. 3,183,965.
Shaw, David N. 3,184,151.
Carter, Giles F.: *See*—
Argyriades, Dimitri, and Carter. 3,184,292.
Carter, Giles F., to E. I. du Pont de Nemours and Co. Diffusion process. 3,184,330, 5–18–65, Cl. 117—114.
Carter, Giles F., to E. I. du Pont de Nemours and Co. Process of diffusion coating. 3,184,331, 5–18–65, Cl. 117—114.
Cassella Farbwerke Mainkur Aktiengesellschaft: *See*—
Zerweck, Werner, Fleischhauer, and Bender. 3,184,280.
Casull, Don C. Flow control valve for drinking containers and the like. 3,184,126, 5–18–65, Cl. 222—487.
Catto, Vincent P., and N. Tunkel, to Esso Research and Engineering Co. Reaction product of alkenyl succinic acid or anhydride with polyamine and polyhydric material. 3,184,474, 5–18–65, Cl. 260—326.3.
Cavitron Ultrasonics Inc.: *See*—
Balamuth, Lewis, and Kuris. 3,184,353.
Celotex Corp., The: *See*—
Cotts, Ronald F. 3,184,372.
Gaines, Eugene F. 3,184,588.
Central National Bank of Cleveland: *See*—
Peterson, Thomas F. 3,183,658.
Centre Circuits, Inc.: *See*—
Benton, Robert C. 3,184,599.
Cermak, Werner: *See*—
Thomann, Thomas, Cermak, and Schlafli. 3,184,558.
Ceroni, Gino: *See*—
Alzani, Franco, and Ceroni. 3,183,978.
Chadha, Rajendra N., D. E. Jefferson, and F. X. Werber, to W. R. Grace & Co. Interpolymer comprising acrylic acid, an acrylic acid ester and a maleic anhydride derivative and a process of preparation. 3,184,440, 5–18–65, Cl. 260—78.5.
Chadwick, Alexander, to Chrysler Corp. Fuel control system for a gas turbine engine. 3,183,667, 5–18–65, Cl. 60—39.28.
Chall, Harold J., and C. F. Clemons, to Friden, Inc. Progressive latches for calculating machines. 3,184,159, 5–18–65, Cl. 235—60.
Chambers, Victor S., and L. H. Howland, to United States Rubber Co. Method of making a synthetic rubber latex employing an alkali polyacrylate. 3,184,424, 5–18–65, Cl. 260—29.7.
Chamot, Walter M., to Nalco Chemical Co. Condensate polymers, uses thereof, and compositions containing said polymers. 3,184,294, 5–18–65, Cl. 44—62.
Chapman, Aubrey I., Jr., and B. E. Martel, to Texas Instruments Inc. Optical system for airborne ground mapping radar apparatus. 3,184,735, 5–18–65, Cl. 343—5.
Chapman, James R., and D. B. Puryear, to The Bendix Corp. Flow metering valve. 3,184,211, 5–18–65, Cl. 251—15.
Chaser, Anthony R., to The Triax Co. Load checking and positioning devices for automatic warehouse system. 3,184,083, 5–18–65, Cl. 214—95.
Chatelain, Maurice G., to The Ryan Aeronautical Co. Double loop antenna. 3,184,746, 5–18–65, Cl. 343—742.
Chechak, Albert J., and C. D. Robeson, to Eastman Kodak Co. Thianyrans and their use in preparing polyenes. 3,184,516, 5–18–65, Cl. 260—666.
Check, Mathias M., to Yale & Towne, Inc. Construction lock cylinder. 3,183,692, 5–18–65, Cl. 70—383.
Cheeley, William E., to Reynolds Metals Co. Container seal and opening means. 3,184,096, 5–18–65, Cl. 220—46.
Chemagro Corp.: *See*—
Hensel, Jack, and Aichenegg. 3,184,377.
Chemetron Corp.: *See*—
Albers, Gus A., and Schumacher. 3,184,578.
Chenette, Edmond Z., and L. E. Chennette. Milling machine vises and the like and auxiliary jaws therefor. 8,184,228, 5–18–65, Cl. 269—234.
Chenette Leo E.: *See*—
Chenette, Edmond Z. and L. E. 3,184,228.
Chesterton, A.W., Co.: *See*—
Van Vleet, Frank R. 3,184,244.
Chicago Aerial Industries, Inc.: *See*—
Elliott, Eugene W., and Gray. 3,183,811.
Chidsey, Francis A., Jr., and J. V. Mahon, to Container Corp. of America. Wrap around can carrier carton with central retaining member. 3,184,103, 5–18–65, Cl. 220—115.
Child, Claude H., to North American Aviation, Inc. Radar system. 3,184,757, 5–18–65, Cl. 343—6.8.
Chindgren, Carl J., United States of America, Interior. Process removal of oxygen and aluminum from metals prepared by alumino-thermic and similar processes. 3,184,302, 5–18–65, Cl. 75—84.
Chleq, Frote & Cie: *See*—
Siegel, Peter, and Chleq. 3,184,375.
Chleq, Jean: *See*—
Siegel, Peter, and Chleq. 3,184,375.
Chouings, Leslie C., to Automotive Products Co. Ltd. Fluid pressure braking systems. 8,183,671, 5–18–65, Cl. 60—54.5.
Christ, Joseph G.: *See*—
Riseman, Jacob, Christ, and Sankuer. 8,183,567.
Christen, Earl W., J. F. Seeley and G. V. Kingsley, deceased by M. W. Kingsley, administratrix, to Universal American Corp. Composite cast-forged aluminum piston with bonded ferrous ring-carrier, and method of producing same. 8,183,796, 5–18–65, Cl. 92—229.
Christison, Sommerville G., to Gearmatic Co. Ltd. Reversible drive assembly including fluid-powered prime mover. 3,184,018, 5–18–65, Cl. 192—3.
Christofferson, James, to High Voltage Engineering Corp. High voltage terminal for tandem-type charged-particle accelerator. 3,184,621, 5–18–65, Cl. 310—6.
Chrysler Corp.: *See*—
Chadwick, Alexander. 3,183,667.
Farison, Glenn S., to 3,184,625.
May, Robert F., and Dart. 3,184,182.
Chubb, Alexander A.: *See*—
Scragg, Frederick, and Chubb. 3,183,730.
Ciba Corp.: *See*—
Druey, Jean, Eichenberger, Schmidt, and Rossi. 3,184,452.
Ciba Ltd.: *See*—
Bitterli, Wilhelm. 3,184,285.
Martin, Henry, and Aebi. 3,184,301.
Matter, Erich. 3,184,479.
Siegrist, Adolf E., Guglielmetti, Maeder, and Liechti. 3,184,468.
Cibie, Pierre. Projectors, more particularly motor vehicle headlights. 3,184,591, 5–18–65, Cl. 240—41.35.
Cibie, Pierre. Projectors, more particularly motor vehicle headlights. 3,184,592, 5–18–65, Cl. 240—41.35.
Citroen, Andre, Societe Anonyme: *See*—
Brueder, Antoine. 3,183,992.
Citrus Equipment Corp.: *See*—
James, Donald R. 3,183,825.
Clarey, Alexander. Heavy duty electrical rotary switches with push-button snap-action. 3,184,557, 5–18–65, Cl. 200—4.
Clark, Patrick A., and T. A. G. Shimeld, to Davy and United Engineering Co. Ltd. Guiding and manipulating apparatus for a rolling mill. 3,184,077, 5–18–65, Cl. 214—1.
Clark, Philip B., and E. R. Jablonski, to McGraw-Edison Co. Luminaire. 3,184,199, 5–18–65, Cl. 248—230.
Clark Equipment Co.: *See*—
Berge, Kenneth H. 3,184,088.
Hawks, Gordon L. 3,183,851.
Trusock, George J., and Johnson. 3,183,989.
Claude, George. Collapsible display device. 3,184,366, 5–18–65, Cl. 161—14.
Clayton Corp. of Delaware, The: *See*—
Huling, James K. 3,184,116.
Clements, Albert, to The Minster Machine Co. Apparatus for loading dies in presses. 3,183,828, 5–18–65, Cl. 100—224.
Clemons, Cecil F.: *See*—
Chall, Harold J., and Clemons. 3,184,159.
Cleveland Crane & Engineering Co., The: *See*—
Dehn, Roy F. 3,183,756.
Clinton, Raymond O., and A. J. Manson, to Sterling Drug Inc. Reduced maleimide adducts of α-phellandrene. 3,184,456, 5–18–65, Cl. 260—247.5.
Coal Industry (Patents) Ltd.: *See*—
Gibbon, John. 3,184,043.
Coats & Clark Inc.: *See*—
Kidd, William E., Jr. 3,184,057.
Cochran, Clyde D., to U.S. Industries, Inc. Pulsator for a milking machinery. 3,183,920, 5–18–65, Cl. 187—105.
Cockburn, David H. Rotary fluid pressure pumps and motors of the eccentric vane type. 3,183,843, 5–18–65, Cl. 103—136.
Coenen, Max: *See*—
Raue, Roderich, Muller, Weissel, and Coenen. 8,184,453.
Cohen, Hyman L.: *See*—
Minsk, Louis M., and Cohen. 3,184,309.
Cohen, Julius, to General Telephone and Electronics Laboratories Inc. Tunnel cathode having a metal grid structure. 3,184,659, 5–18–65, Cl. 317—238.
Cohen, Max, and E. R. Elston, to Insco Enterprises, Inc. Container with straw. 3,184,134, 5–18–65, Cl. 229—7.
Cohen, Melvin. Advertising display rack and clip therefor. 3,184,075, 5–18–65, Cl. 211—148.
Cohen, Murray S.: *See*—
Donovan, George J., Fein, and Cohen. 3,184,499.
Cohen, Seymour: *See*—
Hecker, Arthur C., Pollock, and Cohen. 8,184,428.
Cohn, Charles C., to Colonial Alloys Co. Cigarette. 3,183,914, 5–18–65, Cl. 181—4.
Colautti, Albert J., to General Motors Corp. Horizontal drive means for powered seat adjusters. 3,184,209, 5–18–65, Cl. 248—429.
Colburn, Walter E.: *See*—
Marmor, Adrian, and Colburn. 3,183,834.
Cole, John E., Jr., and W. H. Gumprecht, to E. I. du Pont de Nemours and Co. Single pad thermal process for dyeing textile fibers. 3,184,282, 5–18–65, Cl. 8—21.
Cole, John E., Jr., and W. H. Gumprecht, to E. I. du Pont de Nemours and Co. Process for applying fiber reactive dyes to cellulosic materials. 3,184,283, 5–18–65, Cl. 8—54.2.
Cole, Marc, to Hoffmann-La Roche Inc. Process for the preparation of sodium aluminum methoxy hydride. 3,184,492, 5–18–65, Cl. 260—448.
Cole, Robert M., to L. Nusbaum. Insecticides. 3,184,378, 5–18–65, Cl. 167—24.
Coleman, Garry: *See*—
Hermanns, Frederick R., and Coleman. 3,184,207.
Collins & Aikman Corp.: *See*—
White, William L. 3,184,367.
Collins, Samuel C., and E. M. Barsamian, to United States of America, Navy. Pump oxygenator system. 3,183,908, 5–18–65, Cl. 128—214.

- Colonial Alloys Co.: *See—*
  - Cohn, Charles C. 3,183,914.
- Combier, Michel L.: *See—*
  - Meriaux, Michel, and Combier. 3,184,206.
- Combustion Engineering, Inc.: *See—*
  - Stengel, Mathew P. 3,183,864.
- Commissariat a l'Energie Atomique: *See—*
  - Bourquard, Fernand. 3,184,152.
- Conch International Methane Ltd.: *See—*
  - French, Michael J., and Petty. 3,184,094.
  - Hashemi-Tafreshi, Hadi. 3,183,677.
  - Jackson, Robert G. 3,183.666.
  - Schroeder, Carl E. 3,183,675.
- Conescu, Sidney. Box construction. 3,184,139, 5–18–65, Cl. 229—23.
- Conover, George E., to Lynes, Inc. Pump. 3,183,840, 5–18–65, Cl. 103—49.
- Consolidated Electronics Industries Corp.: *See—*
  - Ambrozaitis, John J. 3,184,162.
  - Ellner, Edwin, and Burrows. 3,184,562.
  - Riggs, William D. 3,184,671.
- Consolidation Coal Co.: *See—*
  - Gorin, Everett. 3,184,401.
- Container Corp. of America: *See—*
  - Chidsey, Francis A., Jr., and Mahon. 3,184,103.
  - Hurley, Robert M. 3,184,146.
  - Sanderson, John W. 3,184,117.
  - Wolowicz, Richard S. 3,184,147.
- Continental Gummi-Werke Aktiengesellschaft: *See—*
  - Nädler, Heinrich, and Menell. 3,184,360.
- Continental Oil Co.: *See—*
  - Jay, Robert W. 3,183,600.
  - Roberts, Robert W. 3,184,520.
- Conto, Armando F., to Freez-King Corp. Ice flake making machine. 3,183,682, 5–18–65, Cl. 62—298.
- Control Data Corp.: *See—*
  - Holt, Arthur W. 3,184,712.
- Convertawings, Inc.: *See—*
  - Kaplan, David H. 3,184,181.
- Cook, Ernest E.: *See—*
  - Sadler, Harry J., and Cook. 3,183,842.
- Cook, Hosea C. Stabilizer for tractor lift arms. 3,184,252, 5–18–65, Cl. 280—474.
- Cook, Peter R., to Package Sealing Co. (Export Ltd). Package binding machines. 3,183,824, 5–18–65, Cl. 100—4.
- Cook, Ronald, to R. E. Scott. Sectioned metal springboard. 3,184,233, 5–18–65, Cl. 272—66.
- Cooper-Bessemer Corp., The: *See—*
  - Crooks, William R. 3,184,155.
- Coover, Harry W., Jr., and F. B. Joyner, to Eastman Kodak Co. Metal-titanium halide catalysts for olefin polymerization. 3,184,443, 5–18–65, Cl. 260—93.7.
- Corbiere, Jacques, to Societe Rhodiaceta. Crepe fabrics. 3,183,657, 5–18–65, Cl. 57—140.
- Corhart Refractories Co., Inc.: *See—*
  - Rose, Robert P. 3,183,865.
- Corneal Lens Corp. Pty. Ltd.: *See—*
  - Thomas, Penrhyn F. 3,183,637.
- Corning Glass Works: *See—*
  - Norwalk, Marshall H. 3,184,528.
- Cotts, Ronald F., to The Celotex Corp. Felted inorganic fiber panel. 3,184,372, 5–18–65, Cl. 162—145.
- Counsell, Raymond E., and P. D. Klimstra, to G. D. Searle & Co. 17-oxygenated 5α-androstan-19-ols and esters thereof. 3,184,487, 5–18–65, Cl. 260—397.4.
- Court, Patrick R. J., to Paramount Pictures Corp. Pricing apparatus for subscription television. 3,184,538, 5–18–65, Cl. 178—5.1.
- Court, Patrick R. J., G. Brownstein, A. M. Reiter, and P. H. Weiss, to Paramount Pictures Corp. Subscription-television system employing suppression of synchronizing signals. 3,184,537, 5–18–65, Cl. 178—5.1.
- Cowgill, Richard C.: *See—*
  - Mason, Raymond J., and Cowgill. 3,184,672.
- Cowles, John H.: *See—*
  - Benson, Carl F., and Cowles. 3,184.020.
- Cowles, Warren H., and J. E. Smith, to Holley Carburetor Co. Turbine engine fuel control. 3,183,957, 5–18–65, Cl. 158—36.4.
- Craemer, Lambert F., to Robertshaw Controls Co. Pilot burner constructions and the like. 3,184,337, 5–18–65, Cl. 136—4.
- Craig, John H. D.: *See—*
  - Howard, John A., and Craig. 3,183,980.
- Craubner, Hans: *See—*
  - Hrubesch, Adolf, and Craubner. 3,184,437.
- Crawford, Arthur B., to Bell Telephone Laboratories, Inc. Antenna structures for communication satellites. 3,184,743, 5–18–65, Cl. 343—100.
- Crimmins, David J., to The Thomas & Betts Co. Device for securing connectors to conductors. 3,183,584, 5–18–65, Cl. 29—203.
- Cromwell, Harold J. Power driven lawn sweeper. 3,183,653, 5–18–65, Cl. 56—27.
- Cronin, Bernard. Seats. 3,183,558, 5–18–65, Cl. 20—1.126.
- Crooks, William R., to The Cooper-Bessemer Corp. Motor compressor unit. 3,184,155, 5–18–65, Cl. 230—139.
- Crouse-Hinds Co.: *See—*
  - Hilliker, Arthur E. 3,184,709.
- Crowther, Arthur H., to Bachmann Bros., Inc. Spectacle sales display. 3,184,058, 5–18–65, Cl. 206—79.
- Cruess, William F.: *See—*
  - Reuther, John F., Cruess, and Silliman. 3,184,642.
- Cruse, Oliver B., to Wagner Electric Corp. Friction device operating mechanism. 3,183,791, 5–18–65, Cl. 92—24.
- Cudini, Roger G., to Moynahan Bronze Co. Burring machine. 3,183,784, 5–18–65, Cl. 90—90.
- Cunningham, Charles M.: *See—*
  - McCadam, Maurice B. 3,184,318.
- Cunningham, Clarence V., and I. W. Lichtenfels, to General Electric Co. Plural motor railway acceleration control system. 3,184,664, 5–18–65, Cl. 318—58.
- Cunnington, George R., Jr.: *See—*
  - Stone, Richard L., and Cunnington. 3,183,822.
- Curtis Dyna-Products Corp.: *See—*
  - Curtis, Russell R. 3,184,113.
- Curtis, Joseph A., Jr. Automatic telephonic timer. 3,184,551, 5–18–65, Cl. 179—7.1.
- Curtis, Russell R., to Curtis Dyna-Products Corp. Fluid operated spraying device having non-rigid follower and metering valve. 3,184,113, 5–18–65, Cl. 222—386.5.
- Cutlas Tool and Mfg. Co.: *See—*
  - Kapusta, John M. 3,184,258.
- Cutler, Cassius C., to Bell Telephone Laboratories, Inc. Balloon communication satellite. 3,184,742, 5–18–65, Cl. 343—18.
- Cutler-Hammer, Inc.: *See—*
  - Dennison, William G. 3,184,574.
  - Schaeffer, Aaron J. 3,184,645.
- Czarnecki, Adolph, to Anchor Steel and Conveyor Co. Heavy duty vertical lift conveyor. 3,184,039, 5–18–65, Cl. 198—154.
- Czarnetzky, Edward J.: *See—*
  - Forest, Joseph G., and Czarnetzky. 3,184,314.
- Dachinger, Hugo. Suspension device. 3,184,204, 5–18–65, Cl. 248—323.
- Dahlberg, Truman L., and L. E. Thompson, to De Sota Chemical Coatings, Inc. Disposable paint tray and package including same. 3,184,050, 5–18–65, Cl. 206—47.
- Dairis Co., Inc.: *See—*
  - Wolf, Henry N. 3,184,315.
- Daman, Arthur C., to Denver Equipment Co. Screening type peripheral discharge mill. 3,184,171, 5–18–65, Cl. 241—83.
- Damm, Carl A., to United States of America, Navy. Connector aligning device. 3,183,777, 5–18–65, Cl. 89—1.5.
- Daniels, William H., to General Motors Corp. Transmission control indicator for adjustable steering wheel. 3,183,884, 5–18–65, Cl. 116—124.
- Darner, Frederic M., to Republic Steel Corp. Apparatus and process for producing perforated, corrugated, spiral, lock-seam pipe. 3,183,695, 5–18–65, Cl. 72—49.
- Dart, David L.: *See—*
  - May, Robert F., and Dart. 3,184,182.
- Dasa Corp.: *See—*
  - Boreen, Stuart W., and Healy. 3,183,735.
- Davies, George, ½ to H. A. Walford. Gas igniter. 3,183,958, 5–18–65, Cl. 158—115.
- Davies, Raymond J., and P. D. Mills, to Dunlop Rubber Co. Ltd. Levelling valve for vehicles with pneumatic or hydraulic suspension. 3,183,935, 5–18–65, Cl. 137—627.5.
- Davis, Francis A., Jr., and J. F. Flannery, to Paramount Packaging Corp. Plastic bag cutter. 3,183,750, 5–18–65, Cl. 83—146.
- Davis, Francis A., Jr., and J. F. Flannery, to Paramount Packaging Corp. Assembly of bags. 3,184,055, 5–18–65, Cl. 206—57.
- Davis, Harry L.: *See—*
  - De Domenico, Vincent M., and Davis. 3,184,104.
- Davis, Horace R., to Minnesota Mining and Mfg. Co. 2-alkoxy-5,5-bis(haloalkyl)-2,5-dihydrofurans and preparation thereof. 3,184,481, 5–18–65, Cl. 260—347.8.
- Davis, John E., to The Bendix Corp. Polarized switching device. 3 184,610, 5–18–65, Cl. 307—88.5.
- Davis, Noah S.: *See—*
  - Mohrman, John W., and Davis. 3,183,679.
- Davis, William D.: *See—*
  - White, Frederick A., and Davis. 3,184,633.
- Davison, Brian K., to Hardman & Holden Ltd. Organic aluminium compounds. 3,184,490, 5–18–65, Cl. 260—414.
- Davy and United Engineering Co. Ltd.: *See—*
  - Clark, Patrick A., and Shimeld. 3,184,077.
  - Sims, Raymond B. 3,183,693.
- Dawson, John W.: *See—*
  - Murray, James J., and Dawson. 3,184,683.
- Dayton Aircraft Products, Inc.: *See—*
  - Betcher, Charles F. 3,184,745.
- Deanin, Rudolph D., J. O. Berry, Jr., and L. R. Moore, to Allied Chemical Corp. Process for the production of polycarbonate resins using two-step addition of catalyst. 3,184,431, 5–18–65, Cl. 260—47.
- De Brunner, Ralph E., to Monsanto Research Corp. Certain 2-(dialkyl amino)pyrimidine compounds. 3,184,461, 5–18–65, Cl. 260—256 4.
- De'Caccia, Godfrey L., to Pendleton Tool Industries, Inc. Mounting brackets for parts containers and tool holders. 3,184,072, 5–18–65, Cl. 211—86.
- Decca Ltd: *See—*
  - Skinner, Peter. 3,184,637.
- Decker, John W., to Michigan Tool Co. Polyurethane gear finishing tool. 3,183,633, 5–18–65, Cl. 51—206.
- De Domenico, Vincent M., and H. L. Davis, to Golden Grain Macaroni Co. Dispenser. 3,184,104, 5–18–65, Cl. 221—92.
- Deere & Co.: *See—*
  - MacMillan, James C., and Schmidt. 3,183,953.
- Defoe, Howard A., Jr. Pneumatic tool. 3,183,786, 5–18–65, Cl. 91—232.
- De Forest, Elbert M.: *See—*
  - Penner, Siegfried E., and De Forest. 3,184,515.
- Degoli, Werner J. Method of producing antiseptic composition. 3,184,376, 5–18–65, Cl. 167—14.
- De Havilland Aircraft of Canada, Ltd., The: *See—*
  - Alford, Bryan C. 3,183 931.
  - Jackson, George R. 3.184,189.
- De Havilland Aircraft Co., Ltd., The: *See—*
  - Ovenden, Raymond E., and Towner. 3,184,606.

- Dehn, Roy F., to The Cleveland Crane & Engineering Co. Clearance, rake angle, and stroke length adjusting means for power shears. 3,183,756, 5–18–65, Cl. 83—530.
- Delaire, Gerard V., to Eastman Kodak Co. Plastic case for containers. 3,184,071, 5–18–65, Cl. 211—74.
- De Laittre, Norman C.: *See—*
  - Shipley, Robert M., Jr. 3,183,656.
- De Lisle, Auguste L. Production of improved asbestos fiber. 3,184,288, 5–18–65, Cl. 23—110.
- De Livois, Guy M., to Societe dite Controle Bailey. Superheat control. 3,183,897, 5–18–65, Cl. 122—479.
- Delman Co., The: *See—*
  - Lovell, Ernest E. 3,184,216.
  - McCleery, Robert N. 3,183,793.
- Dennison, William G., to Cutler-Hammer, Inc. Electric switch including housing and contact retaining means. 3,184,574, 5–18–65, Cl. 200—168.
- Densen, Paul: *See—*
  - Greene, Abbot, and Densen. 3,184,144.
- Dent, Harry D. Mounting device. 3,184,196, 5–18–65, Cl. 248—187.
- Denver Equipment Co.: *See—*
  - Daman, Arthur C. 3,184,171.
- Derderian, Edward J. Carton sealing apparatus and adhesive dispenser therefor. 3,183,887, 5–18–65, Cl. 118—3.
- Dery, Gabriel L.: *See—*
  - Gombar, Steve, and Thayer. 3,184,110.
- De Sota Chemical Coatings, Inc.: *See—*
  - Dahlberg, Truman L., and Thompson. 3,184,050.
- Deters, Elmer M., to Red Jacket Mfg. Co. Leak detector. 3,183,723, 5–18–65, Cl. 73—40.5.
- De Vlieg Machine Co.: *See—*
  - Sweeny, Allen N. 3,183,634.
- Diamante, Paul J.: *See—*
  - Huggins, Gerald E. 3,184,220.
- Diassi, Patrick A., and A. I. Laskin, to Olin Mathieson Chemical Corp. 11β,12β-oxido-14α-hydroxy-Δ^4-pregnenes. 3,184,450, 5–18–65, Cl. 260—239.55.
- Diassi, Patrick A., and A. I. Laskin, to Olin Mathieson Chemical Corp. 11β,12β-oxido-6β-hydroxy-Δ^4-pregnenes. 3,184,451, 5–18–65, Cl. 260—239.55.
- Dicks, Fred J. R.: *See—*
  - Greaves, Melvin J., Babb, and Dicks. 3,184,037.
- Diebold, Edward J., to International Rectifier Corp. High voltage rectifier stack. 3,184,646, 5–18–65, Cl. 317—101.
- Diem, Fred F., to M. Greenberg's Sons, Inc. Urn and frame construction. 3,183,574, 5–18–65, Cl. 27—1.
- Diemer, Gesinus: *See—*
  - Joormann, Hendrik J. M., Diemer, and Klasens. 3,184,631.
- Dietzgen, Eugene, Co.: *See—*
  - Brownscombe, Philip J. 3,183,767.
- Dill, Frederick H., to International Business Machines Corp. Method of making transistor structures. 3,183,576, 5–18–65, Cl. 29—25.3.
- Dindial, Winston: *See—*
  - Mettenleiter, Michael W., Borchardt, and Dindial. 3,183,967
- Diotti, Giacinto, to Studi e Brevetti Applicazioni Tessili. Process for the continuous processing of synthetic yarns. 3,184,529, 5–18–65, Cl. 264—340.
- Diversey Corp., The: *See—*
  - Willshaw, Philip J. S. 3.184,123.
- Divone, Louis V., to United States of America, Army. Variable-area rocket nozzle. 3,183,664, 5–18–65, Cl. 60—35.6.
- Doan, Charles A., and W. D. Lepley, to Kellogg Co. Method for producing a candy coated mixture of nut meats and puffed cereal particles. 3,184,316, 5–18–65, Cl. 99—83.
- Dockal, Emil J. Fishing tackle device. 3,183,620, 5–18–65, Cl. 43—42.74.
- Doerschein, Fritz: *See—*
  - O'Donnell, Francis E., and F. B. and A. J. Hallatt, and Doerschein. 3,183,743.
- Dold, Otto, K. Stach, and W. Schaumann, to C. F. Boehringer & Soehne G.m.b.H. Granatanol-(3 beta)-esters. 3,184,467, 5–18–65, Cl. 260—294.3.
- Dole, Marion E., to Hoover Ball and Bearing Co. Barrel. 3,184,093, 5–18–65, Cl. 220—5.
- Dolza, John. Rotary motion transmitting mechanism for internal combustion engines and the like. 3,183,731, 5–18–65, Cl. 74—219.
- Dombeck, Edward K.: *See—*
  - Winge, John L., and Dombeck. 3,184,008.
- Dome, Robert B., to General Electric Co. Vertical sync separator circuit keyed at twice the horizontal line rate. 3,184,547, 5–18–65, Cl. 178—69.5.
- Donaldson, Kenneth J. S., and E. C. Guy, to North American Philips Co., Inc. Electromagnetic thickness gauge. 3,183,597, 5–18–65, Cl. 33—169.
- Donovan, George J., M. M. Fein, and M. S. Cohen, to Thiokol Chemical Corp. Reaction products of alkyldecaboranes and dinitriles. 3,184,499, 5–18–65, Cl. 260—465.6.
- Dore, Burnell V., and R. A. Hein, to Sylvania Electric Products Inc. Cold cathode. 3,184,636, 5–18–65, Cl. 315—94.
- Dorman, Bruce A.: *See—*
  - Dorman, Harley A. and B. A. 3,184,184.
- Dorman, Harley A. and B. A. Aircraft having wings with dimpled surfaces. 3,184,184, 5–18–65, Cl. 244—41.
- Dougherty, John S.: *See—*
  - Smith, Arthur, Lacoppola, and Dougherty. 3,184,016.
- Douglas Aircraft Co., Inc.: *See—*
  - Speakman, Eugene R. 3,183,548.
  - Vincent, Nathaniel R. 3,184,536.
- Dow Chemical Co., The: *See—*
  - Repko, John P. 3,184,149.
  - Sargent, Roger N. 3,184,334.
  - Whalen, Joseph W. 3,184,384.
- Dow Corning Corp.: *See—*
  - Russell, James R., and Sweet. 3,184,427.
- Downs, George W.: *See—*
  - Sfredda, Albert P. 3,183,663.
- Draper Corp.: *See—*
  - Remington, Elliott L. 3,183,943.
- Driesen, Gerd: *See—*
  - Ruschig, Heinrich, Schmitt, Driesen, Ther, and Pfaff. 3,184,470.
- Drinko, John D.: *See—*
  - Peterson, Thomas F. 3,183,658.
- Druey, Jean, K. Eichenberger, P. Schmidt, and A. Rossi, to Ciba Corp. Aminoalkoxy compounds and process for their manufacture. 3,184,452, 5–18–65, Cl. 260—240.
- Dubrovin, John: *See—*
  - Welch, Medard W., and Dubrovin. 3,184,156.
- Duchek, Ernest J.: *See—*
  - Norman, Robert J., and Duchek. 3,183,719.
- Duchin, Paul J., to Aquaval Specialties, Inc. Vacuum breaker including check valve. 3,183,924, 5–18–65, Cl. 137—218.
- Dudley, William A.: *See—*
  - Lamb, Charles P., and Dudley. 3,183,922.
- Dumont, Francis A. Brush attachment for hair clipper. 3,183,591, 5–18–65, Cl. 30—123.
- Duncan, William L., to E. I. du Pont de Nemours and Co. Apparatus for continuously measuring denier and denier variability of a substantially constant elastic modulus elastomeric yarn. 3,183,711, 5–18–65, Cl. 73—160.
- Dunlap, Glenn H., to Owens-Illinois Glass Co. Lehr loader. 3,184,031, 5–18–65, Cl. 198—24.
- Dunlap, Henry F., and L. R. Kern, to The Atlantic Refining Co. Rotary bar-type mower blade having a safety deflector. 3,183,655, 5–18–65, Cl. 56—295.
- Dunlop Rubber Co. Ltd.: *See—*
  - Allitt, Bernard C. 3,184,361.
  - Butler, Henry J. 3,184,004.
  - Davies, Raymond J., and Mills. 3,183,935.
  - Gurney, William A., and Stubbs. 3,183,707.
  - Jenkins, Peter J. 3,183,956.
  - Merriman, Peter. 3,184,419.
  - Trevaskis, Henry W. 3,183,751.
- Du Pont de Nemours, E. I., and Co.: *See—*
  - Andes, George M. 3,184,304.
  - Argyriades, Dimitri, and Carter. 3,184,292.
  - Carboni, Rudolph A. 3,184,472.
  - Carter, Giles F. 3,184,330.
  - Carter, Giles F. 3,184,331.
  - Cole, John E., Jr., and Gumprecht. 3,184,282.
  - Cole, John E., Jr., and Gumprecht. 3,184,283.
  - Duncan, William L. 3,183,711.
  - Eiseman, Bernhardt J., Jr. 3,184,533.
  - England, David C. 3,184,286.
  - Fang, James C.-S. 3,184,441.
  - Gray, William L. 3,184,289.
  - Harder, Robert J. 3,184,471.
  - Haseley, Edward A. 3,184,369.
  - Hollowell, Joseph L. 3,183,557.
  - Huntley, Earl B., Kruse, and Way. 3,184,415.
  - Kissa, Erik. 3,184,284.
  - Magat, Eugene E. 3,184,436.
  - Parker, Stuart H., and Rudy. 3,184,506.
  - Vogl, Otto F. L. 3,184,433.
  - Woodell, Rudolph. 3,183,941.
- Dupont, S. T.: *See—*
  - Tissot Dupont, L. F. S. 3,183 686.
- Durant, Graham J., to Smith Kline & French Laboratories. Imidazoline derivatives. 3,184,473, 5–18–65, Cl. 260—309.6.
- Durston, Harry D., and A. Perry, to J. A. Terteling, Sons, Inc. Apparatus and method for setting hydrostatic pressure relief valves through wearing linings. 3,183,984, 5–18–65, Cl. 175—57.
- Dyna Systems Inc.: *See—*
  - Reynolds, Rollin A. 3,184,670.
- Ealey, James C., and R. Ousley, ½ to Charles B. Johnson. Windshield protector. 3,184,264, 5–18–65, Cl. 296—95.
- Earley, Kenneth D., T. G. Polanyi, and W. Watson, to General Telephone and Electronics Laboratories, Inc. Sealing means for optical maser. 3,183,937, 5–18–65, Cl. 138—89.
- Eastman Kodak Co.: *See—*
  - Anderson, Lawrence A. 3,184,385.
  - Brannock, Kent C., and Pridgen. 3.184.457.
  - Brayer, Henry E., and Ewald. 3,184,130.
  - Bundschuh, John J. 3,184,584.
  - Caldwell, John R., and Hill. 3,184,421.
  - Caldwell, John R., and Jackson. 3 184,435.
  - Chechak, Albert J., and Robeson. 3,184,516.
  - Coover, Harry W., Jr., and Joyner. 3,184,443.
  - Delaire, Gerard V. 3,184,071.
  - Edgcomb, Leslie I., and Hermle. 3,183,820.
  - Gates, John W., Jr., Lovett, and Miller. 3,184,312.
  - Gordon, Robert A. 3,183,819.
  - Jackman, Warren H., and Johanson. 3,184.356.
  - Lee, Charles M., Gunther, and Nerwin. 3,184,652.
  - Letzer, Edward K. 3.184 307.
  - McConnell, Wayne V., and Moore. 3,184,480.
  - Minsk, Louis M., and Cohen. 3,184,309.
  - Nerwin, Hubert. 3.183,809.
  - Offensend, Glen W., Rosenburgh, and Haelen. 3,183,765.
  - Offensend, Glenn W., Swing, and Barringer. 3,183,816.
  - Rees William W., and Russell. 3 184.313.
  - Rosenburgh, Norman J., and Wangerin. 3,183,768.
  - Salminen, Wilho M. 3.184,311.
  - Steisslinger, Kurt. 3,183.807.
  - Willoughby, Victor A. 3.184 581.
- Eby, Charles J., and E. J. Prill, to Monsanto Co. Maleimides, maleamides and fumaramides. 3,184,475, 5–18–65, Cl. 260—326.5.
- Ecker, Mario E., to Radio Corp. of America. Circuit supporting apparatus. 3,184,650, 5–18–65, Cl. 317—101.
- Edgcomb, Leslie I., and P. A. Hermle, to Eastman Kodak Co. Cleaning means for a viscous solution processing device. 3,183,820, 5–18–65, Cl. 95—89.

Edmonds, Lee O., to Phillips Petroleum Co. Coating metal with an aminophenol or aminoalkylphenol treated polyolefin powder. 3,184,325, 5–18–65, Cl. 117—21.
Ednalite Corp., The: *See—*
  Rouy, Auguste L. M. A. 3,184,585.
  Weinstein, Alex J. 3,183,773.
Edwards, Charles L., Jr. Pressurized water tank for filling vehicle tires. 3,183,945, 5–18–65, Cl. 141—38.
Edwards Co., Inc.: *See—*
  Levine, Walter E. 3,184,622.
Edwards, Theodoric B., to United States of America, Army. Multiple track steering application for a plurality of vehicles. 3,183,990, 5–18–65, Cl. 180—14.
Eging, Henry B. Pitless well connector. 3,183,973, 5–18–65, Cl. 166—85.
Egleston, Harry B., to Ex-Cell-O Corp. Carton breaker-tucker apparatus. 3,183,801, 5–18–65, Cl. 93—44.1.
Ehlert, William A., to The Ajax Mfg. Co. Wire drawing apparatus. 3,183,699, 5–18–65, Cl. 72—161.
Eichenberger, Kurt: *See—*
  Druey, Jean, Eichenberger, Schmidt, and Rossi. 3,184,-452.
Eilbracht, Hans, H. Pfannmueller, R. Rotzoll, F. Urban, and W. Zacher, to Badische Anilin- & Soda-Fabrik Aktiengesellshaft. Process for separation of the solvents from polyethylene formed in high-pressure polymerization of ethylene in the presence of solvents and from low-pressure circulating gas. 3,184,444, 5–18–65, Cl. 260—94.9.
Eis Automotive Corp., The: *See—*
  Schwarz, Ernest I. 3,183,565.
  Schwarz, Maurice L. 3,183,673.
Eiseman, Bernhardt J., Jr., to E. I. du Pont de Nemours and Co. Method and apparatus for preventing carbon deposits in electrical apparatus containing electronegatively substituted dielectric fluids. 3,184,533, 5–18–65, Cl. 174—17.
Elastic Stop Nut Corp. of America.: *See—*
  Nagel, Robert I. 3,184,590.
Eldridge, Bruce E., to Oliver Tire & Rubber Co. Shipping and dispensing case for coiled materials. 3,184,053, 5–18–65, Cl. 206—52.
Electric Products Engineering Corp.: *See—*
  Faglie, Jack C. 3,184,644.
Electronic Associates Inc.: *See—*
  Greene, Harold R. 3,184,607.
Elfers, Hendrikus W., to Koninklijke Nederlandsche Papierfabriek N.V. Packing machine. 3,183,644, 5–18–65, Cl. 53—389.
Elgen Mfg. Corp.: *See—*
  Cain, William A., Jr. 3,183,701.
Ellard, James A., to Monsanto Co. Stabilization of organic fluids against radiation decomposition and systems employing same. 3,184,390, 5–18–65, Cl. 176—38.
Elliott, Eugene W., and E. E. Gray, to Chicago Aerial Industries, Inc. Device for threading film. 3,183,811, 5–18–65, Cl. 95—34.
Ellis, Frederick E., and P. J. Standbridge, to Automotive Products Co. Ltd. Power transmission systems providing automatic changes of gear ratio. 3,183,742, 5–18–65, Cl. 74—757.
Ellis, Grenville B. Battery electrode. 3,184,339, 5–18–65, Cl. 136—75.
Ellis, Roger H., to International Telephone and Telegraph Corp. Contact-positioning structure for a resilient connector insulator. 3,184,701, 5–18–65, Cl. 339—59.
Ellison, Lynn E. Watch testing apparatus. 3,183,706, 5–18–65, Cl. 73—6.
Ellner, Edwin, and P. R. Burrows, to Consolidated Electronics Industries Corp. Self-compensating centrifugal governor. 3,184,562, 5–18–65, Cl. 200—80.
Elmo Co. Ltd.: *See—*
  Teshi, Haruo, and Sakaki. 3,183,808.
Elston, Edward R.: *See—*
  Cohen, Max, and Elston. 3,184,134.
Emerson Electric Co.: *See—*
  Luenberger, Frederick O. 3,184,626.
England, David C., to E. I. du Pont de Nemours and Co. $Cs_3B_{18}H_{18}CsNO_3$ product and process for making same. 3,184,286, 5–18–65, Cl. 23—14.
Englesson, Sixten, ½ to Flygts Pumpar, AB. Twin pump device. 3,183,838, 5–18–65, Cl. 103—4.
Engman Mfg. Co.: *See—*
  Webb, William G., and Engman. 3,183,569.
Engman, Milton C.: *See—*
  Webb, William G., and Engman. 3,183,569.
Erickson, Anton F., to General Motors Corp. Wheel cylinder means with feedback. 3,184,007, 5–18–65, Cl. 188—78.
Esoldi, Vincent F., to Wej-Loc, Inc. Electrical outlet box holder. 3,184,191, 5–18–65, Cl. 248—27.
Esso Research and Engineering Co.: *See—*
  Catto, Vincent P., and Tunkel. 3,184,474.
  Furey, Michael J. 3,184,409.
  Furey, Michael J., and Zaybekian. 3,184,413.
  Wilson, Ernest V., and Rudel. 3,184,408.
Ethyl Corp.: *See—*
  Kleinpeter, Edward W. 3,184,566.
Etienne, Marius, to Montres Octo S.A. Watch with a sweep second hand and running-indicator means. 3,183,659, 5–18–65, Cl. 58—152.
Ewald, William P.: *See—*
  Brayer, Henry E., and Ewald. 3,184,130.
Ex-Cell-O Corp.: *See—*
  Egleston, Harry B. 3,183,801.
Ex-Cell-O G.m.b.H.: *See—*
  Nagel, Hans. 3,183,779.
FMA, Inc.: *See—*
  Robison, Paul C. 3,183,775.
FMC Corp.: *See—*
  Gancy, Alan B. 3,184,287.
  Work, Josiah, Joseph, and Blake. 3,184.293.
  Work, Josiah, Joseph, and Blake. 3,184,397.

Fafnir Bearing Co., The: *See—*
  Litsky, Leonard A., and Skelly. 3,184,362.
Faglie, Jack C., to Electric Products Engineering Corp. Polyphase electroresponsive apparatus. 3,184,644, 5–18–65, Cl. 317—46.
Fahnoe, Harold H., to S. & C. Electric Co. Circuit interrupter embodying 2,4 dichloro benzoic acid or 3,4 dichloro benzoic acid. 3,184,568, 5–18–65, Cl. 200—120.
Fairchild Camera and Instrument Corp.: *See—*
  Moore, Gordon E. 3,184,657.
Fairchild Semiconductor Corp.: *See—*
  Hoerni, Jean A. 3,184,347.
Fang, James C., to E. I. du Pont de Nemours and Co. Air-drying esters of 1,3-cyclic acetals. 3,184,441, 5–18–65, Cl. 260—86.1.
Farbenfabriken Bayer Aktiengesellschaft: *See—*
  Kunze, Heinrich, Bayer, Wehn, Siefken, and Klauke. 3,184,493.
  Müller, Erwin, Bayer, and Petersen. 3,184,502.
  Neeff, Rutger. 3,184,455.
  Raue, Roderich, Muller, Weissel, and Coenen. 3,184,453.
  Siegel, Edgar, and Gold. 3,184,459.
  Thoma, Wilhelm, and Rinke. 3,184,426.
Farbwerke Hoechst Aktiengesellshcaft vormals Meister Lucius & Brüning: *See—*
  Feld, Erich, Patzer, and Kleinlein. 3,184,168.
  Hennig, Ingeborg, and Lindner. 3,184,466.
  Quint, Ferdinand, and Schafer. 3,184,483.
  Ruschig, Heinrich, Schmitt, Driesen, Ther, and Pfaff. 3,184,470.
  Scherer, Otto, and Schneider. 3,184,507.
  Schlack, Paul. 3,184,423.
Farbenfabriken Bayer Aktiengesellschaft: *See—*
  Schrader, Gerhard. 3,184,465.
Farison, Glenn S., to Chrysler Corp. Alternator rectifier unit. 3,184,625, 5–18–65, Cl. 310—59.
Farkas, Francis, to Canada Lighter & Plastics Ltd. Plastic molding apparatus. 3,183,552,, 5–18–65, Cl. 18—5.
Farrell, Robert A., and G. V. Skowronski, to American Can Co. Method of forming a cover for a package. 3,183,800, 5–18–65, Cl. 93—36.
Fassnacht, Charles, and N. W. Burwell, to I-T-E Circuit Breaker Co. Collapsible form jig. 3,184,210, 5–18–65, Cl. 249—53.
Federal Paper Board Co., The: *See—*
  Arneson, Edwin L. 3,184,102.
Fein, Marvin M.: *See—*
  Donovan, George J., Fein, and Cohen. 3,184,499.
Feld, Erich, H. Patzer, and W. Kleinlein, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning. Apparatus for pneumatically grinding divided substances. 3,184,168, 5–18–65, Cl. 241—39.
Feldkamp, Rolland F.: *See—*
  Scarborough, Homer C., Wu, and Feldkamp. 3.184,462.
Ferchland, Harold W., to General Motors Corp. Grinding tool. 3,183,632, 5–18–65, Cl. 51—206.
Fernseh G.m.b.H.: *See—*
  Legler, Ernst, and Förster. 3,184,545.
Ferris, Edmund A., to Bros Inc. Vegetation cutting apparatus. 3 183,650, 5–18–65, Cl. 56—25.
Ferro Corp.. *See—*
  Hanson, Leroy C. 3,184,580.
Fiedler, Howard C., to General Electric Co. Grained oriented sheet metal having a vanadium nitride dispersion. 3,184,346, 5–18–65, Cl. 148—31.55.
Fieldgate, Ivan O., to Potter Instrument Co., Inc. Continuous tape system. 3,184,131, 5–18–65, Cl. 226—97.
Finlayson, Frank E., and A. G. Swenson, to General Electric Co. Steam and liquid spray iron. 3,183,610, 5–18–65, Cl. 38—77.
Fischer, Adam, Jr., to Radio Corp. of America. Electron tube parts handling apparatus. 3,183,703, 5–18–65, Cl. 72—386.
Fischer, Fred R., and E. J. Zilkowski, to The Bendix Corp. Assembly mechanism. 3,183,694, 5–18–65, Cl. 72—22.
Fischer, William K., to United States Rubber Co. Squeeze-coating process. 3,184,527, 5–18–65, Cl. 264—255.
Fish, Robert L., to Raybestos-Manhattan, Inc. Friction material. 3,184,306, 5–18–65, Cl. 75—206.
Fisher, Donald M., and J. E. Linnell, to Radio Corp. of America. Print registration control means in high speed printers. 3,183,830, 5–18–65, Cl. 101—93.
Fisher, Frank J. Protective housing for meter equipment. 3,183,714, 5–18–65, Cl. 73—273.
Fitz, Coleman D., to General Mills, Inc. Impact milling apparatus. 3,184,172, 5–18–65, Cl. 241—194.
Fitzgerald, Alex E.: *See—*
  Heuer, Russell P., and Fitzgerald. 3,184,321.
Fitzpatrick, Bill F. Action advertising thru projection. 3,183,772, 5–18–65, Cl. 88—24.
Flannery, Joseph F.: *See—*
  Davis, Francis A., Jr., and Flannery. 3.183,750.
  Davis, Francis A., Jr., and Flannery. 3,184,055.
Fleischhauer, Richard: *See—*
  Zerweck, Werner, Fleischhauer, and Bender. 3,184,280.
Flewellen, Lloyd J. Recoil and stabilizing mechanism for a rifle. 3,183.618, 5–18–65, Cl. 42—75.
Flinn, Richard A., B. K. Schmid, and M. M. Stewart, to Gulf Research & Development Co. Hydrocracking of hydrocarbons with a catalyst composite comprising a tungsten compound and a metal compound from Group VIII on an activated alumina support. 3,184,404, 5–18–65, Cl. 208—112.
Floyd, Terence J.: *See—*
  Hoyle, Edgar, and Floyd. 3,183,925.
Flygts Pumpar, AB: *See—*
  Englesson, Sixten. 3,183,838.
Flynn, Frank M., to Seary Mfg. Co. Film feeder and cutter. 3,183,753, 5–18–65, Cl. 83—231.

Fogiel, Adolf W., and W. R. Rose, to The American Agricultural Chemical Co. Clarification of gelatin. 3,184,445, 5–18–65, Cl. 260—118.
Folding Carrier Corp., Division of Union Asbestos & Rubber Co.: *See—*
  Hummer, Ralph G. 3,184,248.
Fonderies de Nogent Lafeuille & Cie: *See—*
  Pruna, Matei M. C. 3,183,588.
Forbes, Hampton E., Jr., to West Virginia Pulp and Paper Co. Carton structure. 3,184,136, 5–18–65, Cl. 229—14.
Forest, Joseph G., and E. J. Czarnetzky, to International Stock Food Corp. Method for the preservation of silage. 3,184,314, 5–18–64, Cl. 99—8.
Förster, Hubert: *See—*
  Legler, Ernst, and Förster. 3,184,545.
Forty-Eight Insulations, Inc.: *See—*
  Capaul, Raymond W. 3,183,996.
Foseco International Ltd.: *See—*
  Moore, Roy S. 3,183,562.
Foster Grant Co., Inc.: *See—*
  Kaplan, Clifford F. 3,184,059.
Foster, Kenneth W., and R. L. Geer, to Shell Oil Co. Underwater television camera mounting providing three directions of movement for the camera. 3,184,541, 5–18–65, Cl. 178—6.
Foster Wheeler Corp.: *See—*
  Bell, Alan. 3,183,969.
  Kerekes, Zoltan E. 3,184,345.
  Lytle, Robert I., Moran, and Stevens. 3,183,896.
Fox, Robert P., to American Hoist & Derrick Co. Cam-actuated band brake. 3,184,006, 5–18–65, Cl. 188—77.
Francaise du Ferodo, Societe Anonyme: *See—*
  Le Brise, Raymond. 3,184,019.
Francis, William C.: *See—*
  Phillips, Lee V., and Francis. 3.184,438.
Frankl, Ernest, to Winthrop-Atkins Co., Inc. Novelty folding device. 3,183,622, 5–18–65, Cl. 46—154.
Franklin Coffee Urn Corp.: *See—*
  Kirchner, Franklin H. 3,183,905.
Franklin, Frederick, and P. K. Giloth, to United States of America, Navy. Method of tracking radar targets in presence of jamming. 3,184,739, 5–18–65, Cl. 343—15.
Franks, John T., Jr., to Goodyear Aerospace Corp. Magnetic shift register. 3,184,722, 5–18–65, Cl. 340—174.
Frazier, Thomas C., Jr., to Allied Chemical Corp. Processes for producing trichloroisocyanuric acid. 3,184,458, 5–18–65, Cl. 260—248.
Fredd, John V., to Otis Engineering Corp. Perforator hanger. 3,183,972, 5–18–65, Cl. 166—35.
Freedman, David D., and W. J. Hess, to United States of America, Navy. Signal deviation detector. 3,184,729, 5–18–65, Cl. 340—248.
Freeman, Frank G., to Joseph Lucas (Industries) Ltd. Variable speed power transmission mechanism. 3,183,741, 5–18–65, Cl. 74—751.
Freez-King Corp.: *See—*
  Conto, Armando F. 3,183,682.
French, Ernest F.: *See—*
  Rankin, Alexander B. C., French, and Taylor. 3,183,709.
French, Michael J., and J. W. L. Petty, to Conch International Methane Ltd. Extensible metal sheets. 3,184,094, 5–18–65, Cl. 220—9.
Frenchtown Porcelain Co.: *See—*
  Luks, Daniel W. 3,184,370.
Fresno Valves, Inc.: *See—*
  Fritz, Robert A. 3,183,572.
Friden, Inc.: *See—*
  Borisof, Bernard. 3,183,812.
  Chall, Harold J., and Clemons. 3,184,159.
Friedman, Ira L.: *See—*
  Friedman, Lawrence S. and I. L., Zagielski, and Adams. 3,184,169.
Friedman, Lawrence S. and I. L., K. Zagielski, and L. A. Adams. Apparatus for pneumatically pulverizing material. 3,184,169, 5–18–65, Cl. 241—40.
Fritsche, Richard K., to The Miami Margarine Co. Lined food package. 3,184,319, 5–18–65, Cl. 99—171.
Fritz, Edmond B.: *See—*
  Von Meister, Frederick W., and Fritz. 3,183,832.
Fritz, Gerhard, O. Sus, F Uhlig, and W. Neubauer, to Azoplate Corp. Reproduction layers for printing plates. 3,184,310, 5–18–65, Cl. 96—49.
Fritz, Robert A., to Fresno Valves, Inc. Holder for pipe forming device. 3,183,572, 5–18–65, Cl. 25—126.
Fritz, William E. Discharge outlet assembly for hopper car. 3,183,852, 5–18–65, Cl. 105—282.
Frodermann, Hermann. Loose-leaf binder mechanism. 3,183,-913, 5–18–65, Cl. 129—24.
Frontier Chemical Co., Division of Vulcan: *See—*
  Penner, Siegfried E., and De Forest. 3,184,515.
Fry, Edwin L., to Fry and Co. Portable conveyor system. 3,184,045, 5–18–65, Cl. 198—233.
Fry, Emile J.: *See—*
  Brown, George R., and Fry. 3,183,727.
Frye, Reinhold A., to General Precision, Inc. Two-axis gas bearing gyro. 3,183,725, 5–18–65, Cl. 74—5.7.
Fujishima, Shohei, and T. Ishimoto, to Sekisui Kagaku Kogyo Kabushiki Kaisha. Prefabricated house structures. 3,184,-012, 5–18–65, Cl. 189—2.
Fuller Co.: *See—*
  Barlow, Cecil R. 3,183,874.
Fuller, Marvin A.: *See—*
  Reiter, Alexander L., and Fuller. 3,183,683.
Fulmer, Keith H.: *See—*
  Schultz, Harold B., Fulmer, and Tussynski. 3,183.670.
Funk, Howard L., and L. Skarshinski, to International Business Machines Corp. Waveform generators. 3,184,685, 5–18–65, Cl. 328—61.
Furey, Michael J., to Esso Research and Engineering Co. Hydrocarbon compositions containing iodine as an antifriction agent. 3,184,409, 5–18–65, Cl. 252—33.

Furey, Michael J., and P. Zaybekian, to Esso Research and Engineering Co. Polymeric lubricating oil additives containing iodine and uses thereof. 3,184,413, 5–18–65, Cl. 252—56.
Furst, Stefan, to W. Reiners. Yarn-spool winding machine with automatic spool-exchanging device. 3,184,174, 5–18–65, Cl. 242—35.5.
G.K.N. Screw & Fasteners Ltd.: *See—*
  McKewan, Arthur J. 3,183,531.
G-V Controls Inc.: *See—*
  Broekhuysen, William C. 3,184,571.
Gabliks, Maigonis: *See—*
  Nagel, Roger M., and Gabliks. 3,184,442.
Gaines, Eugene F., to The Celotex Corp. Ceiling mounted fluorescent lighting system. 3,184,588, 5–18–65, Cl. 240—9.
Galin, Robert, to General Motors Corp. Refrigerating apparatus. 3,184,157, 5–18–65, Cl. 230—207.
Gamaunt, Geraldine E.: *See—*
  Gamaunt, Roger L. 3,183,991.
Gamaunt, Roger L., 10% to H. E. Teasdall; 35% to G. E. Gamaunt, and 10% to H. E. Teasdall, as trustee. Vehicle. 3,183,991, 5–18–65, Cl. 180—24.
Gancy, Alan B., to FMC Corp. Process for the production of soda ash from underground trona deposits. 3,184,287, 5–18–65, Cl. 23—63.
Gandy, Warren L., to United States of America, Army. Selective one and two-stage trigger mechanism for firearms. 3,183.616, 5–18–65, Cl. 42—69.
Garde Mfg. Co.: *See—*
  Rosenberg, Allan E. 3,184,069.
Gardner, Colin D., to United States of America, Air Force. Forced air cooling of electronic equipment. 3,184,275, 5–18–65, Cl. 312—213.
Gardner, Lloyd E., and R. J. Hogan, to Phillips Petroleum Co. Two-section catalyst bed. 3,184,403, 5–18–65, Cl. 208—89.
Garland, John E., to General Dynamics Corp. Spectrum balanced modulator. 3,184,690, 5–18–65, Cl. 332—43.
Garrard Engineering & Mfg. Co. Ltd., The: *See—*
  Marshall, Thomas S. 3,184,555.
Garrett, Henry U., to Udell, Inc. Gas lift valves. 3,183,-921, 5–18–65, Cl. 137—155.
Garwin, Richard L., to International Business Machines Corp. Thin-film circuit arrangement. 3,184,674, 5–18–65, Cl. 323—44.
Gates, John W., Jr., W. G. Lovett, and P. E. Miller, to Eastman Kodak Co. Photographic emulsions containing carboxymethylated pigskin gelatin. 3,184,312, 5–18–65, Cl. 96—94.
Gaylord, John A., to H. Koch & Sons. Canopy release. 3,183,-568, 5–18–65, Cl. 24—230.
Gaynor, William C. Pump and sealing unit therefor. 3,183,-841, 5–18–65, Cl. 103—111.
Gearmatic Co. Ltd.: *See—*
  Christison, Sommerville G. 3,184,018.
Gee, Minor E., and C. L. Seagraves, to General Box Distributors. Cantaloupe packing machine. 3,183,640, 5–18–65, Cl. 53—78.
Geen, Cory P., to Industrial Devices, Inc. Self-releasing collet nose. 3,184.175, 5–18–65, Cl. 242—46.5.
Geer, Charles W. Three-dimensional display apparatus. 3,184,630, 5–18–65, Cl. 313—70.
Geer, Ronald L.: *See—*
  Foster, Kenneth W., and Geer. 3,184,541.
Gehrie, Charles S., to Presto Lock Co., Inc. Latching and locking devices. 3,183.691, 5–18–65, Cl. 70—70.
General Aniline & Film Corp.: *See—*
  Hort, Eugene V. 3,184,417.
General Box Distributors: *See—*
  Gee, Minor E., and Seagraves. 3,183,640.
General Bronze Corp.: *See—*
  Smith, Arthur, Lacoppola, and Dougherty. 3,184,016.
General Dynamics Corp.: *See—*
  Bull, Harold T. 3,184,680.
  Garland, John E. 3,184,690.
  Piscitello, Robert A., and Petit. 3,184,703.
  Stern, Marvin A. 3,184,721.
General Electric Co.: *See—*
  Anderson, Robert P. 3,184,327.
  Argue, Donald D., and Stauffer. 3,183,605.
  Bates, William C., and True. 3,184 616.
  Cunningham, Clarence V., and Lichtenfels. 3,184,664.
  Dome, Robert B. 3,184,547.
  Fiedler, Howard C. 3,184,346.
  Finlayson, Frank E., and Swenson. 3,183,610.
  Hollister, Edwin S. 3,183,738.
  Ryckman, William D., and Jessup. 3,184,564.
  Stauffer, John D. 3,183,604.
  Swenson, Alfred G. 3,183,611.
  Uren, William J., and Propster. 3,184,734.
  White, Frederick A., and Davis. 3,184,633.
  Wood, Robert F. 3,184,617.
General Mills Inc.: *See—*
  Fitz, Coleman D. 3,184,172.
General Motors Corp.: *See—*
  Bazill, Dale G., and Pickering. 3,184,576.
  Buckman, Kenneth E. 3,184.063.
  Colautti, Albert J. 3,184.209.
  Daniels, William H. 3,183.884.
  Erickson, Anton F. 3.184.007.
  Ferchland, Harold W. 3,183,632.
  Galin, Robert. 3,184,157.
  Hovde, Arne J. 3,184 023.
  Jacobs, James W. 3.183 689.
  Legge, George D. 3,183.740.
  Mondt, James R. 3 183.963.
  Parker, Leland C., and Stoltman. 3,183,993.
  Pollock, Donald E. 3.184 011.
  Reinsch, Earl W. 3,184 009.
  Reinsch, Earl W., and Baynes. 3,184,001.

- General Motors Corp.: *See*—Continued
  - Rodaer, James A. 3,184,676.
  - Ruhala, Joseph D. 3,184,270.
  - Steinhagen, William K., and Yott. 3,183,962.
  - Tanaka, Akira. 3,184,208.
  - Walling, Richard W. 3,184,173.
  - West, Wilson H. 3,184,572.
- General Precision Inc.: *See*—
  - Frye, Reinhold A. 3,183,725.
  - Goldfarb, Samuel. 3,184,608.
  - Grillo, Joseph. 3,184,673.
  - Leibowitz, Donald, Meixner, and Gruber. 3,184,620.
- General Refractories Co.: *See*—
  - Heuer, Russell P., and Fitzgerald. 3,184,321.
- General Telephone and Electronics Laboratories Inc.: *See*—
  - Cohen, Julius. 3,184,659.
  - Earley, Kenneth D., Polanyi, and Watson. 3,183,937.
  - O'Connel, James A., Jr. 3,184,635.
  - Weibel, Gerhard E. 3,184,632.
- George, Henri J. C., to Quartz & Silice S.A. Thin-walled pressure vessels and method of manufacture. 3,184,092, 5–18–65, Cl. 220—3.
- Germino, Felix J., and R. J. Moshy, to American Machine and Foundry Co. Activation of amylose. 3,184,335, 5–18–65, Cl. 127—71.
- Gibbens, Alfred L. Flashlight attachment. 3,184,589, 5–18–65, Cl. 240—10.67.
- Gibbon, John, to Coal Industry (Patents) Ltd. Conveyor systems. 3,184,043, 5–18–65, Cl. 198—187.
- Gibson, Earl D., to ACF Industries, Inc. Noise and distortion reduction in communication systems. 3,184,544, 5–18–65, Cl. 178—69.
- Gierhart, Melvin O. Apparatus for applying sealing material. 3,183,803, 5–18–65, Cl. 94—44.
- Gierse, Franz J.: *See*—
  - Walbert, Wilhelm, Gierse, and Schäfer. 3,183,866.
- Gilbank, LeRoy F.: *See*—
  - Moore, Lawrence A., and Gilbank. 3,183,826.
- Gilinson, Philip J., Jr., to Massachusetts Institute of Technology. Supports for rotating or oscillating members. 3,184,271, 5–18–65, Cl. 308—10.
- Gilliland, Hall E.: *See*—
  - Schmunk, John D., and Gilliland. 3,183,571.
- Gilman, Wayne C., and R. O. Kuehne, to W. R. Grace & Co. Tray. 3,184,047, 5–18–65, Cl. 206—45.34.
- Gilmont, Roger, to Roger Gilmont Instruments, Inc. Flowmeter. 3,183,713, 5–18–65, Cl. 73—209.
- Gilmont, Roger, Instruments, Inc.: *See*—
  - Gilmont, Roger. 3,183,713.
- Giloth, Paul K.: *See*—
  - Franklin, Frederick, and Giloth. 3,184,739.
- Girden, Barney B. Swimmer's safety buoy and float. 3,183,530, 5–18–65, Cl. 9—311.
- Glaverbel, S.A.: *See*—
  - Brichard, Edgard. 3,183,560.
- Gledhill, Arthur E., to The Stanley Works. Curtain rod package. 3,184,052, 5–18–65, Cl 206—47.
- Gleeson, William W. Putting target with gates adapted to be closed and opened by a putted golf ball. 3,184,240, 5–18–65, Cl. 273—177.
- Globe Industries, Inc.: *See*—
  - Pittman, Paul R., Jr. 3,184,560.
- Godfrey, William K.: *See*—
  - McEver, James W., and Godfrey. 3,183,971.
- Godley, William P., to Honeywell Inc. Instrument case. 3,184,647, 5–18–65, Cl. 317—101.
- Goerke, Frederick E., and R. E. Reichard, to The Bendix Corp. Automatic cruise control. 3,183,994, 5–18–65, Cl. 180—82.1.
- Goetz, Frank M., to Bell Telephone Laboratories, Inc. Logic detector circuit. 3,184,723, 5–18–65, Cl. 340—174.1.
- Gold, Heinrich: *See*—
  - Siegel, Edgar, and Gold. 3,184,459.
- Golden Grain Macaroni Co.: *See*—
  - De Domenico, Vincent M., and Davis. 3,184,104.
- Goldfarb, Samuel, to General Precision Inc. Precision phase sensitive demodulator. 3,184,608, 5–18–65, Cl. 307—88.5.
- Gombar, Steve, and C. G. Thayer, 33⅓% to Gabriel L. Dery. Pitcher assembly for a liquid container. 3,184,110, 5–18–65, Cl. 222—86.
- Goodyear Aerospace Corp.: *See*—
  - Franks, John T., Jr. 3,184,722.
- Gordon, Robert A., to Eastman Kodak Co. Processing mechanism. 3,183,819, 5–18–65, Cl. 95—89.
- Gorin, Everett, to Consolidation Coal Co. Process for producing hydrogen-enriched hydrocarbonaceous products from coal. 3,184,401, 5–18–65, Cl. 208—8.
- Goyette, Francis H., to Lodding Engineering Corp. Broke and fuzz remover for doctors. 3,183,541, 5–18–65, Cl. 15—246.
- Grace, W. R. & Co.: *See*—
  - Chadha, Rajendra N., Jefferson, and Werber. 3,184,440.
  - Gilman, Wayne C., and Kuehne. 3,184,047.
  - Zagar, Walter T. 3,184,522.
- Grahl, Melvin F., and K. S. Stull, Jr., to United States of America, Navy. Temperature compensated amplifier. 3,184,688 5–18–65, Cl. 330—136.
- Granath, John W.: *See*—
  - Peterson, Seour, and Granath. 3,183,889.
- Graphic Electronics, Inc.: *See*—
  - Barron, William J. 3,183,745.
- Grau, Theodore H. Apparatus for mixing feeds. 3,184,108, 5–18–65, Cl. 222—58.
- Gravenor, Neville W., to Ashman & Hart Pty. Ltd. Ceiling panel suspension means. 3,184,017, 5–18–65, Cl. 189—88.
- Gravert, William H., to Marine Moisture Control Co., Inc. Closure plate for cargo tanker. 3,184,099, 5–18–65, Cl. 220—55.
- Gray, Earl E.: *See*—
  - Elliott, Eugene W., and Gray. 3,183,811.
- Gray, William L., to E. I. du Pont de Nemours and Co. Process for the preparation of a purified potassium silicate solution. 3,184,289, 5–18–65, Cl. 23—110.
- Greaves, Melvin J., A. W. Babb, and F. J. R. Dicks, to Arthur G. McKee & Co. Reciprocable conveyor. 3,184,037, 5–18–65, Cl. 198—89.
- Greenberg's, M., Sons, Inc.: *See*—
  - Diem, Fred F. 3,183,574.
- Greene, Abbot, and P. Densen. Self sealing container. 3,184,144, 5–18–65, Cl. 229—37.
- Greene, Harold R., to Electronic Associates Inc. Charge gate. 3,184,607, 5–18–65, Cl. 307—88.5.
- Griffith, George L., to Trojan Powder Co. Canister for cast primer. 3,183,836, 5–18–65, Cl. 102—24.
- Grillo, Joseph, to General Precision Inc. Voltage regulator with frequency multiplication detector means. 3,184,673, 5–18–65, Cl. 322—28.
- Grimshaw, Lloyd. Grills for cooking food. 3,183,823, 5–18–65, Cl. 99—445.
- Grobin, Allen W., Jr., to International Business Machines Corp. Superconductive solder. 3,184,303, 5–18–65, Cl. 75—134.
- Groetzner, Kurt, to Robert Bosch, G.m.b.H. Dynamic brake for a compound motor control system. 3,184,666, 5–18–65, Cl. 318—381.
- Groot, John K., to Wilson Athletic Goods Mfg. Co., Inc. Helmet supporting structure. 3,183,522, 5–18–65, Cl. 2—6.
- Groth, Hans F. A., to Burroughs Corp. Electrostatic drum printer. 3,184,749, 5–18–65, Cl. 346—74.
- Gruber, Sol: *See*—
  - Leibowitz, Donald, Meixner, and Gruber. 3,184,620.
- Guglielmetti, Leonardo: *See*—
  - Siegrist, Adolf E., Guglielmetti, Maeder, and Liechti. 3,184,468.
- Gulf Oil Corp.: *See*—
  - Phillips, Lee V., and Francis. 3,184,438.
- Gulf Research & Development Co.: *See*—
  - Flinn, Richard A., Schmid, and Stewart. 3,184,404.
- Gulton Industries, Inc.: *See*—
  - Welkowitz, Walter. 3,183,705.
- Gumprecht, William H.: *See*—
  - Cole, John E., Jr., and Gumprecht. 3,184,282.
  - Cole, John E., Jr., and Gumprecht. 3,184,283.
- Gumz, William H.: *See*—
  - Stuller, Frank G., Gumz, and Anderson. 3,184,034.
- Gundelfinger, William E., to White-Rodgers Co. Plug-type detachable thermostatic-timer control unit for cooking utensils. 3,184,570, 5–18–65, Cl. 200—136.5.
- Gundersen, George A. Garment container. 3,184,049, 5–18–65, Cl. 206—46.
- Gunther, Ralph E.: *See*—
  - Lee, Charles M., Gunther, and Nerwin. 3,184,652.
- Gurney, William A., and A. J. Stubbs, to Dunlop Rubber Co. Ltd. Stiffness-determining device. 3,183,707, 5–18–65, Cl. 73—15.6.
- Gusow, William A., to S & C Electric Co. Apparatus for triggering a dropout fuse comprising a rotatably mounted trip arm which engages an operator in the fuse. 3,184,567, 5–18–65, Cl. 200—114.
- Gustafsson, Rune, and S. Wellmar, to Svenska Flaktfabriken, Aktiebolaget. Device in press-roll sections for dewatering cellulose pulp webs. 3,183,606, 5–18–65, Cl. 34—70.
- Guy, Eric C.: *See*—
  - Donaldson, Kenneth J. S., and Guy. 3,183,597.
- Haack, Erich, A. Hagedorn, F. H. Schmidt and R. Weyer, to C. F. Boehringer & Soehne G.m.b.H. Tetrahydro-quinolines and tetrahydro-isoquinolines. 3,184,464, 5–18–65, Cl. 260—287.
- Haag, Franz, to Junkers & Co. G.m.b.H. Apparatus for heating water and similar fluids. 3,183,895, 5–18–65, Cl. 122—24.
- Hackney, Stanley, to United Kingdom Atomic Energy Authority. Boiling water nuclear reactor. 3,184,391, 5–18–65 ,Cl. 176—54.
- Haelen, John C.: *See*—
  - Offensend, Glen W., Rosenburgh, and Haelen. 3,183,765.
- Hagedorn, Adolf: *See*—
  - Haack, Erich, Hagedorn, Schmidt, and Weyer. 3,184,464.
- Hager, Robert R., to The Bendix Corp. Brake balancing device for hydraulic brake system. 3,184,269, 5–18–65, Cl. 303—6.
- Hague, John D., and R. L. Lundberg, to United States of America, Navy. Obstacle warning computer. 3,184,738, 5–18–65, Cl. 343—7.
- Haims, Murray J., to International Business Machines Corp. Chargistor switching circuit. 3,184,613, 5–18–65, Cl. 307—88.5.
- Hale, Clifford W.: *See*—
  - Abraham, Edward P., Newton, and Hale. 3,184,454.
- Hale, Duane O., to United States of America, Atomic Energy Commission. High-duty-cycle multivibrator. 3,184,604, 5–18–65, Cl. 307—88.5.
- Halfinger, Russell B., ½ to R. T Beebe. Workshop tool stand. 3,184,190, 5–18–65, Cl. 248—13.
- Hall, Fred C. Reel loader. 3,184,082, 5–18–65, Cl. 214—77.
- Hallatt, Arthur J.: *See*—
  - O'Donnell, Francis E., and F. B. and A. J. Hallatt, and Doerschein. 3,183,743.
- Hallatt, Francis B., Jr.: *See*—
  - O'Donnell, Francis E., and F. B. and A. J. Hallatt, and Doerschein. 3,183,743.
- Halliburton Co.: *See*—
  - Baker, Eugene E. 3,183,974.
- Halstrick, Robert T., to American Metal Works, Inc. Stools. 3,183,861, 5–18–65, Cl. 108—144.
- Hamilton, Wallace, to Pneumo Dynamics Corp. Hatch cover actuator. 3,183,873, 5–18–65, Cl. 114—201.

- Hammerstrom, Henry H., and L. B. Woodruff. Variable reluctance generator having a rotor winding. 3,184,628, 5–18–65, Cl. 310—168.
- Hammes, Josef J., and B. E. Bickel, to Lowell Mfg. Co. Gas lantern and loud speaker housing. 3,184,586, 5–18–65, Cl. 240—2.
- Hammesfahr, Willi, to Gebr. Happich, G.m.b.H. Holder grip, particularly for motor vehicles. 3,183,549, 5–18–65, Cl. 16—125.
- Hammond Machinery Builders, Inc.: *See*—
  - Ver Meulen, Robert. 3,183,629.
- Hampton, Hugh H. Pencil sharpeners. 3,183,894, 5–18–65, Cl. 120—92.
- Hancock Brick and Tile Co., The: *See*—
  - Schmunk, John D., and Gilliland. 3,183,571.
- Hannah, Jack W. Film alignment and braking device. 3,184,177, 5–18–65, Cl. 242—55.12.
- Hanson, Leroy C., to Ferro Corp. Surface unit disconnect. 3,184,580, 5–18–65, Cl. 219—451.
- Happich, Gebr., G.m.b.H.: *See*—
  - Hammesfahr, Willi. 3,183,549.
- Harbison-Walker Refractories Co.: *See*—
  - McCreight, Donald O., and Renkey. 3,184,531.
- Harder, Robert J., to E. I. du Pont de Nemours and Co. 1,2′-bibenzotriazole compounds and their production. 3,184,471, 5–18–65, Cl. 260—308.
- Hardman & Holden Ltd.: *See*—
  - Davison, Brian K. 3,184,490.
- Harper, Chester H.: *See*—
  - Allen, Kenneth M., and Harper. 3,184,044.
- Harris, Frank M., to Owens-Illinois Glass Co. Packaging tacky latex emulsion paints in containers manufactured from polyolefinic materials. 3,184,060, 5–18–65, Cl. 206—84.
- Harris, Meade C., and E. F. Maehl, deceased (by E. Maehl, legal representative), to National Biscuit Co. Continuous process for the manufacture of hard sweet dough. 3,184,317, 5–18–65, Cl. 99—90.
- Harris-Intertype Corp.: *See*—
  - Haywood, Russell I., and Barley. 3,183,749.
  - O'Brien, Richard C., Proud. and Hunstiger. 3,183,806.
- Harrison, Edwin H., Jr., to United States of America, Army. Tunnel diode counter with double count capacity producing staircase waveform having both ascending and descending steps. 3,184,614, 5–18–65, Cl. 307—88.5.
- Harrison, Robert H. C. Eye shades. 3,183,523, 5–18–65, Cl 2—13.
- Hart, Donald J., and J. Jaffe, to Smith Kline & French Laboratories. Nul. balancing indicator. 3,184,728, 5–18–65, Cl. 340—233.
- Hart, John L. Girl's swimming suit for competition and racing.. 3,183,524, 5–18–65, Cl. 2—67.
- Hartmann & Braun Aktiengesellschaft: *See*—
  - Moyat, Peter. 3,183,906.
- Haseley, Edward A., to E. I. du Pont de Nemours and Co. Polyester filaments having improved frictional characteristics. 3,184,369, 5–18–65, Cl. 161—179.
- Hashemi-Tafreshi, Hadi, to Conch International Methane Ltd. Liquefaction of nitrogen in regasification of liquid methane. 3,183,677, 5–18–65, Cl. 62—9.
- Hastings, John A.: *See*—
  - Bush, Vannevar, and Hastings. 3,183,907.
- Hauserman, E. F., Co., The: *See*—
  - Wagner, Henry A., Merritt, and Bokmuller. 3,184,328.
- Hawks, Gordon L., to Clark Equipment Co. Conveyor system. 3,183,851, 5–18–65, Cl. 104—91.
- Haynes, Harold E., to Radio Corp. of America. Computer circuit. 3,184,732, 5–18–65, Cl. 340—347.
- Haywood, Russell I., and L. D. Barley, to Harris-Intertype Corp. Automatic memory storage of the operations of a cutting machine. 3,183,749, 5–18–65, Cl. 83—71.
- Healey, Daniel J., III, to United States of America, Navy. Low noise frequency changing circuit. 3,184,682, 5–18–65, Cl. 325—435.
- Healy, James W.: *See*—
  - Boreen, Stuart W., and Healy. 3,183,735.
- Heath, Clarence W., to United-Carr Inc. Torsion spring actuated snap action electric switch. 3,184,561, 5–18–65, Cl. 200—67.
- Heckenkamp, Edward B., R. W. Johansen, and J. R. Plate, to Allis-Chalmers Mfg. Co. Tractor power lift system. 3,183,977, 5–18–65, Cl. 172—7.
- Hecker, Arthur C., M. W. Pollock, and S. Cohen, to Argus Chemical Corp. Prevention of colored iron compounds in asbestos containing polyvinyl chloride resins. 3,184,428, 5–18–65, Cl. 260—41.
- Hedegaard, Kristen: *See*—
  - Astrupgaard, Svend, and Hedegaard. 3,183,869.
- Heilman Co., The: *See*—
  - Kreidich, John. 3,183,829.
- Heidner, Richard C., to Outboard Marine Corp. Speed control device. 3,183,879, 5–18–65, Cl. 115—18.
- Hein, Richard A.: *See*—
  - Dore, Burnell V., and Hein. 3,184,636.
- Hellander, Thomas A. Adjustable boom type pull shovel attachment for cranes and the like. 3,184,084, 5–18–65, Cl. 214—134.
- Heller, Walter E., & Co. (Inc.): *See*—
  - Niles, Raymond W. 3,183,601.
- Heller, Wilhelm, and M. Herbrich, to J. Schmidt. Holding device. 3,183,546, 5–18–65, Cl. 16—94.
- Hellerman, Leo, to International Business Machines Corp. Logic performing device. 3,184,603, 5–18–65, Cl. 307—88.5.
- Hellgren, Leroy L., to United States of America, Navy. Recoverable monitoring circuit with permanent indication. 3,184,726, 5–18–65, Cl. 340—223.
- Helliwell, Guy S. Pump. 3,183,837, 5–18–65, Cl. 103—2.
- Hellweg, Kurt H. W., to Societe Civile Pour l'Etude d'Engins a Pistons Libres E.P.L. Floating-piston internal-combustion machine. 3,183,900, 5–18–65, Cl. 123—41.78.
- Helms, John D.: *See*—
  - Brown, Herbert L., Jr., and Helms. 3,184,714.
- Helmschrott, Norbert: *See*—
  - Muller, Felix, and Helmschrott. 3,184,748.
- Henneman, John W., to The Bendix Corp. Fluid control apparatus. 3,183,917, 5–18–65, Cl. 137—81.
- Hennig, Ingeborg, and E. Lindner, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. N-beta amino butyryl-indolines. 3,184,466, 5–18–65, Cl. 260—294.
- Henrikson, Robert E. Air gap antisyphoning device. 3,183,923, 5–18–65, Cl. 137—216.
- Hensel, Jack, and P. C. Aichenegg, to Chemagro Corp. Method of killing nematodes with thiophosphates. 3,184,377, 5–18–65, Cl. 167—22.
- Herbrich, Manfred: *See*—
  - Heller, Wilhelm, and Herbrich. 3,183,546.
- Hercules Powder Co.: *See*—
  - Brack, Karl. 3,184,420.
  - Brack, Karl. 3,184,439.
  - Brack, Karl. 3,184,497.
  - Klug, Eugene D. 3,184,526.
  - Rachinsky, Michael R. 3,184,332.
- Hermanns, Frederick R., and G. Coleman, to The Singer Co. Underframe for sewing machine table. 3,184,207, 5–18–65, Cl. 248—413.
- Hermle, Paul A.: *See*—
  - Edgcomb, Leslie I., and Hermle. 3,183,820.
- Herring, Clarence R. Breakaway valve for vehicle brake systems. 3,183,919, 5–18–65, Cl. 137—102.
- Hersey, Carl D.: *See*—
  - Way, Robert B., and Hersey. 3,183,696.
- Herzog, Gerald B., to Radio Corp. of America. Pulse generator circuits employing storage diodes. 3,184,605, 5–18–65, Cl. 307—88.5.
- Hess, William J.: *See*—
  - Freedman, David D., and Hess. 3,184,729.
- Hesser, Fr., Maschinenfabrik-Aktiengesellschaft: *See*—
  - Kühnle, Paul. 3,183,798.
- Heuer, Russell P., and A. E. Fitzgerald, to General Refractories Co. Refractory composition and method. 3,184,321, 5–18–65, Cl. 106—58.
- Heuser, Marion F. Golf putting device including automatic cycling means and ball return pushers on an endless chain. 3,184,239, 5–18–65, Cl. 273—176.
- Hexcel Products Inc.: *See*—
  - Rule, Edwin L. 3,184,365.
  - Webb, Wells A. 3,183,665.
- High Voltage Engineering Corp.: *See*—
  - Christofferson, James. 3,184,621.
- Highway Equipment Co.: *See*—
  - Brisbin, Richard F., and McSkimming. 3,184,243.
- Highway Trailer Industries, Inc.: *See*—
  - Martin, John J. 3,184,251.
- Hilbrich, Lawrence W. Portable collapsible backstop for baseball practice. 3,184,235, 5–18–65, Cl. 273—26.
- Hill, Edward H.: *See*—
  - Caldwell, John R., and Hill. 3,184,421.
- Hilliker, Arthur E., to Crouse-Hinds Co. Traffic signal synchronizing system and apparatus. 3,184,709, 5–18–65, Cl. 340—37.
- Hind, Cecil J., to Ruston & Hornsby Ltd. Engine or machine frame structure. 3,183,794, 5–18–65, Cl. 92—146.
- Hirsch, Richard V. Slide barrel lever action rifle and the like. 3,183,615, 5–18–65, Cl. 42—11.
- Hobart Mfg. Co., The: *See*—
  - Spang, Carl F. 3,183,710.
- Hochwalt, George C., and H. A. Mayo, Jr., to Allis-Chalmers Mfg. Co. Hydraulic power installation. 3,184,218, 5–18–65, Cl. 253—31.
- Hodan, James J.: *See*—
  - Baranauckas, Charles F., Carr, and Hodan. 3,184,495.
  - Baranauckas, Charles F., Carr, and Hodan. 3,184,496.
- Hoefler, Harry H. Mowing apparatus. 3,183,651, 5–18–65, Cl. 56—25.4.
- Hoeksema, Herman: *See*—
  - Birkenmeyer, Robert D., and Hoeksema. 3,184,478.
- Hoerni, Jean A., to Fairchild Semiconductor Corp. Selective control of electron and hole lifetimes in transistors. 3,184,347, 5–18–65, Cl. 148—33.
- Hoerr, Harvey T. Fishing rod holder. 3,184,192, 5–18–65, Cl. 248—42.
- Hoesch Aktiengesellschaft: *See*—
  - Werthebach, Paul, and Wrede. 3,184,344.
- Hoffman, August J. Liquid container. 3,184,091, 5–18–65, Cl. 217—99.
- Hoffmann-La Roche Inc.: *See*—
  - Cole, Marc. 3,184,492.
  - Steiger, Norbert. 3,184,482.
- Hogan Faximile Corp.: *See*—
  - Murphy, Gerald G. 3,184,540.
  - Smith, John W. 3,184,546.
  - Smith, John W. 3,184,750.
  - Varrichio, Ralph. 3,184,231.
- Hogan, Robert J.: *See*—
  - Gardner, Lloyd E., and Hogan. 3,184,403.
- Holley Carburetor Co.: *See*—
  - Cowles, Warren H., and Smith. 3,183,957.
- Hollister, Edwin S., to General Electric Co. Adjusting screw spring clip. 3,183,738, 5–18–65, Cl. 74—526.
- Hollowell, Joseph L., to E. I. du Pont de Nemours and Co. Crosslapping method and apparatus. 3,183,557, 5–18–65, Cl. 19—163.
- Holmes, Robert R., to United Aircraft Corp. Liquid metal probe. 3,183,715, 5–18–65, Cl. 73—304.
- Holt, Arthur W., to Control Data Corp. Core correlation matrix reader. 3,184,712, 5–18–65, Cl. 340—146.3.
- Holther, Grover P.: *See*—
  - Rojc, John F., and Holther. 3,183,613.

- Honeywell Inc. : *See—*
  - Godley, William P. 3,184,647.
  - Kampf, Richard S. 3,184,751.
  - Mahoney, John P., and Kampf. 3,184,755.
  - Sapino, Theodore. 3,184,582.
  - Tyler, Tommy N. 3,183,729.
- Hoobler, Ernest S., to Mercury International Insurance Underwriters. Vending machine. 3,184,026, 5–18–65, Cl. 194—57.
- Hooker Chemical Corp. : *See—*
  - Baranauckas, Charles F., Carr, and Hodan. 3,184,495.
  - Baranauckas, Charles F., Carr, and Hodan. 3,184,496.
- Hooper, Fred E. Light fixture. 3,184,595, 5–18–65, Cl 240—128.
- Hoover Ball and Bearing Co. : *See—*
  - Dole, Marion E. 3,184,093.
- Hoover, Charles O. Desulfurizing petroleum with alkali and di-alkyl sulfoxide. 3,184,405, 5–18–65, Cl. 208—227.
- Horn, Charles G. : *See—*
  - Weller, Barton L., and Horn. 3,184,661.
- Horn, Christian F., to Union Carbide Corp. Fluorene sulfonic acid containing dyeable polyesters. 3,184,434, 5–18–65, Cl. 260—75.
- Horsley, David S. Video recording and reproduction with reduced redundancy. 3,184,542, 5–18–65, Cl. 178—6.7.
- Hort, Eugene V., to General Aniline & Film Corp. Method of preparing a copper modified nickel catalyst composition. 3,184,417, 5–18–65, Cl. 252—474.
- Horvath, Bela, to Plasti-Carrier, Inc. Carrier for beverage cans and the like. 3,184,260, 5–18–65, Cl. 294—87.2.
- Hosford, Norman F., to The Bendix Corp. Liquid to gas conversion system. 3,183,678, 5–18–65, Cl. 62—52.
- Hovde, Arne J., to General Motors Corp. Compound friction coupling. 3,184,023, 5–18–65, Cl. 192—87.
- Howard, Bernard, to Mite Corp. Feed mechanism for inked ribbon. 3,184,027, 5–18–65, Cl. 197—160.
- Howard, John A., and J. H. D. Craig, to Rotary Hoes Ltd. Rotary cultivating machine construction. 3,183,980, 5–18–65, Cl. 172—47.
- Howland, Louis H. : *See—*
  - Chambers, Victor S., and Howland. 3,184,424.
- Hoyle, Edgar, and T. J. Floyd, to Audco Ltd. Plug valve having a particular lubricant sealant arrangement. 3,183,925, 5–18–65, Cl. 137—246.14.
- Hrubesch, Adolf, and H. Craubner, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of branched and crosslinked copolymers from olefinically unsaturated monomers containing the N-nitrosoacylamine group. 3,184,437, 5–18–65, Cl. 260—78.
- Hubbard, Samuel B. Multiple purpose mailing piece. 3,184,150, 5–18–65, Cl. 229—73.
- Hübner, Otto. Portable electric toilet apparatus. 3,183,538, 5–18–65, Cl. 15—22.
- Huckabay, William B., S. N. Oatman, and W. H. Parker, to Rayflex Exploration Co. Position indicating and course plotting device. 3,184,740, 5–18–65, Cl. 343—15.
- Huebner, Herbert A. : *See—*
  - Loosli, Stanley. 3,184,029.
- Huggins, Gerald E., to P. J. Diamante. Jack helping device. 3,184,220, 5–18–65, Cl. 254—133.
- Hughes Aircraft Co. : *See—*
  - Schultz, Harold R., Sr. 3,184,643.
  - Stover, Joe V. 3,184,615.
- Huling, James K., to The Clayton Corp. of Delaware. Tamper proof nozzle assembly for pressurized dispensers. 3,184,116, 5–18–65, Cl. 222—182.
- Hüller, Adolf, to Karl Hüller, G.m.b.H. Arrangement for moving components of machine tools and the like. 3,183,783, 5–18–65, Cl. 90—58.
- Hüller, Karl, G.m.b.H. : *See—*
  - Hüller, Adolf. 3,183,783.
- Humbert, Kingsley E., Jr., to Wix Corp. Filter unit. 3,184,062, 5–18–65, Cl. 210—130.
- Hummer, Ralph G., to Folding Carrier Corp., Division of Union Asbestos & Rubber Co. Baby seats for telescoping grocery carts. 3,184,248, 5–18–65, Cl. 280—33.99.
- Hunerwadel, Jean L. : *See—*
  - Vess, Albert, Phipps, and Hunerwadel. 3,183,814.
- Huntley, Earl B., J. M. Kruse, and J. W. Way, to E. I. du Pont de Nemours and Co. Catalyst compositions consisting of group IV metal salts and/or oxides. 3,184,415, 5–18–65, Cl. 252—461.
- Hupin, Christian A., to Manufacture de Produits Pharmaceutiques A. Christiaens Societe Anonyme. New derivative of gitoxin, the use and preparation thereof. 3,184,383, 5–18–65, Cl. 167—65.
- Hurley, Robert M., to Container Corp. of America. Collapsible folding carton with odd number of uncreased side walls. 3,184,146, 5–18–65, Cl. 229—41.
- Hutchins, Alma A. Sander having releasable clip. 3,183,638, 5–18–65, Cl. 51—386.
- Hutson, Jearld L., to Texas Instruments Inc. Switching circuits. 3,184,653, 5–18–65, Cl. 317—157.62.
- Hutton, Paul C. Shoe cleaner. 3,183,539, 5–18–65, Cl. 51—112.
- Hydro-Kinetics, Inc. : *See—*
  - Raymond, Robert E. 3,183,847.
  - Raymond, Robert E. 3,183,848.
  - Raymond, Robert E. 3,183,849.
- Hydra-Might Co. : *See—*
  - Johnson, William E., and Lairson. 3,183,668.
- Hypro Engineering, Inc. : *See—*
  - Sadler, Harry J., and Cook. 3,183,842.
- I-T-E Circuit Breaker Co. : *See—*
  - Fassnacht, Charles, and Burwell. 3,184,210.
- Ikai, Minoru, and K. Arashi, to Shin-Mitsubishi Jokogyo Kabushiki Kaisha. Spoiler. 3,184,186, 5–18–65, Cl. 244—42.
- Ilikon Corp. : *See—*
  - Mancuso, Arlon. 3,184,167.
- Illinois Testing Laboratories, Inc. : *See—*
  - Peltola, Veikko K. 3,184,754.
- Illinois Tool Works Inc. : *See—*
  - Poupitch, Ougljesa J. 3,183,762.
  - Poupitch, Ougljesa J. 3,184,148.
- Imhof, Herman A., to United Shoe Machinery Corp. Article stringing machine having a strand control gripper. 3,183,867, 5–18–65, Cl. 112—104.
- Immel, Ralph C. Valved bridging plug and method. 3,183,939, 5–18–65, Cl. 138—97.
- Imperial Chemical Industries Ltd. : *See—*
  - Baird, William, Batty, and Parkinson. 3,184,477.
  - Bevan, Morfydd A., and Mullan. 3,184,511.
- Imperial Machine Products Co. : *See—*
  - Baverstock, Richard. 3,184,295.
- Industrial Devices, Inc. : *See—*
  - Geen, Cory P. 3,184,175.
- Iners-Lee Co. : *See—*
  - Volckening, Lloyd I. 3,184,121.
- Inland Container Corp. : *See—*
  - Ridgeway, John D., Jr. 3,184,138.
- Insco Enterprises, Inc. : *See—*
  - Cohen, Max, and Elston. 3,184,134.
- Insley Mfg. Corp. : *See—*
  - Randall, Kenneth W., and Vos. 3,184,085.
- Insolio, Thomas A., to American-Saint Gobain Corp. Glass cutting machine. 3,183,747, 5–18–65, Cl. 83—12.
- International Business Machines Corp. : *See—*
  - Albosta, Chester A. 3,184,651.
  - Behnke, Floyd A. 3,184,717.
  - Buck, Robert D. 3,184,741.
  - Dill, Frederick H. 3,183,576.
  - Funk, Howard L., and Skarshinski. 3,184,685.
  - Garwin, Richard L. 3,184,674.
  - Grobin, Allen W., Jr. 3,184,303.
  - Haims, Murray J. 3,184,613.
  - Hellerman, Leo. 3,184,603.
  - Marinace, John C. 3,184,348.
  - Marinace, John C. 3,184,350.
  - Perkins, Norwood K. 3,184,719.
  - Riseman, Jacob, Christ, and Sankuer. 3,183,567.
  - Stuckert, Paul E. 3,184,715.
  - Taylor, Wilfred K. 3,184,711.
  - Thomas, Francis J. 3,184,539.
- International Telephone and Telegraph Corp. : *See—*
  - Atkins, Stuart R. 3,184,706.
- International Latex Corp. : *See—*
  - Kaspar, Peter D. 3,184,357.
- International Nickel Co., Inc., The : *See—*
  - Witherell, Charles E. 3,184,577.
- International Rectifier Corp. : *See—*
  - Diebold, Edward J. 3,184,646.
- International Standard Electric Corp. : *See—*
  - Myatt, Edward R. 3,184,563.
- International Stock Food Corp. : *See—*
  - Forest, Joseph G., and Czarnetzky. 3,184,314.
- International Telephone and Telegraph Corp. : *See—*
  - Ellis, Roger H. 3,184,701.
- Interstate Boochever Corp. : *See—*
  - Bartolucci, Edgar O. 3,184,073.
- L'Oreal : *See—*
  - Seemuller, John R. 3,184,387.
- L'Oreal, Societe Anonyme dite : *See—*
  - Kalopissis, Gregoire. 3,184,388.
- Irasek, Eugene H., to The National Cash Register Co. Random-access information storage device utilizing flexible rectangular magnetic strips. 3,184,724, 5–18–65, Cl. 340—174.1.
- Irikura, Tsutomu, K. Masuzawa, and K. Nishino. 1,4-bis-(2-methoxy-4-substituted-phenoxyacetyl) piperazines and method of making same. 3,184,463, 5–18–65, Cl. 260—268.
- Irish, Robert H. Intrusion detection system. 3,184,730, 5–18–65, Cl. 340—258.
- Isaac, Peter. Retractable airfoils and hydrofoils. 3,184,187, 5–18–65, Cl. 244—43.
- Ishimoto, Tokusaburo : *See—*
  - Fujishima, Shohei, and Ishimoto. 3,184,012.
- Ishizuka, Yoshio, Y. Taneda, and Y. Ohno, to Teijin Ltd. Process for purifying a-methyl glutamate N-carboxy anhydride. 3,184,469, 5–18–65, Cl. 260—307.
- Iverson, Marlowe L. : *See—*
  - Woods, William G., Iverson, and Kitasaki. 3,184,418.
- Jablonski, Edward R. : *See—*
  - Clark, Philip B., and Jablonski. 3,184,199.
- Jackman, Warren H., and R. H. Johanson, to Eastman Kodak Co. Method for slitting and splicing film. 3,184,356, 5–18–65, Cl. 156—159.
- Jackson, George R., to The De Havilland Aircraft of Canada Ltd. Dual purpose retractable undercarriage. 3,184,189, 5–18–65, Cl. 244—101.
- Jackson, Robert G., to Conch International Methane Ltd. Method of gasifying a liquid gas while producing mechanical energy. 3,183,666, 5–18–65, Cl. 60—38.
- Jackson, Winston J., Jr. : *See—*
  - Caldwell, John R., and Jackson. 3,184,435.
- Jacobs, James W., to General Motors Corp. Dry cleaning attachment for clothes washer. 3,183,689, 5–18–65, Cl. 68—23.
- Jacobs, Robert V., and M. L. Siegel, to Babyline Furniture Corp. Folding playpen. 3,183,528, 5–18–65, Cl. 5—99.
- Jacobsen, Julius E., to Allis-Chalmers Mfg. Co. Static control panel. 3:184,677, 5–18–65, Cl. 323—89.
- Jacobson, Edwin B., to Jervis Corp. Remote control for rear-view mirror. 3,183,736, 5–18–65, Cl. 74—501.
- Jacoby-Bender, Inc. : *See—*
  - Rodriguez, Emil. 3,183,660.
- Jaffe, Joseph : *See—*
  - Hart, Donald J., and Jaffe. 3,184,728.
- James, Donald R., to Brown Citrus Machinery Corp. Citrus juice extracting machine having means for separating juice and pulp from peel. 3,183,955, 5–18–65, Cl. 146—3.

- James, Donald R., to Citrus Equipment Corp. Apparatus for recovery of citrus peel oil. 3,183,825, 5–18–65, Cl. 100—98.
- Jaruzelski, John J., M. Kolobielski, and C. S. Sheppard, to United States Steel Corp. Polyvinyl chloride plasticized with epoxy containing monocarboxylic acid esters of cresols and xylenols. 3,184,425, 5–18–65, Cl. 260—30.4.
- Jaspert, William B. : *See—*
  - Agnew, Albert B. 3,183,625.
- Javes, John G. : *See—*
  - Schnable, George L., and Javes. 3,184,399.
- Jay, Robert W., to Continental Oil Co. Caliper surveying instrument. 3,183,600, 5–18–65, Cl. 33—178.
- Jefferson, Donald E. : *See—*
  - Chadha, Rajendra N., Jefferson, and Werber. 3,184,440.
- Jeffres, George E. Safe and locking mechanism. 3,183,863, 5–18–65, Cl. 109—59.
- Jekat, Walter K., to Worthington Corp. Induction circulators. 3,183,968, 5–18–65, Cl. 165—123.
- Jenkins Bros. : *See—*
  - Baskell, Raymond C. 3,183,587.
- Jenkins, Peter J., to Dunlop Rubber Co. Ltd. Pneumatic tire. 3,183,956, 5–18–65, Cl. 152—191.
- Jensen, Arthur J., to Texas Instruments Inc. Semiconductor device enclosure with weld reinforcing ring. 3,184,534, 5–18–65, Cl. 174—52.
- Jensen, Preben W., to American Machine & Foundry Co. Apparatus for separating lengths of can stock. 3,183,754, 5–18–65, Cl. 83—341.
- Jervis Corp. : *See—*
  - Jacobson, Edwin B. 3,183,736.
- Jessup, William R. : *See—*
  - Ryckman, William D., and Jessup. 3,184,564.
- Jierree, Lillian E. : *See—*
  - Jierree, Russell R. B. 3,183,608.
- Jierree, Russell R. B., deceased ; L. E. Jierree, special administratrix. Molecular model. 3,183,608, 5–18–65, Cl. 45—18.
- Johansen, Roy W. : *See—*
  - Heckenkamp, Edward B., Johansen, and Plate. 3,183,977.
- Johanson, Robert H. : *See—*
  - Jackman, Warren H., and Johanson. 3,184,356.
- Johnson, Charles B. : *See—*
  - Ealey, James C., and Ousley. 3,184,264.
- Johnson, Kenneth C. : *See—*
  - Trusock, George J., and Johnson. 3,183,989.
- Johnson, Ralph E., and F. R. Wiehl, to The Singer Co. Rotary saw blade with safety guard. 3,183,947, 5–18–65, Cl. 143—133.
- Johnson, Ronald V., to Waldorf Paper Products Co. Cushioning pad. 3,184,135, 5–18–65, Cl. 229—14.
- Johnson, Walter D. Air-operated stripper for molds. 3,183,551, 5–18–65, Cl. 18—2.
- Johnson, William E., and J. R. Lairson, to Hydra-Might Co. Percussion type rock drills. 3,183,668, 5–18–65, Cl. 60—51.
- Jolly, Carl H. Apparatus for making and dispensing sandwiches. 3,183,856, 5–18–65, Cl. 107—1.
- Jones, Edward J. : *See—*
  - Swanson, John W., Jones, and Mehltretter. 3,184,383.
- Jones, Homer E., to V. B. M. Jones. Manual record player. 3,184,241, 5–18–65, Cl. 274—14.
- Jones, Richard S., to Westland Aircraft Ltd. Composite vehicle for traveling over land and/or water. 3,183,988, 5–18–65, Cl. 180—7.
- Jones, Violet B. M. : *See—*
  - Jones, Homer E. 3,184,241.
- Jonsson, John P. I., to Lecab Rullbanon Aktiebolag. Arrangement in paternoster elevators. 3,184,032, 5–18–65, Cl. 198—27.
- Joormann, Hendrik J. M., G. Diemer, and H. A. Klasens, to North American Philips Co., Inc. Electroluminescent element with a nickel-iron base. 3,184,631, 5–18–65, Cl. 313—108.
- Jopperi, Matt U. Mason's line holder. 3,183,595, 5–18–65, Cl. 33—85.
- Jordan, Merrill E., to Cabot Corp. Method of producing carbon black. 3,184,290, 5–18–65, Cl. 23—209.4.
- Jordan, Russell E., and C. L. Taylor. Apparatus for recovering cotton which has fallen to the ground. 3,183,654, 5–18–65, Cl. 56—28.
- Joseph, Robert T. : *See—*
  - Work, Josiah, Joseph, and Blake. 3,184,293.
  - Work, Josiah, Joseph, and Blake. 3,184,397.
- Joy Mfg. Co. : *See—*
  - Zech, William A., and Kunderman. 3,184,153.
- Joyner, Frederick B. : *See—*
  - Coover, Harry W., Jr., and Joyner. 3,184,443.
- Jukes, Norman A., to Joseph Lucas (Industries) Ltd. Internal combustion engine ignition system with variable timing. 3,184,640, 5–18–65, Cl. 315—362.
- Junkers & Co. G.m.b.H. : *See—*
  - Haag, Franz. 3,183,895.
- Juras, Appy, to Union Carbide Corp. Metal fiber containing structures and method therefor. 3,184,368, 5–18–65, Cl. 161—157.
- Jutzi, Albrecht, to Lever Brothers Co. Insertable closures for containers. 3,184,125, 5–18–65, Cl. 222—479.
- Kaasenbrood, Petrus J. C., to Stamicarbon N.V. Crystallization of biuret from biuret-containing aqueous solutions saturated with urea. 3,184,508, 5–18–65, Cl. 260—555.
- Käch, Alfred, to Patelhold Patentverwertungs- & Elektro-Holding, A.G. Coaxial fed helical antenna with director disk between feed and helix producing endfire radiation towards the disk. 3,184,747, 5–18–65, Cl. 343—840.
- Kaden, Willy : *See—*
  - Kremp, Rudolf, and Kaden. 3,183,769.
- Kahler, Harry L., and J. K. Brown, to Betz Laboratories, Inc. Boiler composition and method. 3,184,407, 5–18–65, Cl. 210—58.
- Kaiser Aluminum & Chemical Corp. : *See—*
  - Parikh, Kanaiyalal N., and Van Dreser. 3,184,322.
- Kali-Chemie Aktiengesellschaft : *See—*
  - Koch, Gerhard, and Koepernik. 3,184,414.
- Kalopissis, Gregoire, to Societe Anonyme dite : l'Oreal. Process and product for artificially browning the skin. 3,184,388, 5–18–65, Cl. 167—90.
- Kaminaka, Hiroshi : *See—*
  - Maeda, Shozo, Yamori, and Kaminaka. 3,184,494.
- Kammerer, Manfred : *See—*
  - Schick, Hans, and Kammerer. 3,183,985.
- Kampf, Richard S., to Honeywell Inc. Recorder. 3,184,751, 5–18–65, Cl. 346—108.
- Kampf, Richard S. : *See—*
  - Mahoney, John P., and Kampf. 3,184,755.
- Kan, Yukiyoshi : *See—*
  - Nishioka, Kinichi, and Kan. 3,183,646.
- Kapany, Narinder S., D. F. Capellaro, and R. G. Ostensen, to SCM Corp. Illumination device. 3,183,815, 5–18–65, Cl. 95—73.
- Kaplan, Clifford F., to Foster Grant Co., Inc. Utility package. 3,184,059, 5–18–65, Cl. 206—80.
- Kaplan, David H., to Convertawings, Inc. Convertiplane with control mechanism. 3,184,181, 5–18–65, Cl. 244—7.
- Kapusta, John M., to Cutlas Tool and Mfg. Co. Vehicle locking hub 3,184,258, 5–18–65, Cl. 287—53.
- Karpus, John T., Jr., to PneumoDynamics Corp. Regulator valve. 3,183,932, 5–18–65, Cl. 137—614.19.
- Kaspar, Peter D., to International Latex Corp. Method of making laminated articles. 3,184,357, 5–18–65, Cl. 156—165.
- Kaynan, Martin. Process for forming a thermometer. 3,183,721, 5–18–65, Cl. 73—371.
- Kaywood Corp. : *See—*
  - Bury, Jack. 3,183,547.
- Keen, John R., to D. Napier & Son Ltd. De-icing. 3,183,975, 5–18–65, Cl. 107—135.22.
- Kelley, Kendal R., and R. Milheiser. Shaft grinding and resurfacing. 3,183,636, 5–18–65, Cl. 51—241.
- Kellogg Co. : *See—*
  - Doan, Charles A., and Lepley. 3,184,316.
- Kellogg, Paul T., to The Bendix Corp. Fastening device. 3,184,015, 5–18–65, Cl. 189—36.
- Kelsey-Hayes Co. : *See—*
  - Stelzer, William. 3,183,789.
- Kelvin & Hughes Ltd. : *See—*
  - Rankin, Alexander B. C., French, and Taylor. 3,183,709.
- Kendall Co., The : *See—*
  - Kennedy, William J., Jr. 3,183,578.
- Kennedy, William J., Jr., to The Kendall Co. Dampening roll cover and fabric therefor. 3,183,578, 5–18–65, Cl. 29—120.
- Kerekes, Zoltan E., to Foster Wheeler Corp. Submerged arc welding composition. 3,184,345, 5–18–65, Cl. 148—26.
- Keresztesy, John, to Universal Milling and Machinery Ltd. Mills. 3,184,170, 5–18–65, Cl. 241—73.
- Kern, Loyd R. : *See—*
  - Dunlap Henry F., and Kern. 3,183,655.
- Kershaw, Stanley S., Jr., to McGraw-Edison Co. Lightning arrester with a resilient seal between the gaps and resistive material. 3,184,634, 5–18–65, Cl. 315—36.
- Kershner, Osborn A., to Lambert Brake Corp. Brake structure. 3,184,003, 5–18–65, Cl. 188—73.
- Kersten, Johannes A. H., to Stichting Reactor Centrum Nederland. Fine control of a suspension nuclear reactor. 3,184,389, 5–18–65, Cl. 176—20.
- Kettner, Hans, to VEB Schrauben-und Nietewerke Tombach. Device for removing the burr from slotted bolt heads. 3,183 700, 5–18–65, Cl. 72—71.
- Keystone Camera Co., Inc. : *See—*
  - Vess, Albert, Phipps, and Hunerwadel. 3,183,814.
- Kidd, William E., Jr., to Coats & Clark Inc. Package. 3,184,057, 5–18–65, Cl. 206—78.
- Kienzle Apparate G.m.b.H. : *See—*
  - Martens, Gunter. 3,184,710.
  - Muller, Felix, and Helmschrott. 3,184,748.
- Killark Electric Mfg. Co. : *See—*
  - Zavertnik, Marshall G. 3,184,256.
- Kilmer, Earl E., and R. A. Montgomery, to United States of America, Navy. Valve with exploding diaphragm. 3,184,097, 5–18–65, Cl. 220—47.
- Kimberly-Clark Corp. : *See—*
  - Patterson, Lloyd D. 3,183,910.
  - Roehr, Walter G. 3,183 909.
- King, Bertell W. Dumping barge with pivoted side rails. 3,183,870, 5–18–65, Cl. 114—32.
- King, Ottis W. Cam operated valve. 3,184,214, 5–18–65, Cl. 251—229.
- Kingsley Gerald V. : *See—*
  - Christen, Earl W., Seeley, and Kingsley. 3,183,796.
- Kingsley, Mildred W. : *See—*
  - Christen, Earl W., Seeley, and Kingsley. 3,183,796.
- Kirchner, Franklin H. to Franklin Coffee Urn Corp. Coffee urn with cover having condensate drain extending therefrom. 3,183,905, 5–18–65, Cl. 126—383.
- Kirk, Walter B., to Westinghouse Air Brake Co. Brake cylinder assembly. 3,183,795, 5–18–65, Cl. 92—212.
- Kisor, Thaddeus W., to Radio Corp. of America. Packages for electronic and other components. 3,184,056, 5–18–65, Cl. 206—65.
- Kissa, Erik, to E. I. du Pont de Nemours and Co. Dye-pad, hot-chemical-treatment dyeing process. 3,184,284, 5–18–65, Cl. 8—54.2.
- Kitasaki Kiyoshi : *See—*
  - Woods, William G., Iverson, and Kitasaki. 3,184,418.
- Klasens, Hendrik A. : *See—*
  - Joormann, Hendrik J. M., Diemer, and Klasens. 3,184,631.
- Klaue, Hermann. Axially spreading brake of the sectional brake shoe and rotary casing type. 3,184,002, 5–18–65, Cl. 188—72.

Klauke, Erich : *See—*
Kunze, Heinrich, Bayer, Wehn, Siefken, and Klauke. 3,184,493.
Kleinlein, Werner : *See—*
Feld, Erich, Patzer, and Kleinlein. 3,184,168.
Kleinmann, Earl E. : *See—*
Alquist, Henry E., and Kleinmann. 3,183,940.
Kleinpeter, Edward W., to Ethyl Corp. Liquid displacement float switch. 3,184,566, 5–18–65, Cl. 200—112.
Kleinschmidt, Edward F., and J. A. Mankawich, to SCM Corp. Ribbon feed and reverse mechanism. 3,184,028, 5–18–65, Cl. 197—161.
Kleiss, Hendricus P., to Shell Oil Co. Suspended working platform unit. 3,183,997, 5–18–65, Cl. 182—82.
Klimstra, Paul D. : *See—*
Counsell, Raymond E., and Klimstra. 3,184,487.
Kline, Roger E., to Aerospace Components Corp. Static face-type floating seal. 3,184,246, 5–18–65, Cl. 277—168.
Klug, Eugene D., to Hercules Powder Co. Manufacture of polyolefin film. 3,184,526, 5–18–65 ,Cl. 264—175.
Knapsack-Griesheim Aktiengesellschaft : *See—*
Sennewald, Kurt, and Born. 3,184,514.
Knecht, John E., to Bathurst Containers Ltd. Method and means for removing the trim from sheets to form blanks. 3,184,129. 5–18–65, Cl. 225—2.
Knox, Lawrence H., to Syntex Corp. 5,10-methylene-19-nor and 5,10-seco-5,19-cyclo-10-fluoro-androstenes and pregnenes and processes for their preparation. 3,184,484, 5–18–65, Cl. 260—397.3.
Knox, Lawrence H., to Syntex Corp. 5,10-methylene-19-nor-androstanes, -androstenes and -androstadienes. 3,184,485, 5–18–65, Cl. 260—397.4.
Kob, Elisabeth : *See—*
Sauer, Hubert, and Kob. 3,184,521.
Koch, Gerhard, and K. Koepernik, to Kali-Chemie Aktiengesellschaft. Catalyst carrier and method of preparation thereof. 3,184,414, 5–18–65, Cl. 252—455.
Koch, H., & Sons : *See—*
Gaylord, John A. 3,183,568.
Koepernik, Karl-Herman : *See—*
Koch, Gerhard, and Koepernik. 3,184,414.
Koester, Charles J., to American Optical Co. Polarization analyzers for optical systems employing polarized light. 3,183,763, 5–18–65, Cl. 88—14.
Kohanzo, Kenneth J. Spout for cans. 3,184,107, 5–18–65, Cl. 222—49.
Kolb, Robert H., and T. R. Reinhart, to Shell Oil Co. Drill string transmission circuit. 3,184,698, 5–18–65, Cl. 339—16.
Kolobielski, Marjan : *See—*
Jaruzelski, John J., Kolobielski, and Sheppard. 3,184,-425.
Kondo, Seiji, R. Nishikawa, and M. Yoshida, to Toyoda Automatic Loom Works, Ltd. Shuttle box changing apparatus in an automatic loom. 3,183,942, 5–18–65, Cl. 139—171.
Koninklijke Nederlandsche Papierfabriek N.V. : *See—*
Elfers, Hendrikus W. 3,183,844.
Kopaska, Arnold F. Farm implement-lift apparatus. 3,183,-982, 5–18–65, Cl. 172—624.
Koppel, Harold H. : *See—*
Brewster, Jerome B., and Koppel. 3,184,611.
Korsgren, Theodore Y., Sr. Heat engine. 3,183,662, 5–18–65, Cl. 60—24.
Kosonocky, Walter F., and L. S. Onyshkevych, to Radio Corp. of America. Switching systems. 3,184,601, 5–18–65, Cl. 307—88.
Koster, Robert A., to The Bunker-Ramo Corp. Apparatus for exposing photosensitive material. 3,184,753, 5–18–65, Cl. 346—110.
Kotowick, Joseph L. Collapsible carton. 3,184,143, 5–18–65, Cl. 229—28.
Kozlowski, Robert H., N. J. Paterson, and J. W. Scott, Jr., to California Research Corp. Hydrocracking process. 3,184,402, 5–18–65, Cl. 208—59.
Krane, Herbert G. : *See—*
Sanders, William W., Krane, and Pansing. 3,184,518.
Krause, Richard : *See—*
Terlecky, Boris, and Krause. 3,183,853.
Kreidich, John, to The Hedman Co. Check writing machine. 3,183,829, 5–18–65, Cl. 101—19.
Kremp, Rudolf, and W. Kaden, to Agfa Aktiengesellschaft. Automatic light compensating structure for photographic projectors. 3,183,769, 5–18–65, Cl. 88—24.
Kritske, Victor J., to Mayline Co., Inc. Tiltable table and locking mechanism. 3,183,860, 5–18–65, Cl. 108—2.
Kronhaus, Semen M. Ship preserver means. 3,183,876, 5–18–65, Cl. 114—229.
Krulwich, Lester S. Telephone attachments. 3,184,548, 5–18–65, Cl. 179—148.
Krumm, Richard L. : *See—*
Schwarz, Paul A., and Krumm. 3,184,161.
Kruse, Jurgen M. :*See—*
Huntley, Earl B., Kruse, and Way. 3,184,415.
Kuehne, Richard O. : *See—*
Gilman, Wayne C., and Kuehne. 3,184,047.
Kuehne, Walter, to Texas Instruments Inc. Multi-phase signal processor for light line optical correlator. 3,184,679, 5–18–65, Cl. 324—77.
Kufert, Larry, to The Bendix Corp. Altitude selector system for automatic pilot. 3,184,667, 5–18–65, Cl. 318—489.
Kuhlman, Richard, to Radio Corp. of America. Package. 3,184,054, 5–18–65, Cl. 206—56.
Kühnle, Paul, to Fr. Hesser Maschinenfabrik-Aktiengesellschaft. Machine for manufacturing bag packages. 3,183,798, 5–18–65, Cl. 93—8.
Kull, Albert R., to The Ajax Mfg. Co. Automatic transfer mechanism for forging machines. 3,183,532, 5–18–65, Cl. 10—12.
Kull, Albert R., to The Ajax Mfg. Co. Stock feed mechanism for forging machines. 3,183,533, 5–18–65, Cl. 10—12.
Kunderman, Fred K. : *See—*
Zech, William A., and Kunderman. 3,184,153.
Kuntzmann, Paul L. E., to Compagnie des Transmissions Seine-Doubs-Isere. Toothed wheel. 3,183,734, 5–18–65, Cl. 74—434.
Kunze, Heinrich, O. Bayer, J. Wehn, W. Siefken, and E. Klauke, to Farbenfabriken Bayer Aktiengesellschaft. Preparation of polyisocyanates. 3,184,493, 5–18–65, Cl. 260—453.
Kurashiki Rayon Co. Ltd. : *See—*
Nichioka, Kinichi, and Kan. 3,183,646.
Kuris, Arthur : *See—*
Balamuth, Lewis, and Kuris. 3,184,353.
Kury, Josef, to J. Bobst and Son S.A. Device ensuring the immobilization in registered working position of bars conveying sheet material in a platen press. 3,183,827, 5–18–65, Cl. 100—215.
Kurz, Karl F., to Sawyers, Inc. Slide projector having reciprocating slide carrier. 3,183,774, 5–18–65, Cl. 88—28.
Lacoppola, Peter : *See—*
Smith, Arthur, Lacoppola, and Dougherty. 3,184,016.
Lafont, Pierre, and M. Thiers, to Rhone-Poulenc S.A. Preparation of 1-halomercuri-2-alkoxy-cyclododeca-5,9-cis, trans-diene. 3,184,491, 5–18–65, Cl. 260—431.
Lagerdahl, Sebastian, to Aktiebolaget Svenska Flaktfabriken. Arrangement in rapping mechanisms for emission electrodes in electrical precipitators. 3,183,648, 5–18–65, Cl. 55—112.
Lairson, Jerry R. : *See—*
Johnson, William E., and Lairson. 3,183,668.
Lamb, Charles P., and W. A. Dudley, to Merla Tool Corp. Gas lift valve. 3,183,922, 5–18–65, Cl. 137—155.
Lambert Brake Corp. : *See—*
Kershner, Osborn A. 3,184,003.
Lanctot, Donald H., deceased ; J. Lanctot, executrix, to Lantronics, Inc. Liquid displacement electric circuit forming device. 3,184,693, 5–18–65, Cl. 333—24.
Lanctot, Jeanette : *See—*
Lanctot, Donald H. 3,184,693.
Landis Tool Co. : *See—*
Price, Ralph E., and Tolbert. 3,183,631.
Lang, Franz. Cleaning filter surfaces. 3,183,647, 5–18–65, Cl. 55—96.
Lang, Karl F. : *See—*
Schumacher, Richard, Lang, and Tengler. 3,184,398.
Langston, Samuel M., Co. : *See—*
Weber, Hanspeter. 3,184,229.
Lantronics, Inc. : *See—*
Lanctot, Donald H. 3,184,693.
Larkin, Wallace K., to Pacific Plantronics, Inc. Miniature headset-microphone adapted for use with a mask. 3,184,556, 5–18–65, Cl. 179—156.
Larson, Robert W., to Beloit Corp. Resiliently contractable cutter head for delimbing trees. 3,183,949, 5–18–65, Cl. 144—2.
Larson, Robert W., to Beloit Corp. Cutter head assemblage for impact shearing of tree limbs. 3,183,951, 5–18–65, Cl. 144—3.
Larson, Robert W., to Beloit Corp. Cammed blade cutter for delimbing trees. 3,183,952, 5–18–65, Cl. 144—3.
Larson, Robert W., to Beloit Corp. Shears. 3,183,954, 5–18–65, Cl. 144—34.
Larter, Raymond B. Echelon sorter. 3,184,067, 5–18–65, Cl. 211—10.
Laskin, Allen I. : *See—*
Diassi, Patrick A., and Laskin. 3,184,450.
Diassi, Patrick A., and Laskin. 3,184,451.
Latour, Andre, to Etablissements Merlin & Gerin. Laminated electrical contact assembly. 3,184,573, 5–18–65, Cl. 200—166.
Lawrence, Stanley L., to Massey-Ferguson Inc. Hay wafering method and apparatus. 3,183,857, 5–18–65, Cl. 107—14.
Lawrence, Stanley L., to Massey-Ferguson Inc. Hay wafering method and apparatus. 3,183,858, 5–18–65, Cl. 107—14.
Leach Corp. : *See—*
Blakistone, James T., and Burdorf. 3,184,132.
Le Brise, Raymond, to Societe Anonyme Francaise du Ferodo. Hydraulic coupling having communicating clutch and pressure chambers. 3,184,019, 5–18–65, Cl. 192—3.2.
Lecab Rullbanon Aktiebolag : *See—*
Jonsson, John P. I. 3,184,032.
Ledig, Kurt W. : *See—*
Wendt, Gerhard R., and Ledig. 3,184,486.
Wendt, Gerhard R., and Ledig. 3,184,488.
Lee, Charles M., R. E. Gunther, and H. Nerwin, to Eastman Kodak Co. Automatic exposure control for photographic cameras. 3,184,652, 5–18–65, Cl. 317—157.
Lee, Mark W. : *See—*
Quijada, Louis. 3,184,587.
Lee, Robert J., and A. Becker, Jr., to Standard Oil Co. Alkylation process for preparing propylbenzenes. 3,184,517, 5–18–65, Cl. 260—671.
Legge, George D., to General Motors Corp. Holding means for a movable operating member. 3,183,740, 5–18–65, Cl. 74—545.
Legler, Ernst, and H. Förster, to Fernseh G.m.b.H. Synchronizing system pickups with television intercommunication provided by phase modulation of reference pulses. 3,184,545, 5–18–65, Cl. 178—69.5.
Leibowitz, Donald, A. E. Meixner, and S. Gruber, to General Precision Inc. Solid state sine-cosine source. 3,184,620, 5–18–65, Cl. 310—2.
Leidich, Edwin E. : *See—*
Brown, Donald R., Campbell, Leidich, and Wagner. 3,184,648.
Lemin, Alan J., A. Steinhards, and G. A. Boyack, to The Upjohn Co. Composition and method for promoting growth and protecting plants from damage by parasitic pathogens. 3,184,300, 5–18–65, Cl. 71—2.6.
Lepetit S.p.A. : *See—*
Nicolaus, Bruno J. R., and Testa. 3,184,500.

Lepley, Winfred D. : *See—*
Doan, Charles A., and Lepley. 3.184,316.
LeTourneau, Robert G. Fork lift type material handling machine with a laterally adjustable frame. 3,184,089, 5–18–65, Cl. 214—730.
LeTourneau, Robert G. Earth working scraper having power means disposed between front and rear load carrying bowls. 3,183,609, 5–18–65, Cl. 37—127.
LeTourneau, Robert G. Mobile sea platform. 3,183,676. 5–18–65, Cl. 61—46.5.
LeTourneau, Robert G. Earth compacting machine. 3,183,-804, 5–18–65, Cl. 94—50.
Letzer, Edward K., to Eastman Kodak Co. Method and apparatus for making color prints. 3,184,307, 5–18–65, Cl. 96—23.
Leutwyler, Kurt, to Baker Oil Tools, Inc. Seal ring extrusion preventing device. 3,184,247, 5–18–65, Cl. 277—170.
Lever Brothers Co. : *See—*
Jutzi, Albrecht. 3,184,125.
Levin, Walter E., to Edwards Co., Inc. Bell striker assembly. 3,184,622, 5–18–65, Cl. 310—30.
Levy, Joseph, to Universal Oil Products Co. N-alkoxy-β-phenylethylamines and β-hydroxy-β-phenylethylamines. 3,184,510, 5–18–65, Cl. 260—570.6.
Levy, Maurice M. Apparatus and method for sorting flat articles. 3,184,061, 5–18–65, Cl. 209—72.
Liberty National Bank and Trust Co. : *See—*
Mould, Harry W., Jr. 3,184,221.
Lichtenfels, Ira W. : *See—*
Cunningham, Clarence V., and Lichtenfels. 3,184,664.
Liechti, Peter : *See—*
Siegrist, Adolf E., Guglielmetti, Maeder, and Liechti. 3,184,468.
Lilly, Eli, and Co. : *See—*
Ploch, Richard P. 3,184,509.
Lindlaw, William, to The Baker Castor Oil Co. Suspension of pigments and other particles. 3,184,323, 5–18–65, Cl. 106—268.
Lindner, Ernst : *See—*
Hennig, Ingeborg, and Lindner. 3,184,466.
Linnell, James E. : *See—*
Fisher, Donald M., and Linnell. 3,183,830.
Lissac, Georges H. E. Apparatus for the assembly of ophthalmic lenses in spectacle frames. 3,184,359, 5–18–65, Cl. 156—349.
Lister Concrete Products and Ornamental Iron : *See—*
Lister, Glenn F. 3.183,581.
Lister, Glenn F., to Lister Concrete Products and Ornamental Iron. Leveling device. 3 183 581, 5–18–65. Cl. 29—200.
Litsky, Leonard A., and J. D. Skelly, to The Fafnir Bearing Co. Apparatus for bonding an annular liner to a bearing ring. 3,184,362, 5–18–65, Cl. 156—423.
Little, Jack M., to Spiro Vlahandreas. Decorative design carving machine. 3,183,780. 5–18–65, Cl. 90—13.2.
Littlepage, Clarence R., Jr., and J. V. Semon, to Texas Instruments Inc. Semiconductor device and header combination. 3.184,658. 5–18–65, Cl. 317—234.
Livingston, Warren P. : *See—*
Nyman, William F., Mason, Noonan, Niederauer, and Livingston. 3 183,770.
Loderhose, Richard E. Container. 3,183,614, 5–18–65, Cl. 40—312.
Loeser, Theodore S., to Union Carbide Corp. System for admixing and discharging particulate material. 3,184,112, 5–18–65, Cl. 222—136.
Logetronics Inc. : *See—*
Takasaka, Tomoyoshi, and Nagayama. 3.183,766.
Loosli, Stanley, ½ each, to H. A. Huebner, and R. M. Worrel. Material handling apparatus. 3,184,029, 5–18–65, Cl. 198—9.
Lord, John M. : *See—*
Lychyk, George S., Lord, and Neese. 3,184,656.
Lorenz, Anton : *See—*
Schliephacke, Fridtjof F. 3,184,266.
Love, Gordon W. Combined self-locking sash balance and sash guide device. 3,183,559, 5–18–65, Cl. 20—52.2.
Lovell, Ernest E., to The Delman Co. Reciprocating valve assembly. 3,184,216, 5–18–65, Cl. 251—347.
Lovett, William G. : *See—*
Gates, John W., Jr., Lovett, and Miller. 3,184.312.
Lowe, Warren, to California Research Corp. Lubricants for reducing corrosion. 3,184,411, 5–18–65, Cl. 252—46.7.
Lowe, Warren, and F. A. Stuart, to California Research Corp. Lubricants inhibited against oxidation. 3,184,412, 5–18–65, Cl. 252—46.7.
Lowell Mfg. Co. : *See—*
Hammes, Josef J., and Bickel. 3,184,586.
Lox-All Sales Corp. : *See—*
Smith, William G. 3,183,628.
Lucas Joseph, (Industries) Ltd. : *See—*
Freeman, Frank G. 3,183,741.
Jukes, Norman A. 3,184,640.
Skinner, Robert T. J. 3,183,846.
Wright, Maurice J. 3.184 665.
Ludwig, Herbert. Apparatus for intermittently moving a series of items in an endless path. 3,194,030, 5–18–65, Cl. 198—24.
Luenberger, Frederick O., to Emerson Electric Co. Eddy current clutch and power supply therefor. 3,184,626, 5–18–65, Cl. 310—96.
Lukes, George E., and T. P. Williamson, to Stauffer Chemical Co Method of controlling microorganisms. 3,184,379, 5–18–65. Cl. 167—32.
Luketa, Frank J. Trough for trawlers. 3,184.080, 5–18–65, Cl. 214—15.
Luks, Daniel W., to Frenchtown Porcelain Co. Ceramic process and product. 3,184,370, 5-18–65, Cl. 161—193.
Lull, Le Grand H. High lift mobile loader. 3,184,086, 5–18–65, Cl. 214—140.
Lundberg, Richard L. : *See—*
Hague, John D., and Lundberg. 3,184,738.
Lutz, Hans G., and W. G. Menzel. Food ice freezer for dispensing food ice in portions out of a freezing container kept under pressure. 3,183,681, 5–18–65, Cl. 62—135.
Lychyk, George S., J. M. Lord, and W. E. Neese, to Automatic Electric Laboratories, Inc. Relay armature bearing assembly. 3,184,656, 5–18–65, Cl. 317—197.
Lynes, Inc. : *See—*
Conover, George E. 3,183,840.
Lyon, Newton E., to Lyon Useful Device Co. Fluid level indicator. 3,183,716, 5–18–65, Cl. 73—323.
Lyon Useful Device Co. : *See—*
Lyon, Newton E. 3,183,716.
Lytle, Robert I., G. P. Moran, and W. D. Stevens, to Foster Wheeler Corp. Separating heater. 3,183,896, 5–18–65, Cl. 122—406.
MacDonald, Clyde E. Cordless electric device and recharging stand therefor. 3,183,891, 5–18–65, Cl. 120—36.
MacGregor, Rob R. : *See—*
Moore, William P., Jr., and MacGregor. 3,184,513.
Mack Trucks, Inc. : *See—*
Mintz, Gerald E. 3,184,262.
Macklem, F Sutherland. Gated control for power circuit. 3,184,675, 5–18–65, Cl. 323—50.
MacMillan, James C., and R. L. Schmidt, to Deere & Co. Tree harvester. 3,183,953, 5–18–65, Cl. 144—34.
Macrander, Max S., to Automatic Electric Laboratories, Inc. Electronic switching network. 3,184,552, 5–18–65, Cl. 179—18.
Maeda, Shozo, K. Yamori, and H. Kaminaka, to Sumitomo Chemical Co., Ltd. Process for producing organic isocyanates. 3,184,494, 5–18–65, Cl. 260—453.
Maeder, Erwin : *See—*
Siegrist, Adolf E., Guglielmetti, Maeder, and Liechti. 3,184,468.
Maehl, Elmore F. : *See—*
Harris, Meade C., and Maehl. 3,184,317.
Maehl, Eunice : *See—*
Harris, Meade C., and Maehl. 3,184,317.
Magat, Eugene E., to E. I. du Pont de Nemours and Co. Polycarbonamides of improved dye affinity having the benzene sulfonic acid salt moiety as an integral part of the polymer chain. 3,184,436, 5–18–65, Cl. 260—78.
Magnus, Agatha C. Apparatus for the treatment of substances with ultrasonic vibrations and electromagnetic radiations. 3,184,400, 5–18–65, Cl. 204—193.
Mahaska Industries, Inc. : *See—*
Brackett, Donald L. 3,184,109.
Mahon, John V. : *See—*
Chidsey, Francis A., Jr., and Mahon. 3,184,103.
Mahoney, John P., and R. S. Kampf, to Honeywell Inc. Recording apparatus. 3,184,755, 5–18–65, Cl. 346—136.
Mahr, William H. : *See—*
McCadam, Maurice B. 3,184,318.
Major, Beverly C. Apparatus for picking up and lowering a pilot at sea. 3,183,998. 5–18–65, Cl. 182—93.
Malm, Curtis L., to Paper Mate Mfg. Co. Project-retract mechanism for a ball-point writing instrument. 3,183,892, 5–18–65, Cl. 120—42.03.
Mancuso, Arlon, to Illikon Corp. Blow-pipe for farbricating plastic resin articles. 3,184,167, 5–18–65, Cl. 239—590.
Mankawich, Joseph A. : *See—*
Kleinschmidt, Edward F., and Mankawich. 3,184,028.
Manning, Thomas J., Jr., to Thiokol Chemical Corp. Tool for removing defects from the propellant grain of a solid propellant rocket motor. 3,183,592, 5–18–65, Cl. 30—169.
Manson, Andrew J. : *See—*
Clinton, Raymond O., and Manson. 3,184,456.
Manufacture de Produits Pharmaceutiques A. Christiaens Societe Anonyme : *See—*
Hupin, Christian A. 3,184,383.
Marcatili, Enrique A. J., and D. H. Ring, to Bell Telephone Laboratories, Inc. Branching hybrid coupler network useful for broadband power-dividing, duplexing and frequency separation. 3,184,691, 5–18–65, Cl. 333—11.
Marcucci, Richard, and I. C. Rainey, to Capps & Co., Inc. Recording stylus. 3,184,242, 5–18–65, Cl. 274—38.
Mariance, John C., to International Business Machines Corp. Method for controlling doping in vapor-grown semiconductor bodies. 3,183,348, 5–18–65, Cl. 148—174.
Marinace, John C., to International Business Machines Corp. Fluorocarbon compound used in masking of epitaxial growth of semiconductors by vapor deposition. 3,184,350, 5–18–65, Cl. 148—175.
Marine Moisture Control Co., Inc. : *See—*
Gravert, William H. 3,184,099.
Marino, Frank J., to L. Marino, Inc. Cargo loading tent. 3,183,916, 5–18–65, Cl. 135—6.
Marino, L., Inc. : *See—*
Marino, Frank J. 3.183,916.
Marmor, Adrian, and W. E. Colburn, to Brewer Pharmacal Engineering Corp. Bed and cylinder tape printing machine. 3,183,834, 5–18–65, Cl. 101—260.
Marsh, Hugh R. W. : *See—*
Wilshin, Frank W., Brown, and Marsh. 3.183,748.
Marshall, Thomas S., to The Garrard Engineering & Mfg. Co. Ltd. Stereophonic electrostatic pick-up. 3,184,555, 5–18–65 ,Cl. 179—100.41.
Martel, Bob E. : *See—*
Chapman, Aubrey I., Jr., and Martel. 3,184,735.
Martel, Jacques : *See—*
Muller, Georges, and Martel. 3,184,504.
Martens, Gunter, to Kienzle Apparate G.m.b.H. Method and arrangement for checking the operative condition of a contact matrix. 3,184,710, 5–18–65, Cl. 340—146.1.
Marti, Frederic, and G. Braunschweig. Miniature electric motor. 3,184,623, 5–18–65, Cl. 310—36.

Martin, Henry, and H. Aebi, to Ciba Ltd. Method for destroying weeds. 3,184,301, 5–18–65, Cl. 71—2.6.
Martin, John J., to Highway Trailer Industries, Inc. Bogie equalizer lock mechanism. 3,184,251, 5–18–65, Cl. 280—104.5.
Martin, Tellis A., and C. W. Waller, to Mead Johnson & Co. Process for the N-monoacylation of cysteine. 3,184,505, 5–18–65, Cl. 260—534.
Mason, Robert P.: *See*—
    Nyman, William F., Jr., Mason, Noonan, Niederauer, and Livingston. 3,183,770.
Mason, Raymono J., and R. C. Cowgill, to Minarik Electric Co. SCR power supply for motor speed control system. 3,184,672, 5–18–65, Cl. 318—345.
Mass Transfer, Inc.: *See*—
    Teller, Aaron J. 3,183,645.
    Teller, Aaron J. 3,183,649.
Massa, Dominick A.: *See*—
    Carlson, Joseph A., and Massa. 3,184,543.
Massachusetts Institute of Technology: *See*—
    Gilinson, Philip J., Jr. 3,184,271.
Massey-Ferguson Inc.: *See*—
    Lawrence, Stanley L. 3,183,857.
    Lawrence, Stanley L. 3,183,858.
    Peterson, Merle H. 3,183,859.
Masson Scott & Co. Ltd.: *See*—
    Wilshin, Frank W., Brown, and Marsh. 3,183,748.
Masuzawa, Kuniyosi: *See*—
    Irikura, Tsutomu, Masuzawa, and Nishino. 3,184,463.
Matsui, Kenichi: *See*—
    Tsunoda, Yoshio, Taneda, Akamatsu, and Matsui. 3,184,281.
Matter, Erich, to Ciba Ltd. Process for the preparation of 2:5-furandicarboxylic acid. 3,184,479, 5–18–65, Cl. 260—347.3.
Matthew, Jack L., and A. Punturi. Bridges for stringed instruments. 3,183,758, 5–18–65, Cl. 84—307.
Matz, Allen S., to Teleflex Inc. Expansion compensated control system. 3,183,737, 5–18–65, Cl. 74—501.5.
May, Claude H., and K. H. Rhodes, to Walker Mfg. Co. Air compressor. 3,184,154, 5–18–65, Cl. 230—137.
May, Robert F., and D. L. Dart, to Chrysler Corp. Pulsed thrust velocity control of a projectile. 3,184,182, 5–18–65, Cl. 244—14.
Mayline Co., Inc.: *See*—
    Kritske, Victor J. 3,183,860.
Mayo, Howard A., Jr.: *See*—
    Hochwalt, George C., and Mayo. 3,184,218.
McAusland, Robert R. Boot carrying and warp preventing device. 3,183,535, 5–18–65, Cl. 12—120.5.
McCadam, Maurice B., 50% to C. M. Cunningham, and 2½% to W. H. Mahr. Process for the production of a granular cheese product. 3,184,318, 5–18–65, Cl. 99—115.
McCardell, Willard B., to Michigan Tool Co. Locating fixture. 3,183,697, 5–18–65, Cl. 72—88.
McCleery, Robert N., to The Delman Co. Differential fluid pressure motors. 3,183,793, 5–18–65, Cl. 92—48.
McConnell, Wayne V., and W. H. Moore, to Eastman Kodak Co. Process for preparing esters of 2,2,4,4-tetramethyltetrahydro-3-furanol. 3,184,480, 5–18–65, Cl. 260—347.4.
McCormick, Maurice D. Rotary vane thermostat. 3,184,164, 5–18–65, Cl. 236—34.
McCreight, Donald O., and A. L. Renkey, to Harbison-Walker Refractories Co. Refractory monolith of preformed grain and dead burned magnesite. 3,184,531, 5–18–65, Cl. 13—35.
McCrink, Joseph J. Brush head and handle lock. 3,183,540, 5–18–65, Cl. 15—145.
McDonnell, Thomas M. Swivel bracket. 3,184,200, 5–18–65, Cl. 248—240.
McEver, James W., and W. K. Godfrey, to Shell Oil Co. Prestressing a pipe string in a well cementing method. 3,183,971, 5–18–65, Cl. 166—21.
McGraw-Edison Co.: *See*—
    Clark, Philip B., and Jablonski. 3,184,199.
    Kershaw, Stanley S., Jr. 3,184,634.
McGuire, George E., to Systems, Inc. Apparatus for controlling, scavenging and reclaiming waste hydraulic fluid. 3,183,669, 5–18–65, Cl. 60—52.
McKee, Arthur G., & Co.: *See*—
    Greaves, Melvin J., Babb, and Dicks. 3,184,037.
McKewan, Arthur J., to G.K.N. Screw & Fasteners Ltd. Method of forming a screw with cutting edges. 3,183,531, 5–18–65, Cl. 10—10.
McLaren, Robert J. Combined plug receptacle and circuit overload protective device. 3,184,569, 5–18–65, Cl. 200—121.
McLaughlin, Clayton H. Hatch cover assembly. 3,183,872, 5–18–65, Cl. 114—201.
McQuillen, Edward J., to United States of America, Navy. Mechanical rotary acceleration sensor. 3,183,724, 5–18–65, Cl. 73—514.
McSkimming, James H.: *See*—
    Brisbin, Richard F., and McSkimming. 3,184,243.
Meacham, Larned A., and F. West, to Bell Telephone Laboratories, Inc. Subscriber calling apparatus. 3,184,554, 5–18–65, Cl. 179—84.
Mead Corp., The: *See*—
    Arledter, Hanns F. 3,184,373.
Mead Johnson & Co.: *See*—
    Martin, Tellis A., and Waller. 3,184,505.
    Scarborough, Homer C., Wu, and Feldkamp. 3,184,462.
Medley, Robert L., Jr. Work handling system. 3,184,078, 5–18–65, Cl. 214—1.
Mehltretter, Charles L.: *See*—
    Swanson, John W., Jones, and Mehltretter. 3,184,333.
Meixner, Arthur E.: *See*—
    Leibowitz, Donald, Meixner, and Gruber. 3,184,620.
Melvin, Edmund W. Bottle support. 3,184,193, 5–18–65, Cl. 248—106.
Melvin, James M., to Monticello Mfg. Corp. Foldable display device. 3,183,862, 5–18–65, Cl. 108—144.
Mencimer, Floyd R.: *See*—
    Ashmead, Harvey, and Mencimer. 3,184,381.
Menell, Hans: *See*—
    Nädler, Heinrich, and Menell. 3,184,360.
Menzel, Waldemar G.: *See*—
    Lutz, Hans G., and Menzel. 3,183,681.
Merck & Co., Inc.: *See*—
    Bolhofer, William A. 3,184,498.
    Bush, Vannevar, and Hastings. 3,183,907.
Mercury International Insurance Underwriters: *See*—
    Hoobler, Ernest S. 3,184,026.
Mergler, Harry W., to The Warner & Swasey Co. Plural pulse responsive motor synchronizing control system with uniform pulse spacing. 3,184,663, 5–18–65, Cl. 318—39.
Merlauz, Michel, and M. L. Combier, to Mines Domaniales de Potasse d'Alsace. Support units especially for mine roof. 3,184,206, 5–18–65, Cl. 248—357.
Merla Tool Corp.: *See*—
    Lamb, Charles P., and Dudley. 3,183,922.
Merlin & Gerin, Establissements: *See*—
    Latour, Andre. 3,184,573.
Merrick Scale Mfg. Co.: *See*—
    Wojcik, Matthew H. 3,184,641.
Merriman, Peter, to Dunlop Rubber Co. Ltd. Method for the production of polyurethane foamed material. 3,184,419, 5–18–65, Cl. 260—2.5.
Merritt, Marvin D.: *See*—
    Wagner, Henry A., Merritt, and Bokmuller. 3,184,328.
Meshberg, Philip. Aerosol dispensing package. 3,184,115, 5–18–65, Cl. 222—156.
Metalines, Inc.: *See*—
    Schmitt, Dale A. 3,183,626.
Mettenleiter, Michael W., P. R. Borchardt, and W Dindial. Heat exchange unit. 3,183,967, 5–18–65, Cl. 165—83.
Meuer, Donal A., to The National Cash Register Co. Semipermanent information-store devices. 3,184,720, 5–18–65, Cl. 340—174.
Mews, Günter. Multiple rool tape dispenser with receptacle. 3,183,752, 5–18–65, Cl. 83—167.
Meyer, Ree V., to Midwest Rubber Reclaiming Co. Retarding the increase in viscosity of reclaimed rubber with sodium nitrite. 3 184,422, 5–18–65, Cl. 260—2.3.
Meyrat, Lucien, to Meyrat & Luisoni. Apparatus for lapping chains. 3,183,781, 5–18–65, Cl. 90—19.
Meyrat & Luisoni: *See*—
    Meyrat, Lucien. 3,183,781.
Miami Margarine Co., The: *See*—
    Fritsche, Richard K. 3,184,319.
Michael, Harold J., to North American Aviation, Inc. Ceramic protective coating compositon. 3,184,320, 5–18–65, Cl. 106—48.
Michel, Adolf. Reeds for application in musical instruments particularly in electronic musical instruments. 3,183,760, 5–18–65, Cl. 84—408.
Michel, Rudolph, to United States of America, Atomic Energy Commission. Expansion joint. 3,183,936, 5–18–65, Cl. 137—802.
Michels, Josephus F.: *See*—
    Akkerman, Antony M., and Michels. 3,184,460.
Michigan Tool Co.: *See*—
    Decker, John W. 3,183,633.
    McCardell, Willard B. 3,183,697.
Midwest Rubber Reclaiming Co.: *See*—
    Meyer, Ree V. 3,184,422.
Miessner, Benjamin F., to Miessner Inventions, Inc. Alarm system. 3,184,727. 5–18–65, Cl. 340—227.
Miessner, Benjamin F., to Miessner Inventions, Inc. Fountain pen. 3,183,893, 5–18–65, Cl. 120—48.
Miessner Inventions, Inc.: *See*—
    Miessner, Benjamin F. 3,184,727.
    Miessner, Benjamin F. 3,183,893.
Milette, Kenneth A.: *See*—
    O'Brien, Robert F., and Milette. 3,183,525.
Milheiser, Reginald: *See*—
    Kelley, Kendal R., and Milheiser. 3,183,636.
Miller, James F., to Radio Corp. of America. Method of manufacturing electron discharge devices. 3,184,278, 5–18–65, Cl. 316—19.
Miller, Leonard: *See*—
    Sampson, Ralph L., Ruttenberg, and Miller. 3,184,064.
Miller, Paul E.: *See*—
    Gates, John W., Lovett, and Miller. 3,184,312.
Mills, John A. Machines having a movable work or tool supporting table. 3,183,782, 5–18–65, Cl. 90—58.
Mills, Peter D.: *See*—
    Davies, Raymond J., and Mills. 3,183,935.
Minarik Electric Co.: *See*—
    Mason, Raymond J., and Cowgill. 3,184,672.
Minear, Lester. Pressurized dispenser assembly. 3,184,114, 5–18–65, Cl. 222—146.
Miner, George K. Cam-operated valve. 3,183,934, 5–18–65, Cl. 137—625.27.
Mines Domaniales de Potasse d'Alsace: *See*—
    Merlaux, Michel, and Combier. 3,184,206.
Minnesota Mining and Mfg. Co.: *See*—
    Brandt, Glendon R. 3,183,554.
    Brandt, Glendon R. 3,184,525.
    Davis, Horace R. 3,184,481.
    Wingfield, Harold T., and Oiye. 3,184,476.
Minsk, Louis M., and H. L. Cohen, to Eastman Kodak Co. Non-light sensitive dye transfer receiving blanks and method of using them. 3,184,309, 5–18–65, Cl. 96—29.
Minster Machine Co., The: *See*—
    Clements, Albert. 3,183,828.
Mintz, Gerald E., to Mack Trucks, Inc. Cab mounting device. 3,184,262, 5–18–65, Cl. 296—35.
Mission Industries: *See*—
    Van Dusen, Laurence W. 3,184,066.

Mission-West Mfg. Co.: *See*—
    O'Brien, Robert F., and Milette. 3,183,525.
Mite Corp.: *See*—
    Howard, Bernard. 3,184,027.
Moakley, William A., Jr., to Carrier Corp. Heat pump control circuit. 3,183,965, 5–18–65, Cl. 165—29.
Moffitt, Merritt L., Jr. Flag holder. 3,183,886, 5–18–65, Cl. 116—173.
Mogilner, George S. Diathermy machine. 3,183,912, 5–18–65, Cl. 128—421.
Mohler, Harry G. Carton with integral spout. 3,184,137, 5–18–65, Cl. 229—17.
Mohlman, John W., and N. S. Davis, to Struthers Scientific and International Corp. Removing refrigerant contaminants and dissolved gases in a fractional crystallization process. 3,183,679, 5–18–65, Cl. 62—58.
Mondt, James R., to General Motors Corp. Matrix for regenerative heat exchangers. 3,183,963, 5–18–65, Cl. 165—10.
Monsanto Co.: *See*—
    Eby, Charles J., and Prill. 3,184,475.
    Ellard, James A. 3,184,390.
    Mottus, Edward H. 3,184,416.
Monsanto Research Corp.: *See*—
    De Brunner, Ralph E. 3,184,461.
    Wilson, Glenn R. 3,184,430.
Montecatini Societa Generale per l'Industria Mineraria e Chimica: *See*—
    Billi, Walter. 3,183,680.
Montgomery, Rayner A.: *See*—
    Kilmer, Earl E., and Montgomery. 3,184,097.
Monticello Mfg. Corp.: *See*—
    Melvin, James M. 3,183,862.
Montres Octo S.A.: *See*—
    Etienne, Marius. 3,183,659.
Moore, Gordon E., to Fairchild Camera and Instrument Corp. Nested region transistor configuration. 3,184,657, 5–18–65, Cl. 317—234.
Moore, Lawrence A., and L. F. Gilbank, to Beloit Corp. Calender stack. 3,183,826, 5–18–65, Cl. 100—163.
Moore, Lloyd R.: *See*—
    Deanin, Rudolph D., Berry, and Moore. 3,184,431.
Moore, Roy S., to Foseco International Ltd. Production of ingots and castings. 3,183,562, 5–18–65, Cl. 22—1.
Moore, William H.: *See*—
    McConnell, Wayne V., and Moore. 3,184,480.
Moore, William P., Jr., and R. R. MacGregor, to Allied Chemical Corp. Production of hexamethylene glycol. 3,184,513, 5–18–65, Cl. 260—635.
Moran, George P.: *See*—
    Lytle, Robert I., Moran, and Stevens. 3,183,896.
Morgan Construction Co.: *See*—
    Webber, John J. 3,184,223.
Morgan, David L., to Robertshaw Controls Co. Pressure responsive device with overpressure protection. 3,183,672, 5–18–65, Cl. 60—54.5.
Morgan, Eldon L. Fence engaging device. 3,184,198, 5–18–65, Cl. 248—223.
Moseman, Samuel B.: *See*—
    Watson, Herbert M., and Moseman. 3,184,111.
Moshy, Raymond J.: *See*—
    Germino, Felix J., and Moshy. 3,184,335.
Mottus, Edward H., to Monsanto Co. Production of Ziegler polymerization catalysts. 3,184,416, 5–18–65, Cl. 252—429.
Mould, Harry W., Jr., to Liberty National Bank and Trust Co. Homogenizing apparatus. 3,184,221, 5–18–65, Cl. 259—7.
Mowll, Roger T. L.: *See*—
    Yeo, Alan A., and Mowll. 3,184 406.
Moyat, Peter, to Hartmann & Braun Aktiengesellschaft. Method for dosing the concentration of gaseous or vaporous anesthetics in closed systems of anesthesia. 3,183,906, 5–18–65, Cl. 128—188.
Moynahan Bronze Co.: *See*—
    Cudini, Roger G. 3,183,784.
Mueller, Gustav A., to Union Carbide Corp. Formation of negative electrodes. 3,184,338, 5–18–65, Cl. 136—75.
Mugnier, Joachim. Multiple-platform office desks. 3,184,274, 5–18–65, Cl. 312—196.
Mullan, John: *See*—
    Bevan, Morfydd A., and Mullan. 3,184,511.
Müller, Erwin, O. Bayer, and S. Petersen, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of polyamines. 3,184,502, 5–18–65, Cl. 260—482.
Muller, Felix, and N. Helmschrott, to Kienzle Apparate G.m.b.H. Erasing arrangement for recording devices. 3 184,748 5–18–65, Cl. 346—21.
Muller, Georges, and J. Martel, to Roussel-UCLAF, S.A. A-nor-B-homo-5(6)-estrene-17β-ol-3-one and 17β-acyloxy derivatives thereof. 3,184,504, 5–18–65, Cl. 260—488.
Müller Josef: *See*—
    Wiegelmann, Hubert, and Müller. 3,184,593.
Muller, Werner: *See*—
    Raue, Roderich, Muller, Weissel, and Coenen. 3,184,453.
Multex Co., The: *See*—
    Shotsky, Nathan. 3,183,868.
Multifol Patentverwertungs A.G.: *See*—
    Utz, Kastulus. 3,184,358.
Murphy, Gerald G., to Hogan Faximile Corp. Controlled facsimile copy cutting mechanism. 3,184,540, 5–18–65, Cl. 178—6.
Murphy, John P. Method of cleaning aqueous systems. 3,184 336, 5–18–65, Cl. 134—22.
Murray, James J., and J. W. Dawson. Mechanically excited electronic detecting element. 3,184,683, 5–18–65, Cl. 325—487.
Murton, Crawford B., to Vesurius Crucible Co. Stopper for a ladle or similar receptacle. 3,183,564, 5–18–65, Cl. 22—85.
Myatt, Edward R., to International Standard Electric Corp. Magnetically controlled reed switching device. 3,184,563, 5–18–65, Cl. 200—87.
Nädler, Heinrich, and H. Menell, to Continental Gummi-Werke Aktiengesellschaft. Machine for making carcasses for pneumatic tires. 3,184,360, 5–18–65, Cl. 156—401.
Nagayama, Mitsuo: *See*—
    Takasaka, Tomoyoshi, and Nagayama. 3,183,766.
Nagel, Hans, to Ex-Cell-O G.m.b.H. Cutter device for manufacturing T or L slots. 3,183,779, 5–18–65, Cl. 90—11.
Nagel, Robert I., to Elastic Stop Nut Corp. of America. Lens and lamp body assembly. 3,184,590, 5–18–65, Cl. 240—11.2.
Nagel, Roger M., and M. Gabliks, to Petro-Tex Chemical Corp. Process for polymerization utilizing a Ziegler catalyst promoted by cadmium, mercury, tin or lead. 3,184,442, 5–18–65, Cl. 260—93.7.
Nalco Chemical Co.: *See*—
    Chamot, Walter M. 3,184,294.
Napier, D., & Son Ltd.: *See*—
    Keen, John R. 3,183,975.
National Acme Co., The: *See*—
    Brown, Harry W., Sr. 3,183,534.
National Biscuit Co.: *See*—
    Harris, Meade C., and Maehl. 3,184,317.
National Cash Register Co., The: *See*—
    Irasek, Eugene H. 3,184,724.
    Meuer, Donal A. 3,184,720.
National Research Development Corp.: *See*—
    Abraham, Edward P., Newton, and Hale. 3,184,454.
National Tile & Mfg. Co.: *See*—
    Alexander, Richard B. 3,183,578.
Navarro, Robert W.: *See*—
    Rajewski, Z. Ted, and Navarro. 3,183,739.
Nederlandsche, N.V., Combinatie Voor Chemische Industrie: *See*—
    Akkerman, Antony M., and Michels. 3,184,460.
Neeff, Rutger, to Farbenfabriken Bayer Aktiengesellschaft. Anthraquinone dyestuffs and process for their production. 3.184,455, 5–18–65, Cl. 260—243.
Neese, Wayne E.: *See*—
    Lychyk, George S., Lord, and Neese. 3,184,656.
Nerenberg, Samuel T. Semi-automatic dilution pipette. 3,184,122, 5–18–65, Cl. 222—255.
Nerwin, Hubert: *See*—
    Lee, Charles M., Gunther, and Nerwin. 3,184,652.
Nerwin, Hubert, to Eastman Kodak Co. Photographic apparatus for use with image transfer film product. 3,183,809, 5–18–65, Cl. 95—13.
Neubauer, Wilhelm: *See*—
    Fritz, Geehard, Sus, Uhlig, and Neubauer. 3,184,310.
Newton, Cecil A., and W. H. Taylor, to Petro-Tex Chemical Corp. Separation of methyl bromide from admixture with C_4 hydrocarbons. 3,184,519, 5–18–65, Cl. 260—683.3.
Newton, Guy G. F.: *See*—
    Abraham, Edward P., Newton, and Hale. 3,184,454.
Nicolaus, Bruno J. R., and E. Testa, to Lepetit S.p.A. O-(β-acyloxyethyl) - N,N - dialkylhydroxylamines. 3,184,500, 5–18–65, Cl. 260—469.
Niederauer, William: *See*—
    Nyman, William F., Mason, Noonan, Niederauer, and Livingston. 3,183,770.
Nightingale, Wesley W. Building construction. 3,184,014, 5–18–65, Cl. 189—34.
Niles, Raymond W., to Walter E. Heller & Co. (Inc.). Gauge. 3,183,601, 5–18–65, Cl. 33—179.
Nishikawa, Ribeel: *See*—
    Kondo, Seiji, Nishikawa, and Yoshida. 3,183,942.
Nishino, Keigo: *See*—
    Irikura, Tsutomu, Masuzawa, and Nishino. 3,184,463.
Nishioka, Kinichi, and Y. Kan, to Kurashiki Rayon Co. Ltd. Method of separation acetylene and ethylene from a gaseous mixture. 3,183,646, 5–18–65, Cl. 55—51.
Nissen Corp.: *See*—
    Nissen, George P. 3.184,232.
Nissen, George P., to Nissen Corp. Variable width low parallel bar. 3,184,232, 5–18–65, Cl. 272—63.
Noland, Wayne B., to Woodford Mfg. Co. Portable dock plate platform. 3,183,536, 5–18–65, Cl. 14—72.
Noonan, Everett L., Jr.: *See*—
    Nyman, William F., Mason, Noonan, Niederauer, and Livingston. 3,183,770.
Norman, Robert J., and E. J. Duchek, to The Powers Regulator Co. Temperature sensing device. 3,183,719, 5–18–65, Cl. 73—362.4.
North American Aviation, Inc.: *See*—
    Child, Claude H. 3,184,737.
    Michael, Harold J. 3,184 320.
North American Philips Co., Inc.: *See*—
    Donaldson, Kenneth J. S., and Guy. 3,183,597.
    Joormann, Hendrik J. M., Diemer, and Klasens. 3,184,631.
    Starre, Gerrit, and Witzlers. 3,183,590.
    Van Tijen, Jan W., and van der Tas. 3,184,629.
    Van Zonneveld, Pieter. 3,184,297.
    Van Zonneveld, Pieter. 3,184,298.
Norwalk, Marshall H., to Corning Glass Works. Molding tubular bodies. 3,184,528, 5–18–65, Cl. 264—314.
Nukem Nuklear-Chemie und- Metallurgie G.m.b.H.: *See*—
    Blomeyer, Walter, and Schneider. 3,184,393.
Null Fay E. Dispenser with positive inertial feed. 3,184,119, 5–18–65, Cl. 222—196.2.
Nusbaum, Lee: *See*—
    Cole, Robert M. 3,184,378.
Nyman, William F., Jr., R. P. Mason, E. L. Noonan, Jr., W. Niederauer, and W. P. Livingston, to Bankers Trust Co. Automatic copy instrument for preparing movies from still pictures. 3,183,770, 5–18–65, Cl. 88—24.
Oatman, Sherman N.: *See*—
    Huckabay, William B., Oatman, and Parker. 3,184,740.

- Obert, Luciano, and W. Teagno, to AMP Inc. Electrically insulating housings. 3,184,705, 5–18–65, Cl. 339—176.
- O'Brien, Richard C., R. A. Proud, Jr., and F. Hunstiger, to Harris-Intertype Corp. Photographic type composition. 3,183,806, 5–18–65, Cl. 95—4.5.
- O'Brien, Robert F., and K. A. Milette, to Mission-West Mfg. Co. Method and means for operating a toilet in a fallout shelter. 3,183,525, 5–18–65, Cl. 4—1.
- O'Connell, James A., Jr., to General Telephone and Electronics Laboratories, Inc. Electroluminescent display device. 3,184,635, 5–18–65, Cl. 315—71.
- O'Donnell, Francis E., F. B. Hallatt, Jr. and A. J. Hallatt, and F. Doerschein. Sheet cutting machine. 3,183,743, 5–18–65, Cl. 77—5.
- Offensend, Glen W., N. J. Rosenburgh, and J. C. Haelen, to Eastman Kodak Co. Viewing apparatus. 3,183,765, 5–18–65, Cl. 88—24.
- Offensend, Glenn W., C. E. Swing, and G. L. Barringer, to Eastman Kodak Co. Card shingling device. 3,183,816, 5–18–65, Cl. 95—85.
- Ohno, Yasuhisa: *See*—
  - Ishizuka, Yoshio, Taneda, and Ohno. 3,184,469.
- Oiye, Benji: *See*—
  - Wingfield, Harold T., and Oiye. 3,184,476.
- Olin Mathieson Chemical Corp.: *See*—
  - Diassi, Patrick A., and Laskin. 3,184,450.
  - Diassi, Patrick A., and Laskin. 3,184,451.
- Oliver Tire & Rubber Co.: *See*—
  - Eldridge, Bruce E. 3,184,053.
- Olson, Howard G. Fluid clutch with retractable vanes. 3,184,022, 5–18–65, Cl. 192—58.
- Olsson, Bror S. Devices for performing rotational movements. 3,183,788, 5–18–65, Cl. 91—342.
- Omark Industries, Inc.: *See*—
  - Carlton, Raymond R. 3,183,948.
- Onyshkevych, Lubomyr S.: *See*—
  - Kosonocky, Walter F., and Onyshkevych. 3,184,601.
- Ostensen, Ralph G.: *See*—
  - Kapany, Narinder S., Capellaro, and Ostensen. 3,183,815.
- Ostermann, Max, to W. & M. Ostermann. Machine for producing armoured hoses, particularly high-pressure hoses. 3,183,583, 5–18–65, Cl. 29—202.5.
- Ostermann, W. & M.: *See*—
  - Ostermann, Max. 3,183,583.
- Otis Engineering Corp.: *See*—
  - Fredd, John V. 3,183,972.
- Ott, Wilhelm F., Habra-Werk: *See*—
  - Schmidt, Paul. 3,183,799.
- Ousley, Richard: *See*—
  - Ealey, James C., and Ousley. 3,184,264.
- Outboard Marine Corp.: *See*—
  - Heidner, Richard C. 3,183,879.
  - Shimanckas, William J. 3,183,880.
  - Tuggle, Lloyd H. 3,183,899.
- Ovenden, Raymond E., and R. F. S. Towner, to The De Havilland Aircraft Company Ltd. Frequency responsive device wherein output is produced when pulses in pulse-train exceed standard pulse-width. 3,184,606, 5–18–65, Cl. 307—88.5.
- Ovitron Corp.: *See*—
  - Burwen, Arthur. 3,184,349.
- Owens-Illinois Glass Co.: *See*—
  - Dunlap, Glenn H. 3,184,031.
  - Harris, Frank M. 3,184,060.
  - Schaich, Wilbur A. 3,184,296.
- Oxley, Robert F. Multi-contact rotary electric switch with resiliently biased conductive pins. 3,184,559, 5–18–65, Cl. 200—11.
- Oxy-Catalyst, Inc.: *See*—
  - Calvert, Willard R. 3,184,291.
- Pacific Plantronics, Inc.: *See*—
  - Larkin, Wallace K. 3,184,556.
- Package Sealing Co. (Export Ltd.): *See*—
  - Cook, Peter R. 3,183,824.
- Packaging Corp. of America: *See*—
  - Boyd, James W., and Allen 3,184,133.
- Pangborn, Jack, and W. E. Wheeler. Automatic film processing device. 3,183,818, 5–18–65, Cl. 95—89.
- Pansing, William F.: *See*—
  - Sanders, William W., Krane, and Pansing 3,184,518.
- Panunzi, Daniel J. Scope eye protector. 3,183,594, 5–18–65, Cl. 33—50.
- Paper Mate Mfg. Co.: *See*—
  - Malm, Curtis L. 3,183,892.
- Paquette, Leo A., to The Upjohn Co. Bis-chloromethylsulfonamides of cyclic diamines. 3,184,447, 5–18–65, Cl. 260—239.
- Paramount Packaging Corp.: *See*—
  - Davis, Francis A., Jr., and Flannery. 3,183,750.
  - Davis, Francis A., Jr., and Flannery. 3,184,055.
- Paramount Pictures Corp.: *See*—
  - Court, Patrick R. J. 3,184,538.
  - Court, Patrick R. J., Brownstein, Reiter, and Weiss. 3,184,537.
- Parikh, Kanaiyalal N., and M. L. Van Dreser, to Kaiser Aluminum & Chemical Corp. Refractory. 3,184,322, 5–18–65, Cl. 106—59
- Parish, Norman A., to Rotax Ltd. Spark ignition apparatus. 3,184,639, 5–18–65, Cl. 315—209.
- Parker, Leland C., and D. D. Stoltman, to General Motors Corp. Speed control system. 3,183,993, 5–18–65, Cl. 180—82.1.
- Parker, Stuart H., and D. D. Rudy, to E. I. du Pont de Nemours and Co. Preparation of carboxylic acid chlorides. 3,184,506, 5–18–65, Cl. 260—544.
- Parker, William H: *See*—
  - Huckabay, William B., Oatman, and Parker. 3,184,740.
- Parkinson, Alexander: *See*—
  - Baird, William, Batty, and Parkinson. 3,184,477.
- Parr, Charles. Gauge for tile cutting. 3,183,598, 5–18–65, Cl. 33—174.
- Parsons, Sir Howard Grubb, & Co. Ltd.: *See*—
  - Wallis, Douglas E. 3,183,776.
- Patelhold Patentverwertungs- & Elektro-Holding, A.G.: *See*—
  - Käch, Alfred. 3,184,747.
- Patterson, Lloyd D., to Kimberly-Clark Corp. Sanitary napkin roll and method of making. 3,183,910, 5–18–65, Cl. 128—290.
- Patzer, Horst: *See*—
  - Feld, Erich, Patzer, and Kleinlein. 3,184,168.
- Pavlecka, John. Interlocked panel structure. 3,184,013, 5–18–65, Cl. 189—34.
- Payne, Harold A. Adjustable, siphon-type liquid dispenser. 3,184,106, 5–18–65, Cl. 222—46.
- Pearson, John H., to The Black-Clawson Co. Apparatus for oscillating a traveling web in paper machinery. 3,184,374, 5–18–65, Cl. 162—257.
- Pearson, R. A., Co.: *See*—
  - Pearson, Reinhold A. 3,184,033.
- Pearson, Reinhold A., to R. A. Pearson Co. Conveyor and article discharge mechanism. 3,184,033, 5–18–65, Cl. 198—27.
- Peltola, Veikko K., to Illinois Testing Laboratories, Inc. Recording oscillograph. 3,184,754, 5–18–65, Cl. 346—112.
- Pendleton Tool Industries, Inc.: *See*—
  - De'Caccia, Godfrey L. 3,184,072.
- Penick, S. B., and Co.: *See*—
  - Balzer, Manuel M. 3,184,503.
- Penner, Siegfried E., and E. M. De Forest, to Frontier Chemical Co., Division of Vulcan Materials Co. Oxychlorination process. 3,184,515, 5–18–65, Cl. 260—658.
- Pentesco, Walter J., to American Flange & Mfg. Co., Inc. Pail handle. 3,184,101, 5–18–65, Cl. 220—94.
- Perdue, James B., and L. E. Tate. Silage distributor. 3,184,081, 5–18–65, Cl. 214—17.
- Perkins, Norwood K., to International Business Machines Corp. Molded core plane. 3,184,719, 5–18–65, Cl. 340—174.
- Perrin, Jack L.: *See*—
  - Tucker, Council A., and Perrin. 3,184,176.
- Perry, Alfred: *See*—
  - Durston, Harry D., and Perry. 3,183,984.
- Petchuk, Joseph. Material handling apparatus. 3,184,038, 5–18–65, Cl. 198—97.
- Peters & Russell, Inc.: *See*—
  - Russell, Linus E. 3,183,875.
- Petersen, Earl J., to United States of America, Army. Pulse-generating counter with successive stages comprising blocking oscillator and "AND" gate forming closed and open loops. 3,184,612, 5–18–65, Cl. 307—88.5.
- Petersen, Siegfried: *See*—
  - Muller, Erwin, Bayer, and Petersen. 3,184,502.
- Peterson, Adolphe C. Air and fuel charging means for four-cycle engines of mono-valve type. 3,183,661, 5–18–65, Cl. 60—13.
- Peterson, Arthur W. Paperboard carton. 3,184,140, 5–18–65, Cl. 229—23.
- Peterson, Merle H., to Massey-Ferguson Inc. Die cell construction for hay wafering apparatus. 3,183,859, 5–18–65, Cl. 107—14.
- Peterson, Seour, and J. W. Granath, to Storm Industries, Inc. Automated egg nest. 3,183,889, 5–18–65, Cl. 119—45.
- Peterson, Thomas F., deceased, by J. D. Drinko and Central National Bank of Cleveland, co-executors. Preformed helical appliance for linear bodies. 3,183,658, 5–18–65, Cl. 57—145.
- Petit, Arthur: *See*—
  - Piscitello, Robert A., and Petit. 3,184,703.
- Petrin, Frank. Valve construction. 3,184,217, 5–18–65, Cl. 251—367.
- Petro Tex Chemical Corp.: *See*—
  - Nagel, Roger M., and Gabliks. 3,184,442.
  - Newton, Cecil A., and Taylor. 3,184,519.
- Petty, John W. L.: *See*—
  - French, Michael J., and Petty. 3,184,094.
- Pfaff, G. M., AG: *See*—
  - Astrupgaard, Svend, and Hedegaard. 3,183,869.
- Pfaff, Werner: *See*—
  - Ruschig, Heinrich, Schmitt, Driesen, Ther, and Pfaff. 3,184,470.
- Pfannmueller, Helmut: *See*—
  - Eilbracht, Hans, Pfannmueller, Rotzoll, Urban, and Zacher. 3,184,444.
- Pfohl, Werner: *See*—
  - Wilke, Gunther, and Pfohl. 3,184,432.
- Phelps, Malcolm T., to Weber-Knapp Co. Counterbalance hinge. 3,183,550, 5–18–65, Cl. 16—190.
- Philco Corp.: *See*—
  - Schnable, George L., and Javes. 3,184,399.
  - Spera, Frank T. 3,184,532.
  - Spera, Frank T. 3,184,699.
  - Tahara, Goro R. 3,184,692.
- Phillips, Lee V., and W. C. Francis, to Gulf Oil Corp. Polyamides of isocyanurate compounds. 3,184,438, 5–18–65, Cl. 260—78.
- Phillips Petroleum Co.: *See*—
  - Edmonds, Lee O. 3,184,325.
  - Gardner, Lloyd E., and Hogan. 3,184,403.
- Phipps, Daniel E.: *See*—
  - Vess, Albert, Phipps, and Hunerwadel. 3,183,814.
- Piasecki Aircraft Corp.: *See*—
  - Piasecki, Frank N. 3,184,183.
- Piasecki, Frank N., to Piasecki Aircraft Corp. Flying platform. 3,184,183, 5–18–65, Cl. 244—23.
- Pickering, Vernon L.: *See*—
  - Bazill, Dale G., and Pickering. 3,184,576.
- Pierce, Norton T.: *See*—
  - Butler, Richard A., Jr., and Pierce. 3,184,364.
- Pillote Vernon J.: *See*—
  - Whitlock, Robert A., and Pillote. 3,183,933.

- Ploch, Richard P., to Eli Lilly and Co. Derivatives of cyclopropanecarboxamide. 3,184,509, 5–18–65, Cl. 260—558.
- Pirlot, Edmond A., to American-Saint Gobain Corp. Apparatus for supporting glass sheets. 3,184,070, 5–18–65, Cl. 211—41.
- Piscitello, Robert A., and A. Petit, to General Dynamics Corp. Multiple wire control cable connector. 3,184,703, 5–18–65, Cl. 339—88.
- Pitt, Arnold, and T. Budzich. Pump control. 3,183,844, 5–18–65 Cl. 103—162.
- Pittman, Paul R., Jr., to Globe Industries, Inc. Delay timer. 3,184,560, 5–18–65, Cl. 200—38.
- Plasti-Carrier, Inc.: *See*—
  - Horvath, Bela. 3,184,260.
- Plate, John R.: *See*—
  - Heckenkamp, Edward B., Johansen, and Plate. 3,183,977.
- Platt, Stephen A. Coiling roll for wire coiling machine. 3,183,698, 5–18–65, Cl. 72—145.
- Plegat, Alain E., to Societe Anonyme des Usines Chausson. Motor vehicle door panel structure. 3,184,263, 5–18–65, Cl. 296—44.
- Pneumo Dynamics Corp.: *See*—
  - Hamilton, Wallace. 3,183,873.
  - Karpus, John T., Jr. 3,183,932.
- Polanski, Frank C. Tool holders for lathes. 3,183,746, 5–18–65, Cl. 82—36
- Polanyi, Thomas G.: *See*—
  - Earley, Kenneth D., Polanyi, and Watson. 3,183,937.
- Pollasky, Arthur G.: *See*—
  - Pollasky, Arthur R. 3,183,755.
- Pollasky, Arthur R., deceased, by A. G. Pollasky, executor. Spacing machine having automatic control means. 3,183,755, 5–18–65, Cl. 83—396.
- Pollock, Donald E., to General Motors Corp. Load sensitive shock absorber. 3,184,011, 5–18–65, Cl. 188—88.
- Pollock, Mark W.: *See*—
  - Hecker, Arthur C., Pollock, and Cohen. 3,184,428.
- Poly-Pak Corp. of America: *See*—
  - Whiteford, Carlton L. 3,184,524.
- Poole, Sidney W., and J. Savas, to Republic Steel Corp. Titanium base alloys. 3,184,305, 5–18–65, Cl. 75—175.5.
- Porath, Gordon H. Precision lead screw. 3,183,732, 5–18–65, Cl. 74—424.8.
- Portable Electric Tools, Inc.: *See*—
  - Rojc, John F., and Holther. 3,183,613.
- Potter Instrument Co., Inc.: *See*—
  - Fieldgate, Ivan O. 3,184,131.
  - Potter, John T. 3,184,600.
- Potter, John T., to Potter Instrument Co., Inc. Photosensitive apparatus for measuring coordinate distances. 3,184,600, 5–18–65, Cl. 250—237.
- Poupitch, Ougljesa J., to Illinois Tool Works, Inc. Fastening device. 3,183,762, 5–18–65, Cl. 85—62.
- Poupitch, Ougljesa J., to Illinois Tool Works Inc. Carrier package and method of assembly. 3,184,148, 5–18–65, Cl. 229—52.
- Powers Regulator Co., The: *See*—
  - Norman, Robert J., and Duchek. 3,183,719.
- Prat, Jean. Heat transfer method. 3,183,960, 5–18–65, Cl. 165—1.
- Pratt, John T. Lawn mowing and trimming apparatus. 3,183,652, 5–18–65, Cl. 56—25.4.
- Preece, Robert, to Automotive Products Co. Ltd. Pressure responsive indicating devices. 3,183,882, 5–18–65, Cl. 116—70.
- Preformed Line Products Co.: *See*—
  - Ruhlman, Jon R., and Williams. 3,183,883.
- Presto Lock Co., Inc.: *See*—
  - Gehrie, Charles S. 3,183,691.
- Price, Ralph E., and C. E. Tolbert, to Landis Tool Co. Precision feed for machine tools. 3,183,681, 5–18–65, Cl. 51—165.
- Pridgen, Herman S.: *See*—
  - Brannock, Kent C., and Pridgen. 3,184,457.
- Prill, Erhard J.: *See*—
  - Eby, Charles J., and Prill. 3,184,475.
- Prindle, William L., R. H. Bielfeldt, and R. J. Surdell, to Republic Steel Corp. Straddle truck support shoe. 3,184,087, 5–18–65, Cl. 214—392.
- Propersi, Ilario. Process for the melting of metals, for example copper, and an electric furnace for the performance of said process. 3,184,530, 5–18–65, Cl. 13—23.
- Propster, Charles H., Jr.: *See*—
  - Uren, William J., and Propster. 3,184,734.
- Proud, Ralph A., Jr.: *See*—
  - O'Brien, Richard C., Proud, and Hunstiger. 3,183 806.
- Pruna, Matei M. C., ½ to Fonderies de Nogent Lafeuille & Cie. Production of alloy-clad articles. 3,183,588, 5–18–65, Cl. 29—529.
- Prust Alvin F., to Republic Steel Corp. Coating of iron and steel. 3 184,326, 5–18–65, Cl. 117—51.
- Pullman Inc.: *See*—
  - Adler Franklin P. 3,183,855.
  - Candlin, James E., Jr., and Van Der Sluys. 3,183,854.
  - Radey, Charles R. 3,184,000.
- Punturi, Albert: *See*—
  - Matthew, Jack L., and Punturi. 3,183,758.
- Pure Oil Co., The: *See*—
  - Calandra Joseph C. 3,184,382.
- Puryear, David B.: *See*—
  - Chapman, James R., and Puryear. 3,184,211.
- Quartz & Silice S.A.: *See*—
  - George Henri J. C. 3,184,092.
- Quercia, Marcel, to Marcel Quercia Flaminaire. Gas lighters. 3 183 687 5–18–65, Cl. 67—7.1.
- Quercia, Marcel, Flaminaire: *See*—
  - Quercia, Marcel. 3,183,687.
- Quijada, Louis, to Mark W. Lee. Illuminated condiment shaker. 3,184,587, 5–18–65, Cl. 240—6.46.
- Quint, Ferdinand, and G. Schafer, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Unsymmetrical 4-halogeno-4′,4′′-diarylamino-triphenyl-methane dyestuffs and process for their manufacture. 3,184,483, 5–18–65, Cl. 260—393.
- Rachinsky, Michael R., to Hercules Powder Co. Textile materials treated with a linear polymeric ester. 3,184,332, 5–18–65, Cl. 117—139.4.
- Radey, Charles R., to Pullman Inc. Brake rigging for railway cars. 3,184,000, 5–18–65, Cl. 188—52.
- Radio Corp. of America: *See*—
  - Briggs, George R., and Shahbender. 3,183,579.
  - Burns, Leslie L., Jr. 3,184,329.
  - Ecker, Mario E. 3,184,650.
  - Fischer, Adam, Jr. 3,183,703.
  - Fisher, Donald M., and Linnel. 3,183,830.
  - Haynes, Harold E. 3,184,732.
  - Herzog, Gerald B. 3,184,605.
  - Kisor, Thaddeus W. 3,184,056.
  - Kosonocky, Walter F., and Onyshkevych. 3,184,601.
  - Kuhlman, Richard. 3,184,054.
  - Miller, James F. 3,184,278.
  - Shaffer, George A., Jr. 3,184,279.
  - Smith, Paul R. 3,183,577.
  - Zittell, Adam H. 3,183,702.
- Railex Corp.: *See*—
  - Rutkovsky, Abraham, and S. 3,184,042.
- Rainey, Isabel C.: *See*—
  - Marcucci, Richard, and Rainey. 3,184,242.
- Rajewski, Ted: *See*—
  - Rajewski, Z., Ted, and Navarro. 3,183,739.
- Rajewski, Z. Ted, and R. W. Navarro, said Rajewski, Z. Ted now by change of name Rajewski, Ted, to United States of America, Air Force. Indexing device. 3,183,739, 5–18–65, Cl. 74—527.
- Ram Domestic Products Co.: *See*—
  - Romanelli, Pat. 3,183,959.
- Ramsdell, William H., to The Youngstown Sheet and Tube Co. Unit pumper. 3,183,728, 5–18–65, Cl. 74—41.
- Randall, Kenneth W., and H. J. Vos, to Insley Mfg. Corp. Telescoping hoe boom. 3,184,085, 5–18–65, Cl. 214—138.
- Rankin, Alexander B. C., E. F. French, and H. W. Taylor, to Kelvin & Hughes Ltd. Ultrasonic testing of material. 3,183,709, 5–18–65. Cl. 73—67.5.
- Raue, Roderich, W. Muller, O. Weissel, M. Coenen, deceased (by R., G., B., and H. Coenen), heirs, to Farbenfabriken Bayer Aktiengesellschaft. 3-dimethyl-substituted indoline dyestuffs. 3,184,453, 5–18–65, Cl. 260—240.4.
- Raybestos-Manhattan, Inc.: *See*—
  - Fish, Robert L. 3,184,306.
- Rayflex Exploration Co.: *See*—
  - Huckabay, William B., Oatman, and Parker. 3,184,740.
- Raymond, Eugene B., and L. L. Schiller, to Triple A Specialty Co. Terminal connector. 3,184,704, 5–18–65, Cl. 339—97.
- Raymond, Robert E. Hydraulic feed control apparatus. 3,183,790, 5–18–65, Cl. 91—435.
- Raymond, Robert E., to Hydro-Kinetics, Inc. Variable displacement pump. 3,183,847, 5–18–65, Cl. 103—173.
- Raymond, Robert E., to Hydro-Kinetics, Inc. Cartridge type pumping apparatus. 3,183,848, 5–18–65, Cl. 103—173.
- Raymond, Robert E., to Hydro-Kinetics, Inc. Variable displacement pump. 3,183,849, 5–18–65 Cl. 103—173.
- Raymond, Robert E. Ball pump. 3,183,850, 5–18–65, Cl. 103—174.
- Recoque, Alice M.: *See*—
  - Albin, Jacques, Recoque, and Richard. 3,184,718.
- Record Vending Machines, Inc.: *See*—
  - Willoughby, John T., and Silverman. 3,184,105.
- Red Jacket Mfg. Co.: *See*—
  - Deters, Elmer M. 3,183,723.
- Reddington, George A. Apparatus for forming terminal loops on coil springs. 3 183,944, 5–18–65, Cl. 140—103.
- Reder, Otto, to Weser Flugzeugbau G.m.b.H. Speed boat with underwater wings. 3,183,871, 5–18–65, Cl. 114—66.5.
- Reed, Theron J., to American Planter Co. Flow diverting mechanism for vertically disposed conveyor tubes. 3,184,036, 5–18–65, Cl. 198—68.
- Rees, William W. and W. H. Russell, to Eastman Kodak Co. Silver halide emulsion desensitized with a tetraalkyl thiuram disulfide. 3,184,313, 5–18–65, Cl. 96—101.
- Reichard, Robert E.: *See*—
  - Goerke, Frederick E., and Reichard. 3,183,994.
- Reihmann, Paul A.: *See*—
  - Blindenbacher, Kenneth F., and Reihmann. 3,184,268.
- Reilly, Thomas A., to Union Carbide Corp. Leak-resistant dry cell. 3,184,341, 5–18–65, Cl. 136—133.
- Reiners, Walter: *See*—
  - Furst, Stefan. 3,184,174.
- Reinhart, Tom R.: *See*—
  - Kolb Robert H., and Reinhart. 3,184,698.
- Reinsch, Earl W., to General Motors Corp. Torque transmitting and/or energy absorbing device. 3,184,009, 5–18–65, Cl. 188—251.
- Reinsch, Earl W., and G. P. Baynes, to General Motors Corp. Brake drum and lining. 3,184,001, 5–18–65, Cl. 188—71.
- Reiter Abraham M.: *See*—
  - Court, Patrick R. J., Brownstein, Reiter, and Weiss. 3 184,537.
- Reiter, Alexander L., and M. A. Fuller, to Whirlpool Corp. Storage unit for perishable materials. 3,183,683, 5–18–65, Cl. 62—411.
- Remington Elliott L., to Draper Corp. Bobbin holder for loom filling battery. 3,183,943, 5–18–65, Cl. 139—249.
- Renkey, Albert L.: *See*—
  - McCreight, Donald O., and Renkey. 3,184,531.
- Repko, John P., to The Dow Chemical Co. Re-sealable bag. 3,184,149 5–18–65, Cl. 229—66.
- Republic Steel Corp.: *See*—
  - Darner, Frederic M. 3,183,695.
  - Poole, Sidney W., and Savas. 3,184,305.

Republic Steel Corp.: *See*—Continued
  Prindle, William L., Bielfeldt, and Surdell. 3,184,087.
  Prust, Alvin F. 3,184,326.
Reuther, John F., W. F. Cruess, and S. D. Silliman, to Westinghouse Electric Corp. Semiconductor overvoltage protector for open-circuited current transformer. 3,184,642, 5–18–65, Cl. 317—14.
Revco, Inc.: *See*—
  Tenniswood, Howard J. 3,184,702.
Rex Chainbelt Inc.: *See*—
  Stuller, Frank G., Gumz, and Anderson. 3,184,034.
Rexall Drug and Chemical Co.: *See*—
  Swett, James B. 3,183,624.
Reynolds Metals Co.: *See*—
  Brandon, Richard N., and Solley. 3,184,095.
  Cheeley, William E. 3,184,096.
  Rutledge, George A. 3,183,802.
Reynolds, Rollin A., to Dyna Systems Inc. Control system for reversing motor rotation. 3,184,670, 5–18–65, Cl. 318—300.
Rheinmetall G.m.b.H., Firma: *See*—
  Zeidler, Willi. 3,183,684.
Rhodes, James H., & Co.: *See*—
  Anders, Archie. 3,183,542.
Rhodes, Keith H.: *See*—
  May, Claude H., and Rhodes. 3,184,154.
Rhone-Poulenc S.A.: *See*—
  Lafont, Pierre, and Thiers. 3,184,491.
Rice, Harry L., deceased (H. Rice, administratrix), to Rubber and Plastics Compound Co., Inc. Transverse waterstop connection. 3,183,627, 5–18–65, Cl. 50—346.
Rice, Helen: *See*—
  Rice, Harry L. 3,183,627.
Richard, Andre M.: *See*—
  Albin, Jacques, Recoque, and Richard. 3,184,718.
Richards Industries, Inc.: *See*—
  Boudot, William D. 3,183,926.
Richardson Scale Co., The: *See*—
  Burke, Arthur J., and Aquadro. 3,184,700.
Richter, Sidney B., to Velsicol Chemical Corp. Hexachlorobicyclic sulfonamides. 3,184,501, 5–18–65, Cl. 260—470.
Ridgeway, John D., Jr., to Inland Container Corp. End-opening container. 3,184,138, 5–18–65, Cl. 229—17.
Ridgway, Asa J., Jr., to Wagner Electric Corp. Lubricating means for a rotatable device. 3,184,272, 5–18–65, Cl. 308—132.
Riegel Paper Corp.: *See*—
  Vrana, George. 3,184,141.
Riehl, Robert F. Raschel loop net. 3,183,685, 5–18–65, Cl. 66—193.
Riggs, William D., to Consolidated Electronics Industries Corp. Motor speed governor circuit. 3,184,671, 5–18–65, Cl. 318—325.
Ring, Douglas H.: *See*—
  Marcatili, Enrique A. J., and Ring. 3,184,691.
Rinke, Heinrich: *See*—
  Thoma, Wilhelm, and Rinke. 3,184,426.
Riseman, Jacob, J. G. Christ, and R. F. Sankuer, to International Business Machines Corp. Manufacturing magnetic storage matrices. 3,183,567, 5–18–65, Cl. 29—155.5.
Ritzerfeld, Gerhard: *See*—
  Ritzerfeld, Wilhelm and G. 3,183,805.
Ritzerfeld, Wilhelm and G. Electro-photographic apparatus. 3,183,805, 5–18–65, Cl. 95—1.7.
Riva, William. Three-dimensional game board with apertures for advancing or regressing the progress of a game piece. 3,184,237, 5–18–65, Cl. 273—134.
Roberts, Robert W., to Continental Oil Co. Catalytic hydrodeoxygenation process. 3,184,520, 5–18–65, Cl. 260—683.9.
Robertshaw Controls Co.: *See*—
  Craemer, Lambert F. 3,184,337.
  Morgan, David L. 3,183,672.
Robeson, Charles D.: *See*—
  Chechak, Albert J., and Robeson. 3,184,516.
Robinson, William H., to Buckeye Molding Co. Fitment for jars and the like. 3,184,090, 5–18–65, Cl. 215—48.
Robison, Elaine C.: *See*—
  Robison, Paul C. 3,183,775.
Robison, Paul C., deceased, by E. C. Robison, administratix, to FMA, Inc. Backlit projection screen. 3,183,775, 5–18–65, Cl. 88—28.93.
Rockwell, Robert E. Garden hose reels. 3,184,180, 5–18–65, Cl. 242—86.
Rodaer, James A., to General Motors Corp. Static inverter. 3,184,676, 5–18–65, Cl. 323—66.
Roddick, Douglas G., to Shell Oil Co. Method and apparatus for metering pressure phenomena in internal combustion engines. 3,183,708, 5–18–65, Cl. 73—35.
Rodman, James B., to Weyerhaeuser Co. Packaging apparatus. 3,183,639, 5–18–65, Cl. 53—75.
Rodriguez, Emil, to Jacoby-Bender, Inc. linkage of limited flexibility. 3,183,660, 5–18–65, Cl. 59—82.
Roehr, Walter G., to Kimberly-Clark Corp. Convertible sanitary napkin. 3,183,909, 5–18–65, Cl. 128—290.
Rogers, Max W., to Admiral Corp. Stereophonic system with derived center channel. 3,184,550, 5–18–65, Cl. 179—1.
Rogers, Thelmer A. Vibrating plow. 3,183,979, 5–18–65, Cl. 172—40.
Rohde, Elliot. Bookkeeping system. 3,184,255, 5–18–65, Cl. 282—29.
Rojc, John F., and G. P. Holther, to Portable Electric Tools, Inc. Nameplate mounting arrangement. 3,183,613, 5–18–65, Cl. 40—10.
Rollins, Eugene C. Beet row finder and steering mechanism for beet harvesters. 3,183,976, 5–18–65, Cl. 171—8.
Rolon, Arnaldo, to Sperry Rand Corp. Document feeding. 3,184,230, 5–18–65, Cl. 271—11.
Romaine, Theodore H. Interchangeable tab neckerchief slide. 3,183,612, 5–18–65, Cl. 40—1.5.
Romanelli, Pat, to Ram Domestic Products Co. Gas burner ignition system. 3,183,959, 5–18–65, Cl. 158—124.
Rose, William R.: *See*—
  Fogiel, Adolf W., and Rose. 3,184,445.
Rosenberg, Allan E., to Garde Mfg. Co. Printed circuit card rack. 3,184,069, 5–18–65, Cl. 211—41.
Rosenberg, Peretz. Automatic shut-off valve responsive to rate of flow. 3,183,928, 5–18–65, Cl. 137—460.
Rosenburg, Charles W., Jr., to F. N. Burt Co., Inc. Multi-cell cartons. 3,184,142, 5–18–65, Cl. 229—28.
Rosenburgh, Norman J.: *See*—
  Offensend, Glen W., Rosenburgh, and Haelen. 3,183,765.
Rosenburgh, Norman J., and E. O. Wangerin, to Eastman Kodak Co. Projection printer. 3,183,768, 5–18–65, Cl. 88—24.
Ross, Robert P., to Corhart Refractories Co., Inc. Refractory arch furnace roof. 3,183,865, 5–18–65, Cl. 110—99.
Rossi, Alberto: *See*—
  Druey, Jean, Eichenberger, Schmidt, and Rossi. 3,184,452.
Rossire, Francis H. S., to The Bendix Corp. Stress sensor and control system for limiting stresses applied to aircraft. 3,184,188, 5–18–65, Cl. 244—77.
Rotary Hoes Ltd.: *See*—
  Howard, John A., and Craig. 3,183,980.
Rotax Ltd.: *See*—
  Parish, Norman A. 3,184,639.
  Solomon, Henry J. 3,184,624.
  Whicker, John C. F. 3,183,733.
Roth, Irving, to Bulova Research and Development Laboratories, Inc. Pistol controlled device for timing races including a digital delay system. 3,184,678, 5–18–65, Cl. 324—68.
Rotzoll, Rudi-Heinz: *See*—
  Eilbracht, Hans, Pfannmueller, Rotzoll, Urban, and Zacher. 3,184,444.
Roussel-UCLAF, S.A.: *See*—
  Muller, Georges, and Martel. 3,184,504.
Rouy, Auguste L. M. A., to The Ednalite Corp. Illuminating device. 3,184,585, 5–18–65, Cl. 240—2.
Royer, Thurber W., J. S. Brower, and N. Brunetz, to Aerojet-General Corp. Liquid chlorinated organic compound sensitizing agents. 3,184,351, 6–18–65, Cl. 149—2.
Rubber and Plastics Compound Co., Inc.: *See*—
  Rice, Harry L. 3,183,627.
Rudel, Harry W.: *See*—
  Wilson, Ernest V., and Rudel. 3,184,408.
Rudy, Dennis D.: *See*—
  Parker, Stuart H., and Rudy. 3,184,506.
Ruger, Sturm, and Co., Inc: *See*—
  Ruger, William B., and Sefried. 3,183,617.
Ruger, William B., and H. H. Sefried, II, to Ruger, Sturm, and Co., Inc. Gun barrel mounting. 3,183,617, 5–18–65, Cl. 42—75.
Ruhala, Joseph D., to General Motors Corp. Handle fastener. 3,184,270, 5–18–65, Cl. 306—41.
Ruhlman, Jon R. and H. L. Williams, to Preformed Line Products Co. Indicating device for cables. 3,183,883, 5–18–65, Cl. 116—114.
Rule, Edwin L., to Hexcel Products Inc. Apparatus for manufacturing honeycomb. 3,184,365, 5–18–65, Cl. 156—548.
Rumble, Richard K. Retracting seat belt assembly. 3,184,267, 5–18–65, Cl. 297—388.
Ruschig, Heinrich, K. Schmitt, G. Driesen, L. Ther, and W. Pfaff, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Triazolidines. 3,184,470, 5–18–65, Cl. 260—308.
Russell, James R., and E. Sweet, to Down Corning Corp. Method for curing room-temperature-vulcanizing organopolysiloxane rubber. 3,184,427, 5–18–65, Cl. 260—37.
Russell, Linus E., to Peters & Russell, Inc. Bumper. 3,183,875, 5–18–65, Cl. 114—219.
Russell, William H.: *See*—
  Rees, William W., and Russell. 3,184,313.
Ruston & Hornsby Ltd.: *See*—
  Hind, Cecil J. 3,183,794.
Rutgerswerke Aktiengesellschaft: *See*—
  Sauer, Hubert, and Kob. 3,184,521.
  Schumacher, Richard, Lang, and Tengler. 3,184,398.
Rutkovsky, Abraham and S., to Railex Corp. Article handling apparatus. 3,184,042, 5–18–65, Cl. 198—177.
Rutkovsky, Sam: *See*—
  Rutkovsky, Abraham and S. 3,184,042.
Rutkus, John, Jr., to Xerox Corp. Microfilm holder. 3,183,771, 5–18–65, Cl. 88—24.
Rutledge, George A., to Reynolds Metals Co. Container and method and apparatus for making the same or the like. 3,183,802, 5–18–65, Cl. 93—80.
Ruttenberg, Herbert: *See*—
  Sampson, Ralph L., Ruttenberg, and Miller. 3,184,064.
Ryan Aeronautical Co., The: *See*—
  Badewitz, Charles J. 3,184,736.
  Chatelain, Maurice G. 3,184,746.
Ryckman, George E., to T-K Roofing Mfg. Co. Method of applying granules and apparatus for doing the same. 3,184,324, 5–18–65, Cl. 117—19.
Ryckman William D., and W. R. Jessup, to General Electric Co. Shock proof relay. 3,184,564, 5–18–65, Cl. 200—87.
S & C. Electric Co.: *See*—
  Fahnoe, Harold H. 3,184,568.
  Gussow, William A. 3,184,567.
SCM Corp.: *See*—
  Kapany, Narinder S., Capellaro, and Ostensen. 3,183,815.
  Kleinschmidt, Edward F., and Mankawich. 3,184,028.
Sabaka, George. Rip strip container. 3,184,098, 5–18–65, Cl. 220—54.
Sadler, Harry J., and E. E. Cook, to Hypro Engineering, Inc. Pump construction. 3,183,842, 5–18–65, Cl. 103—117.

Sakaki, Fumio: *See*—
  Teshi, Haruo, and Sakaki. 3,183,808.
Salminen, Wilho M., to Eastman Kodak Co. Furcellaran as an antistatic agent for photographic film. 3,184,311, 5–18–65, Cl. 96—85.
Samarius Inc.: *See*—
  Sargent, Raymond W. 3,184,697.
Sampson, Ralph L., H. Ruttenberg, and L. Miller, to Water Gard Corp. Domestic water filter. 3,184,064, 5–18–65, Cl. 210—136.
Sanders, William W., H. G. Krane, and W. F. Pansing, to Standard Oil Co. Increased efficiency in molecular sieve adsorption system. 3,184,518, 5–18–65, Cl. 260—676.
Sanderson, John W., to Container Corp. of America. Bag-in-box arrangement for packaging and dispensing of liquids. 3,184,117, 5–18–65, Cl. 222—183.
Sandone, John J. Rotary engine. 3,183,898, 5–18–65, Cl. 123—11.
Sandoz Ltd.: *See*—
  Tamm, Christoph. 3,184,489.
Sankuer, Raymond F.: *See*—
  Riseman, Jacob, Christ, and Sankuer. 3,183,567.
Sapino, Theodore, to Honeywell Inc. Monitor circuit for a tabulating card reader. 3,184,582, 5–18–65, Cl. 235—61.11.
Sargeant, Ralph G. Apparatus for applying high frequency electrical energy to liquids. 3,184,575, 5–18–65, Cl. 219—10.65.
Sargent, Raymond W., to Samarius, Inc. Hermetically sealed potentiometers. 3,184,697, 5–18–65, Cl. 338—175.
Sargent, Roger N., to The Dow Chemical Co. Separation of dextran from fructose using ion exchange resins. 3,184,334, 5–18–65, Cl. 127—46.
Sarkes Tarzian Inc.: *See*—
  Badger, Joe G. 3,183,726.
Sauer, Hubert, and E. Kob, to Rutgerswerke Aktiengesellschaft. Process for preparing a polyester resin. 3,184,521, 5–18–65, Cl. 260—861.
Sausele, George J. H., to American Type Founders Co., Inc. Changeable typographic make-up system. 3,183,817, 5–18–65, Cl. 95—85.
Sauter, August, K.G.: *See*—
  Schick, Hans, and Kammerer. 3,183,985.
Savas, John: *See*—
  Poole, Sidney W., and Savas. 3,184,305.
Sawyers, Inc.: *See*—
  Kurz, Karl F. 3,183,774.
Scarborough, Homer C., Y. H. Wu, and R. F. Feldkamp, to Mead Johnson & Co. Certain 4-substituted quinazolines. 3,184,462, 5–18–65, Cl. 260—256.4.
Schaeffer, Aaron J., to Cutler-Hammer, Inc. Electrical circuit assembly. 3,184,645, 5–18–65, Cl. 317—101.
Schafer, Gustav: *See*—
  Quint, Ferdinand, and Schafer. 3,184,483.
Schäfer, Karl M.: *See*—
  Walbert, Wilhelm, Gierse, and Schäfer. 3,183,866.
Schaich, Wilbur A., to Owens-Illinois Glass Co. Method of and apparatus for manufacturing pressed glass articles. 3,184,296, 5–18–65, Cl. 65—73.
Schaumann, Wolfgang: *See*—
  Dold, Otto, Stach, and Schaumann. 3,184,467.
Scherbatskoy, Serge A. Stabilized scintillation detector. 3,184,597, 5–18–65, Cl. 250—71.5.
Scherer, Otto, and G. Schneider, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning. Fluoroacetyl ureas. 3,184,507, 5–18–65, Cl. 260—553.
Schick, Hans, and M. Kammerer, to A. Sauter K.G. Double beam balance. 3,183,985, 5–18–65, Cl. 177—217.
Schiller, Leslie L.: *See*—
  Raymond, Eugene B., and Schiller. 3,184,704.
Schlabs, Charles. Earthworking apparatus including an alternating implement, another implement and pivotal draft means interconnecting them. 3,183,981, 5–18–65, Cl. 172—162.
Schlack, Paul, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning. Process for the manufacture of polycondensation products from ureido-carboxylic acid esters. 3,184,423, 5–18–65, Cl. 260—21.
Schlafli, Hans: *See*—
  Thomann, Thomas, Cermak, and Schlafli. 3,184,558.
Schliephacke, Fridtjof F., to A. Lorenz. Multiple position reclining chair. 3,184,266, 5–18–65, Cl. 297—89.
Schloemann Aktiengesellschaft: *See*—
  Siegel, Werner. 3,183,555.
Schlumberger Ltd.: *See*—
  Tittle, Charles W. 3,184,598.
Schmid, Bruce K.: *See*—
  Flinn, Richard A., Schmid, and Stewart. 3,184,404.
Schmidt, Felix H.: *See*—
  Haack, Erick, Hagedorn, and Schmidt. 3,184,464.
Schmidt, Julius: *See*—
  Heller, Wilhelm, and Herbrich. 3,183,546.
Schmidt, Paul: *See*—
  Druey, Jean, Eichenberger, Schmidt, and Rossi. 3,184,452.
Schmidt, Paul, to W. F. Ott Habra-Werk. Container making arrangement. 3,183,799, 5–18–65, Cl. 93—12.
Schmidt, Robert L.: *See*—
  MacMillan, James C., and Schmidt. 3,183,953.
Schmidtberger, Rudolf, H.-G. Schwick, and W. von Polnitz, to Behringwerke Aktiengesellschaft. Process for the preparation of enzymes, toxins and toxoids. 3,184,394, 5–18–65, Cl. 195—66.
Schmitt, Dale A., to Metalines, Inc. Expansion joint cover assembly. 3,183,626, 5–18–65, Cl. 50—203.
Schmitt, Karl: *See*—
  Ruschig, Heinrich, Schmitt, Driesen, Ther, and Pfaff. 3,184,470.
Schmunk, John D., and H. E. Gilliland, to The Hancock Brick and Tile Co. Perforating machine for clay drain tile. 3,183,571, 5–18–65, Cl. 25—105.
Schnable, George L., and J. G. Javes, to Philco Corp. Electrolytic etching of semiconductors utilizing A.C. bias. 3,184,399, 5–18–65, Cl. 204—143.
Schnedler, Paul E., to Armco Steel Corp. Measurement of temperature of continuous strips. 3,183,718, 5–18–65, Cl. 73—351.
Schneider, Günther: *See*—
  Blomeyer, Walter, and Schneider. 3,184,393.
  Scherer, Otto, and Schneider. 3,184,507.
Schrader, Gerhard, to Farbenfabriken Bayer Aktiengesellschaft. Alkenyl thionophosphonic acid fluoramides. 3,184,465, 5–18–65, Cl. 260—293.4.
Schroeder, Carl E., to Conch International Methane Ltd. Method of freezing an earth formation. 3,183,675, 5–18–65, Cl. 61—36.
Schultz, Harold B., to The Bendix Corp. Automotive floorboard. 3,183,995, 5–18–65, Cl. 180—90.6.
Schultz, Harold B., K. H. Fulmer, and P. P. Tuszynski, to The Bendix Corp. Power brake means. 3,183,670, 5–18–65, Cl. 60—54.5.
Schultz, Harold R., Sr., to Hughes Aircraft Co. High voltage control circuit. 3,184,643, 5–18–65, Cl. 317—22.
Schumacher, Richard, K. F. Lang, and E. Tengler, to Rutgerswerke-Aktiengesellschaft. Method of processing crude phenols. 3,184,398, 5–18–65, Cl. 202—46.
Schumacher, William G.: *See*—
  Albers, Gus A., and Schumacher. 3,184,578.
Schuster, John E., to Atlantic Research Corp. Motor driven apparatus for the automatic closing of a switch. 3,184,565, 5–18–65, Cl. 200—92.
Schwarz, Ernest I., to The Eis Automotive Corp. Cable shortener. 3,183,565, 5–18–65, Cl. 24—71.1.
Schwarz, Maurice L., to The Eis Automotive Corp. Cloaure adapter for master cylinder. 3,183,678, 5–18–65, Cl. 60—54.6.
Schwarz, Paul A., and R. L. Krumm, to United States of America, Air Force. Low altitude bombing hand computer. 3,184,161, 5–18–65, Cl. 235—89.
Schwick, Hans-Gerhard: *See*—
  Schmidtberger, Rudolf, Schwick, and von Pölnitz. 3,184,394.
Scott, R. E.: *See*—
  Cook, Ronald. 3,184,233.
Scragg, Ernest, & Sons Ltd.: *See*—
  Scragg, Frederick, and Chubb. 3,183,730.
Scragg, Frederick, and A. A. Chubb, to Ernest Scragg & Sons Ltd. High speed spindle assembly. 3,183,730, 5–18–65, Cl. 74—206.
Seagraves, Charles L.: *See*—
  Gee, Minor E., and Seagraves. 3,183,640.
Searle, G. D., & Co.: *See*—
  Counsell, Raymond E., and Klimstra. 3,184,487.
Sears, Anthony. Armatures for electrical generators, motors, and the like. 3,184,627, 5–18–65, Cl. 310—137.
Seary Mfg. Co.: *See*—
  Flynn, Frank M. 3,183,753.
Seeley, Albert S. Ball hitch for connectable vehicles. 3,184,254, 5–18–65, Cl. 280—513.
Seeley, James F.: *See*—
  Christen, Earl W., Seeley, and Kingsley. 3,183,796.
Seemuller, John R., to L'Oreal. Process for dyeing hair with substituted 2,4-diamino phenols. 3,184,387, 5–18–65, Cl. 167—88.
Sefried, Harry H., II: *See*—
  Ruger, William B., and Sefried. 3,183,617.
Seibel, Guy J. L., to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme). Gas-tight casings for power sources or other types of electrochemical cells. 3,184,342, 5–18–65, Cl. 136—166.
Seidl, Alois, to Wasag-Chemie Aktiengesellschaft. Foamed silicate structures. 3,184,371, 5–18–65, Cl. 161—193.
Sekisui Kagaku Kogyo Kabushiki Kaisha: *See*—
  Fujishima, Shohei, and Ishimoto. 3,184,012.
Sellers, Gose B., to Aerpat A.G. Method of making fastening devices. 3,183,586, 5–18–65, Cl. 29—441.
Semon, Joseph V.: *See*—
  Littlepage, Clarence R., Jr., and Semon. 3,184,658.
Sennewald, Kurt, and K. Born, to Knapsack-Griesheim Aktiengesellschaft. Manufacture of trans-1,2-dihalogenoethylenes. 3,184,514, 5–18–65, Cl. 260—654.
Servotomic Ltd.: *See*—
  Carr, Frederick. 3,184,165.
Sfredda, Albert P., 50% to G. W. Downs. Propulsion device. 3,183,663, 5–18–65, Cl. 60—35.5.
Shaffer, George A., Jr., to Radio Corp. of America. Apparatus for sealing and exhausting. 3,184,279, 5–18–65, Cl. 316—31.
Shahbender, Rabah: *See*—
  Briggs, George R., and Shahbender. 3,183,579.
Shannon, John K. Battery cover terminal boss. 3,184,348, 5–18–65, Cl. 136—168.
Shaw, David N., to Carrier Corp. Compressor capacity control. 3,184,151, 5–18–65, Cl. 230—31.
Shaw, Earnest B. Template. 3,183,596, 5–18–65, Cl. 33—90.
Shearman, Wilbur E., to Ajax Magnethermic Corp. Automatic pouring furnace. 3,184,226, 5–18–65, Cl. 266—33.
Sheffield Corp., The: *See*—
  Aller, Willis F. 3,184,197.
Shell Oil Co.: *See*—
  Bradford, Paul C. 3,184,065.
  Foster, Kenneth W., and Geer. 3,184,541.
  Kleiss, Hendricus P. 3,183,997.
  Kolb, Robert H., and Reinhart. 3,184,698.
  McEver, James W., and Godfrey. 3,183,971.
  Roddick, Douglas G. 3,183,708.
  Slater, Ernest R. 3,183,558.

Shell Oil Co. : *See*—Continued
  Stanton, Benjamin D. 3,184,686.
  Vogel, Charles B. 3,183,983.
  Weller, Charles E. 3,184,752.
Shelley, Donald P. Tunnel kiln and method of operation. 3,184,224, 5–18–65, Cl. 263—28.
Sheppard, Chester S. : *See*—
  Jaruzelski, John J., Kolobielski, and Sheppard. 3,184,425.
Shimanckas, William J., to Outboard Marine Corp. Marine propulsion device. 3,183,880, 5–18–65, Cl. 115—41.
Shimeld, Tom A. G. : *See*—
  Clark, Patrick A., and Shimeld. 3,184,077.
Shin-Mitsubishi Jukogyo Kabushiki Kaisha : *See*—
  Ikai, Minoru, and Arashi. 3,184,186.
Shipley, Robert M., Jr., ½ to N. C. De Laittre. Hydraulic tree shaker apparatus. 3,183,656, 5–18–65, Cl. 56—328.
Shone, Samuel M., to Babyline Furniture Corp. Collapsible baby stroller. 3,184,249, 5–18–65, Cl. 280—36.
Shotsky, Nathan, to The Multex Co. Apparatus for producing stretchable fabric. 3,183,868, 5–18–65, Cl. 112—118.
Shure Mfg. Corp. : *See*—
  Wende, Adolph H. 3,184,068.
Siefken, Werner : *See*—
  Kunze, Heinrich, Bayer, Wehn, Siefken, and Klauke. 3,184,493.
Siegel, Al L. Lighting fixture with interchangeable diffusers. 3,184,594, 5–18–65, Cl. 240—78.
Siegel, Edgar, and H. Gold, to Farbenfabriken Bayer Aktiengesellschaft. 3-(p-triazinylamino-phenyl)-coumarin compounds. 3,184 459, 5–18–65, Cl. 260—249.5.
Siegel, Martin, and S. Zelnick, to Weldatron Corp. Machine monitoring apparatus. 3,184,725, 5–18–65, Cl. 340—213.
Siegel, Max L. : *See*—
  Jacobs, Robert V., and Siegel. 3,183,528.
Siegel, Peter, and J. Chleq, to Gebr. Bellmar KG, and Chleq Frote & Cie. Pulp approach flow system for headboxes of paper-making machines. 3,184,375, 5–18–65, Cl. 162—343.
Siegel, Werner, to Schloemann Aktiengesellschaft. Locking means for the mold closing plate of injection molding machines. 3,183,555, 5–18–65, Cl. 18—30.
Siegrist, Adolf E., L. Guglielmetti, E. Maeder, and P. Liechti, to Ciba Ltd. 2,5-di-[1′,3′,4′-oxdiazol-2-yl]thiophene compounds. 3,184,468, 5–18–65, Cl. 260—307.
Silliman, Sheldon D. : *See*—
  Reuther, John F., Cruess, and Silliman. 3,184,642.
Silverman, Hyman P. : *See*—
  Willoughby, John T., and Silverman. 3,184,105.
Simms, James S. Tensioning units. 3,184,219, 5–18–65, Cl. 254—29.
Sims, Raymond B., to Davy and United Engineering Co. Ltd. Control system for temper rolling mills. 3,183,693, 5–18–65, Cl. 72—19.
Singer Co., The : *See*—
  Bioniarz, Richard M. 3,184,681.
  Hermanns, Frederick R., and Coleman. 3,184,207.
  Johnson, Ralph E., and Wiehl. 3,183,947.
Singletary, Ernest C., to Texas Instruments Inc. Miniature circuit assembly. 3,184,649, 5–18–65, Cl. 317—101.
Skarshinski, Leon : *See*—
  Funk, Howard L., and Skarshinski. 3,184,685.
Skeel, Ray C., 50% to R. A. Baker. Metal expanding machine. 3,183,575, 5–18–65, Cl. 29—6.2.
Skinner, Peter, to Decca Ltd. Lamp monitoring apparatus. 3,184,637, 5–18–65, Cl. 315—129.
Skinner, Robert T. J., to Joseph Lucas (Industries) Ltd. Fluid pumps and motors. 3,183,848, 5–18–65, Cl. 103—162.
Skowronski, George V. : *See*—
  Farrell, Robert A., and Skowronski. 3,183,800.
Slater, Ernest R., to Shell Oil Co. Crammer feeder for extruder. 3,183,553, 5–18–65, Cl. 18—12.
Sloan Valve Co. : *See*—
  Billeter, Henry R. 3,184,212.
Smith, Arthur, P. Lacoppola, and J. S. Dougherty, to General Bronze Corp. Anchors for metal windows. 3,184,016, 5–18–65, Cl. 189—75.
Smith, Elbridge G. Inflatable garment holder and drying device. 3,184,127, 5–18–65, Cl. 223—67.
Smith, Hugh R., Jr., to Temescal Metallurgical Corp. Apparatus for continuous foil production by vapor deposition. 3,183,563, 5–18–65, Cl. 22—57.3.
Smith, John E. : *See*—
  Cowles, Warren H., and Smith. 3,183,957.
Smith Kline & French Laboratories : *See*—
  Durant, Graham J. 3,184,473.
  Hart, Donald J., and Jaffe. 3,184,728.
  Weisbach, Jerry A. 3,184,448.
  Whitecar, Allen E. 3,184,668.
Smith, John W., to Hogan Faximile Corp. Facsimile coincidence phasing control circuit. 3,184,546, 5–18–65, Cl. 178—69.5.
Smith, John W., to Hogan Faximile Corp. Electrolytic facsimile recorder apparatus. 3,184,750, 5–18–65, Cl. 346—74.
Smith, Lynn E : *See*—
  Smith, Telford L. and L. E. 3,183 938.
Smith, Paul R., to Radio Corp. of America. Apparatus for assembling an electron tube cage. 3,183,577, 5–18–65, Cl. 29—25.19.
Smith, Robert W., to Aladdin Mfg. Co. Insert for beverage container support. 3,184,201, 5–18–65, Cl. 248—311.
Smith, S., & Sons (England) Ltd. : *See*—
  Bowen, Tom. 3,183,593.
  Williams, Graham. 3,184,669.
Smith, Samuel, to Stevens & Bullivant Ltd Rotary swaging and forging machines. 3,183,704, 5–18–65, Cl. 72—402.
Smith, Telford L. and L. E. Low bolt pipe repair clamp. 3,183 938, 5–18–65, Cl. 138—99.
Smith, William B., Jr., to The Bendix Corp. Guarded tone signalling. 3,184,716, 5–18–65, Cl. 340—171.
Smith, William G., to Lox-All Sales Corp. Masonry wall reinforcing means. 3,183,628, 5–18–65, Cl. 50—492.
Snyder, Charles C., to CTS Corp. Variable resistor. 3,184,096, 5–18–65, Cl. 338—174.
Snyder, Charles F. : *See*—
  Thielfoldt, Lloyd W., and Snyder. 3,184,202.
Sobelson, Milton D. Buoyant illuminating device. 3,183,688, 5–18–65, Cl. 67—51.
Societe Anonyme D.B.A. : *See*—
  Thirion, Rene A. L. 3,184,005.
Societe Civile Pour l'Etude d Engins a Pistons Libres E.P.L. : *See*—
  Hellweg, Kurt H. W. 3,183,900.
Societe d'Electronique et d'Automatisme : *See*—
  Albin, Jacques, Recoque, and Richard. 3,184,718.
Societe dite Controle Bailey : *See*—
  De Livois, Guy M. 3,183,897.
Societe Rhodiaceta : *See*—
  Corbiere, Jacques. 3,183,657.
Solley, Woodrow W. : *See*—
  Brandon, Richard N., and Solley. 3,184,095.
Solomon, Henry J., to Rotax Ltd. Arrangement of cooling channels in a dynamoelectric machine. 3,184,624, 5–18–65, Cl. 310—54.
Sorenson, Villy F. Card punching dies. 3,183,757, 5–18–65, Cl. 83—690.
Souter, Eugene H. Method and apparatus for making an electrical connection. 3,183,580, 5–18–65, Cl. 29—155.55.
Spang, Carl F., to The Hobart Mfg. Co. Method for determining fat content in ground meat. 3,183,710, 5–18–65, Cl. 73—76.
Sparrow, Vernon W., to Bell Punch Co. Ltd. Data recording machines. 3,184,160, 5–18–65, Cl. 235—60.15.
Speakman, Eugene R., to Douglas Aircraft Co., Inc. Dual pintle flush mounting hinge. 3,183,548, 5–18–65, Cl. 16—163.
Spera, Frank T., to Philco Corp. Electrical component and method of assembly. 3,184,532, 5–18–65, Cl. 174—1.
Spera, Frank T., to Philco Corp. Mounting means for electrical components. 3,184,699, 5–18–65, Cl. 339—17.
Sperry Rand Corp. : *See*—
  Anderson, Ralph S. 3,184,707.
  Rolon, Arnaldo. 3,184,230.
  Trenchard, Herbert A. 3,183,603.
  Wallace, Richard A. 3,184,662.
  Yee, Seeping. 3,184,609.
Spicer, Paul J. Wide jalousie end clip. 3,183,561, 5–18–65, Cl. 20—62.
Spiro Vlahandreas : *See*—
  Little, Jack M. 3,183,780.
Spirounis, Vassilios K. Valve grinding apparatus and grinding elements therefor. 3,183,635, 5–18–65, Cl. 51—241.
Spivey, Samuel C. Air-conditioning control system for vehicles and the like. 3,183,964, 5–18–65, Cl. 165—28.
Stach, Kurt : *See*—
  Dold, Otto, Stach, and Schaumann. 3,184,467.
Stadelmann, Rudolf, to Verwaltungsgesellschaft der Werkzeugmaschinenfabrik Oerlikon. Cartridge supply device. 3,183,778, 5–18–65, Cl. 89—33.
Stamicarbon N.V. : *See*—
  Kaasenbrood, Petrus J. C. 3,184,508.
Standaart, Adrian W. Changeable storage device for storing program-representing patterns of connections. 3,184,713, 5–18–65, Cl. 340—147.
Standard Oil Co. : *See*—
  Lee, Robert J., and Becker. 3,184,517.
  Sanders, Willialm W., Krane, and Pansing. 3,184,518.
Standard-Thomson Corp. : *See*—
  Baker, William E. 3,183,720.
Standbridge, Peter J. : *See*—
  Ellis, Frederick E., and Standbridge. 3,183,742.
Stanley Works, The : *See*—
  Gledhill, Arthur E. 3,184,052.
Stanton, Benjiman D., to Shell Oil Co. Optimising controller. 3,184,686, 5–18–65, Cl. 328—69.
Sta-Rite Ginnie Lou, Inc. : *See*—
  Bolinger, George N. 3 183,915.
Starre, Gerrit, and W. Witsiers, to North American Philips Co., Inc. Cover plate for electric hair-clipping device. 3,183,590, 5–18–65, Cl. 30—90.
Stauffer Chemical Co. : *See*—
  Lukes, George E., and Williamson. 3,184,379.
Stauffer, John D. : *See*—
  Argue, Donald D., and Stauffer. 3 183,605.
Stauffer, John D., to General Electric Co. Apparatus and process for removing solvents from coatings on metal. 3,183,604, 5–18–65, Cl. 34—18.
Steen, Gus P. Support for flanged container. 3,184,203, 5–18–65, Cl. 248—318.
Steiger, Norbert, to Hoffmann-La Roche Inc. Anthraquinone formamidines of primary amines. 3,184,482, 5–18–65, Cl. 260—378.
Steinhagen, William K., and E. W. Yott, to General Motors Corp. Method and apparatus for conditioning cars. 3,183,962, 5–18–65, Cl. 165—3.
Steinhards, Arnolds : *See*—
  Lemin, Alan J., Steinhards, and Boyack. 3,184,300.
Steisslinger Kurt, to Eastman Kodak Co. Film speed setting device for cameras. 3 183 807, 5–18–65, Cl. 95—10.
Stelzer, William, to Kelsey-Hayes Co. Fluid pressure motor mechanism. 3,183,789 5–18–65, Cl. 91—369.
Stengel, Mathew P., to Combustion Engineering, Inc. Method and system for operating a furnace. 3,183,864, 5–18–65, Cl. 110—1.
Stephenson, Douglas, to Burroughs Wellcome & Co. (U.S.A.) Inc. Prolonged action medicinal tablets. 3,184,386, 5–18–65, Cl. 167—82.
Sterling Drug Inc. : *See*—
  Clinton, Raymond O., and Manson. 3,184,456.

Stern, Marvin A., to General Dynamics Corp. Waveform time compression system. 3,184,721, 5–18–65, Cl. 340—174.
Steudkowski, Frank S. Fluid-actuated rotatable chance device. 3,184,238, 5–18–65, Cl. 273—142.
Stevens & Bullivant Ltd. : *See*—
  Smith, Samuel. 3,183,704.
Stevens, Eric S., to Brunswick Corp. Shoe sanitizing device. 3,184,277, 5–18–65, Cl. 312—276.
Stevens, William D. : *See*—
  Lytle, Robert I., Moran, and Stevens. 3,183,896.
Stevenson, Wilbur W. Flow meter. 3,183,712, 5–18–65, Cl. 73—203.
Stewart, Meredith M. : *See*—
  Flinn, Richard A., Schmid, and Stewart. 3,184,404.
Stewarts and Lloyds Ltd. : *See*—
  Storr, Hardy E. 3,184,523.
Stichting Reactor Centrum Nederland : *See*—
  Kersten, Johannes A. H. 3,184,389.
Stoltman, Donald D. : *See*—
  Parker, Leland C., and Stoltman. 3,183,993.
Stone, Richard L., and G. R. Cunnington, Jr., to William Wallace Corp. Dome type chimney top. 3,183,822, 5–18–65, Cl. 98—83.
Storm Industries, Inc. : *See*—
  Peterson, Seour, and Granath. 3,183,889.
Storr, Hardy E. Apparatus for use in the granulation of iron. 3,183,537, 5–18–65, Cl. 18—2.7.
Storr, Hardy E., to Stewarts and Lloyds Ltd. Granulation of iron. 3,184,523, 5–18–65, Cl. 264—5.
Stover, Joe V., to Hughes Aircraft Co. Pulse modulator with transistor switch. 3,184,615, 5–18–65, Cl. 307—88.5.
Straub, Harold E. : *See*—
  Averill, Eugene F., and Straub. 3,183,821.
Strother, Fred P., to West Point Mfg. Co. Method of splicing multifilament yarns by vibratory treatment. 3,184,354, 5–18–65, Cl. 156—73.
Strother, Fred P., to West Point Mfg. Co. Apparatus for splicing thermoplastic yarn by high frequency vibrations. 3,184,363, 5–18–65, Cl. 156—433.
Struble, Albert. Friction exercise device having gripper elements. 3,184,234, 5–18-65, Cl. 272—68.
Struthers Scientific and International Corp. : *See*—
  Mohlman, John W., and Davis. 3,183,679.
Stuart, Frank A. : *See*—
  Lowe, Warren, and Stuart. 3,184,412.
Stubbs, Arthur J. : *See*—
  Gurney, William A., and Stubbs. 3,183,707.
Stuckert, Paul E., to International Business Machines Corp. Switching circuit for monitoring signals on a plurality of parallel signal lines. 3,184,715, 5–18–65, Cl. 340—166.
Studi e Brevetti Applicazioni Tessili : *See*—
  Diotti, Giacinto. 3 184,529.
Studiengesellschaft Kohle m.b.H. : *See*—
  Wilke, Gunther, and Pfohl. 3,184,432.
Stüdli, Hans, Sr. Hydraulic press. 3,183,556, 5–18–65, Cl. 18—30.
Stull, Keefer S., Jr. : *See*—
  Grahl, Melvin F., and Stull. 3,184,688.
Stuller, Frank G., W. H. Gumz, and E. J. Anderson, to Rex Chainbelt Inc. Log deck and separator. 3,184,034, 5–18–65, Cl. 198—29.
Sumitomo Chemical Co., Ltd. : *See*—
  Maeda, Shozo, Yamori, and Kaminaka. 3,184,494.
Sun Oil Co. : *See*—
  Armstrong, Charles R. 3,184,396.
  Blair, Edgar A. 3,184,512.
Sunbeam Corp. : *See*—
  Wickenberg, Chester H. 3,184,579.
Sundstrom, Karl E., to Beckman Instruments, Inc. Automatic slit control for analyzers. 3,183,764, 5–18–65, Cl. 88—14.
Surdell, Richard J. : *See*—
  Prindle, William L., Bielfeldt, and Surdell. 3,184,087.
Sus, Oskar : *See*—
  Fritz, Gerhard, Sus, Uhlig, and Neubauer. 3,184,310.
Svenska Flaktfabriken, Aktiebolaget : *See*—
  Gustafsson, Rune, and Wellmar. 3,183,606.
  Lagerdahl, Sebastian. 3,183,648.
Swanson, John W., E. J. Jones, and C. L. Mehltretter, to United States of America, Agriculture. Wet-strength paper comprising highly oxidized periodate xystarch and process of preparing the same. 3,184,333, 5–18–65, Cl. 117—156.
Swartz, Harry : *See*—
  Weese, Wilfred W., and Swartz. 3,183,927.
Sweeny, Allen N., to De Vlieg Machine Co. Fixture for grinding spade drills or the like. 3,183,634, 5–18–65, Cl. 51—220.
Sweet, Edward : *See*—
  Russell, James R., and Sweet. 3,184,427.
Swenson, Alfred G., to General Electric Co. Manual spray iron. 3,183,611, 5–18–65, Cl. 38—77.
Swenson, Alfred G. : *See*—
  Finlayson, Frank E., and Swenson. 3,183,610.
Swett, James B., to Rexall Drug and Chemical Co. Floral arranger. 3,183,624, 5–18–65, Cl. 47—41.11.
Swing, Charles E. : *See*—
  Offensend, Glenn W., Swing, and Barringer. 3,183,816.
Sylvania Electric Products Inc. : *See*—
  Dore, Burnell V., and Hein. 3,184,636.
Syntex Corp. : *See*—
  Knox, Lawrence H. 3,184,484.
  Knox, Lawrence H. 3,184,485.
Systems, Inc. : *See*—
  McGuire, George E. 3,183,669.
Szabö, Zoltán. Blade comb hair trimmer having tooth structure permitting variable depth of cut. 3,183,589, 5–18–65, Cl. 30—30.
T-K Roofing Mfg. Co. : *See*—
  Ryckman, George E. 3,184,324.
Tabara, Goro R., to Philco Corp. Power absorbing coaxial termination comprising slab line structure with plane outer plates having inwardly curved end portions. 3,184,692, 5–18–65, Cl. 333—22.
Takasaka, Tomoyoshi, and M. Nagayama, to Logetronics Inc. Photographic printing apparatus. 3,183,766, 5–18–65, Cl. 88—24.
Tamm, Christoph, to Sandoz Ltd. 11α,19,21-triacetoxy-14-hydroxy-$\Delta^{1,4}$-14 pregnadiene-dione(3,20). 3,184,489, 5–18–65, Cl. 260—397.45.
Tanaka, Akira, to General Motors Corp. Seat adjuster synchronizer. 3,184,208, 5–18–65, Cl. 248—429.
Taneda, Toru : *See*—
  Tsunoda, Yoshio, Taneda, Akamatsu, and Matsui. 3,184,281.
Taneda, Yasuo : *See*—
  Ishizuka, Yoshio, Taneda, and Ohno. 3,184,469.
Tate, Lawrence E. : *See*—
  Perdue, James B., and Tate. 3,184,081.
Tatham, Charles, III. Stop lights providing visual indications to the extent of brake applications. 3,183,881, 5–18–65, Cl. 116—42.
Taylor, Clyde L. : *See*—
  Jordan, Russell E., and Taylor. 3,183,654.
Taylor, Harold W. : *See*—
  Rankin, Alexander B. C., French, and Taylor. 3,183,709.
Taylor, Wilfred K., to International Business Machines Corp. Recognition apparatus. 3,184,711, 5–18–65, Cl. 340—146.3.
Taylor, William H. : *See*—
  Newton, Cecil A., and Taylor. 3,184,519.
Teagno, Wlanimiro : *See*—
  Obert, Luciano, and Teagno. 3,184,705.
Teasdall, Harry E. : *See*—
  Gamaunt, Roger L. 3,183,991.
Teijin Ltd. : *See*—
  Ishizuka, Yoshio, Taneda, and Ohno. 3,184,469.
Teleflex Inc. : *See*—
  Matz, Allen S. 3,183,737.
Telefonaktiebolaget L M Ericsson : *See*—
  Björk, John C. H., and Backholm. 3,184,553.
Teller, Aaron J., to Mass Transfer, Inc. Process for deodorization of an odiferous atmosphere. 3,183,645, 5–18–65, Cl. 55—20.
Teller, Aaron J., to Mass Transfer, Inc. Stepwise rotary adsorber including inflatable seal. 3,183,649, 5–18–65, Cl. 55—179.
Temescal Metallurgical Corp. : *See*—
  Smith, Hugh R., Jr. 3,183,563.
Teng, Jan E. : *See*—
  Unger, Hans P. O., and Teng. 3,183,722.
Tengler, Emanuel : *See*—
  Schumacher, Richard, Lang, and Tengler. 3,184,398.
Tennant, G. H., Co. : *See*—
  Kline, Roger E. 3,184,246.
Tenniswood, Howard J., to Revco, Inc. Electrical connector apparatus. 3,184,702, 5–18–65, Cl. 339—66.
Terlecky, Boris, and R. Krause, to ACF Industries, Inc. Sliding frame car. 3,183,853, 5–18–65, Cl. 105—368.
Terteling, J. A., Sons, Inc. : *See*—
  Durston, Harry D., and Perry. 3,183,984.
Teshi, Haruo, and F. Sakaki, to Elmo Co. Ltd. System for automatically controlling diaphragm for photographic camera. 3,183,808, 5–18–65, Cl. 95—10.
Testa, Emilio : *See*—
  Nicolaus, Bruno J. R., and Testa. 3,184,500.
Texas Instruments Inc. : *See*—
  Brown, Herbert L., Jr., and Helms. 3,184,714.
  Chapman, Aubrey I., Jr., and Martel. 3,184,735.
  Hutson, Jerald L. 3,184,653.
  Jensen, Arthur J. 3,184,534.
  Kuehne, Walter. 3,184,679.
  Littlepage, Clarence R., Jr., and Semon. 3,184,658.
  Singletary, Ernest C. 3,184,649.
Thayer, Charles G. : *See*—
  Gombar, Steve, and Thayer. 3,184,110.
Ther, Leopold : *See*—
  Ruschig, Heinrich, Schmitt, Driesen, Ther, and Pfaff. 3,184,470.
Thielfoldt, Lloyd W., C. F. Snyder. Electric shaver rack. 3,184,202, 5–18–65, Cl. 248—314.
Thiers, Michel : *See*—
  Lafont, Pierre, and Thiers. 3,184,491.
Thiokol Chemical Corp. : *See*—
  Donovan, George J., Fein, and Cohen. 3,184,499.
  Manning, Thomas J., Jr. 3,183,592.
Thirion, Rene A. L., to Societe Anonyme D.B.A. Caliper, spot-type disc brake. 3,184,005, 5–18–65, Cl. 188—73.
Thoma, Wilhelm, and H. Rinke, to Farbenfabriken Bayer Aktiengesellschaft. Polyurethane elastic fibers and a method of producing the same. 3,184,426, 5–18–65, Cl. 260—30.8.
Thomann, Thomas, W. Cermak, and H. Schlafli. Electrical switches for controlling a sequence of different operations. 3,184,558, 5–18–65, Cl. 200—9.
Thomas & Betts Co., The : *See*—
  Crimmins, David J. 3,183,584.
Thomas, Francis J., to International Business Machines Corp. Visual display device for presentation of continuous video data. 3,184,539, 5–18–65, Cl. 15—112.
Thomas, Maurice E. Waste grease disposal unit. 3,184,100, 5–18–65, Cl. 220—63.
Thomas, Penrhyn Francis, to Corneal Lens Corp. Pty. Ltd. Manufacture of corneal lenses. 3,183,637, 5–18–65, Cl. 51—284.
Thompson, John O. Marble shooter. 3,183,908, 5–18–65, Cl. 124—10.
Thompson, Leslie E. : *See*—
  Dahlberg, Truman L., and Thompson. 3,184,050.
Thuesen, Niel C. Compression-compensating means for poppet valves. 3,183,901, 5–18–65, Cl. 123—90.

- Tidwell, Joe S. Adaptor for centering bells on bottle filling machines. 3,183,946, 5–18–65, Cl. 141—371.
- Tindall, John M. Food packaging machine. 3,183,642, 5–18–65, Cl. 53—251.
- Tinfow, Lionel: *See*—
  - Winton, Sidney V. 3,184,061.
- Tissot-Dupont, Lucien F. S., to S. T. Dupont. Pressure reducer for liquefied gas containers. 3,183,686, 5–18–65, Cl. 67—7.1.
- Tittle, Charles W., to Schlumberger, Ltd. Radioactive well logging method. 3,184,598, 5–18–65, Cl. 250—83.3.
- Titus Mfg. Corp.: *See*—
  - Averill, Eugene F., and Straub.. 3,183,821.
- Tolbert, Charles E.: *See*—
  - Price, Ralph E., and Tolbert. 3,183,631.
- Torrington Co., The: *See*—
  - Benson, Carl F., and Cowles. 3,184,020.
- Towlsaver, Inc.: *See*—
  - Tucker, Council A., and Perrin. 3,184,176.
- Towner, Robert F. S.: *See*—
  - Ovenden, Raymond E., and Towner. 3,184,606.
- Toyoda Automatic Loom Works, Ltd.: *See*—
  - Kondo, Seiji, Nishikawa, and Yoshida. 3,183,942.
- Transmissions Mecaniques Seine-Doubs-Isere, Compagnie des: *See*—
  - Kuntzmann, Paul L. E. 3,183,734.
- Trenchard, Herbert A., to Sperry Rand Corp. Conversion apparatus and method for magnetic compass systems. 3,183,803, 5–18–65, Cl. 33—224.
- Trevaskis, Henry W., to Dunlop Rubber Co. Ltd. Apparatus for cutting lengths of rubber or rubber-like material from strips or sheets. 3,183,751, 5–18–65, Cl. 83—156.
- Triax Co., The: *See*—
  - Chasar, Anthony R. 3,184,083.
- Trilux-Lenze K.G.: *See*—
  - Wiegelmann, Hubert, and Müller. 3,184,593.
- Triple A Specialty Co.: *See*—
  - Raymond, Eugene B., and Schiller. 3,184,704.
- Trojan Powder Co.: *See*—
  - Griffith, George L. 3,183,836.
- Trombley, Gerald P. Motorized snow sled. 3,183,986, 5–18–65, Cl. 180—5.
- Trombley, Gerald P. Snow vehicle having demountable crawler treads. 3,183,987, 5–18–65, Cl. 180—6.24.
- True, Thomas T.: *See*—
  - Bates, William C., and True. 3,184,616.
- True-Trace Corp.: *See*—
  - Weaver, Paul J. 3,183,929.
- Trusock, George J., and K. C. Johnson, to Clark Equipment Co. Hand lift truck. 3,183,989, 5–18–65, Cl. 180—13.
- Tsunoda, Yoshio, T. Taneda, K. Akamatsu, and K. Matsui, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for dyeing polyolefin articles. 3,184,281, 5–18–65, Cl. 8—4.
- Tucker, Council A., and J. L. Perrin, to Towlsaver, Inc. Dual toilet tissue dispenser. 3,184,176, 5–18–65, Cl. 242—55.3.
- Tuggle, Lloyd H., to Outboard Marine Corp. Chaff-proof flywheel. 3,183,899, 5–18–65, Cl. 123—41.65.
- Tunkel, Norman: *See*—
  - Catto, Vincent P., and Tunkel. 3,184,474.
- Turner, David V. Enclosure. 3,183,527, 5–18–65, Cl. 5—98.
- Tuszynski, Paul P.: *See*—
  - Schultz, Harold B., Fulmer, and Tuszynski. 3,183,670.
- Twin Disc Clutch Co.: *See*—
  - Aschauer, George R. 3,183,878.
  - Aschauer, George R. 3,184,024.
  - Aschauer, George R. 3,184,025.
- Tyler, Henry P., to The Bendix Corp. Pump. 3,183,845, 5–18–65, Cl. 103—162.
- Tyler, Tommy N., to Honeywell, Inc. Variable speed transmission. 3,183,729, 5–18–65, Cl. 74—190.5.
- Uren, William J., and C. H. Propster, Jr., to General Electric Co. Digital-to-analog converter. 3,184,734, 5–18–65, Cl. 340—347.
- Udell, Inc.: *See*—
  - Garrett, Henry U. 3,183,921.
- Uhlig, Fritz: *See*—
  - Fritz, Gerhard, Sus, Uhlig, and Neubauer. 3,184,310.
- Undi, Karl, ½ to K. Undi. Dispensing device for fluids. 3,184,120, 5–18–65, Cl. 222—209.
- Undi, Katherine: *See*—
  - Undi, Karl. 3,184,120.
- Unger, Hans-Georg, Bell Telephone Laboratories, Inc. Circular electric mode filter. 3,184,695, 5–18–65, Cl. 333—98.
- Unger, Hans P. O., and J. E. Teng. Device for indicating pressure in liquids and gases. 3,183,722, 5–18–65, Cl. 73—388.
- Union Carbide Corp.: *See*—
  - Horn Christian F. 3,184,434.
  - Loeser, Theodore S. 3,184,112.
  - Mueller, Gustav A. 3,184,338.
  - Reilly, Thomas A. 3,184,341.
  - Juras, Appy. 3,184,368.
- United Aircraft Corp.: *See*—
  - Holmes, Robert R. 3,183,715.
- United-Carr Inc.: *See*—
  - Heath, Clarence W. 3,184,561.
- United Kingdom Atomic Energy Authority: *See*—
  - Blake Leslie R. 3,184,392.
  - Hackney, Stanley. 3,184,391.
- United Shoe Machinery Corp.: *See*—
  - Imhof, Herman A. 3,183,867.
- United States Borax & Chemical Corp.: *See*—
  - Willcockson, George W. 3 184,429.
  - Woods, William G., Iverson, and Kitasaki. 3,184,418.
- U.S. Industries, Inc.: *See*—
  - Cochran, Clyde D. 3,183,920.
- United States of America,
  - Agriculture: *See*—
    - Swanson, John W., Jones, and Mehltretter. 3,184,333.
- United States of America—Continued
  - Air Force: *See*—
    - Gardner, Colin D. 3,184,275.
    - Rajewski, Z. Ted., and Navarro. 3 183,739.
    - Schwarz, Paul A., and Krumm. 3,184,161.
  - Army: *See*—
    - Baker, Walter S. 3,184,352.
    - Bisch, James L. 3,183,835.
    - Divone, Louis V. 3,183,664.
    - Edwards, Theodoric B. 3,183,990.
    - Gandy, Warren L. 3,183,616.
    - Harrison, Edwin H., Jr. 3,184,614.
    - Petersen, Earl J. 3,184,612.
  - Atomic Energy Commission: *See*—
    - Hale, Duane O. 3,184,604.
    - Michel, Rudolph. 3,183,936.
  - Interior: *See*—
    - Chindgren, Carl J. 3,184,302.
  - Navy: *See*—
    - Baraksuskas, Edward J. 3,183,904.
    - Bussey, William H. 3,184,708.
    - Collins, Samuel C., and Barsamian. 3,183,908.
    - Damm, Carl A. 3,183,777.
    - Franklin, Frederick, and Giloth. 3,184,739.
    - Freedman, David D., and Hess. 3,184,729.
    - Grahl, Melvin F., and Stull. 3,184,688.
    - Hague, John D., and Lundberg. 3,184,738.
    - Healey, Daniel J., III. 3,184,682.
    - Hellgren Leroy L. 3,184,726.
    - Kilmer, Earl E., and Montgomery. 3,184,097.
    - McQuillen, Edward J. 3,183,724.
- United States Rubber Co.: *See*—
  - Chambers, Victor S., and Howland. 3,184,424.
  - Fischer, William K. 3,184,527.
- United States Steel Corp.: *See*—
  - Jaruzelski, John J., Kolobielski, and Sheppard. 3,184,425.
- Universal American Corp.: *See*—
  - Christen, Earl W., Seeley, and Kingsley. 3,183,796.
- Universal Milling and Machinery Ltd.: *See*—
  - Keresztesy, John. 3,184,170.
- Universal Oil Products Co.: *See*—
  - Levy, Joseph. 3,184,510.
- Universal Producing Co.: *See*—
  - Blough, Ronald S. 3,184,273.
- Updyke, Dean E. Combination pocket and carpenter's level. 3,183,602, 5–18–65, Cl. 33—207.
- Upjohn Co., The: *See*—
  - Birkenmeyer, Robert D., and Hoeksema. 3,184,478.
  - Lemin, Alan J., Steinhards, and Boyack. 3,184,300.
  - Paquette, Leo A. 3,184,447.
- Urban Friedrich: *See*—
  - Eilbracht, Hans, Pfannmueller, Rotzoll, Urban, and Zacher. 3,184,444.
- Usines Chausson, Societe Anonyme des: *See*—
  - Plegat, Alain E. 3,184,263.
- Utz Kastulus, to Multifol Patentverwertungs A.G. Method of forming laminated plastic tubing. 3,184,358, 5–18–65, Cl. 156—244.
- VEB Schrauben- und Nietewerke Tombach: *See*—
  - Kettner, Hans. 3,183,700.
- Valtri, Frank J. Fastener for furniture. 3,184,257, 5–18–65, Cl. 287—20.
- Van Der Sluys, William: *See*—
  - Candlin, James E., Jr., and Van Der Sluys. 3,183,854.
- Van der Tas, Johannes C.: *See*—
  - Van Tijen, Jan W., and Van der Tas. 3,184,629.
- Van Dreser, Merton L.: *See*—
  - Parikh, Kanaiyalal N., and Van Dreser. 3,184,322.
- Van Dusen, Laurence W., to Mission Industries. Valet stand and garment hangers. 3,184 066, 5–18–65, Cl. 211—1.
- Van Ooyen, Claude P. Method and means for tuning musical instruments. 3,183,761, 5–18–65, Cl. 84—455.
- Van Tijen, Jan W., and J. C. van der Tas, to North American Philips Co., Inc. Gas-filled electric lamp with a gas-directing screen. 3 184,629, 5–18–65 Cl. 313—33.
- Van Vleet, Frank R., to A. W. Chesterton Co. Shaft seal. 3 184,244, 5–18–65, Cl. 277—83.
- Van Zonneveld, Pieter, to North American Philips Co., Inc. Method of mechanically manufacturing hollow glass objects. 3,184 297, 5–18–65, Cl. 65—78.
- Van Zonneveld, Pieter, to North American Philips Co., Inc. Method of manufacturing hollow glass articles. 3,184,298, 5–18–65, Cl. 65—80.
- Vanden Hoek, Harold L.: *See*—
  - Brunson, Virgil A., and Vanden Hoek. 3,183,839.
- Vansteenkiste, Rene H.: *See*—
  - Buyze, Edwin K., and Vansteenkiste. 3,183 999.
- Varrichio, Ralph, to Hogan Faximile Corp. Facsimile transmitter sheet feeding mechanism. 3,184,231, 5–18–65, Cl. 271—36.
- Velsicol Chemical Corp.: *See*—
  - Richter, Sidney B. 3,184,501.
- Venema, William. Indicating dial. 3,183,885, 5–18–65, Cl. 116—124.
- Ver Meulen, Robert, to Hammond Machinery Builders, Inc. Splash curtain for belt grinder. 3,183,629, 5–18–65, Cl. 51—135.
- Verwaltungsgesellschaft der Werkzeugmaschinenfabrik Oerlikon: *See*—
  - Stadelmann, Rudolf. 3,183,778.
- Vess, Albert, D. E. Phipps, and J. L. Hunerwadel, to Keystone Camera Co., Inc. Camera exposure control. 3,183,814, 5–18–65, Cl. 95—64.
- Vesuvius Crucible Co.: *See*—
  - Murton, Crawford B. 3,183,564.
- Viall, Charles S., Sr. Seat spring arrangement. 3,184,227, 5–18–65, Cl. 267—108.

- Vincent, Nathaniel R., to Douglas Aircraft Co., Inc. Electrical component mounting pad for printed circuit boards. 3,184,536, 5–18–65, Cl. 174—138.
- Vitramon, Inc.: *See*—
  - Weller, Barton L., and Horn. 3,184,661.
- Vogel, Charles B., to Shell Oil Co. Core magnetization device. 3,183,983, 5–18–65, Cl. 175—44.
- Vogl, Otto F. L., to E. I. du Pont de Nemours and Co. Stabilized crystalline polyaldehydes having 2–10 carbon atoms per monomer unit. 3,184,433, 5–18–65, Cl. 260—67.
- Vogt, Clarence W. Compacting equipment. 3,183,570, 5–18–65, Cl. 25—90.
- Volckening, Lloyd I., to Iners-Lee Co. Package with self-sealing closure. 3,184,121, 5–18–65, Cl. 222—213.
- Von Meister, Frederick W., and E. B. Fritz, to Azoplate Corp. Lithographic printing foil. 3,183,832, 5–18–65, Cl. 101—149.2.
- Von Polnitz, Wolfgang: *See*—
  - Schmidtberger, Rudolf, Schwick, and Von Polnitz. 3,184,394.
- Vos, Henry J.: *See*—
  - Randall, Kenneth W., and Vos. 3,184,085.
- Vrana, George, to Riegel Paper Corp. Collapsible cellular carton. 3,184,141, 5–18–65, Cl. 229—28.
- Wagner, Arthur M.: *See*—
  - Brown, Donald R., Campbell, Leidich, and Wagner. 3,184,648.
- Wagner Electric Corp.: *See*—
  - Cruse, Oliver B. 3,183,791.
  - Ridgway, Asa J., Jr. 3,184,272.
- Wagner, Henry A., M. D. Merritt, and R. M. Bokmuller, to The E. F. Hauserman Co. Method and apparatus for spraying paint. 3,184,328, 5–18–65, Cl. 117—105.3.
- Wahl Clipper Corp.: *See*—
  - Wahl, John F. and W. P. 3,184,195.
- Wahl, John F. and W. P., to Wahl Clipper Corp. Supporting structure for an adjustable appliance. 3,184,195, 5–18–65, Cl. 248—158.
- Wahl, Warren P.: *See*—
  - Wahl, John F. and W. P. 3,184,195.
- Walbert, Wilhelm, F. J. Gierse, and K. M. Schäfer, to Wirkmaschinen-Fabrik Wilhelm Barfuss G.m.b.H. Method of and device for embroidering a web of cloth or the like. 3,183,866, 5–18–65, Cl. 112—90.
- Walden, Harry R. Fishing equipment. 3,183,619, 5–18–65, Cl. 43—17.2.
- Waldorf Paper Products Co.: *See*—
  - Johnson, Ronald V. 3,184,135.
- Walford, Herbert A.: *See*—
  - Davies, George. 3,183,958.
- Walker Mfg. Co.: *See*—
  - May, Claude H., and Rhodes. 3,184,154.
- Wallace, Richard A., to Sperry Rand Corp. Closed loop servo system with dual channel degenerative feedback. 3,184,662, 5–18–65, Cl. 318—18.
- Wallace, William, Corp.: *See*—
  - Stone, Richard L., and Cunnington. 3,183,822.
- Waller, Coy W.: *See*—
  - Martin, Tellis A., and Waller. 3,184,505.
- Walling, Richard W., to General Motors Corp. Stator winding equipment. 3,184,173, 5–18–65, Cl. 242—1.1.
- Wallis, Douglas E., to Sir H. G. Parsons & Co. Ltd. Mirror cover for reflecting telescopes. 3,183,776, 5–18–65, Cl. 88—32.
- Walmet Corp., The: *See*—
  - Almdale, Einar R. 3,184,259.
- Walston, Dan H.: *See*—
  - Byrd, Charles R., and Walston. 3,183,599.
- Wangerin, Elmer O.: *See*—
  - Rosenburgh, Norman J., and Wangerin. 3,183,768.
- Warner & Swasey Co., The.: *See*—
  - Mergler, Harry W. 3,184,663.
- Wartenberg, Erwin W. Glass tempering apparatus. 3,184,299, 5–18–65, Cl. 65—348.
- Warwick Electronics Inc.: *See*—
  - Carlson, Joseph A., and Massa. 3,184,543.
- Wasag-Chemie Aktiengesellschaft: *See*—
  - Seidl, Alois. 3,184,371.
- Water Gard Corp.: *See*—
  - Sampson, Ralph L., Ruttenberg, and Miller. 3,184,064.
- Watson, Herbert M., and S. B. Moseman. Apparatus for use in filtration of contaminated fluids. 3,184,111, 5–18–65, Cl. 222—133.
- Watson, William: *See*—
  - Earley, Kenneth D., Polanyi, and Watson. 3,183,937.
- Way, John W.: *See*—
  - Huntley, Earl B., Kruse, and Way. 3,184,415.
- Way, Robert B., and C. D. Hersey. Process for forming masks and stencils. 3,183,696, 5–18–65, Cl. 72—57.
- Weaver, Paul J., to True-Trace Corp. Circuit and control. 3 183,929, 5–18–65, Cl. 137—596.18.
- Webb, Wells A., to Hexcel Products Inc. Rocket grain and method of constructing same. 3,183,665, 5–18–65, Cl. 60—35.6.
- Webb, William G., and M. C. Engman, to Engman Mfg. Co. Clamp means. 3,183,569, 5–18–65, Cl. 24—270.
- Webber, John J., to Morgan Construction Co. Gaseous flow reversal valve. 3,184,223 5–18–65, Cl. 263—15.
- Weber, Hanspeter, to Samuel M. Langston Co. Intermittent motion drive mechanism. 3,184,229, 5–18–65, Cl. 271—3.
- Weber-Knapp Co.: *See*—
  - Phelps, Malcolm T. 3,183,550.
- Webster, Milo E., to Bernz O Matic Corp. Aerosol spray container. 3,184,118, 5–18–65, Cl. 222—189.
- Weese, Wilfred W., and H. Swartz, said Weese assignor to said Swartz. Fire extinguishing apparatus. 3,183,927, 5–18–65, Cl. 137—355.19.
- Wehn, Julius: *See*—
  - Kunze, Heinrich, Bayer, Wehn, Siefken, and Klauke. 3,184,493.
- Wei, Peter H.-L., to American Home Products Corp. Benzodiazepinium compounds. 3,184,448, 5–18–65, Cl. 260—239.3.
- Weibel, Gerhard E., to General Telephone and Electronics Laboratories, Inc. Wave generator with time-variant electric potential distribution. 3,184,632, 5–18–65, Cl. 315—7.
- Weinschel, Bruno O., to Weinschel Engineering Co., Inc. Precision variable coaxial attenuator. 3,184,694, 5–18–65, Cl. 333—81.
- Weinschel Engineering Co., Inc.: *See*—
  - Weinschel, Bruno O. 3,184,694.
- Weinstein, Alex J., to The Ednalite Corp. Projection pointer. 3,183,773, 5–18–65, Cl. 88—24.
- Weisbach, Jerry A., to Smith Kline & French Laboratories. Helmia alkaloids. 3,184,446, 5–18–65, Cl. 260—236.
- Weiss, Otto: *See*—
  - Wöhner, Karl-Heinz, and Weiss. 3,183,813.
- Weiss, Phil H.: *See*—
  - Court, Patrick R. J., Brownstein, Reiter, and Weiss. 3,184,537.
- Weissel, Oskar: *See*—
  - Raue, Roderick, Muller, Weissel, and Coenen. 3,184,453.
- Wej-Loc, Inc.: *See*—
  - Esoldi, Vincent F. 3,184,191.
- Welch, Medard W., and J. Dubrovin. Skin stimulating and cleaning device and pump therefor. 3,184,156, 5–18–65, Cl. 230—152.
- Weldatron Corp.: *See*—
  - Siegel, Martin, and Zelnick. 3,184,725.
- Welkowitz, Walter, to Gulton Industries, Inc. Temperature or pressure measuring apparatus. 3,183,705, 5–18–65, Cl. 73—1.
- Weller, Barton L., and C. G. Horn, to Vitramon, Inc. Terminal means for electrical components. 3,184,661, 5–18–65, Cl. 317—261.
- Weller, Charles E., to Shell Oil Co. Variable area recording apparatus and method. 3,184,752, 5–18–65, Cl. 346—108.
- Wellmar, Sven: *See*—
  - Gustafsson, Rune, and Wellmar. 3,183,606.
- Wellworthy Ltd.: *See*—
  - Woolcott, Arthur J. 3,184,245.
- Wende, Adolph H., to Shure Mfg. Corp. Display rack for torus shaped articles. 3,184,068, 5–18–65, Cl. 211—23.
- Wendt, Gerhard R., and K. W. Ledig, to American Home Products Corp. 17-(3-substituted amino propyl)-17-hydroxyestra-3-one-steroids and process for preparing same. 3,184,486, 5–18–65, Cl. 260—397.4.
- Wendt, Gerhard R., and K. W. Ledig, to American Home Products Corp. Preparation of novel 3-lower alkoxy-17-hydroxyalkoxyestra-1,3,5(10)-triene methanesulfonates. 3,184,488, 5–18–65, Cl. 260—397.5.
- Werber, Frank X.: *See*—
  - Chadha, Rajendra N., Jefferson, and Werber. 3,184,440.
- Werthebach, Paul, and W. Wrede, to Hoesch Aktiengesellschaft. Method of improving the aging characteristics of steel. 3,184,344, 5–18–65, Cl. 148—12.
- Weser Flugzeugbau G.m.b.H.: *See*—
  - Reder, Otto. 3,183,871.
- West, Fred: *See*—
  - Meacham, Larned A., and West. 3,184,554.
- West Point Mfg. Co.: *See*—
  - Strother, Fred P. 3,184,354.
  - Strother, Fred P. 3,184,363.
- West Virginia Pulp and Paper Co.: *See*—
  - Baker, James K. 3,184,145.
  - Forbes, Hampton E., Jr. 3,184,136.
- West, William A. Method for replacing bushings. 3,183,585, 5–18–65, Cl. 29—401.
- West, Wilson H., to General Motors Corp. Switch assembly having self-supporting structure to simplify interfit of component parts. 3,184,572, 5–18–65, Cl. 200—159.
- Western Electric Co., Inc.: *See*—
  - Brown, Donald R., Campbell, Leidich, and Wagner. 3,184,648.
  - Brown, Ford J. 3,184,655.
  - Byrd, Charles R., and Walston. 3,183,599.
- Westinghouse Air Brake Co.: *See*—
  - Kirk, Walter B. 3,183,795.
- Westinghouse Electric Corp.: *See*—
  - Reuther, John F., Cruess, and Silliman. 3,184,642.
- Westland Aircraft Ltd.: *See*—
  - Jones, Richard S. 3,183,988.
- Weyerhaeuser Co.: *See*—
  - Berg, Robert A. 3,184,046.
  - Rodman, James B. 3,183,639.
- Whalen, Joseph W., to The Dow Chemical Co. Method of producing Brucella abortus vaccine. 3,184,384, 5–18–65, Cl. 167—78.
- Wheeler, Warren E.: *See*—
  - Pangborn, Jack, and Wheeler. 3,183,818.
- Whicker, John C. F., to Rotax Ltd. Screw and nut mechanisms. 3,183,733, 5–18–65, Cl. 74—424.8.
- Whirlpool Corp.: *See*—
  - Reiter, Alexander L., and Fuller. 3,183,683.
  - Wood, Donald V. 3,184,166.
- White, Frederick A., and W. D. Davis, to General Electric Co. Semiconductive electron multiplier. 3,184,633, 5–18–65, Cl. 315—12.
- White-Rodgers Co.: *See*—
  - Gundelfinger, William E. 3,184,570.
- White, William L., to Collins & Aikman Corp. Tufted pile fabric and method of making same. 3,184,367, 5–18–65, Cl. 161—63.
- Whitecar, Allen E., to Smith Kline & French Laboratories. Master-slave plural motor synchronizing system. 3,184,668, 5–18–65, Cl. 318—75.
- Whiteford, Carlton L., to Poly-Pak Corp. of America. Method of forming containers. 3,184,524, 5–18–65, Cl. 264—94.

Whitlock, Robert A., and V. J. Pillote, to Aquamatic Inc. Multiport valve for water treatment system. 3,183,933, 5–18–65, Cl. 137—624.18.
Wickenberg, Chester H., to Sunbeam Corp. Immersible electric cooking vessel. 3,184,579 5–18–65, Cl. 219—441.
Wicklund, Sven E., to Atlas Copco Aktiebolag. Ignition apparatus. 3,183,902, 5–18–65, Cl. 123—148.
Wiegelmann, Hubert, and J. Müller, to Trilux-Lenze K.G. Pole-mounted lamp. 3,184,593, 5–18–65, Cl. 240—52.
Wiehl, Frederick R.: *See—*
Johnson, Ralph E., and Wiehl. 3,183,947.
Wiley, George D. Fish stick distributing apparatus. 3,184,035, 5–18–65, Cl. 198—33.
Wilke, Gunther, and W. Pfohl, to Studiengesellschaft Kohle m.b.H. Process for the production of cyclododecane derivatives. 3,184,432, 5–18–65, Cl. 260—617.
Wilkins, Charles A., to Ampex Corp. Push-pull power amplifier. 3,184,687, 5–18–65, Cl. 330—70.
Willcockson, George W., to United States Borax & Chemical Corp. Polymeric organoboron compounds. 3,184,429, 5–18–65, Cl. 260—47.
Williams, Graham, to S. Smith & Sons (England) Ltd. Horological instrument motor. 3,184,669, 5–18–65, Cl. 318—129.
Williams, Harrison L.: *See—*
Ruhlman, Jon R., and Williams. 3,183,883.
Williamson, Thomas B.: *See—*
Lukes, George E., and Williamson. 3,184,379.
Willoughby, John T., and H. P. Silverman, to Record Vending Machines, Inc. Record vending machine. 3,184,105, 5–18–65, Cl. 221—129.
Willoughby, Victor A., to Eastman Kodak Co. System for co-ordinating synchronizing signals. 3,184,581, 5–18–65, Cl. 235—61.11.
Willshaw, Philip J. S., to The Diversey Corp. Dispensing device. 3,184,123, 5–18–65, Cl. 222—321.
Wilshin, Frank W., J. F. Brown, and H. R. W. Marsh, to Masson Scott & Co. Ltd. Cutting device having means responsive to the product to disengage work-feed. 3,183,748, 5–18–65, Cl. 83—61.
Wilson Athletic Goods Mfg. Co., Inc.: *See—*
Groot, John K. 3,183,522.
Wilson, Ernest V., and H. W. Rudel, to Esso Research and Engineering Co. High temperature stabilizing lubricant additive. 3,184,408, 5–18–65, Cl. 252—32.7.
Wilson, Glenn R., to Monsanto Research Corp. Organotin polymers. 3,184,430, 5–18–65, Cl. 260—47.
Wilson, Lee, to Lee Wilson Engineering Co., Inc. Regenerative furnace. 3,184,225, 5–18–65, Cl. 263—36.
Wilson, Lee, Engineering Co., Inc.: *See—*
Wilson, Lee. 3,184,225.
Blackman, Calvin C. 3,183,888.
Wilson, W. M., Co., Inc.: *See—*
Wilson, Warren M. 3,183,966.
Wilson, Warren M., to W. M. Wilson Co., Inc. Control system. 3,183,966, 5–18–65, Cl. 165—32.
Winge, John L., and E. K. Dombeck, to The Bendix Corp. Automatic adjuster for non-servo brake. 3,184,008, 5–18–65, Cl. 188—79.5.
Wingfield, Harold T., and B. Olye, to Minnesota Mining and Mfg. Co. Process for removing endogenous activators from pyrrolidone. 3,184,476, 5–18–65, Cl. 260—326.5.
Winthrop-Atkins Co., Inc.: *See—*
Frankl, Ernest. 3,183,622.
Winton, Sidney V., to L. Tinfow. Strippable dispensing sheath and methods for applying the same to articles of merchandise. 3,184,051, 5–18–65, Cl. 206—47.
Wirkmaschinen-Fabrik Wilhelm Barfuss G.m.b.H.: *See—*
Walbert, Wilhelm, Gierse, and Schäfer. 3,183,866.
Witherell, Charles E., to The International Nickel Co., Inc. Welding material for producing welds with low coefficient of expansion. 3,184,577, 5–18–65, Cl. 219—137.
Witziers, Willem: *See—*
Starre, Gerrit, and Witziers. 3,183,590.
Wix Corp.: *See—*
Humbert, Kingsley E., Jr. 3,184,062.
Wohner, Karl-Heinz, and O. Weiss, to Carl Zeiss Stiftung. Device for focussing of photographic objectives. 3,183,813, 5–18–65, Cl. 95—45.
Wojcik, Matthew H., to Merrick Scale Mfg. Co. Electrical circuit for translating a mechanical variation into an electrical variation. 3,184,641, 5–18–65, Cl. 317—5.
Wolf, Henry N., ½ to Dalris Co., Inc. Manufacture of chocolate flavored confections. 3,184,315, 5–18–65, Cl. 99—23.
Wolowicz, Richard S., to Container Corp. of America. End loading, top opening, folding carton. 3,184,147, 5–18–65, Cl. 229—51.
Wood, Donald V., to Whirlpool Corp. Dishwasher. 3,184,166, 5–18–65, Cl. 239—245.
Wood, Garfield A., Jr. Fishing reel with friction drive. 3,184,179, 5–18–65, Cl. 242—84.45.
Wood, Robert F., to General Electric Co. High level sawtooth waveform voltage generator. 3,184,617, 5–18–65, Cl. 307—107.
Wood, Warren R., to Robert Bosch G.m.b.H. Series stacked transistorized ignition system having diodes in series with the bases. 3,184,638, 5–18–65, Cl. 315—206.
Woodell, Rudolph, to E. I. du Pont de Nemours and Co. Tubular fluid conduit of film fibril elements. 3,183,941, 5–18–65, Cl. 138—141.
Woodford Mfg. Co.: *See—*
Noland, Wayne B. 3,183,536.
Woodruff, Lee B.: *See—*
Hammerstrom, Henry H., and Woodruff. 3,184,628.
Woods, Verle W. Stabilisation of concentrated suspensions of pesticide particles. 3,184,380, 5–18–65, Cl. 167—43.
Woods, William G., M. L. Iverson, and K. Kitasaki, to United States Borax & Chemical Corp. Aluminosiloxane polymers and method of preparing same. 3,184,418, 5–18–65, Cl. 260—2.
Woolcott, Arthur J., to Wellworthy Ltd. Piston rings. 3,184,245, 5–18–65, Cl. 277—136.
Woolman, Granville: *See—*
Brown, Edwin C., and Woolman. 3,184,076.
Worcester, Gurdon S. Disposable sanitary washing envelope. 3,183,543, 5–18–65, Cl. 15—509.
Work, Josiah, R. T. Joseph, and J. H. Blake, to FMC Corp. Carbonaceous shapes. 3,184,293, 5–18–65, Cl. 44—23.
Work, Josiah, R. T. Joseph, and J. H. Blake, to FMC Corp. Amorphous carbonaceous material. 3,184,397, 5–18–65, Cl. 202—35.
Worley, Norman G., to Babcock & Wilcox Ltd. Finned tubes and heat exchangers formed of such tubes. 3,183,970, 5–18–65, Cl. 165—181.
Worrel, Richard M.: *See—*
Loosli, Stanley. 3,184,029.
Worten, Jessie J.: *See—*
Alquist, Henry E., and Kleinmann. 3,183,940.
Worthington Corp.: *See—*
Jekat, Walter K. 3,183,968.
Worthington, George D., to Cable Covers Ltd. Compression connector for joining wires. 3,184,535, 5–18–65, Cl. 174—90.
Wrede, Willi: *See—*
Werthebach, Paul, and Wrede. 3,184,344.
Wright, Maurice J., to Joseph Lucas (Industries) Ltd. Semiconductor direct current control circuits. 3,184,665, 5–18–65, Cl. 318—327.
Wright, Royal K. Rock polishing machine. 3,183,630, 5–18–65, Cl. 51—163.
Wu, Yao H.: *See—*
Scarborough, Homer C., Wu, and Feldkamp. 3,184,462.
Wurlitzer Co., The: *See—*
Bode, Harald E. W. 3,183,759.
Wylde, Ronald J. Oscillator with phase shift start stop controls. 3,184,689, 5–18–65, Cl. 331—117.
Xerox Corp.: *See—*
Rutkus, John, Jr. 3,183,771.
Yale & Towne, Inc.: *See—*
Check, Mathias M. 3,183,692.
Yamori, Katsundo: *See—*
Maeda, Shozo, Yamori, and Kaminaka. 3,184,494.
Yardney International Corp.: *See—*
Andre, Henri G. 3,184,340.
Yarnall-Waring Co.: *See—*
Brown, George R., and Fry. 3,183,727.
Yee, Seening, to Sperry Rand Corp. Transistor gated switching circuit having high input impedance and low attenuation. 3,184,609, 5–18–65, Cl. 307—88.5.
Yeo, Alan A., and R. T. L. Mowll, to The British Petroleum Co. Ltd. Separation process. 3,184,406, 5–18–65, Cl. 208—310.
Yep, George W. Clamp for securing hawsers and the like. 3,183,566, 5–18–65, Cl. 24—125.
Yoshida, Masaru: *See—*
Kondo, Seiji, Nishikawa, and Yoshida. 3,183,942.
Yott, Edward W.: *See—*
Steinhagen, William K., and Yott. 3,183,962.
Young, Charles H. Collapsible and extendable standard. 3 184,261, 5–18–65, Cl. 296—26.
Youngstown Sheet and Tube Co., The: *See—*
Ramsdell, William H. 3,183,728.
Zacher, Wieland: *See—*
Ellbracht, Hans, Pfannmueller, Rotsoll, Urban, and Zacher. 3,184,444.
Zagar, Walter T., to W. R. Grace & Co. Blends of ethylene polymer and butyl rubber. 3,184,522, 5–18–65, Cl. 260—889.
Zagielski, Kenneth C.: *See—*
Friedman, Lawrence S. and I. L., Zagielski, and Adams. 3,184,169.
Zavertnik, Marshall G., to Killark Electric Mfg. Co. Flexible conduit. 3,184,256, 5–18–65, Cl. 285—12.
Zaybekian, Philip: *See—*
Furey, Michael J., and Zaybekian. 3,184,413.
Zech, William A., and F. K. Kunderman, to Joy Mfg. Co. Rotor construction. 3,184,153, 5–18–65, Cl. 230—134.
Zeidler, Willi, to Rheinmetall G.m.b.H., Firma. Spline shaft connections. 3,183,684, 5–18–65, Cl. 64—23.
Zeiss, Carl, Stiftung: *See—*
Wohner, Karl-Heinz, and Weiss. 3,183,813.
Zelnick, Seymour: *See—*
Siegel, Martin, and Zelnick. 3,184,725.
Zens Hosiery Mfg. Co.: *See—*
Zens, Charles F. 3,184,236.
Zerweck, Werner, R. Fleischhauer, and H. Bender, to Cassella Farbwerke Mainkur Aktiengesellschaft. Solid dyeings and prints on polyhydroxylated materials. 3,184,280, 5–18–65, Cl. 8—54.2.
Zerweck, Werner, R. Fleischhauer, and H. Bender, to Cassella Farbwerke Mainkur Aktiengesellschaft. Solid dyeings and prints on polyhydroxylated materials. 3,184,280, 5–18–65, Cl. 8—54.2.
Zilkowski, Eugene J.: *See—*
Fischer, Fred R., and Zilkowski. 3,183,694.
Zimmer, Franz P. Rotary printing machine. 3,183,831, 5–18–65, Cl. 101—115.
Zimmerli, Kurt, to Butterworth Mfg. Co. Apparatus for treating web materials in fluids. 3,183,690, 5–18–65, Cl. 68—179.
Zens, Charles F., to Zens Hosiery Mfg. Co. Bowling pin reinforcing cover. 3,184,236, 5–18–65, Cl. 273—82.
Zittell, Adam H., to Radio Corp. of America. Method of and apparatus for cutting and deburring tubes. 3,183,702, 5–18–65, Cl. 72—294.
Zydney, Herbert M., to Bell Telephone Laboratories, Inc. Contact noise suppressor. 3,184,619, 5–18–65, Cl. 307—134.

CLASSIFICATION OF PATENTS

ISSUED MAY 18, 1965

NOTE.—First number, class; second number, subclass; third number, patent number

2– 6 : 3,183,522
13 : 3,183,523
67 : 3,183,524
4– 1 : 3,183,525
47 : 3,183,526
5– 98 : 3,183,527
99 : 3,183,528
8– 4 : 3,184,281
21 : 3,184,282
54.2 : 3,184,280
3,184,283
3,184,284
127.6 : 3,184,285
9–309 : 3,183,529
311 : 3,183,530
10– 10 : 3,183,531
12 : 3,183,532
3,183,533
105 : 3,183,534
12–120.5 : 3,183,535
13– 23 : 3,184,530
35 : 3,184,531
14– 72 : 3,183,536
15– 22 : 3,183,538
112 : 3,183,539
145 : 3,183,540
246 : 3,183,541
3,183,542
509 : 3,183,543
16– 18 : 3,183,544
42 : 3,183,545
94 : 3,183,546
125 : 3,183,549
129 : 3,183,547
163 : 3,183,548
190 : 3,183,550
18– 2 : 3,183,551
2.7 : 3,183,537
5 : 3,183,552
12 : 3,183,553
26 : 3,183,554
30 : 3,183,555
3,183,556
19–163 : 3,183,557
203 : Re.25,780
20– 1.126 3,183,558
52.2 : 3,183,559
56.5 : 3,183,560
62 : 3,183,561
22– 1 : 3,183,562
57.3 : 3,183,563
85 : 3,183,564
23– 14 : 3,184,286
63 : 3,184,287
110 : 3,184,288
3,184,289
209.4 : 3,184,290
288 : 3,184,291
24– 71.1 : 3,183,565
125 : 3,183,566
230 : 3,183,568
270 : 3,183,569
25– 90 : 3,183,570
105 : 3,183,571
126 : 3,183,572
142 : 3,183,573
27– 1 : 3,183,574
29– 6.2 : 3,183,575
25.19: 3,183,577
25.3 : 3,183,576
120 : 3,183,578
155.5 : 3,183,567
3,183,579
155.55: 3,183,580
197 : 3,184,292
200 : 3,183,581
3,183,582
202.5 : 3,183,583
203 : 3,183,584
401 : 3,183,585
441 : 3,183,586
451 : 3,183,587
529 : 3,183,588
30– 30 : 3,183,589
90 : 3,183,590
123 : 3,183,591
169 : 3,183,592
33– 27 : 3,183,593
50 : 3,183,594
85 : 3,183,595
90 : 3,183,596
169 : 3,183,597
174 : 3,183,598
3,183,599
178 : 3,183,600
179 : 3,183,601
33–207 : 3,183,602
224 : 3,183,603
34– 18 : 3,183,604
48 : 3,183,605
70 : 3,183,606
122 : 3,183,607
35– 18 : 3,183,608
37–127 : 3,183,609
38– 77 : 3,183,610
3,183,611
40– 1.5 : 3,183,612
10 : 3,183,613
312 : 3,183,614
42– 11 : 3,183,615
69 : 3,183,616
75 : 3,183,617
3,183,618
43– 17.2 : 3,183,619
42.74: 3,183,620
44– 23 : 3,184,293
62 : 3,184,294
46– 6 : 3,183,621
154 : 3,183,622
200 : 3,183,623
47– 41.11: 3,183,624
48–184 : 3,184,295
50–157 : 3,183,625
205 : 3,183,626
346 : 3,183,627
492 : 3,183,628
51–135 : 3,183,629
163 : 3,183,630
165 : 3,183,631
206 : 3,183,632
3,183,633
220 : 3,183,634
241 : 3,183,635
3,183,636
284 : 3,183,637
386 : 3,183,638
53– 75 : 3,183,639
78 : 3,183,640
190 : 3,183,641
251 : 3,183,642
261 : 3,183,643
389 : 3,183,644
55– 20 : 3,183,645
51 : 3,183,646
96 : 3,183,647
112 : 3,183,648
179 : 3,183,649
56– 25 : 3,183,650
25.4 : 3,183,651
3,183,652
27 : 3,183,653
28 : 3,183,654
295 : 3,183,655
328 : 3,183,656
57–140 : 3,183,657
145 : 3,183,658
58–152 : 3,183,659
59– 82 : 3,183,660
60– 13 : 3,183,661
24 : 3,183,662
35.5 : 3,183,663
35.6 : 3,183,664
3,183,665
38 : 3,183,666
39.28: 3,183,667
51 : 3,183,668
52 : 3,183,669
54.5 : 3,183,670
3,183,671
3,183,672
54.6 : 3,183,673
61– 13 : 3,183,674
36 : 3,183,675
46.5 : 3,183,676
62– 9 : 3,183,677
52 : 3,183,678
58 : 3,183,679
112 : 3,183,680
135 : 3,183,681
236 : Re.25,782
298 : 3,183,682
411 : 3,183,683
64– 23 : 3,183,684
65– 73 : 3,184,296
78 : 3,184,297
80 : 3,184,298
348 : 3,184,299
66–193 : 3,183,685
67– 7.1 : 3,183,686
3,183,687
51 : 3,183,688
68– 4 : Re.25,784
68– 23 : 3,183,689
179 : 3,183,690
70– 70 : 3,183,691
383 : 3,183,692
71– 2.6 : 3,184,300
3,184,301
72– 19 : 3,183,693
22 : 3,183,694
49 : 3,183,695
57 : 3,183,696
71 : 3,183,700
88 : 3,183,697
145 : 3,183,698
161 : 3,183,699
181 : 3,183,701
294 : 3,183,702
386 : 3,183,703
402 : 3,183,704
73– 1 : 3,183,705
6 : 3,183,706
15.6 : 3,183,707
35 : 3,183,708
40.5 : 3,183,723
67.5 : 3,183,709
76 : 3,183,710
160 : 3,183,711
203 : 3,183,712
209 : 3,183,713
273 : 3,183,714
304 : 3,183,715
323 : 3,183,716
343.5 : 3,183,717
351 : 3,183,718
362.4 : 3,183,719
368.3 : 3,183,720
371 : 3,183,721
388 : 3,183,722
514 : 3,183,724
74– 5.7 : 3,183,725
10.8 : 3,183,726
17.8 : 3,183,727
41 : 3,183,728
190.5 : 3,183,729
206 : 3,183,730
219 : 3,183,731
424.8 : 3,183,732
3,183,733
434 : 3,183,734
472 : 3,183,735
501 : 3,183,736
501.5 : 3,183,737
526 : 3,183,738
527 : 3,183,739
545 : 3,183,740
751 : 3,183,741
757 : 3,183,742
75– 84 : 3,184,302
134 : 3,184,303
3,184,304
175.5 : 3,184,305
206 : 3,184,306
77– 5 : 3,183,743
81–165 : 3,183,744
82– 11 : 3,183,745
36 : 3,183,746
83– 12 : 3,183,747
61 : 3,183,748
71 : 3,183,749
146 : 3,183,750
156 : 3,183,751
167 : 3,183,752
231 : 3,183,753
341 : 3,183,754
396 : 3,183,755
530 : 3,183,756
690 : 3,183,757
84–307 : 3,183,758
402 : 3,183,759
408 : 3,183,760
455 : 3,183,761
85– 62 : 3,183,762
88– 14 : 3,183,763
3,183,764
24 : 3,183,765
3,183,766
3,183,767
3,183,768
3,183,769
3,183,770
3,183,771
3,183,772
3,183,773
28 : 3,183,774
28.93: 3,183,775
32 : 3,183,776
89– 1.5 : 3,183,777
89– 33 : 3,183,778
90– 11 : 3,183,779
13.2 : 3,183,780
19 : 3,183,781
58 : 3,183,782
3,183,783
90 : 3,183,784
91– 20 : 3,183,785
232 : 3,183,786
266 : 3,183,787
342 : 3,183,788
369 : 3,183,789
435 : 3,183,790
92– 24 : 3,183,791
33 : 3,183,792
48 : 3,183,793
146 : 3,183,794
212 : 3,183,795
229 : 3,183,796
93– 8 : 3,183,797
3,183,798
12 : 3,183,799
36 : 3,183,800
44.1 : 3,183,801
80 : 3,183,802
94– 44 : 3,183,803
50 : 3,183,804
95– 1.7 : Re.25,779
3,183,805
4.5 : 3,183,806
3,183,812
10 : 3,183,807
3,183,808
13 : 3,183,809
16 : 3,183,810
34 : 3,183,811
45 : 3,183,813
64 : 3,183,814
73 : 3,183,815
85 : 3,183,816
3,183,817
89 : 3,183,818
3,183,819
3,183,820
96– 23 : 3,184,307
27 : 3,184,308
29 : 3,184,309
49 : 3,184,310
85 : 3,184,311
94 : 3,184,312
101 : 3,184,313
98– 40 : 3,183,821
83 : 3,183,822
99– 8 : 3,184,314
23 : 3,184,315
83 : 3,184,316
90 : 3,184,317
115 : 3,184,318
171 : 3,184,319
445 : 3,183,823
100– 4 : 3,183,824
98 : 3,183,825
163 : 3,183,826
215 : 3,183,827
229 : 3,183,828
101– 19 : 3,183,829
93 : 3,183,830
115 : 3,183,831
149.2 : 3,183,832
149.4 : 3,183,833
260 : 3,183,834
102– 19 : 3,183,835
24 : 3,183,836
103– 2 : 3,183,837
4 : 3,183,838
21 : 3,183,839
49 : 3,183,840
111 : 3,183,841
117 : 3,183,842
136 : 3,183,843
162 : 3,188,844
3,183,845
3,183,846
173 : 3,183,847
3,183,848
3,183,849
174 : 3,183,850
104– 91 : 3,183,851
105–282 : 3,183,852
368 : 3,183,853
3,183,854
369 : 3,183,855
106– 48 : 3,184,320
58 : 3,184,321
59 : 3,184,322
268 : 3,184,323
107– 1 : 3,183,856
14 : 3,183,857
3,183,858
3,183,859
108– 2 : 3,183,860
144 : 3,183,861
3,183,862
109– 59 : 3,183,863
110– 1 : 3,183,864
99 : 3,183,865
112– 90 : 3,183,866
104 : 3,183,867
118 : 3,183,868
140 : 3,183,869
114– 32 : 3,183,870
66.5 : 3,183,871
201 : 3,183,872
3,183,873
202 : 3,183,874
219 : 3,183,875
229 : 3,183,876
230 : 3,183,877
115– 16 : 3,183,878
18 : 3,183,879
41 : 3,183,880
116– 42 : 3,183,881
70 : 3,183,882
114 : 3,183,883
124 : 3,183,884
3,183,885
173 : 3,183,886
117– 19 : 3,184,324
21 : 3,184,325
51 : 3,184,326
63 : 3,184,327
105.3 : 3,184,328
106 : 3,184,329
114 : 3,184,330
3,184,331
139.4 : 3,184,332
156 : 3,184,333
118– 3 : 3,183,887
49.5 : 3,183,888
119– 45 : 3,183,889
159 : 3,183,890
120– 36 : 3,183,891
42.03: 3,183,892
48 : 3,183,893
92 : 3,183,894
122– 24 : 3,183,895
406 : 3,183,896
479 : 3,183,897
123– 11 : 3,183,898
41.65: 3,183,899
41.78: 3,183,900
90 : 3,183,901
148 : 3,183,902
124– 10 : 3,183,903
11 : 3,183,904
126–383 : 3,183,905
127– 46 : 3,184,334
71 : 3,184,335
128–188 : 3,183,906
208 : 3,183,907
214 : 3,183,908
290 : 3,183,909
3,183,910
353 : 3,183,911
421 : 3,183,912
129– 24 : 3,183,913
131– 4 : 3,183,914
132– 47 : 3,183,915
134– 22 : 3,184,336
135– 6 : 3,183,916
136– 4 : 3,184,337
75 : 3,184,338
3,184,339
78 : 3,184,340
133 : 3,184,341
166 : 3,184,342
168 : 3,184,343
137– 81 : 3,183,917
85 : 3,183,918
102 : 3,183,919
105 : 3,183,920
155 : 3,183,921
3,183,922
216 : 3,183,923
218 : 3,183,924
246.14: 3,183,925
270 : 3,183,926
355.19: 3,183,927
460 : 3,183,928
596.18: 3,183,929
610 : 3,183,930
612.1 : 3,183,931
137–614.19: 3,183,932
624.18: 3,183,933
625.27: 3,183,934
627.5 : 3,183,935
802 : 3,183,936
138– 89 : 3,183,937
97 : 3,183,939
99 : 3,183,938
106 : 3,183,940
141 : 3,183,941
139–171 : 3,183,942
249 : 3,183,943
140–103 : 3,183,944
141– 38 : 3,183,945
371 : 3,183,946
143–133 : 3,183,947
135 : 3,183,948
144– 2 : 3,183,949
3,183,950
3 : 3,183,951
3,183,952
34 : 3,183,953
3,183,954
146– 3 : 3,183,955
148– 12 : 3,184,344
26 : 3,184,345
31.55: 3,184,346
33 : 3,184,347
125 : 3,184,349
174 : 3,184,348
175 : 3,184,350
149– 2 : 3,184,351
19 : 3,184,352
152–191 : 3,183,956
156– 73 : 3,184,353
3,184,354
154 : 3,184,355
159 : 3,184,356
165 : 3,184,357
244 : 3,184,358
349 : 3,184,359
401 : 3,184,360
415 : 3,184,361
423 : 3,184,362
433 : 3,184,363
504 : 3,184,364
548 : 3,184,365
158– 36.4 : 3,183,957
115 : 3,183,958
124 : 3,183,959
161– 14 : 3,184,366
63 : 3,184,367
116 : Re.25,778
157 : 3,184,368
179 : 3,184,369
193 : 3,184,370
3,184,371
162–145 : 3,184,372
152 : 3,184,373
257 : 3,184,374
343 : 3,184,375
165– 1 : 3,183,960
2 : 3,183,961
3 : 3,183,962
10 : 3,183,963
28 : 3,183,964
29 : 3,183,965
32 : 3,183,966
83 : 3,183,967
123 : 3,183,968
160 : 3,183,969
181 : 3,183,970
166– 21 : 3,183,971
35 : 3,183,972
85 : 3,183,973
141 : 3,183,974
167– 14 : 3,184,376
22 : 3,184,377
24 : 3,184,378
32 : 3,184,379
43 : 3,184,380
53 : 3,184,381
65 : 3,184,382
3,184,383
78 : 3,184,384
81 : 3,184,385
82 : 3,184,386
88 : 3,184,387
90 : 3,184,388
170–135.22: 3,183,975
171– 8 : 3,183,976
172– 7 : 3,183,977
38 : 3,183,978
40 : 3,183,979
47 : 3,183,980
162 : 3,183,981

172 – 624 : 3,183,982
174 – 1 : 3,184,532
17 : 3,184,533
52 : 3,184,534
90 : 3,184,535
138 : 3,184,536
175 – 44 : 3,183,983
57 : 3,183,984
176 – 20 : 3,184,389
38 : 3,184,390
54 : 3,184,391
67 : 3,184,392
82 : 3,184,393
177 – 217 : 3,183,985
178 – 5.1 : 3,184,537
3,184,538
5.4 : 3,184,539
6 : 3,184,540
3,184,541
6.7 : 3,184,542
7.9 : 3,184,543
69 3,184,544
69.5 . 3,184,545
3,184,546
3,184,547
179 – 1 : 3,184,549
3,184,550
7.1 : 3,184,551
18 : 3,184,552
27 : 3,184,553
84 : 3,184,554
100.41: 3,184,555
148 : 3,184,548
156 : 3,184,556
180 – 5 : 3,183,986
6.24: 3,183,987
7 : 3,183,988
13 : 3,183,989
14 : 3,183,990
24 : 3,183,991
79.2 : 3,183,992
82.1 : 3,183,993
3,183,994
90.6 : 3,183,995
181 – 33 : 3,183,996
182 – 82 : 3,183,997
93 : 3,183,998
188 – 18 : 3,183,999
52 : 3,184,000
71 : 3,184,001
72 : 3,184,002
73 : 3,184,003
3,184,004
3,184,005
77 : 3,184,006
78 : 3,184,007
3,184,010
79.5 : 3,184,008
88 : 3,184,011
251 : 3,184,009
189 – 1 : 3,184,012
34 : 3,184,013
3,184,014
36 : 3,184,015
75 : 3,184,016
88 : 3,184,017
192 – 3 : 3,184,018
3.2 : 3,184,019
45 : 3,184,020
58 : 3,184,021
3,184,022
87 : 3,184,023
103 : 3,184,024
105 : 3,184,025
194 – 57 : 3,184,026
195 – 66 : 3,184,394
80 : 3,184,395
196 – 132 : 3,184,396
197 – 160 : 3,184,027
161 : 3,184,028
198 – 9 : 3,184,029
24 : 3,184,030
3,184,031
27 : 3,184,032
3,184,033
29 : 3,184,034
33 : 3,184,035
68 : 3,184,036
89 : 3,184,037
97 : 3,184,038
154 : 3,184,039
165 : 3,184,040
168 : 3,184,041
177 : 3,184,042
187 : 3,184,043
221 : 3,184,044
233 : 3,184,045
200 – 4 : 3,184,557
9 : 3,184,558
11 : 3,184,559
38 : 3,184,560

200 – 67 : 3,184,561
80 : 3,184,562
87 : 3,184,563
3,184,564
92 : 3,184,565
112 : 3,184,566
114 : 3,184,567
120 : 3,184,568
121 : 3,184,569
136.5 : 3,184,570
138 : 3,184,571
159 : 3,184,572
166 : 3,184,573
168 : 3,184,574
202 – 35 : 3,184,397
46 : 3,184,398
204 – 143 : 3,184,399
193 : 3,184,400
206 – 45.14: 3,184,046
45.34: 3,184,047
46 : 3,184,048
3,184,049
47 : Re.25,781
3,184,050
3,184,051
3,184,052
52 : 3,184,053
56 : 3,184,054
57 : 3,184,055
65 : 3,184,056
78 : 3,184,057
79 : 3,184,058
80 : 3,184,059
84 : 3,184,060
208 – 8 : 3,184,401
59 : 3,184,402
89 : 3,184,403
112 : 3,184,404
227 : 3,184,405
310 : 3,184,406
209 – 72 : 3,184,061
210 – 58 : 3,184,407
130 : 3,184,062
3,184,063
136 : 3,184,064
519 : 3,184,065
211 – 1 : 3,184,066
10 : 3,184,067
23 : 3,184,068
41 : 3,184,069
3,184,070
74 : 3,184,071
86 : 3,184,072
132 : 3,184,073
135 : 3,184,074
148 : 3,184,075
212 – 145 : 3,184,076
214 – 1 : 3,184,077
3,184,078
3,184,079
15 : 3,184,080
17 : 3,184,081
77 : 3,184,082
95 : 3,184,083
134 : 3,184,084
138 : 3,184,085
140 : 3,184,086
392 : 3,184,087
653 : 3,184,088
730 : 3,184,089
215 – 48 : 3,184,090
217 – 99 : 3,184,091
219 – 10.65: 3,184,575
93 : 3,184,576
137 : 3,184,577
146 : 3,184,578
441 : 3,184,579
451 : 3,184,580
220 – 3 : 3,184,092
5 : 3,184,093
9 : 3,184,094
21 : 3,184,095
46 : 3,184,096
47 : 3,184,097
54 : 3,184,098
55 : 3,184,099
63 : 3,184,100
94 : 3,184,101
113 : 3,184,102
115 : 3,184,103
221 – 92 : 3,184,104
129 : 3,184,105
222 – 46 : 3,184,106
49 : 3,184,107
58 : 3,184,108
64 : 3,184,109
86 : 3,184,110
133 : 3,184,111
136 : 3,184,112
146 : 3,184,114
156 : 3,184,115

222 – 182 : 3,184,116
183 : 3,184,117
189 : 3,184,118
196.2 : 3,184,119
209 : 3,184,120
213 : 3,184,121
255 : 3,184,122
321 : 3,184,123
333 : 3,184,124
386.5 : 3,184,113
479 : 3,184,125
487 : 3,184,126
223 – 67 : 3,184,127
224 – 25 : 3,184,128
225 – 2 : 3,184,129
226 – 11 : 3,184,130
97 : 3,184,131
181 : 3,184,132
229 – 2.5 : 3,184,133
7 : 3,184,134
14 : 3,184,135
3,184,136
17 : 3,184,137
3,184,138
23 : 3,184,139
3,184,140
28 : 3,184,141
3,184,142
3,184,143
37 : 3,184,144
40 : 3,184,145
41 : 3,184,146
51 : 3,184,147
52 : 3,184,148
66 : 3,184,149
73 : 3,184,150
230 – 31 : 3,184,151
127 : 3,184,152
134 : 3,184,153
137 : 3,184,154
139 : 3,184,155
152 : 3,184,156
207 : 3,184,157
234 – 3 : 3,184,158
235 – 60 : 3,184,159
60.15: 3,184,160
61.11: 3,184,581
3,184,582
89 : 3,184,161
92 : 3,184,583
139 : 3,184,162
144 : 3,184,163
236 – 34 : 3,184,164
237 – 17 : 3,184,165
239 – 245 : 3,184,166
590 : 3,184,167
240 – 1.3 : 3,184,584
2 : 3,184,585
3,184,586
6.46: 3,184,587
9 : 3,184,588
10.67: 3,184,589
11.2 : 3,184,590
41.35: 3,184,591
3,184,592
52 : 3,184,593
78 : 3,184,594
128 : 3,184,595
241 – 39 : 3,184,168
40 : 3,184,169
73 : 3,184,170
83 : 3,184,171
194 : 3,184,172
242 – 1.1 : 3,184,173
35.5 : 3,184,174
46.5 : 3,184,175
55.12: 3,184,177
55.3 : 3,184,176
74 : 3,184,178
84.45: 3,184,179
86 : 3,184,180
244 – 7 : 3,184,181
14 : 3,184,182
23 : 3,184,183
41 : 3,184,184
42 : 3,184,185
3,184,186
43 : 3,184,187
77 : 3,184,188
101 : 3,184,189
248 – 13 : 3,184,190
27 : 3,184,191
42 : 3,184,192
106 : 3,184,193
117.2 : 3,184,194
158 : 3,184,195
187 : 3,184,196
204 : 3,184,197
223 : 3,184,198
230 : 3,184,199
240 : 3,184,200

248 – 311 : 3,184,201
314 : 3,184,202
318 : 3,184,203
323 : 3,184,204
352 : 3,184,205
357 : 3,184,206
413 : 3,184,207
429 : 3,184,208
3,184,209
249 – 53 : 3,184,210
250 – 71 : 3,184,596
71.5 : 3,184,597
83.3 : 3,184,598
220 : 3,184,599
237 : 3,184,600
251 – 15 : 3,184,211
105 : 3,184,212
172 : 3,184,213
229 : 3,184,214
309 : 3,184,215
347 : 3,184,216
367 : 3,184,217
252 – 32.7 : 3,184,408
33 : 3,184,409
42.7 : 3,184,410
46.7 : 3,184,411
3,184,412
56 : 3,184,413
429 : 3,184,416
455 : 3,184,414
461 : 3,184,415
474 : 3,184,417
253 – 31 : 3,184,218
254 – 29 : 3,184,219
133 : 3,184,220
259 – 7 : 3,184,221
54 : 3,184,222
260 – 2 : 3,184,418
2.3 : 3,184,422
2.5 : 3,184,419
3,184,420
15 : 3,184,421
21 : 3,184,423
29.7 : 3,184,424
30.4 : 3,184,425
30.8 : 3,184,426
37 : 3,184,427
41 : 3,184,428
47 : 3,184,429
3,184,430
3,184,431
67 : 3,184,433
75 : 3,184,434
77.5 : 3,184,435
78 : 3,184,436
3,184,437
3,184,438
78.4 : 3,184,439
78.5 : 3,184,440
86.1 : 3,184,441
93.7 : 3,184,442
3,184,443
94.9 : 3,184,444
118 : 3,184,445
236 : 3,184,446
239 : 3,184,447
239.3 : 3,184,448
239.5 : 3,184,449
239.55: 3,184,450
3,184,451
240 : 3,184,452
240.4 : 3,184,453
243 : 3,184,454
3,184,455
247.5 : 3,184,456
247.7 : 3,184,457
248 : 3,184,458
249.5 : 3,184,459
251 : 3,184,460
256.4 : 3,184,461
3,184,462
268 : 3,184,463
287 : 3,184,464
293.4 : 3,184,465
294 : 3,184,466
294.3 : 3,184,467
307 : 3,184,468
3,184,469
308 : 3,184,470
3,184,471
3,184,472
309.6 : 3,184,473
326.3 : 3,184,474
326.5 : 3,184,475
3,184,476
327 : 3,184,477
340.3 : 3,184,478
347.3 : 3,184,479
347.4 : 3,184,480
347.8 : 3,184,481
378 : 3,184,482

260 – 393 : 3,184,483
397.3 : 3,184,484
397.4 : 3,184,485
3,184,486
3,184,487
397.45: 3,184,489
397.5 : 3,184,488
414 : 3,184,490
431 : 3,184,491
448 : 3,184,492
453 : 3,184,493
3,184,494
461 : 3,184,495
3,184,496
3,184,497
465 : 3,184,498
465.6 : 3,184,499
469 : 3,184,500
470 : 3,184,501
482 : 3,184,502
3,184,503
488 : 3,184,504
534 : 3,184,505
544 : 3,184,506
553 : 3,184,507
555 : 3,184,508
558 : 3,184,509
570.6 : 3,184,510
576 : 3,184,511
604 : 3,184,512
617 : 3,184,432
635 : 3,184,513
654 : 3,184,514
658 : 3,184,515
666 : 3,184,516
671 : 3,184,517
676 : 3,184,518
683.3 : 3,184,519
683.9 : 3,184,520
861 : 3,184,521
889 : 3,184,522
263 – 15 : 3,184,223
28 : 3,184,224
36 : 3,184,225
264 – 5 : 3,184,523
94 : 3,184,524
127 : 3,184,525
175 : 3,184,526
255 : 3,184,527
314 : 3,184,528
340 : 3,184,529
266 – 38 : 3,184,226
267 – 108 : 3,184,227
269 – 234 : 3,184,228
271 – 3 : 3,184,229
11 : 3,184,230
36 : 3,184,231
272 – 63 : 3,184,232
66 : 3,184,233
68 : 3,184,234
273 – 26 : 3,184,235
82 : 3,184,236
134 : 3,184,237
142 : 3,184,238
176 : 3,184,239
177 : 3,184,240
274 – 14 : 3,184,241
38 : 3,184,242
275 – 6 : 3,184,243
277 – 83 : 3,184,244
136 : 3,184,245
168 : 3,184,246
170 : 3,184,247
280 – 33.99: 3,184,248
36 : 3,184,249
81 : 3,184,250
104.5 : 3,184,251
258 : Re.25,783
474 : 3,184,252
481 : 3,184,253
513 : 3,184,254
282 – 29 : 3,184,255
285 – 12 : 3,184,256
287 – 20 : 3,184,257
53 : 3,184,258
294 – 86 : 3,184,259
87.2 : 3,184,260
296 – 26 : 3,184,261
35 : 3,184,262
44 : 3,184,263
95 : 3,184,264
97 : 3,184,265
297 – 89 : 3,184,266
388 : 3,184,267
301 – 39 : 3,184,268
303 – 6 : 3,184,269
306 – 41 : 3,184,270
307 – 88 : 3,184,601
88.5 : 3,184,602
3,184,603
3,184,604

307 – 88.5 : 3,184,605
3,184,606
3,184,607
3,184,608
3,184,609
3,184,610
3,184,611
3,184,612
3,184,613
3,184,614
3,184,615
107 : 3,184,616
3,184,617
114 : 3,184,618
134 : 3,184,619
308 – 10 : 3,184,271
132 : 3,184,272
310 – 2 : 3,184,620
6 : 3,184,621
30 : 3,184,622
36 : 3,184,623
54 : 3,184,624
59 : 3,184,625
96 : 3,184,626
137 : 3,184,627
168 : 3,184,628
312 – 6 : 3,184,273
196 : 3,184,274
213 : 3,184,275
274 : 3,184,276
276 : 3,184,277
313 – 33 : 3,184,629
70 : 3,184,630
108 : 3,184,631
315 – 7 : 3,184,632
12 : 3,184,633
36 : 3,184,634
71 : 3,184,635
94 : 3,184,636
129 : 3,184,637
206 : 3,184,638
209 : 3,184,639
362 : 3,184,640
316 – 19 : 3,184,278
31 : 3,184,279
317 – 5 : 3,184,641
14 : 3,184,642
22 : 3,184,643
46 : 3,184,644
101 : 3,184,645
3,184,646
3,184,647
3,184,648
3,184,649
3,184,650
155.5 : 3,184,651
157 : 3,184,652
157.62: 3,184,653
159 : 3,184,654
3,184,655
197 : 3,184,656
234 : 3,184,657
3,184,658
238 : 3,184,659
258 : 3,184,660
261 : 3,184,661
318 – 18 : 3,184,662
39 : 3,184,663
58 : 3,184,664
75 : 3,184,668
129 : 3,184,669
300 : 3,184,670
325 : 3,184,671
327 : 3,184,665
345 : 3,184,672
381 : 3,184,666
489 : 3,184,667
322 – 28 : 3,184,673
323 – 44 : 3,184,674
50 : 3,184,675
66 : 3,184,676
89 : 3,184,677
324 – 68 : 3,184,678
77 : 3,184,679
83 : 3,184,680
3,184,681
325 – 435 : 3,184,682
487 : 3,184,683
328 – 58 : 3,184,684
61 : 3,184,685
69 : 3,184,686
330 – 70 : 3,184,687
136 : 3,184,688
331 – 117 : 3,184,689
332 – 43 : 3,184,690
333 – 11 : 3,184,691
22 : 3,184,692
24 : 3,184,693
81 : 3,184,694
98 : 3,184,695
338 – 174 : 3,184,696

338 – 175 : 3,184,697
339 – 16 : 3,184,698
17 : 3,184,699
18 : 3,184,700
59 : 3,184,701
66 : 3,184,702
88 : 3,184,703
97 : 3,184,704
176 : 3,184,705
177 : 3,184,706

339 – 186 : 3,184,707
340 – 4 : 3,184,708
37 : 3,184,709
146.1 : 3,184,710
146.3 : 3,184,711
3,184,712
147 : 3,184,713
149 : 3,184,714
166 : 3,184,715
171 : 3,184,716

340 – 173.1 : 3,184,717
174 : 3,184,718
3,184,719
3,184,720
3,184,721
3,184,722
174.1 : 3,184,723
3,184,724
213 : 3,184,725
223 : 3,184,726

340 – 227 : 3,184,727
233 : 3,184,728
248 : 3,184,729
258 : 3,184,730
315 : 3,184,731
347 : 3,184,732
3,184,733
3,184,734
343 – 5 : 3,184,735
3,184,736

343 – 6.8 : 3,184,737
7 : 3,184,738
15 : 3,184,739
3,184,740
17.1 : 3,184,741
18 : 3,184,742
100 : 3,184,743
118 : 3,184,744
705 : 3,184,745
742 : 3,184,746

343 – 840 : 3,184,747
346 – 21 : 3,184,748
74 : 3,184,749
3,184,750
108 : 3,184,751
3,184,752
110 : 3,184,753
112 : 3,184,754
136 : 3,184,755

CLASSIFICATION OF DESIGNS

D 3 – 19 : 201,119
D 4 – 5 : 201,120
D10 – 8 : 201,121
201,122
201,123
D13 – 1 : 201,124
201,125
D14 – 3 : 201,126
201,127

D14 – 30 : 201,128
D15 – 3 : 201,129
11 : 201,130
D18 – 2 : 201,131
D19 – 1 : 201,132
D26 – 10 : 201,133
14 : 201,134
201,135
D29 – 28 : 201,136

D33 – 7 : 201,137
14 : 201,138
D34 – 3 : 201,139
5 : 201,140
15 : 201,141
D37 – 1 : 201,142
D41 – 1 : 201,143
D42 – 7 : 201,144
D44 – 29 : 201,145

D45 – 4 : 201,146
201,147
201,148
201,149
201,150
D48 – 20 : 201,151
D52 – 3 : 201,152
D54 – 14 : 201,153
D55 – 1 : 201,154

D56 – 9 : 201,155
201,156
D58 – 5 : 201,157
D61 – 1 : 201,158
D64 – 11 : 201,159
D67 – 3 : 201,160
201,161
D76 – 1 : 201,162
D80 – 9 : 201,163

D80 – 10 : 201,164
D81 – 10 : 201,165
D83 – 1 : 201,166
201,167
D86 – 10 : 201,168
D89 – 1 : 201,169
D90 – 20 : 201,170
D93 – 4 : 201,171

CLASSIFICATION OF PLANTS

P. – 39 : 2,515
P. – 54 : 2,514
P. – 54 : 2,516
P. – 88 : 2,513

GEOGRAPHICAL INDEX
OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama	1	Louisiana	17	Pennsylvania	37
Alaska	53	Maine	18	Puerto Rico	51
Arizona	2	Maryland	19	Rhode Island	38
Arkansas	3	Massachusetts	20	South Carolina	39
California	4	Michigan	21	South Dakota	40
Canal Zone	57	Minnesota	22	Tennessee	41
Colorado	5	Mississippi	23	Texas	42
Connecticut	6	Missouri	24	U.S. Army	55
Delaware	7	Montana	25	U.S. Air Force	54
District of Columbia	8	Nebraska	26	U.S. Navy	56
Florida	9	Nevada	27	U.S. Samoa	59
Georgia	10	New Hampshire	28	Utah	43
Guam	58	New Jersey	29	Vermont	44
Hawaii	50	New Mexico	30	Virgin Islands	52
Idaho	11	New York	31	Virginia	45
Illinois	12	North Carolina	32	Washington	46
Indiana	13	North Dakota	33	West Virginia	47
Iowa	14	Ohio	34	Wisconsin	48
Kansas	15	Oklahoma	35	Wyoming	49
Kentucky	16	Oregon	36		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,183,592
3,183,701
3,183,946
3,183,964
3,184,081
3,184,354
3,184,363
2 : 3,184,288
3,184,662
3,184,734
4 : Re.25,783
3,183,525
3,183,528
3,183,548
3,183,553
3,183,563
3,183,568
3,183,572
3,183,574
3,183,575
3,183,585
3,183,586
3,183,601
3,183,610
3,183,611
3,183,638
3,183,640
3,183,654
3,183,656
3,183,665
3,183,679
3,183,708
3,183,735
3,183,764
3,183,775
3,183,780
3,183,810
3,183,815
3,183,818
3,183,822
3,183,825
3,183,876
3,183,887
3,183,890
3,183,892
3,183,894
3,183,901
3,183,904
3,183,912
3,183,919
3,183,929
3,183,938
3,183,944
3,183,955
3,183,991
3,184,026
3,184,038
3,184,048
3,184,053
3,184,064

4 : 3,184,066
3,184,067
3,184,072
3,184,082
3,184,104
3,184,105
3,184,122
3,184,132
3,184,134
3,184,159
3,184,176
3,184,178
3,184,180
3,184,196
3,184,202
3,184,203
3,184,227
3,184,241
3,184,246
3,184,247
3,184,249
3,184,253
3,184,295
3,184,318
3,184,322
3,184,337
3,184,347
3,184,351
3,184,352
3,184,365
3,184,400
3,184,402
3,184,411
3,184,412
3,184,418
3,184,429
3,184,536
3,184,537
3,184,538
3,184,542
3,184,549
3,184,551
3,184,556
3,184,587
3,184,589
3,184,596
3,184,604
3,184,615
3,184,618
3,184,626
3,184,628
3,184,630
3,184,636
3,184,638
3,184,643
3,184,646
3,184,657
3,184,670
3,184,672
3,184,680

4 : 3,184,681
3,184,686
3,184,687
3,184,692
3,184,693
3,184,701
3,184,720
3,184,724
3,184,726
3,184,736
3,184,737
3,184,746
3,184,753
5 : 3,183,630
3,183,716
3,183,729
3,184,045
3,184,171
3,184,751
3,184,755
6 : 3,183,545
3,183,565
3,183,570
3,183,587
3,183,617
3,183,672
3,183,673
3,183,715
3,183,754
3,183,763
3,183,864
3,184,020
3,184,052
3,184,115
3,184,162
3,184,188
3,184,190
3,184,228
3,184,260
3,184,293
3,184,306
3,184,362
3,184,397
3,184,424
3,184,431
3,184,524
3,184,527
3,184,562
3,184,622
3,184,661
3,184,671
3,184,675
3,184,703
7 : 3,183,557
3,183,786
3,184,136
3,184,282
3,184,283
3,184,284
3,184,286

7 : 3,184,304
3,184,330
3,184,331
3,184,357
3,184,420
3,184,433
3,184,436
3,184,439
3,184,471
3,184,472
3,184,497
3,184,506
3,184,526
3,184,533
8 : 3,183,664
3,184,565
3,184,602
9 : 3,183,561
3,183,616
3,183,668
3,183,674
3,183,772
3,183,891
3,183,893
3,183,920
3,184,041
3,184,119
3,184,179
3,184,233
3,184,240
3,184,567
3,184,575
3,184,727
3,184,745
10 : 3,183,628
11 : 3,184,029
12 : 3,183,522
3,183,542
3,183,580
3,183,613
3,183,623
3,183,642
3,183,662
3,183,682
3,183,706
3,183,719
3,183,745
3,183,762
3,183,811
3,183,812
3,183,829
3,183,841
3,183,852
3,183,854
3,183,863
3,183,879
3,183,880
3,183,915
3,183,917
3,183,923

12 : 3,183,933
3,183,953
3,183,996
3,184,028
3,184,046
3,184,050
3,184,065
3,184,076
3,184,087
3,184,102
3,184,107
3,184,114
3,184,116
3,184,117
3,184,140
3,184,147
3,184,148
3,184,156
3,184,164
3,184,192
3,184,194
3,184,195
3,184,200
3,184,212
3,184,219
3,184,238
3,184,258
3,184,294
3,184,308
3,184,355
3,184,372
3,184,382
3,184,487
3,184,501
3,184,517
3,184,518
3,184,543
3,184,550
3,184,552
3,184,568
3,184,579
3,184,580
3,184,590
3,184,648
3,184,654
3,184,656
3,184,704
3,184,708
3,184,733
3,184,754
13 : 3,183,573
3,183,599
3,183,604
3,183,605
3,183,653
3,183,670
3,183,694
3,183,726
3,183,739
3,183,845

13 : 3,183,855
3,183,862
3,183,994
3,183,995
3,184,000
3,184,008
3,184,079
3,184,085
3,184,113
3,184,120
3,184,133
3,184,235
3,184,261
3,184,269
3,184,384
3,184,462
3,184,505
3,184,509
3,184,676
3,184,696
3,184,738
14 : 3,183,524
3,183,536
3,183,569
3,183,581
3,183,678
3,183,723
3,183,821
3,183,982
3,184,108
3,184,109
3,184,232
3,184,243
3,184,254
3,184,273
15 : 3,184,438
3,184,515
16 : 3,183,865
3,184,264
3,184,319
3,184,719
17 : 3,184,566
18 : 3,184,595
19 : 3,183,603
3,183,936
3,184,015
3,184,060
3,184,097
3,184,275
3,184,395
3,184,440
3,184,544
3,184,610
3,184,682
3,184,688
3,184,689
3,184,694
3,184,712
3,184,716
20 : 3,183,541

20 : 3,183,543
3,183,578
3,183,622
3,183,635
3,183,710
3,183,717
3,183,720
3,183,814
3,183,867
3,183,907
3,183,908
3,183,943
3,184,059
3,184,069
3,184,146
3,184,223
3,184,244
3,184,271
3,184,290
3,184,339
3,184,349
3,184,364
3,184,430
3,184,582
3,184,621
3,184,660
3,184,684
3,184,706
21 : Re.25,784
3,183,547
3,183,559
3,183,629
3,183,632
3,183,633
3,183,634
3,183,667
3,183,683
3,183,697
3,183,698
3,183,731
3,183,732
3,183,736
3,183,740
3,183,758
3,183,761
3,183,784
3,183,785
3,183,789
3,183,793
3,183,801
3,183,839
3,183,851
3,183,857
3,183,858
3,183,859
3,183,884
3,183,924
3,183,932
3,183,957
3,183,962
3,183,963
3,183,989
3,183,999
3,184,003
3,184,011
3,184,013
3,184,036
3,184,039
3,184,078
3,184,088
3,184,110
3,184,127
3,184,182
3,184,184
3,184,208
3,184,211
3,184,216
3,184,220
3,184,259
3,184,267
3,184,270
3,184,276
3,184,277
3,184,300
3,184,316
3,184,334
3,184,368
3,184,427
3,184,445
3,184,447
3,184,478
3,184,572
3,184,583
3,184,625
3,184,702
22 : Re.25,778
3,183,554
3,183,608
3,183,661
3,183,842
3,183,889

22 : 3,184,006
3,184,084
3,184,086
3,184,135
3,184,166
3,184,201
3,184,338
3,184,476
3,184,481
3,184,525
24 : 3,183,791
3,183,899
3,184,068
3,184,198
3,184,256
3,184,272
3,184,377
3,184,422
3,184,570
3,184,586
3,184,588
25 : 3,184,022
26 : 3,184,093
28 : 3,183,881
29 : Re.25,779
3,183,526
3,183,540
3,183,577
3,183,579
3,183,584
3,183,612
3,183,639
3,183,685
3,183,688
3,183,691
3,183,702
3,183,703
3,183,705
3,183,725
3,183,767
3,183,817
3,183,830
3,183,832
3,183,885
3,183,896
3,183,898
3,183,914
3,183,947
3,183,968
3,184,027
3,184,054
3,184,056
3,184,057
3,184,075
3,184,112
3,184,121
3,184,144
3,184,169
3,184,172
3,184,191
3,184,207
3,184,222
3,184,229
3,184,265
3,184,268
3,184,278
3,184,279
3,184,287
3,184,317
3,184,323
3,184,329
3,184,332
3,184,345
3,184,370
3,184,408
3,184,409
3,184,413
3,184,415
3,184,417
3,184,425
3,184,442
3,184,446
3,184,450
3,184,451
3,184,474
3,184,482
3,184,492
3,184,499
3,184,510
3,184,522
3,184,540
3,184,554
3,184,577
3,184,601
3,184,605
3,184,607
3,184,608
3,184,641
3,184,650
3,184,667
3,184,668

29 : 3,184,673
3,184,691
3,184,695
3,184,700
3,184,729
3,184,731
3,184,732
3,184,739
3,184,742
3,184,743
31 : 3,183,530
3,183,544
3,183,550
3,183,567
3,183,576
3,183,582
3,183,614
3,183,627
3,183,636
3,183,660
3,183,713
3,183,721
3,183,743
3,183,753
3,183,759
3,183,765
3,183,768
3,183,770
3,183,771
3,183,773
3,183,792
3,183,809
3,183,816
3,183,819
3,183,820
3,183,853
3,183,868
3,183,870
3,183,872
3,183,874
3,183,877
3,183,905
3,183,916
3,183,927
3,183,934
3,183,937
3,183,959
3,183,965
3,183,967
3,183,986
3,183,987
3,183,993
3,184,016
3,184,042
3,184,051
3,184,073
3,184,091
3,184,099
3,184,111
3,184,118
3,184,130
3,184,131
3,184,139
3,184,141
3,184,142
3,184,151
3,184,153
3,184,167
3,184,181
3,184,205
3,184,217
3,184,221
3,184,231
3,184,237
3,184,242
3,184,255
3,184,303
3,184,307
3,184,309
3,184,311
3,184,312
3,184,313
3,184,314
3,184,327
3,184,335
3,184,346
3,184,348
3,184,350
3,184,353
3,184,356
3,184,366
3,184,374
3,184,379
3,184,385
3,184,428
3,184,449
3,184,456
3,184,495
3,184,496
3,184,516
3,184,528

31 : 3,184,539
3,184,546
3,184,547
3,184,548
3,184,557
3,184,569
3,184,571
3,184,581
3,184,584
3,184,585
3,184,594
3,184,600
3,184,603
3,184,609
3,184,613
3,184,616
3,184,617
3,184,619
3,184,620
3,184,627
3,184,632
3,184,633
3,184,635
3,184,645
3,184,651
3,184,652
3,184,659
3,184,674
3,184,678
3,184,685
3,184,690
3,184,709
3,184,715
3,184,717
3,184,721
3,184,723
3,184,725
3,184,730
3,184,741
3,184,744
3,184,750
32 : 3,183,744
3,183,945
3,184,062
3,184,074
3,184,158
3,184,369
3,184,564
3,184,683
3,184,713
34 : 3,183,527
3,183,532
3,183,533
3,183,534
3,183,551
3,183,571
3,183,595
3,183,645
3,183,649
3,183,651
3,183,658
3,183,689
3,183,695
3,183,699
3,183,718
3,183,749
3,183,756
3,183,790
3,183,796
3,183,803
3,183,806
3,183,828
3,183,847
3,183,848
3,183,849
3,183,850
3,183,873
3,183,875
3,183,883
3,183,888
3,183,911
3,183,926
3,183,966
3,183,973
3,184,001
3,184,007
3,184,009
3,184,023
3,184,031
3,184,037
3,184,083
3,184,090
3,184,124
3,184,145
3,184,149
3,184,155
3,184,157
3,184,173
3,184,177
3,184,197
3,184,225

34 : 3,184,239
3,184,296
3,184,305
3,184,320
3,184,324
3,184,326
3,184,328
3,184,336
3,184,341
3,184,373
3,184,390
3,184,416
3,184,461
3,184,503
3,184,560
3,184,576
3,184,611
3,184,663
3,184,722
35 : 3,183,596
3,183,626
3,183,675
3,183,940
3,183,974
3,184,021
3,184,214
3,184,248
3,184,325
3,184,403
3,184,520
3,184,597
36 : 3,183,774
3,183,856
3,183,948
3,184,014
3,184,044
37 : 3,183,564
3,183,566
3,183,594
3,183,602
3,183,625
3,183,631
3,183,663
3,183,690
3,183,692
3,183,696
3,183,712
3,183,724
3,183,727
3,183,737
3,183,738
3,183,747
3,183,750
3,183,777
3,183,795
3,183,834
3,183,835
3,183,836
3,183,861
3,183,886
3,184,035
3,184,055
3,184,058
3,184,098
3,184,103
3,184,137
3,184,161
3,184,175
3,184,183
3,184,210
3,184,218
3,184,226
3,184,234
3,184,251
3,184,257
3,184,262
3,184,291
3,184,292
3,184,315
3,184,321
3,184,367
3,184,378
3,184,396
3,184,399
3,184,401
3,184,404
3,184,407
3,184,441
3,184,448
3,184,486
3,184,488
3,184,498
3,184,512
3,184,531
3,184,532
3,184,598
3,184,599
3,184,642
3,184,647
3,184,655
3,184,664

37 : 3,184,699
3,184,707
3,184,728
3,184,749
38 : 3,183,591
3,183,624
39 : 3,183,621
3,184,047
3,184,252
3,184,289
41 : 3,184,070
3,184,071
3,184,421
3,184,435
3,184,443
3,184,457
3,184,480
42 : Re.25,780
3,183,609
3,183,618
3,183,619
3,183,620
3,183,652
3,183,655
3,183,676
3,183,728
3,183,787
3,183,804
3,183,840
3,183,921
3,183,922
3,183,930
3,183,939
3,183,971
3,183,972
3,183,979
3,183,981
3,183,983
3,184,089
3,184,150
3,184,193
3,184,213
3,184,215
3,184,230
3,184,405
3,184,519
3,184,534
3,184,541
3,184,578
3,184,644
3,184,649
3,184,653
3,184,658
3,184,679
3,184,698
3,184,714
3,184,735
3,184,740
3,184,752
43 : 3,183,615
3,183,976
3,184,126
3,184,302
3,184,381
3,184,612
44 : 3,184,697
45 : 3,183,539
3,183,643
3,183,711
3,183,802
3,183,941
3,183,990
3,184,095
3,184,096
3,184,458
3,184,475
3,184,513
3,184,614
46 : 3,183,535
3,183,950
3,183,984
3,184,033
3,184,080
3,184,380
47 : 3,184,434
48 : 3,183,607
3,183,650
3,183,669
3,183,746
3,183,755
3,183,800
3,183,826
3,183,860
3,183,878
3,183,909
3,183,910
3,183,949
3,183,951
3,183,952
3,183,954
3,183,977

48 : 3,184,024
3,184,025
3,184,034
3,184,138
3,184,154
3,184,199
3,184,236
3,184,333
3,184,343
3,184,574
3,184,634
3,184,677
49 : 3,183,600
3,183,714
3,183,903
61 : 3,183,562
3,183,637
3,184,017
62 : 3,183,831
64 : 3,183,560
3,183,641
3,183,797
3,184,383
70 : Re.25,781
3,183,523
3,183,552
3,183,598
3,183,844
3,183,931
3,184,018
3,184,049
3,184,061
3,184,100
3,184,101
3,184,106
3,184,128
3,184,129
3,184,143
3,184,170
3,184,187
3,184,189
3,184,209
3,184,250
77 : 3,183,757
3,183,869
80 : 3,183,531

80 : 3,183,537
3,183,558
3,183,593
3,183,597
3,183,666
3,183,671
3,183,677
3,183,693
3,183,704
3,183,707
3,183,709
3,183,730
3,183,733
3,183,741
3,183,742
3,183,748
3,183,751
3,183,776
3,183,782
3,183,794
3,183,823
3,183,824
3,183,833
3,183,837
3,183,843
3,183,846
3,183,882
3,183,925
3,183,935
3,183,956
3,183,958
3,183,969
3,183,970
3,183,975
3,183,980
3,183,988
3,183,998
3,184,004
3,184,040
3,184,043
3,184,063
3,184,077
3,184,094
3,184,123
3,184,160
3,184,165

80 : 3,184,204
3,184,224
3,184,245
3,184,361
3,184,386
3,184,391
3,184,392
3,184,406
3,184,410
3,184,419
3,184,454
3,184,473
3,184,477
3,184,490
3,184,511
3,184,523
3,184,535
3,184,555
3,184,559
3,184,561
3,184,563
3,184,606
3,184,624
3,184,637
3,184,639
3,184,640
3,184,665
3,184,669
3,184,711
83 : 3,183,529
3,183,588
3,183,657
3,183,686
3,183,687
3,183,734
3,183,897
3,183,900
3,183,960
3,183,992
3,184,005
3,184,010
3,184,019
3,184,092
3,184,152
3,184,163
3,184,185

83 : 3,184,206
3,184,263
3,184,274
3,184,340
3,184,342
3,184,359
3,184,387
3,184,388
3,184,491
3,184,504
3,184,573
3,184,591
3,184,592
3,184,718
84 : 3,183,538
3,183,546
3,183,549
3,183,555
3,183,583
3,183,647
3,183,681
3,183,684
3,183,700
3,183,752
3,183,760
3,183,769
3,183,779
3,183,783
3,183,798
3,183,799
3,183,805
3,183,807
3,183,813
3,183,866
3,183,871
3,183,895
3,183,906
3,183,913
3,183,918
3,183,961
3,183,985
3,184,002
3,184,030
3,184,168
3,184,174
3,184,266

84 : 3,184,280
3,184,299
3,184,310
3,184,344
3,184,358
3,184,360
3,184,371
3,184,375
3,184,393
3,184,394
3,184,398
3,184,414
3,184,423
3,184,426
3,184,432
3,184,437
3,184,444
3,184,453
3,184,455
3,184,459
3,184,464
3,184,465
3,184,466
3,184,467
3,184,470
3,184,483
3,184,493
3,184,502
3,184,507
3,184,514
3,184,521
3,184,545
3,184,593
3,184,666
3,184,710
3,184,748
96 : 3,183,928
97 : 3,183,680
3,183,978
3,184,500
3,184,529
3,184,530
3,184,705
99 : 3,183,646
3,183,766
3,183,808

99 : 3,183,942
3,184,012
3,184,186
3,184,281
3,184,463
3,184,469
3,184,494
104 : 3,184,484
3,184,485
106 : 3,183,590
3,183,644
3,183,997
3,184,297
3,184,298
3,184,389
3,184,460
3,184,508
3,184,629
3,184,631
124 : Re.25,782
3,183,556
3,183,606
3,183,648
3,183,722
3,183,788
3,183,838
3,183,902
3,184,032
3,184,553
125 : 3,183,589
3,183,659
3,183,778
3,183,781
3,183,827
3,184,125
3,184,285
3,184,301
3,184,376
3,184,452
3,184,468
3,184,479
3,184,489
3,184,558
3,184,623
3,184,747

Design Patents

4 : 201,119
201,121
201,122
201,125
201,132
201,140
201,141
201,153
6 : 201,169

9 : 201,158
12 : 201,123
201,138
201,160
201,161
201,164
201,167
13 : 201,136
16 : 201,120

19 : 201,133
20 : 201,166
21 : 201,128
201,129
201,139
22 : 201,126
201,127
24 : 201,142
29 : 201,154

29 : 201,157
31 : 201,124
201,131
201,143
201,146
201,147
201,148
201,159
201,163

31 : 201,168
32 : 201,156
34 : 201,145
201,155
201,165
201,170
35 : 201,134
201,135
37 : 201,130

37 : 201,152
201,162
42 : 201,137
47 : 201,151
48 : 201,171
125 : 201,144
136 : 201,149
201,150

Plant Patents

4 : 2,515

4 : 2,516

26 : 2,513

50 : 2,514

48 : 3,184,024
3,184,025
3,184,034
3,184,138
3,184,154
3,184,199
3,184,236
3,184,333
3,184,343
3,184,574
3,184,634
3,184,677
49 : 3,183,600
3,183,714
3,183,903
61 : 3,183,562
3,183,637
3,184,017
62 : 3,183,831
64 : 3,183,560
3,183,641
3,183,797
3,184,383
70 : Re.25,781
3,183,523
3,183,552
3,183,598
3,183,844
3,183,931
3,184,018
3,184,049
3,184,061
3,184,100
3,184,101
3,184,106
3,184,128
3,184,129
3,184,143
3,184,170
3,184,187
3,184,189
3,184,209
3,184,250
77 : 3,183,757
3,183,869
80 : 3,183,531

80 : 3,183,537
3,183,558
3,183,593
3,183,597
3,183,666
3,183,671
3,183,677
3,183,693
3,183,704
3,183,707
3,183,709
3,183,730
3,183,733
3,183,741
3,183,742
3,183,748
3,183,751
3,183,776
3,183,782
3,183,794
3,183,823
3,183,824
3,183,833
3,183,837
3,183,843
3,183,846
3,183,882
3,183,925
3,183,935
3,183,956
3,183,958
3,183,969
3,183,970
3,183,975
3,183,980
3,183,988
3,183,998
3,184,004
3,184,040
3,184,043
3,184,063
3,184,077
3,184,094
3,184,123
3,184,160
3,184,165

80 : 3,184,204
3,184,224
3,184,245
3,184,361
3,184,386
3,184,391
3,184,392
3,184,406
3,184,410
3,184,419
3,184,454
3,184,473
3,184,477
3,184,490
3,184,511
3,184,523
3,184,535
3,184,555
3,184,559
3,184,561
3,184,563
3,184,606
3,184,624
3,184,637
3,184,639
3,184,640
3,184,665
3,184,669
3,184,711
83 : 3,183,529
3,183,588
3,183,657
3,183,686
3,183,687
3,183,734
3,183,897
3,183,900
3,183,960
3,183,992
3,184,005
3,184,010
3,184,019
3,184,092
3,184,152
3,184,163
3,184,185

83 : 3,184,206
3,184,263
3,184,274
3,184,340
3,184,342
3,184,359
3,184,387
3,184,388
3,184,491
3,184,504
3,184,573
3,184,591
3,184,592
3,184,718
84 : 3,183,538
3,183,546
3,183,549
3,183,555
3,183,583
3,183,647
3,183,681
3,183,684
3,183,700
3,183,752
3,183,760
3,183,769
3,183,779
3,183,783
3,183,798
3,183,799
3,183,805
3,183,807
3,183,813
3,183,866
3,183,871
3,183,895
3,183,906
3,183,913
3,183,918
3,183,961
3,183,985
3,184,002
3,184,030
3,184,168
3,184,174
3,184,266

84 : 3,184,280
3,184,299
3,184,310
3,184,344
3,184,358
3,184,360
3,184,371
3,184,375
3,184,393
3,184,394
3,184,398
3,184,414
3,184,423
3,184,426
3,184,432
3,184,437
3,184,444
3,184,453
3,184,455
3,184,459
3,184,464
3,184,465
3,184,466
3,184,467
3,184,470
3,184,483
3,184,493
3,184,502
3,184,507
3,184,514
3,184,521
3,184,545
3,184,593
3,184,666
3,184,710
3,184,748
96 : 3,183,928
97 : 3,183,680
3,183,978
3,184,500
3,184,529
3,184,530
3,184,705
99 : 3,183,646
3,183,766
3,183,808

99 : 3,183,942
3,184,012
3,184,186
3,184,281
3,184,463
3,184,469
3,184,494
104 : 3,184,484
3,184,485
106 : 3,183,590
3,183,644
3,183,997
3,184,297
3,184,298
3,184,389
3,184,460
3,184,508
3,184,629
3,184,631
124 : Re.25,782
3,183,556
3,183,606
3,183,648
3,183,722
3,183,788
3,183,838
3,183,902
3,184,032
3,184,553
125 : 3,183,589
3,183,659
3,183,778
3,183,781
3,183,827
3,184,125
3,184,285
3,184,301
3,184,376
3,184,452
3,184,468
3,184,479
3,184,489
3,184,558
3,184,623
3,184,747

DESIGN PATENTS

4 : 201,119
201,121
201,122
201,125
201,132
201,140
201,141
201,153
6 : 201,169

9 : 201,158
12 : 201,123
201,138
201,160
201,161
201,164
201,167
13 : 201,136
16 : 201,120

19 : 201,133
20 : 201,166
21 : 201,128
201,129
201,139
22 : 201,126
201,127
24 : 201,142
29 : 201,154

29 : 201,157
31 : 201,124
201,131
201,143
201,146
201,147
201,148
201,159
201,163

31 : 201,168
32 : 201,156
34 : 201,145
201,155
201,165
201,170
35 : 201,134
201,135
37 : 201,130

37 : 201,152
201,162
42 : 201,137
47 : 201,151
48 : 201,171
125 : 201,144
136 : 201,149
201,150

PLANT PATENTS

4 : 2,515
4 : 2,516
26 : 2,513
50 : 2,514

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
May 18, 1965 Volume 814 Number 3

TRADEMARKS

NOTICES

Decisions of the Commissioner of Patents

The 1964 Edition of the Decisions of the Commissioner of Patents has been released from the printer and is available from the Superintendent of Documents, Government Printing Office, Washington, D. C., 20402 ________________ Price $4.50

Service by Publication

A petition to cancel the registration identified below having been filed, and the notice of such proceeding sent by registered mail to registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrant listed herein, his assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Sterling Metal Products Company, assignee of Clyde W. Vassar, Redwood City, Calif., Reg. No. 430,941, Canc. No. 8453.

EDWIN L. REYNOLDS,
Apr. 21, 1965. *First Assistant Commissioner of Patents.*

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 112,291 (LIBBY'S in script), Libby, McNeill & Libby, Canned meats, canned sausage, canned soups, and canned boneless chicken; **Reg. No. 132,013**, same, Fresh, prepared, pickled, and canned beef, veal, pork, mutton, and poultry and their products; **Reg. No. 233,742** (LIBBY'S (in script) AND DESIGN), same, Canned fruits and berries; **Reg. No. 320,977** (LIBBY'S in script), same, Beer; **Reg. No. 781,105** (LIBBY'S (in script) AND DESIGN), same, Canned and frozen fruits and vegetables, canned corned beef hash, canned Spanish rice, etc., **filed** Feb. 19, 1965, D.C., E.D.N.Y. (Brooklyn), Doc. 65C–160, *Libby, McNeill & Libby* v. *Libby Produce, Inc.*

Reg. No. 132,013. (See Reg. No. 112,291.)

Reg. No. 148,819 (DU PONT), E. I. du Pont de Nemours & Company, Dyestuffs, **filed** Aug. 21, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1434, *E. I. du Pont de Nemours & Company* v. *United Coatings, Inc. et al.* Final consent judgment; trademark held valid; defendants enjoined Feb. 11, 1965.

Reg. No. 233,742. (See Reg. No. 112,291.)

Reg. No. 289,082 (ACTIN), Seeck & Kade, Inc., Household proprietary preparation for the treatment of common colds, simple headaches, and muscular pains, **filed** Feb. 2, 1965, D.C., N.D.N.Y. (Utica), Doc. 65–CV–50, *Chesebrough-Pond's, Inc.* v. *Approved Pharmaceutical Corporation.*

Reg. No. 301,614 ("WHITE LABEL"), John Dewar & Sons, Limited, Scotch whisky, **filed** Oct. 9, 1961, D.C. Del. (Wil-

CONDITION OF TRADEMARK APPLICATIONS AS OF MARCH 31, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] ____________ 15, 573
Date of oldest new application ____________ August 26, 1964
Date of oldest amended application ____________ July 27, 1964

J. H. MERCHANT, Director, Trademark Examining Operation **TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION**	**Oldest Application**	
	New	**Amended**
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	8-26-64	8-5-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	9-1-64	7-27-64
Renewals (All Classes)	3-8-65	3-29-65
Sec. 12 (c) Publications (All Classes)	3-16-65	-- ---

Applications filed during the month of March 1965—2,676

Registrations Issued ____________ 300—No. 789,521 to No. 789,820
Renewals Issued ____________ 60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

mington), Doc. 2881, *John Dewar & Sons, Limited* v. *Continental Distilling Corporation*. Stipulation of dismissal Feb. 8, 1965.

Reg. No. 308,053 (BURROUGH'S BEEFEATER DISTILLED LONDON DRY GIN AND DESIGN), James Burrough Limited, Gin; **Reg. No. 678,608** (BEEFEATER), same; **Reg. No. 678,610** (REPRESENTATION OF MALE FIGURE), same, filed July 20, 1964, D.C., S.D. Calif. (San Diego), Doc. 3103–SD–K, *James Burrough Ltd. et al.* v. *Larry E. McSeaton et al.* Final judgment enjoining defendant Feb. 9, 1965.

Reg. No. 320,977. (See Reg. No. 112,291.)

Reg. No. 411,294 (SEVENTEEN), Triangle Publications, Inc., Monthly magazine devoted to the interests of girls, filed Feb. 15, 1965, D.C., E.D. Pa. (Philadelphia), Doc. 37449, *Triangle Publications, Inc.* v. *Standard Plastic Products, Inc.*

Reg. No. 634,318 (ONE A DAY), Miles Laboratories, Inc., Vitamin tablets, filed Dec. 7, 1964, D.C., E.D. Pa. (Philadelphia), Doc. 37010, *Miles Laboratories, Inc.* v. *Generic Pharmaceutical Corp. et al.* Final judgment terminating action; injunction granted Feb. 8, 1965.

Reg. No. 678,608. (See Reg. No. 308,053.)

Reg. No. 678,610. (See Reg. No. 308,053.)

Reg. No. 693,882 (AMERICAN INTERNATIONAL (in script), PICTURES AND DESIGN), American-International Film Distributing Corporation, Motion picture photoplays, filed Feb. 17, 1965, D.C., N.D. Tex. (Dallas), Doc. CA–3–883, *American International Pictures* v. *Eagle-American International Films, Inc.*

Reg. No. 781,105. (See Reg. No. 112,291.)

Notice of Tentative Recordation of a Trade Name

[T.D. 56394]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., April 14, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946 and section 11.16, Customs Regulations:

> "FANON-MASCO," the trade name used by Fanon Electronic Industries, Inc., a corporation organized under the laws of the State of New York, located and doing business at 439 Frelinghuysen Avenue, Newark, New Jersey. The trade name is associated with merchandise comprising electronic amplification, communication, recording, reproducing and signaling equipment and components thereof, manufactured in Japan.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after May 14, 1965, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after May 14, 1965, of any opposition proceeding.

Until 45 days after May 14, 1965, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

LESTER D. JOHNSON,
Acting Commissioner of Customs.

International Convention for the Protection of Industrial Property

Adherence of Mauritania to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of the Islamic Republic of Mauritania to the Convention of Union of Paris for the Protection of Industrial Property, as last revised at Lisbon on October 31, 1958.

The note also confirms the membership of that State in the International Union of Paris for the Protection of Industrial Property.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

Apr. 7, 1965.

International Convention for the Protection of Industrial Property

Adherence of South Africa to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 17, 1965, of the Republic of South Africa to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

Apr. 7, 1965.

International Convention for the Protection of Industrial Property

Adherence of Yugoslavia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the adherence, effective April 11, 1965, of Yugoslavia to the Convention of Union of Paris for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

(Signed) EDWARD J. BRENNER,
Commissioner of Patents.

Apr. 7, 1965.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 145,656. Automatic Canteen Company of America, d.b.a. Rowe AC Services, Chicago, Ill. Filed May 29, 1962.

CUSTOMUSIC

Class 100—Miscellaneous

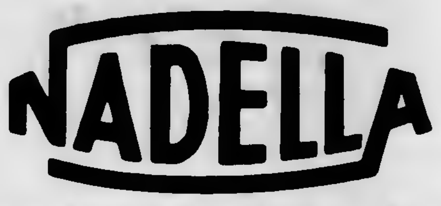
For Designing Background Music Systems for Installation in Businesses, Leasing Said Systems and Leasing Sound Programs for Use Therewith.

Class 103—Construction and Repair

For Installation and Maintenance of Background Music Systems.

First use on or about Aug. 31, 1959.

SN 185,230. Nadella S.A., Rueil-Malmaison, Seine-et-Oise, France. Filed Jan. 23, 1964.



Priority claimed under Sec. 44(d) on French Reg. No. 7,906, dated July 24, 1963 (Versailles); Natl. Inst. No. 210,614.

Class 19—Vehicles

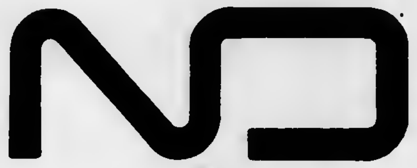
For Carrying Bearing, Rollers, and Bearing Springs, All for Vehicles, and Axle Bearings for Vehicle Wheels.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Rollers and Bearings, and Parts, Fittings, and Mountings Therefor, Motor Vehicle Drive Trains Comprising Drums, Clutch Thrust Bearings, Drive Shafts, Universals and Related Couplings, Articulating, Transmission and Coupling Devices (Not Being for Vehicles); Machine and Machine Tools for Use in the Manufacture of Such Goods.

First use February 1930; in commerce February 1930.

SN 192,869. Canadian National Railway Company, Montreal, Quebec, Canada. Filed May 5, 1964.



Class 102—Insurance and Financial

For Issuing and Redeeming of Money Orders.

Class 105—Transportation and Storage

For Transportation of Persons and Goods by Railway, Ship, Aircraft, Motor Vehicles, Buses, and Automobiles.

First use Dec. 15, 1960; in commerce Dec. 15, 1960.

SN 204,216. Dayco Corporation, Dayton, Ohio. Filed Oct. 19, 1964.

SYNCHRO-COG

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pulleys.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Power Transmission Belts.

First use March 1964.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 185,912. Ed. F. Mangelsdorf & Bro., Inc., St. Louis, Mo. Filed Feb. 3, 1964.

A-11

Owner of Reg. No. 706,825.
For Alfalfa Seed.
First use Jan. 9, 1959.

SN 187,013. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Feb. 19, 1964.

SURLYN

For Polymeric Compounds and Mixtures in the Form of Sheets, Rods, Tubes, Powder, and Liquid for General Use in the Industrial Arts.
First use Oct. 28, 1963.

SN 188,100. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Mar. 6, 1964.

PLIOPAVE

For Rubber Additives for Paving.
First use May 13, 1963.

SN 188,142. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Mar. 6, 1964.

ALPHAPRENE

For Olefinic Polymers.
First use Dec. 6, 1963.

SN 188,143. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Mar. 6, 1964.

BETAPRENE

For Olefinic Polymers.
First use Dec. 6, 1963.

SN 188,144. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Mar. 6, 1964.

DELTAPRENE

For Olefinic Polymers and Copolymers.
First use Dec. 6, 1963.

SN 190,351. Eastman Kodak Company, Rochester, N.Y. Filed Apr. 6, 1964.

TENITE

Owner of Reg. Nos. 304,385, 433,452, and 616,380.
For Polymeric Materials; and Molding and Sheet-Forming Compounds of Plastic Material.
First use Nov. 30, 1932.

SN 190,602. Engelhard Hanovia, Inc., Newark, N.J. Filed Apr. 8, 1964.

EMB

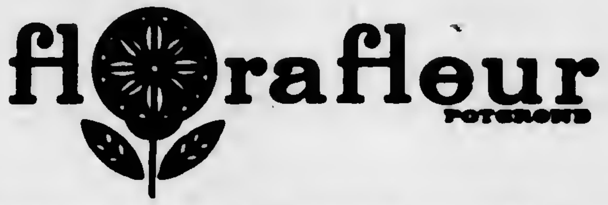
For Natural Diamond Grit Engineered for Bonding to Metal.
First use Mar. 26, 1964.

SN 191,426. Mobay Chemical Company, Pittsburgh, Pa. Filed Apr. 17, 1964.

PYLON

For Raw or Partially Prepared Materials—Namely, Polyurethane Polymers.
First use Feb. 13, 1964.

SN 198,599. Veenproducten Maatschappij Tuinturf N.V., Zwolle, Netherlands. Filed July 27, 1964.



"Potgrond" is a Dutch word meaning "potting soil." Applicant disclaims any exclusive right in the word "Potgrond" apart from the mark as shown. Owner of Dutch Reg. No. 150,086, dated Nov. 25, 1963.
For Potting Soil Made From Frozen Black Peat Mixed With Fertilisers.

SN 201,808. Celanese Corporation of America, New York, N.Y. Filed Sept. 14, 1964.

STELLA

Owner of Reg. No. 770,977.
For Man-Made Fibers.
First use Sept. 3, 1964.

SN 201,809. Celanese Corporation of America, New York, N.Y. Filed Sept. 14, 1964.

STELLASET

Owner of Reg. No. 770,977.
For Man-Made Fibres.
First use Sept. 3, 1964.

SN 205,346. Rezolin, Inc., Santa Monica, Calif. Filed Nov. 2, 1964.

URALITE

For Polyurethane Material for Castings, Coatings, and Adhesives.
First use Sept. 22, 1964.

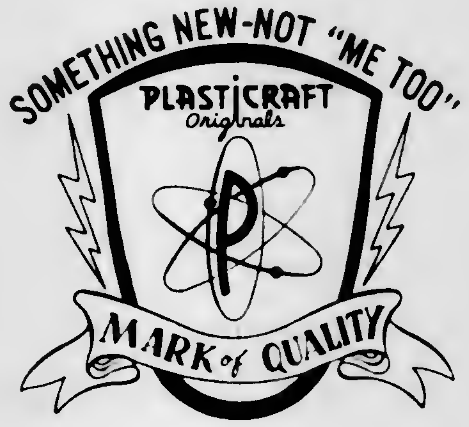
SN 206,023. Fields Plastics & Chemicals, Inc., Lodi, N.J. Filed Nov. 12, 1964.

POROFIELD

For Plastic Sheeting or Film in the General Nature of an Improvement, Equivalent, or Substitute for Leather, Particularly Adapted for Garments, Especially Outerwear, Luggage, Furniture, Especially Upholstery, Building Wall Covering, Automobile Seat Covers and Headliners, Footwear, and Similar Items.
First use July 24, 1964.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 184,308. Peerless Plastics, Inc., New York, N.Y. Filed Jan. 9, 1964.



The term "Originals," and the phrase "Mark of Quality," are disclaimed apart from the mark as shown.
For Synthetic Resinous Novelty Items—Namely, Wallets, Card Cases, Billfolds, Key Cases, and Pocket Portfolios.
First use Dec. 20, 1963.

Class 6 — Chemicals and Chemical Compositions

SN 171,999. Manufacturers' Marketing Co., U.S.A. Inc., New York, N.Y. Filed June 27, 1963.

WORKEASE

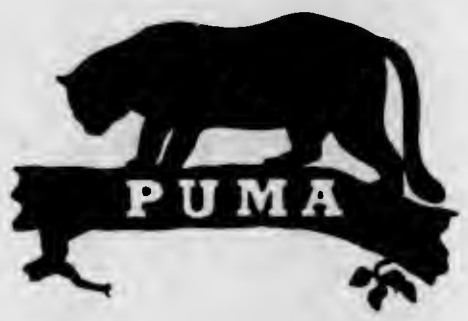
For Chemical Wallpaper Remover, Room Deodorants, Laundry Starch, and Moth Crystals.
First use May 15, 1963.

SN 175,243. W. H. Barber Oil Company, Minneapolis, Minn. Filed Aug. 19, 1963.

KRITTER KOTE

Owner of Reg. No. 583,249.
For Hog Oil and Antiseptic.
First use on or about July 1, 1942.

SN 177,287. Puma Corporation, East Farmingdale, N.Y. Filed Sept. 18, 1963.



For Additives for Electro-Plating and/or Metal Conditioning.
First use Aug. 8, 1961.

SN 181,691. Sohio Chemical Company, Cleveland, Ohio. Filed Nov. 21, 1963.

DICHLORANDIMER

For Chemical Compound Useful as a Plasticizer and as a Reactive Intermediate for the Manufacture of Dyes, Pharmaceuticals, and Resins—Namely, 1,2-Dichlorocyclobutane-1,2-Dicarbonitrile.
First use Sept. 26, 1963.

SN 181,692. Sohio Chemical Company, Cleveland, Ohio. Filed Nov. 21, 1963.

ANDIAMINE

For Chemical Intermediate Useful in the Manufacture of Resins, Surfactants, and Emulsifying Agents—Namely, Cyclobutane-1,2-Bis (Methyl Amine).
First use Sept. 26, 1963.

SN 181,697. Sohio Chemical Company, Cleveland, Ohio. Filed Nov. 21, 1963.

ANDIMER

For Chemical Compound Useful as a Selective Solvent in the Manufacture of Polyamides and Polyesters—Namely, Cyclobutane-1,2-Dicarbonitrile.
First use Sept. 26, 1963.

SN 181,699. Sohio Chemical Company, Cleveland, Ohio. Filed Nov. 21, 1963.

ANDIGUANAMINE

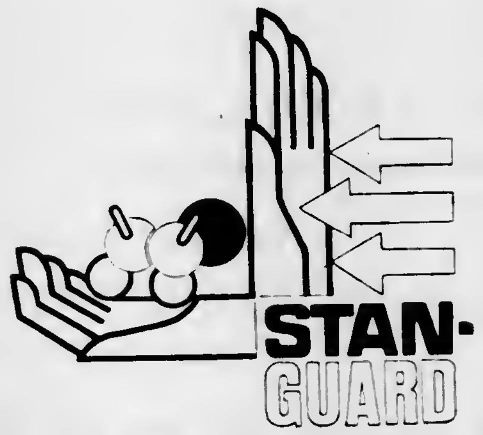
For Chemical Intermediate Useful in Thermosetting Resins, Plasticizers, Bleaches, Pharmaceuticals, and Disinfectants—Namely, Cyclobutane-1,2-Dicarboguanamine.
First use Sept. 26, 1963.

SN 181,700. Sohio Chemical Company, Cleveland, Ohio. Filed Nov. 21, 1963.

ANDIISOCYANATE

For Chemical Intermediate Useful in the Treatment of Textiles, Leather, Adhesives, Foams and Coating—Namely, Cyclobutane-1,2-Bis (Methyl Isocyanate).
First use Sept. 26, 1963.

SN 186,641. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Feb. 13, 1964.



For Stabilizing Agents for Polyvinyl Chloride Resins and Other Chlorinated Organic Compounds.
First use Dec. 11, 1963.

SN 187,778. Milchem Incorporated, Houston, Tex. Filed Mar. 2, 1964.

MIL-SQUEEZ

Owner of Reg. No. 703,093.
For Chemical Composition Being an Acidic Inorganic Condensation Copolymer Which Functions as a Loss of Circulation Control Material.
First use Oct. 5, 1963.

SN 188,199. Coastal Chemical Co., Inc., Savannah, Ga. Filed Mar. 9, 1964.

CLO-WHITE

For Bleach, Laundry Starch, Laundry Rinse, and Disinfectant.
First use Dec. 24, 1938, on bleach.

SN 188,640. Kingman Manufacturing Co., Inc., Cunningham, Kans. Filed Mar. 13, 1964.

STOCKMASTER

Owner of Reg. Nos. 744,657 and 744,951.
For Insecticides.
First use Feb. 7, 1964.

SN 189,576. General Aniline & Film Corporation, New York, N.Y. Filed Mar. 25, 1964.

GAFLOC

Owner of Reg. Nos. 693,674 and 704,803.
For Chemical Flocculating Agents.
First use Sept. 20, 1963.

SN 189,797. Navan Products, Inc., El Segundo, Calif. Filed Mar. 27, 1964.

PENESTRIP

For Penetrant and Developer Agents for Non-Destructive Testing and Inspection of Metals and Other Materials.
First use Mar. 22, 1962.

SN 190,011. J. & L. Adikes, Inc., Jamaica, N.Y. Filed Mar. 31, 1964.

NO-GRO

For Herbicide.
First use Mar. 11, 1964.

SN 190,065. Corrosion Reaction Consultants, Inc., Dresher, Pa. Filed Apr. 1, 1964.

NO RUST FOR THE WARY

For Chemical Rust and Corrosion Inhibitor.
First use Mar. 20, 1964.

SN 190,433. Ranco Industrial Products Corporation, Cleveland, Ohio. Filed Apr. 6, 1964.

NEVRGREEN

For Weed, Grass, and Brush Killer.
First use Mar. 16, 1964.

SN 190,451. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICAPEL

For Chemical Emulsions, Solutions and Suspensions for Use as Water Repellents in Finishing of Textiles and Papers.
First use at least as early as May 1954.

SN 190,452. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICAPAD

For Polymer Emulsions for Use in Pigment Compositions for Pad-Dyeing of Textiles.
First use at least as early as May 1959.

SN 190,453. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICANOL

For Polyvinyl Alcohol and Emulsions, Solutions and Suspensions Containing Polyvinyl Alcohol Used in the Adhesive, Textile, and Paper Industries.
First use April 1962.

SN 190,454. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICALOID

For Synthetic and Natural Rubber Latex and Compounds Containing Rubber Latex, for Use as Coating Agents in the Textile, Paper, Paint, Adhesive, Plastic, Leather, and Similar Industries.
First use September 1952.

SN 190,455. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICAKRAF

For Synthetic Wax Emulsions and Water Repellent Compositions for General Industrial Use.
First use Sept. 18, 1958.

SN 190,456. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICAFIX

For Chemical Compositions for Use as Fixing Agents for Textile Dyes.
First use at least as early as May 1952.

SN 190,464. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICATEX

For Lubricants, Softeners, Wetting Agents, and Other Chemical Specialties for the Textile Industry.
First use 1949.

SN 190,470. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICASAN

For Compounded Blends of Sulfated Fatty Esters for Use as Lubricants, Wetting Agents, and Rewetting Agents for Cotton Fibers and Fabrics.
First use at least as early as May 1954.

SN 190,471. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICARENE

For Styrene Polymers and Compounds Containing Styrene Polymers in Liquid or Dry Solid Form for Use as Components of Polishing Compounds and as Components of Plastic Molding Compositions.
First use August 1962.

SN 190,804. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Apr. 10, 1964.

MBC

For Herbicides.
First use May 31, 1963.

SN 191,170. Guardian Chemical Corporation, Long Island City, N.Y. Filed Apr. 15, 1964.

DESEKELEX

For Decalcifying, Sequestering, Chelating, and Complexing Agents for the Prevention of Deposition or Dissolution of Insoluble Salts, and Clarifying Agents for Aqueous Solutions.
First use Feb. 26, 1964.

SN 191,427. Mobay Chemical Company, Pittsburgh, Pa. Filed Apr. 17, 1964.

PYLON

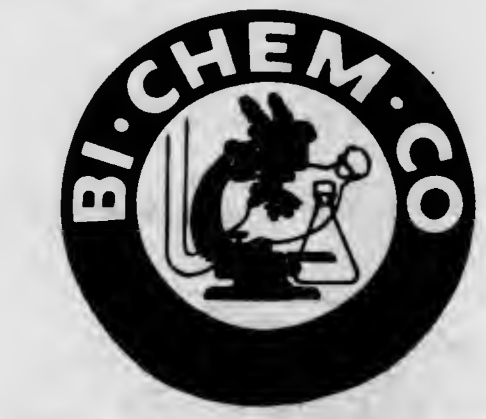
For Chemicals—Namely, Isocyanates, Carbamyl Halides, Compounds Reactive With Isocyanates and Other Materials Used in the Preparation of Polyurethane Plastics.
First use Feb. 13, 1964.

SN 191,495. The Biochemical Corporation of America, Salem, Va. Filed Apr. 20, 1964.

BI·CHEM·CO

For Cultures and Enzymes for Use in the Industrial Arts, in the Animal and Human Food Industries, in the Brewing Industry, in Waste Disposal, and in the Textile Industry.
First use at least as early as June 6, 1957.

SN 191,496. The Biochemical Corporation of America, Salem, Va. Filed Apr. 20, 1964.



For Cultures and Enzymes for Use in the Industrial Arts, in the Animal and Human Food Industries, in the Brewing Industry, in Waste Disposal, and in the Textile Industry.
First use at least as early as June 6, 1957.

SN 192,309. Monsanto Company, St. Louis, Mo. Filed Apr. 29, 1964.

EMA

For Ethylene Maleic Anhydride for General Industrial Use and Further Manufacture.
First use Mar. 19, 1964.

SN 192,625. Puritan Chemical Company, Atlanta, Ga. Filed May 4, 1964.

PROPHYLIN

For Germicide, Bactericide, Fungicide, Tuberculocide, Disinfectant, and Deodorant Which Are Generally Distributed to Customers for Industrial and Institutional Housekeeping Jobs and/or Repacking Under Their Own Brand Name.
First use Oct. 9, 1961.

SN 193,207. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed May 11, 1964.

TRICARBAMIX

For Composition for Controlling Fungi and Mineral Deficiencies of Plants.
First use Jan. 29, 1964.

SN 195,074. The Dow Chemical Company, Midland, Mich. Filed June 8, 1964.

PETROFRAC

Owner of Reg. Nos. 602,237 and 652,857.
For Liquid Chemical Compositions Useful in the Treatment of Wells and Underground Earth Formations.
First use May 2, 1953, on well treating services.

SN 195,076. The Dow Chemical Company, Midland, Mich. Filed June 8, 1964.

BDA

For Acid Compositions and Chemical Additives for Increasing the Penetrating Properties of and for Imparting Liquid Dispersing Properties to Acids, Useful in Treatment of Wells and Underground Earth Formations.
First use Feb. 11, 1958, on well treating services.

SN 195,077. The Dow Chemical Company, Midland, Mich. Filed June 8, 1964.

CEALMENT

Owner of Reg. No. 651,856.
For Chemical Additives for Cement Useful in Wells and Underground Earth Formations.
First use July 25, 1954.

SN 199,441. Arkansas Co., Inc., Newark, N.J. Filed Aug. 7, 1964.

ANTHOMINE

Owner of Reg. No. 441,716.
For Nonionic Fatty Acid Condensation Products for Use in Dyeing Wool and Wool Blends.
First use January 1948.

SN 200,040. Spectra Biologicals, Incorporated, East Brunswick, N.J. Filed Aug. 17, 1964.

CORD-COOMBS

For Anti-Human Sera for Laboratory Use Especially Prepared and Titrated for Testing Cord Bloods for Hemolytic Disease of the Newborn.
First use June 2, 1964.

SN 201,101. Ciba Limited, Basel, Switzerland. Filed Sept. 2, 1964.

CAPASIN

Owner of Swiss Reg. No. 202,507, dated Feb. 6, 1964.
For Dyestuffs, Coloring Matters, Chemical Compositions, Preparations or Compounds for Use as Auxiliary Agents in the Leather Industry.

SN 201,103. Ciba Limited, Basel, Switzerland. Filed Sept. 2, 1964.

INVASOL

Owner of Swiss Reg. No. 95,787, dated Nov. 6, 1958.
For Chemical Compositions, Preparations or Compounds for Use as Auxiliary Agents in the Textile, Leather, and Paper Industries.

SN 201,104. Ciba Limited, Basel, Switzerland. Filed Sept. 2, 1964.

VIRANITE

Owner of Swiss Reg. No. 202,066, dated Jan. 24, 1964.
For Chemical Compositions, Preparations or Compounds for Use as Auxiliary Agents in the Textile and Paper Industries.

SN 202,783. The Dow Chemical Company, Midland, Mich. Filed Sept. 28, 1964.

DOWICIL

Owner of Reg. Nos. 140,588, 658,402, and others.
For Antimicrobial Agent.
First use Aug. 6, 1964.

SN 203,299. Krasdale Foods, Inc., Bronx, N.Y. Filed Oct. 5, 1964.

KRASDALE

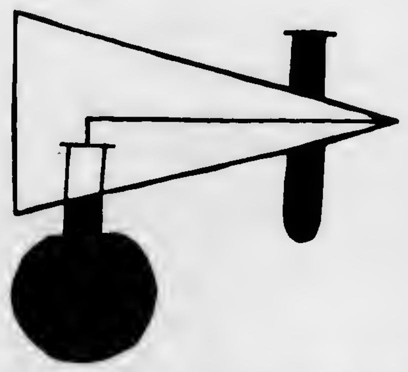
Owner of Reg. Nos. 395,811 and 695,787.
For Ammonia, Fabric Softener, and Laundry Starch.
First use Oct. 15, 1963.

SN 203,318. Paul L. Miller, Paterson, N.J. Filed Oct. 5, 1964.

ACIDEX

For Chemical Compositions for the Control of Acid Pickling Baths for Metals.
First use on about Dec. 13, 1940.

SN 203,344. The Stamford Chemical Company, Stamford, Conn. Filed Oct. 5, 1964.



For Chemical Preparations for Garment Sizing.
First use Aug. 6, 1958.

SN 203,934. Cabot Corporation, Boston, Mass. Filed Oct. 14, 1964.

CAB-O-SPERSE

Owner of Reg. Nos. 581,369, 618,425, and others.
For Dispersion of Progenic Silica at Various Concentrations in Water for the Coating of Paper, for an Anti-Slip Agent in Wool Treatment, To Thicken Pastes in the Printing of Cloth, and for Other Commercial Applications Particularly in the Paper and Textile Industries.
First use Sept. 21, 1964.

SN 205,195. Ortho Pharmaceutical Corporation, Raritan, N.J. Filed Oct. 30, 1964.

AFFIRMAGEN

For Diagnostic Reagent for Laboratory Use.
First use Sept. 8, 1964.

SN 206,526. Dade Reagents, Inc., Miami, Fla. Filed Nov. 19, 1964.

SEARCH-CYTE

For Reagent Containing Human Red Blood Cells Containing Known Antibodies and Antigens for Use in the Detection and Tentative Classification of Clinically Significant Antibodies in the Serum of Blood Donors, Recipients, and Prenatal Patients.
First use on or before Aug. 10, 1964.

SN 213,825. The Upjohn Company, Kalamazoo, Mich. Filed Mar. 8, 1965.

BANOL

For Insecticide Preparation for Use on Animals and Plants.
First use Feb. 26, 1964.

Class 10 — Fertilizers

SN 182,602. Des Plaines Chemical Company, Morris, Ill. Filed Dec. 9, 1963.

GRANAID

For Granulating Liquid Consisting of a Mixture of Sulphuric and Phosphoric Acids and Iron and Aluminum Salts Used in the Manufacture of Granulated Fertilizer.
First use on or about Aug. 28, 1963.

SN 197,087. Compagnie Francaise des Fumures Naturelles, Thorigny, Seine-et-Marne, France. Filed July 6, 1964.

COFUNA

For Manure Products (Artificial or Natural Manure) for Agriculture and Horticulture.
First use 1950; in commerce Mar. 1, 1964.

SN 205,717. The Ohio Seed Company, West Jefferson, Ohio. Filed Nov. 6, 1964.

For Nitrogen-Fixing Inoculant in the Form of a Culture of Nodule Bacteria.
First use Oct. 1, 1958.
Subj. to Intf. with SN 204,189.

Class 11 — Inks and Inking Materials

SN 168,985. Kores Manufacturing Company Limited, London, England. Filed May 14, 1963.

PLASTOFOIL

Owner of British Reg. No. B833,090, dated Apr. 6, 1962.
For Carbon Paper and Carbon Coated Films of Plastics for Copying Purposes.

Class 12 — Construction Materials

SN 201,609. National Gypsum Company, Buffalo, N.Y. Filed Sept. 10, 1964.

CORINTHIAN

For Low Density Mineral Fiber Acoustical Tile.
First use Jan. 30, 1962.

SN 203,347. Sterling Packing & Gasket Company, Inc., Houston, Tex. Filed Oct. 5, 1964.

FLURO-THRED

For Tape Made of Polymerized Polytetrafluoroethylene for Use in Sealing Threaded Connections and the Like.
First use Nov. 22, 1963.

SN 203,811. Potlatch Forests, Inc., Lewiston, Idaho. Filed Oct. 12, 1964.

The word "Coated" is disclaimed.
For Lumber.
First use Apr. 21, 1964.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 165,875. Charles Wheatley Company, Tulsa, Okla. Filed Apr. 1, 1963.

FABULAUNCH

For Valves, Valve Components, and Pipe Line Installations—Namely, Launching and Receiving Equipment for Pipe Line Spheres and Pipe Line Pigs.
First use Feb. 7, 1963.

SN 187,418. The H. M. Harper Company, Morton Grove, Ill. Filed Feb. 25, 1964.

INFINITY BRAND

Applicant disclaims the word "Brand" apart from the mark as shown, retaining all rights which may be afforded by common law and by the applicable statutes.
For Fasteners and Extruded Metal Products.
First use on or about Jan. 22, 1964.

SN 206,319. United States Steel Corporation, Pittsburgh, Pa. Filed Nov. 16, 1964.

AMERTWIST

Owner of Reg. Nos. 538,759 and 641,623.
For Nails.
First use Oct. 21, 1964.

Class 14 — Metals and Metal Castings and Forgings

SN 203,150. The Boston Metals Company, Chester, Pa. Filed Oct. 2, 1964.

SNUG STOWING

For Anchors.
First use August 1954.

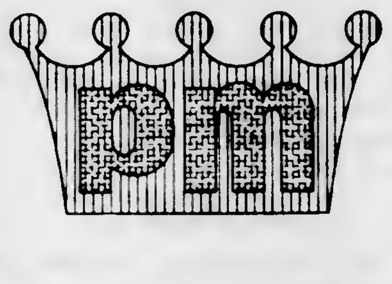
Class 15 — Oils and Greases

SN 190,465. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICAWAX

For Wax Emulsions—Namely, Paraffin, Mineral, Petroleum, and Microcrystalline Wax Emulsions for the Textile, Paper, and Other Industries.
First use 1949.

SN 194,653. The Pure Oil Company, Palatine, Ill. Filed June 1, 1964.



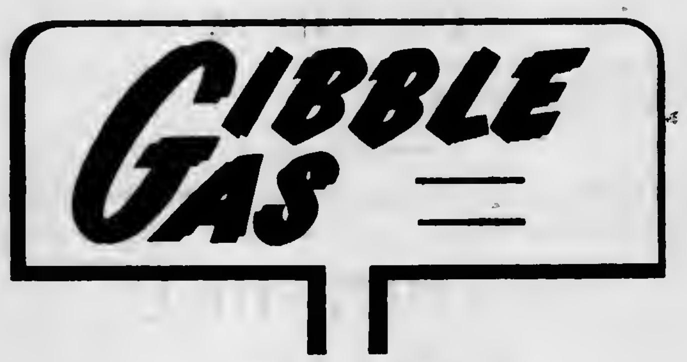
The drawing is lined for the colors red and gold.
For Lubricating Oils.
First use on or about June 1, 1963.

SN 196,602. The Barcolene Company, Boston, Mass. Filed June 29, 1964.

PSL

For Protective Silicone Lubricant Spray Useful To Stop Squeaks and Sticking and To Prevent Rust and Corrosion of Automobile Parts, Locks, Skates, Bikes, Doors, Windows, Screens, Garden Equipment, Tools, Guns, and Other Similar Purposes.
First use Apr. 16, 1964.

SN 203,280. Gibble Oil Company, Cushing, Okla. Filed Oct. 5, 1964.



Applicant disclaims the word "Gas." The drawing is lined for blue, but no claim is made to color.
For Gasoline.
First use Oct. 17, 1958.

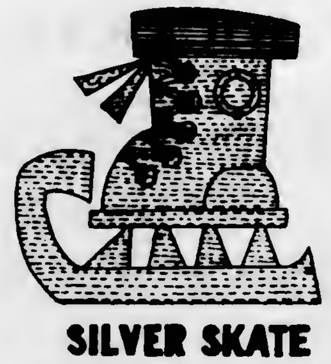
SN 209,561. Virginia Aerosol Inc., Winchester, Va. Filed Jan. 7, 1965.

TONE

For Silicone Lubricant for Musical Instruments.
First use Sept. 14, 1964.

Class 16—Protective and Decorative Coatings

SN 185,403. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



SILVER SKATE

No registration rights are claimed for the words "Silver Skate" apart from the mark shown, but the applicant waives none of its common law rights in the mark shown or any feature thereof. The lines shown on the drawing represent the colors blue, gray, and silver.

For Spray Aluminum Paint.

First use Jan. 2, 1963.

SN 191,955. Rockcote Paint Co., Rockford, Ill. Filed Apr. 24, 1964.

FINESSE

For Interior Wall Paint and Enamel.

First use Mar. 18, 1964.

Class 18—Medicines and Pharmaceutical Preparations

SN 146,701. Atlas Chemical Industries, Inc., Wilmington, Del. Filed June 12, 1962.

FERANCEE

For Hematinic.

First use Mar. 14, 1962.

SN 178,386. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Oct. 4, 1963.

SPECTRUM

For Cough Tablets.

First use Sept. 26, 1963.

SN 179,515. Barnes-Hind Laboratories, Sunnyvale, Calif. Filed Oct. 22, 1963.

BARNES-HIND
KOMEX

For Pharmaceutical Preparation in Shampoo Form for Treating and Preventing Seborrheic Conditions of the Body.

First use Aug. 20, 1963.

SN 181,316. California Institutional Supply Co. Inc., Hollywood, Calif. Filed Nov. 18, 1963.

FRUTI-FLOR

For Sodium Cyclamate Sweetened Fluorinated Chewing Gum.

First use on or about Sept. 15, 1963.

SN 184,126. American Hospital Supply Corporation, Evanston, Ill. Filed Jan. 7, 1964.

SP

For Parenteral Solutions, Normal Human Plasma and Normal Human Serum Albumin.

First use on or before Nov. 1, 1955.

SN 184,541. Western Research Laboratories, Inc., Denver, Colo., assignee of Western Research Laboratories, Denver, Colo. Filed Jan. 13, 1964.

PYRIDAMIDE

For Vitamin B Complex Preparation.

First use July 1942.

SN 192,056. Miles Laboratories, Inc., Elkhart, Ind. Filed Apr. 27, 1964.

RELIEF IS JUST A SWALLOW AWAY

Owner of Reg. No. 699,988.

For Alkalizer and Analgesic for the Relief of Headaches, Acid Indigestion, Cold Discomfort, and Muscular Aches and Pains.

First use Mar. 31, 1958.

SN 195,727. Smith, Miller & Patch, Inc., New York, N.Y. Filed June 15, 1964.

MIOCHOL

For Pharmaceutical Preparation Used in Inter-Ocular Surgery.

First use Apr. 27, 1964.

SN 200,574. Kapson Laboratories, Inc., Newport, Oreg. Filed Aug. 25, 1964.

AMFODYNE

For All-Purpose Germicide for Use on the Human Body.

First use May 28, 1964.

SN 201,016. Dr. Schieffer Arzneimittel Ges.m.b.H. & Co., Ohg. Villach, Austria. Filed Sept. 1, 1964.

BIOJAD

Owner of Austrian Reg. No. 47,589, dated Mar. 21, 1962.

For Combined Tonic and Vitamin Preparation.

SN 201,296. McKesson & Robbins, Incorporated, New York, N.Y. Filed Sept. 4, 1964.

KAOPARIN

For Preparation for the Relief of Diarrhea.

First use Aug. 14, 1964.

SN 203,577. Commerce Drug Co., Inc., Brooklyn, N.Y. Filed Oct. 8, 1964.

TRIALKA

For Antacid for Stomach Upsets and Nervous Stomachs.

First use Jan. 4, 1960.

SN 203,672. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Oct. 9, 1964.

CYSTOKON

Owner of Reg. Nos. 213,690, 700,834, and others.

For X-Ray Contrast Media.

First use Sept. 10, 1964.

SN 204,905. Hoffmann-La Roche Inc., Nutley, N.J. Filed Oct. 27, 1964.

PALMA-SPERSE

Owner of Reg. Nos. 713,411 and 726,654.

For Vitamin Preparation.

First use Oct. 9, 1964.

SN 206,268. Kasar Company, Niles, Ill. Filed Nov. 16, 1964.

Kx

For Pharmaceutical Preparations.

First use Nov. 4, 1964.

SN 206,583. The Upjohn Company, Kalamazoo, Mich. Filed Nov. 19, 1964.

NELOSAN

For Acne Lotion Preparations.

First use Oct. 7, 1964.

SN 207,729. Muro Pharmacal Laboratories, Inc., Quincy, Mass. Filed Dec. 8, 1964.

MUROCOLL

For Medicinal Eye Drops.

First use Aug. 17, 1956.

SN 207,777. American Cyanamid Company, Wayne, N.J. Filed Dec. 9, 1964.

AUREO

Owner of Reg. Nos. 566,712, 771,414, and others.

For Animal Feed Supplement Containing an Antibiotic, and an Antibiotic.

First use Nov. 12, 1964.

SN 208,041. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 14, 1964.

CANTILYTE

Owner of Reg. Nos. 642,246 and 740,839.

For Anti-Diarrheal Medication.

First use on or about Nov. 3, 1964.

SN 208,142. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Dec. 14, 1964.

SKEDULE

For Steroid Hormone Preparation for Veterinary Use.

First use Sept. 29, 1964.

SN 208,774. The Sheffield Company, New London, Conn. Filed Dec. 23, 1964.

KYLE'S

Owner of Reg. Nos. 413,198 and 421,255.

For Zinc Oxide Ointment.

First use Mar. 21, 1945.

Class 19—Vehicles

SN 204,225. Arnold, Schwinn & Co., Chicago, Ill. Filed Oct. 19, 1964.

BREEZE

For Bicycles.

First use Sept. 25, 1964.

SN 206,314. Union Carbide Corporation, New York, N.Y. Filed Nov. 16, 1964.

UNION
CARBIDE

For Infants' Car Seats.

First use on or about Oct. 22, 1964.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 178,147. Teleprompter Corporation, New York, N.Y. Filed Oct. 1, 1963.

GROUP COMMUNICATIONS

Owner of Reg. Nos. 727,121 and 727,126.

For Apparatus for the Staging of Audio Visual Displays, Including Electrically-Operated Apparatus for the Cuing of Speakers and Actors by Means of Scripts Advanced in Conformity With the Action and/or Dialogue or Monologue To Be Presented, and Electrical Driving, Switching and Speed Control Equipment Therefor, Projectors, Slide Selectors, Card Readers, Sequence Selectors, Lighting Control Apparatus, Relay Control Panels, and Electrical Circuit Control Apparatus.

First use April 1958 on electrical circuit control apparatus.

SN 185,899. Jennings Radio Manufacturing Corporation, San Jose, Calif. Filed Feb. 3, 1964.

Jennings

For Electric and Electronic Apparatus—Namely, Vacuum Condensers, Vacuum Switches and Relays Including Overload Circuit Breakers, Vacuum Coaxial Switches and Relays; Mechanical and Electrical Actuators for Condensers, Switches and Relays; and High Voltage Measuring Equipment Including Voltmeters, Voltage Dividers, and High Voltage Probes.

First use Nov. 15, 1958, on overload circuit breakers.

SN 189,660. Comptoir des Machines, S.A., Lausanne, Switzerland. Filed Mar. 26, 1964.

Valentine

Owner of Swiss Reg. No. 147,373, dated July 20, 1953.

For Thermo-Electric Apparatus and Accessories for Kitchen and Restaurant Use—Namely, Food Fryers, Infra-Red Food Ovens, and Plate Heaters.

SN 205,190. Montgomery Brothers, Inc., Burlingame, Calif. Filed Oct. 30, 1964.

TETON

For Electric Baseboard Heaters.

First use Sept. 16, 1964.

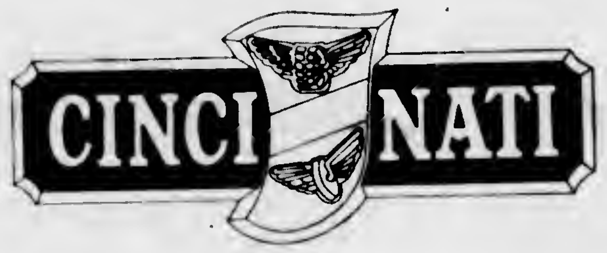
SN 205,850. Russell & Stoll Company, Inc., New York, N.Y. Filed Nov. 9, 1964.

RUSTOLITE

For Electric Outlet Box Accessories—Namely, Carpet Flanges, Cone Nozzles, and Protective Rings for Outlet Boxes.

First use Sept. 18, 1964.

SN 207,789. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Dec. 9, 1964.



Owner of Reg. No. 612,130.

For Electrochemical Machines, Electrolytic Grinding Machines, and Electrical Discharge Machines.

First use on or about Mar. 1, 1956.

Class 22 — Games, Toys, and Sporting Goods

SN 163,047. Hedlund Manufacturing Company, Nokomis, Ill. Filed Feb. 19, 1963.

hedlund

For Sports Equipment—Namely, Hockey Sticks, Toboggans, Sleds, Aqua Planes, Skip Planes, Tow Ropes, Ski Poles, Skis, Together With Accessories Such as Ski Bindings, Harness, and Harness Mounts.

First use September 1961; 1950 in a different form.

SN 176,359. Eldorado Products, Inc., Costa Mesa, Calif. Filed Sept. 5, 1963.

GRIP GROOVER

Applicant hereby disclaims the word "Grip."

For Training Device for Golf Clubs Consisting of a Handle Grip for Use as a Device To Train the Hands To Grip a Golf Club.

First use June 1, 1963.

SN 177,780. Nicholas Egnatz, Hammond, Ind. Filed Sept. 26, 1963.

HOLE IN

For Golfing Putters.

First use Mar. 29, 1963.

SN 184,513. St. Lawrence Sales Incorporated, Royal Oak, Mich. Filed Jan. 13, 1964.

ALPRIMA

Owner of Reg. Nos. 748,384 and 754,665.

For Skis, Ski Bindings, Ski Poles, and Ski Accessories.

First use Dec. 17, 1963.

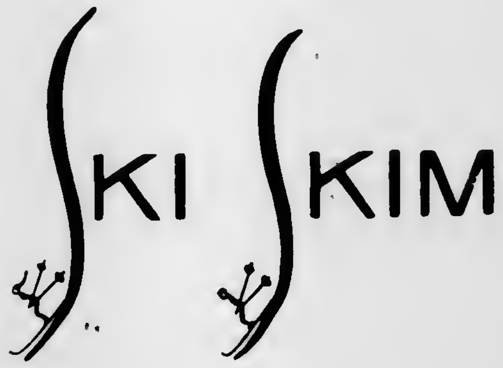
SN 187,145. Pro Sports All, Inc., Henderson, Ky. Filed Feb. 20, 1964.

MAGIC-NOCK

For Nocking Device for Fitting an Arrow Onto a Bow String.

First use Jan. 6, 1964.

SN 188,055. Henry L. Hunter III, d.b.a. Ski Skim, Pleasantville, N.Y. Filed Mar. 2, 1964.

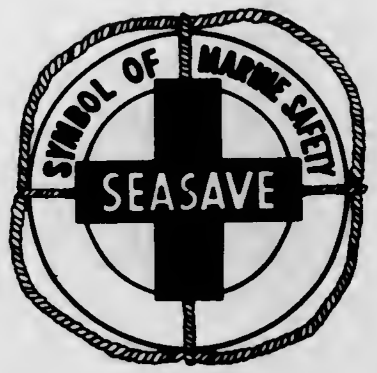


The word "Ski" is disclaimed apart from the mark.

For Ski Bottom Lubricant.

First use Dec. 29, 1963.

SN 189,507. Seamac Corporation, New Orleans, La. Filed Mar. 24, 1964.

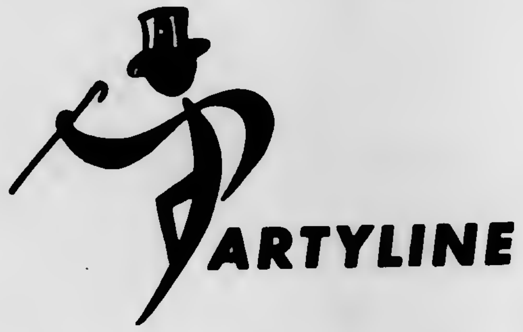


Applicant hereby disclaims the term "Symbol of Marine Safety" apart from the mark as shown.

For Life Preserver Vest or Jacket.

First use at least as early as Sept. 10, 1963.

SN 189,812. Geraldine W. Rodin, d.b.a. G. W. Rodin Company, Clarks Summit, Pa. Filed Mar. 27, 1964.



For Party Goods—Namely, Favors, Decorations, Novelties, Masks, Party Hats, Noise Makers, and Balloons.

First use Mar. 3, 1964.

SN 190,995. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed Apr. 13, 1964.

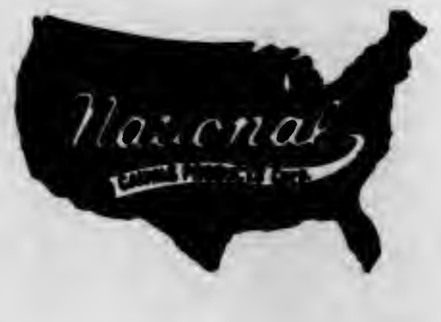
ALLEY THE CAT

The words "The Cat" are disclaimed apart from the mark as shown.

For Puppet.

First use Mar. 4, 1964.

SN 192,067. National Canvas Products Corp., Toledo, Ohio. Filed Apr. 27, 1964.



Applicant disclaims the map design of the United States and the words "Canvas Products" apart from the mark as shown.

For Tents.

First use March 1962.

SN 193,528. Anglers Manufacturing Co., Miami, Fla. Filed May 15, 1964.

Dorado 360°

For Fishing Reels.

First use Mar. 24, 1964.

SN 194,366. R. Dakin & Company, San Francisco, Calif., by change of name from R. Dakin & Company, Importers, San Francisco, Calif. Filed May 27, 1964.

WILD N' WOOLIES

For Stuffed Animal Toys.

First use Apr. 1, 1964.

SN 194,749. Ridley Mfg. Co., Inc., Ridley Park, Pa. Filed June 2, 1964.

Reel-A-Rig

For Apparatus for Reeling and Storing Fishing Leaders.

First use on or about Apr. 24, 1964.

SN 196,083. Wittek Golf Range Supply Co., Inc., Chicago, Ill. Filed June 19, 1964.

TEE QUEEN

No claim of exclusive right is made to "Tee" for the goods recited.

For Mechanical Golf Tees.

First use April 1949.

SN 197,280. John Freiburg, Torrance, Calif. Filed July 7, 1964.

AB-STRACTO?

For Combined Toy and Hobby Paint Set.

First use Jan. 6, 1964.

SN 197,662. Hasel Bowman, Brownfield, Tex. Filed July 13, 1964.

Skip-Bo

For Equipment Comprising a Deck of Specialty Cards for Playing a Parlor Game.

First use Feb. 21, 1964.

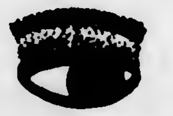
SN 198,898. John A. Roberts & Company, Inc., Newark, N.J. Filed July 30, 1964.

JARCO

For Game Equipment Comprising Bingo Boards of Paper and Hard Boards.
First use July 18, 1945.

SN 199,969. Columbia Toy Products, Inc., Kansas City, Mo. Filed Aug. 17, 1964.

PROVOCATIVE EYES



For Stuffed Dolls and Animals.
First use July 14, 1964.

SN 200,404. Bicky Boy Football Games Inc., Portland, Oreg. Filed Aug. 24, 1964.

BICKY BOY

For Apparatus Sold as a Unit for Playing a Football Game.
First use Sept. 11, 1962.

SN 200,451. Rae Levine, New York, N.Y. Filed Aug. 24, 1964.

BOWL-4-CASH

For Equipment Comprising Cards for Playing a Promotional-Type Game of Chance.
First use July 27, 1964.

SN 200,453. Rae Levine, New York, N.Y. Filed Aug. 24, 1964.

HUNT-4-CASH

For Equipment Comprising Cards for Playing a Promotional-Type Game of Chance.
First use July 27, 1964.

SN 200,455. Rae Levine, New York, N.Y. Filed Aug. 24, 1964.

FLOWERCASH

For Equipment Comprising Cards for Playing a Promotional-Type Game of Chance.
First use July 27, 1964.

SN 200,456. Rae Levine, New York, N.Y. Filed Aug. 24, 1964.

FISH-4-CASH

For Equipment Comprising Cards for Playing a Promotional-Type Game of Chance.
First use July 27, 1964.

SN 200,457. Rae Levine, New York, N.Y. Filed Aug. 24, 1964.

SONGCASH

For Equipment Comprising Cards for Playing a Promotional-Type Game of Chance.
First use July 27, 1964.

SN 200,812. Arndt & Sons, Inc., Hamilton, Ohio. Filed Aug. 28, 1964.

BUG-EYE

For Artificial Fish Lures—Namely, Bucktail Weedless Jigs.
First use Aug. 1, 1964.

SN 200,846. The Jennirest Company, Pasadena, Calif. Filed Aug. 28, 1964.

'JENNIREST'

For Beach Headrest.
First use Jan. 7, 1964.

SN 202,833. Anna Edwarda Moszczynski, d.b.a. Anna Edwarda, New York, N.Y. Filed Sept. 28, 1964.

"Weepers"

For Toy Stuffed Animals.
First use May 29, 1956.

SN 203,029. Puritan Cordage Mills, Louisville, Ky. Filed Sept. 30, 1964.

SHAPE-UP GYM

For Apparatus for Isometric Exercises—Namely, a Portable Device Comprising a Flexible Non-Extensible Rope Having a Pair of Adjustable Handles Thereon.
First use Sept. 17, 1964.

SN 203,925. Battle Creek Equipment Co., Battle Creek, Mich. Filed Oct. 14, 1964.

TRIM-TABLE

Owner of Reg. Nos. 623,613, 747,556, and 747,922.
For Exercise Platforms of Both Level and Inclined Types Useable for Conducting Physical Fitness Body-Conditioning Exercises.
First use Sept. 3, 1963.

SN 204,099. Roddy Recreation Products, Inc., Gardena, Calif. Filed Oct. 15, 1964.

GATOR TAIL

For Fishing Rods.
First use Oct. 7, 1964.

SN 204,178. Mattel, Inc., Hawthorne, Calif. Filed Oct. 16, 1964.

SCOOBA-DOO

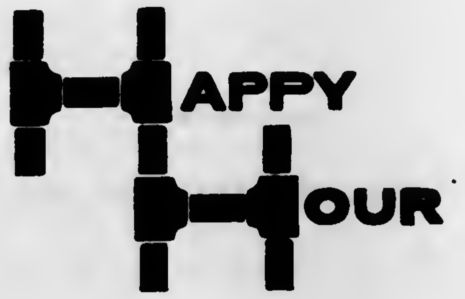
For Doll.
First use Apr. 13, 1964.

SN 204,351. Cameo Doll Products Co., Inc., Port Allegheny, Pa. Filed Oct. 20, 1964.

"RAGSY"

For Doll.
First use on or about Sept. 1, 1964.

SN 204,381. Humane Barn Equipment Co., Inc., d.b.a. Happy Hour Playground Equipment Co., Baraboo, Wis. Filed Oct. 20, 1964.



For Playground Equipment.
First use 1929.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 200,852. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Aug. 28, 1964.

AQUA FLO

For Moistener for Gummed Tape.
First use July 1, 1964.

SN 203,834. Southern California Hydraulic Engineering Corp., d.b.a. SC Hydraulic Engineering Corp., Los Angeles, Calif. Filed Oct. 12, 1964.

SC

For Hydraulic Pumps.
First use Aug. 31, 1964.

SN 204,184. Moorhead Machinery & Boiler Co., Minneapolis, Minn. Filed Oct. 16, 1964.

AQUA-VERTER

For Ammonia Conversion Equipment for Converting Anhydrous Ammonia to Aqua Ammonia.
First use Aug. 21, 1964.

SN 205,446. Norvey, Inc., Los Angeles, Calif. Filed Nov. 3, 1964.

REACH-ALL

For Hand-Operated Pen Oiler With an Extensible and Retractable Oiling Tube, Said Oiler Being Filled With Lubricant.
First use July 6, 1964.

SN 206,712. Forest China, Inc., New York, N.Y. Filed Nov. 23, 1964.

STER-LUSTRE

For Stainless Steel Flatware—Namely, Knives, Forks, Spoons, and Serving Utensils.
First use Nov. 10, 1964.

Class 26—Measuring and Scientific Appliances

SN 193,490. Ohaus Scale Corporation, Union, N.J. Filed May 14, 1964.

AUTOGRAM

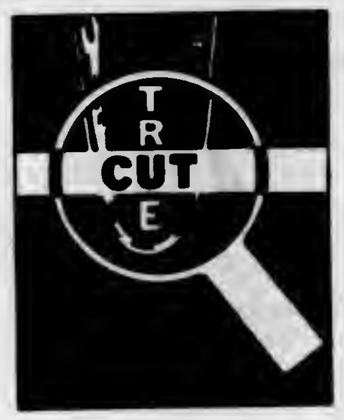
For Direct Reading Laboratory Balance.
First use Mar. 30, 1964.

SN 196,061. Radio Corporation of America, New York, N.Y. Filed June 19, 1964.

VE DET

For Electronic Traffic Detection and Sensing Devices and Components and Parts Thereof and Accessories Therefor.
First use at least as early as or on about Dec. 15, 1959.

SN 196,570. True-Cut Products, Inc., Goleta, Calif. Filed June 26, 1964.



For Automatic Proportionate Fluid Samplers and Parts Thereof for Isokinetic Sampling.
First use during June 1961.

SN 201,525. Crompton & Knowles Corporation, Worcester, Mass. Filed Sept. 9, 1964.

MAG-AIR

For Sheet Stock Thickness Indicators.
First use June 1, 1964.

Class 30—Crockery, Earthenware, and Porcelain

SN 166,134. Shenango Ceramics, Inc., New Castle, Pa., assignee of Shenango China, Inc., New Castle, Pa. Filed Apr. 4, 1963.

ESQUIRE

For China Dinnerware.
First use Feb. 12, 1963.

Class 31—Filters and Refrigerators

SN 184,766. Union Tank Car Company, Chicago, Ill. Filed Jan. 16, 1964.

SPHERICONE

For Hot Process Softeners for the Treatment of Water for Industrial Purposes.
First use on or about Aug. 31, 1950.

SN 194,718. Frost Queen Corporation, Bala-Cynwyd, Pa. Filed June 2, 1964.

frost Queen

For Refrigerators and Freezers.
First use on or about Apr. 17, 1959.

SN 195,981. Sunroc Corporation, Glen Riddle, Pa. Filed June 18, 1964.

TALL 'N SMALL

For Drinking Water Coolers.
First use Mar. 10, 1964.

Class 32 — Furniture and Upholstery

SN 204,993. New York Feather Co., Inc., Brooklyn, N.Y. Filed Oct. 28, 1964.

For Pillows and Cushions.
First use January 1957.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 194,335. United States Rubber Company, New York, N.Y. Filed May 26, 1964.

WINDSOR

For Pneumatic Tires.
First use 1961.

SN 203,498. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Oct. 7, 1964.

PLICORD

For Conveyor Belting.
First use Aug. 27, 1963.

SN 203,501. Greene, Tweed & Co., North Wales, Pa. Filed Oct. 7, 1964.

DŌLON

For Packings for the Wearing and Bearing Parts of Machines and Mechanical Devices and for Use in Stuffing Boxes.
First use Sept. 9, 1964.

SN 204,581. Lapine Scientific Company, Chicago, Ill. Filed Oct. 22, 1964.

DES-O-RING

For Gaskets.
First use Oct. 13, 1964.

SN 204,648. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Oct. 23, 1964.

TRANSPORT 100

Applicant disclaims the number "100" apart from the mark as shown. Owner of Reg. Nos. 159,855, 378,189, and 778,511.
For Resilient Vehicle Tires.
First use Nov. 7, 1960.

Class 36 — Musical Instruments and Supplies

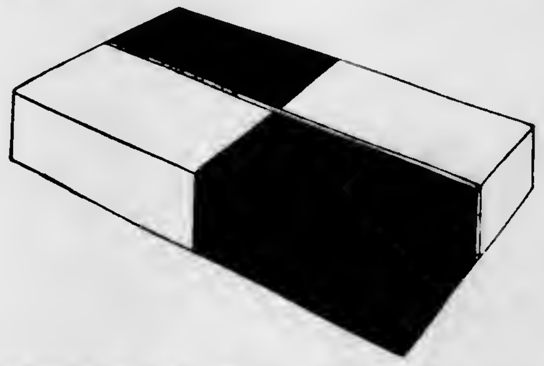
SN 198,698. W. T. Armstrong Co., Inc., Elkhart, Ind. Filed July 29, 1964.

EMERITUS 21

For Woodwind Musical Instruments.
First use May 12, 1964.

Class 37 — Paper and Stationery

SN 175,117. Kimberly-Clark Corporation, Neenah, Wis. Filed Aug. 15, 1963.



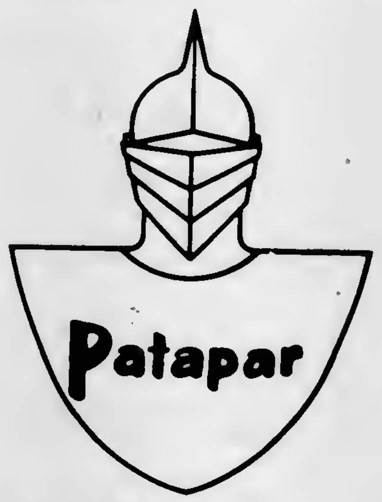
The predominant part of the trademark consists of two rectangular-shaped darker portions which are in contrasting colors to the other portions of the package. Owner of Reg. No. 744,081.
For Cleansing Tissue Suitable for Hygienic, Cosmetic, or Cleaning Purposes.
First use on or before May 1, 1938.

SN 185,871. Continental Can Company, Inc., New York, N.Y. Filed Feb. 3, 1964.

ADVANCE-COTE

Owner of Reg. Nos. 209,711, 566,298, and others.
For Paperboard.
First use June 18, 1963.

SN 186,472. The Paterson Parchment Paper Company, Bristol, Pa. Filed Feb. 11, 1964.



Owner of Reg. No. 217,634.
For Vegetable Parchment for Wrapping Food Products.
First use Oct. 25, 1963.

SN 204,772. Doolittle Stationery Specialties Co., Chicago, Ill. Filed Oct. 26, 1964.

NEEDA-PADS

For Memorandum and Note Tablets.
First use Aug. 4, 1964.

SN 205,263. Eberhard Faber Inc., Wilkes-Barre, Pa. Filed Nov. 2, 1964.

PINK KLEEN

Owner of Reg. No. 349,376.
For Erasers, Plastic Type Cleaner, and Artists' Cleaning Material (Kneaded Rubber).
First use Oct. 27, 1964.

Class 38 — Prints and Publications

SN 172,261. United Western Enterprises, Inc., d.b.a. United Western Enterprises, Santa Monica, Calif. Filed July 1, 1963.

HOT BOAT

For Magazine.
First use May 9, 1963.

SN 174,150. Glenn L. Albritton, Jackson, Miss. Filed Aug. 1, 1963.

Glenn Albritton

The mark consists of the facsimile signature of the applicant.
For Building Plans and Specifications.
First use June 24, 1963.

SN 175,114. International Grapho Analysis Society, Inc., Chicago, Ill. Filed Aug. 15, 1963.

THE JOURNAL OF GRAPHOANALYSIS

Owner of Reg. Nos. 744,240, 762,104, and others.
For Monthly Publication Containing News and Articles Relating to the Field of Handwriting Analysis.
First use March 1963.

SN 176,469. Young World Press, Inc., New York, N.Y. Filed Sept. 6, 1963.

datebook

For Magazine for Girls, Devoted to Matters Concerning Popularity and Personality.
First use July 10, 1957.

SN 185,880. Eureka Specialty Printing Company, Scranton, Pa. Filed Feb. 3, 1964.

MILE-MARK

For Printed Paper Labels Having a Pressure Sensitive Adhesive Coating on the Back Thereof and Used for Purposes of Servicing.
First use Oct. 7, 1963.

SN 189,369. Red Cedar Shingle & Handsplit Shake Bureau, Seattle, Wash. Filed Mar. 23, 1964.

MALLET & FROE

For Newsletter.
First use May 1962.

SN 190,309. Newsweek, Inc., New York, N.Y. Filed Apr. 3, 1964.

ART NEWS

For Art Magazine.
First use prior to Nov. 1, 1936; Mar. 1, 1923, in a different form.

SN 190,310. Newsweek, Inc., New York, N.Y. Filed Apr. 3, 1964.

ART NEWS ANNUAL

For Art Magazine.
First use prior to Jan. 1, 1945.

SN 190,623. David G. Kilpatrick and William A. Dittrich (partnership), Bala-Cynwyd, Pa. Filed Apr. 8, 1964.

DATADEX

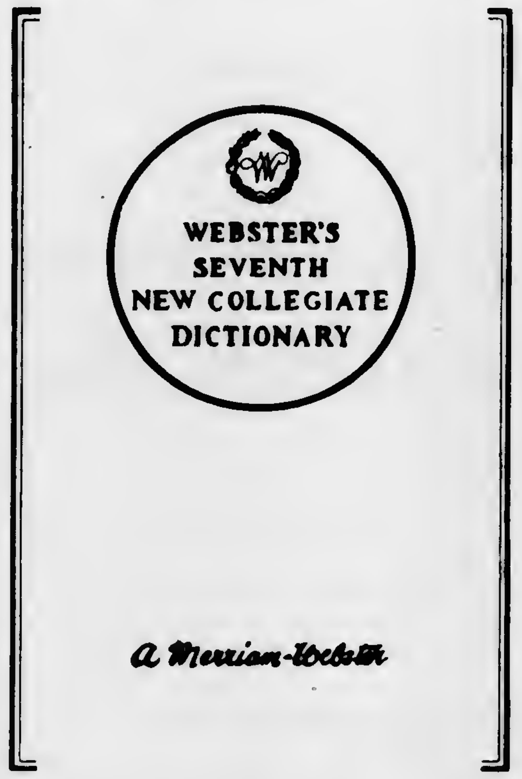
For Directories of Technical and Scientific Information and Data Relating to Mechanical and Electrical Components and Techniques Issued From Time to Time.
First use May 10, 1963.

SN 192,961. Vulcan Manufacturing Co., Cincinnati, Ohio. Filed May 7, 1964.

Vulcan columns

Owner of Reg. Nos. 747,288 and 767,572.
For Periodical Trade Newsletter.
First use in or about 1948.

SN 200,107. G. & C. Merriam Company (Delaware corporation), Springfield, Mass., assignee of G. & C. Merriam Company (Massachusetts corporation), Springfield, Mass. Filed Aug. 18, 1964.

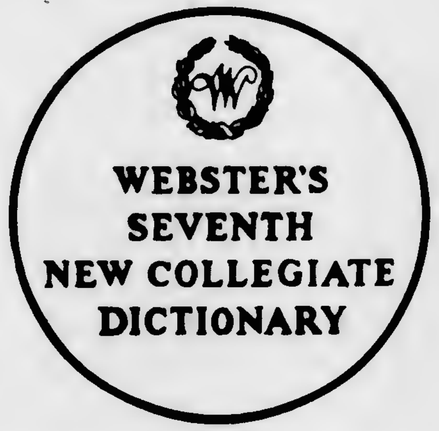


Applicant makes no claim of right to exclusive use of the word "Seventh," "New," and "Dictionary" apart from the mark as shown. Owner of Reg. Nos. 172,131, 346,557, and others.

For Dictionaries.

First use Feb. 11, 1963.

SN 200,108. G. & C. Merriam Company (Delaware corporation), Springfield, Mass., assignee of G. & C. Merriam Company (Massachusetts corporation), Springfield, Mass. Filed Aug. 18, 1964.



Applicant makes no claim of right to exclusive use of the words "Seventh," "New," and "Dictionary" apart from the mark as shown. Owner of Reg. Nos. 172,131 and 346,557.

For Dictionaries.

First use Feb. 11, 1963.

SN 201,573. Cambridge Associates, Inc., Boston, Mass. Filed Sept. 10, 1964.

EXECUTIVES' DIGEST

Owner of Reg. No. 430,673.

For Monthly Pamphlet Containing Timely Articles of Special Interest to Businessmen, Prepared for Issuance by Applicant and by Others.

First use May 1944.

SN 201,588. Herman Publishing Co., Inc., North Hollywood, Calif. Filed Sept. 10, 1964.

The National
CLOSE-UP

For Tabloid Newspaper.

First use Aug. 17, 1964.

SN 202,398. Walden-Mott Corp., Oradell, N.J. Filed Sept. 22, 1964.

PAPER AGE

For Trade Newspaper.

First use Aug. 1, 1964.

SN 203,989. Norcross, Inc., New York, N.Y. Filed Oct. 14, 1964.

TISHU FLOWER

For Greeting Cards.

First use Mar. 20, 1964.

SN 204,072. Inter/Trade Incorporated, Philadelphia, Pa. Filed Oct. 15, 1964.

I/T

For Books, Pamphlets, Loose-Leaf Pages, and Periodicals With Regard to International Business Law.

First use June 27, 1964.

SN 204,076. Maco Magazine Corporation, New York, N.Y. Filed Oct. 15, 1964.

MACO

For Magazines and Books.

First use in or before January 1963.

SN 204,093. Queensmith Associates, Inc., Washington, D.C. Filed Oct. 15, 1964.

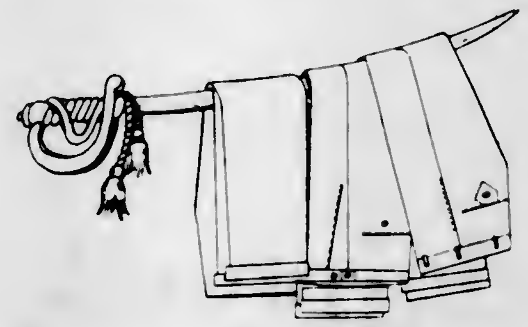
HYDROGRAM

For Twice-Monthly Newsletter.

First use Jan. 2, 1964.

Class 39 — Clothing

SN 170,701. Sportswear Corporation of America, St. Louis, Mo. Filed June 10, 1963.



The representation of the goods is disclaimed apart from the mark as shown.

For Slacks Having a Permanent Crease.

First use Apr. 28, 1963.

SN 185,416. Imperial Outfitters to Large Men, Inc., New York, N.Y. Filed Jan. 27, 1964.

JOHN VANCE

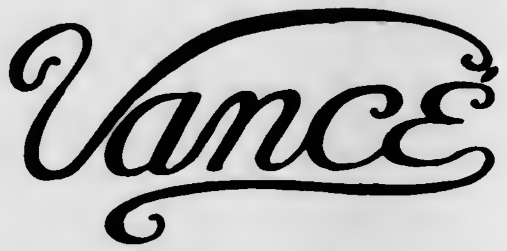
The name "John Vance" is fictitious.

For Men's Sportcoats, Jackets, Overcoats, Slacks, and Raincoats.

First use Dec. 15, 1963.

Subj. to Intf. with SN 189,028.

SN 189,028. A & S Manufacturing Company, Inc., Cleburne, Tex. Filed Mar. 19, 1964.



For Women's Dresses, Women's Culottes, Women's Robes, and Women's Smocks.

First use Jan. 10, 1959.

Subj. to Intf. with SN 185,416.

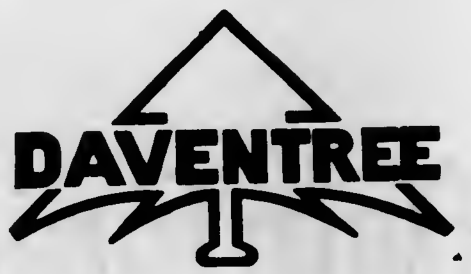
SN 193,878. Junior House, Inc., Milwaukee, Wis. Filed May 20, 1964.

JUNIOR HOUSE

For Women's and Girls' Clothing—Namely, Blouses, Sweaters, Skirts, Slacks, Suits, Dresses, Coats, and Swimsuits.

First use March 1945.

SN 198,140. Davidow Suits, Inc., New York, N.Y. Filed July 20, 1964.



For Ladies' and Misses' Clothing—Namely, Suits, Jackets, Skirts, Dresses, Coats, Dress Ensembles, and Blouses.

First use in or about August 1932.

SN 198,325. Boss Manufacturing Company, Kewanee, Ill. Filed July 22, 1964.

PLASTIC DOT

For Work Gloves Made of Cotton Fabric.

First use Sept. 5, 1961.

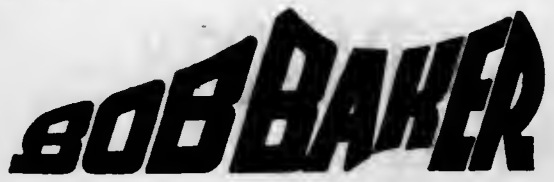
SN 200,003. James F. Lamont and Terrence P. Gormley (joint venture), d.b.a. Heel-Set Golf Shoe Cushions Co., East Hartford, Conn. Filed Aug. 17, 1964.

HEEL-SET

For Golf Shoe Cushions.

First use July 1964.

SN 202,553. J. W. Carter Company, Nashville, Tenn. Filed Sept. 24, 1964.



The name "Bob Baker" does not refer to any living individual.

For Men's Shoes.

First use May 19, 1964.

SN 205,938. The H. W. Gossard Co., Chicago, Ill. Filed Nov. 10, 1964.

ANSWERETTE

Owner of Reg. Nos. 656,494, 678,150, and 742,029.

For Girdles and Pantie Girdles.

First use Oct. 19, 1964.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 189,736. The Stahl Felt Stamping Co., Warren, Mich. Filed Mar. 26, 1964.

PLASTI-BAK

For Plastic Coated Cloth and Letters for Ironing on Garments.

First use 1946.

SN 197,519. Supply Manufacturing Co., Inc., New York, N.Y. Filed July 9, 1964.

PERMAFUZED

Owner of Reg. Nos. 693,241 and 774,197.

For Flexible Strip of Material To Be Used as a Stiffener in Garment Belts or for Like Purposes.

First use Jan. 8, 1964.

SN 202,539. C. J. Bates & Son, Incorporated, Chester, Conn. Filed Sept. 24, 1964.

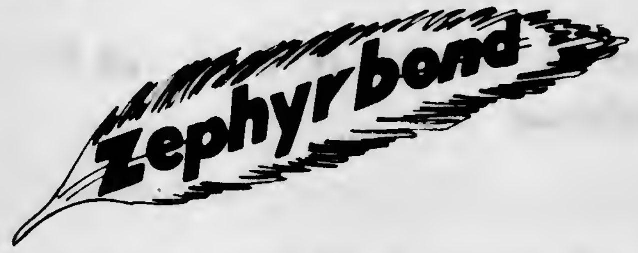
SILVALITE

For Crochet Hooks for Hand Use, Hand Knitting Needles, and Accessories.

First use May 26, 1941.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 196,932. Abaco Fabrics Corp., New York, N.Y. Filed July 2, 1964.



For Fabrics Composed of Silk, Wool, Cotton, Synthetics, and Any Combination Thereof.

First use Jan. 2, 1964.

SN 200,660. Rainbow Purchasing Corporation, New York, N.Y. Filed Aug. 26, 1964.

RAINBOW

For Rubber Webbing.
First use April 1961.

SN 206,330. Emile Marghab, Incorporated, New York, N.Y. Filed Oct. 26, 1964.

MARTISTE

For Fine Quality Batiste Cloth.
First use Sept. 7, 1955.

SN 206,346. Cannon Mills Company, Kannapolis, N.C. Filed Nov. 17, 1964.

CROWN JEWEL

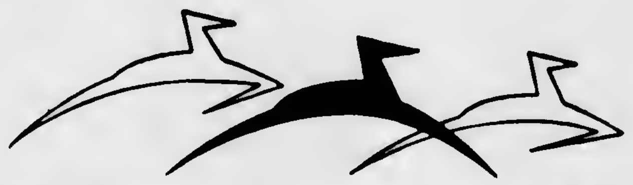
For Bedspreads, Blankets, Sheets, Pillowcases, Towels, and Wash Cloths.
First use Oct. 20, 1964, on bedspreads and blankets.

SN 206,383. J. P. Stevens & Co., Inc., New York, N.Y. Filed Nov. 17, 1964.

INSULBATTE

For Fabrics Made From Glass Fibers.
First use Oct. 26, 1964.

SN 206,930. Erwin Mills, Inc., Durham, N.C. Filed Nov. 25, 1964.



For Cotton Denims and Cotton Piece Goods With Nylon.
First use Aug. 26, 1964.

Class 43 — Thread and Yarn

SN 206,740. Moulinage et Retorderie de Chavanoz, Societe Anonyme, Chavanoz, Isere, France. Filed Nov. 23, 1964.

CHAVALOR

Owner of French Reg. No. 1,067, dated June 1, 1956 (Vienne); Natl. Inst. No. 75,303.
For Thread and Yarns.

Class 44 — Dental, Medical, and Surgical Appliances

SN 184,124. American Hospital Supply Corporation, Evanston, Ill. Filed Jan. 7, 1964.

S/P

For Receptacles—Namely, Specimen Bottles and Cups.
First use on or before Feb. 1, 1953.

SN 203,244. Advanced Products Corp., Framingham, Mass. Filed Oct. 5, 1964.

APC

The drawing is lined for shading.
For Portable Gas Sterilizers and Disposable Gas Cartridges Containing a Gas Sterilant Used by Hospitals, Doctors, Dentists, Clinics, and Laboratories.
First use Feb. 1, 1964.

SN 206,980. Specialized Components Corporation, Garden City Park, N.Y. Filed Nov. 25, 1964.

HEMOCLIP

For Surgical Fasteners.
First use at least as early as Nov. 11, 1964.
Subj. to Intf. with SN 209,213.

SN 209,213. Edward Weck & Company, Inc., Long Island City, N.Y. Filed Dec. 31, 1964.

HEMOCLIPS

For Surgical Apparatus for Occluding Blood Vessels.
First use Nov. 10, 1964.
Subj. to Intf. with SN 206,890.

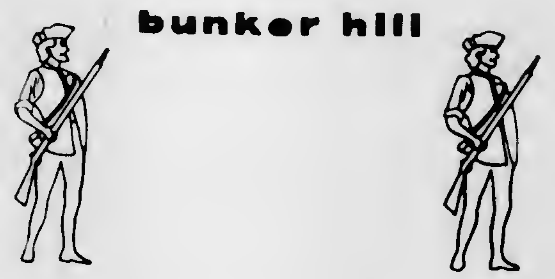
Class 45 — Soft Drinks and Carbonated Waters

SN 168,135. American Beverage Corporation, d.b.a. Calso Water Co., Menlo Park, Calif. Filed May 6, 1963.

QuinTonic

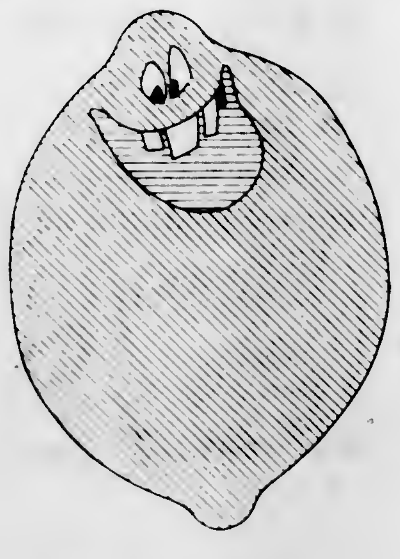
For Quinine Water.
First use Apr. 22, 1963.

SN 174,834. Contact International, Inc., Chicago, Ill. Filed Aug. 12, 1963.



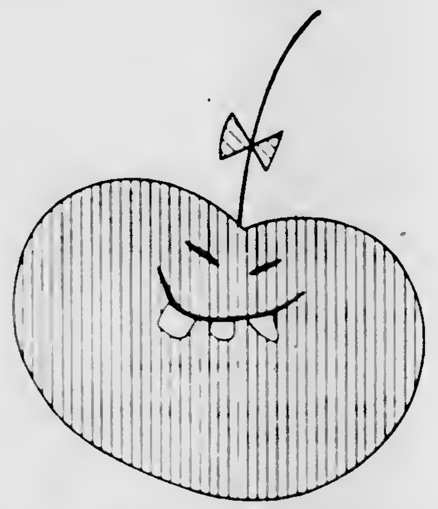
For Pasteurised Non-Carbonated Soft Drinks of Various Flavors.
First use on or about July 17, 1963.

SN 196,296. The Pillsbury Company, Minneapolis, Minn. Filed June 23, 1964.



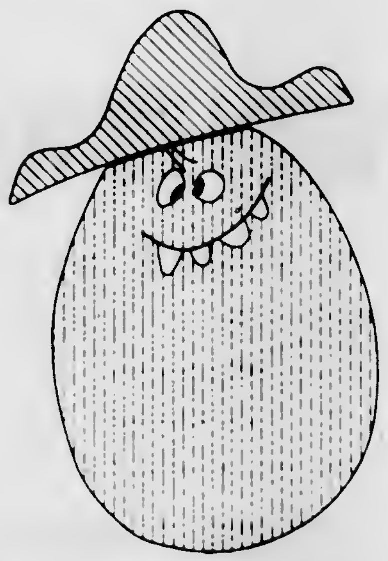
The drawing is lined for green and blue.
For Powders for Preparing Soft Drinks.
First use Feb. 15, 1964.

SN 196,297. The Pillsbury Company, Minneapolis, Minn. Filed June 23, 1964.



The drawing is lined for red and green.
For Powders for Preparing Soft Drinks.
First use Feb. 15, 1964.

SN 196,298. The Pillsbury Company, Minneapolis, Minn. Filed June 23, 1964.



The drawing is lined for purple and green.
For Powders for Preparing Soft Drinks.
First use Feb. 15, 1964.

SN 200,375. Mutual Citrus Products Company, Anaheim, Calif. Filed Aug. 21, 1964.

PAPEETE PETE

For Non-Alcoholic Mixes for Use in Preparing Alcoholic Cocktails.
First use Aug. 6, 1964.

Class 46 — Foods and Ingredients of Foods

SN 155,303. Dixie Portland Flour Mills, Inc., Chattanooga, Tenn. Filed Oct. 17, 1962.

Chill 'n Bake

For Self-Rising Ingredient (Mono-Calcium Phosphate) Incorporated in Flour.
First use Aug. 31, 1962.

SN 168,597. J. H. Filbert, Inc., Baltimore, Md. Filed May 10, 1963.

MRS. FILBERT'S PRESTIGE

Owner of Reg. Nos. 518,648, 723,355, and others.
For Oleomargarine.
First use Nov. 8, 1960.

SN 169,023. Carnation Company, Los Angeles, Calif., assignee of Contadina Foods, Inc., San Jose, Calif. Filed May 16, 1963.

MADONNA

Owner of Reg. Nos. 186,786 and 342,537.
For Canned Food Products—Namely, Catsup, String Beans, Tomato Paste, Round Tomatoes, Pear Peeled Tomatoes, Purees, Chili Sauce, Tomato Juice, Fruit Cocktail, and Peaches.
First use Jan. 22, 1923.

SN 175,497. International Packers Limited, Chicago, Ill. Filed Aug. 21, 1963.

TENDERPACK

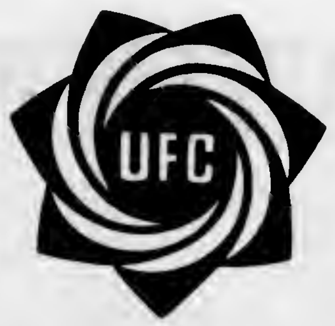
For Fresh, Chilled and Frozen Meat Cuts Sold to Wholesalers Only.
First use Aug. 9, 1962.

SN 175,995. Holderness Food Products Limited, Hull, England. Filed Aug. 29, 1963.

ENERGEN

For Starch Reduced Foods—Namely, Bread Rolls, Crispbread, Wheat Flakes, Biscuits, and Rusks.
First use Nov. 16, 1911; in commerce May 31, 1925.

SN 181,813. United Fruit Company, Boston, Mass. Filed Nov. 22, 1963.



For Bananas.
First use Oct. 29, 1963.

SN 181,851. E. J. Brach & Sons, Chicago, Ill. Filed Nov. 26, 1963.

EL RANCHO

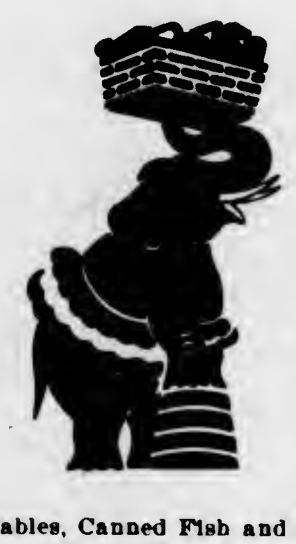
For Candy.
First use Jan. 16, 1951.

SN 184,103. New England Canners, Inc., Cedar Grove, N.J. Filed Jan. 6, 1964.

SPICE CHEST

The word "Spice" is disclaimed apart from the mark.
For Partially Prepared Food Preparations—Namely, Rice Curry, Rice Pilaf, Herb Rice, and Other Combinations of Rice With Seasoning Ingredients.
First use Dec. 2, 1963.

SN 185,121. S. M. Flickinger Co., Inc., Buffalo, N.Y. Filed Jan. 22, 1964.



For Fresh Vegetables, Canned Fish and Shell Fish, Canned Fruit, Salad Dressing, Canned Fruit Preserves, Potato Chips, Butter, Bread, Ice Cream, Fresh Eggs, Frozen Vegetables and Frozen Fruits, and Frozen Fruit Juices.
First use Oct. 17, 1958.

SN 185,615. New England Canners, Inc., Cedar Grove, N.J. Filed Jan. 29, 1964.

A TREASURE OF GOOD EATING

For Partially Prepared Food Preparations—Namely, Rice Curry, Rice Pilaf, Herb Rice, and Other Combinations of Rice With Seasoning Ingredients.
First use Dec. 2, 1963.

SN 185,791. Bennett Lea, d.b.a. Lady Luck Vineyards, Delano, Calif. Filed Jan. 31, 1964.

LADY ANGEL

For Fresh Grapes.
First use Aug. 30, 1963.

SN 186,355. Harry and David, Medford, Oreg. Filed Feb. 10, 1964.

Harry and David

Owner of Reg. No. 400,009.
For Fresh, Canned, Preserved, Dried and Candied Fruit; Spices and Herbs, Nuts, Shelled and Unshelled; Candies; Confections—Namely, Petits Fours, Plum Pudding, Cakes, Sugar Plums and Dobosh Torte; Smoked and Cured Meats and Fowl; Cakes; Fruit Flavored Syrups; Tea; Canned Fish and Shellfish; Cheeses; Salad Dressings; Barbecue Sauce; and Dog Food.
First use Sept. 5, 1942, on fresh fruit.

SN 187,143. Peter Paul, Inc., Naugatuck, Conn. Filed Feb. 20, 1964.

INDESCRIBABLY DELICIOUS

For Candy.
First use June 15, 1956.

SN 187,443. The Sugardale Provision Company, Canton, Ohio. Filed Feb. 25, 1964.

SAW-READY

For Cuts of Fresh Dressed Meat.
First use on or about Feb. 27, 1963.

SN 187,452. Wise Potato Chip Company, Berwick, Pa. Filed Feb. 25, 1964.

CORN PIXIES

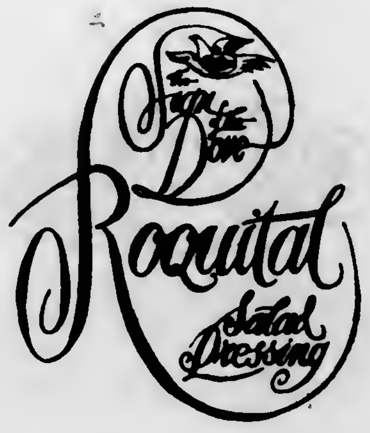
The word "Corn" is disclaimed apart from the mark as shown.
For Flavored Puffed Corn.
First use Sept. 9, 1963.
Subj. to Intf. with SN 209,688.

SN 187,739. Fabro, Inc., Atlanta, Ga. Filed Mar. 2, 1964.

HENNY PEN

For Dog Food.
First use Aug. 15, 1955.

SN 188,663. Joseph B. Santo, d.b.a. The Sign of the Dove, New York, N.Y. Filed Mar. 13, 1964.



Applicant disclaims the words "Salad Dressing."
For Salad Dressing.
First use Feb. 19, 1964.

SN 189,472. Holly Farms Poultry Industries, Inc., Wilkesboro, N.C. Filed Mar. 24, 1964.

HOLLY FARMS

Owner of Reg. No. 626,645.
For Fresh Dressed and Frozen Poultry, Frozen Bone-In Chicken, and Frozen Deboned Chicken.
First use on or about Dec. 1, 1951.

SN 189,956. A. E. Stannard Limited, London, England. Filed Mar. 30, 1964.

Breath-gards

For Candy Mints for Deodorizing the Breath.
First use Feb. 3, 1964; in commerce Mar. 2, 1964.

SN 190,512. A. Goodman & Sons, Inc., Long Island City, N.Y. Filed Apr. 7, 1964.

JOY SEE

For Prepared Chow Mein.
First use Apr. 8, 1960.

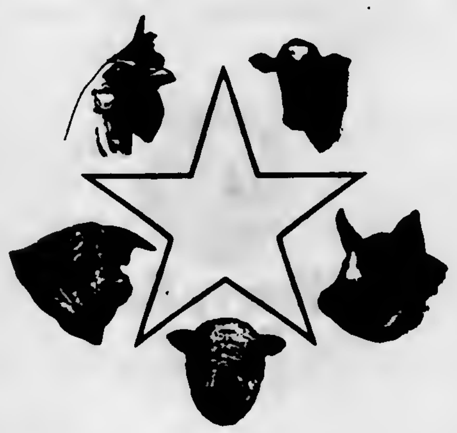
SN 191,713. Phoenix Candy Co., Inc., Brooklyn, N.Y. Filed Apr. 21, 1964.

FARMER IN THE DELL

For Candy.
First use Jan. 20, 1964.

SN 194,382. G & M Feed Co., Inc., Kenesaw, Nebr. Filed May 27, 1964.

CUPREM



For Livestock and Poultry Feed.
First use Feb. 20, 1964.

SN 194,909. National Dairy Products Corporation, Chicago, Ill. Filed June 4, 1964.

MOZZATANG

Owner of Reg. No. 564,548.
For Cheese.
First use Apr. 7, 1964.

SN 196,093. Apex Distributing Co., Hopkins, Minn. Filed June 22, 1964.

San Juan Capistrano

For Food Products—Namely, Olives.
First use May 18, 1964.

SN 196,310. Charles A. Sayous, Inc., New York, N.Y. Filed June 23, 1964.

COLOLO'

The term "Cololo" is of Indian origin and means "waterfall."
For Canned Corned Beef.
First use January 1958.

SN 197,135. Kellogg Company, Battle Creek, Mich. Filed July 6, 1964.

KEL-PRIME

For Fat Additive for Animal Feed.
First use June 16, 1964.

SN 199,036. Delson Candy Co., Inc., New York, N.Y. Filed Aug. 3, 1964.

MERRI-MINTS

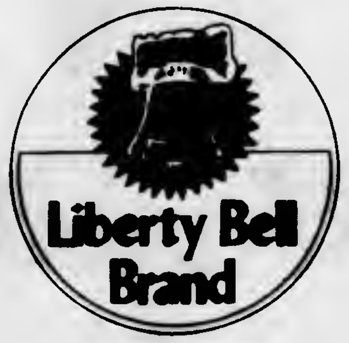
Owner of Reg. No. 528,261.
For Candies.
First use 1948.

SN 199,188. Fairfield Distributors Inc., New York, N.Y. Filed Aug. 4, 1964.

ROCOCO

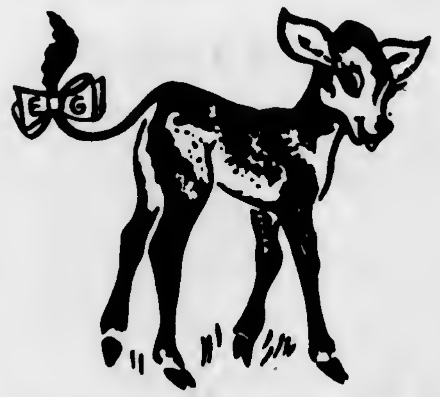
For Spices and Jams.
First use July 27, 1964.

SN 200,171. John Engelhorn & Sons, Newark, N.J. Filed Aug. 19, 1964.



For Bacon.
First use May 1, 1964.

SN 200,919. East Greenwich Dairy Company, East Greenwich, R.I. Filed Aug. 31, 1964.



For Fluid Milk and Cream of All Types, Non-Alcoholic Egg Nog, Orange Juice in Cartons and Bottles, and Cottage Cheese.
First use in or about October 1958.

SN 200,954. National Biscuit Company, New York, N.Y. Filed Aug. 31, 1964.

SHRIMPERS

For Crackers.
First use Aug. 5, 1964.

SN 200,955. National Biscuit Company, New York, N.Y. Filed Aug. 31, 1964.

TEMPTERS

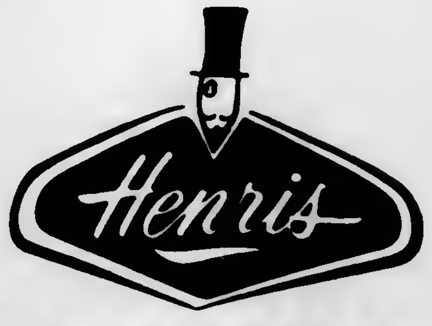
For Biscuits.
First use Aug. 5, 1964.

SN 201,307. River Valley Co., Inc., Albany, N.Y. Filed Sept. 4, 1964.

RIVER VALLEY

Owner of Reg. No. 536,174.
For Frozen Concentrated Fruit Juices, Canned Citrus Fruits, Canned Tomato Juice, Frozen Berries, Frozen Vegetables, Frozen Fish, Frozen Meats; Frozen Seafood—Namely, Halibut, Swordfish and Salmon Steaks, and Breaded Cod and Sole Portions; Frozen Bakery Goods—Namely, Pies and Cakes; and Butter.
First use July 22, 1949, on frozen vegetables.

SN 201,687. Henri's Food Products Company, Inc., Milwaukee, Wis. Filed Sept. 11, 1964.



Owner of Reg. Nos. 402,670, 666,666, and 677,803.
For Seasoned Salt.
First use Oct. 23, 1963.

SN 201,727. My Bread Baking Company, New Bedford, Mass. Filed Sept. 11, 1964.

MOTHER PARKER'S

For Bakery Products—Namely, Bread, Rolls, Doughnuts, and Pies.
First use 1940.

SN 203,791. National Dairy Products Corporation, Chicago, Ill. Filed Oct. 12, 1964.

QUICK FROST

For Mix for Icing.
First use Aug. 4, 1964.

SN 204,006. Philadelphia Chewing Gum Corporation, Havertown, Pa. Filed Oct. 14, 1964.

TIGER TAILS

For Chewing Gum.
First use Oct. 2, 1964.

SN 204,063. General Mills, Inc., Minneapolis, Minn. Filed Oct. 15, 1964.

30 "THIRTY"

For Ready-To-Eat Breakfast Cereal.
First use June 29, 1964.

SN 204,064. General Mills, Inc., Minneapolis, Minn. Filed Oct. 15, 1964.

ARISE

For Ready-To-Eat Cereal.
First use Aug. 10, 1964.

SN 204,065. General Mills, Inc., Minneapolis, Minn. Filed Oct. 15, 1964.

A.M.

For Ready-To-Eat Cereal.
First use Aug. 10, 1964.

SN 204,482. Leaf Brands, Inc., Chicago, Ill. Filed Oct. 21, 1964.

HOOLA EGGS

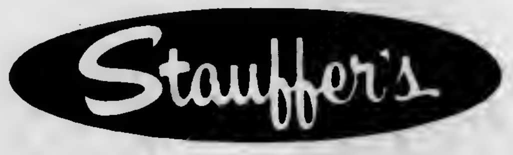
Applicant waives exclusive right to the word "Eggs" apart from the mark as shown.
For Candy.
First use Sept. 23, 1964.

SN 204,517. John Sexton & Co., Chicago, Ill. Filed Oct. 21, 1964.

THE WORKS

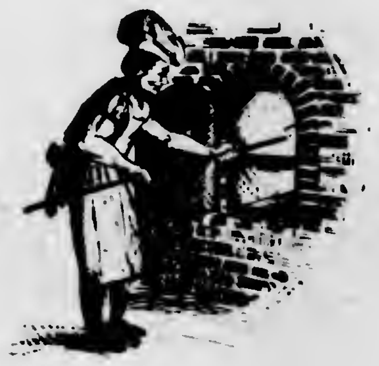
For Food Relish.
First use Oct. 5, 1964.

SN 204,613. D. F. Stauffer Biscuit Co., Inc., York, Pa. Filed Oct. 22, 1964.



Owner of Reg. Nos. 337,210, 650,171, and 658,850.
For Cookies.
First use 1913.

SN 204,614. D. F. Stauffer Biscuit Co., Inc., York, Pa. Filed Oct. 22, 1964.



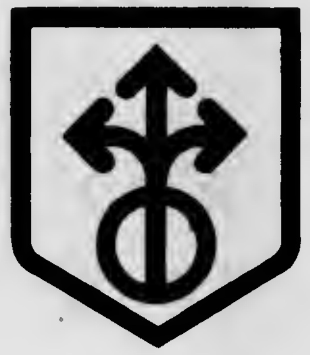
The figure of the person shown is fanciful.
For Cookies.
First use Oct. 1, 1963.

SN 204,632. Edward J. Baker, Summit, N.J. Filed Oct. 23, 1964.

CHAR-BONE

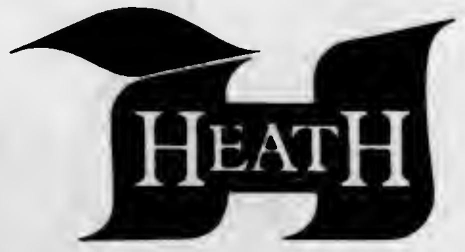
For Dog Biscuits.
First use July 14, 1964.

SN 204,965. Central Soya Company, Inc., Fort Wayne, Ind. Filed Oct. 28, 1964.



Owner of Reg. No. 730,175.
For Livestock and Poultry Feed, Dog Food, Soy Flour, Protein for Use as an Ingredient of Foods, Soybean Oil for Use in Foods, and Lecithin for Use in Foods.
First use June 1, 1963.

SN 204,977. L. S. Heath & Sons, Inc., Robinson, Ill. Filed Oct. 28, 1964.



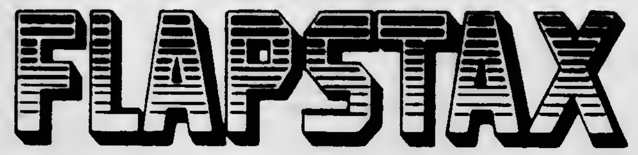
Owner of Reg. Nos. 389,755, 598,577, and others.
For Ready-Baked Coffee Cake.
First use Feb. 17, 1964.

SN 204,980. Hygrade Food Products Corporation, Detroit, Mich. Filed Oct. 28, 1964.

BIG LEAGUE

For Frankfurters.
First use on or about Sept. 26, 1964.

SN 208,866. Martha White Mills, Inc., Nashville, Tenn. Filed Dec. 24, 1964.



For Pancake Mix.
First use Nov. 9, 1964.

SN 209,129. Weis Markets, Inc., Sunbury, Pa. Filed Dec. 30, 1964.

DUTCH VALLEY

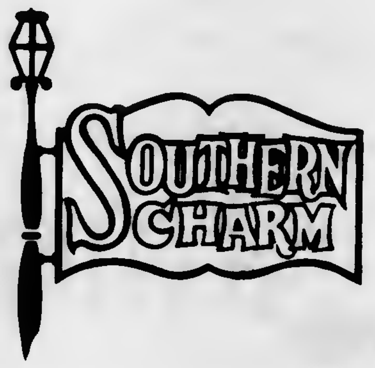
Owner of Reg. Nos. 701,482, 778,579, and others.
For Crackers; Snack Food Products, Plain and Flavored—Namely, Cheese Corn Q's, Caramel Corn and Corn Chips.
First use Oct. 21, 1963, on crackers.

SN 209,688. Filler Products, Inc., Forest Park, Ga. Filed Jan. 11, 1965.

PIXIES

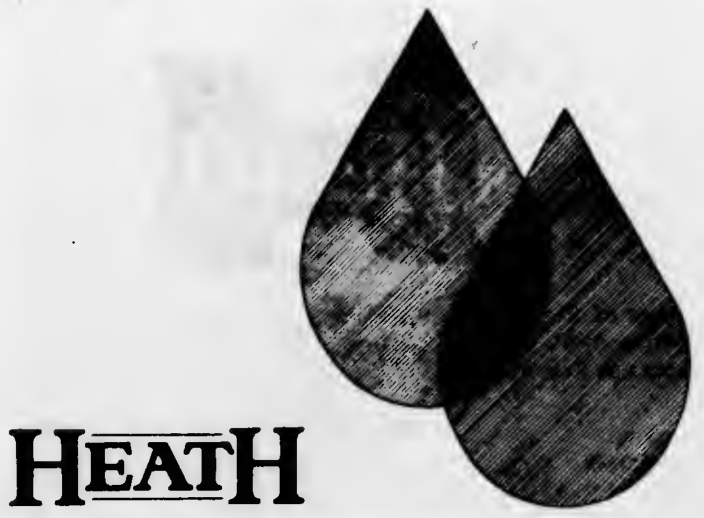
For Rice Chips.
First use in or before 1952.
Subj. to Intf. with SN 187,452.

SN 209,764. China Doll, Incorporated, Mobile, Ala. Filed Jan. 12, 1965.



For Rice, Dried Beans, and Dried Peas.
First use July 9, 1964, on dried beans.

SN 209,856. L. S. Heath & Sons, Inc., Robinson, Ill. Filed Jan. 13, 1965.



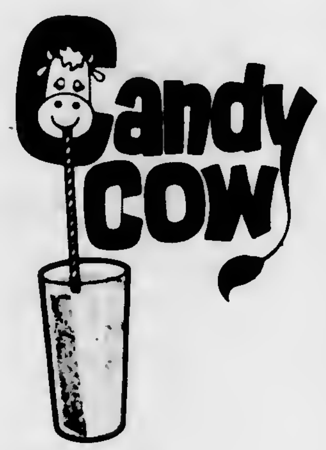
The drawing is lined for the color brown. Owner of Reg. Nos. 389,755, 782,609, and others.
For Candy.
First use Nov. 18, 1964.

SN 209,948. The Quaker Oats Company, Chicago, Ill. Filed Jan. 14, 1965.

MASQUERADE

For Cookies.
First use Nov. 4, 1957.

SN 210,075. The Borden Company, New York, N.Y. Filed Jan. 18, 1965.



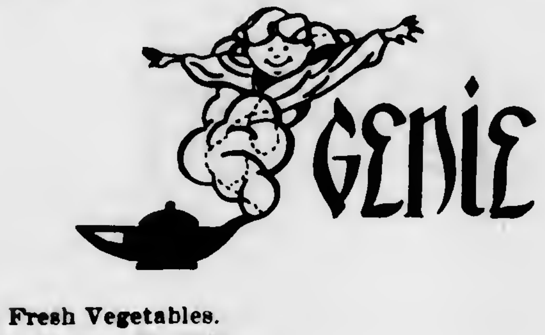
For Flavored Milk Drink Mix.
First use Jan. 5, 1965.

SN 210,155. Jim Sano, Denver, Colo. Filed Jan. 18, 1965.

THREE SONS

For Salad Dressings.
First use on or about June 29, 1964.

SN 210,177. J. (Bud) Vukasovich, Watsonville, Calif. Filed Jan. 18, 1965.



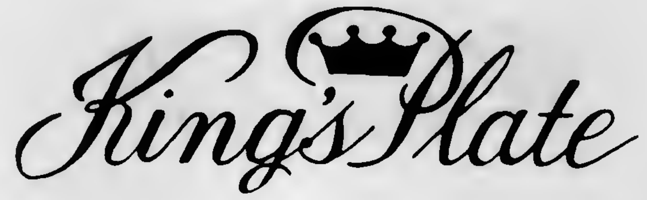
For Fresh Vegetables.
First use Nov. 28, 1964.

SN 210,187. Big Fink Gum, Lake Forest, Ill. Filed Jan. 19, 1965.

BIG FINK

For Chewing Gum.
First use Nov. 2, 1964.

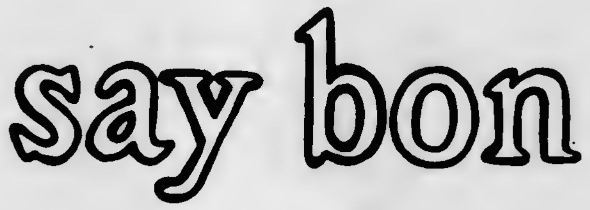
SN 210,454. Martin & Robertson Limited, Vancouver, British Columbia, Canada. Filed Jan. 22, 1965.



For Frozen Smoked Fish.
First use Sept. 1, 1964; in commerce Sept. 25, 1964.

Class 47 — Wines

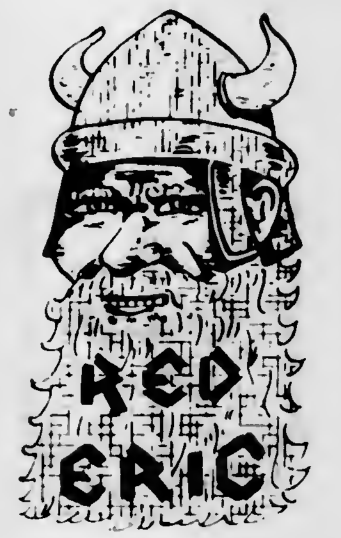
SN 191,547. Guild Wine Co., d.b.a. Say Bon Wine Co., Lodi, Calif. Filed Apr. 20, 1964.



No claim is made to the word "Bon" apart from the mark as shown.
For Champagnes and Sparkling Wines.
First use July 1954.

Class 48 — Malt Beverages and Liquors

SN 188,513. Ceres Bryggerierne A/S Østjydske Bryggerier A/S), Aarhus, Denmark. Filed Mar. 12, 1964.



The drawing is lined to indicate color; the helmet being in gold and the beard and eyebrows in yellow. Owner of Danish Reg. No. 62/62, dated Jan. 13, 1962.
For Beer.
First use February 1959; in commerce February 1959.

Class 49 — Distilled Alcoholic Liquors

SN 180,869. Flagstaff Liquor Co., Perth Amboy, N.J. Filed Nov. 12, 1963.

CRUSADER

For Whiskey.
First use Oct. 10, 1933.

SN 199,501. Senior & Co. Incorporated, Curacao, Netherlands Antilles. Filed Aug. 7, 1964.

SENIOR

For Liqueurs.
First use at least as early as 1905; in commerce at least as early as 1905.

SN 200,597. T. W. Samuels Distillery, Inc., Deatsville, Ky. Filed Aug. 25, 1964.

DIAMOND HEAD

For Whiskey.
First use July 30, 1964.

Class 50 — Merchandise Not Otherwise Classified

SN 156,156. Para-Tone Incorporated, La Grange, Ill. Filed Oct. 29, 1962.

COPY-ZIP

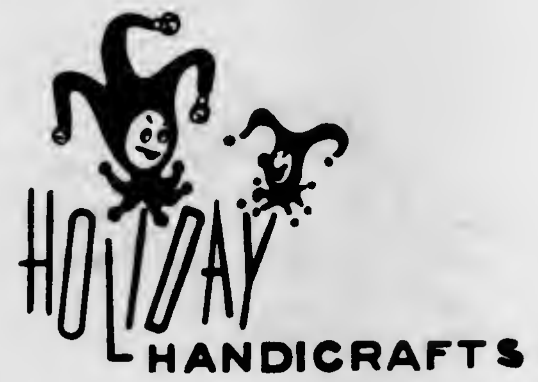
Owner of Reg. No. 402,487.
For Single Laminates and Pads of Laminates, the Laminates Consisting of a Transparent Sheet Capable of Receiving Pen, Pencil or Artists' Colors on One Side and Carrying Pressure Sensitive Adhesive on the Other Side, and a Backing Sheet Removably Held on the Adhesive Side of the Transparent Sheet.
First use March 1956.

SN 188,460. Pabst Brewing Company, Milwaukee, Wis. Filed Mar. 11, 1964.

TAP-CAP

The term "Cap" is disclaimed apart from the mark as shown. Owner of Reg. No. 337,751.
For Closures for Bottled Beverages, Particularly Bottled Malt Beverages.
First use Feb. 18, 1964.

SN 190,517. Holiday Handicrafts, Inc., Winsted, Conn. Filed Apr. 7, 1964.



No claim is made to the words "Holiday Handicrafts" apart from the mark.
For Party Favors and Christmas Decorations.
First use Sept. 6, 1958.

SN 200,297. Trio Manufacturing Co., Griggsville, Ill. Filed Aug. 20, 1964.

TRIO-MUSSELMAN

For Bird Houses.
First use Apr. 3, 1962.

SN 204,856. Testworth Laboratories, Incorporated, Addison, Ill. Filed Oct. 26, 1964.

For Canvas Repair Kit Including Canvas Cloth and a Container of Adhesive for Applying the Canvas Cloth to Canvas Goods.
First use on or about Mar. 2, 1964.

SN 206,091. Trio Manufacturing Co., Griggsville, Ill. Filed Nov. 12, 1964.

TRIO

Owner of Reg. Nos. 606,331, 676,793, and others.
For Pet Supplies—Namely, Dog and Bird Houses and Feeders.
First use on or about Dec. 12, 1960.

SN 209,922. Finesse Displays, Inc., Long Island City, N.Y. Filed Jan. 14, 1965.

FINESSE ORIGINALS

For Three Dimensional Wall Decorations and Wall Sculpture.
First use in or about January 1959.

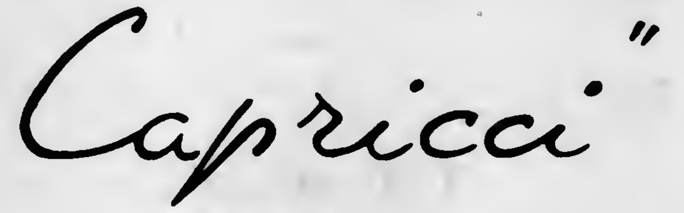
SN 210,402. Allen Electronics, Inc., Bethlehem, Pa. Filed Jan. 22, 1965.

SNAK-BAR

For Kit Consisting of a Hot Water Heater, Cups, Stirrers, and Packages of Dry Powdered Food Products Such as Coffee, Tea, Chocolate, and Soups.
First use Nov. 12, 1964.

Class 51 — Cosmetics and Toilet Preparations

SN 113,762. Nina Ricci S.A.R.L., Paris, France. Filed Feb. 15, 1961.



For Perfumes and Toilet Waters.
First use on or about Dec. 1, 1960; in commerce on or about Dec. 1, 1960.

SN 152,642. Studio Girl-Hollywood, Inc., d.b.a. Studio Girl, Glendale, Calif. Filed Sept. 6, 1962.

SQUEEZE ME

For Talcum Powder.
First use on or about Aug. 14, 1962.

SN 188,715. Gerald G. Boyce, Granada Hills, Calif. Filed Mar. 16, 1964.

HOUSE OF CHARM

For Cosmetics—Namely, Face Powder, Hair Dressing, Lip Rouge, Face Rouge, Foundation Liquid, Eye Brow Pencils, Eye Cream, Cake Mascara, Eye Shadow, Deodorant, Beauty Masque, and Lipstick.

First use Feb. 6, 1964.

SN 194,758. Tecnique, Inc., Clifton, N.J. Filed June 2, 1964.

SET 'N FORGET

For Hair Setting Spray.

First use Apr. 17, 1964.

SN 200,665. Shorell Products, Inc., New York, N.Y. Filed Aug. 26, 1964.

Irma Shorell's

The mark "Irma Shorell's" is the possessive form of the name of a living person, whose consent is of record.

For Cosmetic Cleansing Preparation.

First use Mar. 27, 1964.

SN 204,011. Helena Rubinstein, Inc., New York, N.Y. Filed Oct. 14, 1964.

MORNING DEW

For Bath Oil.

First use Nov. 26, 1957.

SN 204,052. Colgate-Palmolive Company, New York, N.Y. Filed Oct. 15, 1964.

PRINCE CHARMING

For Hand Lotion.

First use Aug. 26, 1964.

SN 204,129. Carmel Myers, Inc., New York, N.Y. Filed Oct. 16, 1964.

GEORGE V

For Toilet Water.

First use July 3, 1964.

SN 204,143. Helene Curtis Industries, Inc., Chicago, Ill. Filed Oct. 16, 1964.

TOP MODEL

For Hair Spray.

First use on or about Sept. 30, 1964.

SN 204,212. Turtle Wax, Inc., Chicago, Ill. Filed Oct. 16, 1964.

VALOR

For After Shave Lotion.

First use Sept. 29, 1964.

SN 204,235. Hazel Bishop Inc., Union, N.J. Filed Oct. 19, 1964.

SPUN SATIN

For Creme Make-Up.

First use Sept. 30, 1964.

SN 210,062. Harry H. Masle, d.b.a. H. H. Masle Toiletries, New York, N.Y. Filed Jan. 15, 1965.

OLD EUROPE

Owner of Reg. No. 409,760.

For Perfumes, Toilet Water, Eau de Cologne, Pine Bath Preparations in Liquid Form, in Powder Form, and in the Form of Tablets.

First use July 30, 1942.

Class 52—Detergents and Soaps

SN 176,109. Frank Miller & Sons, Inc., Chicago, Ill. Filed Aug. 30, 1963.

VŌBAN

For Pulverulent Absorbent Compositions for Absorbing Objectionable Odors on Surfaces.

First use November 1959.

SN 188,790. Julian V. Pace, New York, N.Y. Filed Mar. 16, 1964.

MAQUIS

For Toilet Soap.

First use Feb. 21, 1964.

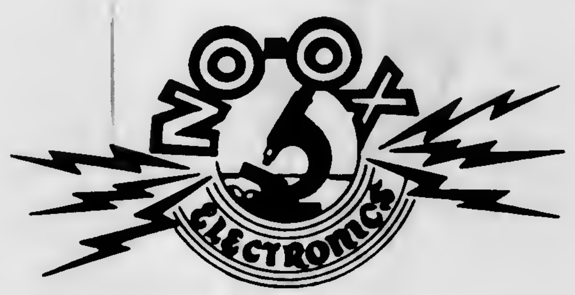
SN 189,512. Sunstar Dentifrice Co., Ltd., Takatsuki-shi, Osaka, Japan. Filed Mar. 24, 1964.

SALATT

For Household Detergent for Use in Washing Clothes and as a General Purpose Cleaner.

First use 1963; in commerce July 1, 1963.

SN 189,863. Henry J. Bohlman, d.b.a. No-Ox Laboratories, Los Angeles, Calif. Filed Mar. 30, 1964.



The word "Electronics" is disclaimed apart from the mark as shown.

For Electrical Contact Cleaner.

First use Aug. 1, 1938.

SN 190,467. Wica Chemicals, Incorporated, Charlotte, N.C. Filed Apr. 6, 1964.

WICASOLVE

For Cleaning and Degreasing Agents for Fabrics, Metals, and Processing Equipment.

First use at least as early as May 1954.

SN 192,082. 'S No Spot Corp., San Francisco, Calif. Filed Apr. 27, 1964.

'S NO SPOT

For Spot Removing Dry Cleaner.

First use July 19, 1963.

SN 192,822. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed May 6, 1964.

PARCO

Owner of Reg. Nos. 298,605 and 598,070.

For Metal Cleaning Compositions.

First use Apr. 9, 1964.

SN 193,039. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed May 8, 1964.

B·K FC

Owner of Reg. Nos. 108,332, 611,887, and others.

For Cleaning Compositions for Brick, Concrete, Tile, Terrazzo, and Marble Surfaces.

First use July 20, 1959.

SN 201,647. B. T. Babbitt, Inc., New York, N.Y. Filed Sept. 11, 1964.

BAB-O

Owner of Reg. Nos. 203,724 and 687,432.

For Liquid Detergent for Dishes and Fabrics.

First use 1962.

SN 202,775. Creco Company, Inc., Long Island City, N.Y. Filed Sept. 28, 1964.

SMOOTHOFOAM

For Liquid Hand and Face Soap for Industrial, Institutional, and Commercial Use.

First use Sept. 15, 1922.

SN 203,234. Abco, Inc., McKeesport, Pa. Filed Oct. 5, 1964.

RAMEX

For Drain Cleaning Composition.

First use Sept. 15, 1964.

SN 203,261. Dartmouth Marketing Co., Inc., Skokie, Ill. Filed Oct. 5, 1964.

SUDS TIME

The word "Suds" is disclaimed apart from the mark as shown.

For Detergent for Washing Dishes and Fabrics.

First use June 8, 1964.

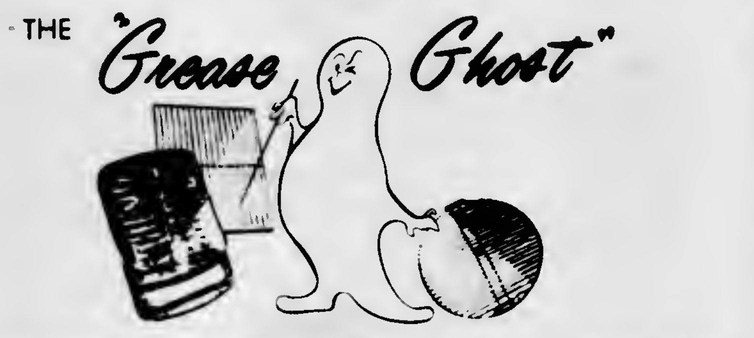
SN 203,407. Lab Automated Chemicals Corporation, Baltimore, Md. Filed Oct. 6, 1964.

NO-EXCUSE

For Spot and Soil Cleaner.

First use Aug. 17, 1964.

SN 204,332. Daniel A. Wechsler, d.b.a. Grease Ghost Process, Santa Monica, Calif. Filed Oct. 19, 1964.



The word "Grease" and the representation of the oven pan and grille are hereby disclaimed except in the association disclosed by the drawing, without waiver of applicant's common law rights therein.

For Heavy Duty Cleaners for Removing Grease, Grit, and Grime From Range and Oven Units.

First use Sept. 30, 1964.

Subj. to Intf. with SN 203,479.

SN 205,383. D. J. Alexander Corporation, Philadelphia, Pa. Filed Nov. 3, 1964.

DJA

For Stainless Steel Cleaner.

First use June 9, 1961.

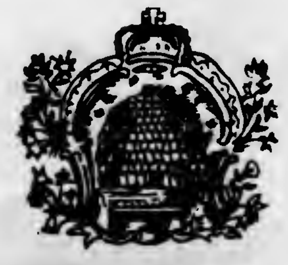
SN 206,010. Double Stamp Brands, Inc., Birmingham, Ala. Filed Nov. 12, 1964.

VBQ

For Liquid Detergent for General Purpose Cleaning.

First use Oct. 15, 1964.

SN 206,514. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. Filed Nov. 19, 1964.



Colonial

Owner of Reg. Nos. 779,591, 769,043, and 765,230.

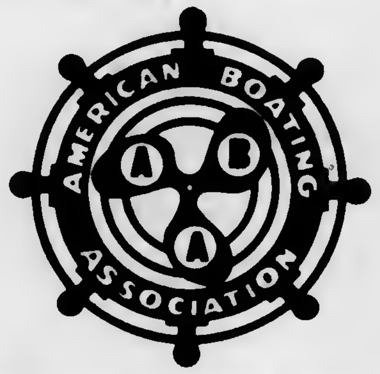
For Toilet Soap.

First use on or about June 30, 1954.

SERVICE MARKS

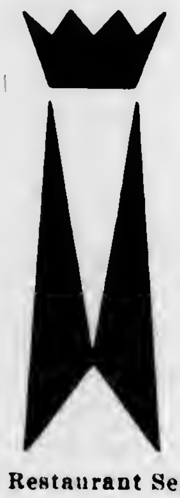
Class 100 — Miscellaneous

SN 94,127. American Boating Association, Cincinnati, Ohio, assignee, by mesne assignments, of American Boating Association, Inc., Cincinnati, Ohio. Filed Apr. 1, 1960. COLLECTIVE MARK.



For Services—Namely, Providing Emergency Services, Cruising and Travel Information, and Boat Protection Service.
First use June 1, 1959.

SN 168,206. Marriott Motor Hotels, Inc., Washington, D.C. Filed May 6, 1963.



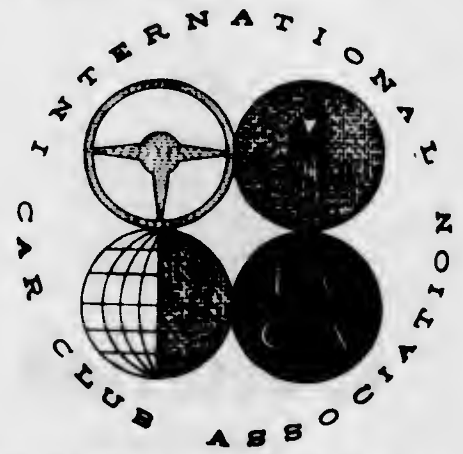
For Hotel, Motel, and Restaurant Services.
First use at least as early as summer 1955.

SN 175,922. International Airports Restaurants Company, Chicago, Ill. Filed Aug. 28, 1963.

SEVEN CONTINENTS

For Restaurant Services.
First use Mar. 7, 1963.

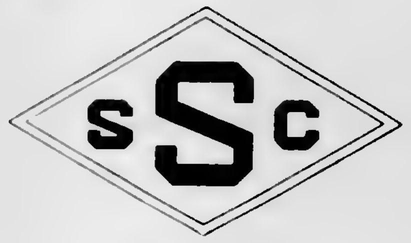
SN 176,100. International Car Club Association, Los Angeles, Calif. Filed Aug. 30, 1963.



The drawing is lined for the colors gold and gray; color is not claimed as an integral feature of the mark. No claim is made to the words "International Car Club Association," the name of applicant, except as shown.

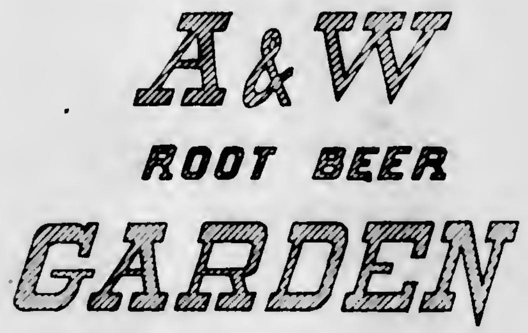
For Association Services—Namely, Assisting in the Organization of Local Automobile Clubs, Promoting Safe Driving, and Promoting Automobile Inter-Club Competition.
First use Apr. 1, 1963.

SN 187,356. Stirling Sintering Corporation, Pittsburgh, Pa. Filed Feb. 24, 1964.



For Consultation, Research, and Development Services With Regard to the Conversion of Industrial and Mineral Wastes Into Usable Material.
First use Apr. 15, 1963.

SN 195,489. The A & W Root Beer Company, Santa Monica, Calif. Filed June 12, 1964.

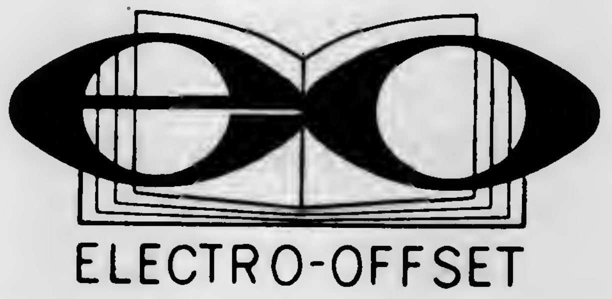


The words "Root Beer" are disclaimed apart from the mark as shown. The drawing is lined for the color brown, but no claim is made to color. Owner of Reg. Nos. 716,618, 723,388, and 743,858.

For Restaurant Services.
First use Mar. 16, 1964.

Class 101 — Advertising and Business

SN 169,646. Multiprint, Inc., New York, N.Y. Filed May 24, 1963.



Without disclaiming its common law rights and for the purpose of this registration only, applicant disclaims the right to the exclusive use of the words "Electro" and "Offset" apart from the mark as shown.

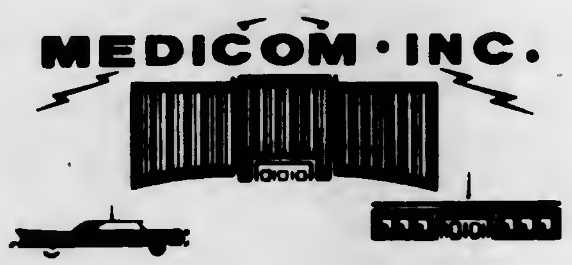
For Making Printing Plates, Offset Printing, and Binding Printed Material for Others.
First use Apr. 15, 1963.

SN 173,215. Ronald Blumenschein, d.b.a. Dial A House, Pittsburgh, Pa. Filed July 18, 1963.

DIAL A HOUSE

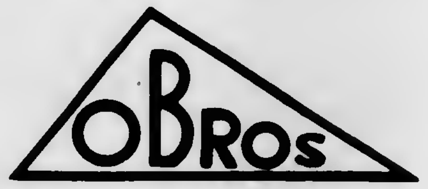
For Aiding Others To Select a House Which Meets Their Particular Needs.
First use Feb. 1, 1963.

SN 188,122. Medicom, Inc., Chicago Heights, Ill. Filed Mar. 6, 1964.


MEDICOM · INC.

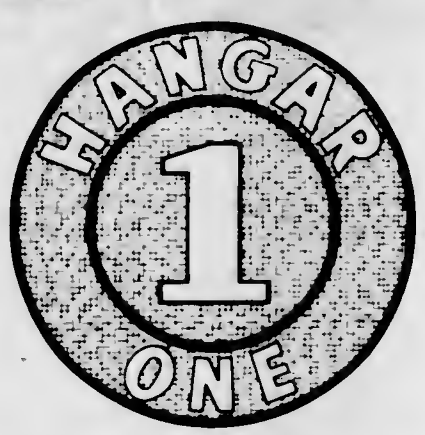
For Leasing and Servicing of Communications Equipment.
First use June 1, 1961.

SN 193,202. Dolph Obergfel, d.b.a. Obergfel Brothers, Los Angeles, Calif. Filed May 11, 1964.



For Pharmaceutical Distributorship Services.
First use June 1934.

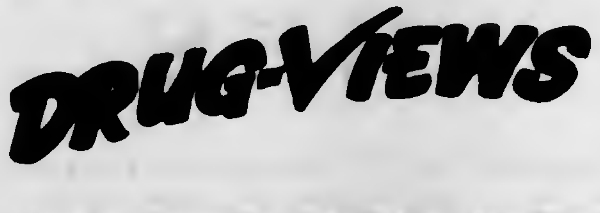
SN 197,913. Southern Airways Company, Inc., Atlanta, Ga. Filed July 15, 1964.



The mark is lined for yellow color and a claim is made for this particular color as a part of the mark.

For Distributor Sales and Services Agency in the Field of Aircraft, Aircraft Parts and Accessories.
First use July 6, 1964.

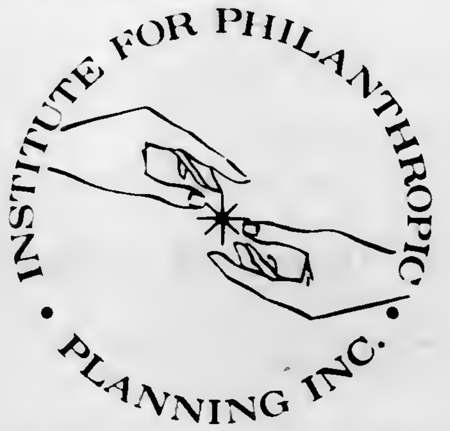
SN 200,474. Parkview Drugs, Inc., Kansas City, Mo. Filed Aug. 24, 1964.



For Gathering, Recording, Coordinating and Periodically Reporting Information Relating to the Retail Sale of Health and Beauty Aids, Prescriptions, Tobacco Goods, and Candy.
First use May 17, 1964.

Class 102 — Insurance and Financial

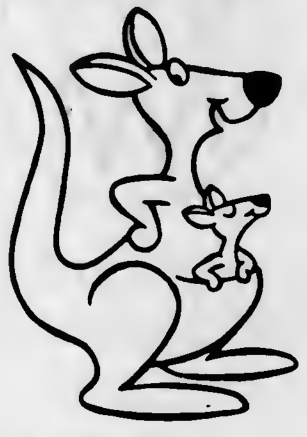
SN 164,626. Institute for Philanthropic Planning, Inc., New York, N.Y. Filed Mar. 14, 1963.


INSTITUTE FOR PHILANTHROPIC PLANNING INC.

No claim is made to any of the wording appearing in the drawing, no common law rights therein being waived.

For Counsel for Institutional Planning, Financial Development, and Related Management and Communications Assistance to Religious, Educational, Welfare, Civic, and Other Organizations and Associations in the Design, Installation and Implementation of Estate Plans, Deferred Gifts (Including Life Insurance and Other Specific Programs), Bequest and Related Philanthropic Gift Programs.
First use Dec. 1, 1962.

SN 183,739. Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Filed Dec. 30, 1963.



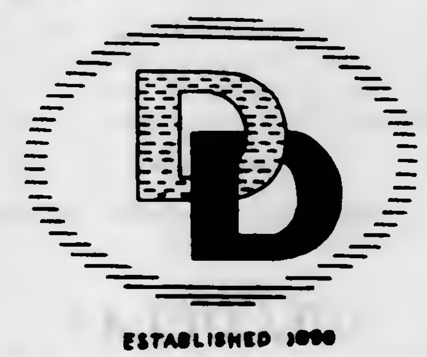
For Banking Services.
First use Oct. 8, 1963.

SN 194,839. Harold H. Starr, d.b.a. Mex-I-Plan, Los Angeles, Calif. Filed June 3, 1964.

MEX-I-PLAN

For Insurance Agency Services.
First use Apr. 2, 1964.

SN 196,122. Davis, Dorland & Company, New York, N.Y. Filed June 22, 1964.



The drawing is lined for the colors gray and blue.
For Insurance Brokerage Services.
First use May 1, 1964.

SN 201,730. Occidental Life Insurance Company of California, Los Angeles, Calif. Filed Sept. 11, 1964.

10 PLUS

Owner of Reg. No. 577,480.

For Underwriting of Group Life, Disability, and Medical Insurance.

First use Sept. 9, 1950.

Class 103 — Construction and Repair

SN 164,987. Morey Seidin Machinery Corp., Indianapolis, Ind. Filed Mar. 19, 1963.

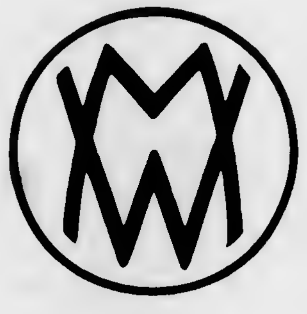
ADJUST-A-DRAPE

Owner of Reg. Nos. 654,759 and 707,488.

For Dry Cleaning of Draperies and the Like So As To Control Their Folds and To Retain Their Original Length.

First use Mar. 17, 1956.

SN 166,648. Meili & Worthington, Inc., Hatboro, Pa. Filed Apr. 12, 1963.

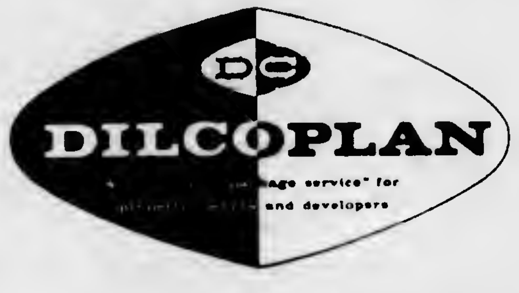


The mark consists of a monogram, with a fanciful configuration of the letters M and W.

For Manufacture of Metal Products to Customer Specifications.

First use on or about Oct. 1, 1950.

SN 169,436. Dillingham Corporation, Honolulu, Hawaii. Filed May 22, 1963.



Applicant disclaims the words "A Convenient 'Package Service' for Property Owners and Developers."

For Construction of Buildings for Others.

First use Apr. 15, 1963.

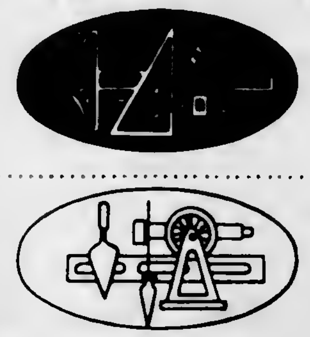
SN 169,437. Dillingham Corporation, Honolulu, Hawaii. Filed May 22, 1963.

DILCOPLAN

For Construction of Buildings for Others.

First use Apr. 15, 1963.

SN 172,956. George B. Vlier, d.b.a. Vlier Contracting Company, Studio City, Calif. Filed July 12, 1963.



For Engineering Services—Namely, the Building of Highways, Wharfs, Marine Installations, Airfields, and Similar Installations.

First use June 18, 1963.

SN 174,058. Sun Oil Company, Philadelphia, Pa. Filed July 30, 1963.

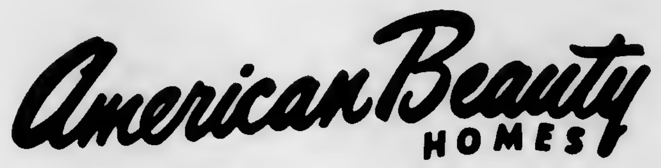
STOP AT SUNOCO . . .
GO WITH CONFIDENCE

Owner of Reg. Nos. 128,183, 736,268, and others.

For Services Rendered to Automobiles at Service Stations.

First use on or about May 24, 1960.

SN 183,796. The Reasor Corporation, Charleston, Ill. Filed Dec. 30, 1963.

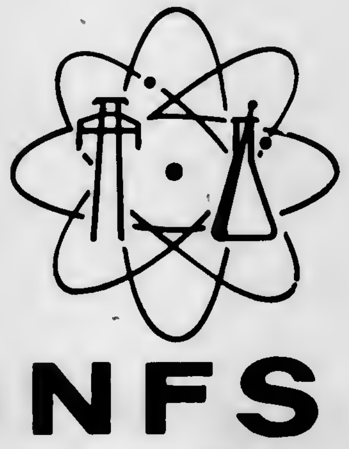


No claim is made to the word "Homes" apart from the mark as shown.

For Erection of Pre-Cut Houses.

First use Sept. 6, 1963.

SN 187,425. Nuclear Fuel Services, Inc., Washington, D.C. Filed Feb. 25, 1964.



For Refining Nuclear Raw Materials and Ores, Production of Compounds and Metals for Use in Nuclear Reactors, Fabrication of Fuels and Fuel Elements for Use in Nuclear Reactors, and Reclaiming Unirradiated and Irradiated Fuel Materials.

First use Jan. 3, 1963.

Class 105 — Transportation and Storage

SN 146,621. Gold Bond Stamp Company, Minneapolis, Minn. Filed June 11, 1962.

GOLDEN TOURS

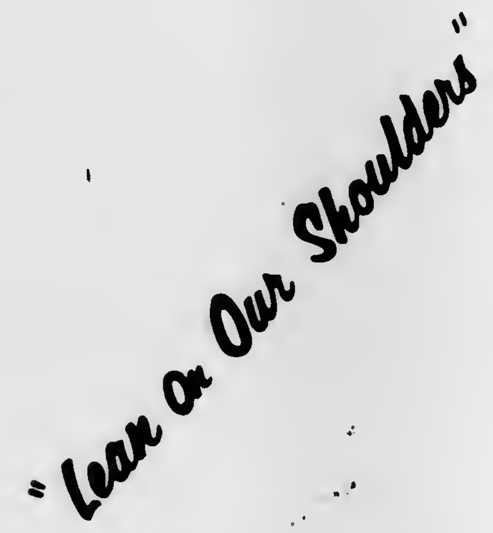
The term "Tours," when used apart from the mark, is disclaimed.

For Travel Agency Services.

First use May 21, 1962.

Class 106 — Material Treatment

SN 187,719. Blue Bird Food Products Co., Philadelphia, Pa. Filed Mar. 2, 1964.

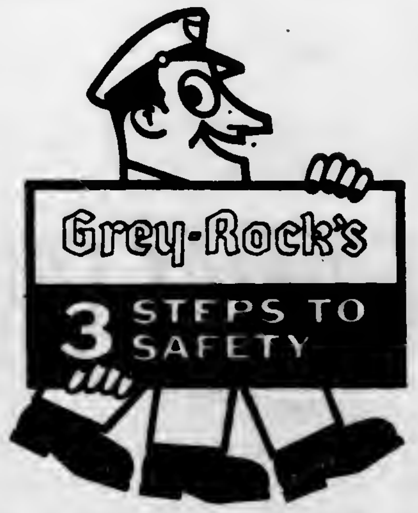


For Processing Meats.

First use Jan. 4, 1960.

Class 107 — Education and Entertainment

SN 138,650. Raybestos-Manhattan, Inc., Manheim, Pa. Filed Feb. 26, 1962.



No claim is made to the wording shown in the mark except the expressions "Grey-Rock's" and "P-L-S." Owner of Reg. Nos. 239,088, 516,554, 675,722, and others.

For Educating the Motoring Public to the Importance of Maintaining Good Brakes by Means of Periodic Inspections and Timely Repairs.

First use Jan. 15, 1962.

SN 184,109. Roller Derby Associates, Chicago, Ill. Filed Jan. 6, 1964.

ROLLER DERBY

For Entertainment Exhibition Involving Contest Between Teams of Roller Skaters.

First use 1935.

SN 195,552. Scholastic Magazines, Inc., New York, N.Y. Filed June 12, 1964.

CO-ED'S YOUNG
DECORATOR COURSE

The words "Young Decorator Course" are disclaimed apart from the mark as shown. Owner of Reg. No. 630,956.

For Consulting, Advisory and Promotional Services in Connection With Organizing and Conducting Courses of Instruction in Home Economics, Including Furnishing Instructional Materials, Supplies, Manuals, Tools, and Visual Aids.

First use Feb. 14, 1964.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 193,609. The American Institute of Architects, Washington, D.C. Filed May 18, 1964.

AMERICAN INSTITUTE OF
ARCHITECTS

For Indicating Membership in Good Standing in Applicant.

First use in or about 1867.

SN 193,614. The American Institute of Architects, Washington, D.C. Filed May 18, 1964.

AIA

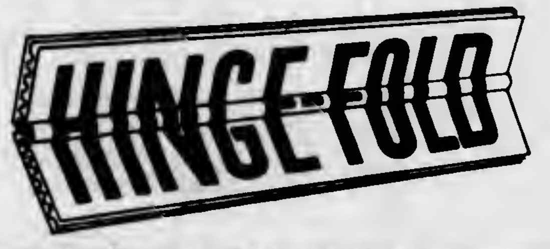
For Indicating Membership in Good Standing in Applicant.

First use in or about 1898.

CERTIFICATION MARKS

Class A — Goods

SN 182,880. The International Paper Box Machine Company, Nashua, N.H. Filed Dec. 12, 1963.

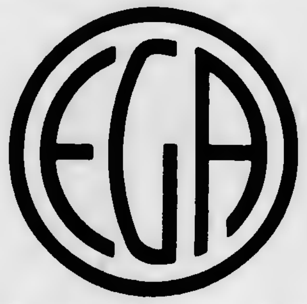


The mark certifies that the goods have been manufactured on a machine made by applicant, that the cartons meet accepted trade standards and that the cartons meet the standard set by applicant.

For Corrugated Paper Cartons.

First use on or about Nov. 1, 1962.

SN 205,048. Elberton Granite Association, Elberton, Ga. Filed Oct. 29, 1964.



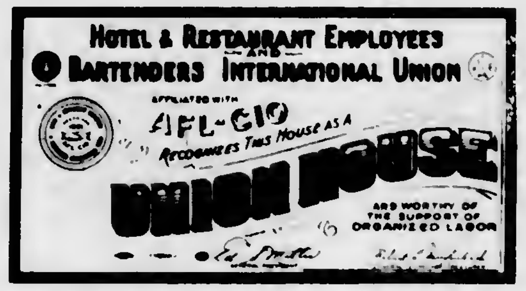
The mark certifies that the quality of the stone and workmanship and design meet the standards of the applicant.

For Cemetary Monuments and Grave Markers.

First use on or about July 15, 1964.

Class B — Services

SN 207,048. Hotel and Restaurant Employees and Bartenders International Union, Cincinnati, Ohio. Filed Nov. 27, 1964.

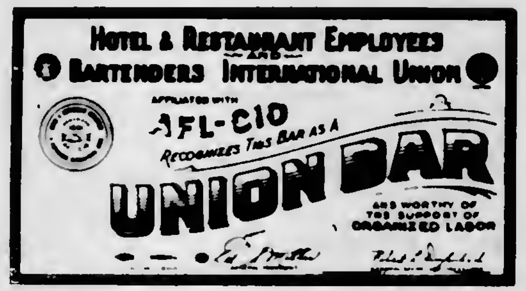

HOTEL & RESTAURANT EMPLOYEES
AND
BARTENDERS INTERNATIONAL UNION
AFFILIATED WITH
AFL-CIO
RECOGNIZES THIS HOUSE AS A
UNION HOUSE
AND WORTHY OF THE SUPPORT OF ORGANIZED LABOR

The mark certifies that the services are performed by members of the applicant association. Owner of Reg. Nos. 120,746 and 410,739.

For Hotel and Restaurant Services.

First use 1955; 1891 in different form.

SN 207,049. Hotel and Restaurant Employees and Bartenders International Union, Cincinnati, Ohio. Filed Nov. 27, 1964.

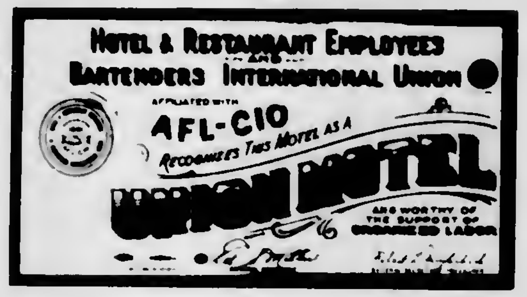

HOTEL & RESTAURANT EMPLOYEES
AND
BARTENDERS INTERNATIONAL UNION
AFFILIATED WITH
AFL-CIO
RECOGNIZES THIS BAR AS A
UNION BAR
AND WORTHY OF THE SUPPORT OF ORGANIZED LABOR

The mark certifies that the services are performed by members of the applicant association. Owner of Reg. Nos. 120,746 and 410,738.

For Hotel and Restaurant Services.

First use 1955; 1891 in different form.

SN 207,050. Hotel and Restaurant Employees and Bartenders International Union, Cincinnati, Ohio. Filed Nov. 27, 1964.


HOTEL & RESTAURANT EMPLOYEES
AND
BARTENDERS INTERNATIONAL UNION
AFFILIATED WITH
AFL-CIO
RECOGNIZES THIS HOTEL AS A
UNION HOTEL
AND WORTHY OF THE SUPPORT OF ORGANIZED LABOR

The mark certifies that the services are performed by members of the applicant association. Owner of Reg. Nos. 410,738 and 410,739.

For Hotel and Restaurant Services.

First use 1958.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

789,521. WEF. Weyerhaeuser Company. SN 191,968. Pub. 3–2–65. Filed 4–24–64.

789,522. THERMOCOMP. Liquid Nitrogen Processing Corporation. SN 192,489. Pub. 3–2–65. Filed 5–1–64.

789,523. GAFPONE. General Aniline & Film Corporation. SN 200,718. Pub. 3–2–65. Filed 8–27–64.

789,524. MACSTAT. Morgan Adhesives Company. SN 201,453. Pub. 3–2–65. Filed 9–8–64.

Class 2 — Receptacles

789,525. "MIRACLE BAKE" PLATE AND DESIGN. Mrs. Smith's Pie Company. SN 185,724. Pub. 3–2–65. Filed 1–30–64.

789,526. DURA GARD. Aladdin Industries, Incorporated. SN 191,896. Pub. 3–2–65. Filed 4–24–64.

Class 4 — Abrasives and Polishing Materials

789,527. GRIFFIN ALLWITE. American Home Products Corporation. SN 191,899. Pub. 3–2–65. Filed 4–24–64.

789,528. WASH 'N WEAR. Chemical Service of Baltimore, Inc. SN 195,763. Pub. 3–2–65. Filed 6–16–64.

Class 5 — Adhesives

789,529. BOND-IT. Atlas Chemical Co. SN 193,320. Pub. 3–2–65. Filed 5–13–64.

Class 6 — Chemicals and Chemical Compositions

789,530. BOILERMASTER. Michigan Chemical Corporation. SN 163,747. Pub. 3–2–65. Filed 3–1–63.

789,531. CHECKMATE. Checkmate Chemicals, Inc. SN 189,436. Pub. 3–2–65. Filed 3–24–64.

789,532. SILIMITE. Allis-Chalmers Manufacturing Company. SN 199,951. Pub. 3–2–65. Filed 8–17–64.

Class 12 — Construction Materials

789,533. KD KABIN. Winnebago Industries, Inc. SN 181,198. Pub. 3–2–65. Filed 11–14–63.

789,534. MISCELLANEOUS DESIGN. Dowsmith Inc. MULTIPLE CLASS (Classes 12, 13 and 34). SN 183,570. Pub. 3–2–65. Filed 12–26–63.

789,535. NATURA GRAIN. Lake Shore Industries, Inc. SN 184,481. Pub. 3–2–65. Filed 1–13–64.

789,536. STRIASTONE. Vida Mosaic Co. SN 186,484. Pub. 3–2–65. Filed 2–11–64.

789,537. APA ETC. AND DESIGN. American Plywood Association, by change of name from Douglas Fir Plywood Association. SN 186,822. Pub. 3–2–65. Filed 2–17–64. COLLECTIVE MARK.

789,538. CONTRACT SUPPLY AND DESIGN. Ald, Inc., d.b.a. Contract Supply. SN 191,107. Pub. 3–2–65. Filed 4–15–64.

789,539. QUALITY MILLWORK, ETC. AND DESIGN. Diamond National Corporation. SN 191,679. Pub. 3–2–65. Filed 4–21–64.

789,540. QUAKER CITY. Berger Bros. Company. SN 192,784. Pub. 3–2–65. Filed 5–6–64.

789,541. SPARTAN AND DESIGN. Clark Aluminum Co. SN 193,938. Pub. 3–2–65. Filed 5–21–64.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

789,534. (See Class 12 for this trademark.)

789,542. FOSTER. International Telephone and Telegraph Corporation, assignee of ITT General Controls Inc. SN 181,146. Pub. 3–2–65. Filed 11–14–63.

789,543. DRITZ. John Dritz & Sons, Inc. SN 191,261. Pub. 3–2–65. Filed 4–16–64.

789,544. HEX POINT AND DESIGN. Harvey Hubbell, Incorporated. SN 196,864. Pub. 3–2–65. Filed 7–1–64.

Class 14 — Metals and Metal Castings and Forgings

789,545. TCW AND DESIGN. Treibacher Chemische Werke Aktiengesellschaft. SN 186,980. Pub. 3–2–65. Filed 2–18–64.

789,546. CRU DIE. Crucible Steel Company of America. SN 190,703. Pub. 3–2–65. Filed 4–19–64.

789,547. CHAR-PAC. United States Steel Corporation. SN 206,581. Pub. 3–2–65. Filed 11–19–64.

Class 15 — Oils and Greases

789,548. OPE-N-EZE. Edward Curran, d.b.a. Ope-N-Eze. SN 185,202. Pub. 3–2–65. Filed 1–23–64.

789,549. STOEGER. Stoeger Arms Corporation. SN 201,752. Pub. 3–2–65. Filed 9–11–64.

789,550. TURTLE OIL. Turtle Wax, Inc. SN 203,901. Pub. 3–2–65. Filed 10–13–64.

789,551. . . . MADE FOR THE PROFESSIONAL! Permatex Company, Inc. SN 205,098. Pub. 3–2–65. Filed 10–28–64.

789,552. SLUDG-MASTER. Rust Master Chemical Corporation. SN 205,350. Pub. 3–2–65. Filed 11–2–64.

789,553. HARBOR. Westway Petroleum Co. SN 205,641. Pub. 3–2–65. Filed 11–5–64.

Class 16—Protective and Decorative Coatings

789,554. THE STAIN WITH A BRAIN. Beverlee's Satin Stain, Inc. SN 178,889. Pub. 3–2–65. Filed 7–29–63.

789,555. FARBO-COAT. The Farboil Company. SN 176,726. Pub. 3-2-65. Filed 9-11-63.

789,556. RESIN EMULSION 1302. Cargill, Incorporated. SN 180,490. Pub. 3-2-65. Filed 11-5-63.

789,557. FORMULA 1308. Cargill, Incorporated. SN 180,491. Pub. 3-2-65. Filed 11-5-63.

789,558. JAYGOT. Jaygot. SN 193,176. Pub. 3-2-65. Filed 5-11-64.

789,559. SOUTH SEAS. Devoe & Raynolds Company, Inc. SN 194,551. Pub. 3-2-65. Filed 5-29-64.

789,560. GAMAKOTE. Gamlen Chemical Company. SN 195,397. Pub. 3-2-65. Filed 6-11-64.

789,561. LADY BROOKE. Cameo, Inc. SN 196,347. Pub. 3-2-65. Filed 6-24-64.

789,562. STOEGER. Stoeger Arms Corporation. SN 201,751. Pub. 3-2-65. Filed 9-11-64.

Class 17—Tobacco Products

789,563. CHIQUITO. La Primadora Cigar Corporation. SN 188,377. Pub. 3-2-65. Filed 3-10-64.

789,564. UNIVERSAL. La Primadora Cigar Corporation. SN 188,986. Pub. 3-2-65. Filed 3-18-64.

789,565. CIGATIP. La Primadora Cigar Corporation. SN 191,570. Pub. 3-2-65. Filed 4-20-64.

789,566. 1845 AND DESIGN. Mark Cross Company, Ltd. SN 200,364. Pub. 3-2-65. Filed 8-21-64.

789,567. HASTINGS AND DESIGN. Mark Cross Company, Ltd. SN 200,365. Pub. 3-2-65. Filed 8-21-64.

789,568. GLOUCESTER AND DESIGN. Mark Cross Company, Ltd. SN 200,366. Pub. 3-2-65. Filed 8-21-64.

789,569. DUNDEE AND DESIGN. Mark Cross Company, Ltd. SN 200,367. Pub. 3-2-65. Filed 8-21-64.

Class 18—Medicines and Pharmaceutical Preparations

789,570. BAR FLY AND DESIGN. Interstate Industries, Inc., d.b.a. Interstate Chemical Company. SN 155,996. Pub. 3-2-65. Filed 10-26-62.

789,571. TETRAJECT. Merck & Co., Inc. SN 190,019. Pub. 3-2-65. Filed 3-31-64.

789,572. PREDNIGESIC. Palmedico, Inc. SN 193,038. Pub. 3-2-65. Filed 5-8-64.

789,573. BIORELL. Alfred Kapust. SN 193,552. Pub. 3-2-65. Filed 5-15-64.

789,574. ANATROPIN. Ortho Pharmaceutical Corporation. SN 199,756. Pub. 3-2-65. Filed 8-12-64.

789,575. EDECRIN. Merck & Co., Inc. SN 200,014. Pub. 3-2-65. Filed 8-17-64.

789,576. DECALSYN. Lifespan Products Co., Inc. SN 200,361. Pub. 3-2-65. Filed 8-21-64.

789,577. ENUCLENE. Alcon Laboratories, Inc. SN 201,166. Pub. 3-2-65. Filed 9-3-64.

789,578. HERPLEX. Allergan Pharmaceuticals. SN 201,779. Pub. 3-2-65. Filed 9-14-64.

789,579. LODRINAL. Geigy Chemical Corporation. SN 204,159. Pub. 3-2-65. Filed 10-16-64.

789,580. TYROSUM. Summers Laboratories, Inc. SN 204,416. Pub. 3-2-65. Filed 10-20-64.

789,581. SEBASORB. Summers Laboratories, Inc. SN 204,417. Pub. 3-2-65. Filed 10-20-64.

789,582. F.C.A.H. First Texas Pharmaceuticals, Inc. SN 204,647. Pub. 3-2-65. Filed 10-23-64.

789,583. FEVAC. Fromm Laboratories, Inc. SN 205,175. Pub. 3-2-65. Filed 10-30-64.

Class 19—Vehicles

789,584. TORQUE-O-MATIC. Perfect Equipment Corporation. SN 186,113. Pub. 3-2-65. Filed 2-5-64.

789,585. FENDER-FUL. Fender-Ful, Inc. SN 188,225. Pub. 3-2-65. Filed 3-9-64.

789,586. STATLER HOMES AND DESIGN. Statler Homes, Inc. SN 193,416. Pub. 3-2-65. Filed 5-13-64.

789,587. FREEWAY AND DESIGN. R. T. Romrell Enterprises, Inc. SN 193,500. Pub. 3-2-65. Filed 5-14-64.

789,588. WHEEL CAMPER AND DESIGN. Campers, Inc. SN 195,510. Pub. 3-2-65. Filed 6-12-64.

789,589. STARDUST CRUISER. Stardust Cruiser Manufacturing Co. SN 196,315. Pub. 3-2-65. Filed 6-23-64.

789,590. "IOWA FARM BOYS" AND DESIGN. Iowa Farm Boys Trailer Sales, Inc. SN 198,737. Pub. 3-2-65. Filed 7-29-64.

789,591. ARROW SYMBOL. Applied Power Industries, Inc. SN 198,811. Pub. 3-2-65. Filed 7-30-64.

789,592. MAJI. Borg-Warner Corporation. SN 198,823. Pub. 3-2-65. Filed 7-30-64.

789,593. MAJI-BUCKLE. Borg-Warner Corporation. SN 198,824. Pub. 3-2-65. Filed 7-30-64.

789,594. MAGIC. Borg-Warner Corporation. SN 198,825. Pub. 3-2-65. Filed 7-30-64.

789,595. MAGIC-BUCKLE. Borg-Warner Corporation. SN 198,826. Pub. 3-2-65. Filed 7-30-64.

789,596. 3.3.3. Shimano Kogyo Kabushiki Kaisha. SN 198,904. Pub. 3-2-65. Filed 7-30-64.

789,597. AZTEC. Rubbermaid Incorporated. SN 199,315. Pub. 3-2-65. Filed 8-5-64.

789,598. BULLDOG DESIGN. Mack Trucks, Inc. SN 199,375. Pub. 3-2-65. Filed 8-6-64.

789,599. BULLDOG DESIGN. Mack Trucks, Inc. SN 199,377. Pub. 3-2-65. Filed 8-6-64.

789,600. SK. Mack E. Stevens, d.b.a. Stevens Boat Mfg. SN 199,415. Pub. 3-2-65. Filed 8-6-64.

789,601. SAF-T-SAKE. Safety Sake Enterprises, Inc. SN 199,617. Pub. 3-2-65. Filed 8-10-64.

789,602. MAYPORT. Lone Star Boat Company. SN 199,839. Pub. 3-2-65. Filed 8-13-64.

789,603. MUSTANG. Lone Star Boat Company. SN 199,840. Pub. 3-2-65. Filed 8-13-64.

789,604. TRACER. Lone Star Boat Company. SN 199,841. Pub. 3-2-65. Filed 8-13-64.

Class 20—Linoleum and Oiled Cloth

789,605. SPANISH STONE. Congoleum-Nairn Inc. SN 184,439. Pub. 3-2-65. Filed 1-13-64.

Class 21—Electrical Apparatus, Machines, and Supplies

789,606. SOUND DIRECTOR. Argos Products Company, Inc. SN 163,515. Pub. 3-2-65. Filed 2-27-63.

789,607. ADD-A-RELAY. Essex Wire Corporation. SN 176,435. Pub. 3-2-65. Filed 9-6-63.

789,608. HIDE-A-WAY. Swanson Manufacturing Company. SN 182,978. Pub. 3-2-65. Filed 12-13-63.

789,609. BALLA HI. The Spero Electric Corporation. SN 184,759. Pub. 3-2-65. Filed 1-16-64.

789,610. UM AND DESIGN. Unimark Corporation. SN 184,765. Pub. 3-2-65. Filed 1-16-64.

789,611. STENTOCOM. Tandberg of America, Inc. SN 184,988. Pub. 3-2-65. Filed 1-20-64.

789,612. C AND DESIGN. Cardinal Electronics Company of Canada Limited. SN 185,655. Pub. 3-2-65. Filed 1-30-64.

789,613. TELCOLOR. George A. Baehr. SN 186,317. Pub. 3-2-65. Filed 2-10-64.

789,614. ELECTRA CELL. Allis-Chalmers Manufacturing Company. SN 186,924. Pub. 3-2-65. Filed 2-18-64.

789,615. SIMPLON. Gremar Manufacturing Co., Inc. SN 189,898. Pub. 3-2-65. Filed 3-30-64.

789,616. MOXFOAM. Moxness Products, Inc. SN 194,907. Pub. 3-2-65. Filed 6-4-64.

789,617. TEMLOC. RFD Inc. SN 197,328. Pub. 3-2-65. Filed 7-7-64.

789,618. CAGE-TROL. Electric Machinery Mfg. Company. SN 197,687. Pub. 3-2-65. Filed 7-13-64.

789,619. SYNC-TROL. Electric Machinery Mfg. Company. SN 197,688. Pub. 3-2-65. Filed 7-13-64.

789,620. SEALMETIC. Anaconda Wire and Cable Company. SN 202,732. Pub. 3-2-65. Filed 9-28-64.

789,621. PROVEN SOUND AROUND THE WORLD AND DESIGN. Fedtro, Inc. SN 202,786. Pub. 3-2-65. Filed 9-28-64.

789,622. BISCAYNE. Lamb Industries, Inc. MULTIPLE CLASS (Classes 21 and 34). SN 203,230. Pub. 3-2-65. Filed 10-5-64.

Class 22—Games, Toys, and Sporting Goods

789,623. JACK-IN-THE-BOX (DESIGN). Romper Room, Inc. SN 169,172. Pub. 2-23-65. Filed 5-17-63.

789,624. OVER/UNDER. Jorgensen Bros. SN 189,705. Pub. 3-2-65. Filed 3-26-64.

789,625. SLIM-N-TRIM. Still Fish Reel Company. SN 192,096. Pub. 3-2-65. Filed 4-27-64.

789,626. LEATHERPETS. R. Dakin & Company, by change of name from R. Dakin & Company-Importers. SN 192,155. Pub. 3-2-65. Filed 4-28-64.

789,627. E AND DESIGN. Stowe-Woodward, Inc. SN 192,230. Pub. 3-2-65. Filed 4-28-64.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

789,628. "SOONER THE BETTER." Sooner Pipe & Supply Corporation. SN 138,894. Pub. 3-2-65. Filed 3-1-62.

789,629. ARROW DESIGN. William S. Fiedler for himself and as administrator of the estate of Stuart O. Fiedler, deceased, John W. Frost, John M. Diehl and Merton R. Barry (joint venture), d.b.a. Go Jet Products. SN 159,397. Pub. 3-2-65. Filed 12-19-62.

789,630. PACKER AND DESIGN. Packer Manufacturing Co. SN 180,526. Pub. 3-2-65. Filed 11-5-63.

789,631. BLACK WAXER. Stowe-Woodward, Inc. SN 185,450. Pub. 3-2-65. Filed 1-27-64.

789,632. MOTOR-ROTOR. Owatonna Tool Company. SN 186,751. Pub. 3-2-65. Filed 2-14-64.

789,633. ACRA-MATIC. Gardner-Denver Company. SN 186,841. Pub. 3-2-65. Filed 2-17-64.

789,634. CONQUIP. Conquip Co. SN 187,177. Pub. 3-2-65. Filed 2-21-64.

789,635. CW&G AND DESIGN. Eaton Manufacturing Company. SN 187,183. Pub. 3-2-65. Filed 2-21-64.

789,636. ZIG-ZAG. The Patterson Kelley Co., Inc. SN 187,794. Pub. 3-2-65. Filed 3-2-64.

789,637. THOMSON. Thomson Industries, Inc. SN 187,815. Pub. 3-2-65. Filed 3-2-64.

789,638. SCAVENGER. Parker Sweeper Company. SN 188,139. Pub. 3-2-65. Filed 3-6-64.

789,639. UNIVERSAL AND DESIGN. Universal Fluid Dynamics Co. SN 188,401. Pub. 3-2-65. Filed 3-10-64.

789,640. SAFE-LOC. Rockwell Manufacturing Company. SN 188,468. Pub. 3-2-65. Filed 3-11-64.

789,641. DRITZ. John Dritz & Sons, Inc. SN 191,262. Pub. 3-2-65. Filed 4-16-64.

789,642. SOILSERV. Soilserv, Inc. SN 191,889. Pub. 3-2-65. Filed 4-23-64.

789,643. ROTASCOPE. Link-Belt Company. SN 198,856. Pub. 3-2-65. Filed 7-30-64.

789,644. BACK-UP. International Tool Company, Inc. SN 200,258. Pub. 3-2-65. Filed 8-20-64.

789,645. BAND-O-MATIC. Misceramic Tile, Inc. SN 200,855. Pub. 3-2-65. Filed 8-28-64.

789,646. STAFFA. Chamberlain Industries Limited. SN 201,523. Pub. 3-2-65. Filed 9-9-64.

789,647. VACUPACTOR. The Crompton & Knowles Corporation. SN 201,527. Pub. 3-2-65. Filed 9-9-64.

789,648. SPRAYON. Sprayon Products, Inc. SN 201,887. Pub. 3-2-65. Filed 9-14-64.

789,649. OMNI-FILL. Sprayon Products, Inc. SN 201,888. Pub. 3-2-65. Filed 9-14-64.

789,650. MO-VAC. Charles F. Pfeifer. SN 204,400. Pub. 3-2-65. Filed 10-20-64.

789,651. CONISKOID. The Gleason Works. SN 206,716. Pub. 3-2-65. Filed 11-23-64.

789,652. MAYBELLE. Utica Cutlery Company. SN 206,788. Pub. 3-2-65. Filed 11-23-64.

789,653. EVERSHARP SCHICK. Eversharp, Inc. SN 206,844. Pub. 3-2-65. Filed 11-24-64.

789,654. AMBASSADOR. Allied Stores Corporation. SN 207,358. Pub. 3-2-65. Filed 12-3-64.

789,655. ULTRAWHIRL. G. W. Davis Corporation. SN 207,370. Pub. 3-2-65. Filed 12-3-64.

Class 24—Laundry Appliances and Machines

789,656. JET-MASTER. General Motors Corporation. SN 194,879. Pub. 3-2-65. Filed 6-4-64.

Class 26—Measuring and Scientific Appliances

789,657. MISCELLANEOUS DESIGN. L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude. SN 187,120. Pub. 3-2-65. Filed 2-20-64.

789,658. DRITZ. John Dritz & Sons, Inc. SN 191,263. Pub. 3-2-65. Filed 4-16-64.

789,659. I.C.Q. Joseph K. Rose, d.b.a. Light Shield Co. SN 196,807. Pub. 3-2-65. Filed 6-30-64.

Class 27—Horological Instruments

789,660. TILE TIME. Sunbeam Corporation. SN 173,297. Pub. 3-2-65. Filed 7-18-63.

Class 28—Jewelry and Precious-Metal Ware

789,661. SHERWOOD AND DESIGN. Standard Metal Products Company, Inc. SN 206,479. Pub. 3-2-65. Filed 11-18-64.

Class 29—Brooms, Brushes, and Dusters

789,662. ELECTRA-BRUSH. Standard Products Corporation. SN 206,770. Pub. 3-2-65. Filed 11-23-64.

Class 31 — Filters and Refrigerators

789,663. MISCELLANEOUS (DESIGN). L'air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude. SN 187,121. Pub. 3–2–65. Filed 2–20–64.

Class 32 — Furniture and Upholstery

789,664. FURNITURE CITY. Furniture City Upholstery Company. SN 178,438. Pub. 3–2–65. Filed 10–7–63.

789,665. THE CROWNING TOUCH. Imperial Furniture Company. SN 199,065. Pub. 3–2–65. Filed 8–3–64.

789,666. BANKERS BOX, ETC. AND DESIGN. Bankers Box Company. SN 199,530. Pub. 3–2–65. Filed 8–10–64.

789,667. THE CROWNING TOUCH AND DESIGN. Imperial Furniture Company. SN 199,565. Pub. 3–2–65. Filed 8–10–64.

789,668. MMP. Modern Metal Products Company. SN 199,687. Pub. 3–2–65. Filed 8–11–64.

789,669. API. All Purpose Industries. SN 200,135. Pub. 3–2–65. Filed 8–19–64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

789,534. (See Class 12 for this trademark.)

789,622. (See Class 21 for this trademark.)

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

789,670. THREE POINTED STAR IN CIRCLE (DESIGN). Daimler-Benz Aktiengesellschaft. SN 45,021. Pub. 3–2–65. Filed 1–31–58.

789,671. LASCAR AND DESIGN. Beldam Asbestos Company Limited. SN 180,808. Pub. 3–2–65. Filed 10–30–63.

789,672. PAR AND DESIGN. Arthur D. Finn, d.b.a. Pacific Asbestos & Rubber Co. SN 191,099. Pub. 3–2–65. Filed 3–2–64.

789,673. ELEGANTE. The Denman Rubber Manufacturing Company. SN 199,180. Pub. 3–2–65. Filed 8–4–64.

Class 36 — Musical Instruments and Supplies

789,674. HAHNEMANN MEDI DISC AND DESIGN. Silver Plastics, Inc. SN 187,159. Pub. 3–2–65. Filed 2–20–64.

Class 37 — Paper and Stationery

789,675. GEOMETRIC DESIGN. Kimberly-Clark Corporation. SN 173,580. Pub. 3–2–65. Filed 7–23–63.

789,676. QUALI-WRAP. The Qualitad Sales Corporation. SN 183,623. Pub. 3–2–65. Filed 12–26–63.

789,677. PEN SATION! Best Plastics, Inc. SN 183,648. Pub. 3–2–65. Filed 12–16–63.

789,678. CHEEP. Joan M. del Castillo. SN 190,067. Pub. 3–2–65. Filed 4–1–64.

789,679. DRITZ. John Dritz & Sons, Inc. SN 191,264. Pub. 3–2–65. Filed 4–16–64.

789,680. MEDEX. Pacific Paper Products, Inc. SN 195,959. Pub. 3–2–65. Filed 6–18–64.

789,681. PPP PACIFIC AND DESIGN. Pacific Paper Products, Inc. SN 195,960. Pub. 3–2–65. Filed 6–18–64.

789,682. VF AND DESIGN. Groveton Papers Company. SN 196,781. Pub. 3–2–65. Filed 6–30–64.

789,683. GAY NOTE. R. J. Reynolds Tobacco Company. SN 196,904. Pub. 3–2–65. Filed 7–1–64.

789,684. TOKESTRIP. Globe Ticket Company. SN 197,829. Pub. 3–2–65. Filed 7–14–64.

789,685. TIMELESS. The Mead Corporation. SN 198,569. Pub. 3–2–65. Filed 7–27–64.

789,686. KRAFTBILT BOOMERANGS AND DESIGN. Ross-Martin Company. SN 202,314. Pub. 3–2–65. Filed 9–21–64.

789,687. MULCHNET. Bemis Bro. Bag Company. SN 202,408. Pub. 3–2–65. Filed 9–23–64.

Class 38 — Prints and Publications

789,688. KALVIEWS. Kalvar Corporation. SN 191,563. Pub. 3–2–65. Filed 4–20–64.

789,689. PROFILE OF ARIZONA. First National Bank of Arizona. SN 200,430. Pub. 3–2–65. Filed 8–24–64.

789,690. METALSTAT. Graphtex Inc. SN 200,565. Pub. 3–2–65. Filed 8–25–64.

789,691. THE SCORED SHEET. International Paper Company. SN 202,486. Pub. 3–2–65. Filed 9–23–64.

Class 39 — Clothing

789,692. PIXIES BY FLITE-STEP AND DESIGN. Ideal Shoe Co. SN 100,257. Pub. 3–2–65. Filed 7–5–60.

789,693. NIP-N-TUCK. Max Ulman, Inc. SN 170,848. Pub. 3–2–65. Filed 6–12–63.

789,694. TWINCOAT AND DESIGN. John Roberts, Inc. SN 172,940. Pub. 3–2–65. Filed 7–12–63.

789,695. ADJUSTON. Stone Manufacturing Company. SN 177,197. Pub. 3–2–65. Filed 9–17–63.

789,696. GB57. Sears, Roebuck and Co. SN 178,228. Pub. 3–2–65. Filed 10–2–63.

789,697. THERM O SNUGS. Dutchess Underwear Corporation. SN 182,165. Pub. 3–2–65. Filed 12–2–63.

789,698. THE GOLDEN THREAD COLLECTION. Style Undies, Inc. SN 183,292. Pub. 3–2–65. Filed 12–19–63.

789,699. EVEN WASH IT AND DESIGN. Wembley, Inc. SN 184,671. Pub. 3–2–65. Filed 1–15–64.

789,700. FRESH AS NEW AND DESIGN. Wembley, Inc. SN 184,672. Pub. 3–2–65. Filed 1–15–64.

789,701. FLUFFY RUFFLES. Ship 'N Shore, Inc. SN 185,083. Pub. 3–2–65. Filed 1–21–64.

789,702. HOLLYWOOD SKOOTERS AND DESIGN. Vogue Shoe, Inc. SN 185,541. Pub. 3–2–65. Filed 1–28–64.

789,703. E.V. Boris Smoler & Sons, Inc. SN 185,822. Pub. 3–2–65. Filed 1–31–64.

789,704. SMART "N" GAY. Carhartt of Texas, Inc. SN 186,151. Pub. 3–2–65. Filed 2–6–64.

789,705. BOBBI-LOU. Shoo-Zees Manufacturing Company. SN 187,342. Pub. 3–2–65. Filed 2–24–64.

789,706. GEOMETRIC DESIGN. Lawrence Children's Underwear Co., Inc. SN 189,027. Pub. 3–2–65. Filed 3–17–64.

789,707. A NORMAN LAFER DESIGN. Joan Iris Corp. SN 192,294. Pub. 3–2–65. Filed 4–24–64.

789,708. TRIESTE. Lily Lynn of Texas, Inc., assignee of Kabro of Houston Inc. SN 193,792. Pub. 3–2–65. Filed 5–19–64.

789,709. CANNON AND DESIGN. Cannon Mills Company. SN 194,129. Pub. 3–2–65. Filed 5–25–64.

789,710. BRIGHT-LITES. Benjamin & Johnes, Inc. SN 194,352. Pub. 3–2–65. Filed 5–27–64.

789,711. AKRON. Akron Garment Corp. SN 194,562. Pub. 3–2–65. Filed 6–1–64.

789,712. V-ETTE STRETCH. Munsingwear, Inc., d.b.a. Hollywood Vassarette. SN 194,607. Pub. 3–2–65. Filed 6–1–64.

789,713. PILLOW-TALK. Pacific Undergarment Co., Inc. SN 194,748. Pub. 3–2–65. Filed 6–2–64.

789,714. DAVEN-TWEED. Davidow Suits, Inc. SN 194,967. Pub. 3–2–65. Filed 6–5–64.

789,715. ARMOR-TUNG. Safety First Shoes, Inc. SN 195,252. Pub. 3–2–65. Filed 6–9–64.

789,716. LACY LADY. Adams-Millis Corporation. SN 195,267. Pub. 3–2–65. Filed 6–10–64.

789,717. RONNA. Ronna Knitwear and Sunny Sportswear, Incorporated. SN 195,331. Pub. 3–2–65. Filed 6–10–64.

789,718. THE PIETA VEIL. Dubin Veilings, Inc. SN 195,381. Pub. 3–2–65. Filed 6–11–64.

789,719. LUSTRKOOL. E. R. Moore Company. SN 195,429. Pub. 3–2–65. Filed 6–11–64.

789,720. MAR ELD. Mar Eld, Inc. SN 195,996. Pub. 3–2–65. Filed 6–12–64.

789,721. LIKE-A-NIT. De Weese, Inc. SN 196,361. Pub. 3–2–65. Filed 6–24–64.

789,722. MIRACRON. The Manhattan Shirt Company. SN 196,387. Pub. 3–2–65. Filed 6–24–64.

789,723. ARA-FLEX. Cluett, Peabody & Co., Inc. SN 196,430. Pub. 3–2–65. Filed 6–25–64.

789,724. CORDMASTER. Unishops, Inc. SN 196,485. Pub. 3–2–65. Filed 6–25–64.

789,725. JARARD. Rielly Company, Inc. SN 196,805. Pub. 3–2–65. Filed 6–30–64.

789,726. WALES. Wales Manufacturing Company. SN 196,827. Pub. 3–2–65. Filed 6–30–64.

789,727. SKI-MATIC. American Needle & Novelty Co. SN 197,054. Pub. 3–2–65. Filed 7–6–64.

789,728. TEENEES. Associated Stylists, Inc. SN 197,252. Pub. 3–2–65. Filed 7–7–64.

789,729. BEAU SURE AND DESIGN. Beaunit Corporation. SN 197,655. Pub. 3–2–65. Filed 7–13–64.

789,730. FRAN ROLAND. Poise N' Ivy, Inc. SN 199,697. Pub. 3–2–65. Filed 8–11–64.

789,731. SWIFTER SHIFTER. Hurst-Campbell, Inc. SN 201,290. Pub. 3–2–65. Filed 9–4–64.

Class 40 — Fancy Goods, Furnishings, and Notions

789,732. TREASURE MOUNTAINS PARK CITY AND DESIGN. United Park City Mines Company. SN 185,460. Pub. 3–2–65. Filed 1–27–64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

789,733. KERAFLEX. Sobelta, Société Belge de Teintures et Apprêts. SN 190,440. Pub. 3–2–65. Filed 4–6–64.

789,734. SOLIDOT. Staflex International Limited. SN 191,450. Pub. 3–2–65. Filed 4–17–64.

789,735. HUY-WICK. Huyck Corporation. SN 200,187. Pub. 3–2–65. Filed 8–19–64.

789,736. ARABI. Klopman Mills, Inc. SN 200,732. Pub. 3–2–65. Filed 8–27–64.

789,737. AGENDA. Klopman Mills, Inc. SN 200,733. Pub. 3–2–65. Filed 8–27–64.

789,738. KEYNOTE. Klopman Mills, Inc. SN 200,734. Pub. 3–2–65. Filed 8–27–64.

789,739. MAGIC HOUR. Klopman Mills, Inc. SN 200,735. Pub. 3–2–65. Filed 8–27–64.

789,740. PASSWORD. Klopman Mills, Inc. SN 200,737. Pub. 3–2–65. Filed 8–27–64.

789,741. SLINKY. Klopman Mills, Inc. SN 200,739. Pub. 3–2–65. Filed 8–27–64.

789,742. WILDFIRE. Klopman Mills, Inc. SN 200,740. Pub. 3–2–65. Filed 8–27–64.

789,743. SYNONYM. Klopman Mills, Inc. SN 200,743. Pub. 3–2–65. Filed 8–27–64.

789,744. SWING EASY. Klopman Mills, Inc. SN 200,744. Pub. 3–2–65. Filed 8–27–64.

789,745. HI-SIGN. Klopman Mills, Inc. SN 200,745. Pub. 3–2–65. Filed 8–27–64.

789,746. GRAND DUKE. Klopman Mills, Inc. SN 200,746. Pub. 3–2–65. Filed 8–27–64.

789,747. GLIDE. Klopman Mills, Inc. SN 200,747. Pub. 3–2–65. Filed 8–27–64.

789,748. DOVE TOUCH. Klopman Mills, Inc. SN 200,750. Pub. 3–2–65. Filed 8–27–64.

789,749. DOUBLE TIME. Klopman Mills, Inc. SN 200,751. Pub. 3–2–65. Filed 8–27–64.

789,750. COUNTRY FASHION. Klopman Mills, Inc. SN 200,752. Pub. 3–2–65. Filed 8–27–64.

789,751. CITY TALK. Klopman Mills, Inc. SN 200,753. Pub. 3–2–65. Filed 8–27–64.

789,752. BULKHEAD. Klopman Mills, Inc. SN 200,754. Pub. 3–2–65. Filed 8–27–64.

789,753. BOX OFFICE. Klopman Mills, Inc. SN 200,755. Pub. 3–2–65. Filed 8–27–64.

789,754. BOMBSHELL. Klopman Mills, Inc. SN 200,756. Pub. 3–2–65. Filed 8–27–64.

789,755. ABSTRACT. Klopman Mills, Inc. SN 200,757. Pub. 3–2–65. Filed 8–27–64.

789,756. BY PLAY. Klopman Mills, Inc. SN 200,758. Pub. 3–2–65. Filed 8–27–64.

789,757. FAIR & SQUARE. Klopman Mills, Inc. SN 200,759. Pub. 3–2–65. Filed 8–27–64.

789,758. FORSTMANN AND DESIGN. J. P. Stevens & Co., Inc. SN 200,793. Pub. 3–2–65. Filed 8–27–64.

789,759. LAPRAP. R. G. Barry Corporation. SN 200,897. Pub. 3–2–65. Filed 8–31–64.

Class 43 — Thread and Yarn

789,760. MULTIBLEND. Celestial Mercantile Corp. SN 200,628. Pub. 3–2–65. Filed 8–26–64.

Class 44 — Dental, Medical, and Surgical Appliances

789,761. VERTEX. A. J. Dijk, d.b.a. Dentimex. SN 183,318. Pub. 3–2–65. Filed 12–20–63.

789,762. RECTA-KIT. Rectalator Co. SN 184,398. Pub. 3–2–65. Filed 1–10–64.

789,763. CORONET. Johnson & Johnson. SN 197,032. Pub. 3–2–65. Filed 7–3–64.

Class 46 — Foods and Ingredients of Foods

789,764. SILBON. Bonded Frozen Foods Corporation. SN 190,150. Pub. 3–2–65. Filed 4–2–64.

789,765. GOLBON. Bonded Frozen Foods Corporation. SN 190,151. Pub. 3–2–65. Filed 4–2–64.

789,766. MUSHROOM TOPPERS. Abner Michaud, d.b.a. A. Michaud Co. SN 191,698. Pub. 3–2–65. Filed 4–21–64.

789,767. GAUCHO (DESIGN). Gaucho Food Products, Inc. SN 191,853. Pub. 3–2–65. Filed 4–23–64.

789,768. TUSSCO. The United States Spice Corp. SN 192,234. Pub. 3–2–65. Filed 4–28–64.

789,769. DARICAL. National Dairy Products Corporation. SN 192,421. Pub. 3–2–65. Filed 4–30–64.

789,770. JAM-BAR-EE. Mother's Cake & Cookie Co., d.b.a. Venus Foods. SN 193,196. Pub. 3–2–65. Filed 5–11–64.

789,771. TATER GEMS. J. R. Simplot Company. SN 193,503. Pub. 3–2–65. Filed 5–14–64.

789,772. BIORELL. Alfred Kapust. SN 193,553. Pub. 3–2–65. Filed 5–15–64.

789,773. CHEF'S TOUCH. McCormick & Company, Incorporated. SN 199,685. Pub. 3–2–65. Filed 8–11–64.

789,774. TOYS-APOPPING. Palco Products Corp. SN 199,757. Pub. 3–2–65. Filed 8–12–64.

789,775. REPRESENTATION OF A CHICKEN. Decatur Foods, Inc. SN 199,797. Pub. 3–2–65. Filed 8–13–64.

789,776. CRYSTAL LAKE. Decatur Foods, Inc. SN 199,798. Pub. 3–2–65. Filed 8–13–64.

789,777. THICK & THIN. Easy Products, Inc. SN 200,170. Pub. 3–2–65. Filed 8–19–64.

789,778. INFAMEAL. Mead Johnson & Company. SN 203,193. Pub. 3–2–65. Filed 10–2–64.

789,779. CAT CHOPS. National Biscuit Company. SN 203,195. Pub. 3–2–65. Filed 10–2–64.

789,780. RIO KIST. Melch & Stepp Tomato Company. SN 203,512. Pub. 3–2–65. Filed 10–7–64.

Class 50 — Merchandise Not Otherwise Classified

789,781. FLYING-H-MESSAGE BOY. Kenneth M. Polson. SN 186,969. Pub. 3–2–65. Filed 2–18–64.

789,782. SENTRY SEAL. Owens-Illinois Glass Company. SN 200,965. Pub. 3–2–65. Filed 8–31–64.

789,783. CON-TACT FROSTY. United Merchants and Manufacturers, Inc. SN 202,334. Pub. 3–2–65. Filed 9–21–64.

Class 51 — Cosmetics and Toilet Preparations

789,784. DERM ALURE. Maber Color & Chemical Company. SN 144,748. Pub. 3–2–65. Filed 5–16–62.

789,785. HAIR LUXURY. Maradel Products, Inc. SN 168,513. Pub. 3–24–64. Filed 5–9–63.

789,786. T35. The Procter & Gamble Company. SN 190,111. Pub. 3–2–65. Filed 4–1–64.

789,787. BY GEORGE AND DESIGN. Caryl Richards, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 190,118. Pub. 3–2–65. Filed 4–1–64.

789,788. BURMA BRIGADE. Philip Morris Incorporated. SN 191,701. Pub. 3–2–65. Filed 4–21–64.

789,789. BURMA BLOCKADE. Philip Morris Incorporated. SN 191,703. Pub. 3–2–65. Filed 4–21–64.

789,790. DENTURA. Colgate-Palmolive Company. SN 199,268. Pub. 3–2–65. Filed 8–5–64.

Class 52 — Detergents and Soaps

789,787. (See Class 51 for this trademark.)

789,791. SUPER GOLD. Scientific Supply Company, Inc. SN 196,727. Pub. 3–2–65. Filed 6–29–64.

789,792. STOEGER. Stoeger Arms Corporation. SN 201,753. Pub. 3–2–65. Filed 9–11–64.

Service Marks

Class 100 — Miscellaneous

789,793. ABC AND DESIGN. Research and Investments, Inc., d.b.a. ABC Stores, Inc. SN 136,494. Pub. 3–2–65. Filed 1–24–62.

Class 105 — Transportation and Storage

789,794. CURT'S AND DESIGN. Curt's Oil Co., Inc., d.b.a. Curt's Oil Company. SN 200,551. Pub. 3–2–65. Filed 8–25–64.

Class 107 — Education and Entertainment

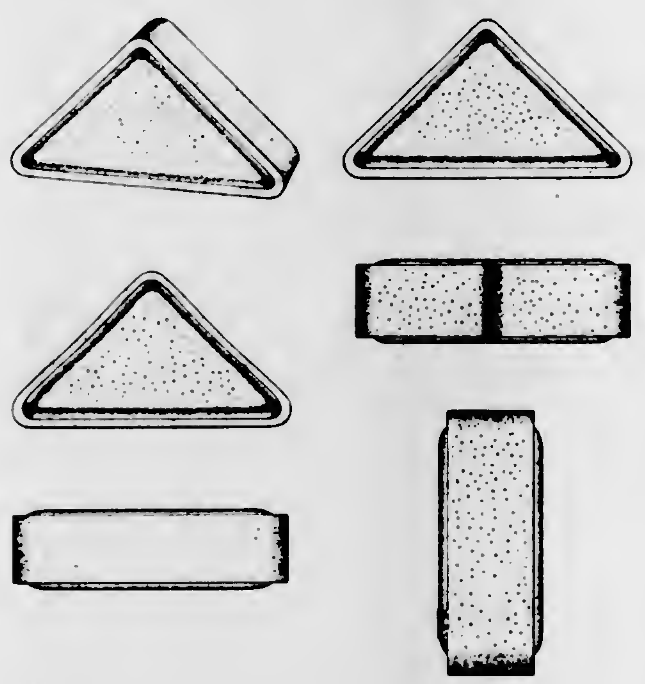
789,795. OLYMPIC. United States Olympic Association, d.b.a. the United States Olympic Committee. SN 192,536. Pub. 3–2–65. Filed 5–1–64.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 6 — Chemicals and Chemical Compositions

789,796. Minnesota Mining and Manufacturing Company, St. Paul, Minn. SN 72,342. Filed P.R. 4–27–59; Am. S.R. 2–3–61.



The mark comprises the triangular three-dimensional configuration of the goods.

For Chemical Composition in Solid Form for Use in a Mechanical, Non-Electrolytic System Adapted To Plate Metal Parts, Said System Being To Tumble Said Parts in a Tumbling Barrel With Powdered Metal, Small Spherical Particles (e.g., Glass Beads) and Said Chemical Composition, the Tumbling Action Causing the Powdered Metal To Form Into a Dense, Continuous, Adherent Coating on Said Metal Parts.

First use Feb. 6, 1958.

789,797. Standard Fire Alarm & Signal Inc., Jenkintown, Pa. SN 132,387. Filed P.R. 11–20–61; Am. S.R. 2–15–65.

REDDI SOUND

For Gas Filled Disposable Containers for Use in Fire Detecting and Signaling Systems.

First use Nov. 8, 1961.

Class 12 — Construction Materials

789,798. Clearview Corp., Dallas, Tex. SN 185,869. Filed P.R. 2–3–64; Am. S.R. 3–8–65.

SOLAR SHADE

For Louver Windows.

First use July 10, 1963.

Class 18 — Medicines and Pharmaceutical Preparations

789,799. Bonne Bell, Inc., Lakewood, Ohio. SN 145,761. Filed P.R. 5–31–62; Am. S.R. 3–23–65.

COOL GEL

For First Aid Lotion for Treatment of Minor Burns, Sunburn, Itching Skin and Skin Irritations.

First use Mar. 30, 1962.

789,800. The Wander Company, Chicago, Ill. SN 177,124. Filed P.R. 9–16–63; Am. S.R. 3–18–65.

BERN

For Preparation To Be Used in the Treatment of Burns.

First use Aug. 30, 1963.

789,801. Reyman Drug Company, Inc., Baltimore, Md. SN 198,666. Filed P.R. 7–28–64; Am. S.R. 12–8–64.

LES-ASMA

For Medicinal Tablets for the Relief of Bronchial Asthma and Hay Fever.

First use January 1963.

Class 22 — Games, Toys, and Sporting Goods

789,802. Superior Sales Co., Fort Worth, Tex. SN 164,749. Filed P.R. 3–15–63; Am. S.R. 3–24–65.

KIDDIE COTTAGE

For Metal Playhouses.

First use Dec. 10, 1962.

789,803. Stuart Sport Specialties, Inc., d.b.a. Al's Goldfish Lure Co., Indian Orchard, Mass. SN 193,997. Filed P.R. 5–21–64; Am. S.R. 3–12–65.

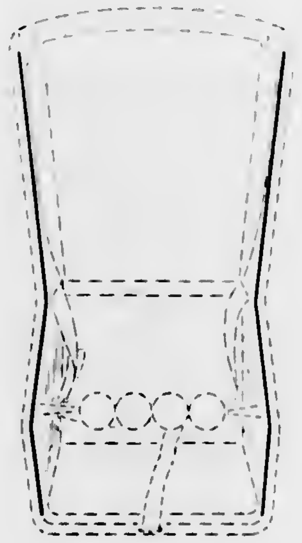
KWIK-KLIP

For Metal Clips for Attaching Fish Hooks and the Like to Fishing Lines.

First use Dec. 28, 1950.

Class 32 — Furniture and Upholstery

789,804. Infanseat Company, Eldora, Iowa, assignee of Infanseat Company, Eldora, Iowa. SN 157,109. Filed P.R. 11–13–62 ; Am. S.R. 3–12–65.



The mark comprises the configuration of the flaring, vase shaped, forwardly facing edges of the sides of the baby carrier.

For Baby Carriers.
First use Oct. 31, 1955.

Class 38 — Prints and Publications

789,805. Continental News, Inc., Los Angeles, Calif. SN 174,264. Filed P.R. 8–2–63 ; Am. S.R. 3–16–65.

NUDISTS' LEISURE

For Magazine or Periodical.
First use February 1963.

789,806. Musicmaster Publications, Inc., Jackson Heights, N.Y. SN 183,441. Filed P.R. 12–23–63 ; Am. S.R. 3–8–65.

MULTI-SCORE

For Orchestrations.
First use July 23, 1963.

789,807. Volunteer Community Activities Clearinghouse, Inc., Washington, D.C. SN 188,939. Filed P.R. 3–17–64 ; Am. S. R. 3–18–65.

VOLUNTEER'S DIGEST

For Educational Quarterly.
First use Mar. 10, 1964.

789,808. Cal-Western Publishing Co., Orange, Calif. SN 192,153. Filed P.R. 4–28–64 ; Am. S.R. 3–22–65.

COUNTRY MUSIC REVIEW

For Magazine Relating to Musical Entertainment.
First use Dec. 28, 1963.

789,809. Farm Journal Inc., Philadelphia, Pa. SN 203,953. Filed P.R. 10–14–64 ; Am. S.R. 3–17–65.

LETTERS FROM FARM WOMEN

For Section of Magazine.
First use Nov. 24, 1946.

789,810. Farm Journal Inc., Philadelphia, Pa. SN 203,956. Filed P.R. 10–14–64 ; Am. S.R. 3–17–65.

THE MAGAZINE FARM FAMILIES DEPEND ON

For Monthly Magazine.
First use Dec. 22, 1957.

Class 46 — Foods and Ingredients of Foods

789,811. Prince Macaroni Manufacturing Company, Lowell, Mass. SN 163,764. Filed P.R. 3–1–63 ; Am. S.R. 12–7–64.

SQUARE

Spaghetti and macaroni in the shape of elongated prisms with quadrangular end faces.

For Spaghetti Products.
First use Sept. 12, 1962.

789,812. Callet & Cie., Rouen (Seine Maritime), France. SN 16[illegible] 872. Filed 4–16–63.

BARNIER

For Candles.
First use Jan. 25, 1900

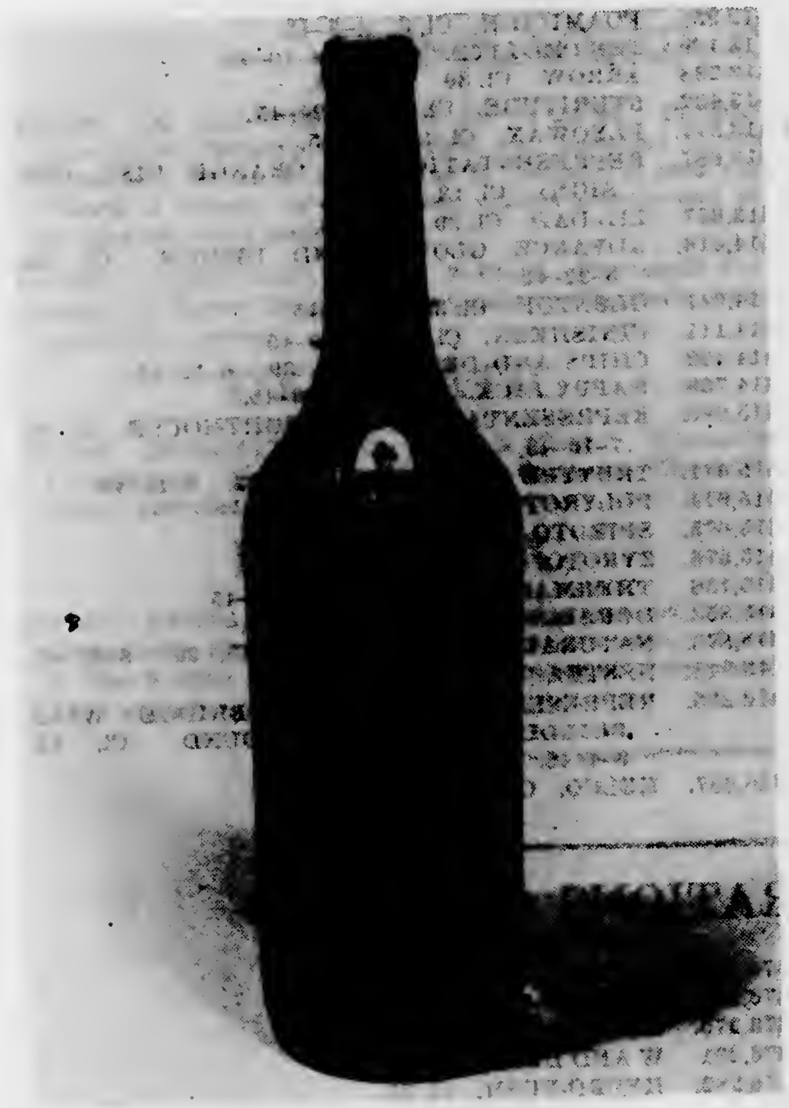
789,813. Gro-Kote, Inc., Santa Rosa, Calif. SN 185,034. Filed P.R. 1–21–64 ; Am. S.R. 1–12–65.

SLIVERS

For Packaged Dog and Cat Food.
First use Jan. 2, 1964.

Class 47 — Wines

789,814. Jean G. Cordier, Labottiere, Bordeaux (Gironde), France. SN 190,895. Filed P.R. 4–13–64 ; Am. S.R. 1–15–65.



The mark consists of the conformation of a bottle, together with the portrait thereon, used as the container for applicant's wines. Portrait shown on the container is that of the late Mr. Désiré Cordier who died in 1940. Priority claimed under Sec. 44(d) on French Reg. No. 52,320, dated Oct. 14, 1963 (Bordeaux) ; Natl. Inst. No. 213,683.

For Wines.

Class 50 — Merchandise Not Otherwise Classified

789,815. G.I. Plastics Corporation, Chicago, Ill., assignee of Velsicol Chemical Corporation, Chicago, Ill. SN 156,538. Filed P.R. 11–2–62 ; Am. S.R. 3–22–65.

ROSE KONE

For Plant Shelter for Protecting Plants.
First use Oct. 20, 1962.

Class 51 — Cosmetics and Toilet Preparations

789,816. Western Brands, Inc., Denver, Colo. SN 134,915. Filed P.R. 12–29–61 ; Am. S.R. 3–25–65.

SAT'NY SMOOTH

For Cosmetic Skin Lotion.
First use on or about Dec. 1, 1961.

789,817. The Andrew Jergens Company, Cincinnati, Ohio. SN 187,291. Filed P.R. 2–24–64 ; Am. S.R. 3–9–65.

NATURALLY LOVELY

For Hair Spray.
First use Jan. 31, 1964.

789,818. Revlon, Inc., New York, N.Y. SN 187,335. Filed P.R. 2–24–64 ; Am. S.R. 3–8–65.

BROW BEAUTIFUL

For Brow Mascara.
First use Feb. 4, 1964.

789,819. Maradel Products, Inc., New York, N.Y. SN 188,895. Filed P.R. 3–17–64 ; Am. S.R. 3–17–65.

AUBURN FLAME

For Hair Coloring.
First use Jan. 23, 1964.

789,820. Revlon, Inc., New York, N.Y. SN 189,108. Filed P.R. 3–19–64 ; Am. S.R. 3–15–65.

CARAMELLA

The Italian definition of the Word "Caramella" is "caramel."

For Lipsticks and Nail Enamels.
First use Feb. 10, 1964.

TRADEMARK REGISTRATIONS RENEWED

45,076. COMPTOMETER. Cl. 26. 8–8–05.
45,094. NAUMKEAG SATTEEN TWILLS. Cl. 42. 8–8–05.
45,169. GLYCO-THYMOLINE. Cl. 18. 8–8–05.
45,859. DOROTHY DODD. Cl. 39. 8–29–05.
46,058. ATLAS. Cl. 12. 9–5–05.
192,451. PARAGON. Cl. 26. 12–2–24.
196,010. MARCOVITCH & CO. LTD. AND DESIGN. Cl. 17. 3–10–25.
196,284. LE GUI. Cl. 39. 3–17–25.
196,322. OPTIMUS AND DESIGN. Cl. 6. 3–17–25.
196,390. LACTOPA. Cl. 51. 3–17–25.
196,392. FLIT. Cl. 6. 3–17–25.
196,674. SIMON ACKERMAN CLOTHES INCORPORATED AND DESIGN. Cl. 39. 3–24–25.
197,145. RUNION'S WHITE WONDER AND DESIGN. Cl. 18. 4–14–25.
197,180. OGILVIE. Cl. 51. 4–14–25.
197,204. STAR DESIGN (RED). Cl. 18. 4–14–25.
197,351. Y-ER EAS. Cl. 15. 4–14–25.
197,376. SIERRA. Cl. 12. 4–14–25.
197,636. DENT-O-FORMS. Cl. 44. 4–21–25.
197,844. ALCRUDOL. Cl. 18. 4–28–25.
197,960. GAVIOTA AND DESIGN. Cl. 46. 4–28–25.
198,179. CORINA. Cl. 17. 5–5–25.
199,345. THE HEART OF AMERICA AND DESIGN. Cl. 46. 6–9–25.
199,549. THE BOSTON SUNDAY GLOBE. Cl. 38. 6–9–25.
201,995. FORT PITT. Cl. 16. 8–11–25.
202,210. HILL AND HILL. Cl. 49. 8–18–25.
202,630. ROBIN HOOD. Cl. 39. 9–1–25.
202,695. CARMENCITA. Cl. 46. 9–1–25.
202,751. FOR THE MAN WHO CARES AND DESIGN. Cl. 39. 9–1–25.
203,002. HEATHLAND. Cl. 39. 9–8–25.
410,314. ENTHRALLING. Cl. 51. 11–21–44.
411,653. FARGO. Cl. 19. 1–23–45.
412,101. PENETREX. Cl. 52. 2–20–45.
412,461. ACME. Cl. 44. 3–6–45.
412,676. TERAZ-O-LITE. Cl. 16. 3–20–45.
412,706. FIRST LADY. Cl. 3. 3–20–45.
412,715. MONARCH. Cl. 44. 3–20–45.
412,771. "STAK·PAK." Cl. 11. 3–27–45.
412,950. FOAMICIDE. Cl. 6. 4–3–45.
413,126. JEN-CEL-LITE. Cl. 39. 4–10–45.
413,238. ARROW. Cl. 39. 4–17–45.
413,432. STERITUBE. Cl. 44. 4–24–45.
413,574. PLYOWAX. Cl. 4. 5–1–45.
413,687. REPRESENTATION OF ORANGE DISC (DESIGN). Cl. 13. 5–8–45.
413,697. LIL-DAD. Cl. 39. 5–8–45.
414,016. ADVANCE GLOVES AND DESIGN. Cl. 39. 5–22–45.
414,047. GLENTOP. Cl. 39. 5–22–45.
414,111. FINISHEEN. Cl. 51. 5–29–45.
414,492. CHIPS AND DESIGN. Cl. 39. 6–12–45.
414,789. HAPPY JACK. Cl. 18. 6–26–45.
415,083. REPRESENTATION OF A LIGHTHOUSE. Cl. 48. 7–10–45.
415,641. TRUTYPE AMERICANA. Cl. 32. 8–14–45.
415,674. POLYROTO. Cl. 11. 8–14–45.
415,675. SPIROTO. Cl. 11. 8–14–45.
415,676. ZYROTO. Cl. 11. 8–14–45.
415,756. THERMASCREW. Cl. 23. 8–14–45.
415,853. DURABONDED. Cl. 4. 8–21–45.
415,873. NATURALIZER FUNSTERS. Cl. 39. 8–21–45.
415,948. NESTEA. Cl. 46. 8–21–45.
416,285. REPRESENTATION OF A BRIDGE WITH BUILDINGS IN BACKGROUND. Cl. 11. 9–4–45.
416,387. KELCO. Cl. 46. 9–11–45.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

146,075. JAZZ. Cl. 46. 8–30–21.
276,129. WHITE TULIP. Cl. 46. 10–7–30.
297,557. MO-BISCUIT. Cl. 46. 9–20–32.

Section 8

The following registrations issued Mar. 31, 1959

676,158. DIAMOND HICKORY FLAVOR CHIPS AND DESIGN. Cl. 1.
676,159. ZEPHYRFOAM. Cl. 1.
676,162. CAMBI-DOODLE. Cl. 1.
676,165. PLASTILAM. Cl. 1.
676,168. DB DAVID BRADLEY. Cl. 1.
676,174. MAXI-LAY QUEENS AND BABY CHICK WITH CROWN AND DESIGN. Cl. 1.
676,175. BAG-O-FIRE. Cl. 1.
676,177. FIBERFLUFF. Cl. 1.
676,178. JIFFY. Cl. 2.
676,181. TELL-TALE. Cl. 3.
676,186. MACROCYCLAROMES. Cl. 6.
676,196. H. Cl. 9.
676,202. KEY-BOND AND DESIGN. Cl. 12.
676,205. PERMACEL. Cl. 12.
676,207. ALUM-A-STIX. Cl. 12.
676,208. WONDER FILL. Cl. 12.
676,218. ALCEL. Cl. 16.
676,222. DIPLOMAT AND DESIGN. Cl. 17.
676,227. TRASENTINE-PA. Cl. 18.
676,238. PEER-EYE. Cl. 18.
676,244. ABC AND DESIGN. Cl. 19.
676,246. RAPIDJUST. Cl. 21.
676,248. SUPERLITE. Cl. 21.
676,259. U.S. 444. Cl. 22.
676,261. ZANZI. Cl. 22.
676,263. ACE 10 21. Cl. 22.
676,267. LANCER. Cl. 22.
676,272. ELTEE. Cl. 22.
676,274. DEPTH-O-MATIC. Cl. 22.
676,275. SHUR-GAF. Cl. 22.
676,281. W AND DESIGN. Cl. 23.
676,282. HYDRO-PUSH. Cl. 23.
676,296. HAYMOBILE NEW HOLLAND. Cl. 23.
676,298. DIFLON. Cl. 23.
676,299. DESERT STAR. Cl. 23.
676,301. BOLINDER'S. Cl. 23.
676,308. HAMILTON. Cl. 26.
676,317. TILE-O-METER. Cl. 26.
676,321. HELICAP. Cl. 29.
676,322. JETTIP. Cl. 29.
676,326. SEIDELHUBER. Cl. 34.
676,331. PHOTOSTAT. Cl. 37.
676,332. SEMAPHORE. Cl. 37.
676,339. LEATHERAMIC. Cl. 37.
676,344. MAIRCARDS. Cl. 37.
676,351. MAN TO WATCH. Cl. 38.
676,354. MONEY GUIDE. Cl. 38.
676,355. THE WOOD WORKER VENEERS AND PLYWOOD AND DESIGN. Cl. 38.
676,356. THE CORTEX HERALD. Cl. 38.
676,361. GANNEX ETC. AND DESIGN. Cl. 39.
676,364. MILLER'S MAGICREEPER ETC. AND DESIGN. Cl. 39.
676,372. THE ANGULAR LOOK. Cl. 39.
676,378. WEE WOUNDER. Cl. 39.
676,386. VESTMORIAL. Cl. 39.
676,387. INTERNATIONAL TRAVELER. Cl. 39.
676,395. AZUR. Cl. 40.
676,406. BEMBELINE. Cl. 43.
676,407. TEKNEEK. Cl. 43.
676,414. BAIRD AND DESIGN. Cl. 45.
676,428. STORZ AND DESIGN. Cl. 48.
676,443. CUPIT-RICE. Cl. 50.
676,444. PINK DEW. Cl. 51.

676,446. HI-NAP. Cl. 52.
676,447. LENS GLEEM. Cl. 52.
676,450. CLOUD 9 AND DESIGN. Cl. 52.
676,454. ALCOJET. Cl. 52.
676,463. PARCELAIR SYSTEM AND REPRESENTATION OF EAGLE ETC. Cl. 105.
676,469. NEW HAMPSHIRE PINK. Cl. 12.
676,489. COOL 'N FIRM ENGLANDER ETC. AND DESIGN. Cl. 32.
676,490. FOOD WEEK. Cl. 38.
676,492. THE UNIFORM CENTER OF NEW YORK. Cl. 39.
676,495. MEND EZ-ZE. Cl. 44.
676,496. AVOCATE. Cl. 46.
676,504. HIGH-GLOSS. Cl. 51.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

414,766. PQ AND DESIGN. Cl. 52. 6–26–45. Philadelphia Quartz Company, Philadelphia, Pa. Amended: In the statement, column 1, lines 7 and 8, "silicate of soda and silicate of potash" is deleted and *sodium silicate and potassium silicate* is inserted.

419,309. DYNAMATIC. Cl. 21. 2–12–46. Dynamatic Corporation. Eaton Manufacturing Company, Cleveland, Ohio. Amended to appear:

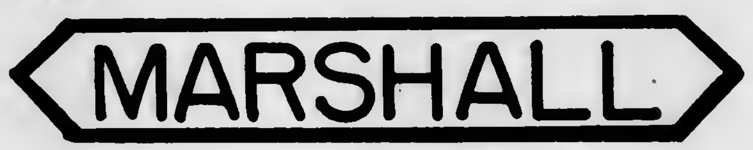
DYNAMATIC

419,310. DYNAMATIC. Cl. 23. 2–12–46. Dynamatic Corporation. Eaton Manufacturing Company, Cleveland, Ohio. Amended to appear:

DYNAMATIC

629,031. PENTA. Cl. 23. 6–19–56. Aktiebolaget Volvo, Gothenburg, Sweden. Amended: In the statement, column 2, line 2 after "thereof" *excluding outboard motors and parts of outboard motors* is inserted.

769,506. MARSHALL AND DESIGN. Cl. 26. 5–12–64. Marshall Products Company, Columbus, Ohio. Amended to appear:



785,900. TEL. Cl. 19. 3–2–65. Tel-E-Lect Products, Inc., Minneapolis, Minn. Corrected: In the statement, column 1, line 1, "Product" should be deleted and *Products* should be inserted.

786,560. PROTECTOR. Cl. 2. 3–9–65. Keyes Fibre Company, Waterville, Maine. Corrected: In the statement, column 1, line 1, "Keys" should be deleted and *Keyes* should be inserted.

786,747. GLEASON AND DESIGN. Cl. 23. 3–16–65. Maysteel Products Corp., assignee of Gleason Reel Corp., Mayville, Wis. Corrected: In the certificate, column 1, line 1, "Inc." should be deleted and *Corp.* should be inserted.

INDEX OF REGISTRANTS

MAY 18, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

ABC Stores, Inc. : *See*—
  Research and Investments, Inc.
ALD, Inc., d.b.a. Contract Supply, Chicago, Ill. 789,538, pub. 3-2-65. Cl. 12.
Ackerman, Simon, Clothes, Inc., New York, N.Y., to Simon Ackerman Clothes, Inc., Brooklyn, N.Y. 196,674, ren. 5-18-65. Cl. 39.
Adams-Millis Corp., High Point, N.C. 789,716, pub. 3-2-65. Cl. 39.
Advance Glove Mfg. Co. : *See*—
  Frenkel, Joseph.
Akron Garment Corp., New York, N.Y. 789,711, pub. 3-2-65. Cl. 39.
Aktiebolaget Bolinder-Munktell, Eskilstuna, Sweden. 676,301, canc. Cl. 23.
Aktiebolaget Volvo, Gothenburg, Sweden. 629,031. Am. 7(d). Cl. 23.
Aladdin Industries, Inc., Chicago, Ill. 789,526, pub. 3-2-65. Cl. 2.
Alcon Laboratories, Inc., Fort Worth, Tex. 789,577, pub. 3-2-65. Cl. 18.
Alconoc, Inc., New York, N.Y. 676,454, canc. Cl. 52.
All Purpose Industries, Miami, Fla. 789,669, pub. 3-2-65. Cl. 32.
Allergan Pharmaceuticals, Santa Ana, Calif. 789,578, pub. 3-2-65. Cl. 18.
Allied Stores Corp., New York, N.Y. 789,654, pub. 3-2-65. Cl. 23.
Allis-Chalmers Mfg. Co., Milwaukee, Wis. 789,532, pub. 3-2-65. Cl. 6.
Allis-Chalmers Mfg. Co., Milwaukee, Wis. 789,614, pub. 3-2-65. Cl. 21.
Almor Tool Co., The, Detroit, Mich. 676,275, canc. Cl. 22.
Al's Goldfish Lure Co. : *See*—
  Stuart Sport Specialties, Inc.
American Home Products Corp., New York, N.Y. 789,527, pub. 3-2-65. Cl. 4.
American Needle & Novelty Co., Chicago, Ill. 789,727, pub. 3-2-65. Cl. 39.
American Plywood Association, from Douglas Fir Plywood Association, Tacoma, Wash. 789,537, pub. 3-2-65. Cl. 12.
American Shippers, Inc., Los Angeles, Calif. 676,463, canc. Cl. 105.
Anaconda Wire and Cable Co., New York, N.Y. 789,620, pub. 3-2-65. Cl. 21.
Anderson, Chas. H., Floors, Inc., d.b.a. Creative Laminates Co., Chicago, Ill. 676,165, canc. Cl. 1.
Anderson, Robert L., d.b.a. Robert Isaac Pharmaceutical Co., Portland, Oreg. 676,495, canc. Cl. 44.
Applied Power Industries, Inc., West Allis, Wis. 789,591, pub. 3-2-65. Cl. 19.
Argos Products Co., Inc., Genoa, Ill. 789,606, pub. 3-2-65. Cl. 21.
Arkwight, Inc., New York, N.Y. 412,706, ren. 5-18-65. Cl. 3.
Associated Stylists, Inc., New York, N.Y. 789,728, pub. 3-2-65. Cl. 39.
Atlas Chemical Co., Miami, Fla. 789,529, pub. 4-2-65. Cl. 5.
Atlas Portland Cement Co., The, New York, N.Y., to United States Steel Corp., Pittsburgh, Pa. 46,058, ren. 5-18-65. Cl. 12.
Azur Jewelry, Inc., New York, N.Y. 676,395, canc. Cl. 40.
Bada Co., The, Pasadena, Calif. 676,244, canc. Cl. 19.
Baehr, George A., Newport Beach, Calif. 789,613, pub. 3-2-65. Cl. 21.
Baird Beverage Co., Inc., South River, N.J. 676,414, canc. Cl. 45.
Bankers Box Co., Franklin Park, Ill. 789,666, pub. 3-2-65. Cl. 32.
Barry, Merton R. : *See*—
  Fieldler, William S.
Barry, R. G., Corp., Columbus, Ohio. 789,759, pub. 3-2-65. Cl. 42.
Beaunit Corp., New York, N.Y. 789,729, pub. 3-2-65. Cl. 39.
Beaunit Mills, Inc., New York, N.Y. 676,406, canc. Cl. 43.
Beaver Shirt Mfg. Co. Inc., d.b.a. Beaver Shirt Mfg. Co., Inc., New York, N.Y. 414,047, ren. 5-18-65. Cl. 39.
Bechik Products Inc., St. Paul, Minn. 676,177, canc. Cl. 1.
Becton, Dickinson and Co., East Rutherford, N.J. 412,461, ren. 5-18-65. Cl. 44.
Becton, Dickinson and Co., East Rutherford, N.J. 412,715, ren. 5-18-65. Cl. 44.
Becton, Dickinson and Co., East Rutherford, N.J. 413,432, ren. 5-18-65. Cl. 44.
Behr-Manning Corp., Troy, N.Y., to Norton Co., Worcester, Mass. 415,853, ren. 5-18-65. Cl. 4.
Beldam Asbestos Co. Ltd., Hounslow, England. 789,671, pub. 3-2-65. Cl. 35.
Bemis Bro. Bag Co., Minneapolis, Minn. 789,687, pub. 3-2-65. Cl. 37.
Benjamin & Johnes, Inc., Newark, N.J. 789,710, pub. 3-2-65. Cl. 39.
Berger Bros., Co., Philadelphia, Pa. 789,540, pub. 3-2-65. Cl. 12.
Best Plastics, Inc., Providence, R.I. 789,677, pub. 3-2-65. Cl. 37.
Beverlee's Satin Stain, Inc., Visalia, Calif. 789,554, pub. 3-2-65. Cl. 16.
Bonded Frozen Foods Corp., Boise, Idaho. 789,764-5, pub. 3-2-65. Cl. 46.
Bonne, Bell, Inc., Lakewood, Ohio. 789,799. Cl. 18.
Borg-Warner Corp., Chicago, Ill. 789,592-5, pub. 3-2-65. Cl. 19.
Boston Beer Co., South Boston, Mass., to Haffenreffer & Co., Inc., Boston, Mass. 415,083, ren. 5-18-65. Cl. 48.
Brooks Machine Products Co., Unadilla, N.Y. 676,178, canc. Cl. 2.
Brown, Charles K., Jr., Verona, N.J. 676,202, canc. Cl. 12.
Brown Shoe Co., Inc. : *See*—
  Central Shoe Co.
Brown Shoe Co., Inc., St. Louis, Mo. 415,873, ren. 5-18-65. Cl. 39.
Cahn, Bernard, Co., Inc., New York, N.Y. 676,181, canc. Cl. 3.
Caldwell, Marilyn S., d.b.a. Maircards, Newport, R.I. 676,344, canc. Cl. 37.
Callet & Cie, Rouen (Seine Maritime), France. 789,812. Cl. 46.
Cal-Western Publishing Co., Orange, Calif. 789,808. Cl. 38.
Cameo, Inc., Toledo, Ohio. 789,561, pub. 3-2-65. Cl. 16.
Campers, Inc., Centerville, Mich. 789,588, pub. 3-2-65. Cl. 19.
Cannon Mills Co., Kannapolis, N.C. 789,709, pub. 3-2-65. Cl. 39.
Cardinal Electronics Co. of Canada Ltd., Whitby, Ontario, Canada. 789,612, pub. 3-2-65. Cl. 21.
Cargill, Inc., Minneapolis, Minn. 789,556-7, pub. 3-2-65. Cl. 16.
Carhartt of Texas, Inc., Dallas, Tex. 789,704, pub. 3-2-65. Cl. 39.
Carsello Chemical Products, Chicago, to Madison Chemical Corp., Maywood, Ill. 412,676, ren. 5-18-65. Cl. 16.
Celestial Mercantile Corp., New York, N.Y. 789,760, pub. 3-2-65. Cl. 43.
Central Shoe Co., to Brown Shoe Co., Inc., St. Louis, Mo. 202,630, ren. 5-18-65. Cl. 39.
Chamberlain Industries Ltd., London, England. 789,646, pub. 3-2-65. Cl. 23.
Chapman Water Sports Equipment Co., Costa Mesa, Calif. 676,159, canc. Cl. 1.
Char-Clean Co., The, Oklahoma City, Okla. 676,175, canc. Cl. 1.
Checkmate Chemicals, Inc., Greenville, S.C. 789,531, pub. 3-2-65. Cl. 6.
Chemical Service of Baltimore, Inc., Baltimore, Md. 789,528, pub. 3-2-65. Cl. 4.
Chips 'N Twigs, Inc. : *See*—
  Schwartz, William B.
Chrysler Corp., Highland Park, Mich. 411,653, ren. 5-18-65. Cl. 19.
Ciba Pharmaceutical Products Inc., Summit, N.J. 676,227, canc. Cl. 18.
Clark Aluminum Co., Houston, Tex. 789,541, pub. 3-2-65. Cl. 12.
Cluett, Peabody & Co., Inc., Troy, N.Y. 413,238, ren. 5-18-65. Cl. 39.
Cluett, Peabody & Co., Inc., New York, N.Y. 789,723, pub. 3-2-65. Cl. 39.
Colgate-Palmolive Co., New York, N.Y. 789,790, pub. 3-2-65. Cl. 51.
Collins, L. A., & Co., Inc., Long Beach, Calif., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 196,390, ren. 5-18-65. Cl. 51.
Columbia Dentaform Corp. : *See*—
  Columbia Dental & X-Ray Corp.
Columbia Dental & X-Ray Corp., to Columbia Dentaform Corp., New York, N.Y. 197,636, ren. 5-18-65. Cl. 44.
Congoleum-Nairn Inc., Kearny, N.J. 789,605, pub. 3-2-65. Cl. 20.
Conquip Co., Chicago, Ill. 789,634, pub. 3-2-65. Cl. 23.
Continental News, Inc., Los Angeles, Calif. 789,805. Cl. 38.
Contract Supply : *See*—
  Ald. Inc.
Cordier, Jean G., Labottiere, Bordeaux (Gironde), France. 789,814. Cl. 47.
Cortex Herald, The, Cortex, Colo. 676,356, canc. Cl. 38.
Cosby-Hodges Milling Co., Inc. : *See*—
  Cosby, W. M., Flour & Grain Co.
Cosby-Hodges Milling Co. Inc., Birmingham, Ala. 276,129, canc. Cl. 46.
Cosby-Hodges Milling Co. Inc., Birmingham, Ala. 297,557, canc. Cl. 46.
Cosby, W. M., Flour & Grain Co., to Cosby-Hodges Milling Co., Inc., Birmingham, Ala. 146,075, canc. Cl. 46.
Creative Laminates Co. : *See*—
  Anderson, Chas H., Floors, Inc.
Crestwood Wood Products, Inc., Brooklyn, N.Y. 676,267, canc. Cl. 22.
Criterion Leathersmiths : *See*—
  Mueller, Leo G.
Crompton & Knowles Corp., The, Worcester, Mass. 789,647, pub. 3-2-65. Cl. 23.
Crucible Steel Co. of America, Pittsburgh, Pa. 789,546, pub. 3-2-65. Cl. 14.

Curran, Edward, d.b.a. Ope-N-Eze, Jackson Heights, N.Y. 789,548, pub. 3-2-65. Cl. 15.

Curtis Lighting, Inc., Chicago, Ill. 676,246, canc. Cl. 21.

Curt's Oil Co.: *See*—
  Curt's Oil Co., Inc.

Curt's Oil Co., Inc., d.b.a. Curt's Oil Co., Lawton, Okla. 789,794, pub. 3-2-65. Cl. 105.

Daimler-Benz Aktiengesellschaft, Stuttgart-Untertuerkheim, Germany. 789,670, pub. 3-2-65. Cl. 35.

Dakin, R., & Co.-Importers: *See*—
  Dakin, R., & Co.

Dakin, R., & Co., from R. Dakin & Co.-Importers, San Francisco, Calif. 789,626, pub. 3-2-65. Cl. 22.

Davidow Suits, Inc., New York, N.Y. 789,714, pub. 3-2-65. Cl. 39.

Davis, G. W., Corp., New York, N.Y. 789,655, pub. 3-2-65. Cl. 23.

Decatur Foods, Inc., Decatur, Ark. 789,775-6, pub. 3-2-65. Cl. 46.

Del Castillo, Joan M., Bellport, N.Y. 789,678, pub. 3-2-65. Cl. 37.

Del Russo Enterprises, Miami, Fla. 676,444, canc. Cl. 51.

Denman Rubber Mfg. Co., The, Warren, Ohio. 789,673, pub. 3-2-65. Cl. 35.

Dentimex: *See*—
  Dijk, A. J.

Devoe & Raynolds Co., Inc., Louisville, Ky. 789,559, pub. 3-2-65. Cl. 16.

Deweese, Inc., Los Angeles, Calif. 789,721, pub. 3-2-65. Cl. 39.

Diamond Gardner Corp., from The Diamond Match Co., New York, N.Y. 676,158, canc. Cl. 1.

Diamond Match Co., The: *See*—
  Diamond Gardner Corp.

Diamond National Corp., New York, N.Y. 789,539, pub. 3-2-65. Cl. 12.

Diehl, John M.: *See*—
  Fieldler, William S.

Dijk, A. J., d.b.a. Dentimex, Zeist, Netherlands. 789,761, pub. 3-2-65. Cl. 44.

Diversey Corp., The, Chicago, Ill. 413,574, ren. 5-18-65. Cl. 4.

Dorothy Dodd Shoe Co., Montclair, N.J., and Boston, Mass., to International Shoe Co., St. Louis, Mo. 45,859, ren. 5-18-65. Cl. 39.

Dowsmith Inc., Little Rock, Ark. 789,534, pub. 3-2-65. Multiple Class (Classes 12, 13, and 34).

Drits, John, & Sons, Inc., Spartanburg, S.C. 789,543, pub. 3-2-65. Cl. 13.

Drits, John, & Sons, Inc., Spartanburg, S.C. 789,641, pub. 3-2-65. Cl. 23.

Drits, John, & Sons, Inc., Spartanburg, S.C. 789,658, pub. 3-2-65. Cl. 26.

Drits, John, & Sons, Inc., Spartanburg, S.C. 789,679, pub. 3-2-65. Cl. 37.

Dubin Veilings, Inc., New York, N.Y. 789,718, pub. 3-2-65. Cl. 39.

Duplan Corp., The, Winston-Salem, N.C. 676,407, canc. Cl. 43.

Duquesne Paint Co., to W. W. Lawrence & Co., d.b.a. Duquesne Paint Co., Pittsburgh, Pa. 201,995, ren. 5-18-65. Cl. 16.

Dutchess Underwear Corp., New York, N.Y. 789,697, pub. 3-2-65. Cl. 39.

Dynamatic Corp. Eaton Mfg. Co., Cleveland, Ohio. 419,309. Am. 7(d). Cl. 21.

Eagle Pencil Co., New York, N.Y. 676,332, canc. Cl. 37.

Easy Products, Inc., Hartford, Conn. 789,777, pub. 3-2-65. Cl. 46.

Eaton Mfg. Co.: *See*—
  Dynamatic Corp.

Eaton Mfg. Co., Cleveland, Ohio. 789,635, pub. 3-2-65. Cl. 28.

Electric Machinery Mfg. Co., Minneapolis, Minn. 789,618-19, pub. 3-2-65. Cl. 21.

Electro Compound Co.: *See*—
  Electro Compound Co., The.

Electro Compound Co., The, to Electro Compound Co., Cleveland, Ohio. 197,351, ren. 5-18-65. Cl. 15.

Englander Co., Inc., The, Chicago, Ill. 676,489, canc. Cl. 32.

Escalante, Jose, & Co., Chicago, Ill., to General Cigar Co., Inc., New York, N.Y. 198,179, ren. 5-18-65. Cl. 17.

Essex Wire Corp., Fort Wayne, Ind. 789,607, pub. 3-2-65. Cl. 21.

Etablissements Gaston Verdier (Societe Anonyme), Meaux, Seine-et-Marne, France. 196,284, ren. 5-18-65. Cl. 39.

Eversharp, Inc., Milford, Conn. 789,653, pub. 3-2-65. Cl. 23.

Exum, James G., Snow Hill, N.C. 414,789, ren. 5-18-65. Cl. 18.

Fairmark Mfg. Co., Chicago, Ill. 676,446, canc. Cl. 52.

Farboil Co., The, Baltimore, Md. 789,555, pub. 3-2-65. Cl. 16.

Farm Journal, Inc., Philadelphia, Pa. 789,809-10. Cl. 38.

Fedtro, Inc., Rockville Centre, N.Y. 789,621, pub. 3-2-65. Cl. 21.

Felt & Tarrant Mfg. Co., to Victor Comptometer Corp., Chicago, Ill. 45,076, ren. 5-18-65. Cl. 26.

Fender-Ful, Inc., Tenafly, N.J. 789,585, pub. 3-2-65. Cl. 19.

Fiedler, Stuart O.: *See*—
  Fiedler, William S.

Fiedler, William S., for himself and as administrator of the estate of Stuart O. Fiedler, deceased, John W. Frost, John M. Diehl, and Merton R. Barry, d.b.a. Jet Products, Madison, Wis. 789,629, pub. 3-2-65. Cl. 23.

Finn, Arthur D., d.b.a. Pacific Asbestos & Rubber Co., Emeryville, Calif. 789,672, pub. 3-2-65. Cl. 35.

First National Bank of Arizona, Phoenix, Ariz. 789,689, pub. 3-2-65. Cl. 38.

First Texas Pharmaceuticals, Inc., Dallas, Tex. 789,582, pub. 3-2-65. Cl. 18.

Flintkote Co., The: *See*—
  Pacific Lime and Plaster Co.

Florsheim Shoe Co., The, to International Shoe Co., Chicago, Ill. 202,751, ren. 5-18-65. Cl. 39.

Frenkel, Joseph, d.b.a. Advance Glove Mfg. Co., to Advance Glove Mfg. Co., Detroit, Mich. 414,016, ren. 5-18-65. Cl. 39.

Friedberg, Leonard: *See*—
  Rejuvia Beauty Laboratories, Inc.

Fromm Laboratories, Inc., Charles City, Iowa. 789,583, pub. 3-2-65. Cl. 18.

Frost, John W.: *See*—
  Fieldler, William S.

Furniture City Upholstery Co., Grand Rapids, Mich. 789,664, pub. 3-2-65. Cl. 32.

G.I. Plastics Corp., from Velsicol Chemical Corp., Chicago, Ill. 789,815. Cl. 50.

Gamlen Chemical Co., South San Francisco, Calif. 789,560, pub. 3-2-65. Cl. 16.

Gardner-Denver Co., Quincy, Ill. 789,633, pub. 3-2-65. Cl. 23.

Gaucho Food Products, Inc., Chicago, Ill. 789,767, pub. 3-2-65. Cl. 46.

Geigy Chemical Corp., Ardsley, N.Y. 789,579, pub. 3-2-65. Cl. 18.

Geilich Tanning Co., Taunton, Mass. 676,162, canc. Cl. 1.

General Aniline & Film Corp., New York, N.Y. 789,523, pub. 3-2-65. Cl. 1.

General Cigar Co., Inc.: *See*—
  Jose Escalante & Co.

General Motors Corp., Detroit, Mich. 789,656, pub. 3-2-65. Cl. 24.

Gibson, Whitmel H., Jourdanton, Tex. 676,238, canc. Cl. 18.

Gleason Reel Corp.: *See*—
  Maysteel Products Corp.

Gleason Works, The, Rochester, N.Y. 789,651, pub. 3-2-65. Cl. 23.

Globe Newspaper Co., Boston, Mass. 199,549, ren. 5-18-65. Cl. 38.

Globe Ticket Co., Philadelphia, Pa. 789,684, pub. 3-2-65. Cl. 37.

Gotham Ink & Color Co., Inc.: *See*—
  Kantor, Samuel T.

Graphtex Inc., Lodi, N.J. 789,690, pub. 3-2-65. Cl. 38.

Greene Enterprises, Inc., Oklahoma City, Okla. 676,274, canc. Cl. 22.

Gremar Mfg. Co., Inc., Wakefield, Mass. 789,615, pub. 3-2-65. Cl. 21.

Gro-Kote, Inc., Santa Rosa, Calif. 789,813. Cl. 46.

Groveton Papers Co., Groveton, N.H. 789,682, pub. 3-2-65. Cl. 37.

Haffenreffer & Co., Inc.: *See*—
  Boston Beer Co.

Hamilton Watch Co., Lancaster, Pa. 676,196, canc. Cl. 9.

Harrison Bros., Inc., New York, N.Y. 676,386, canc. Cl. 39.

Hart, Schaffner & Marx, Chicago, Ill. 203,002, ren. 5-18-65. Cl. 39.

Hermanos, Masso, to Masso Hermanos, S.A., Vigo, Spain. 197,960, ren. 5-18-65. Cl. 46.

Hill & Hill Distilling Co., Owensboro, Ky., and Cincinnati, Ohio, to National Distillers and Chemical Corp., d.b.a. National Distillers Products Co., New York, N.Y. 202,210, ren. 5-18-65. Cl. 49.

Hollywood Vassarette: *See*—
  Munsingwear, Inc.

Hubbell, Harvey, Inc., Bridgeport, Conn. 789,544, pub. 3-2-65. Cl. 13.

Humble Oil & Refining Co.: *See*—
  Standard Oil Co.

Hurst-Campbell, Inc., Glenside, Pa. 789,731, pub. 3-2-65. Cl. 39.

Huyck Corp., Rensselaer, N.Y. 789,735, pub. 3-2-65. Cl. 42.

Hydro Push Co., Seattle, Wash., from R. & G. Mfg. Co., Eugene, Oreg. 676,282, canc. Cl. 23.

ITT General Controls Inc.: *See*—
  International Telephone and Telegraph Corp.

Ideal Shoe Co., Philadelphia, Pa. 789,692, pub. 3-2-65. Cl. 39

Ilex Optical Co., to Ilex Optical Co., Inc., Rochester, N.Y. 192,451, ren. 5-18-65. Cl. 26.

Ilex Optical Co., Inc.: *See*—
  Ilex Optical Co

Imperial Furniture Co., Grand Rapids, Mich. 789,665, pub. 3-2-65. Cl. 32.

Imperial Furniture Co., Grand Rapids, Mich. 789,667, pub. 3-2-65. Cl. 32.

Infanseat Co., from Infanseat Co., Eldora, Iowa. 789,804. Cl. 32.

International Paper Co, New York, N.Y. 789,691, pub. 3-2-65. Cl. 38.

International Shoe Co.: *See*—
  Dodd, Dorothy, Shoe Co.
  Florsheim Shoe Co., The.

International Telephone and Telegraph Corp., New York, N.Y., from ITT General Controls Inc., Glendale, Calif. 789,542, pub. 3-2-65. Cl. 13

International Tool Co., Inc., Houston, Tex. 789,644, pub. 3-2-65. Cl. 23.

Interstate Chemical Co.: *See*—
  Interstate Industries, Inc.

Iowa Farm Boys Trailer Sales, Inc., Glendale, Calif. 789,590, pub. 3-2-65. Cl. 19.

Iris, Joan, Corp., New York, N.Y. 789,707, pub. 3-2-65. Cl. 39.

Isaac, Robert, Pharmaceutical Co.: *See*—
  Anderson, Robert L.

Jacobs, Eddie, Ltd., Baltimore, Md. 676,372, canc. Cl. 39.

Jaygot, Roxbury, Conn. 789,558, pub. 3-2-65. Cl. 16.

Jen Cel-Lite Corp.: *See*—
  Jensen Mfg. Co.

Jensen Mfg. Co., to Jen-Cel-Lite Corp., Seattle, Wash. 413,126, ren. 5-18-65. Cl. 39.

Jergens, Andrew, Co., The, Cincinnati, Ohio. 789,817. Cl. 51.

Jet Products: *See*—
  Fieldler, William S.

Johnson & Johnson, New Brunswick, N.J. 789,763, pub. 3-2-65. Cl. 44.

Johnson & Johnson, from Permacel-Le Page's Inc., from Permacel Tape Corp., New Brunswick, N.J. 676,205, canc. Cl. 12.

Kabro of Houston Inc.: *See*—
  Lynn, Lily, of Texas, Inc.

Kagan Textiles Ltd., Elland, England. 676,361, canc. Cl. 39.

Kalvar Corp., New Orleans, La. 789,688, pub. 3-2-65. Cl. 38.

Kantor, Samuel T., d.b.a. Gotham Ink & Color Co., to Gotham Ink & Color Co., Inc., Long Island City, N.Y. 415,674-6, ren. 5-18-65. Cl. 11.

Kapust, Alfred, Uphusen, Germany. 789,772, pub. 3-2-65. Cl. 46.

Kapust, Alfred, Uphusen, Germany. 789,573, pub. 3-2-65. Cl. 18.

Kelco Co., San Diego, Calif. 416,387, ren. 5-18-65. Cl. 46.

Keyes Fibre Co., Waterville, Maine. 786,560, cor. Cl. 2.

Kimberly-Clark Corp., Neenah, Wis. 789,675, pub. 3-2-65. Cl. 37.

Klopman Mills, Inc., Rockleigh Borough, N.J. 789,739-57, pub. 3-2-65. Cl. 42.

Kress & Owen Co., New York, N.Y., to Kress & Owen Co., Middletown, N.J. 45,169, ren. 5-18-65. Cl. 18.

L-J Enterprises, Inc., Boulder, Colo. 676,450, canc. Cl. 52.

L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude, Paris, France. 789,657, pub. 3-2-65. Cl. 26.

L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude, Paris, France. 789,663, pub. 3-2-65. Cl. 31.

Lake Shore Industries, Inc., Toledo, Ohio. 789,535, pub. 3-2-65. Cl. 12.

Lamb Industries, Inc., Toledo, Ohio. 789,622, pub. 3-2-65. Multiple Class (Classes 21 and 34).

La Primadora Cigar Corp., New York, N.Y. 789,563-5, pub. 3-2-65. Cl. 17.

Lawrence Children's Underwear Co., Inc., New York, N.Y. 789,706, pub. 3-2-65. Cl. 39.

Lawrence, W. W., & Co.: *See*—
  Duquesne Paint Co.

Lehn & Fink Products Corp., New York, N.Y. 414,111, ren. 5-18-65. Cl. 51.

Lifespan Products Co., Inc., Middle Village, N.Y. 789,576, pub. 3-2-65. Cl. 18.

Light Shield Co.: *See*—
  Rose, Joseph K.

Linen Thread Co., Inc., The, New York, N.Y. 676,272, canc. Cl. 22.

Link-Belt Co., Chicago, Ill. 789,643, pub. 3-2-65. Cl. 23.

Linzer, David & Sons, Inc., New York, N.Y. 676,322, canc. Cl. 29.

Liquid Nitrogen Processing Corp., Malvern, Pa. 789,522, pub. 3-2-65. Cl. 1.

Lone Star Boat Co., Plano, Tex. 789,602-4, pub. 3-2-65. Cl. 19.

Lynn, Lily, of Texas, Inc., from Kabro of Houston Inc., Houston, Tex. 789,708, pub. 3-2-65. Cl. 39.

MacDermid Inc., Waterbury, Conn. 412,101, ren. 5-18-65. Cl. 52.

Mack Trucks, Inc., Montvale, N.J. 789,598-9, pub. 3-2-65. Cl. 19.

Macy, R. H., & Co., Inc., New York, N.Y. 197,204, ren. 5-18-65. Cl. 18.

Madison Chemical Corp.: *See*—
  Carsello Chemical Products.

Maher Color & Chemical Co., Chicago, Ill. 789,784, pub. 3-2-65. Cl. 51.

Maircards: *See*—
  Caldwell, Marilyn S.

Manhattan Shirt Co., The, New York, N.Y. 789,722, pub. 3-2-65. Cl. 39.

Mantrose Corp., Brooklyn, N.Y. 676,218, canc. Cl. 16.

Mar Eld, Inc., San Jose, Calif. 789,720, pub. 3-2-65. Cl. 39.

Maradel Products, Inc., New York, N.Y. 789,785, pub. 3-24-64. Cl. 51.

Maradel Products, Inc., New York, N.Y. 789,819. Cl. 51.

Marcovitch & Co., Ltd., to The United Kingdom Tobacco Co., Ltd., London, England. 196,010, ren. 5-18-65. Cl. 17.

Mark Cross Co., Ltd., New York, N.Y. 789,566-70, pub. 3-2-65. Cl. 17.

Marshall Products Co., Columbus, Ohio. 769,506. Am. 7(d). Cl. 26.

Mastic Tile Corp. of America, The, Newburgh, N.Y. 676,317, canc. Cl. 26.

Maysteel Products Corp. from Gleason Reel Corp., Mayville, Wis. 786,747, cor. Cl. 23.

McCormick & Co., Inc., Baltimore, Md. 789,773, pub. 3-2-65. Cl. 46.

McGraw-Hill Publishing Co., Inc., New York, N.Y. 676,490, canc. Cl. 38.

Mead Corp., The, Dayton, Ohio. 789,685, pub. 3-2-65. Cl. 37.

Mead Johnson & Co., Evansville, Ind. 789,778, pub. 3-2-65. Cl. 46.

Mechanical Steel Tubing Corp., Bronx, N.Y. 676,207, canc. Cl. 12.

Melch & Stepp Tomato Co., Mission, Tex. 789,780, pub. 3-2-65. Cl. 46.

Mendelson, Felix M., San Francisco, Calif. 676,308, canc. Cl. 26.

Merck & Co., Inc., Rahway, N.J. 789,571, pub. 3-2-65. Cl. 18.

Merck & Co., Inc., Rahway, N.J. 789,575, pub. 3-2-65. Cl. 18.

Michaud, A., Co.: *See*—
  Michaud, Abner.

Michaud, Abner, d.b.a. A. Michaud Co., Philadelphia, Pa. 789,766, pub. 3-2-65. Cl. 46.

Michigan Chemical Corp., St. Louis, Mich. 789,530, pub. 3-2-65. Cl. 6.

Miller Art Mfg. Co.: *See*—
  Miller, Morris.

Miller, Morris, d.b.a. Miller Art Mfg. Co., New York, N.Y. 676,364, canc. Cl. 39.

Minnesota Mining and Mfg. Co., St. Paul, Minn. 789,796. Cl. 6.

Misceramic Tile, Inc., Cleveland, Miss. 789,645, pub. 3-2-65. Cl. 23.

Modern Metal Products Co., Greensboro, N.C. 789,668, pub. 3-2-65. Cl. 32.

Money Guide, Inc., New York, N.Y. 676,354, canc. Cl. 38.

Moore, E. R., Co., Chicago, Ill. 789,719, pub. 3-2-65. Cl. 39.

Moreno Frozen Foods, Inc., Los Angeles, Calif. 676,496, canc. Cl. 46.

Morgan Adhesives Co., Stow, Ohio. 789,524, pub. 3-2-65. Cl. 1.

Morris, Philip, Inc., New York, N.Y. 789,788-9, pub. 3-2-65. Cl. 51.

Mother's Cake & Cookie Co., d.b.a. Venus Foods, Oakland, Calif. 789,770, pub. 3-2-65. Cl. 46.

Moxness Products, Inc., Racine, Wis. 789,616, pub. 3-2-65. Cl. 21.

Mrs. Smith's Pie Co., Pottstown, Pa. 789,525, pub. 3-2-65. Cl. 2.

Mueller, Leo G., d.b.a. Criterion Leathersmiths, Sharon, Mass. 676,339, canc. Cl. 37.

Munsingwear, Inc., d.b.a. Hollywood Vassarette, Minneapolis, Minn. 789,712, pub. 3-2-65. Cl. 39.

Musicmaster Publications, Inc., Jackson Heights, N.Y. 789,806. Cl. 38.

National Biscuit Co., New York, N.Y. 789,779, pub. 3-2-65. Cl. 46.

National Dairy Products Corp., Chicago, Ill. 789,769, pub. 3-2-65. Cl. 46.

National Distillers and Chemical Corp.: *See*—
  Hill & Hill Distilling Co.

National Distillers Products Co.: *See*—
  Hill & Hill Distilling Co.

Naumkeag Steam Cotton Co., Salem, Mass., to The Springs Cotton Mills, Lancaster, S.C. 45,094, ren. 5-18-65. Cl. 42.

Nestlé Co., Inc., The: *See*—
  Nestle's Milk Products, Inc.

Nestle's Milk Products, Inc., New York, to The Nestlé Co., Inc., White Plains, N.Y. 415,948, ren. 5-18-65. Cl. 46.

New Hampshire Pink Granite Co., Nashua, N.H. 676,469, canc. Cl. 12.

New York Herald Tribune, Inc., from New York Herald Tribune, Inc., New York, N.Y. 676,351, canc. Cl. 38.

North American Cigarette Manufacturers, Inc., New York, N.Y. 676,222, canc. Cl. 17.

Norton Co.: *See*—
  Behr-Manning Corp.

Ogilvie Sisters, to Lehn & Fink Products Corp., New York, N.Y. 197,180, ren. 5-18-65. Cl. 51.

Old Town Corp.: *See*—
  Old Town Ribbon & Carbon Co Inc.

Old Town Ribbon & Carbon Co. Inc., to Old Town Corp., Brooklyn, N.Y. 416,285, ren. 5-18-65. Cl. 11.

Ope-N-Eze: *See*—
  Curran, Edward.

Ortho Pharmaceutical Corp., Raritan, N.J. 789,574, pub. 3-2-65. Cl. 18.

Owatonna Tool Co., Owatonna, Minn. 789,632, pub. 3-2-65. Cl. 23.

Owens-Illinois Glass Co., Toledo, Ohio. 789,782, pub. 3-2-65. Cl. 50.

Pacific Asbestos & Rubber Co.: *See*—
  Finn, Arthur D.

Pacific Lime and Plaster Co., San Francisco, Calif., to The Flintkote Co., New York, N.Y. 197,376, ren. 5-18-65. Cl 12.

Pacific Paper Products, Inc., Tacoma, Wash. 789,680-1, pub. 3-2-65. Cl. 37.

Pacific Undergarment Co., Inc., New York, N.Y. 789,713, pub. 3-2-65. Cl 39.

Packer Mfg. Co., Green Bay, Wis. 789,630, pub. 3-2-65. Cl. 23.

Palco Products Corp., New York, N.Y. 789,774, pub. 3-2-65. Cl. 46.

Palmedico, Inc., Columbia, S.C. 789,572, pub. 3-2-65. Cl. 18.

Parker Metal Products Co., Chicago, Ill. 676,208, canc. Cl. 12.

Parker Sweeper Co., Springfield, Ohio. 789,638, pub. 3-2-65. Cl. 23.

Patch, E. L., Co., The, Stoneham, Mass., to Smith, Miller & Patch, Inc., New York, N.Y. 197,844, ren. 5-18-65. Cl. 18.

Patterson Kelley Co., Inc., The, East Stroudsburg, Pa. 789,636, pub. 3-2-65. Cl. 23.

Perfect Equipment Corp., Kokomo, Ind. 789,584, pub. 3-2-65. Cl. 19.

Permacel-Le Page's Inc.: *See*—
  Johnson & Johnson.

Permacel Tape Corp.: *See*—
  Johnson & Johnson.

Permatex Co., Inc., Brooklyn, N.Y. 789,551, pub. 3-2-65. Cl. 15.

Peyron, Antoine Francois Regis, Paris, France. 676,321, canc. Cl. 29.

Pfeifer, Charles F., New Canaan, Conn. 789,650, pub. 3-2-65. Cl. 23.

Philadelphia Quartz Co., Philadelphia, Pa. 414,766. Am. 7(d). Cl. 52.
Photostat Corp., Providence, R.I. 676,331, canc. Cl. 37.
Pillsbury Co., The, from Pillsbury Mills, Inc., Minneapolis, Minn. 676,174, canc. Cl. 1.
Pillsbury Mills, Inc.: *See—*
  Pillsbury Co., The.
Pinaud, Ed., Inc.: *See—*
  Pinaud, Inc.
Pinaud, Inc., to Ed. Pinaud, Inc., New York, N.Y. 410,314, ren. 5–18–65. Cl. 51.
Placentia Orange Growers Association, Fullerton, to Placentia Orange Growers Association, Placentia, Calif. 202,695, ren. 5–18–65. Cl. 46.
Poise N' Ivy, Inc., Hialeah, Fla. 789,730, pub. 3–2–65. Cl. 39.
Polson, Kenneth M., Williams, Ariz. 789,781, pub. 3–2–65. Cl. 50.
Prince Macaroni Mfg. Co., Lowell, Mass. 789,811. Cl. 46.
Procter & Gamble Co., The, Cincinnati, Ohio. 789,786, pub. 3–2–65. Cl. 51.
Qualitad Sales Corp., The, New York, N.Y. 789,676, pub. 3–2–65. Cl. 37.
R. & G. Mfg. Co.: *See—*
  Hydro Push Co.
RRD Inc., Tampa, Fla. 789,617, pub. 3–2–65. Cl. 21.
Rectalator Co., Los Angeles, Calif. 789,762, pub. 3–2–65. Cl. 44.
Rejuvia Beauty Laboratories, Inc., from L. Friedberg, New York, N.Y. 676,447, canc. Cl. 52.
Research and Investments, Inc., d.b.a. ABC Stores, Inc., Evansville, Ind. 789,793, pub. 3–2–65. Cl. 100.
Revlon, Inc., New York, N.Y. 676,504, canc. Cl. 51.
Revlon, Inc., New York, N.Y. 789,818. Cl. 51.
Revlon, Inc., New York, N.Y. 789,820. Cl. 51.
Reyman Drug Co., Inc., Baltimore, Md. 789,801. Cl. 18.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 789,683, pub. 3–2–65. Cl. 37.
Rheem Mfg. Co., Richmond, Calif. 676,326, canc. Cl. 34.
Richards, Caryl, Inc., New York, N.Y. 789,787, pub. 3–2–65. Multiple Class (Classes 51 and 52).
Rielly Co., Inc., New York, N.Y. 789,725, pub. 3–2–65. Cl. 39.
Rietz, Carl A., d.b.a. Jos. Wagner Mfg. Co., San Francisco, to Rietz Mfg. Co., Santa Rosa, Calif. 415,756, ren. 5–18–65. Cl. 23.
Rietz Mfg. Co.: *See—*
  Rietz, Carl A.
Roberts, John, Inc., East Boston, Mass. 789,694, pub. 3–2–65. Cl. 39.
Rockwell Mfg. Co., Pittsburgh, Pa. 789,640, pub. 3–2–65. Cl. 23.
Rodney Milling Co., to Seaboard Allied Milling Co., Kansas City, Mo. 199,345, ren. 5–18–65. Cl. 46.
Romper Room, Inc., Baltimore, Md. 789,623, pub. 2–23–65. Cl. 22.
Romrell, R. T., Enterprises, Inc., Idaho Falls, Idaho. 789,587, pub. 3–2–65. Cl. 19.
Ronna Knitwear and Sunny Sportswear, Inc., Nashville, Tenn. 789,717, pub. 3–2–65. Cl. 39.
Rose, Joseph K., d.b.a. Light Shield Co., Highland Park, Ill. 789,659, pub. 3–2–65. Cl. 26.
Ross-Martin Co., Tulsa, Okla. 789,686, pub. 3–2–65. Cl. 37.
Rubbermaid Inc., Wooster, Ohio. 789,597, pub. 3–2–65. Cl. 19.
Rust Master Chemical Corp., Worcester, Mass. 789,552, pub. 3–2–65. Cl. 15.
Safety First Shoes, Inc., Allentown, Pa. 789,715, pub. 3–2–65. Cl. 39.
Safety Sake Enterprises, Inc., Phoenix, Ariz. 789,601, pub. 3–2–65. Cl. 19.
Sanford Ink Co., Bellwood, Ill. 412,771, ren. 5–18–65. Cl. 11.
Schwartz, B., & Co.: *See—*
  Schwartz, William B.
Schwartz, William B., d.b.a. B. Schwartz & Co., to Chips 'N Twigs, Inc., Philadelphia, Pa. 414,492, ren. 5–18–65. Cl. 39.
Scientific Supply Co., Inc., Denver, Colo. 789,791, pub. 3–2–65. Cl. 52.
Seaboard Allied Milling Co.: *See—*
  Rodney Milling Co.
Sears, Roebuck and Co., Chicago, Ill. 676,168, canc. Cl. 1.
Sears, Roebuck and Co., Chicago, Ill. 789,696, pub. 3–2–65. Cl. 39.
Shelley Knitting Mills, Inc., Philadelphia, Pa. 676,378, canc. Cl. 39.
Shimano Kogyo Kabushiki Kaisha, Sakai, Japan. 789,596, pub. 3–2–65. Cl. 19.
Ship 'N Shore, Inc., Upland, Pa. 789,701, pub. 3–2–65. Cl. 39.
Shoo-Zees Mfg. Co., Higginsport, Ohio. 789,705, pub. 3–2–65. Cl. 39.
Siceloff Mfg. Co., Inc.: *See—*
  Siceloff Mfg. Co.
Siceloff Mfg. Co., to Siceloff Mfg. Co., Inc., Lexington, N.C. 413,697, ren. 5–18–65. Cl. 39.
Silver Plastics, Inc., Southampton, Pa. 789,674, pub. 3–2–65. Cl. 36.
Simplot, J. R., Co., Boise, Idaho. 789,771, pub. 3–2–65. Cl. 46.
Smith Enterprises: *See—*
  Smith, Nervin P.
Smith, Miller & Patch, Inc.: *See—*
  Patch, E. L., Co., The.
Smith, Nervin P., d.b.a. Smith Enterprises, Miami, Fla. 676,263, canc. Cl. 22.
Smith, S. H., Co., The, Indianapolis, Ind. 676,355, canc. Cl. 38.
Smoler, Boris, & Sons, Inc., Chicago, Ill. 789,703, pub. 3–2–65. Cl. 39.
Sobelta, Societe Belge de Teintures et Apprets, Chaussee de Tronchiennes Ghent, Belgium. 789,733, pub. 3–2–65. Cl. 42.
Sociedad Anonima Quebrachales Fusionados, Buenos Aires, Argentina. 196,322, ren. 5–18–65. Cl. 6.
Soilserv, Inc., Salinas, Calif. 789,642, pub. 3–2–65. Cl. 23.
Sooner Pipe & Supply Corp., Tulsa, Okla. 789,628, pub. 3–2–65. Cl. 23.
Southwest Products Co., Monrovia, Calif. 676,298, canc. Cl. 23.
Spero Electric Corp., Cleveland, Ohio. 789,609, pub. 3–2–65. Cl. 21.
Sperry Rand Corp., New Holland, Pa. 676,296, canc. Cl. 23.
Spotnails, Inc., Rolling Meadows, Ill. 413,687, ren. 5–18–65. Cl. 13.
Sprayon Products, Inc., Bedford Heights, Ohio. 789,648–9, pub. 3–2–65. Cl. 23.
Springs Cotton Mills, The: *See—*
  Naumkeag Steam Cotton Co.
Staflex International Ltd., London, England. 789,734, pub. 3–2–65. Cl. 42.
Standard Fire Alarm & Signal Inc., Jenkintown, Pa. 789,797. Cl. 6.
Standard Metal Products Co., Inc., Mansfield, Mass. 789,661, pub. 3–2–65. Cl. 28.
Standard Oil Co. (New Jersey), Bayonne, N.J., to Humble Oil & Refining Co., Houston, Tex. 196,392, ren. 5–18–65. Cl. 6.
Standard Products Corp., Brockton, Mass. 789,662, pub. 3–2–65. Cl. 29.
Stardust Cruiser Mfg. Co., Chattanooga, Tenn. 789,589, pub. 3–2–65. Cl. 19.
Statler Homes, Inc., Dallas, Tex. 789,586, pub. 3–2–65. Cl. 19.
Stevens Boat Mfg.: *See—*
  Stevens, Mack E.
Stevens, J. P., & Co., Inc., New York, N.Y. 789,758, pub. 3–2–65. Cl. 42.
Stevens, Mack E., d.b.a. Stevens Boat Mfg., Gardena, Calif. 789,600, pub. 3–2–65. Cl. 19.
Still Fish Reel Co., Toledo, Ohio. 789,625, pub. 3–2–65. Cl. 22.
Stoeger Arms Corp., South Hackensack, N.J. 789,549, pub. 3–2–65. Cl. 15.
Stoeger Arms Corp., South Hackensack, N.J. 789,562, pub. 3–2–65. Cl. 16.
Stoeger Arms Corp., South Hackensack, N.J. 789,792, pub. 3–2–65. Cl. 52.
Stone Mfg. Co., Greenville, S.C. 789,695, pub. 3–2–65. Cl. 39.
Storz Brewing Co., Omaha, Nebr. 676,428, canc. Cl. 48.
Stowe-Woodward, Inc., Newton Upper Falls, Mass. 789,627, pub. 3–2–65. Cl. 22.
Stowe-Woodward, Inc., Newton Upper Falls, Mass. 789,631, pub. 3–2–65. Cl. 23.
Stratton Furniture Mfg. Co., Hagerstown, Md. 415,641, ren. 5–18–65. Cl. 32.
Stuart Sport Specialties, Inc., d.b.a. Al's Goldfish Lure Co., Indian Orchard, Mass. 789,803. Cl. 22.
Style Undies, Inc., Ozone Park, N.Y. 789,698, pub. 3–2–65. Cl. 39.
Style Vogues, Inc., New York, N.Y. 676,387, canc. Cl. 39.
Summers Laboratories, Inc., Fort Washington, Pa. 789,580–1, pub. 3–2–65. Cl. 18.
Sunbeam Corp., Chicago, Ill. 789,660, pub. 3–2–65. Cl. 27.
Superior Sales Co., Fort Worth, Tex. 789,802. Cl. 22.
Superlite Mfg. Corp., St. Louis, Mo. 676,248, canc. Cl. 21.
Swanson Mfg. Co., Owosso, Mich. 789,608, pub. 3–2–65. Cl. 21.
Tandberg of America, Inc., Pelham, N.Y. 789,611, pub. 3–2–65. Cl. 21.
Tel-E-Lect Products, Inc., Minneapolis, Minn. 785,900, cor. Cl. 19.
Thomson Industries, Inc., Manhasset, N.Y. 789,637, pub. 3–2–65. Cl. 23.
Treibacher Chemische Werke Aktiengesellschaft, Treibach, Karnten, Austria. 789,545, pub. 3–2–65. Cl. 14.
Turtle Wax, Inc., Chicago, Ill. 789,550, pub. 3–2–65. Cl. 15.
Ulman, Max, Inc., New York, N.Y. 789,693, pub. 3–2–65. Cl. 39.
Uniform Center, New York, N.Y. 676,492, canc. Cl. 39.
Unimark Corp., San Ramon, Calif. 789,610, pub. 3–2–65. Cl. 21.
Unishops, Inc., Jersey City, N.J. 789,724, pub. 3–2–65. Cl. 39.
United Kingdom Tobacco Co., Ltd.: *See—*
  Marcovitch & Co., Ltd.
United Merchants and Manufacturers, Inc., New York, N.Y. 789,783, pub. 3–2–65. Cl. 50.
United Park City Mines Co., Salt Lake City, Utah. 789,732, pub. 3–2–65. Cl. 40.
United States Olympic Association, d.b.a. The United States Olympic Committee, New York, N.Y. 789,795, pub. 3–2–65. Cl. 107.
United States Olympic Committee, The: *See—*
  United States Olympic Association.
United States Rubber Co., New York, N.Y. 676,259, canc. Cl. 22.
United States Spice Corp., The, New York, N.Y. 789,768, pub. 3–2–65. Cl. 46.
United States Steel Corp.: *See—*
  Atlas Portland Cement Co.
United States Steel Corp., Pittsburgh, Pa. 789,547, pub. 3–2–65. Cl. 14.
Universal Fluid Dynamics Co., Alpena, Mich. 789,639, pub. 3–2–65. Cl. 23.
Utica Cutlery Co., Utica, N.Y. 789,652, pub. 3–2–65. Cl. 23.
Velsicol Chemical Corp.: *See—*
  G.I. Plastics Corp.

Venus Foods: *See—*
  Mother's Cake & Cookie Co.
Verley, Albert, & Co., Linden, N.J. 676,186, canc. Cl. 6.
Victor Comptometer Corp.: *See—*
  Felt & Tarrant Mfg. Co.
Vida Mosaic Co., San Francisco, Calif. 789,536, pub. 3–2–65. Cl. 12.
Vogue Shoe, Inc., Los Angeles, Calif. 789,702, pub. 3–2–65. Cl. 39.
Volunteer Community Activities Clearinghouse, Inc., Washington, D.C. 789,807. Cl. 38.
Wagner, John, & Sons Inc., Hatboro, Pa. 676,261, canc. Cl. 22.
Wagner, Jos., Mfg. Co.: *See—*
  Rietz, Carl A.
Wales Mfg. Co., Boston, Mass. 789,726, pub. 3–2–65. Cl. 39.
Wallace Silversmiths, Inc., Wallingford, Conn. 676,281, canc. Cl. 23.
Wallace Silversmiths, Inc., Wallingford, Conn. 676,299, canc. Cl. 23.
Wander Co., The, Chicago, Ill. 789,800. Cl. 18.
War, Florence, Paterson, N.J. 676,443, canc. Cl. 50.
Warner-Lambert Pharmaceutical Co.: *See—*
  Collins, L. A., & Co., Inc.
Wembley, Inc., New Orleans, La. 789,699–700, pub. 3–2–65. Cl. 39.
Western Brands, Inc., Denver, Colo. 799,816. Cl. 51.
Westway Petroleum Co., Portland, Oreg. 789,553, pub. 3–2–65. Cl. 15.
Weyerhaeuser Co., Tacoma, Wash. 789,521, pub. 3–2–65. Cl. 1.
White Wonder Chemical Co.: *See—*
  White Wonder Co., The.
White Wonder Co., The, Montgomery, to White Wonder Chemical Co., Selma, Ala. 197,145, ren. 5–18–65. Cl. 18.
Winnebago Industries, Inc., Forest City, Iowa. 789,533, pub. 3–2–65. Cl. 12.
Wyandotte Chemicals Corp., Wyandotte, Mich. 412,950, ren. 5–18–65. Cl. 6.

U.S. GOVERNMENT PRINTING OFFICE : O—1965

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
May 25, 1965 Volume 814 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of April 1965

Examiner affirmed	261
Examiner affirmed in part	46
Examiner reversed	95
Total	402

Reminder—Automatic Furnishing of References

Letters authorizing automatic furnishing of references are not honored if received *after* the prosecution has been closed by:

Final Rejection
Allowance (or Patenting)
Ex Parte Quayle Action
Abandonment

Effective May 17, 1965, such letters will not be returned.

R. A. WAHL,
Superintendent, Patent Examining Corps.

Concur:
C. A. KALK,
Director of Administration.

April 16, 1965.

Geographical Index of Residence of Inventors

This issue of the OFFICIAL GAZETTE contains an index of the residence of inventors represented in the patents announced herein. It includes only inventors who at the time of application filing resided in a State or Territory of the United States, the Commonwealth of Puerto Rico, or the Canal Zone or who were members of the U.S. Armed Services. When there are two or more inventors, the index entry is based on the residence of the inventor whose name appears first in the patent application. Information for the index is obtained from the residence entry shown on the oath or declaration accompanying the application for patent.

The index consists of lists of patent numbers grouped by major geographical areas. With this information, users may find in the body of the OFFICIAL GAZETTE the names, locations, and subjects of invention of inventors representing the respective areas.

Future issues of the OFFICIAL GAZETTE will contain a like index. Communications concerning its use and value are invited.

May 3, 1965.

Notice of Tentative Recordation of a Trade Name

[T.D. 56394]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., April 14, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946 and section 11.16, Customs Regulations:

> "FANON-MASCO," the trade name used by Fanon Electronic Industries, Inc., a corporation organized under the laws of the State of New York, located and doing business at 439 Frelinghuysen Avenue, Newark, New Jersey. The trade name is associated with merchandise comprising electronic amplification, communication, recording, reproducing and signaling equipment and components thereof, manufactured in Japan.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after May 14, 1965, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after May 14, 1965, of any opposition proceeding.

Until 45 days after May 14, 1965, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

LESTER D. JOHNSON,
Acting Commissioner of Customs.

International Convention for the Protection of Industrial Property

Accession by Southern Rhodesia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by Southern Rhodesia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 4, 1965.

New Applications Received During March 1965

Patents	8708
Designs	547
Plant Patents	5
Reissues	19
Total	9279

Issue—May 25, 1965

Patents	1248	—No.	3,184,756	to No.	3,186,003, incl.
Designs	67	—No.	201,172	to No.	201,238, incl.
Plant Patents	5	—No.	2,517	to No.	2,521, incl.
Total	1320				

International Convention for the Protection of Industrial Property

Accession by Zambia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by the Republic of Zambia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.

May 4, 1965.

Adjudicated Patents

(C.A. Tex.) Stein and Franco Patent No. 2,921,390 (104—7), for BALLAST PLOW FOR USE UNDER RAILWAY TRACKS. Claims 1, 2, 10 and 11 *Held* invalid. *Mannix Company Limited* v. *Healey*, 341 F.2d 1009; 144 USPQ 611.

(C.A. Tex.) Christoff Patent No. 2,961,972 (104—7), for BALLAST PLOW FOR USE UNDER RAILROAD TRACKS. Claims 1, 2, 10 and 11 *Held* invalid. *Id.*

Patents Available for Licensing or Sale

3,165,219. NURSING BOTTLE APPLIANCE. Robert A. Johnson, 412 2nd Ave., S., South St. Paul, Minn.

3,172,529. TUBE DRAWING PROCESS AND APPARATUS. Th. Kieserling & Albrecht, Solingen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y.

3,175,230. BOLSTER FOR NIGHT WEAR. Astrid L. Herdal, 717 22nd St., Sacramento, Calif.

3,176,862. JUNIOR SHOVEL. D. W. McKinney, et al., P.O. Box 731, Paradise, Calif., 95969.

3,178,144. LANTERN HOLDER. John Kimoto, 3034 W. Van Buren St., Chicago 12, Ill.

United Aircraft Corporation is prepared to grant the following licenses under the patent set forth below.

2,987,610. METHOD AND MEANS FOR WELDING USING A CONTROLLED BEAM OF CHARGED PARTICLES.

a. An irrevocable, nonexclusive, royalty-free license to any person or organization to practice the patented method through the use of a beam of charged particles generated by each device acquired prior to April 14, 1965.

b. A nonexclusive license at a reasonable royalty, to any person or organization to practice the patented method through the use of a beam of charged particles generated by each device acquired on or after April 14, 1965.

Applications for license under that patent may be addressed to: United Aircraft Corporation, 400 Main St., East Hartford, Conn., 06108. Attn: Charles L. Shelton, Director, Patent Section.

Reynolds Metals Company is prepared to grant nonexclusive licenses under the following patent. Correspondence should be addressed to: Patent Counsel, Reynolds Metals Co., Richmond, Va., 23218.

3,164,494. BRIGHT FINISHED ALUMINUM ALLOY SYSTEM.

General Electric Company is prepared to grant nonexclusive licenses under the following 32 patents upon reasonable terms to domestic manufacturers.

Application for licenses under the following patent may be addressed to: General Electric Company, P. E. Rochford, Patent Counsel, Wiring Device Department, Construction Industries Division, 1285 Boston Ave., 1B, Bridgeport, Conn., 06602.

3,124,021. WIRE INSULATION STRIPPER.

Applications for license under the following 2 patents may be addressed to: General Electric Company, Patent Counsel, Silicone Products Department, Chemical and Metallurgical Division, Waterford, N.Y., 12188.

2,714,115. ETHANOL - MISCIBLE METHYLPHENYL-BUTOXYPOLY-SILOXANE.

3,153,006. FLUIDIZABLE CATALYSTS CONTAINING MONOORGANOSILOXANE UNITS AND OXY-CONTAINING UNITS DERIVED FROM ALUMINUM, BORON, AND TIN.

Applications for license under the following 6 patents may be addressed to: Patent Counsel, Major Appliance Division, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,066,497. REVERSIBLE REFRIGERATION SYSTEM.

3,144,759. WASHING MACHINE.

3,170,314. WASHING SYSTEM FOR ECONOMIZING ON WATER USAGE.

3,172,848. CENTRIFUGAL EXTRACTION MACHINE HAVING SPEED CONTROL MEANS RESPONSIVE TO UNBALANCED WEIGHT DISTRIBUTION.

3,174,301. HEAT EXCHANGER STRUCTURE.

3,174,539. AIR CONDITIONING UNIT.

Applications for license under the following 23 patents may be addressed to: Patent Counsel, Light Military Electronics Department, General Electric Company, Utica, N.Y.

2,869,004. PULSE GENERATING ELECTRIC CIRCUIT ARRANGEMENTS.

2,907,620. POLAR PLOTTER.

2,954,522. TRANSIENT FREQUENCY METER.

2,970,575. MULTIPLE INPUT HYDRAULIC AMPLIFIER.

2,987,273. SENSING DEVICE AND DAMPING SYSTEM FOR AIRCRAFT.

2,987,666. SOLID STATE POWER STAGE AMPLIFIER EMPLOYING SILICON RECTIFIERS AND HALF-CYCLE RESPONSE MAGNETIC AMPLIFIERS.

2,992,330. POSITION INDICATING SYSTEM.

3,001,054. HEATING PANEL HAVING A PLURALITY OF CURRENT PATHS.

3,001,116. SERVOSYSTEM INVERSE GAIN CHANGER.

3,002,113. PULSE FORMING APPARATUS.

3,004,429. DYNAMIC FLOWMETER.

3,004,638. FLOATING NUT WITHIN TUBULAR STRUCTURE.

3,007,997. PRINTED CIRCUIT BOARD.

3,010,032. TRIGGERED TRANSISTORIZED BLOCKING OSCILLATOR WITH SATURABLE TRANSFORMER.

3,010,222. CONTACT FLIGHT DISPLAY.

3,101,479. TIME MODULATED FLUID CONTROL VALVE.

3,013,254. INFORMATION STORAGE APPARATUS.

3,014,211. DIGITAL-TO-ANALOG CONVERTER.

3,015,739. DIRECT-CURRENT CHARGED MAGNETIC MODULATOR.

3,015,779. APPARATUS FOR PULSE-WIDTH DISCRIMINATION.

3,022,448. MODULAR ELECTRONIC SUB-ASSEMBLIES AND METHOD OF FABRICATING.

3,022,501. DRAWING TAPE PROGRAMMER.

3,060,752. GYROSCOPE.

Registration to Practice

The following list contains the names of all applicants for registration to practice before the United States Patent Office who attained passing grades in the examination of February 9, 1965. Information tending to affect the eligibility of any of said applicants on moral or ethical grounds should be furnished the Commissioner of Patents on or before June 24, 1965.

S. WM. COCHRAN,
Vice-Chairman, Committee on Enrollment.

May 3, 1965.

List of Applicants Who Passed the Examination for Registration to Practice Before the Patent Office Held February 9, 1965

Alabama

Eberhardt, Wayne B., 2403 Crestview Drive, SE., Decatur, Ala.

California

Baynham, Robert J., 53 N. Keeble, Apt. 10, San Jose, Calif. 95126
Beck, Robert A., 6411 Snake Road, Oakland, Calif.
Belt, Taylor M., 2318 Glenada, Montrose, Calif. 91020
Bryant, Austin U., 2349 San Juan Ave., Walnut Creek, Calif.
Carney, Hayden A., 595 E. Colorado Blvd., Pasadena, Calif. 91101
Dannells, Richard A., Jr., 365 Coventry Road, Berkeley, Calif. 94707
Dugas, Edward, 5908 Los Arcos Way, Buena Park, Calif.
Fine, Timothy H., 907 9th St., Albany, Calif. 94710
Holaday, Harold O., 2265 Del Mar Road, Montrose, Calif.
Holman, Emmette R., 1300 Granvia Altamira, Palos Verdes Estates, Calif. 90275
Jacobs, Bradley L., 1629 N. 2nd Ave., Upland, Calif. 91786
Jones, Stanley R., 4931 Ocean View Blvd., La Canada, Calif.

Lippman, Peter I., 156 Wyland Way, Apt. 5, Monrovia, Calif. 91016
McCoy, Ernest H., 20353 Park Way, #37, Castro Valley, Calif.
McDonald, William F., 689 Spruce St., San Francisco 18, Calif.
Meads, Robert R., 6930 Clovercliff Drive, Palos Verdes Peninsula, Calif.
Mohn, John Peter, 5037 Narragansett Ave., Apt. #5, San Diego, Calif. 92107
Mok, Louis, 531 Ridgway Lane, #15, La Habra, Calif. 90632
Morrissey, Clarence J., P.O. Box 54342, Los Angeles 54, Calif.
Mossino, Ralph L., 1275 Spruce St., Livermore, Calif.
Rubin, Herbert, 899 Hillside St., Albany 6, Calif.
Sandford, Dean, 333 S. Loretta Drive, Orange, Calif. 92667
Wallen, Richard A., 417 S. Hill St., Suite 900, Los Angeles 13, Calif.
Weger, Richard E., 801 S. K St., Livermore, Calif. 94550
Weis, Berthold J., 450 Amaral Circle, Pleasanton, Calif.
Western, Marion Wayne, 2932 Grande Courte, Walnut Creek, Calif.

Connecticut

James, Richard N., United Aircraft Corp., East Hartford 8, Conn.
Kalman, Stan C., 655 Mix Ave., Apt. #B–14, Hamden, Conn. 06514
Kline, Robert E., 331 Church Hill Road, Trumbull, Conn.
Reens, Louis H., 10 Daniel Blvd., Bloomfield, Conn.
Seemar, Frank A., 719 Old Stamford Road, New Canaan, Conn.
Wheeless, Kenneth G., Box 1091, New Haven, Conn.

Delaware

Haase, Charles Albert, 2100 Mousley Place, Brandywood, Wilmington, Del. 19803
Kerr, Don M., 300 Tindall Road, Wilmington, Del. 19805

District of Columbia

Abrams, Neal Edward, 4719 Butterworth Place NW., Washington, D.C.
Adelman, Martin J., 1629 Columbia Road NW., Washington, D.C.
Battist, Gerald, 4117 W St., Washington, D.C. 20007
Berman, Eugene, 1150 12th St. NW., Washington, D.C.
De Peyster, James A., Jr., 323 6th St. SE., Washington, D.C. 20004
Flynn, Edward Michael, 1337 30th St. NW., Washington, D.C.
Gerety, Daniel A., 1337 30th St. N.W., Washington, D.C.
Hoffmann, Thomas James, 601 18th St. NW., Washington, D.C.
Lasker, Robert J., 119 2nd St. NE., Washington, D.C. 20002
Myers, Michael J., 1337 30th St. NW., Washington, D.C. 20007
Petry, Marvin, 3636 16th St. NW., Washington, D.C. 10010
Plant Lawrence Bruce, % General Motors Corp., 711 14th St. NW., Washington, D.C.
Pugh, C. Emmet, 1730 18th St. NW., Washington, D.C. 20009
Schmidt, Dana M., 2020 F St. NW., #106, Washington 6, D.C.
Wise, Lowell G., 2209 42nd St. NW., Washington, D.C. 20007
Wray, James C., 1000 Connecticut Ave., Washington, D.C. 20036

Florida

Sims, James G., 1818 E. Brainerd St., P.O. Box 2304, Pensacola, Fla. 32503.

Illinois

Allen, Franklin Glenn, 2801 N. Sheridan Road, Chicago, Ill. 60657
Backus, Richard E., 850 W. Argyle St., Chicago, Ill. 60640
Bergendorf, Harold W., 29 Dover Drive, Des Plaines, Ill.
Fitz-Gerald, Roger M., 1427 N. State Parkway, Chicago, Ill. 60610
Hosier, Jerry D., 1028 Austin, Oak Park, Ill.
McAndrews, George P., 2662 E. 73rd, Chicago, Ill. 60649
Meloy, Sybil P., 5616 N. Washtenaw, Chicago, Ill. 60645
Morgan Paul F., 1715 Crilly Court, Chicago, Ill. 60614
Morris, William J., 619 N. Fairview Ave., Mount Prospect, Ill.
Munday, John Steffen, 847 S. Lyman, Oak Park, Ill.
Muskal, James B., 309 Sherman Ave., Evanston, Ill.
Southhard, Donald Bradley, 2857 N. Rutherford Ave., Chicago, Ill. 60634
Speckman, Thomas W., 189 Gage Road, Riverside, Ill.
VanSanten, William A., Jr., 940 Beau Drive, Des Plaines, Ill.
Vittum, Daniel Weeks, Jr., 1512 Central St., Evanston, Ill. 60201
Wanke, Ronald L., 5248 Harvard Terrace, Skokie, Ill. 60076
Zikas, Andrew F., 324 S. Prairie St., Batavia, Ill. 60510

Indiana

Badger, David H., 5883 N. Crestview Ave., Indianapolis, Ind. 46220
Hoffmann, Charles W., 9010 E. 39th Place, Apt. 8, Indianapolis, Ind.

Iowa

Rein, Philip A., 710 Savings and Loan Bldg., Des Moines, Iowa

Maryland

Alpert, A. Sidney, 6711 Northwest Drive, #C, Hyattsville, Md.
Anderson, Richard A., 10108 Ashwood Drive, Kensington, Md.
Bethurum, William J., 1822 Metzerott Road, Apt. B–3, Adelphi, Md.
Blumenstock, Theodore, 2706 Fawn Lane, Bowie, Md. 20715
Carpenter, M. Michael, 811 Downs Drive, Silver Spring, Md. 20904
Farley, Walter C., 10405 Barrie St., Silver Spring, Md.
Gershuny, Edward S., 4800 Chevy Chase Drive, Chevy Chase, Md. 20015
Hamrick, Claude A. S., 328 Marcy Ave., #T–2, Oxon Hill, Md. 20021
Knebel, James H., 2714 Webster St., #3, Mt. Rainier, Md.
Lee, William D., Jr., 517 S. Frederico Ave., Apt. 203A, Gaithersburg, Md.
Pfeiffer, Hesna Johnston, 4621 Schenley Road, Baltimore, Md. 21210
Reisdorf, David L., 4A Crescent Road, Greenbelt, Md.
Thomson, James M., 10681 Weymouth St., Apt. 202, Bethesda, Md.

Massachusetts

Cooch, Thomas, 120 Montvale Road, Weston, Mass. 02193
Flavin, Chester E., 134 Mallowhill Road, Springfield, Mass.
Fleming, Frank J., 8 S. Pleasant St., Sharon, Mass. 02067
Hillman, Robert E., 84 State St., Boston, Mass. 02109
Krenzer, Cyril A., Leonard Drive, Southboro, Mass. 01772
Miller, Henry S., Jr., 26 Donna Road, Chelmsford, Mass.
O'Connor, James R., 88 Bay State Road, Belmont, Mass. 02178

Michigan

Borrousch, Roger H., 1113 Corrinne St., Midland, Mich.
Dry, Neal Elton, 3615 Boston, Midland, Mich.
Ellis, William Garrettson, 3825 Patrick Road, Midland, Mich.
Guthrie, Marvin C., 3706 Boston, Midland, Mich.
McCarter, Lowell H., 700 Harrison Blvd., Apt. 14, Lincoln Park, Mich. 48146
Michaels, Joseph D., 7822 Berwick Drive, Garden City, Mich.
Nikaido, David I., 408 Longview St., Midland, Mich.
Pursglove, Laurence A., Box 1025, Bay City, Mich.
Tanis, Ronald J., 3514 Pinto, Kalamazoo, Mich. 49004

Minnesota

Bones, Glenn W., 8607 Poplar Bridges Circle, Bloomington 31, Minn.
Field, Harold D., Jr., 818 Farmers and Mechanics Bank Bldg., Minneapolis, Minn. 55402
Medved, Albin, 2447 W. Co. Road B, St. Paul, Minn. 55113
Phillips, James A., 426 Oliver Ave. N., Minneapolis, Minn. 55405

Missouri

Denk, Paul M., 6244 Oakland Ave., Apt. 306, St. Louis, Mo. 63110
Hough, George Andrew, Jr., 800 N. Lindbergh Blvd., St. Louis, Mo. 63166
Mullen, James J., 1137 Reyem Court, St. Louis, Mo. 63132

New Jersey

Cassett, Larry R., Apt. 2P, 12 Wisteria Drive, Fords, N.J.
David, Sidney, 585 Newark Ave., Apt. 5C, Elizabeth, N.J.
Honor, Robert S., 1775 Manor Drive, Union, N.J.
Monaco, Mario A., 524 Morris Ave., Elizabeth, N.J.
Padden, Frederick W., 300 Fred Allen Drive, South Plainfield, N.J.
Seligman, Richard I., 35 Birch Road, Cedar Grove, N.J. 07009
Sudol, Michael C., 449 Madison Ave., Elizabeth, N.J.
Vespasiano, Louis A., 94 Sunset Ave., Newark 6, N.J.

New York

Brady, Alfred R., 254—05 Pembroke Ave., Little Neck, N.Y. 11362
Crotti, Alfred F., 635 Madison Ave., New York, N.Y. 10022
Curley, James A., 1715 Lurting Ave., Bronx, N.Y. 10461
Degenholtz, Arthur I., 314 E. 201 St., New York, 58, N.Y.
Delabunty, G. Thomas, 5 Harrison St., Garden City, N.Y. 11530
Evans, Barry L., 353 E. 19th St., New York 3, N.Y.
Fishkin, Barry H., 2075 St. Raymond Ave., New York, N.Y. 10462
Geber, Walter W., 140 Cabrini Blvd., New York, N.Y. 10033
Green, William E., 320–B Chatham Gardens, Rochester, N.Y. 14605
Hirsch, Joseph, 8 Stonewall Circle, White Plains, N.Y.
Hodge, Thomas Arthur, 241 Terrace Park, Rochester, N.Y. 14619
Jarkovsky, Isaac, 1402 New York Ave., Brooklyn, N.Y. 11210
Jecies, Saul, 792 Columbus Ave., New York, N.Y. 10025
Klauber, Stefan J., 32 Knollbrook Road, Rochester, N.Y. 14610
Kurtz, Melvin H., 5639 Netherland Ave., Riverdale 71, N.Y.
Lessler, Arthur L., 65 Shelter Lane, Roslyn Heights, N.Y.
Lezdey, John, 57—66 79 St., Elmhurst 73, N.Y.
Lloyd, Richard R., 110 Colony Park Drive, Liverpool, N.Y. 13088
Marx, Julius 49—08 215th St., Bayside, N.Y. 11364
McKenney, Charles E., 209 E. 66th St., New York 21, N.Y.
McNulty, William E., 2957 Wilson Ave., Wantagh, N.Y. 11793
Newman, Irving, 64—57 185th St., Fresh Meadows, N.Y. 11365
Noller, David C., 145 E. Morris Ave., Buffalo, N.Y. 14214
Ouziel, Bernard, 69—43 136th St., Flushing, N.Y. 10067
Roediger, Joseph H., 649 E. 14th St., New York, N.Y. 10009
Roehrig, August E., Jr., 2051 E. Henrietta Road, Rochester, N.Y. 14623
Schwartz, Herbert F., 511 E. 80th St., Apt. 12F, New York, N.Y. 10021
Strnisha, Herman J., 53 Sansharon Drive, Rochester, N.Y. 14617
Walsh, Patrick J., 63 Wall St., New York, N.Y. 10005
Weinfeldt, Frederick Howard, 769 Ave. Z, Brooklyn 35, N.Y.
Wolson, Milton, 11 E. 87th St., New York, N.Y.
Woronoff, David S., 205 Oxford Road, New Hartford, N.Y. 13413

North Carolina

Lackey, Charles Yount, 2513 Lafayette Ave., Greensboro, N.C.
Layton, Samuel G., Jr., 217 Burleigh St., Charlotte, N.C.

Ohio

Forgrave, Edward P., 3559 Otterbein Ave., Dayton, Ohio 45406
Hummer, Harlan E., 2032 S. Green Road, Euclid 21, Ohio
Kremblas, Francis Thomas, Jr., 1019–D Western Ave., Columbus, Ohio 43212
Kriegsman, Irving M., 23651 Delmere Drive, Apt. 215, North Olmsted, Ohio
Mangels, Alfred J., 11506 Hanover Road, Cincinnati, Ohio 45240
Meckstroth, Alan F., 3046 Southdale Drive, Dayton, Ohio 45409
Mims, Roy L., P.O. Box 7311, Wright-Patterson AFB, Ohio
Noll, William B., 3907 Harden Ave., Middletown, Ohio 45042
Reck, James R., 4211 Allendorf Drive, Apt. 36, Cincinnati, Ohio 45209
Smith, Stephen R., 5465 Kenwood Road, Cincinnati, Ohio 45227
Sutton, Robert S., 137 Kensington St., Middletown, Ohio
Weil, Gerard G., 1661 S. Belvoir Blvd., South Euclid, Ohio 44121

Oklahoma

MacDonald, Roderick W., 4904 Brookline Drive, Bartlesville, Okla.
Massa, Robert E., 312 E. 48th St., Tulsa, Okla. 74105
Tucker, Laurey D., 4765 Cornell Drive, Bartlesville, Okla. 74003

Oregon

Dickinson, John M., 7965 SW. 19th St., Portland, Oreg. 97219

Pennsylvania

Barron, Alexis, 708 Hartwell Lane, Wyndmoor, Pa. 19118
Berkstresser, Jerry W., 1951 Locust St., Philadelphia, Pa. 19103
Blahous, Charles P., Jr., 109 Wassex Hills Drive, Coraopolis, Pa. 15108
Bowie, Stuart S., 523 Cornell Ave., Swarthmore, Pa.
Duffield, Charles F., 377 Avon Road, Apt. 105–D, Devon, Pa.
Feeney, Edward J., Jr., Pigeon Run Farm, R.D. 1, Malvern, Pa.
Goretzky, Heinrich, R.D. 3, Export, Pa.
Kratz, William G., Jr., 431 Cedarhurst Drive, McKeesport, Pa. 15131
Marlino, Joseph A., 112 W. Stratford Ave., Lansdowne, Pa.
Reynolds, Florence U., 1529 Derbyshire Road, Yardley, Pa. 19068
Schaper, Donald D., 401 Eden Road, Apt. J3, Lancaster, Pa.
Silverman, Arnold B., P.O. Box 772, New Kensington, Pa. 15068
Sites, Edward J., 12 Crescent Hill Drive, Havertown, Pa.
Sklar, Benjamin D., Jr., 3688 Northern Pike, Monroeville, Pa.
Williamson, Arba G., Jr., 40 Swallow Hill Road, Carnegie, Pa. 15106
Woodward, Gail W., 3209 Brookdale Road, Philadelphia, Pa. 19114
Wright, Ernest R., 147 Race St., Pittsburgh, Pa. 15218
Zurawsky, Lawrence G., 221 Emerson Ave., Pittsburgh, Pa. 15215

Texas

Dobie, Dudley R., Jr., Fulbright, Crocker et al., 8th Floor, Bank of the Southwest Bldg., Houston, Tex. 77002
Grossman, Rene Earl, 8546 Lazy Acres Circle, 204, Dallas, Tex. 75230
Johnson, William E., Jr., 1013 Sleepy Hollow Drive S., Irving, Tex.
Roney, Edward M., III, 7714 Renwick Drive, Apt. 107, Houston, Tex.
Sewell, Virgil L., 3208 Daniels, #4, Dallas, Tex. 75205
Swaim, Charles H., 13417 Bold Venture, Apt. 214, Dallas, Tex. 75222
Woodward, Henry K., 8564 Lazy Acres Circle, Apt. 104, Dallas, Tex. 75240

Utah

McCullough, Edward E., Box 46, Brigham City, Utah. 84302

Virginia

Bjorge, Gerald H., 4801 Kenmore Ave., Alexandria, Va.
Brook, David Edward, Apt. 439, Shirlington House, 4201 S. 31st St., Arlington, Va. 22206
Brunsvold, Brian G., 1730 Arlington Blvd., Apt. 307, Arlington, Va. 22209
Creel, Thomas L., 6102 Custer St., Springfield, Va.
Deloma, David B., 114 Church Walk, Falls Church, Va. 22042
DiPietro, Vito J., 4638 S. 31st Road, Arlington, Va. 22206
Dulin, Jacques Matagne, 850 S. Greenbrier St., Apt. 406, Arlington, Va. 22204
Elderkin, Charles B., 1400 N. Beauregard St., Alexandria, Va. 22311
Frank, William F., 215 E. Brookwood Drive, Fairfax, Va. 22030
Gilfillan, John G., 1645 N. 21st Road, Arlington, Va. 22209
Girvin, John W., Jr., 3854 Columbia Pike, #204, Arlington, Va. 22204
Goebel, Edward Wm., Jr., 419 N. Cleveland St., Arlington, Va. 22201
Grodberg, Lester S., 5741 Sanger Ave., Alexandria, Va. 22312
Hadland, Kenneth W., 1200 S. Court House Road, Arlington 4, Va.
Halsey, James D., Jr., 1020 N. Quincy St., Apt. 611, Arlington, Va.
Harmon, Robert L., 5916 Carlyn Springs Road, Apt. 202, Falls Church, Va.
Havelka, Ronnie D., 5425 Sanger Ave., Apt. 131, Alexandria, Va. 22311
Henson, William C., 1632 La Vista Drive, Alexandria 10, Va.
Hope, Henry Welker, 3210 S. 28th St., Apt. 303, Alexandria 2, Va.
Josephic, David J., 5513 Sanger Ave., Alexandria, Va.
Klee, Warren B., 1301 S. Scott, Arlington, Va.
Lilly, Donald S., 1947 Oak Drive, Alexandria, Va. 22306
Lovejoy, David E., 5731–231 Sanger Ave., Alexandria, Va. 22311
Lyne, Robert C., Jr., 507 St. Christopher's Road, Richmond, Va. 23226
Mulcahy, Edwin C., Jr., 1301 S. Scott St., Arlington, Va. 22204
Murphy, David R., 56 S. Aberdeen St., Arlington, Va. 22204
O'Brien, John P., 4660–A S. 36th St., Arlington, Va.
O'Donnell, Harry B., III, 3013 Mosby St., Alexandria, Va. 22305
Olson, Douglas E., 2910 S. Glebe Road, Apt. 209, Arlington 6, Va.
Panitch, Ronald Louis, 955 S. Columbus St., Arlington, Va. 22204
Potter, Alan Lee, 123 Falster Road, Alexandria, Va.
Price, Robert L., 2305 N. Dearing St., Alexandria, Va. 22302
Santorelli, Albert J., 1301 S. Scott St., Apt. 818, Arlington, Va.
Sayko, Andrew F., Jr., 2935 S. Columbus St., Arlington, Va.
Schutzman, Charles M., 1600 S. Joyce St., Apt. C–1403, Arlington 2, Va.
Stepno, Norman H., 3753 Gunston Road, Alexandria, Va.
Szabo, Joseph E., 3837 Jay Ave., Alexandria, Va.
Webster, Thomas M., 4435 31st St. S., Arlington, Va.
Wylie, Paul R., Jr., 3230 28th St., South Alexandria, Va. 22302

Wisconsin

Fuller, Henry C., Jr., 7476 N. Lombardy Road, Milwaukee, Wis. 53217
Moore, Malcolm L., 434 S. 21st St., La Crosse, Wis. 54601
Muckenthaler, George J., 5101 Ruby Ave., Racine, Wis. 53402
Schatzel, Thomas E., 5868 S. Honey Creek Drive, Milwaukee, Wis. 53221

PATENT EXAMINING CORPS

R. A. WAHL, Superintendent

CONDITION OF PATENT APPLICATIONS AS OF APRIL 1, 1965

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—P. E. MANGAN, Director.		
GENERAL CHEMISTRY, GROUP 110—R. L. CAMPBELL, Supervisory Examiner Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries.	7-11-62	3- 3-58
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Supervisory Examiner Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids.	10-31-62	9-15-58
PETROLEUM CHEMISTRY, GROUP 130—J. R. LIBERMAN, Supervisory Examiner Hydrocarbons; Halogenated Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices; Organic Chemistry (Part) e.g.: Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	2- 5-63	9-23-58
HIGH POLYMER CHEMISTRY, GROUP 140—M. STERMAN, Supervisory Examiner Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins: Reclaiming; Pore-Forming.	8- 1-62	5-14-59
COMPOSITIONS AND MOLDING, GROUP 150—G. D. MITCHELL, Acting Supervisory Examiner Compositions (Part) e.g.: Coating; Molding; Adhesive Compositions; Abrading; Liquid Purification or Separation; Gas Separation; Special Utility; Molding Processes.	9-11-62	12-22-58
COATING AND LAMINATING, GROUP 160—J. REBOLD, Supervisory Examiner Coating: Processes, Apparatus and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Ornamentation; Adhesive Bonding; Special Manufactures.	7-20-62	6-24-59
SPECIALIZED CHEMICAL ARTS AND INDUSTRIES, GROUP 170—W. B. KNIGHT, Supervisory Examiner Bleaching and Dyeing; Fertilizers; Foods; Fermentation; Photography; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Metallurgical Apparatus; Gas, Heating and Illuminating; Cleaning Processes; Liquid Purification; Thermolytic Distillation; Preserving.	9- 6-62	1-14-59
CHEMICAL ENGINEERING, GROUP 180—G. D. MITCHELL, Supervisory Examiner Gas, Liquid and Solid Separation; Centrifugal Bowl Separators; Gas and Liquid Contact Apparatus; Distillation; Drying; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	12- 6-62	1- 5-61
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
POWER, GROUP 210—M. L. LEVY, Supervisory Examiner Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art.	10- 5-62	4-12-60
SECURITY, GROUP 220—S. BOYD, Supervisory Examiner Ordnance, Firearms and Ammunition; Radar, Sonar, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-18-62	4-15-60
INFORMATION TRANSMISSION, GROUP 230—S. W. CAPELLI, Supervisory Examiner Communications; Multiplexing Techniques; Facsimile and Related Art.	10-19-62	12-28-59
INFORMATION STORAGE AND RETRIEVAL, GROUP 240—W. W. BURNS, Supervisory Examiner Data Processing, Computation and Conversion; Storage Devices and Related Art.	7- 5-62	5-16-57
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—B. G. MILLER, Supervisory Examiner Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks.	10- 2-62	1- 5-60
RADIATION AND INSTRUMENTS, GROUP 260—F. M. STRADER, Supervisory Examiner Optics; Radiant Energy; Measuring.	9-10-62	2-11-59
ELEMENTS, GROUP 270—E. J. SAX, Supervisory Examiner Conductors; Switches; Miscellaneous.	1-24-63	3-23-60

Total number of pending applications (excluding Designs)	198,445
Total number of Design applications pending	5,230
Total number of applications awaiting action (excluding Designs)	141,516
Total number of Design applications awaiting action	1,911
Date of oldest new application awaiting action	July 5, 1962
Date of oldest amended application awaiting action	May 16, 1957

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during May 1965, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*

Patents	Numbers 2,440,671 to 2,442,329, inclusive
Plant Patents	Numbers 797 to 798, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL ENGINEERING EXAMINING OPERATION—F. H. BRONAUGH, (Acting) Director.		
MATERIAL OR ARTICLE HANDLING AND DISPENSING, GROUP 310—A. BERLIN, Supervisory Examiner Material or Article Handling and Dispensing; Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Fluid Sprinkling and Fire Extinguishers; Coin Handling and Check Controlled Apparatus; Classifying and Assorting Solids.	6- 3-63	12- 1-60
METAL AND PLASTICS WORKING, GROUP 320—N. BERGER, Supervisory Examiner Metal Bending, Drawing, Extruding, Forging, Rolling; Sheet Metal Working; Wireworking; Chain, Staple, Horseshoe Making; Metal Founding; Wire Fabrics; Plastic Working Apparatus; Plastic Block, Earthenware Apparatus.	3- 1-63	1-23-61
MANUFACTURING AND ASSEMBLING MISCELLANEOUS ARTICLES, GROUP 330—A. M. HORTON, Supervisory Examiner Special Article Making; Assembling, Tool and Implement Making; and Metal Working.	10-26-62	9-26-60
MACHINE TOOLS, MECHANISMS AND ELEMENTS, GROUP 340—F. H. BRONAUGH, Supervisory Examiner. Machine Tools for Shaping or Dividing Involving Cutting or Breaking; Machine Elements Including Power Transmission Components, Work and Tool Holders.	2- 5-63	9-29-59
HARDWARE, TOOLS AND JOINTS, GROUP 350—T. J. HICKEY, Supervisory Examiner Miscellaneous Hardware; Tools; Joints; Cutlery; Locks; Fasteners; Rod Pipe and Electrical Connectors; Buckles; Buttons, Clasps, Etc.; Pushing and Pulling.	12-19-62	2-16-60
FLUID HANDLING, GROUP 360—E. PAUL, Supervisory Examiner Fluid Handling; Valves; Pipes and Tubular Conduits; Fluid Material Handling; Lubrication; Baths, Closets and Sinks; Joint Packing.	12-19-62	8-11-60
POWER PLANTS, MOTORS AND PUMPS, GROUP 370—C. F. GAREAU, Supervisory Examiner Power Plants, Combustion Power Plants, Expansible Chamber Motors, Rotary Motors and Rotary Expansible Chamber Motors, Expansible Chamber Devices and Internal Combustion Engines, Pumps and Pump Regulation.	3- 4-63	6- 7-60
HEATING, COOLING AND VENTILATING, GROUP 380—P. L. PATRICK, Supervisory Examiner Furnaces, Liquid Heaters and Vaporizers, Burners, Heat Exchange, Automatic Temperature and Humidity Regulation, Refrigeration, Ventilation, and Illumination.	4- 8-63	9-25-59
GENERAL ENGINEERING AND INDUSTRIAL ARTS EXAMINING OPERATION—J. A. MANIAN, Director.		
AGRICULTURE, GROUP 410—A. RUEGG, Supervisory Examiner Animal Husbandry; Butchering; Fishing, Trapping and Vermin Destroying; Plant Husbandry; Tobacco, Earth Working.	7-29-63	4-26-61
CIVIL ENGINEERING, GROUP 420—B. BENDETT, Supervisory Examiner Building Structures; Bridges, Closures; Closure Operators; Safes; Earth Engineering; Drilling; Mining.	3- 1-63	4- 4-60
PHYSICS, GROUP 430—R. L. EVANS, Supervisory Examiner Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-29-62	10-22-59
TEXTILES AND APPAREL, GROUP 440—R. C. MADER, Supervisory Examiner Textiles; Winding and Reeling; Tying Strands; Apparel; Boot and Shoe Making; Sewing Machines.	2-25-63	10-10-60
TRANSPORTATION, GROUP 450—P. ARNOLD, Supervisory Examiner. Railways and Rolling Stock; Brakes; Land Vehicles; Aeronautics; Ships.	3-23-63	6-23-59
FURNITURE AND RECEPTACLES, GROUP 460—W. S. COLE, Supervisory Examiner Furniture; Supports; Cabinet Structures; Receptacles; Baggage.	4-25-63	11-15-60
PRINTING, STATIONERY AND MATERIAL TREATMENT, GROUP 470—L. W. VARNER, Supervisory Examiner Printing; Typewriters; Stationery; Material Treatment.	7-17-62	12-31-58
PERSONAL TREATMENT, ADORNMENT AND AMUSEMENTS, GROUP 480—A. RUEGG, Acting Supervisory Examiner Surgery; Dentistry; Artificial Body Members; Toiletry; Amusement Devices; Jewelry; Mechanical Guns; Projectors.	3-22-63	9-27-61
DESIGNS, GROUP 490—J. A. MANIAN, Supervisory Examiner Industrial Arts; Household, Personal and Fine Arts.	5-19-64	3-26-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

POLAROID CORPORATION v. RICHARD MANUFACTURING COMPANY

No. 7248. Decided February 11, 1965

[52 CCPA —; 341 F.2d 150; 144 USPQ 419]

1. TRADEMARK—CONFUSING SIMILARITY—"POLAROID," "POLACOLOR," "POLAPAN," "POLA-LINE," "POLAPAK," "POLACHROME," AND "POLY-VUE."

"A comparison of the competing marks in their entireties convinces us that they present striking and distinguishing dissimilarities. They do not look alike, are not similar in commonly accepted pronunciation and impart separate and distinct connotations. 'Polar' is pronounced with a long 'o' while 'poly' is pronounced with a short 'o.' One is hyphenated; the other is not. The difference in connotations of the competing marks is so obvious as not to require resort to lexicography. What we have said relating to the contrast between 'POLAROID' and 'POLY-VUE' bears the same relevance in its application to the other marks on which appellant relies, such as 'POLACOLOR,' 'POLAPAN,' 'POLA-LINE,' 'POLAPAK,' and 'POLACHROME.' "

2. SAME—OPPOSITION—FAMILY OF MARKS—EVIDENCE.

In response to appellant's contention that its use of a group of trademarks all bearing the prefix "pola" upon a wide variety of photographic products has become firmly associated with appellant in the mind of the consuming public and is therefore entitled to a broad degree of protection, *Held* that "We agree with the Board that the evidence fails to establish that appellant has advertised or promoted such marks sufficiently to establish in the mind of the public or in the trade a recognition or awareness that it possesses a 'family of marks' identified by the prefix 'pola' and that the ownership and registration of a number of marks containing this prefix is not sufficient to create that exclusivity claimed for the prefix 'pola,' per se, under the theory advanced."

APPEAL from the Patent Office. Opposition No. 41,032.

AFFIRMED.

Donald L. Brown for appellant.

Munson H. Lane, Conder C. Henry, for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH,
and ALMOND, Jr., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

Polaroid Corporation appeals from the decision of the Trademark Trial and Appeal Board, 137 USPQ 488, dismissing its opposition to application [1] of Richard Manufacturing Company for registration of the mark "POLY-VUE" for filmstrip or slidefilm projectors.

Evidence on behalf of each party was stipulated. The relevant facts as found by the Board and supported by the record are substantially as follows:

Continuously since September 1937 appellant has used the word "POLAROID" as the distinguishing feature of its name and as a trademark for all of its numerous products. Since prior to appellee's date of first use, appellant has used "POLAROID" as a trademark on slidefilm projectors and various other photographic products, all of which are sold in containers bearing the mark "POLAROID." These products are used in many fields of visual communication such as classroom instruction, sales presentations and related areas of service. The products are sold to educational institutions, industry, governmental agencies and to the using public in all fifty states directly and through approximately twelve thousand wholesale and retail outlets. Total sales volume of "POLAROID" products increased from a sum in excess of $26 million in 1955 to more than $100 million in 1961 with approximately ninety percent of these amounts attributable to sales of photographic material. Appellant's photographic products have been extensively advertised on a nationwide basis by means of television, magazines, direct mailings to dealers and users, and by other promotional media.

---

[1] Serial No. 107,508, filed October 31, 1960.

In addition to the use of "POLAROID," appellant has used the mark "POLACOLOR" for motion picture color prints since 1947 and the marks "POLAPAN," "POLA-LINE," "POLAPAK," and "POLACHROME" for substantially similar goods, such as sensitized photographic film and papers.[2] These latter marks have been used and promoted in association with the principal mark "POLAROID" with substantial sales of the products sold thereunder.

Appellee is the owner of the registered mark "POLY-CONS" for containers for processed film and other uses.[3] Since September 6, 1960 it has continuously used "POLY-VUE" as a trademark for projectors of filmstrip still pictures, which are stored in cylindrical containers such as those sold under the mark "POLY-CONS." The pictures are of individual scenes printed on a common strip of film as distinguished from individually mounted slides. The projectors are used principally in audio-visual instruction, teaching and related uses. "POLY-CONS" containers and "POLY-VUE" projectors have been advertised on a nationwide scale since June 1956 and June 1961, respectively. In its advertising program appellee has used such media as brochures, direct mail, magazines, papers and trade publications directed to industrial, religious and educational fields, some of which were also utilized by appellant for advertising its goods. Appellee's outlet for its product is through approximately 150 franchised dealers with substantial sales in the United States and Canada.

The Board found, and we agree, that the record clearly establishes that long prior to appellee's use of either "POLY-CONS" or "POLY-VUE" appellant and its various products had become well known and identified by its name and the mark "POLAROID," and that appellant's use of the marks "POLACOLOR," "POLA-LINE," "POLAPAK," and "POLACHROME" antedates appellee's use of "POLY-VUE."

The Board further found, and we agree, that the record clearly supports the finding and conclusion that the parties market under their respective marks closely related goods through the same channels of trade to the same classes of purchasers; that they utilize some of the same advertising media and that under such circumstances the use of the *same or similar* marks in connection with such goods would be likely to cause purchasers to attribute a common origin thereto.

The Board's dismissal of the opposition was predicated on whether or not the mark "POLY-VUE" so resembles "POLAROID" and/or "POLAPAN," "POLACOLOR," "POLA-LINE," "POLAPAK," or "POLACHROME" as to be likely to cause confusion as to the

---

[2] The mark "POLASCOPE" has been used in connection with such goods since September 22, 1961, which is subsequent to appellee's date of first use.

[3] Reg. No. 641,925, issued February 26, 1957.

source or origin of the goods on which appellee's mark is used. The Board held that considering the marks in their entireties, the mark "POLY-VUE":

> * * * is so distinctly different from each of the opposer's marks in sound, appearance, and possible connotation, that there is no likelihood as to confusion of origin of the various goods marketed thereunder.

The single issue before us is whether or not appellee's mark "POLY-VUE" so resembles the marks used and relied upon by opposer as to be likely, when applied to appellee's goods, to result in confusion, mistake or deception.

[1] A comparison of the competing marks in their entireties convinces us that they present striking and distinguishing dissimilarities. They do not look alike, are not similar in commonly accepted pronunciation and impart separate and distinct connotations. "Polar" is pronounced with a long "o" while "poly" is pronounced with a short "o." One is hyphenated; the other is not. The difference in connotations of the competing marks is so obvious as not to require resort to lexicography. What we have said relating to the contrast between "POLAROID" and "POLY-VUE" bears the same relevance in its application to the other marks on which appellant relies, such as "POLACOLOR," "POLAPAN," "POLA-LINE," "POLAPAK," and "POLACHROME."

Appellant contends that its use of a group of trademarks all bearing the prefix "pola" upon a wide variety of photographic products has become firmly associated with appellant in the mind of the consuming public and is therefore entitled to a broad degree of protection.

[2] We agree with the Board that the evidence fails to establish that appellant has advertised or promoted such marks sufficiently to establish in the mind of the public or in the trade a recognition or awareness that it possesses a "family of marks" identified by the prefix "pola" and that the ownership and registration of a number of marks containing this prefix is not sufficient to create that exclusivity claimed for the prefix "pola," per se, under the theory advanced.

We are familiar with the prior decisions cited by appellant. As has been often said by this court, prior decisions in trademark cases, where the issue is a likelihood of confusion, furnish meager assistance in the resolution of that issue. Each case must be decided on the basis of the factual situation thereby presented.

Finding no reversible error in the decision of the Board, we must therefore affirm.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

JAMES A. PATTERSON AND GLENN K. LISSNER *v.* KARL-HEINZ HAUCK

No. 7262. Decided February 18, 1965

[52 CCPA —; 341 F.2d 131; 144 USPQ 481]

1. INTERFERENCE—REDUCTION TO PRACTICE—CORROBORATION.

"* * * the testimony of Richard W. Dorst, * * * the Board dismissed in toto along with the testimony of two other corroborating witnesses merely on the ground that they 'offered no testimony concerning the *observation of acts* which could constitute actual reduction to practice * * *.' We think this is too narrow a view of the nature of corroborating evidence. It is tantamount to a requirement that corroboration requires every inventor to have a technically qualified observer at his side during every phase of the completion of an invention through actual reduction to practice, scarcely a workable or practicable rule of evidence."

2. SAME—SAME—SAME.

"In our judgment, Mr. Dorst's testimony has corroborative value of a high order. It is particularly to be noted in this case that the process of the count may be, and was, carried out using exactly the same polyester resins and the same catalysts already in use and being made and sold by Chemical Process Company prior to the making of the invention as a regular part of its business. There is therefore no problem in identifying materials such as may exist in cases where the invention is a new compound. All that is involved in meeting the terms of the count here is a change in manipulative procedures and the application of the catalyst in a 'lacquer' solution, which, in this context, merely means a volatile solvent containing a suitable binder for the catalyst. Moreover, there is additional corroborating evidence by witnesses other than the inventors as to what the polyesters actually were, which we consider unnecessary to discuss other than to say that they were clearly such as to meet the terms of the count. We think this is a sufficient answer to appellee's contention that the evidence identifying the materials used in the Lissner work is *all* hearsay because the corroborating witnesses only knew what was being used because Lissner told them. Realistically, with respect to Dorst's evidence, the situation is the reverse. He told Lissner to take the company's polyester material, well known to both of them, and work out a better *process* of using them, which he did."

3. SAME—SAME—SAME—CIRCUMSTANTIAL EVIDENCE.

"* * *, with respect to dealings [on behalf of appellants] with the attorneys, Dr. Abrams prepared for them a more detailed write-up of seven closely-spaced typed pages which bears date December 28, 1954. The letter of transmittal of the write-up to the attorneys bears the same date plus the notation '(dict. 12-24-54).' The letter bears a received stamp of the attorneys Dec. 29, 1954. To be sure, these dates are all a day or more after Hauck's date but as circumstantial evidence of when the process had been reduced to practice and as the final link in the chain of evidence it is evident that the test work on which the write-up is based must have been done a considerable time prior to the preparation of the detailed write-up, which Dr. Abrams said probably took him two weeks to write."

4. SAME—SAME—SAME—SPECIFIC DATE UNIMPORTANT WHEN PERIOD ANTEDATES OTHER PARTY.

"We could review the evidence of another reduction to practice made by Patterson under the direction and observation of Dr. Abrams, reported as one of the examples in the December 28 write-up, but we do not consider it necessary. We think it too undoubtedly took place prior to Hauck's date. We think Abrams' testimony thoroughly corroborated the testimony of Patterson respecting it, considered in the light of the surrounding circumstances and the nature of the invention. The Board appears to have rejected the evidence on the ground that no *specific* date was fixed for the work and on the further ground that Dr. Abrams did not know of his own knowledge precisely *which* polyester was used, except as Patterson may have told him. While we appreciate the hearsay issue raised by appellee and adopted by the Board, we think it has little applicability here. It happens that Patterson was doing an experiment which Dr. Abrams had told him to do to provide an added example for a patent application, using one of the company's polyesters. Other evidence shows that those polyesters are within the terms of the count. As to the lack of a *specific* date, we consider it unimportant since in all probability the *period* during which it was done was early enough to antedate Hauck."

5. APPLICATION—INVENTORSHIP—MISJOINDER OF INVENTORS—35 U.S.C. 116 AND 256.

"Section 116, together with section 256 with which it should be read, was added to the law in the 1952 revision for the purpose of removing technical grounds for attacking the validity of patents by reason of the erroneous naming of inventors, on which point the prior law was very strict. As such a liberalizing provision it should be given a liberal construction in favor of applicants, permitting them to make such changes as more thorough consideration of facts may show to be necessary in order to comply accurately with the law in naming inventors."

6. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—RECORD—PRINTING COSTS.

"The question remains who should bear the cost of printing about 65 pages in a record of 278 pages, the added pages having been included at the request of appellee. All but 17 of the added pages relate to the proceedings below on the change of inventorship issue, an issue Hauck was entitled to raise on appeal and to have considered in case the reduction to practice issue went against him, as it has. The remaining pages are Hauck's brief before the Board. While it is usually wasteful to include briefs below in the record in this court, because the same arguments are usually made in the briefs here, the excuse is that the Board's opinion refers to several pages of that brief in its opinion as setting forth Hauck's contentions. We think this is a somewhat lame reason for printing the entire brief, since an excerpt would have sufficed, but under the circumstances of the case we rule that the appellant bear the entire cost of printing the record, including all matter added by appellee."

APPEAL from the Patent Office. Interference No. 89,824.

REVERSED.

Stanley Bialos, Warburton & Cross, Dick M. Warburton (*Harold I. Johnson* of counsel) for appellants.

Burgess, Dinklage & Sprung (*Arnold Sprung* of counsel) for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Patent Interferences, adhered to on reconsideration, awarding priority to Hauck.

Hauck is involved on the basis of his application, Serial No. 554,133, filed December 20, 1955. On a motion to shift the burden of proof he was given the benefit of the filing date of a German convention application, December 23, 1954, as the result of which he became senior party.

Patterson and Lissner are the present applicants of an application, Serial No. 520,137, filed July 5, 1955, by Patterson and Abrams. The interference, No. 89,824, was originally declared November 14, 1958, on that application but was reformed on May 12, 1959, upon the changing of the joint applicants from Patterson and Abrams to Patterson and Lissner.

Hauck, relying solely on his German filing date, took no testimony. Patterson et al. gave testimony themselves and called five other witnesses in corroboration thereof. They also put in evidence several documentary exhibits. They assert actual reduction to practice of the invention prior to Hauck's filing date of December 23, 1954.

The Board reviewed Hauck's right to rely on his German filing date and found no error in the Examiner's ruling that he was entitled to it, finding that the German application contained clear support for each positive limitation of the count in issue. Upon a review of the evidence of the junior party it concluded that there was a failure to establish an actual reduction to practice prior to December 23, 1954. The Board also ruled that Patterson et al. could not overcome Hauck's date by a showing of conception prior to December 23, 1954, coupled by diligence extending from a time just prior to December 23, 1954, to a later reduction to practice. The Board also considered Hauck's contention, repeated in this court, that the conversion of the inventorship in appellants' application was not in compliance with the statute, 35 U.S.C. 116, by reason of which appellants do not have a valid application on which an award of priority to them can be made. This issue had previously been taken to the Commissioner on petition, the First Assistant Commissioner ruling that it should be passed on by the Board either as (*a*) a matter ancillary to priority or (*b*) one suitable for a recommendation under Rule 259 of the Rules of Practice. The Board found compliance with the statute and a legal change of inventorship. All of these issues are raised on this appeal.

To summarize, there are four possible issues: (1) Whether Hauck is entitled to his German filing date; (2) whether Patterson et al. had an actual reduction to practice before that date; (3) whether the latter were diligent during a period of about six months; and (4) whether the inventorship of the Patterson et al. application was illegally changed.

Invention of the Count

At the times here involved Patterson and Lissner, as well as most of their witnesses, were employed by Chemical Process Company, now a division of Diamond Alkali Company, in Redwood City, California. Part of this company's business was the manufacture and sale of "polyester resins," sold under the name "Duolite." These are liquids resins or "plastics" capable of being turned into tough solids by the action of catalysts. According to Lissner, and other witnesses, his company's "polyesters" were solutions of unsaturated polyesters in a polymerizable monomer, usually styrene, and the polyester itself was a condensation product of polycarboxylic acids and glycols. These polyesters were liquid products shipped to customers in drums and, as sold, might contain accelerators or inhibitors. Users of this material would mix it with a suitable catalyst, coat it on a reinforcing or laminating material such as glass cloth or glass fiber mat material and allow it to harden. By placing the reinforcement over a form, objects of any desired shape could be produced such as flat or corrugated panels, boats, gear cases for aircraft, amusement park devices, cabs for earth moving equipment, protective "hard hats," or lamp shades, these all being objects actually made by Chemical Process Company customers.

An inherent difficulty in the use of the polyester resins was that as soon as the catalyst was added to the liquid resin it would begin to polymerize or set, first to a gel and then to hard material. It therefore had a "pot life," after which it would be of no further use, which might range from a few minutes to several hours depending on type and amount of catalyst mixed into it. A long pot life, which might be convenient in extending time available for fabrication, entailed the further disadvantage that vertical coated surfaces might not set rapidly enough to prevent running off of the fluid coating before it gelled.

The invention is a relatively simple variation in the *process* of using these known polyester materials wherein the catalyst is not mixed with the polyester *before* it is applied to the glass or other reinforcement but is separately coated on the reinforcement in a lacquer solution, the lacquer containing a volatile solvent which is allowed to evaporate, leaving the catalyst bound to the layer of material to be coated with the polyester. When the polyester is applied to the thus prepared surface, it comes into contact with the catalyst for the first time and only then begins to polymerize and harden. Thus the pot life of the coating material is indefinitely extended, quick hardening after coating can be achieved, and the principal disadvantages of the former process are eliminated. The process of the invention may clearly be discerned in the single count, which reads:

> Process for coating surfaces with unsaturated polyesters which comprises coating the surface with a solvent containing lacquer capable of drying by solvent evaporation and containing a peroxide catalyst capable of hardening a solution containing an unsaturated polyester dissolved in a polymerizable monomer, evaporating the solvent from said layer, thereafter applying a coating of an unsaturated polyester dissolved in a polymerizable monomer and allowing said coating to set by action of said catalyst.

Hauck's Date

We shall consider first the date of invention to which Hauck is entitled. The Examiner, granting a motion by Hauck to shift the burden of proof, held him entitled to the filing date of his German patent application under 35 U.S.C. 119. Patterson et al. seek to deprive him of this date on the ground that the disclosure of the German application is insufficient to support the count, judged by the standards of 35 U.S.C. 112. Appellants point out that Hauck's United States application contains a quantity of specific illustrative material not present in the German application. Notwithstanding this difference, the Examiner made the following finding:

> The German application of Hauck specifically defines the surface to be coated, the particular peroxide catalyst and solvent therefor, the lacquer, the ratio of peroxide solution to lacquer, a type of polyester resin monomer solution contemplated and the steps of application and drying. The disclosure is clearly sufficient to teach one skilled in the art how to practice the invention without undue experimentation. Also it is seen that the best mode of carrying out the invention is set forth.

The Examiner also ruled, in reply to argument by Patterson et al., that

> The provisions of Rule 71(b) are within 35 U.S.C. 112 which requires the inventor to set forth the best mode of carrying out his invention. It does not require that the specification be filled with examples but that the disclosure be measured by its adequacy to teach those skilled in the art how to practice the invention without requiring undue experimentation.

The Board found no error in the conclusion of the Examiner and neither do we. Giving the German application, in the words of section 119, "the same effect as the same application would have if filed in this country," we find Hauck entitled to the December 23, 1954 date. Patterson et al. claim to have made an actual reduction to practice earlier than that date and we turn now to that issue.

Actual Reduction to Practice by Patterson et al.

Drawing what we deem to be unduly rigid principles of law primarily from the case of *Thurston* v. *Wulff*, 35 CCPA 794, 164 F.2d 612, 76 USPQ 121, and applying them to the facts, the Board concluded that no actual reduction to practice had been proved. On a review of *all* the evidence, and considering it as a whole, we do not have the slightest doubt that the invention was reduced to practice several times before December 23, 1954, or that the proof thereof is legally sufficient.

Thurston v. *Wulff* was a case in which the appellant argued that the rule of independent corroboration of inventors' testimony or notebook evidence was a harsh one and "should not be applied with its usual strictness in chemical cases where new compounds emanate from large and well-conducted laboratories in the ordinary course of business * * *." This court flatly rejected that proposition but said, in doing so:

> An inventor's testimony, however, might be corroborated *by facts and circumstances other than by an independent witness.* Such proof or evidence should be independent of the testimony of the inventor and should not consist of self-serving documents prepared by him or under his direction, nor should it be based upon facts the truth of which *depends* upon information received from the inventor. [Emphasis added.]

In that case, we note, the issue before the court was the identity of a compound alleged to be γ-nitropimelic nitrile, that being the subject matter of the count. The alleged corroborating evidence apparently failed, technically, to establish the *identity* of the material which was physically in evidence, as of a date earlier than the critical date. We are not faced with such a situation in this case, which involves the question of whether a simple *process*, using *known* materials, was or was not practiced.

On other occasions we have been faced with similar applications of *Thurston* v. *Wulff*, as we were recently in *Hasselstrom* v. *McKusick*, 51 CCPA 1008, 324 F.2d 1013, 139 USPQ 511, wherein we reversed a finding of no corroboration and said:

> * * * we are in complete agreement with the necessity for corroboration of an inventor's testimony. However, the purpose of corroborative evidence is to confirm and to strengthen the testimony of the inventor. [Quoting in a footnote Rivise and Caesar, Interference Law and Practice, vol. 3, p. 2127.] Obviously the amount and quality of corroborative evidence that is necessary in any given case will vary with the facts of that case. As we observed in *Phillips and Paul S. Starcher* v. *Arthur W. Carlson*, 47 CCPA 1007, 278 F.2d 732, 126 USPQ 146, there can be no fixed single formula in determining the sufficiency of corroborative evidence.

We repeated the last statement in *MacMullen* v. *Santelli*, 51 CCPA 978, 326 F.2d 1008, 140 USPQ 374. In *Guinot* v. *Hull*, 40 CCPA 982, 204 F.2d 281, 97 USPQ 441, to the same effect, we said:

> A study of the cases issuing from this court reflect[s] the consistent application of the doctrine of independent corroboration of the inventor; that each case is decided upon the basis of the facts therein; and that the entire record is examined to determine whether the necessary proof is present in a given case.

In *Gianladis* v. *Kass*, 51 CCPA 753, 324 F.2d 322, 139 USPQ 300, we said:

> As we understand the Board's position, corroboration of the Gianladis reduction to practice would require that Packwood have tested the composition cosmetically and know of his *own independent* knowledge the chemical constituents thereof. We do not agree.
>
> This court stated in *Phillips and Starcher* v. *Carlson* * * * [cited supra]:
>
>> While each and every element of a reduction to practice must be corroborated, there is no fixed single formula in proving corroboration. It may be established by documentary evidence and the activity of others * * *.
>
> The goal of corroboration here is simply to establish that the inventor actually produced the product and knew it would work, by proof that could not have been fabricated or falsified. All the evidence must be considered in determining whether or not the appellant has met such requirement.

The foregoing cases present no novel doctrine. In *Buffington* v. *Blair*, 28 CCPA 1382, 121 F.2d 635, 50 USPQ 211, this court said:

> The record must be considered as a whole, and all competent testimony making up the continuous story given its proper place and weight.

The continuous story here begins on June 10, 1954, the date of three notebook pages of one of the inventors, Lissner, recording what is said to be the first reduction to practice. These pages were signed and dated by Lissner, signed and dated by the other inventor Patterson and the first page is signed and dated by Leo L. Benezra, a group leader for polyester research in the laboratory where Lissner worked, a small laboratory of 8 or 10 men working closely together. What they show, taken with Lissner's testimony, is the preparation of a solution of methylene chloride as solvent, benzoyl peroxide catalyst, and a low molecular weight polystyrene as binder (all constituting a "lacquer"), the coating of a sandwich of cloth-mat-cloth of glass fibers therewith; drying by loss of solvent, leaving the sandwich slightly stiff; impregnating the thus treated glass material with one of the regular polyester materials of the Chemical Process Company, known as "364CSA," containing a small amount of dimethylaniline as an activator for the peroxide catalyst; and gelling of the coating in about 5 minutes, complete curing being accomplished by heating at 65° C. for half an hour. Now, to be sure, this is the testimony and the showing of the written records of one of the coinventors himself and standing *alone* would be insufficient. The problem of corroboration is simply whether there is other evidence which makes it appear that these events actually took place at the time shown by the records. We think there is.

[1] There is a considerable quantity of other evidence as to events preceding those just outlined, events substantially contemporaneous therewith, and events following immediately thereafter which, in our judgment, more than adequately establish a reduction to practice on June 10, 1954. We will first refer to the testimony of Richard W. Dorst, which the Board dismissed in toto along with the testimony of two other corroborating witnesses merely on the ground that they "offered no testimony concerning the *observation of acts* which could constitute actual reduction to practice * * *." [Our emphasis.] We think this is too narrow a view of the nature of corroborating evidence. It is tantamount to a requirement that corroboration requires every inventor to have a technically qualified observer at his side during every phase of the completion of an invention through actual reduction to practice, scarcely a workable or practicable rule of evidence.

The witness Dorst, 36 at the time he testified, was then president of Dorsett Marine Division of Textron, builders of "Fiberglas" boats in three plants, which boats are made of "Fiberglas" cloth, mat, and woven roving combined with unsaturated polyester resins, cured, and known as Dorsett boats. From 1951 through September 15, 1955, he was employed by Chemical Process Company, hired as new products manager and made manager of the polyester division before the events herein took place. As such, he was concerned with the sale and development of polyester products. He was a graduate engineer with chemical training and prior experience in chemical manufacturing and a graduate of the Harvard Business School. Lissner was directly under his charge and worked with him on polyester technical service. In late April and early May of 1954, as shown by correspondence dated May 4, Dorst had been working on polyester promotion with the editor of Sunset Magazine, looking for do-it-yourself outlets for polyesters. A demonstration for the editor had been arranged for May 28. Dorst testified (several answers are here run together in narrative form):

> Glenn Lissner and I went over there with some resin and catalyst and promoter and sheets of cellophane and Fiberglas and we prepared the basis for certain laminates which we did on their patio at Sunset Magazine one afternoon. I think it was the 28th of May, and we prepared maybe a dozen or more laminates which we formed into little bowls and made into corrugated shapes

> and in which they introduced leaves and decorative objects. We used in all of this the techniques * * * of mixing of the catalyst with the resin before combining with the reinforcement * * *. It was a messy operation. The mixing of the components in with the resin and the introduction into the Fiberglas is a messy operation, and this demonstration in which Lissner and I both participated physically made us realize that there had to be a better way of doing this. * * * we had been thinking of the possibility of introducing the catalyst on a binder with a mat and, although we had talked about it for some time among ourselves, we had not actually done any laboratory work; but, as a result of this, particularly as a result of this demonstration which was held, I told Glenn Lissner to get something started on it so that we could see whether it was feasible or not.

Dorst then testified to having known about the June 10, 1954 laminated glass fabric panel above described and to seeing it within a matter of hours after it was made, though he did not say he watched the process. We continue with excerpts from his testimony:

> * * * we made the same general observation of the panel that we make of all of the panels that we were preparing from time to time. In this particular case we wanted to see whether or not the system worked, whether or not the resin would completely cure. * * * the accelerated resin had mixed thoroughly enough with the catalyst which had been deposited on the reinforcement to cure, even though it was not directly in contact with the reinforcing. * * * We bent it and touched it and hit it and felt it and made this type of visual test and qualitative tests as to how stiff it was and whether it was hard enough and whether it was cured enough and so on. * * * Well, we were very excited—or I was very excited about the particular panel because this was what we had hoped to get. It was as good as a panel which would have been prepared in the conventional manner. * * * The success of this panel convinced us that the method was feasible, since this panel was in all respects that we normally used for testing at the time the equivalent of a panel that we would make under the previous method.

Mr. Dorst then had his attention directed to a later test by Lissner recorded in his notebook under date of Aug. 6, 1954, witnessed the same day by Patterson, and seen "shortly thereafter" by Dorst. Dorst said:

> I recall that particularly. Item No. 4 is the sample prepared with cyclohexanone peroxide and this was a sample that I was particularly interested in because cyclohexanone peroxide is a solid which is a room temperature curing catalyst, whereas a liquid had normally been employed, methylethyl ketone peroxide, before; and I was particularly interested in this one, since it meant that we would probably get a longer shelf life of the impregnated reinforcement with cyclohexanone which was a solid, rather than methylethyl ketone peroxide which was a liquid. I recall the sample very well. * * * [Q. Can you fix the time when you saw that sample?] Well, it was within a week after the event, within a week or ten days. We reviewed these things periodically, anywhere from two to six times a month, depending on the urgency of the matter. * * * in every respect it [Item No. 4] was comparable, equal in every physical, qualitative property that we could determine [with products made in the field].

[2] In our judgment, Mr. Dorst's testimony has corroborative value of a high order. It is particularly to be noted in this case that the process of the count may be, and was, carried out using exactly the same polyester resins and the same catalysts already in use and being made and sold by Chemical Process Company prior to the making of the invention as a regular part of its business. There is therefore no problem in identifying materials such as may exist in cases where the invention is a new compound. All that is involved in meeting the terms of the count here is a change in manipulative procedures and the application of the catalyst in a "lacquer" solution, which, in this context, merely means a volatile solvent containing a suitable binder for the catalyst. Moreover, there is additional corroborating evidence by witnesses other than the inventors as to what the polyesters actually were, which we consider unnecessary to discuss other than to say that they were clearly such as to meet the terms of the count. We think this is a sufficient answer to appellee's contention that the evidence identifying the materials used in the Lissner work is *all* hearsay because the corroborating witnesses only knew what was being used because Lissner told them. Realistically, with respect to Dorst's evidence, the situation is the reverse. He told Lissner to take the company's polyester material, well known to both of them, and work out a better *process* of using them, which he did.

Lissner continued his work into September of 1954, trying out variations and refinements of the process and about this time Patterson prepared a three-page preliminary write-up of the invention entitled "Vinyl and/or Condensation Polymerizations With Catalyst Impregnated Fillers." There are six specific examples in this write-up, some of which clearly describe the invention and go even further, describing the results attained by practicing the invention. One example refers to tests allowing periods of a day, a week, and a month between impregnating the glass mat and cloth with catalyst-binder solution and coating it with polyester-styrene mix, the gel time being the same in all three tests. The document is not dated but the evidence makes it quite clear that it was sent to San Francisco attorneys who used it in writing to Washington attorneys on September 20, 1954, to order a search in the Patent Office. The letter requesting the search clearly discloses the same invention as the write-up and states at its end that "a copy of the inventor's report is enclosed." Another letter dated December 7, 1954, from the San Francisco attorneys to Dr. I. M. Abrams, another witness, technical director of Chemical Process Company, stamped with a received stamp Dec. 8, 1954, reads:

> **Re:** ***Catalyst Impregnated Fillers***
>
> Dear Irv:
>
> In accordance with your request over the telephone, we are returning your copy of the preliminary write-up on this subject.

Dr. Abrams testified that he ordered the search made, that Patterson prepared the write-up, that he, Abrams, gave it to the attorneys, that he asked for its return because it was the only one available and he needed it to make a more complete write-up for a patent application, and that the letter had been in his files ever since. The San Francisco attorney testified and confirmed the foregoing events.

[3] Finally, with respect to dealings with the attorneys, Dr. Abrams prepared for them a more detailed write-up of seven closely-spaced typed pages which bears date December 28, 1954. The letter of transmittal of the write-up to the attorneys bears the same date plus the notation "(dict. 12–24–54)." The letter bears a received stamp of the attorneys Dec. 29, 1954. To be sure, these dates are all a day or more after Hauck's date but as circumstantial evidence of when the process had been reduced to practice and as the final link in the chain of evidence it is evident that the test work on which the write-up is based must have been done a considerable time prior to the preparation of the detailed write-up, which Dr. Abrams said probably took him two weeks to write.

[4] We could review the evidence of another reduction to practice made by Patterson under the direction and observation of Dr. Abrams, reported as one of the examples in the December 28 write-up, but we do not consider it necessary. We think it too undoubtedly took place prior to Hauck's date. We think Abrams' testimony thoroughly corroborated the testimony of Patterson respecting it, considered in the light of the surrounding circumstances and the nature of the invention. The Board appears to have rejected the evidence on the ground that no *specific* date was fixed for the work and on the further ground that Dr. Abrams did not know of his own knowledge precisely *which* polyester was used, except as Patterson may have told him. While we appreciate the hearsay issue raised by appellee and adopted by the Board, we think it has little applicability here. It happens that Patterson was doing an experiment which Dr. Abrams had told him to do to provide an added example for a patent application, using one of the company's polyesters. Other evidence shows that those polyesters are within the terms of the count. As to the lack of a *specific* date, we consider it unimportant since in all probability the *period* during which it was done was early enough to antedate Hauck.

We therefore find actual reduction to practice by Patterson and Lissner prior to the date on which Hauck relies to have been proved. This makes it unnecessary to consider the issue of diligence by Patterson et al. but does make it necessary to pass on whether their application is invalid by reason of the change in inventorship.

Change of Inventors by Appellant

The Patterson et al. application is assigned to Chemical Process Company division of Diamond Alkali Company. It was originally filed in the names of Patterson and Abrams and was changed to one in the names of Patterson and Lissner, the Patent Office consenting. The relevant statute is the last paragraph of 35 U.S.C. 116:

> Whenever a person is joined in an application for patent as joint inventor through error, or a joint inventor is not included in an application through error, and such error arose without any deceptive intention on his part, the Commissioner may permit the application to be amended accordingly, under such terms as he prescribes.

Patent Office Rule 45 implements the statute.

Hauck asserts that on the basis of the record herein there was clearly a deceptive intention in the original filing without Lissner. He presented this issue below by petition to the Commissioner who, acting through the First Assistant Commissioner, left the question to be decided by the Board at final hearing as a matter ancillary to priority or one for a recommendation under Rule 259.

The Board found compliance with section 116. It found no basis in the testimony for holding the conversion was made with deceptive intent.

[5] Section 116, together with section 256 with which it should be read, was added to the law in the 1952 revision for the purpose of removing technical grounds for attacking the validity of patents by reason of the erroneous naming of inventors, on which point the prior law was very strict. As such a liberalizing provision it should be given a liberal construction in favor of applicants, permitting them to make such changes as more thorough consideration of facts may show to be necessary in order to comply accurately with the law in naming inventors. See *In re Schmidt*, 48 CCPA 1140, 293 F.2d 274, 130 USPQ 404.

Our study of the record shows no ground for overruling the well-considered decision of the Board on this issue.

Cost of Additions to Record

[6] The question remains who should bear the cost of printing about 65 pages in a record of 278 pages, the added pages having been included at the request of appellee. All but 17 of the added pages relate to the proceedings below on the change of inventorship issue, an issue Hauck was entitled to raise on appeal and to have considered in case the reduction to practice issue went against him, as it has. The remaining pages are Hauck's brief before the Board. While it is usually wasteful to include briefs below in the record in this court, because the same arguments are usually made in the briefs here, the excuse is that the Board's opinion refers to several pages of that brief in its opinion as setting forth Hauck's contentions. We think this is a somewhat lame reason for printing the entire brief, since an excerpt would have sufficed, but under the circumstances of the case we rule that the appellant bear the entire cost of printing the record, including all matter added by appellee.

The decision of the Board of Patent Interferences is reversed.

REVERSED.

U.S. Court of Customs and Patent Appeals

WILLIAM A. VOGT *v.* HARRY L. MCFEATERS

No. 7273. Decided February 18, 1965

[52 CCPA —; 341 F.2d 315; 144 USPQ 488]

1. INTERFERENCE—CONSTRUCTION OF COUNT—RIGHT TO MAKE—COUNT GIVEN BROADEST REASONABLE CONSTRUCTION.

"Count 1 requires as an element 'an enclosing hood defining an effluent passageway therethrough.' That recitation is not satisfied by separate elements which constitute merely spaced half-collar members in one position recited by the count and at best define a hood only in a different position. Since the counts require means for moving the ends of the hood, and the hood is specifically defined as an 'enclosing hood,' we think the Board correctly ruled that Vogt failed to disclose means for moving the hood 'as such.' In so deciding, we consider the count unambiguous, as did both parties and the Board, and accord it the broadest construction the language reasonably will bear without recourse to the specification from which it originated. See *In re Kelley*, 49 CCPA 1359, 305 F.2d 909, 134 USPQ 397. On the other hand, acceptance of the interpretation sought by Vogt would broaden the scope of the recitations in count 1 well beyond what we regard as the reasonable meaning of the language employed."

2. SAME—SAME—SAME—EXPRESS LIMITATIONS IN COUNT ARE MATERIAL—DEPENDENT COUNTS.

"The pertinent recitations are discussed * * * with respect to count 1 in which they are set out, but of course they are actually part of each of the dependent counts in issue. The applicable rule is that every express limitation must be regarded as material in determining the right to make a count. *Crome v. Morrogh*, 44 CCPA 704, 239 F.2d 390, 112 USPQ 49. Vogt must support the additional limitations in the dependent counts in issue in relation to the basic structure, and if he does not support the recitations of the basic structure, he plainly has no support for the additional recitations of the dependent counts in relation to that structure."

APPEAL from the Patent Office. Interference No. 89,817.

AFFIRMED.

Brown, Jackson, Boettcher & Dienner (*John A. Dienner, Henry H. Babcock, Edward C. Grelle*, of counsel) for appellant.

Green, McCallister & Miller (*Thomas G. Miller* of counsel) for appellee.

Before Worley, *Chief Judge*, and Rich, Martin, Smith, and Almond, Jr., *Associate Judges*

Martin, *J.*, delivered the opinion of the court.

Vogt, the senior party, appeals from the decision of the Board of Patent Interferences awarding priority of invention as to all counts remaining in Interference No. 89,817 to McFeaters.

The interference involves McFeaters' Patent No. 2,847,206, issued August 12, 1958, on an application filed June 20, 1955, and Vogt application Serial No. 400,480, filed December 28, 1953. As originally declared the interference included counts 1 through 14 corresponding to claims 1 through 12, 18 and 19, respectively, of the McFeaters patent. However, counts 1, 2, 3, 8, 12, 13 and 14 were eliminated by the Primary Examiner who ruled them unpatentable over the prior art, and the Board thus determined priority as to only counts 4, 5, 6, 7, 9, 10 and 11.

Although both parties took testimony, the Board based its decision on a holding that Vogt's application does not support the counts and did not consider that testimony. Hence, the only issue before us is whether the Board erred in that holding.

The involved counts all depend upon canceled count 1 which reads:

> Apparatus for receiving a hot fluid effluent from the mouth of a generator such as a converter and for conducting the effluent to a discharge-receiving means including an enclosing hood defining an effluent passageway therethrough and open at its lower end to receive the effluent from the mouth of the generator, said hood being open at its upper end to discharge the effluent therefrom into the discharge-receiving means, and means for moving the upper end portion of said hood into and out of a registry with the discharge-receiving means, while moving its lower end portion into and out of a co-operative effluent-receiving relationship with the mouth of the generator.

The counts in issue read as follows:

> *Count 4.*—Apparatus as claimed in count 1 wherein said upper end of the hood terminates in a hollow flange and includes means for passing a coolant therethrough.
>
> *Count 5.*—Apparatus as defined in count 1 wherein, cooling fluid jacket portions extend along the longitudinal extent of a lower portion of said hood, and inlet and outlet means is connected to said jacket portions to supply cooling fluid to and remove warmed fluid from said jacket portions.
>
> *Count 6.*—Apparatus as defined in count 1 wherein, said hood has cooling fluid jacketing, a jacket ring about the lower end portion of said hood, and spray means connected to said jacket ring to direct a cooling fluid spray upon the effluent entering said hood from the generator.
>
> *Count 7.*—Apparatus as defined in count 1 wherein said hood has at one end portion concentric shells, means to space the shells from each other, means to seal the ends of the shells to each other, baffles disposed substantially longitudinally between the shells, a coolant-delivering pipe extending around the outer shell, a conduit extending from said pipe to a delivery station between the shells adjacent a lower end thereof, a coolant-exiting pipe extending around the outer shell, and a conduit extending from the last-mentioned pipe to an exit station between the shells adjacent an upper end thereof.
>
> *Count 9.*—Apparatus as defined in count 1 wherein, said hood has at one end portion a pair of radially spaced-apart shells defining a cooling spacing therebetween, means enclosing end portions of the spacing, and means for supplying cooling fluid to and removing warmed fluid from the spacing.
>
> *Count 10.*—Apparatus as defined in count 9 wherein baffle means defines circuitous cooling fluid passageways along the spacing from said last-mentioned means.

> *Count 11.*—Apparatus as defined in count 10 wherein, the generator is supplied with oxygen through a vertically-extending supply lance, and said hood has a through-port portion sealed off from its jacket portions to receive and by-pass the supply lance therethrough into the mouth of the generator.

The counts relate to apparatus for receiving hot fluid effluent from the mouth of a generator such as a converter vessel for use in the oxygen-blow process of refining steel. In that process, an oxygen-providing gas is ordinarily fed downwardly into the generator and large volumes of gas and fumes are evolved as the oxygen burns off impurities. The invention in issue provides exhaust apparatus which is adapted to be positioned close to the generator to convey gases away during a blowing operation, yet which also can be moved to another position to permit charging and emptying of the generator between operations. A brief description of the structures of both parties will facilitate a full understanding of the case.

The McFeaters construction is best illustrated by his FIGURE 1, reproduced below:

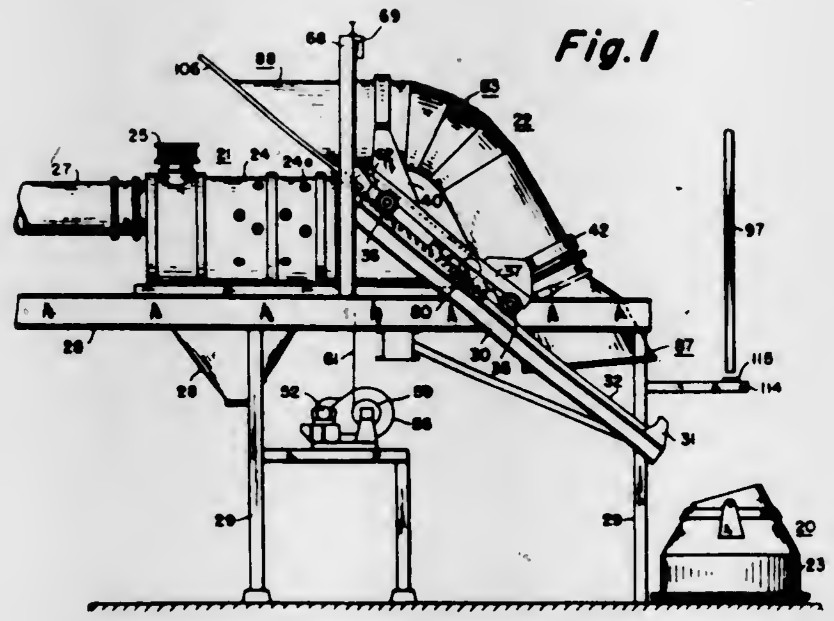
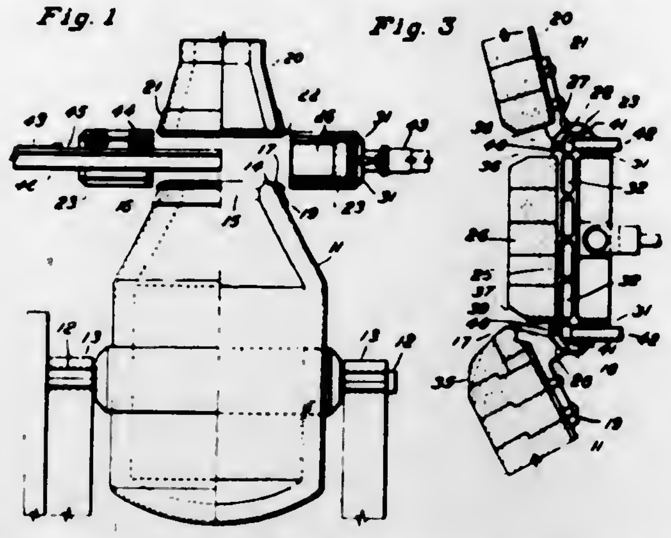


Fig. I

In this figure, a tubular hood 83 is mounted on a carriage which includes a frame 37 and rollers 35 and 36. The carriage travels on a runway 30 between an upper or retracted position and a lower or operative position. In the upper position, shown in FIGURE 1, the upper end 88 and the lower end 87 of the hood are out of engagement with other apparatus and the hood is inoperative. When the hood is moved to its lower position, the lower end 87 is disposed about the open upper end of vessel or generator 20 to receive the effluent therefrom and the upper end 88 is in engagement with the inlet end of a discharge or exhaust receiver 21.

The lower end of the hood comprises spaced concentric shells forming a passage or jacket fed with coolant liquid through an encircling pipe. A port is provided in the upper wall of the lower portion of the hood so that a lance 97 carrying oxygen-providing gas may be inserted downwardly therethrough into the open mouth of the generator. A tube having inwardly-facing nozzles spaced therealong is provided at the lower end of the hood to direct a cooling liquid into the shell. The upper end of the hood terminates in a hollow flange through which a cooling liquid can be circulated.

FIGURES 1 and 3 of Vogt's application are as follows:



In the Vogt construction, a duct 20 is supported in a position above and spaced from a steel converter or vessel 11 to receive gases generated in the latter during the blowing period, the space between the vessel and duct being provided to allow the vessel to pivot on trunnions 12. Sealing means or collar 23 permits selectively enclosing the space between the vessel and duct to form a conduit between the two. The collar is made up of two equal semi-cylindrical parts movable in a horizontal plane from a spaced-apart inoperative position shown in FIG. 1 to a position where they form a closed cylinder with its upper end making engagement with the lower edge of the duct at 27 and its lower end making similar engagement with the upper end of the vessel at 28. The sections are each provided with wheels 44 movable on rails 45 into and out of operative position by means of hydraulic cylinders at 43. Each of the two sections is provided with independent means for passing cooling water through ducts 32. Inlet pipes 42 lead to passages 41 which have a plurality of apertures 40 through which water is sprayed into the exhaust gases, the heat therefrom forming a protective steam layer over insulation 26.

The Board found that Vogt lacks support for canceled count 1, upon which all the counts now in issue depend. In reaching that conclusion the Board referred to the recitation of "an enclosing hood defining an effluent passageway therethrough" to receive effluent from the mouth of the generator and to the following clause of the count:

> * * * means for moving the upper end portion of said hood into and out of a registry with the discharge-receiving means, while moving its lower end portion into and out of a cooperative-relationship with the mouth of the generator.

It then concluded:

> In our judgment the Vogt application is totally lacking in support for this last limitation. It bears some similarity to the McFeaters patent in that it provides interconnecting means in the form of a sealing member 23 which forms a disruptible collar for conducting gases from the converter 11 to the lined duct 20, but here the similarity ends. The sealing member 23 of Vogt is formed in two parts, which are relatively movable radially between the positions of FIGURES 3 and 2, to permit access to the vessel 11 for discharging and reloading; but these parts form the desired sealing collar or hood *only when brought together*. Although the collar formed by bringing these parts together from the position of FIGURES 1 and 2 to the position of FIGURE 3 might be said to be an enclosing hood as required by the counts, it must be noted that these counts require that the enclosing hood *as such* be movable between positions in which its upper end is respectively "into and out of [a] registry with the discharge-receiving means," and its lower end portion is respectively movable "into and out of a cooperative effluent-receiving relationship with the mouth of the generator." Vogt discloses no means for moving an "enclosing hood" in this manner.
>
> In fact Vogt has no means for moving "an enclosing hood" between the positions recited or between any positions. If the collar formed by bringing the two sections together and into sealing contact may be said to constitute "an enclosing hood" once the parts are brought together, it must be noted that there is no means to move the hood, but only a means to destroy its identity as a collar or hood. * * *

Vogt urges that the recitation of "an enclosing hood defining an effluent passageway therethrough and open at its lower end to receive effluent from the mouth of the generator" refers to the hood "in its operative position when it defines an effluent passageway from the mouth of the generator" and that his apparatus defines such a hood when in operative position. He further states that the Board erroneously thought that the hood had to be moved to its inoperative position as a one-piece or unitary structure although there is no such limitation in count 1. On that basis, it is Vogt's position that the Board improperly read into the counts the limitation that the enclosing hood "as such" be movable between the operative and inoperative positions.

[1] We cannot agree with that reasoning. Count 1 requires as an element "an enclosing hood defining an effluent passageway therethrough." That recitation is not satisfied by separate elements which constitute merely spaced half-collar members in one position recited by the count and at best define a hood only in a different position. Since the counts require means for moving the ends of the hood, and the hood is specifically defined as an "enclosing hood," we think the Board correctly ruled that Vogt failed to disclose means for moving the hood "as such." In so deciding, we consider the count unambiguous, as did both parties and the Board, and accord it the broadest construction the language reasonably will bear without recourse to the specification from which it originated. See *In re Kelley*, 49 CCPA 1359, 305 F.2d 909, 134 USPQ 397. On the other hand, acceptance of the interpretation sought by Vogt would broaden the scope of the recitations in count 1 well beyond what we regard as the reasonable meaning of the language employed.

[2] The pertinent recitations are discussed above with respect to count 1 in which they are set out, but of course they are actually part of each of the dependent counts in issue. The applicable rule is that every express limitation must be regarded as material in determining the right to make a count. *Crome* v. *Morrogh*, 44 CCPA 704, 239 F.2d 390, 112 USPQ 49. Vogt must support the additional limitations in the dependent counts in issue in relation to the basic structure, and if he does not support the recitations of the basic structure, he plainly has no support for the additional recitations of the dependent counts in relation to that structure.

The issue before us is quite narrow. What we have here are counts 4–7, 9, 10 and 11 to combinations of a movable hood with various cooling means. We decide only that Vogt cannot make the combination recited in those counts.

In view of the foregoing, the decision of the Board of Patent Interferences is affirmed.

AFFIRMED.

SMITH, *J.*, concurring.

My decision to affirm the Board of Patent Interferences is predicated upon my agreement with the following statement of the Board:

> In fact Vogt has no means for moving "an enclosing hood" between the positions recited or between any positions. If the collar formed by bringing the two sections together and into sealing contact may be said to constitute "an enclosing hood" once the parts are brought together, it must be noted that there is no means to move the hood, but only a means to destroy its identity as a collar or hood.

To meet the counts in issue, the burden was on Vogt to show that the "enclosing hood" called for in each count is met by his construction. It is my opinion that he has not discharged this burden. Vogt has disclosed in his specification what is there termed a "sealing member." Vogt describes it as follows:

> * * * This sealing member is in the general form of a relatively short, open ended cylinder or tube, separated into two equal semi-cylindrical parts on a vertical median plane, the two parts being adapted to horizontal motion, having their confronting faces 24 in contact in the closed or blowing position, and being spaced apart, equidistant from the vertical center line of the vessel in the retracted or vessel loading and discharging position. * * *

Such a construction is properly a split collar which can perform the functions of McFeaters "enclosing hood" only when the two segments of the collar are brought together during one cycle in the operation of the furnace. During this cycle the collar admittedly performs the same functions as does the "enclosing hood" of McFeaters. Here, however, the similarity ends. The collar of Vogt is broken and its identity as a collar is destroyed when the two segments are moved away from each other during an ensuing cycle in the operation. When this is done there is no longer a unit identity which permits Vogt's collar to be moved *as* an "enclosing hood" in the manner called for in the counts.

U.S. Court of Customs and Patent Appeals

GEO. A. HORMEL & CO. (ASSIGNEE OF STARK, WETZEL & CO., INC.) *v.* HEREFORD HEAVEN BRANDS, INC.

No. 7278. Decided February 18, 1965

[52 CCPA —; 341 F.2d 158; 144 USPQ 493]

1. TRADEMARK—GOODS—BROAD DESIGNATION OF GOODS IN APPLICATION.

"There is no significant difference between the goods of the parties. While appellee stresses that its goods are in fact breaded cubed beef patties, the application is drawn to use on 'fresh and frozen packaged meats' which includes the goods, sausages and sausage meat, of appellant."

2. SAME—CONFUSING SIMILARITY—"LITTLE SIZZLERS" AND "SIZZLE."

"Although 'Sizzlers' as used in LITTLE SIZZLERS is a noun and 'Sizzle,' as used by appelle, is a verb, they both conjure up identical mental images, i.e., meat making a hissing sound while cooking. Thus we believe that the concurrent use of LITTLE SIZZLERS and SIZZLE on the respective goods of the parties is likely to cause confusion, mistake or deception."

3. SAME—OPPOSITION—RIGHT TO OPPOSE—ABANDONMENT OF MARK—EVIDENCE—BURDEN ON PARTY WHO CHARGES ABANDONMENT.

In connection with the assignment by Stark, to appellant, of its interest in LITTLE SIZZLERS, and the concurrent execution, by appellant, of an agreement granting Stark a non-exclusive license to use the mark in the same market area in which it had previously marketed its goods. *Held* that "* * * Hormel is a user of the mark, and the assignment did affect its position by giving it standing in this opposition"; that "Stark's continued use does not affect that change of parties in this opposition"; that "We think the burden of proving Hormel abandoned the mark by failing to control the use by Stark under the license, is on appellee"; that "Inferences which might

be drawn from Hormel's testimony here do not meet that burden"; and that "We must agree with the conclusion of the Board that 'it cannot at this time be said that Hormel has failed to exercise such control' as to preclude its right in this opposition."

APPEAL from the Patent Office. Opposition No. 40,970.

REVERSED.

Fred S. Lockwood for appellant.

Jim W. Gipple for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

Geo. A. Hormel & Co. (hereinafter Hormel), user of the mark LITTLE SIZZLERS, has appealed a decision of the Trademark Trial and Appeal Board dismissing its opposition to the registration of the mark SIZZLE used by appellee Hereford Heaven Brands, Inc. (hereinafter Hereford).

While the major issue is whether there would be a likelihood of confusion between LITTLE SIZZLERS as a mark for fresh pork sausage and SIZZLE as a mark for fresh and frozen packaged meats, there is a secondary issue raised by appellee Hereford which will necessitate a full exposition of the facts leading to the present opposition, No. 40,970.

Appellee Hereford filed its application to register SIZZLE, Serial No. 106,714, on October 19, 1960, alleging use since December 1, 1959. Hormel applied to register LITTLE SIZZLERS, Serial No. 107,569, on November 1, 1960, alleging use since September 9, 1960. Stark, Wetzel & Co., later the assignor to and licensee of Hormel, also applied to register LITTLE SIZZLERS, Serial No. 119,435, on May 5, 1961, alleging use since 1948.

The Board described the subsequent proceedings, which led to this opposition on appeal, in its opinion as follows:

> * * * [Hereford] on the basis of its present application for registration, was * * * involved in an interference [Interference No. 5893] with Geo. A. Hormel & Co. (hereinafter referred to as Hormel) which had filed an application to register "LITTLE SIZZLERS" for pork sausage [Serial No. 107,569]. When these applications were published subject to such interference, they were both opposed by Stark, Wetzel & Co., Inc., (hereinafter referred to as Stark), and at approximately the same time Stark filed an application for registration of "LITTLE SIZZLERS" for pork sausages [Serial No. 119,435, May 5, 1961]. Following a denial by the Examiner of Trademarks of a motion to dissolve the interference made by Hormel, which was consented to by Hereford, Hormel expressly abandoned its application, thereby terminating both the interference and opposition [Opposition No. 40,973] in which this application was involved. Shortly thereafter, Stark assigned to Hormel its entire rights, title and interest in the mark "LITTLE SIZZLERS," and upon filing of the instrument assigning the mark in the Patent Office, Hormel was substituted as party opposer in this proceedings. Concurrent with the assignment of the mark, Hormel executed an agreement granting Stark a non-exclusive license to use the mark in the same market area in which it had previously marketed its goods.
>
> According to the record, Stark has continuously used the mark "LITTLE SIZZLERS" on fresh pork link sausage since as early as 1948 and has marketed such products in the State of Indiana, and in parts of Illinois, Michigan, Ohio and Kentucky. Stark has advertised its sausage in newspapers and on radio, television, and billboards. Since November 1954, sales of "LITTLE SIZZLERS" sausages have been in excess of 100,000 tons.[1]

---

[1] The Board's footnotes have been omitted, and the matter in brackets added to identify the several applications, interferences and oppositions.

The Board then considered "the nature of the marks together with the overall differences in both sound and appearance" and concluded that Hereford's mark SIZZLE "differs sufficiently" from Hormel's mark LITTLE SIZZLERS as to avoid a likelihood of confusion as a result of using the marks on their respective goods.

We do not agree with the Board. [1] There is no significant difference between the goods of the parties. While appellee stresses that its goods are in fact breaded cubed beef patties, the application is drawn to use on "fresh and frozen packaged meats" which includes the goods, sausages and sausage meat, of appellant. Further, the channels of trade are the same.

[2] Although "Sizzlers" as used in LITTLE SIZZLERS is a noun and "Sizzle," as used by appellee, is a verb, they both conjure up identical mental images, i.e., meat making a hissing sound while cooking. Thus we believe that the concurrent use of LITTLE SIZZLERS and SIZZLE on the respective goods of the parties is likely to cause confusion, mistake or deception.

Appellee Hereford challenges the status of Hormel in this opposition. Appellee states in its brief:

> In view of the license given to Stark, Wetzel as a part of the assignment agreements it is likely that the entire assignment is invalid as an assignment in gross * * *.

However, it also states:

> * * * [Hormel] then purchased from Stark its trademark "LITTLE SIZZLERS," the application to register same, goodwill, etc. A copy of this instrument has been made a part of this record and is the Hormel Exhibit No. 10. *There is nothing suspicious or objectionable about the assignment as such.* * * * [Emphasis supplied.]

In the light of its brief and the facts of the case, we take the thrust of these contentions not as challenging the initial assignment to be invalid, but that the subsequent license, being what is termed a "naked license," has resulted in an abandonment by Hormel of its rights in LITTLE SIZZLERS for failure to exercise control over the nature and quality of the goods marketed under the mark licensed to Stark. The issue of abandonment is one of subsequent, not prior use. By the assignment, the prior use of Stark inures to the benefit of its assignee, Hormel. In any event, since Hereford took no testimony, it is restricted to its filing date, while Hormel has shown by adequate testimony that it has been the user in its own right since September 9, 1960, which is prior to Hereford's filing date of October 19, 1960.

We find appellee's reliance on *Roger & Gallet* v. *Janmarie, Inc.*, 107 USPQ 295 (Commr. 1955), aff'd on rehearing 109 USPQ 16 (Commr. 1956), to be inappropriate to support its position that the assignment is invalid because both parties continued to use the mark as they had prior to the assignment, since that case was reversed and remanded by this court, 44 CCPA 965, 245 F.2d 505, 114 USPQ 238, rev'd on other grounds on remand 114 USPQ 406 (Commr. 1956), aff'd 46 CCPA 787, 263 F.2d 350, 120 USPQ 484. As we stated in reversing (44 CCPA at 972):

> On the next point, that the parties were *doing* the same things after the assignment they were doing before, we think this is of little or no significance on the question of the validity of the assignment and of no help in deciding that issue. The important thing is not what they *did* do, but what they *could* do.

[3] Here, Hormel is a user of the mark, and the assignment did affect its position by giving it standing in this opposition. Stark's continued use does not affect that change of parties in this opposition. We think the burden of proving Hormel abandoned the mark by failing to control the use by Stark under the license, is on appellee. Inferences which might be drawn from Hormel's testimony here do not meet that burden. We must agree with the conclusion of the Board that "it cannot at this time be said that Hormel has failed to exercise such control" as to preclude its right in this opposition.

Since we find a likelihood of confusion, between the marks, we must reverse the decision of the Board.

REVERSED.

SMITH, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

KENNETH H. WHITE *v.* HAROLD H. P. LEMMERMAN

No. 7129. Decided February 11, 1965

[52 CCPA —; 341 F.2d 110; 144 USPQ 409]

1. INTERFERENCE—REDUCTION TO PRACTICE—BENCH TESTS.

"The Board, in holding that the tests conducted by White prior to the filing of Lemmerman's patent application were insufficient to establish reduction to practice, relied upon *Larsen* v. *Marzall*, 92 USPQ 306, 195 F.2d 200 (D.C. Cir. 1952) and *Elmore* v. *Schmitt*, 47 CCPA 958, 278 F.2d 510, 125 USPQ 653. In both cases it is pointed out that bench tests may be sufficient and that the amount of testing necessary depends upon the particular invention. * * * The general rule indicated by *Elmore* is that tests must be such as to indicate that the invention worked as intended in practical use. This may be done in several ways. The invention may be tested under actual conditions of use, i.e., flight tests in this case. The invention may be given 'bench tests' which fully duplicate each and every condition of actual use. Finally, in some cases, bench tests may be performed which do not duplicate all of the conditions of actual use. In order to show reduction to practice based on such tests, the evidence must establish a relationship between the test conditions and the intended functional setting of the invention."

APPEAL from the Patent Office. Interference No. 91,143.

AFFIRMED.

D. D. Allegretti, Bair, Freeman & Molinare (*Roger W. Jensen* of counsel) for appellant.

Irving M. Freedman for appellee.

Before RICH, *Acting Chief Judge*,[1] and SMITH, and ALMOND, Jr., *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK, *United States Senior District Judge for the Eastern District of Pennsylvania;* original argument before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This appeal relates to an interference proceeding involving a patent[2] granted to Kenneth H. White as assignor to Minneapolis-Honeywell Regulator Company, and an application[3] filed by Harold H. P. Lemmerman and assigned to the General Electric Company.

There are eight counts in issue which are all of the claims of the White patent copied by Lemmerman while his application was under final rejection with no claims allowed.

---

[1] WORLEY, *Chief Judge*, did not sit in the hearing of this case, but by agreement of counsel, participated in the decision.

[2] Serial No. 643,704, filed March 4, 1957, now Pat. No. 2,900,823, granted August 25, 1959.

[3] Serial No. 631,903, filed December 31, 1956.

Counts 1 and 8 are representative and read as follows:

> 1. In a floated gyroscope: a generally hollow cylindrical housing; a generally hollow cylindrical chamber in said housing; a gyroscope in said chamber; support means for rotatably supporting said chamber in said housing for rotation about an axis, said chamber having a normal position relative to said housing; a fluid in said housing and surrounding said chamber; and means for resisting relative rotation of said chamber and said housing about said axis comprising a plurality of vanes on said chamber extending generally parallel to said axis and outwardly from said chamber, toward said housing defining a plurality of restrictive gaps between said vanes on said chamber and said housing, and a plurality of vanes on said housing extending generally parallel to said axis and inwardly from said housing toward said chamber defining a plurality of restrictive gaps between said vanes on said housing and said generally cylindrical chamber, said vanes on said housing and said chamber terminating with arcuate faces of substantial width.
>
> 8. In an inertial instrument: a housing; a gimbal; means for rotatably supporting said gimbal on said housing for relative rotation therebetween about an axis; inertial means mounted on said gimbal; and means for resisting relative rotation of said gimbal and said housing about said axis comprising a plurality of vanes on said gimbal extending substantially radially from said gimbal toward said housing, a plurality of vanes on said housing extending substantially radially from said housing toward said gimbal, fluid means in contact with said vanes, and restrictive gap means, said vanes on said housing and said gimbal coacting together and with said fluid means to pump said fluid means through said restrictive gap means upon a relative rotation between said housing and said gimbal about said axis.

Each party took and filed testimony.

The question here is one of priority of invention with the burden of proof resting on the junior party, appellant White. The Board found that appellant had conceded before the Board that appellee Lemmerman, the senior party, was the first to conceive the invention in issue. Appellant must, if he is to prevail, establish an actual reduction to practice of the invention at least prior to the filing date of the appellee. The Board considered only the evidence adduced on behalf of appellant and the arguments in the briefs relating to an actual reduction to practice "since a finding adverse to him would dispose of this case."

Appellant asserts that the invention in issue constitutes an improvement in floated inertial devices, such as floated gyroscopes, which were well known in the art long prior to the filing of either of the instant applications. A typical prior art floated gyro is shown in the patent to Jarosh et al.[4] A cylindrically shaped chamber or gimbal is supported inside a similarly shaped casing or housing. A gyroscope is mounted inside the gimbal. The housing is filled with a viscous damping fluid. This fluid surrounds the gimbal and is disposed in the annular damping gap. The fluid used has a density substantially identical to the density of the gyroscope gimbal resulting in the gimbal being supported in substantial neutral suspension, thus relieving the loading on the bearing means between the gimbal and the housing. The gimbal rotational axis is identified as the "output axis." The purpose of reducing the friction on the output axis is to eliminate the frictional errors normally present in gyroscopes. Another function of the fluid is to cushion the gyroscope against mechanical shocks. Still another function of the fluid is to serve as a damping means on the rotation of the gimbal and the housing about the output axis. The damping of the prior art is known as "shear damping" which is produced by the shearing effect between the adjacent fluid molecules as they are moved relative to one another.

Jarosh states that the damping about the output axis causes "the gyro to act as an integrator and hence to tend to produce a rotation about the output axis which is proportional to the integral of the rate of deflection of the assembly about the input axis." Jarosh employed heating to keep the fluid at a constant temperature "so there will be no variation in the damping coefficient."

Honeywell, appellant's assignee, began manufacture and sale of gyroscopes of the Jarosh type in 1949, which included models identified of record as HIG–4's, HIG–5's and HIG–6's. The application of these gyroscopes was restricted by reason of the limitations on the amount of "total damping" which could be secured from the shearing action of the fluid in the annular gap. The record shows that appellant and the technicians at Honeywell were cognizant of this problem and the need for additional damping prior to the conception by appellant of the invention here involved. The testimony shows that the severity of these prior art limitations was more pronounced in very large gyros or small gyros with high speed rotors.

The specific problem which the invention in issue solved was to considerably increase total damping of a floated gyroscope. It was essential in such progress to maintain accuracy of the integration function of the gyroscope. In doing this, there could be no sacrifice of linearity of damping.

It is asserted that the solution of the problem by the invention in issue was accomplished through means described as "paddle damping." This comprises providing at least two paddles or vanes on the gimbal which extend toward the housing and at least two similar means attached to the housing which extend toward the gimbal. Upon relative rotation between the gimbal and the housing about the output axis, a pumping action on the fluid occurs which forces the fluid between relatively small restrictive gaps between the circumferential faces of the paddles and their coacting structure. It is claimed that a higher degree of total damping can be obtained through this structure, due to the pumping action, than could be obtained by the prior art shear damping.

The White patent herein involved states:

> One use of a floated gyroscope is to integrate angular rate of the gyro about its input axis (the input axis being defined as the axis perpendicular to both the gyro spin axis and the gyro output axis). The amount of angular displacement of the gimbal assembly about the output axis is a measure of the time integral of the angular rate of the gyroscope about the input axis and hence is a measure of the total angular displacement about the input axis.
>
> The integration is performed because the rotation of the gimbal about its output axis is opposed by a retarding torque developed by the action of the viscous fluid on the gimbal assembly. In order to have accuracy of integration it is necessary that the damping torque be a linear function of gimbal angular turning rate.
>
> The damping means of the present invention as described above will serve to provide a damping torque that is a linear function of the angular turning rate between the gimbal and the housing. The paddles produce a pumping action upon the viscous fluid.

Appellant's approach to establish actual reduction to practice of his invention was through a modification of a standard Honeywell HIG–6 production gyro of the prior art shear damping or annular gap type into the paddle damping configuration of his invention and to test this configuration to determine whether or not it could solve the problem stated with no sacrifice of linearity. As noted, the damping problem was more critical in the larger gyro. This was the reason assigned for the selection for the damper comparison test of the HIG-6 gyro which was the largest and most advanced of the Honeywell production gyros in existence at that time and had a factor of higher angular momentum than the HIG-5.

---

[4] Pat. No. 2,752,791, filed February 9, 1951; issued July 3, 1956.

The modified paddle damping gyro used for the comparison test with the HIG-6 is referred to as the "P.D. 609." The witness Johnson testified that the HIG-6 was modified "by putting paddles on the gimbal which was made with a different size damping gap than the normal one and with a different main housing." In addition, a fluid of different viscosity was employed. That the "P.D. 609" was built at least prior to Lemmerman's filing date admits of no controversy. Thus the question before the Board which we now review is whether proper testing occurred to establish reduction to practice.

[1] The Board, in holding that the tests conducted by White prior to the filing of Lemmerman's patent application were insufficient to establish reduction to practice, relied upon *Larsen* v. *Marzall*, 92 USPQ 306, 195 F.2d 200 (D.C. Cir. 1952) and *Elmore* v. *Schmitt*, 47 CCPA 958, 278 F.2d 510, 125 USPQ 653. In both cases it is pointed out that bench tests may be sufficient and that the amount of testing necessary depends upon the particular invention. The invention in *Larsen* was drilling mud and in *Elmore* it was a binary counter. The factual situations in both cases are so different from the one presented before us here that we find them of little actual help in deciding the present issue. The general rule indicated by *Elmore* is that tests must be such as to indicate that the invention worked as intended in practical use. This may be done in several ways. The invention may be tested under actual conditions of use, i.e., flight tests in this case. The invention may be given "bench tests" which fully duplicate each and every condition of actual use. Finally, in some cases, bench tests may be performed which do not duplicate all of the conditions of actual use. In order to show reduction to practice based on such tests, the evidence must establish a relationship between the test conditions and the intended functional setting of the invention. *Paivinen* v. *Sands*, 52 CCPA —, 339 F.2d 217, 144 USPQ 1. We must determine whether White's evidence has established that relationship. Lemmerman contends that the testing was insufficient to show this.

In commercializing a gyroscope, many characteristics are tested. For example, White's Exhibit 25 refers to storage temperature tests that should be run. A progress report dated September 19, 1955, recites:

> The immersion test is the only LCA test passed by the HIG-6 to date . . . Tests still to be run are: vibration, shock, high temperature, *low temperature*, altitude, and *life*. [Emphasis added.]

White, however, contends that the only significant question regarding the gyro was whether the increased damping could be achieved with no decrease in damping linearity. White maintains that there were no serious questions with regard to how well the paddle damped gyro would hold up in service because it was merely a modification of the commercial HIG-6. We feel that White's position is consistent with the record. Lemmerman would require all of the standard industry tests mentioned above, but he has not indicated why they are *necessary*. In the present case, with the information obtained in developing the earlier HIG-6 gyro to draw on, we agree with White that the only significant unresolved problem is that of linearity of damping. The problems raised by the fact that the paddle damped gyro employed a new damping fluid and operated by different principles of fluid mechanics than the HIG-6 are, we think, to a large extent just a part of the over-all problem of linearity. Thus, we must determine whether the testing was sufficient to indicate that damping would be "truly linear" under conditions of use.

With regard to testing for linearity, Lewis Winker, a Honeywell engineer, testified:

> Q26. Can you tell me in general what the nature of the test was that you indicated it was ready for at the time of this memo, Exhibit No. 10? A. We wanted to test the gyro and see what the damping coefficient of the gyro was and if the damping coefficient was a linear characteristic of the gyro under *different rates of input* to the gyro. [Emphasis added.]

Winker's testimony continues that the test work was assigned to John Voissem, with whom he conferred regarding the testing; that he observed part of the testing "maybe a couple of hours"; that he could not recall exactly to what extent he discussed the testing with Voissem during the course of the test work "possibly three or four times * * * when he was evaluating the linearity of the gyro" and that Voissem reported the results to him giving him copies of the graphs from the results of the testing.

Prior to the Voissem tests Winker prepared a memorandum identified of record as Exhibit #10. This exhibit in pertinent part recited:

> In addition to determining gyro damping, a large part of the test work on this gyro will be expended in determining damping linearity at high and low input turning rates in comparison to present gyros.

Winker stated that the evaluation engineer tested both the P.D. 609 and the HIG-6 at various turning rates on a mechanical turntable and that he ran damping tests on a mechanical rate table; that he (Winker) observed some of these tests on the paddle damping gyro but did not watch the tests on the HIG-6.

Winker stated that he received the graphs (Exhibits 14 and 15) from Voissem on or about the dates appearing thereon, viz., March 29, 1956 and April 9, 1956, and that from the data reported thereon it could be determined that the damping coefficient was a linear function of the different turning rates put into the gyro and that "from memory" it was "about ten times as great as it would have been for the other gyro which we used to compare it to."

Rodney W. Johnson, an engineering technician with Honeywell identified the gyroscope P.D. 609 from the markings which he had put on it.

John J. Voissem, a senior production engineer with Honeywell, testified that his first duties with respect to gyros at Honeywell were in the Evaluation Department doing preshipment testing of gyros, of HIG-6's and special tests in response to design engineering test requests; that he kept a log book of the test work he performed. He referred to log book data of March 8, 1956 relating to gyro No. 609 stating that he ran some "Null East-Null West" checks to start checking or start calibrating the gyro and to check its repeatability, and "also checked the stops" and that he believed he checked the transfer function also. He described data of March 9, 1956 as relating to balancing and running variable and unbalanced checks; data taken on unit 609, the paddle damper gyro, indicated that he was calibrating the gyro "against earth's rate, or essentially calibrating the servo and the gyro against earth's rate" so as to determine and measure the mass unbalance; that data recorded March 22, 1956 relating to the same gyro referred to where he started to determine the transfer function at various input rates and that these tests were run on a small HIG–4 or HIG–5 rate table. The witness identified a photograph as showing the rate table or one like the table used which he described as an old design or an old type of rate table "which would put out a constant rate and various gyros—mostly HIG–4's and HIG–5's were checked on it."

In describing the nature of the tests performed, Voissem stated:

> The test essentially consisted of mounting the gyro on a table at proper operating temperature and driving the table at the various rates both clockwise and counterclockwise and measuring the null signal or the signal generator output signal and the time required to traverse a particular angle, and through calculations determining what the transfer and millivolts per milliradian were.

The witness referred to 609 and 662 HIG–6 data as having the purpose "To make a brief comparison of the two gyros, one being with the paddle damper and one a standard damping type gyro." He stated that the comparison indicated to him that "it looks like the standard gyro was a little bit more nonlinear, or at least not level * * * over the rate range, as was the paddle damper. It was linear but it wasn't level."

It is White's contention that the above summarized tests indicate that the gyro will exhibit linear damping under conditions of use. The Board disagreed, stating "the record does not show that any one of the tests performed by Voissem duplicated the conditions which would normally be encountered in a practical application of the invention in issue." We note that no one testified that the Voissem tests indicated that the paddle damped gyro would exhibit linear damping under normal conditions of use. All that was said about the tests was that for the given turning rates on the old test table, the output was linear. The important question is, were the turning rates a proper test of linearity, i.e., was there a relationship between the turning rates and the intended functional setting? In answering this question the Board referred to the testimony of Lower:

> Jack W. Lower, in the employ of Honeywell, was design supervisor, section head of the floated gyro group and had worked on gyros from the first Honeywell floated gyro. Lower testified that in 1949 he assisted in building an experimental autopilot around a floated gyro. He tested these early Honeywell gyros by plugging them into the auotopilot and "flew them in the company airplane." He stated that the problems encountered in these first flight tests involved damping; that the flight tests were only partially successful because damping was not under adequate control. In further pursuit of a resolution of the problem, he stated that without adequate damping control it would not have been possible
>
> * * * to pursue a number of the so-called strap-down auto pilot schemes, lagged rate autopilot schemes like we have been pursuing in the past. I speak specifically of items like the Vanguard, the vehicle we injected into orbit, and a succession of other orbital shots in the last and succeeding six or eight years.
>
> With regard to the experimental paddle damped gyro, Lower testified:
>
> It is my recollection that we had made certain paper studies and experimental studies of configurations of paddle dampers prior to the building of this first gyro. However, the extreme dynamic range needed in the intergrater action of this damper in the gyro we felt could not be exhibited and demonstrated except in a completed gyro. In fact, in addition to building the gyro we built a very special hydraulic test fixture which could exercise the gyro adequately in order to prove or disprove the true linearity of this paddle damper. The specifics of that were instead of having a sinusoidal-type of oscillating table which is conventional in most testing of this nature, we built a saw tooth type of oscillating table which would slowly take the table over to one side and then jerk it back, and it was displayed that a number of cycles repeated thusly could prove or disprove the linearity to a fine degree of instrumentation.
>
> Q53. What if any action did you take based upon the results reported to you of the gyro constructed with the paddle damping feature? A. The incident of positive results in the gyro test results confirmed to me that the paddle damper did have a basic utility that could not be proven totally up to this point. We were considering alternative solutions to the problem, and this solution at this point then became apparent as a very prominent and acceptable solution.

Lower stated that laminar flow was essential to the achievement of linearity in the paddle damped gyro. He testified that testing on the new rate table indicated that laminar flow existed and that the Reynolds number was consistent.

The testimony of Lower is convincing that the new rate table was an adequate test of the linearity of the paddle damped gyro. The date of these tests is not in the record, however, and they cannot be relied upon for reduction to practice. Lower's testimony is also convincing that "true linearity" was not established by the Voissem tests on the old rate table. Furthermore, there is nothing in the record to controvert Lower's testimony on this point. Mr. LaHue, a senior staff engineer, stated in a memo "that the proof of damping linearity is an exceedingly difficult thing to prove over the ranges that are required * * *." Mr. Voissem, the senior production engineer who made the tests, testified only that the paddle damped gyro was linear "over the rate range." Mr. Winker, when asked if he had drawn any conclusion from the first rate table tests, stated only that the "damping coefficient was a linear function of the different turning rates that were put into the gyro * * *." No one has stated that the old turning rate gave a meaningful test.

As to the rate table itself, Voissem testified that "It is an old design, or an old type of rate table which would put out a constant rate and various gyros * * * mostly HIG–4's and HIG–5's were checked on it." According to Frykman, a project supervisor, in comparing the HIG–6 to the HIG–4 and HIG–5, the HIG–6 "had a factor of higher angular momentum than the HIG–5. The higher the angular momentum, the more critical the damping problem * * *." In view of Frykman's testimony, it is questionable whether a rate table designed for HIG–4's and 5's would satisfactorily simulate the intended functional setting of the HIG–6.

We reviewed the entire record but find no error in the Board's holding that the Voissem testing was not sufficient to establish reduction to practice. The decision of the Board is affirmed.

AFFIRMED.

RICH, *J.*, dissenting.

I join in Judge Smith's dissent to which I would add only the following thoughts.

In *In re Hartop*, 50 CCPA 780, 792, 311 F.2d 249, 135 USPQ 419, after reviewing a number "of the so-called reduction-to-practice cases decided by this court," we summarized our view of them as follows:

> In some of the cases, the court found actual reduction to practice had been established; in others, no actual reduction to practice was found. However,

> running through *all nine cases* cited is the same expressed or implied criterion, namely, how would one *skilled in the art* interpret the experiments or tests. If the court was convinced that *one skilled in the art* would accept a particular test or experiment as a "possibility" or "reasonable certainty" or "probability" or that it was "reasonably predictable" that a tested invention would operate as alleged or have the utility alleged, a reduction to practice was found; otherwise, the court found no reduction to practice.

I think White has shown all that the law, as this court has propounded it, requires.

I also feel that the majority has failed to appreciate the essential simplicity of the claimed invention and its relation to the prior art as a mere improvement thereon. Reading the record and observing the reactions of my colleagues to it and to appellee's brief has given me the feeling that appellee has succeeded in hiding this essential simplicity behind a great cloud of dust without anything specific upon which to rest his case.

In my view the evidence adequately establishes the only two things that had to be established: (1) that the paddles added to the *old* gyro structure would effectually *increase* damping; and (2) that the linearity of damping is not thereby sacrificed.

SMITH, *J.*, dissenting.

I regret having to dissent in this case, for I feel strongly that the majority opinion evidences a clear understanding and correct interpretation of the relevant legal principles. I wholeheartedly agree with the proposition that, for the purpose of establishing actual reduction to practice of an invention, bench tests may be sufficient and the amount and nature of testing required depends upon the particular invention. Likewise, I agree with the stated position of the majority that the "tests must be such as to indicate that the invention worked as intended in practical use," and that the "evidence must establish a relationship between the test conditions and the intended functional setting of the invention."

Thus, the point at which I am constrained to disagree with the majority opinion comes not at the determination of *what the law is*, but at the *application of that law* to the facts of this case.

The testimony of White and of Winker indicates that both were satisfied that the tests were successful, and that the invention would operate as they had hoped it would. Standing against this testimony are the statements of Lower, which the majority feels cast sufficient doubt upon the quality and nature of the tests as to negate the significance of the conclusions of White and Winker. I cannot agree. Appellant's burden in this case is one of proof by a preponderance of the evidence. And when Lower's testimony is properly weighed, along with the other evidence, I feel that appellant has nevertheless established his case by a preponderance.

Lower's statements regarding the adequacy of the tests are at best general, and at worst, exceedingly vague. Nowhere does he point out specific shortcomings on the basis of which it could be said there was a failure to establish "a relationship between the test conditions and the intended functional setting of the invention."

Since, in my opinion, the Board improperly weighed the evidence on behalf of appellant, and since the Board elected not to consider the evidence on behalf of appellee, I would remand the case for a determination of priority based on a consideration of all the evidence.

U.S. Court of Customs and Patent Appeals

IN RE NOBLE ANDRÉ

No. 7303. Decided February 18, 1965

[52 CCPA —; 341 F.2d 304; 144 USPQ 497]

1. PATENTABILITY—OBVIOUSNESS.

In response to appellant's argument that the combination of references was improved, *Held* that "Each case involving the question of obviousness must ultimately rest on its own facts" and that the "facts here dictate a holding that the combination is obvious."

2. SAME—PARTICULAR SUBJECT MATTER—"MULTI-CAN PACKAGE AND BLANK."

The decision of the Board of Appeals, refusing the claims in an application entitled "Multi-Can Package and Blank" as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 780,603.

AFFIRMED.

Dirks B. Foster (*Mark R. Mohler* of counsel) for appellant.

Clarence W. Moore (*L. F. Parker* of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, and MARTIN, SMITH, and ALMOND, Jr., *Associate Judges*

MARTIN, *J.*, delivered the opinion of the court.

This appeal is a review of the Board's affirmance of the rejection of appellant's claims 9 and 10 in application Serial No. 780,603 for a "Multi-Can Package and Blank," filed December 15, 1958. The specification states that this application is a continuation-in-part of Serial No. 557,885, filed January 9, 1956. No claims stand allowed. The question is one of obviousness under 35 U.S.C. 103.

The invention is a paper wrapper of the type used for six-packs of canned items. Its major features are best understood by reference to FIGURES 2 and 5 of the application reproduced below:

FIG_2

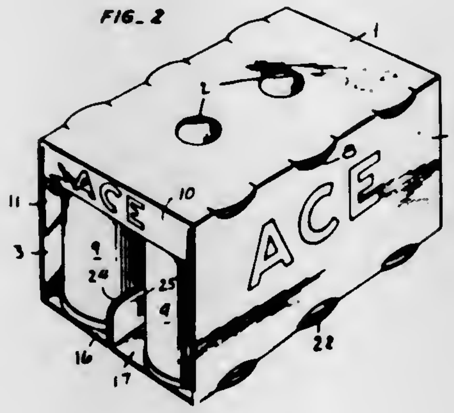
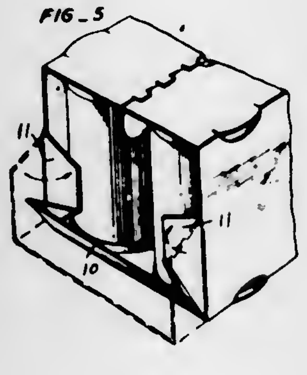


FIG_5



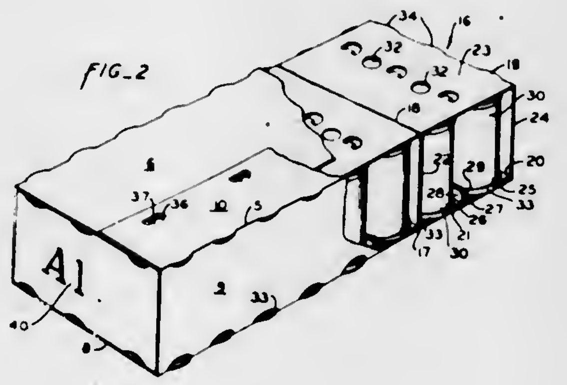
As the first major feature of the invention, a paper blank is tightly wrapped around the cans so that the rims or chimes 8 and 22 of the cans protrude through arcuate slits provided therefor. The second major feature is a display strip 10 which is positioned by folding in extensions 11, which terminate midway along the side panels 3, so that the extensions spring past the cans and are tightly secured thereby.

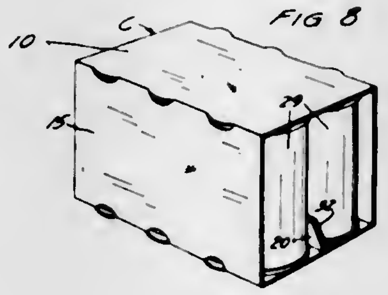
The following references were relied on for the rejection:

Kinkenon, 2,033,526, March 10, 1936.
Murray, 2,765,073, October 2, 1956.
André, 2,828,009, March 25, 1958.
Fisher, 2,889,040, June 2, 1959.
Filmer Ltd., et al. (British), 736,218, September 7, 1955.

Claims 9 and 10 were rejected by the Examiner as unpatentable over André, showing a tightly wrapped slitted sleeve-type wrapper, in view of Fisher, Filmer or Kinkenon, all of which show a display strip. Additionally, claim 10 was rejected, as unpatentable over Murray, who has showings similar to André, in view of each of the secondary references. Neither the Board nor appellants make any distinction between the claims or between such rejections. On analysis of the claims and references, we also see no reason to do so and accordingly will treat them together.

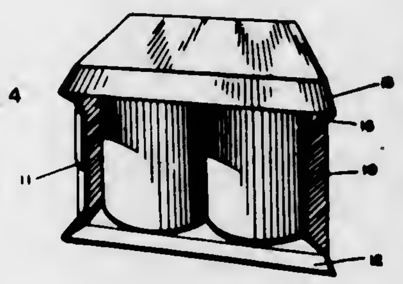
An inspection of FIGURES 2 of André and 8 of Murray below show the tightly wrapped sleeve-type wrapper with slits for the chimes of cans:

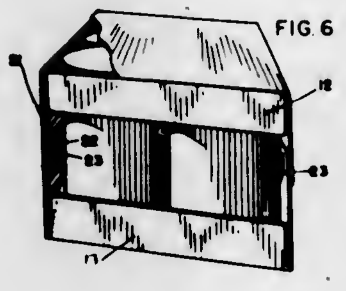




Typical of the secondary references showing the other major feature, the display strip, is Fisher:

FIG 4





Fisher has two display strips 12 and 13, which are joined along the sides by a connecting extension 10. This extension is sprung past the cans in the folded condition as shown best in FIG. 6. Pull tab 23 facilitates reopening the package. The Filmer reference shows a single display strip along the lower edge of an open-ended sleeve. The infolded extension continues around the remaining three edges and is secured on the sides by staples. Kinkenon also shows a single display strip with full side extensions.

The following analysis of representative claim 10 shows portions of the claim in two columns according to the correspondence said to exist between the primary and secondary references:[1]

	André or Murray	*Fisher or Kinkenon or Filmer*	
	10. A package comprising:		
	at least one row of a plurality of cylindrical objects in side by side relation,		
	an open ended sleeve enclosing said row with the end objects in said row at the open ends of said sleeve,		
		a pair of strips one at each end of said sleeve in positions extending across the sides of said end objects that face outwardly of said open ends of said sleeve,	
	said sleeve and said strips being formed from a single elongated cardboard blank having side edges extending longitudinally thereof and transversely creased to form a longitudinally extending series of panels including a pair of spaced end panels and a pair of spaced side panels alternating with and immediately adjacent to said end panels and a pair of terminal end sections,		
		said strips extending along and projecting oppositely outwardly from side edges of one of said end panels and having	
		extensions at their ends integrally connected therewith and with said side panels along said side edges,	
		said *extensions terminating within the extent of said side panels,*	A
	said blank having openings therein, said blank being so tightly wrapped around said row in forming said sleeve as to forcibly project portions of said objects through said openings and to hold said objects in said sleeve with said end panels extending over and substantially in engagement with the opposite ends of said objects and said side panels extending over and substantially in engagement with the oppositely outwardly facing sides of said row of objects,		
		said extensions extending into said sleeve to positions between said side panels and said *objects* with the latter *solely holding said extensions therein,*	B
C	and *means securing said terminal end sections together maintaining* said sleeve so wrapped around said objects		
		and *said strips and said extensions in their said positions.*	D

---

[1] This analysis is from appellant's brief.

The italicized portions, referred to by letters A–D, are said by appellant not to be found in the references and are alleged to form the basis of the unobviousness of the combination. We do not agree.

Regarding italicized portion A, we see it to be no more than an obvious matter of choice to terminate the extension midway along the sides. Appellant's specification does not indicate that any particular significance was placed on that detail of the wrapper for it states:

> * * * While the extensions 11 may continue the full widths of the panels 3, if desired, there is no actual need for it in the present invention, and they are therefore indicated as terminating along diagonally extending free end edges 15 at points intermediate the end edges of the panels 3.

Appellant contends that a saving of paper is obtained by the use of shorter, or "terminating," extensions since the blanks can be nested in cutting them from a paper strip. Assuming the record supports this saving, it is not persuasive of patentability since it is obvious to consider such matters in the design of blanks.

Regarding italicized portion B, appellant states that the wrapper of Fisher is a *loose* one and the extensions may be reopened by means of pull tab 23. This is said to be in contrast to the present invention in which the extension is *tightly* secured in position. Fisher recognizes that the cans will lock the folded extension in place, stating:

> * * * if each closing flap [side extension] is moved inwardly further along its hinge line [fold], the outer end of each flap will first engage the periphery of the can and, upon further movement in the same direction, will bend and then straighten out and be locked against the back of the can.

It is apparent that a slitted wrapper of the type of Murray or André, by permitting the chimes to project through the arcuate slits, will result in a tight fit between the cans and sides of the wrapper. It follows predictably that a more snug fit is obtained when the display strip is used with the slitted-type wrapper. Moreover, that italicized language of the claim does not permit any distinction over the somewhat looser wrapping of Fisher.

Italicized portion C refers to interlocking tabs which secure the ends of the sleeve together. For that purpose we find tabs in the André patent, and glue in both André and Murray. Portion D merely refers to the strips and extensions in their relative positions as earlier recited in the claim, which were amply discussed above.

Appellant argues that the combination of references is improper, stating:

> However, for such a rejection to be proper, it is necessary that at least one of the references suggest the combination or the selection from and incorporation of features into the other. As stated [in] *In re Hortman*, 46 CCPA 814, [264 F.2d 911] 121 USPQ 218, 220 (1959):
>
> > "It is well settled that references may not be combined where 'there is no suggestion in either of the references that they can be combined . . .' to meet the recitation of appellant's claims. *In re Shaffer* [43 CCPA 758, 229 F.2d 476, 108 USPQ 326] * * *."
>
> To the same effect are *In re Rothermel and Waddell*, 47 CCPA 866 [276 F.2d 393], 125 USPQ 328 (1960) and *In re Pavlecka*, 50 CCPA 1406 [318 F.2d 339], 138 USPQ 152 (1963). The latter decision points out that the appellant's disclosure may not be used as the source of the suggestion for combining features of various references, but that such suggestion must come from the references themselves.

[1] We disagree not with the principles set forth in those cases, but with the application of them as controlling in all fact situations involving the question of obviousness. Each case involving the question of obviousness must ultimately rest on its own facts; those facts here dictate a holding that the combination is obvious. As stated recently in *In re Conti*, 52 CCPA 817, 337 F.2d 664, 143 USPQ 242, Judge Almond speaking for the court, 143 USPQ at 248:

> * * * We think that the structures shown in the references when contemplated by one of ordinary skill in the art would, in themselves, suggest or hint at the combination of old features here claimed.

In our opinion that is the situation here.

[2] For the foregoing reasons the decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, concurs in the result.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,702,180, W. H. Horner, METHOD OF EXCAVATION; **3,011,567**, G. M. Turner, METHOD OF DRILLING HORIZONTAL BORES EMPLOYING A GEL-FORMING COLLOIDAL DRILLING FLUID, **filed** Dec. 14, 1964, D.C., S.D. Tex. (Houston), Doc. 64–H–637, *Gilbert M. Turner et al.* v. *C. E. Pennington et al.*

2,902,940, A. W. Meyer et al., SELF-PRIMING PUMPING SYSTEM, **filed** Dec. 11, 1964, D.C., S.D.N.Y., Doc. 64/3811, *Hudson Engineering Co. et ano.* v. *Bringham Pump Company.*

2,912,799, S. A. Boettcher, LAPPING MACHINE; **2,968,135**, Boettcher and Page, same, **filed** Dec. 9, 1965, D.C., N.D. Ill. (Chicago), Doc. 64c2055, *Speedlap Corporation* v. *Spitfire Tool & Machine Co.*

2,925,841, S. W. Brunner, CARRYING CASES, **filed** Dec. 1, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–1163, *Sam Brunner* v. *Gross Electronics Components Corp.* Action dismissed Apr. 14, 1965.

2,953,878, M. O. Schur, METHOD AND APPARATUS FOR MAKING FILTER RODS; **2,979,058**, same, MANUFACTURE OF LAMINATED FILTER TIP; **3,088,359**, same, COMPOSITE ROD MACHINE, **filed** Dec. 14, 1964, D.C., E.D. Va. (Richmond), Doc. 4176, *Olin Mathieson Chemical Corporation* v. *Molins Machine Company, Inc. et al.*

2,968,135. (See 2,912,799.)

2,979,058. (See 2,953,878.)

2,979,334, C. F. Mitchell, SMOOTH SURFACED BOWLING BALL WITH APERTURES THEREIN, **filed** Aug. 19, 1963, D.C., E.D.N.Y. (Brooklyn), Doc. 63C–936, *Charles F. Mitchell* v. *Grip Rite Sport Supplies, Inc.* Order of dismissal Dec. 10, 1964.

2,981,209, W. J. Flemming, COMBINATION RAIL-HIGHWAY FREIGHT AND AUTO TRANSPORT, **filed** Dec. 10, 1964, D.C., W.D.N.Y. (Buffalo), Doc. 11,218, *Walter J. Flemming* v. *General Motors Corporation et al.* **Same, filed** Dec. 30, 1964, D.C., W.D.N.Y. (Buffalo), Doc. 11,237, *Walter J. Flemming* v. *United States of America Preserver of United States Government.*

2,984,036, J. I. Adler, GARLAND CONSTRUCTION, **filed** Dec. 2, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c2006, *Adler Enterprises, Inc.* v. *Marshall Field & Co.* **Same, filed** Dec. 3, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c2020, *Adler Enterprises, Inc.* v. *F. W. Woolworth Co.*

3,007,262, W. J. Richards, SHOE CONSTRUCTION, **filed** Dec. 4, 1964, D.C., N.D. Ill. (Chicago), 64c2034, *Genesco, Inc.* v. *Knapp Bros. Shoe Corp. et al.*

3,011,567. (See 2,702,180.)

3,024,301, K. R. Walch, WIRING GRILLE, **filed** Dec. 15, 1964, D.C., W.D. Mich. (Grand Rapids), Doc. 4935, *Panduit Corporation* v. *Stahlin Bros. Fibre Works, Inc.*

3,025,923, H. Burnstein, COLLAPSIBLE LADDER, **filed** Feb. 19, 1963, D.C.N.J. (Newark), Doc. 142–63, *Harry Burnstein et al.* v. *Win-Chek Industries, Inc.* Stipulation and order of dismissal Dec. 18, 1964.

3,029,421, R. F. Beguin, ANNUNCIATOR SYSTEM; **3,039,065**, E. A. Keller, MAGNETIC CORE ANNUNCIATOR SYSTEM; **Re. 24,031**, R. J. Marmorstone, ANNUNCIATOR SYSTEM, **filed** Dec. 31, 1964, D.C., E.D. Pa. (Philadelphia), Doc. 37141, *The Scam Instrument Corp.* v. *Compudyne Corp.* **Same, filed** Feb. 9, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c199, *The Scam Instrument Corporation* v. *Lundell Controls, Inc.*

3,035,845, M. L. Benjamin, COLLET CHUCK, **filed** Dec. 28, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–857, *Erickson Tool Company* v. *Bales Collet Manufacturing Company.*

3,039,065. (See 3,029,421.)

3,043,994, Anderson and Heidorn, ENCAPSULATED COIL AND METHOD OF MAKING; **3,045,290**, same, METHOD OF ENCAPSULATING COILS, **filed** Sept. 4, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c1578, *Anderson Controls, Inc.* v. *D. J. Davis Company, Inc. et al.* By agreement, cause dismissed without prejudice as to defendants D. J. Davis and Dhuaine J. Davis. Final judgment—patent held valid and infringed by Hermetic Coil Co., Inc. Complaint and counterclaim dismissed without prejudice Dec. 24, 1964.

3,044,798, T. C. Gerner, REPLACEMENT UNIT FOR IDLER ARM BRACKET, **filed** Dec. 1, 1964, D.C., E.D. Mo. (St. Louis), Doc. 64C432(2), *Theodore C. Gerner* v. *Moog Industries, Inc.*

3,045,290. (See 3,043,994.)

3,074,601, C. O. Kuffer, AEROSOL VALVE ASSEMBLY, **filed** Dec. 17, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c2115, *Edward H. Green et al.* v. *Aerosol Research Company.*

3,082,794, F. W. Wahl, CLAMPING MEANS FOR SEALING PLASTIC TUBING, **filed** Dec. 30, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c2184, *AMP Incorporated* v. *Abbott Laboratories.*

3,088,359. (See 2,953,878.)

3,090,097, J. E. Ruckstuhl, METHOD OF MAKING SYNTHETIC VELVET-LIKE KNITTED FABRIC, **filed** Dec. 3, 1964, D.C., S.D.N.Y., Doc. 64/3699, *Terlinden & Co.* v. *Gehring Textiles, Inc.*

3,093,103, L. J. Berkeley, METHOD OF PRODUCING SPIRAL PIPE, **filed** Dec. 3, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c2023, *Security-First National Bank* v. *Acme Steel Company.*

Des. 188,032, E. Simon, HAT, **filed** Dec. 5, 1963, D.C.N.J. (Newark), Doc. 1030–63, *Simon Simple Originals, Inc.* v. *Newark Felt Novelty Co.* Stipulation of dismissal Dec. 14, 1964.

Des. 195,175, L. E. Greenberg, PLAY POOL OR SIMILAR ARTICLE, **filed** Dec. 4, 1964, D.C., S.D.N.Y., Doc. 64/3737, *Coleco Industries, Inc.* v. *Kransco Manufacturing, Inc. et ano.*

Des. 196,262, E. K. Sovatsky, PORTABLE INCANDESCENT LAMP; **Reg. No. 734,840** (TENSOR), Tensor Electric Development Company, Lamps, A.C.-D.C. voltage supplies, A.C. generators, master oscillator, etc., **filed** Dec. 3, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64–1682–WM, *Tensor Corporation* v. *Sears, Roebuck & Co. et al.*

Des. 196,871, S. J. Koch, Adjustable table lamp or similar article, **filed** Nov. 20, 1964, D.C., E.D.N.Y. (Brooklyn), Doc. 64C–1131, *Amprobe Instrument Corp.* v. *Mobilite, Inc.*

Des. 199,621, J. Johnson, ARMCHAIR, **filed** Nov. 30, 1964, D.C., S.D.N.Y., Doc. 64/3649, *Frank & Son, Inc.* v. *Charlton Co., Inc.*

Re. 24,031. (See 3,029,421.)

Erratum

In the OFFICIAL GAZETTE of March 16, 1965, vol. 812, p. 656, under the heading "Patent Suits," second column, lines 16 and 17, strike out "; Reg. No. 717,500 (CROWN JEWEL), Brunswick Corporation, Bowling balls".

ABBREVIATURES OF APPLICATIONS

Published at the request of the applicant or owner in accordance with Notice of July 28, 1964, 804 O.G. 813. The abbreviatures are identified by serial number of the applications and arranged in chronological order. The heading of each abbreviature of application published herein indicates the number of pages of specification, including claims, and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and photocopies of them, or any part thereof, may be purchased for 30 cents a page.

285,722. **ADJUSTABLE CENTER OF GRAVITY FIXTURE.** David Vineberg, Philadelphia, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania. Filed June 5, 1963. Published May 25, 1965. Class 73—65. 2 sheets of drawings. 6 pages of specification.

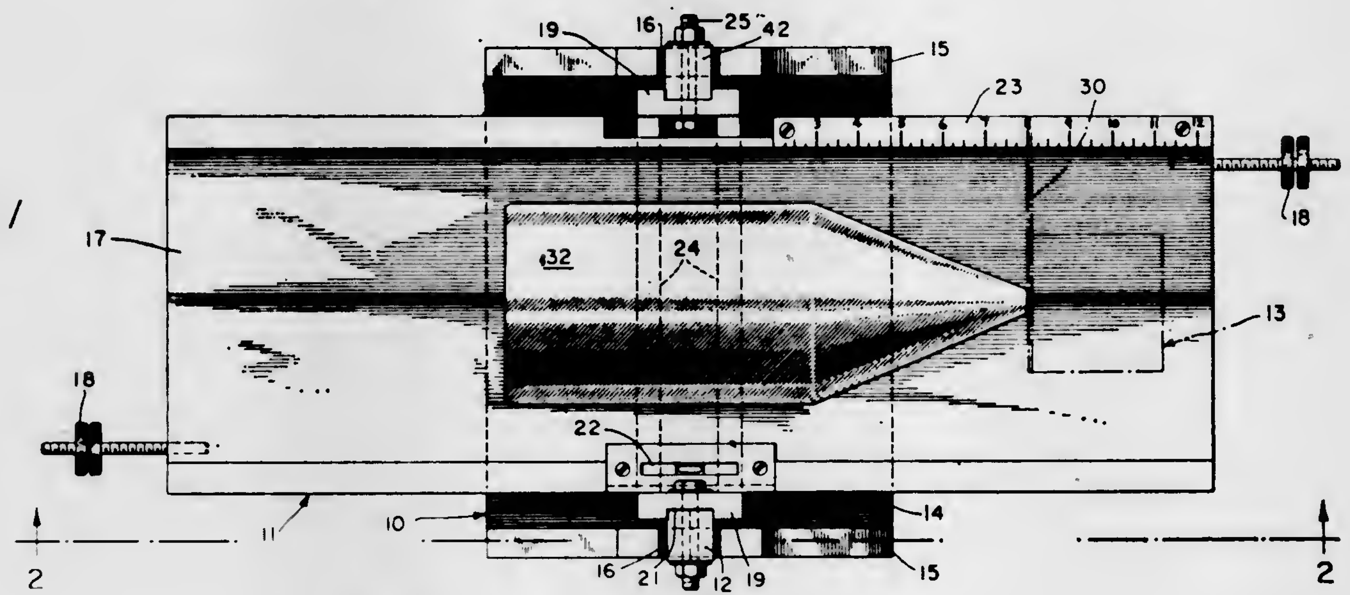


Fig. 1

2. Apparatus for measuring the longitudinal location of the center of gravity of an object, comprising: cradle means adapted to support the object for sliding movement therealong in such a manner that the longitudinal axis of the object is parallel to that of said cradle means; a pair of fixed supports disposed on opposite sides of said cradle adjacent the center thereof; and a pair of pivots operatively connected to said cradle means and supporting it on said supports for pivotal movement about an axis extending transversely of the longitudinal axis of said cradle means, said pivots being vertically adjustable relative to said cradle means whereby the pivotal axis intersects the longitudinal axis of the object.

PLANT PATENTS

GRANTED MAY 25, 1965

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,517

CHRYSANTHEMUM PLANT

Orville O. Dunham, Niles, Mich., assignor to Stern's Nurseries, Inc., Geneva, N.Y., a corporation of New York

Filed Mar. 4, 1964, Ser. No. 349,514

1 Claim. (Cl. Plt.—80)

A new and distinct variety of chrysanthemum plant, substantially as herein disclosed, characterized as to novelty by the Pale Purplish-Pink color of its blooms with pearl-like luminescence, the earliness and large size of the blooms, the tall, strong stems, bushy plant habit and the abundant Dark Yellowish-Green foliage.

2,518

CHRYSANTHEMUM PLANT

Orville O. Dunham, Niles, Mich., assignor to Stern's Nurseries, Inc., Geneva, N.Y., a corporation of New York

Filed Mar. 4, 1964, Ser. No. 349,515

1 Claim. (Cl. Plt.—77)

A new and distinct variety of chrysanthemum plant substantially as herein disclosed, characterized as to novelty by the rich creamy white color of its blooms having a suggestion of Brilliant Greenish-Yellow at their centers, the very large size of the blooms, with full incurving centers and deeply reflexing outer petals, the blooms being very symmetrical, tall, long, straight stems, the very double petalage, and earliness to bloom.

2,519

CHRYSANTHEMUM PLANT

Orville O. Dunham, Niles, Mich., assignor to Stern's Nurseries, Inc., Geneva, N.Y., a corporation of New York

Filed Mar. 4, 1964, Ser. No. 349,516

1 Claim. (Cl. Plt.—82)

A new and distinct variety of chrysanthemum plant substantially as herein disclosed, characterized as to novelty by the generally Strong Purplish-Red color of its blooms with the petals having much lighter reverses of Pale Purplish-Pink, the reflexing outer petals and tightly incurving central petals, strong, sturdy stems, upright habit and large weather resistant blooms.

2,520

CHRYSANTHEMUM PLANT

Orville O. Dunham, Niles, Mich., assignor to Stern's Nurseries, Inc., Geneva, N.Y., a corporation of New York

Filed Mar. 4, 1964, Ser. No. 349,517

1 Claim. (Cl. Plt.—79)

A new and distinct variety of chysanthemum plant substantially as herein disclosed characterized as to novelty by the Dark Reddish-Orange inside of petals with Orange-Yellow reverses, providing a Reddish-Bronze general tonality, large, incurving blooms, somewhat reflexed, earliness to bloom, and strong, upright habit of growth with good weather resistant characteristics.

2,521

ROSE PLANT

Herbert C. Brownell, Little Compton, R.I.

Filed Dec. 17, 1963, Ser. No. 331,330

1 Claim. (Cl. Plt.—19)

A new and distinct variety of rose plant of the hybrid tea type, substantially as herein shown and described, characterized particularly as to novelty by its vigorous habit of growth, abundant foliage, its resistance to mildew and blackspot, and its ability to withstand moderate subzero temperatures in combination with its hybrid tea character and its *Rosa wichuraiana* ancestry.

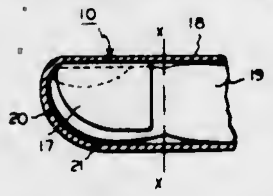
PATENTS

GRANTED MAY 25, 1965

GENERAL AND MECHANICAL

3,184,756
PROTECTIVE GLOVE

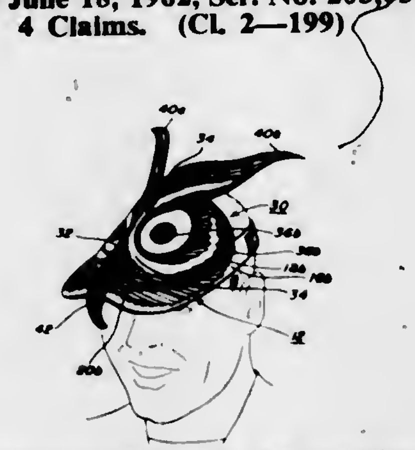
Joseph A. De Luca, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 10, 1962, Ser. No. 229,647
3 Claims. (Cl. 2—161)



1. A workman's protective glove having at least one finger portion accommodating an individual finger comprising, in combination, a glove adapted to enclose the entire hand fabricated throughout from pliable material provided at the distal finger portions with an integral individual U-shaped armor saddle piece adapted to overlie substantially the entire 80% mid-length outside distal portion of the wearer's finger past the first joint and in which the depending portions constitute side wings enclosing said finger a minimum amount of about 70% of the uncompressed thickness of said fingers while permitting the extreme tip of the finger to extend beyond the front end of said saddle piece to thereby preserve finger tip tactile sensitivity, said saddle piece being fabricated from a rigid high-strength unitary piece of material formed longitudinally with a slightly converging taper in width extending from back to front and with said side wings undercut to a convex profile extending over about 50% to about 95% of the length of said side wings and terminating at the forward tip of said saddle piece, thereby providing rocker edges predisposing said saddle piece for tilting movement towards the tip of said wearer's fingers in reaction to a force applied to the remote outside ends of said distal finger portions.

3,184,757
NOVELTY HEADWEAR

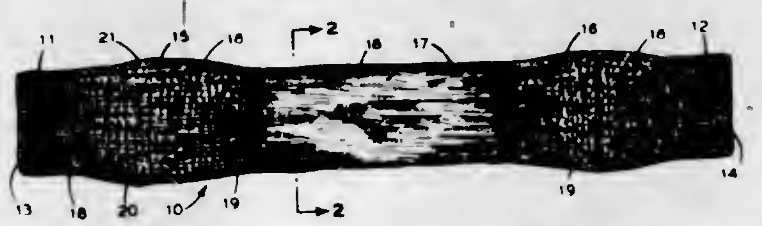
William R. Pennington, Baton Rouge, La. (10104 Goodyear Drive, Dallas, Tex.)
Filed June 18, 1962, Ser. No. 203,038
4 Claims. (Cl. 2—199)



1. In an article of headwear, the combination of: an integral visor section including a frontal peak portion and rearwardly extending side arms adapted to be secured together adjacent their free rearward ends thereby with said peak portion to form a head-encircling band; and a partial crown section extending across the frontal peak portion and between the forward end portions of the side arms of said visor section, said crown section having increasingly greater width in front-to-rear direction and greater overall width in its rear portion than the normal spacing between said side arms and being folded along a front-to-rear line, whereby, when assembled to said visor section with its bottom edge in engagement therewith, said crown section extends upwardly-rearwardly from the peak portion of said visor section, and cooperative means on the bottom edges of the forward and rearward portions of the crown section and on the frontal peak portion and the side arms, respectively, of the visor section for securing the crown section to the visor section at points of the latter which are so located that the rearward end portions of said crown section are spread apart a substantially greater distance than are its forward end portions, said forward end portions terminating in ends which extend forwardly and downwardly over the forward edge of the visor peak portion; said sections being configured, marked and colored in simulation of the head of a particular bird.

3,184,758
HEAD BANDS

Theodor F. Hirsch, Carrollton, Ga., assignor to Maryon Hosiery Mill, Inc., Carrollton, Ga., a corporation
Filed Nov. 1, 1962, Ser. No. 234,715
6 Claims. (Cl. 2—209)

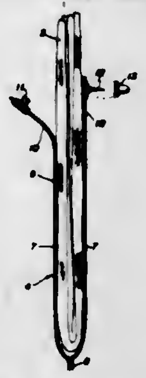


1. A stretchable head band for encircling the head of a wearer having a front section, a rear section and a pair of oppositely disposed ear covering sections interconnecting said front and rear sections, said front and rear sections comprising throughout their extent knitted nylon yarns having substantial residual stretch, said ear covering sections comprising a mixture of knitted yarns, a major portion of the yarns of said mixture being uniformly distributed throughout the extent of said ear covering sections and being soft and heat insulating with limited residual stretch, and a minor portion of the yarns of said mixture being of nylon with substantial residual stretch, whereby said head band may be stretched to conform to a large range of head sizes and said ear covering sections may closely conform to the ears of the wearer.

3,184,759
HANDKERCHIEF HOLDER

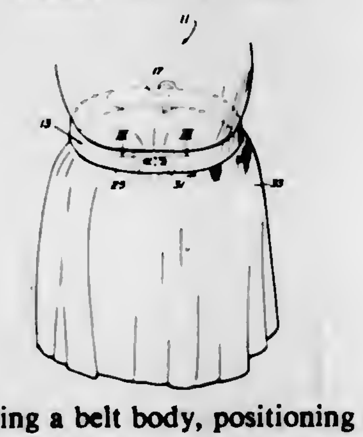
George R. Masters, 200 Burnett, Fort Worth, Tex.
Filed Jan. 6, 1964, Ser. No. 335,959
6 Claims. (Cl. 2—279)

1. A holder for a folded handkerchief for insertion with the handkerchief in the breast pocket of a coat comprising a substantially rectangular envelope, open at one of its ends, which in use is positioned uppermost, formed of plastic sheet material adapted to have a folded handkerchief inserted therein from its open end with an edge portion of the handkerchief extending outwardly beyond said open end of the envelope, the envelope having separable upper edge portions for convenience in inserting a handkerchief therein, and snap fastener means and tack means for removably connecting said upper edge portions to each other and to the material of a coat forming the inside of a pocket in which the handkerchief and its holder are adapted to be received whereby said upper edge portion of the handkerchief is adapted to be adjustably positioned relative to the top of the pocket, said upper edge portions of the envelope being removably connected to each other adjacent their top corners by said snap fastener means and said tack means for removably connecting said upper edge portions to the material of a coat forming the inside of a pocket in which the handkerchief and its holder are adapted to be received consisting of a pair of tacks having protective covers applied to their pointed ends.



3,184,760
POSITIONING MEANS FOR WOMEN'S BELTS

Richard W. Anstey and Doris B. Anstey, both of 1513 White Station Road, Memphis, Tenn.
Filed May 21, 1963, Ser. No. 281,932
5 Claims. (Cl. 2—312)

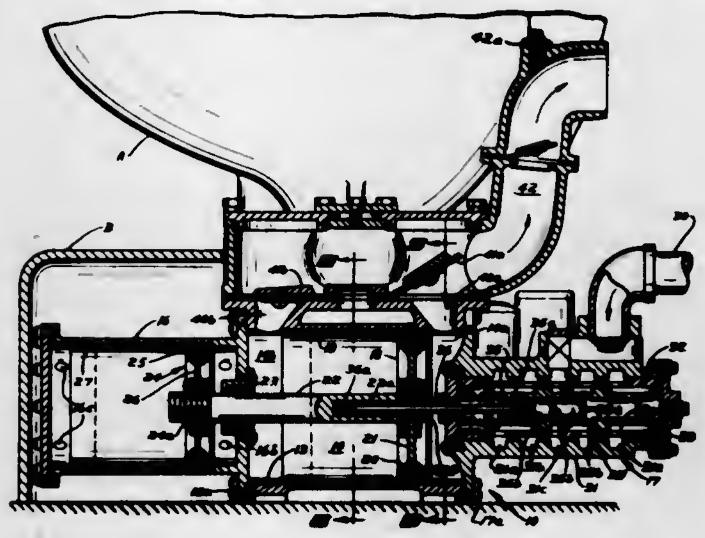


1. In a belt having a belt body, positioning means comprising an attachment means for fastening to a woman's skirt and the like, elastic means including a broad resilient member interconnecting said attachment means and said belt body to which at least a part of said attachment means is fixedly attached for permitting movement of said part of said attachment means relative to said belt body during the fastening of said attachment means, said broad resilient member being attached to said belt body at substantially spaced apart places to provide a passageway between said broad resilient member and said belt body and to provide access for the insertion of the fingers in said passageway between said broad resilient member and said belt body for effecting the fastening of said attachment means.

3,184,761
TOILET SYSTEM WITH PRESSURE DISCHARGE PUMPING SYSTEM

Arthur E. Broughton, Glens Falls, N.Y.
Filed Nov. 14, 1963, Ser. No. 323,629
13 Claims. (Cl. 4—90)

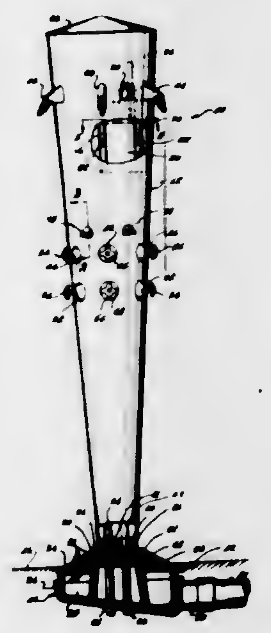
1. A toilet system for pumping sewage under pressure, said system comprising:
- (*a*) a toilet bowl having a discharge outlet in the lower portion and flushing inlet means in the upper portion;
- (*b*) liquid supply means for supplying liquid under pressure;
- (*c*) a hydraulically actuated pumping system connected to said supply means and to said bowl and including:
  - (1) a reciprocating actuator connected to said supply means and responsive for reciprocation to the liquid supplied under pressure from said supply means;



  - (2) a pump connected to said actuator to be actuated thereby and communicating with said discharge outlet from the toilet bowl;
  - (3) check valve means positively preventing backflow through said discharge outlet from said pump;
- (*d*) means for supplying from said supply means flushing liquid to the flushing inlet means when said pump is being actuated by said actuator; and
- (*e*) a primary control valve for controlling the liquid supplied to said actuator to control the operation thereof.

3,184,762
MULTI-STATION SHOWER FIXTURE WITH SLOPING SHOWER HEAD PANEL

Hugh H. Logan, Glendale, George I. Doty, La Canada, and James F. Nelson, Woodland Hills, Calif., assignors to The Logan Manufacturing Company, Glendale, Calif., a corporation of California
Continuation of application Ser. No. 186,705, Apr. 11, 1962, which is a continuation of application Ser. No. 19,270, Apr. 1, 1960. This application Oct. 9, 1963, Ser. No. 315,740
6 Claims. (Cl. 4—145)

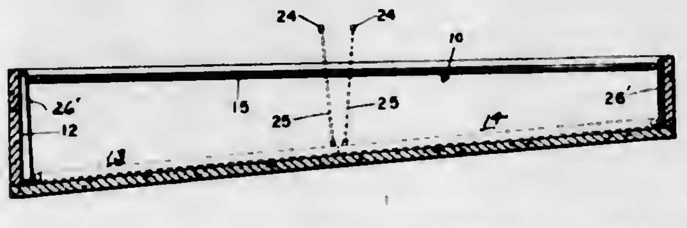


1. A shower fixture comprising:
a frusto-conical shell,

- a mounting flange rigidly fixed to the small end of said shell and projecting outwardly therefrom,
- a plurality of shower heads mounted on said frustoconical shell at a circumferential spacing from one another in the region of the larger diameter portion of said shell,
- a control valve for each shower head mounted on said shell and including an operating handle projecting outwardly from said shell, and

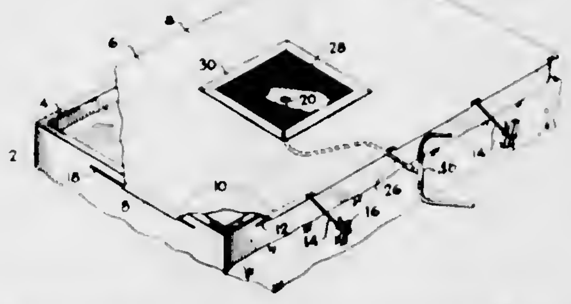
water piping within said shell leading to said valves and from said valves to said shower heads.

3,184,763
SAFETY COVER FOR SWIMMING POOLS
Donald P. Kennedy, 441 W. 31st St., Erie, Pa.
Filed Mar. 6, 1963, Ser. No. 263,230
4 Claims. (Cl. 4—172)



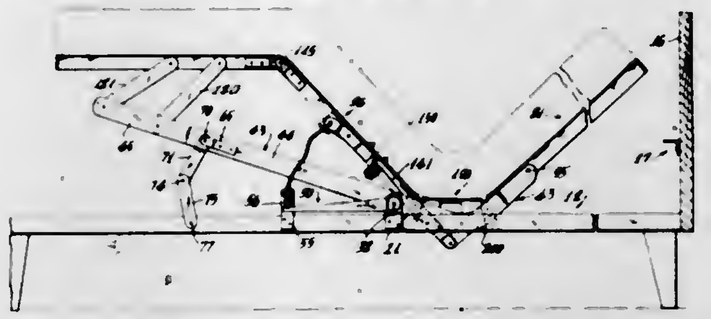
1. In combination, a swimming pool and a cover therefor, said swimming pool having generally vertical side walls and a bottom, said cover comprising an open frame made of rigid hollow tubular material, at least one flexible sheet attached to said frame and covering the opening defined by said frame, means for fastening said frame to the top of said side walls, said frame being heavier than water whereby it will sink in said pool when filled with water, and means to force gas into said tubular material and to force the water from said hollow tubular material of said frame with a lighter than water gas whereby said cover will float on the top of the water in said pool, the bottom of said pool being non-planar, said frame having flexible means thereon for allowing it to adjust in shape to said bottom, said tubular material having a plurality of separate air receiving sections therein sealed from each other.

3,184,764
SWIMMING POOL COVER
Robert E. West, Yardley, Pa., assignor to Cascade Industries, Incorporated, Edison, N.J.
Filed Oct. 22, 1963, Ser. No. 317,900
8 Claims. (Cl. 4—172)



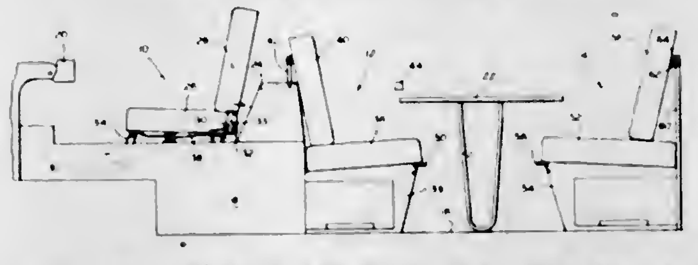
3. A swimming pool cover comprising a flexible sheet of water-impervious material, means connected to said sheet and located adjacent the edges thereof for holding said sheet in a substantially horizontal position, said sheet having a drain opening located near the central portion thereof, a layer of screening overlying said drain opening, the edges of said screening being spaced a substantial distance from the drain opening, the central portion of the screening being separable from the portion of the sheet adjacent the drain opening to hold leaves and the like elevated above the portion of the sheet which it overlies and cooperating with said portion of the sheet to form a water-receiving well beneath the screening and communicating with the drain opening.

3,184,765
BEDS
Alex J. Katz, Orange, N.J., assignor, by mesne assignments, to Super Sagless Spring Corporation, Amsterdam, N.Y., a corporation of New York
Filed Apr. 7, 1961, Ser. No. 101,386
22 Claims. (Cl. 5—67)



1. In combination, a bed base, a bed frame, comprising a head section, another section pivoted at its rear end to the forward end of said head section, means to support the bed frame on the base permitting said head section to move from a position coplanar with said other section to an angular position of less than 180° relative thereto, and means supported by said sections to support a portion of a mattress on the bed frame, and over the junction of said sections, above and across the corner formed at said junction when said sections are in angular position of less than 180° one relative to the other.

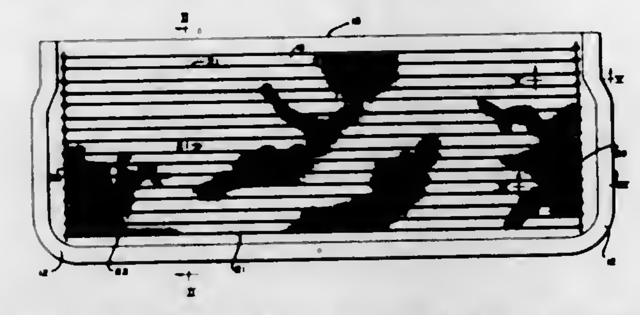
3,184,766
PASSENGER ACCOMMODATIONS FOR VEHICLE
Albert D. Mortrude, Pompano Beach, Fla., assignor to Clark Equipment Company, a corporation of Michigan
Filed Feb. 24, 1964, Ser. No. 346,819
9 Claims. (Cl. 5—118)



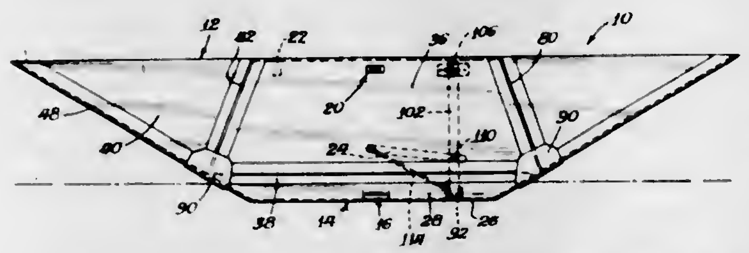
1. In combination, a first bench having a seat and a back, said back being connected to said seat and pivotal to a position in substantial co-planar relation with said seat, means for supporting said bench in a raised position, a second bench having a seat and a back and disposed in back-to-back relationship with said first bench, said second bench back being actuatable to a position in substantially co-planar relation with the said first bench seat and back when the latter is disposed in said co-planar relation, a third bench having a seat and a back and disposed in facing relationship with the said second bench, the said third bench back being removable, and means for supporting the said third bench back between the said second and third bench seats and in substantially co-planar relation thereto.

3,184,767
PAD FOR COVERING CONTOURED CUSHION SPRING STRUCTURE
John S. Meyers, Allen Park, Mich., assignor, by mesne assignments, to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Dec. 7, 1962, Ser. No. 242,951
1 Claim. (Cl. 5—345)

A top pad and insulator pad assembly for vehicle seats and the like, comprising a molded top pad of resilient reaction material such as foam rubber, foam urethane, and the like, the undersurface of said top pad having a molded front-to-back concave contour substantially complementary to the crown of the spring structure of the seat, and a flexible insulator pad bonded to said undersurface and conforming to the contour of said undersurface, said insulator pad having spaced wires disposed normal to the direction of concavity of the contour of said undersurface.

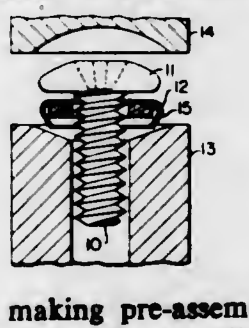


3,184,768
COMBINATION COLLAPSIBLE BOAT AND CARRYING CASE
John E. Thomson, Pittsburgh, Pa., assignor of one-third to Wilfred S. Stone, Wayne, Ill., and Anthony S. Zummer, Evanston, Ill.
Filed June 5, 1961, Ser. No. 114,793
3 Claims. (Cl. 9—2)



1. A combination carrying case and collapsible boat comprising, in combination, a rigid quadangular bottom; a rigid first quadrangular side having one edge sealingly fixed to one edge of said bottom; a rigid quadrangular bow having one edge sealingly fixed to one edge of said bottom and a second edge sealingly fixed to one edge of said side; a rigid second side having one edge sealing fixed to a second edge of said bottom and a second edge sealingly fixed to one edge of said bow; a rigid quadrangular stern having one edge fixed to a third edge of said bottom, a second edge sealingly fixed to the second-mentioned side and a third edge sealingly fixed to the first-mentioned side; a handle formed integral with the first-mentioned side; a rigid trapezoidal first side panel having its longest parallel side hingedly and sealingly connected to one edge of the first-mentioned side; a rigid first triangular side panel having one angle equal to the angle between the longer parallel edge and one of the non-parallel edges of the first side panel, said rigid first triangular side panel having its angle equal to one angle of the first side panel adjacent to said angle and having one edge hingedly and sealingly connected to one of the non-parallel edges of the first side panel; a rigid quadrangular bow panel having one edge hingedly and sealingly connected to one edge of the first triangular side panel and a second edge hingedly and sealingly connected to one edge of the bow; a rigid trapezoidal second side panel having its longer parallel edge hingedly and sealingly connected to one edge of the second side; a rigid triangular side panel having an angle equal to the angle between the longer parallel edge and the diagonal edge adjacent to the bow, said second triangular side panel having the apex of its angle equal to the angle in the second trapezoidal side panel adjacent to the apex of said angle of the trapezoidal side panel and having one edge hingedly and sealingly connected to said diagonal edge of the trapezoidal side panel and a second edge hingedly and sealingly connected to one edge of the bow panel; a rigid third triangular side panel having an angle equal to the angle between the other diagonal edge and the longer parallel edge of the trapezoidal second side panel, said third triangular side panel having one edge hingedly and sealingly connected to the other diagonal edge of the trapezoidal second side panel and the apex of the equal angles in the third triangular side panel and the second trapezoidal side panel juxtapositioned; a rigid quadrangular stern panel having one edge hingedly and sealingly connected to one edge of the third triangular side panel and a second edge hingedly and sealingly connected to one edge of the stern; a rigid fourth triangular side panel having an angle equal to an acute angle of the first trapezoidal side panel adjacent to the stern, said fourth triangular side panel having one edge hingedly and sealingly connected to a non-parallel edge of the first-mentioned trapezoidal side panel with apexes [illegible] the equal angles of the fourth triangular side panel and the first-mentioned trapezoidal side panel juxtapositioned and a second edge hingedly and sealingly connected to one edge of the stern panel; a latch mounted on the first-mentioned trapezoidal side panel and engageable with the bow and stern panels to hold the bow and stern panels relative to the first trapezoidal side panel; a seat bracket mounted on the bottom; a U-shaped seat frame having the bottom of the U positioned in the seat bracket; a seat bottom pivotally mounted between the upright arms of the seat frame; a brace connected to the seat bottom and the bottom of the U of the seat frame to hold the seat bottom relative to the frame; a combination seat-back fastener and seat lock mounted on the upper portion of each of the arms of the U-shaped seat frame; each of said combination seat-back fasteners and seat locks including, a seat-back bar, a longitudinal spacer perpendicular to the seat back and arms, a frame rod perpendicular to the spacer and pivotally mounted in the upper portion of its respective seat-frame arm, and a finger perpendicular to the rod and parallel to the seat-back rods; a flexible seat back connected to the rod of each of said seat locks, and a seat catch mounted on each of the trapezoidal panels for locking the seat locks to the side panels by means of the catch finger.

3,184,769
METHOD OF ASSEMBLING SEALING WASHER AND HEADED FASTENER
Victor H. Barwood, 400 Commonwealth Ave., Boston, Mass.
Original application May 13, 1960, Ser. No. 29,102. Divided and this application May 21, 1963, Ser. No. 285,184
3 Claims. (Cl. 10—10)

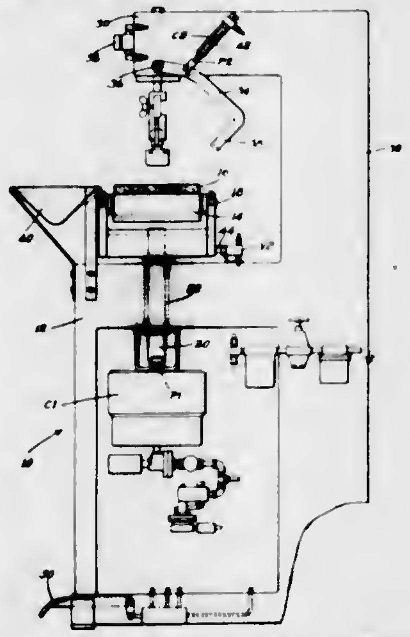


1. The process of making pre-assembled sealing fasteners, comprising the steps of assembling a loose fitting washer of compressible flowable sealing material in a metallic shell having an upstanding outer flange, bending the flange inwardly sufficiently to hold the washer in place in the shell, encircling the threaded shank of a headed fastener with the assembled shell and washer, and then, with a countersunk die, swaging them both into conical formation against the head of the fastener causing the

sealing material of the washer to become interlocked with the thread of the shank and the shell partially to cover the conformed washer in conical formation while exposing a conical zone for direct contact with a member to be secured by the fastener.

3,184,770
SHOE PRESS

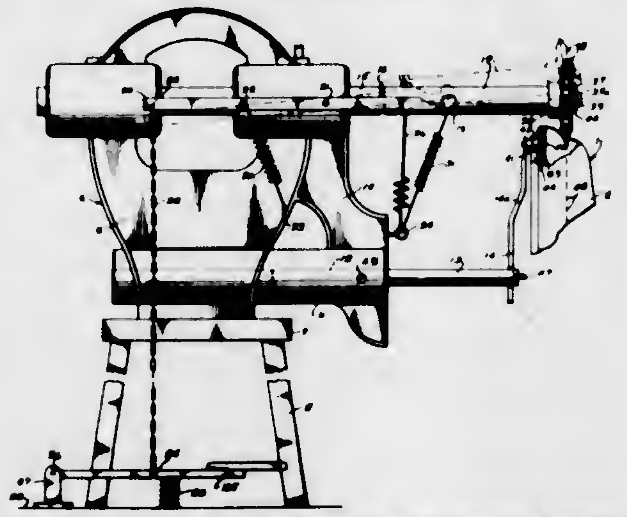
Harry Phillips, Hamilton, Marcel A. Chaloux, Beverly, and Raymond A. De Vita, Winchester, Mass., assignors to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Nov. 9, 1962, Ser. No. 236,557
11 Claims. (Cl. 12—33)



1. In a sole press, a main piston for moving a pad box from a rest position to apply pressure to a shoe, an ejector piston for actuating shoe ejecting means, operator-controlled means for actuating the main piston, means responsive to actuation of the main piston to open valve means to the ejecting piston, means for thereafter releasing the pressure from the main piston, means actuated upon release of pressure from the main piston to apply pressure through the valve means to actuate said ejecting piston, and means responsive to the return of the pad box to the rest position to close said valve means.

3,184,771
METHOD OF PREMARKING SHOE VAMPS PREPARATORY TO HAND STITCHING

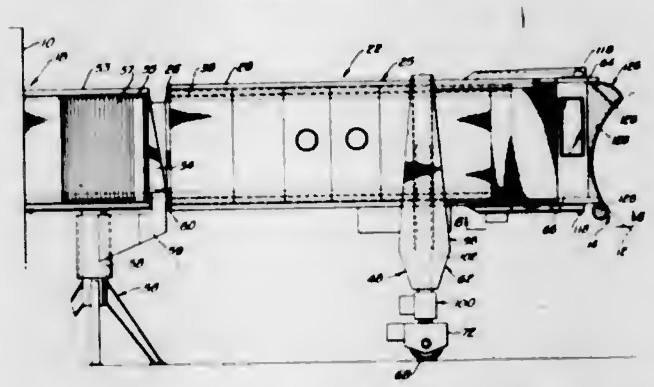
Harry O. Bowman, Beloit, Wis., assignor to Freeman Toor Corporation, a corporation of Wisconsin
Original application July 19, 1961, Ser. No. 125,174, now Patent No. 3,132,361, dated May 12, 1964. Divided and this application Jan. 31, 1963, Ser. No. 255,387
2 Claims. (Cl. 12—142)



1. In the method of marking shoe vamps with guide marks for quantone stitching, the steps comprising: attaching the vamp to a shoe insole, supporting the vamp in pressure contact with a freely rotatable scoring wheel and rotating the shoe to mark the vamp with said guide marks.

3,184,772
TELESCOPING LOADING AND UNLOADING STRUCTURE FOR AIRCRAFT

Herbert Carvel Moore, West Los Angeles, and Carl L. Lodjic, Long Beach, Calif., assignors, by mesne assignments, to Stanray Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 2, 1959, Ser. No. 790,584
3 Claims. (Cl. 14—71)



1. In a loading and unloading structure for vehicles, the combination of:

(*a*) an extensible and contractible passageway having inner and outer ends and comprising at least two telescopically connected sections progressively increasing in cross-sectional dimensions from said inner end of said passageway to said outer end thereof so that each section inwardly of the outermost is telescoped into the adjacent section outwardly thereof;

(*b*) means supporting said inner end of said passageway for horizontal swinging movement of said passageway about an upright axis;

(*c*) a wheeled, steerable, ground-engaging supporting structure for said outer end of said passageway connected to said outermost of said telescopically connected sections of said passageway and adapted to extend or contract said telescopically connected sections of said passageway relative to each other;

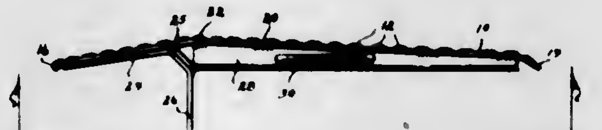
(*d*) steering means connected to said supporting structure for steering same;

(*e*) propelling means connected to said supporting structure for propelling same; and

(*f*) said supporting structure being connected to a portion of said outermost of said telescopically connected sections of said passageway which is spaced inwardly from the outer end of said outermost section and which is telescoped over the adjacent section inwardly thereof when said sections are completely contracted relative to each other.

3,184,773
DOCK PLATE

Warren R. Breneman, West Des Moines, Iowa, assignor to Woodford Manufacturing Company, Des Moines, Iowa, a corporation of Iowa
Filed Sept. 7, 1961, Ser. No. 136,658
7 Claims. (Cl. 14—72)

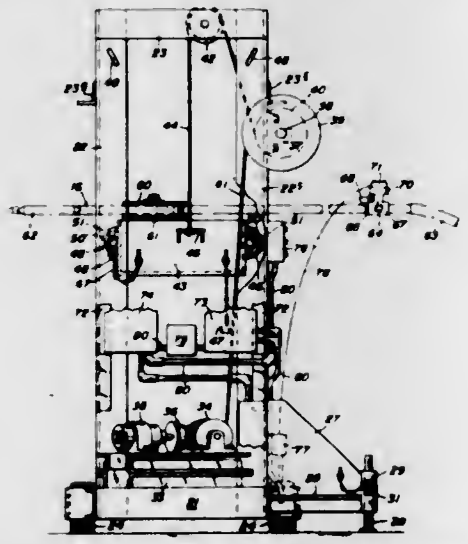


1. In a dock plate, comprising, an elongated base member having a top and bottom surface, a downwardly

angled bend in said base member along a bend line disposed in spaced relation to the ends of said base member and defining a plate section on opposite sides of said bend line, each of said sections being flat throughout their substantial length, one of said sections having reinforcing means, a plurality of transversely spaced apart longitudinally extending elongated channel-shaped members having side walls with their outer longitudinal edges fixedly secured to the bottom surface of said other section, said channel members each having one end terminating adjacent said bend line in said base member, said elongated members extending in substantially parallel relation to adjacent the end of said base member opposite said one section, said elongated members having a width uniformly increasing along its length beginning with said one end, and said elongated members uniformly decreasing in thickness along its length measured along a vertical plane beginning with said one end.

3,184,774
CHECKER-CLEANING APPARATUS

Charles J. Burch, Lower Makefield Township, Bucks County, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Mar. 19, 1963, Ser. No. 266,294
12 Claims. (Cl. 15—317)

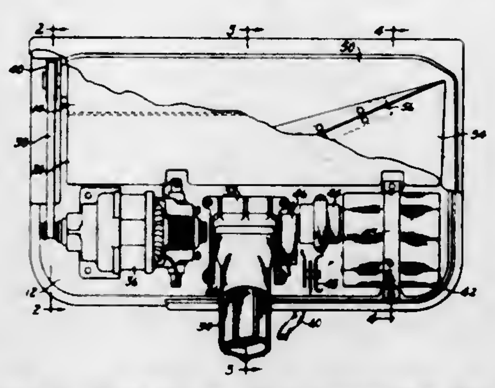


1. A lance-handling machine comprising a base, a vertical frame fixed to said base, a movable support loosely confined within said frame, means on said base operatively connected with said support for raising and lowering it but allowing it to tilt and to move horizontally within the confines of said frame, pinch rollers carried by said support for rotation on vertical axes and being positioned at the same level, means carried by said support for separating said rollers horizontally to permit insertion of a lance therebetween and drawing said rollers together to grip the lance, and drive means for said rollers to propel a lance gripped therebetween.

3,184,775
ELECTRIC CARPET SWEEPERS

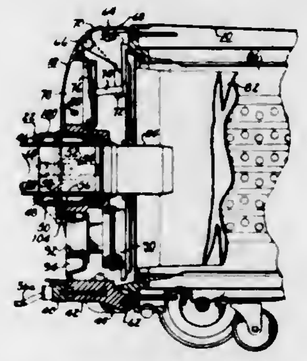
David F. Downey, Stamford, and John J. Moughty, Old Greenwich, Conn., assignors to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed May 22, 1962, Ser. No. 196,781
9 Claims. (Cl. 15—328)

1. In an electric carpet sweeper, a hol.ow body formed with a lower elongated inlet opening adapted to be moved over a surface to be cleaned, walls forming a dirt-receiving compartment within said body and communicating with said opening, a brush rotatably mounted in said body and extending through said opening whereby rotation thereof sweeps dirt from said surface through said opening into said compartment, an electric motor for driving said brush, a rechargeable electric battery within said body for supplying current to said motor, conduit means for connecting said compartment to an electric vacuum cleaner for removing accumulated dirt from the compartment and for inducing flow of air through said inlet opening to aid said brush in removing dirt from said surface, and electric conductor means associated with said conduit means for supplying current from said vacuum cleaner for recharging said battery.



3,184,776
VACUUM CLEANERS

William P. Vermeulen, Springdale, Conn., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed Sept. 26, 1962, Ser. No. 226,420
6 Claims. (Cl. 15—327)

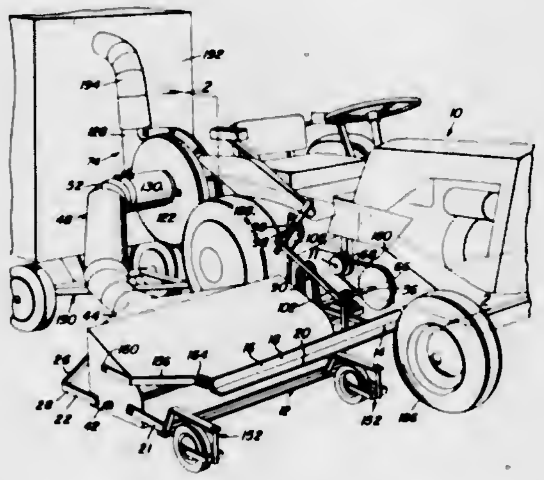


1. In a vacuum cleaner, a body having an inlet opening, a fan in said body for inducing flow of air through said inlet, an electric motor in said body for driving said fan, a suction hose, means for rotatably connecting one end of said hose to said inlet opening, a suction nozzle connected to the other end of said hose, electrically operated means in said nozzle, an electric conductor carried by said hose for supplying current to said nozzle, an electrical receptacle carried by said body adjacent to said inlet, a portion of said conductor adjacent to said one end of said hose being free of said hose, an electric plug on the free end of said portion and being receivable in said receptacle, a ring removably mountable on said hose adjacent to said one end thereof, means extending radially from said hose and engaging a radially extending surface on said ring to prevent rotation of the ring relative to the hose, and means extending axially from said ring and engaging an axially extending surface on said body to prevent rotation of said ring relative to said body.

3,184,777
LAWN SWEEPER

Walter E. Norden, 843½ South D St., Broken Bow, Nebr.
Filed Mar. 7, 1963, Ser. No. 263,512
3 Claims. (Cl. 15—340)

1. In combination with a tractor of the type including a transversely extending horizontally disposed power output shaft, a transversely extending and horizontally disposed drawbar supported from said tractor in an elevated position above the surface supporting said tractor and with said bar extending laterally of one side of said

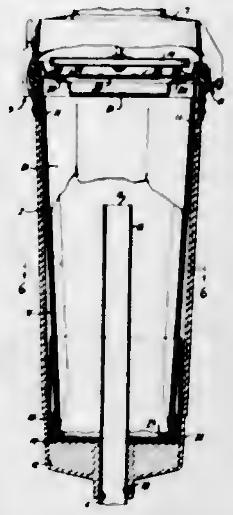


tractor, auxiliary ground engaging and supported load means, a pair of spaced apart trailing pull arms pivotally secured at their forward ends to said drawbar and at their rear ends to said load means for rotation about generally horizontal first and second axes, respectively, extending transversely of said tractor whereby forward movement of said drawbar will effect forward movement of said load means therebehind, said load means including a rotatable input shaft generally paralleling and substantially horizontally aligned with said output shaft and spaced longitudinally of said tractor relative to said output shaft, said shafts including aligned driving and driven wheels, an endless flexible member entrained over said wheels drivingly connecting said output shaft to said input shaft, said load means including a frame defining front and rear generally horizontally disposed frame sections pivotally secured together at adjacent end portions for rotation about a generally horizontally disposed transversely extending axis and including ground engaging support means at remote end portions and power actuated ground cover pickup means supported from said adjacent end portion of said rear section and driven by said input shaft, said input shaft being journaled on said rear section, the axis of rotation of said input shaft being displaced from the second pivot axis of said pull arms, means interconnecting said front and rear sections for releasably securing the latter in adjusted rotated positions relative to each other, the arc of swinging movement of said input shaft about the point at which the ground engaging support means at the rear end portion of the rear frame section is adapted to engage the ground during relative rotation of said frame sections having a radius sufficiently large whereby limited vertical movement of said input shaft from the position substantially horizontally aligned with said output shaft is substanitally straight along a line disposed generally normal to a plane containing said input and output shafts when said shafts are horizontally aligned whereby relative movement between said input and output shafts may occur without excessively tensioning said endless flexible member.

3,184,778
VACUUM CLEANER WITH REMOVABLE FILTER BAG

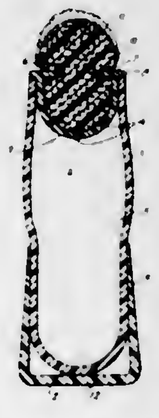
Carl A. Lindberg, Adrian, Mich., and Howard A. Anderson, Pittsburgh, Pa., assignors to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Jan. 4, 1963, Ser. No. 249,448
6 Claims. (Cl. 15—344)

1. A vacuum cleaner with removable filter bag, comprising a substantially vertical tank of generally cylindrical construction having an open top and a closed bottom, suction means removably connected to the open top of said tank, a suction nozzle, a suction tube connected to said nozzle and extending upwardly through said tank bottom to provide an open suction mouth near the top of the bank, an inverted filter bag of substantially uniform cross-sectional area throughout its length and disposed within said tank and extending downwardly over said suction tube, a resilient sealing ring of a diameter corresponding generally to the diameter of the bag and disposed at the bottom of the tank, and means pressing and sealing the mouth of said bag at its periphery against said ring, said bag being removable from said tank upon removal of said suction means from the top of the tank.



3,184,779
SHAVING LATHER APPLICATOR

Eugene A. Lloyd, 23 Bayside Place, Amityville, Long Island, N.Y.
Filed Dec. 18, 1963, Ser. No. 331,604
1 Claim. (Cl. 15—538)



An applicator for fluent material, comprising a hollow compressible container body holding the fluent material, said body being rounded at one end and open at the opposite end, a cup fitted into the open end of said body and extending into said body, the wall of said cup having an aperture which establishes communication between the interior of said body and the interior of said cup, said cup having a constricted mouth defined by an annular flange, a sponge extending through the mouth and being gripped by said flange, said sponge being adapted to be impregnated by the fluent material passing through said aperture when squeezing pressure is applied to said body, and a closure cap telescopically fittable upon either end of said body, said cap having a flat end wall and when fitted over the rounded end of the body forming a flat supporting face therefor.

3,184,780
CLEANING TOOL

James R. Hageman, Eau Claire, Mich., assignor to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware
Filed Nov. 13, 1961, Ser. No. 151,772
3 Claims. (Cl. 15—547)

1. A cleaning tool comprising,

an elongated main body portion having a pumping chamber formed therein including check valves and an elastic wall portion,

means to flex said elastic wall portion to develop a pumping action,

said main body portion having a passage for receiving the fluid discharged by said pumping action and forming a reservoir for fluid in said tool,

said body portion having a washer head at the end of said passage,

said washer head having a recess formed therein,

a plate member having a centrally disposed passage formed therein and extending across the bottom of said recess,

means forming a valve compartment between said body portion passage and said centrally disposed passage in said plate member,

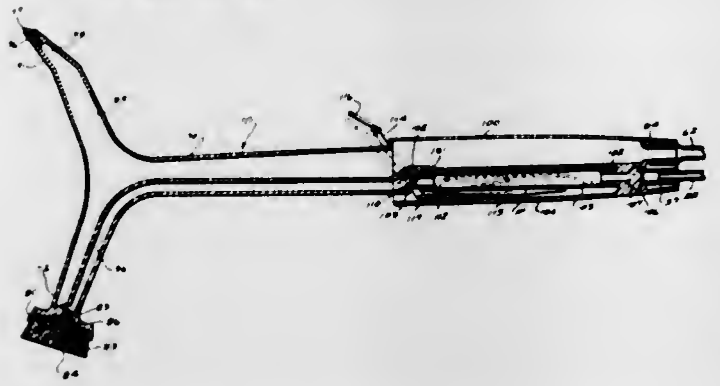
a resilient disc valve positioned in said compartment and extending across said body portion passage,

a continuous biasing means between said disc valve and one side of said plate member tending to normally close said disc valve against said body portion passage,

and a sponge in said recess bottomed against the other side of said plate member,

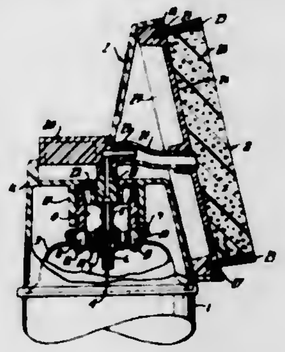
said continuous biasing means being compressible against one side of said plate member and said sponge being compressible against the other side of said plate member,

whereby said disc valve will meter flow of fluid delivered to said passage by said pumping action to said sponge.



3,184,781
AEROSOL UPHOLSTERY SHAMPOOER

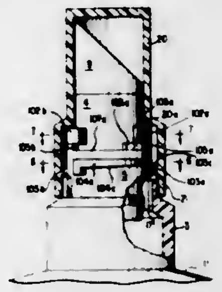
Orville D. Hoxie, Grand Rapids, Mich., assignor to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 4, 1963, Ser. No. 255,771
13 Claims. (Cl. 15—552)



4. In a device of the class described, an applicator for applying a detergent foam to a surface to be cleaned, comprising a resilient synthetic sponge having a pore size of from about 10 to 30 pores per inch, aerosol means connected to said applicator so as to supply an intumescent detergent solution to the back side of said sponge, said detergent having a surface tension which requires appreciable time for full intumescence of the foam, said sponge having a thickness for the given pore size and detergent mix providing substantially complete intumescence of the detergent as it reaches the face of the sponge for application to the surface to be cleaned.

3,184,782
DISPENSING DEVICE

Donald F. Armour, Bloomfield, Conn., assignor to Monsanto Company, a corporation of Delaware
Filed July 30, 1963, Ser. No. 298,620
11 Claims. (Cl. 15—594)



1. In a dispensing device, including a material reservoir, the improvement comprising:

sleeve means having generally cylindrical, inner and outer portions and extending from said material reservoir and defining a material outlet;

rotary valve means having a generally cylindrical outer portion journaled within said generally cylindrical inner portions of said sleeve means;

cap means having a generally cylindrical inner portion adapted to telescopingly pass over said outer cylindrical portion of said sleeve means and be rotated to a secured cap position;

cap means carried abutment means projecting generally laterally inwardly from the generally cylindrical inner portion of said cap means;

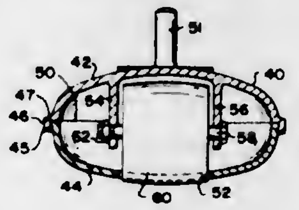
sleeve means carried abutment means projecting generally laterally outwardly from the generally cylindrical outer portion of said sleeve means; and

valve means carried abutment means projecting generally laterally outwardly from the generally cylindrical outer portion of said valve means;

said cap means carried abutment means being adapted to cooperate with said sleeve means carried abutment means and said valve means carried abutment means to cause the simultaneous rotation and closing of said valve means and securing of said cap means on said sleeve means when said cap means is rotated in one direction and for causing simultaneous rotation and opening of said valve means and freeing of said cap means in relation to said sleeve means to allow its axial removal therefrom when said cap means is rotated in an opposite direction.

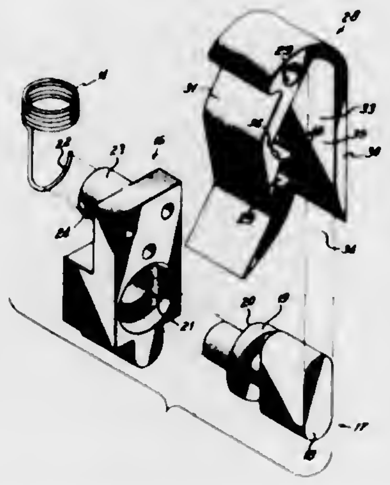
3,184,783
CASTER DEVICE

James W. Brigham, 6744 Brantford Ave., South Burnaby, British Columbia, Canada
Filed May 16, 1961, Ser. No. 110,497
1 Claim. (Cl. 16—18)



A caster device comprising a casing adapted to be rotatably mounted adjacent the bottom of an article to be supported, said casing comprising a pair of interfitting shells, the upper one of said shells having a pair of spaced arms depending downwardly therefrom interiorally thereof and the lower shell forming a flooring engaging surface and being formed with an opening centrally thereof, and a roller carrying axle fixedly connected at each end to said arms in a position whereat a portion of the roller periphery projects slightly downwardly through said opening into contact with the flooring, said roller and the outer surface of said lower shell forming a substantially even and unbroken bearing surface effectively supporting an applied load when on a soft flooring without unduly disarranging the latter and the exposed portion of said roller supporting the load on a hard flooring and enabling the article to be easily moved over said hard flooring.

3,184,784
RECEPTACLE FOR WINDOW SASH PIVOT LOCK
Lowell E. Peters, 4500 Reading Road, Cincinnati 29, Ohio
Filed Feb. 8, 1962, Ser. No. 171,955
1 Claim. (Cl. 16—171)

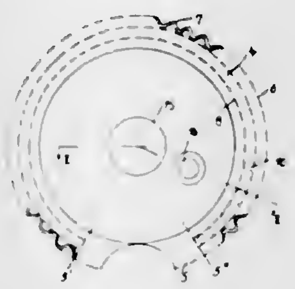


A window comprising a frame, a sash pivot lock for pivoting a sash to said frame and locking balance springs in a stressed condition upon pivoting, said pivot lock being slidably mounted in said frame, said pivot lock having a rotatable member terminating in a projecting flat head of generally rectangular cross section, a sash slidably mounted in said frame, a receptacle in said sash for receiving the head of said pivot lock, said receptacle comprising:

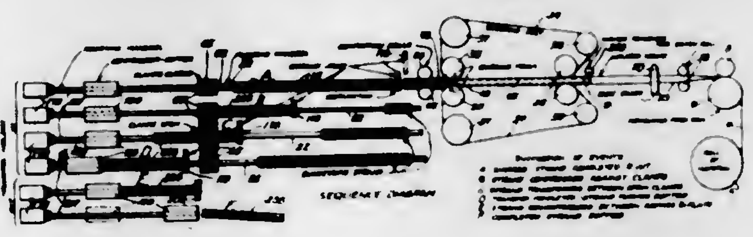
a U-shaped member having two legs and a bight portion
the outer surface in said U-shaped member being seated in said sash,
the inner surface of a first leg of said U-shaped member being straight to facilitate sliding introduction and removal of the head of said rotatable member,
the inner surface of a second leg of said U-shaped member having a notch angulated with respect to the inner surface of said first leg
said notch being configurated to receive and block inadvertent removal of said head of said rotatable member,
said opening blocking full rotation of said rotatable member therein.

3,184,785
ROTARY CUTTER
Hansgeorg Wezel, Maulbronn, Wurttemberg, Germany, assignor to Schmid & Wezel, Maulbronn, Wurttemberg, Germany, a firm.
Filed Apr. 24, 1962, Ser. No. 189,899
Claims priority, application Germany, May 4, 1961, Sch 29,660
3 Claims. (Cl. 17—21)

1. A blade disk for disintegument devices and the like, comprising a generally flat circular support member of synthetic resin material, and an arcuate steel blade member overlying only an outer marginal portion of said support member along an exterior surface thereof, said blade member being concave away from said exterior surface and formed with a peripheral array of substantially radially extending teeth wholly outwardly of the periphery of said support member, the tips of said teeth terminating in a common plane parallel to and axially spaced from said surface and with a plurality of angularly spaced throughgoing lateral openings, said support member being integrally provided with a plurality of laterally extending formations projecting into said openings and completely filling them, and said blade member being further provided with laterally extending integral lugs imbedded in said support member for positively securing both of said members together.



3,184,786
SHIRRING METHOD
Clifford E. Ives, Wilmette, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois
Original application Sept. 19, 1960, Ser. No. 57,057, now Patent No. 3,112,517, dated Dec. 3, 1963. Divided and this application Oct. 16, 1963, Ser. No. 316,582
6 Claims. (Cl. 17—45)

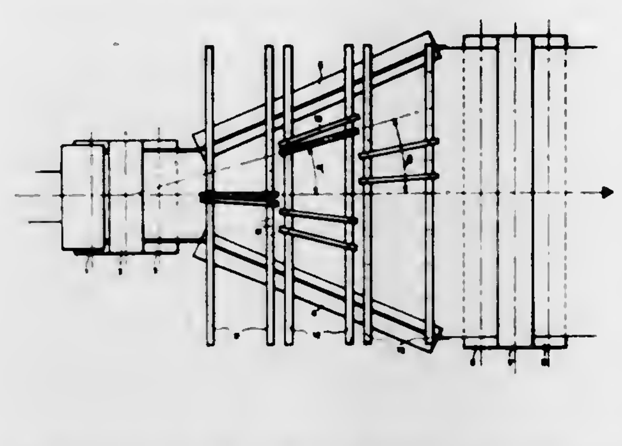


1. Method of reducing the length of a shirred strand of thin walled sausage casing which comprises: holding one end of the shirred strand against endwise movement while moving the other end toward said one end and then holding said other end against endwise movement while moving said one end toward said other end.

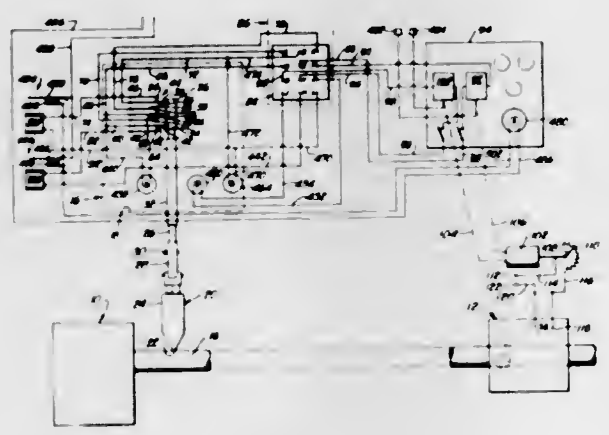
3,184,787
DEVICE FOR STRETCHING THERMOPLASTIC FILMS
Paul Jozef Steegmans, Edegem, Belgium, assignor to Gevaert Photo-Producten N.V., Morstel, Belgium, a Belgian company
Filed July 27, 1962, Ser. No. 212,985
Claims priority, application Belgium, July 28, 1961, 40,848, Patent 606,650
8 Claims. (Cl. 18—1)

1. Apparatus for controlling the heat exchange of thermoplastic film in the stretching of the film transversely of its direction of movement through a stretching zone, comprising in combination

heating means disposed above the film and adapted to radiate heat toward the film,
and elongate heat reflecting means mounted between the film and said heating means,
said elongate means being disposed in said stretching zone in spaced relationship parallel to the plane of the film and extending substantially longitudinally of the direction of movement of the film,
the longitudinal axis of said elongate elements diverging outwardly in the direction of movement of the film relative to the center line of the film.



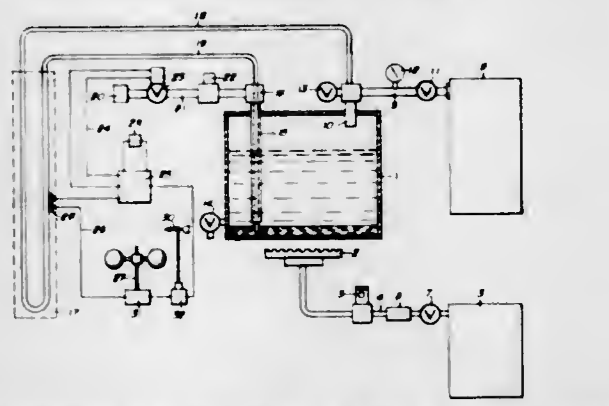
3,184,788
EXTRUSION CONTROL SYSTEM
Edwin A. Serrano, 1633 W. Cubbon St., Santa Ana, Calif.
Filed Feb. 5, 1963, Ser. No. 256,460
7 Claims. (Cl. 18—2)



1. A control system which comprises:

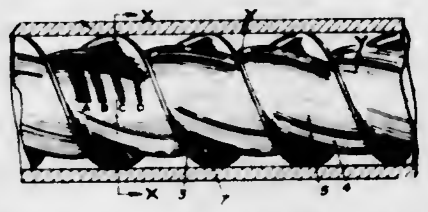
an extrusion head for forming a continuous article;
pulling means for applying a continuous pulling force on said article in a direction away from said extrusion head whereby the magnitude of said force is proportioned to and determines a dimension of said article;
adjustable means for regulating the magnitude of said force;
sensing means responsive to said dimension of said article to effect an electric signal when said dimension deviates from a specified range of magnitudes;
control circuit means responsive to said signal in circuit connection between said sensing means and said adjustable means responsive to said signal to provide an output to adjust said adjustable means, said control circuit means comprising a first time delay means actuated in response to said signal and a second time delay means actuated by the output of said first time delay means, said output of said first time delay means being connected to means to adjust said adjustable means so that no adjustment is made during said first time delay to permit short time deviations to pass without adjustment, and wherein the output of said second time delay means is operable to disconnect the output of said first time delay means from said means to adjust said adjustable means so that said adjustment of said adjustable means is made during the entire second time delay period.

3,184,789
APPARATUS FOR LARGE-SCALE APPLICATION OF MONOMOLECULAR LAYERS TO WATER SURFACES USING MELTED MATERIAL
Quentin L. Florey, Denver, and Lloyd O. Timblin, Jr., Boulder, Colo., assignors to the United States of America as represented by the Secretary of Interior
Original application June 30, 1961, Ser. No. 121,261. Divided and this application Apr. 7, 1964, Ser. No. 362,548
4 Claims. (Cl. 18—2.4)



1. Apparatus for producing a finely divided powdered form of a higher fatty alcohol comprising a storage tank having inlet means for receiving the alcohol in a molten state, heating means for applying sufficient heat to the tank to sustain the alcohol in its molten state, a second inlet means connected to a pressure inducing means to create in said tank an elevated pressure, an outlet means on the tank communicating with a conduit means opening below the surface of the molten alcohol at approximately the bottom of the tank, a spray nozzle, a second conduit means connecting the spray nozzle to the outlet means, a valve in said second conduit, means controlling the valve to opened and closed conditions comprising a solenoid made operative to either one of its conditions by an electrical controller means, a means to sense the level of the molten alcohol in the tank, and a means to sense the wind velocity, each said sensing means having electrical switch means responsive thereto, circuit means including said electrical switch means and said controller means for determining the effectiveness of the solenoid upon the valve made operative thereby, whereby the molten alcohol under pressure is intermittently sprayed through said nozzle into a cooling atmosphere to form finely divided powder of higher fatty alcohol material.

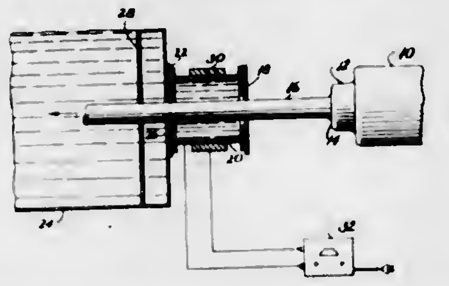
3,184,790
SCREW FOR THE COLD FEED EXTRUDER OF THE COMPOUNDED RUBBER
Katsuji Araki, Ibaraki, Osaka, Japan, assignor to The Toyo Rubber Industry Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Sept. 16, 1963, Ser. No. 309,135
Claims priority, application Japan, Sept. 15, 1962, 37/40,040
1 Claim. (Cl. 18—12)



A screw for a kneading and extruding apparatus for warming up and extruding visco-elastic materials such as compounded rubber, said screw having at least one feed helix extending helically therearound, the surface of the screw between spires of the helix being tapered inwardly from a trailing spire of the helix toward a preceding spire of the helix, and said surface having ribs thereon with the outer surfaces of the ribs inclined at the same angle at which the said surface is tapered and said ribs having the longitudinal axes thereof at a lead angle to the spires of the helix between 50° and 70° in the same direction as the spires of the helix.

3,184,791
APPARATUS FOR FABRICATION OF THERMOPLASTIC RESINS

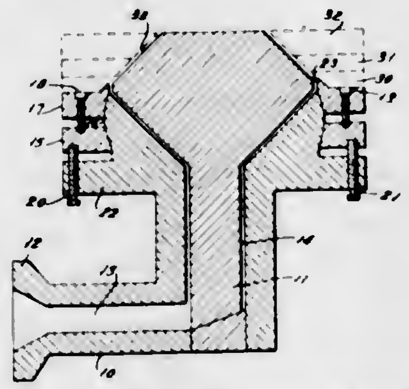
Paul E. Gamble, Bound Brook, and Louis A. Rosenthal, Highland Park, N.J., and James W. Pendleton, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed Aug. 17, 1962, Ser. No. 217,602
3 Claims. (Cl. 18—14)



1. Apparatus for fabricating spherulite-forming thermoplastic conduits comprising an extruder, a conduit forming means mounted thereon, a cooling bath spaced a distance from said forming means and adapted to receive the extrudate from said conduit forming means, an ultrasonic vibration chamber positioned between said forming means and said bath comprising means for receiving and maintaining an energy transmitting liquid in peripheral contact with an annular portion of the extrudate, and a suitably activated transducer associated with the vibration chamber and adapted to impart radial ultrasonic vibrations to the energy transmitting liquid.

3,184,792
VARIABLE ORIFICE EXTRUSION DIE

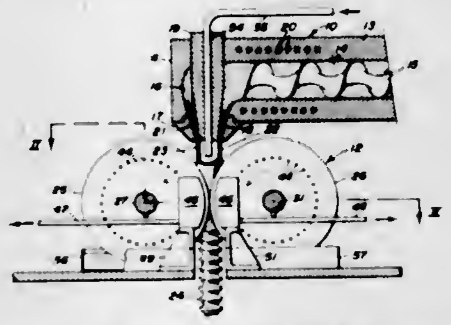
Nicholas Dominic Commisso, Victor, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Dec. 31, 1962, Ser. No. 248,638
3 Claims. (Cl. 18—14)



1. A die structure for the extrusion of tubular thermoplastic film wherein said structure provides a variable diameter die orifice, comprising in combination, a die body; a primary passageway defined in said body, said passageway having an inlet end, and a discharge end including an outwardly flared, conically formed portion; a mandrel, including a stem and a head, adapted to be mounted in concentric radially spaced relation to said passageway walls, thereby limiting said passageway to an annular form; said mandrel head having a first right frusto-conical portion, substantially matched with said passageway conically formed portion, joined to said stem in an inverted position, and a second right frusto-conical portion joined to said first head portion at their larger base ends, said second head portion being disposed entirely beyond said primary passageway; a first die ring mounted on said die body at the discharge end of said annularly limited primary passageway, concentric therewith, said first die ring having an inner peripheral surface portion shaped to match an outer peripheral surface portion of said mandrel disposed beyond said primary passageway discharge end, and radially spaced from said mandrel surface portion, therewith to define a continuing secondary passageway portion and an annular die orifice; and a plurality of additional die rings successively and serially connected on said first die ring and on each other thereafter, each of said additional rings being removably connected to one another, each said additional ring having a tapered, conical inner surface area angularly matched to a specific portion of said mandrel second head portion, and providing therewith a continuation of said secondary passageway, and a discharge orifice; wherein, when said additional rings are serially mounted on said first die ring and on each other, said rings variably determine the outer diameter of said discharge orifice in a descending order, and when serially removed determine said orifice diameter in an ascending order.

3,184,793
APPARATUS FOR PRODUCING A CONTINUOUS TUBULAR ARTICLE

Roger P. Plourde, 68 Maple St., Paxton, Mass.
Continuation of application Ser. No. 130,420, Aug. 9, 1961. This application Apr. 3, 1964, Ser. No. 358,144
1 Claim. (Cl. 18—14)

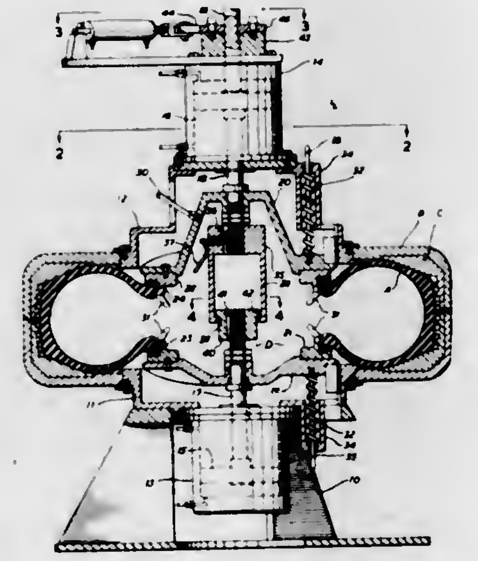


Apparatus for producing a continuous corrugated tubular article from a recently-formed seamless tube of plastic, comprising an extruder for forming the tube so that it emerges in a downward direction, at least two rotary dies residing below the extruder on opposite sides of the tube as it emerges from the extruder, the dies being disclike in form and being mounted for rotation on generally horizontal parallel axes with their peripheries generally tangential, said peripheries being formed with smooth continuous grooves having cooperating forming surfaces consisting of alternate annular ridges and grooves lying in opposition to each other, means for rotating the dies about their axes so that the said surfaces move at the same linear speed as the tube, passages opening on the said surfaces, the passages extending away from the surfaces, said passages terminating with openings at the lateral surface of said discs, said openings positioned to form an annular ring, commutator means as a manifold for applying suction to the passages during a forming portion of the movement of the dies, and means to provide a slight positive pressure in the tube above the dies as it emerges from the extruder to cause the tube to form a seal with the surface of the die.

3,184,794
SEALING APPARATUS FOR TIRES

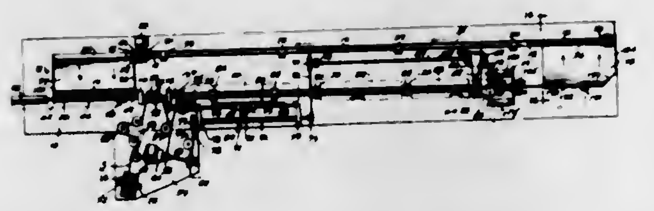
Morris A. Sherkin, 76 Ridelle Ave., Toronto, Ontario, Canada
Filed July 13, 1961, Ser. No. 123,839
4 Claims. (Cl. 18—18)

4. Apparatus for recapping vehicle tires comprising a frame, a base therefor, means for mounting a tread-forming matrix on said base, means for mounting a tire to locate its tread-receiving area in cooperative relationship to said matrix, a pair of opposed movable walls, means for moving said walls relatively towards one another, means in connection with said walls for engaging the beads of said tire under pressure to form an air-tight seal therewith, whereby to form a substantially air-tight chamber incorporating the hollow interior of said tire as an essential part of said chamber, means for supplying air to said chamber to support the walls of said tire against said matrix, and a coupling means including a head carried by each of said walls, and contained in said chamber, said heads being designed and constructed to telescope with respect to each other as said means for engaging the beads of a tire move to form a seal with a tire in use and to releasably interlock to set the spacing of said walls and said tire beads when said chamber is subjected to air pressure, said heads being adjustable with respect to their respective wall to vary the spacing from their respective wall whereby the set spacing between said walls and tire beads when the chamber is subjected to pressure can be varied.



3,184,795
CONTINUOUS COIL WINDING APPARATUS

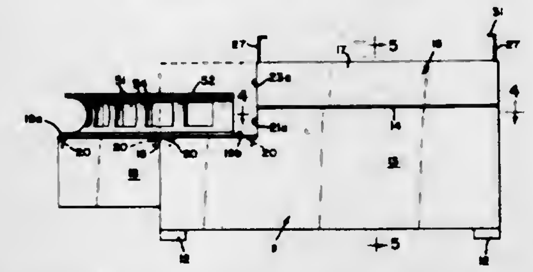
Alleyne C. Howell, Jr., 645 Mine Hill Road, Fairfield, Conn.
Filed Apr. 20, 1962, Ser. No. 189,123
20 Claims. (Cl. 18—19)



1. Apparatus for coil winding a strand, comprising an elongated mandrel, bearing supports for said mandrel supporting it for helical rotary and longitudinal movement respectively about and parallel to its axis, a strand to be coiled, strand supply means from which said strand extends in helically coiled relation about and from said mandrel to constitute a helical driving belt to impart helical rotary and longitudinal movement to said mandrel, means for guiding said strand from said driving belt back to said mandrel at a receiving point longitudinally in advance of said driving belt for coiling thereon through the helical rotary and longitudinal movement of said mandrel, and means for taking said coiled strand from said mandrel at a point longitudinally in advance of its receiving point thereon.

3,184,796
APPARATUS FOR BENDING PLASTIC PIPE

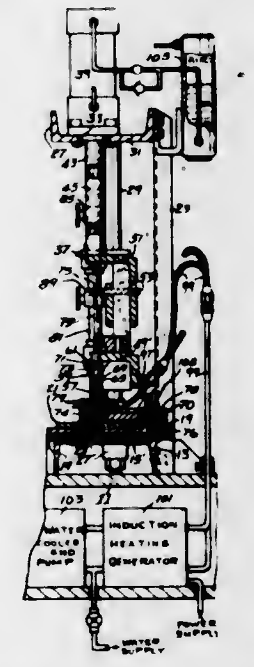
Marvin A. Southcott, 83 Arroyo Way, San Francisco, Calif., and Charles Lashinco, Jr., 1568 Todd St., Mountain View, Calif.
Filed Jan. 28, 1963, Ser. No. 254,205
8 Claims. (Cl. 18—19)



1. Apparatus for bending tubular material flexible when heated, comprising a frame, a heating cabinet on said frame, support means on said frame for supporting pipe in said cabinet, a cover for said cabinet, means mounting said cover on said cabinet, slides mounted for movement in said cover, said cover and cabinet formed with cut away portions to accommodate pipe of different sizes, said slides at least partially closing off the cut away portions of said cover and cabinet against escape of heat when small pipe is supported on said support means, heating elements in said cabinet positioned to direct heat upon pipe held in said support means, a curved form mounted on said frame adjacent said heating cabinet and shaped to receive pipe, and a tool cooperable with said form to bend into a curved shape pipe made flexible by heating in said cabinet.

3,184,797
APPARATUS FOR USE IN THE MANUFACTURE OF GRINDING WHEEL AND SPINDLE ASSEMBLIES

Robert A. Eves, Holden, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Nov. 10, 1961, Ser. No. 151,521
11 Claims. (Cl. 18—30)



1. An apparatus for making mounted point assemblies of the kind wherein there is an abrasive point containing a hole and a spindle fixed in the hole by means of a binder, comprising the combination of means for supporting said point and for vacuum filling the hole in the point solely with an unactivated binder, a spindle mounting station and a transfer means to deliver filled points to said spindle mounting station, means at said station for supporting the spindle at said station with its lower end embedded in the unactivated binder in the hole in axial alignment with the axis of the point, means for activating the binder to fix the

point to the spindle, and said transfer means serving to aid in the alignment of the filled point with the supported spindle at said spindle mounting station.

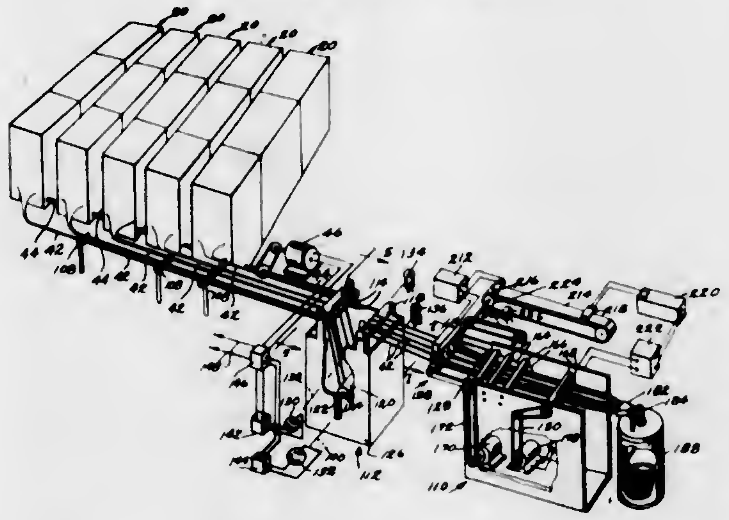
3,184,798

SYSTEM FOR PROCESSING TEXTILE FIBERS

Arthur L. Burnet and Herbert J. Woods, Greensboro, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

Filed June 4, 1962, Ser. No. 199,697

9 Claims. (Cl. 19—65)



1. Apparatus for processing textile fibers comprising: a plurality of textile cards each having moving mechanical doffing means and sliver forming means; a railway head for receiving the slivers formed on said cards including back rolls and front rolls; means between said cards and said railway head for causing corresponding sections of the slivers being delivered from said cards to said railway head to sag; means for feeding the slivers formed on said cards to said sag-causing means; means including speed varying means for driving and for varying the speed of said doffing means and sliver forming means of all of said cards and of said feeding means in synchronism; means for driving said railway head independent of said driving means for said doffing means, said sliver forming means and said feeding means and means responsive to differentials between the rate of feed of the slivers to said sag-causing means and the rate of withdrawal therefrom by said railway head for controlling said speed varying means to vary the speed of all of said doffing means, said sliver forming means, and said feeding means in synchronism so as to maintain said feed and withdrawal rates substantially equal.

3,184,799

CONTROL MECHANISM FOR FEED EQUIPMENT OF RECTILINEAR COMBERS

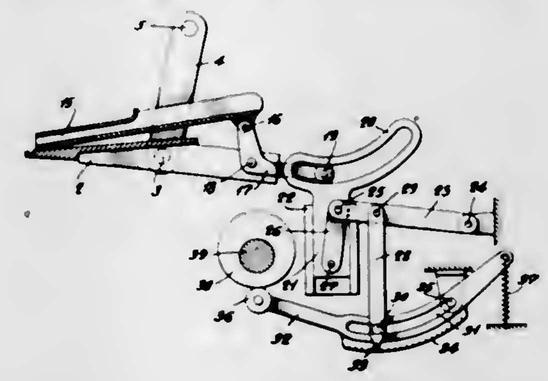
Roger Gauvain, Buhl, Haut-Rhin, France, assignor to Société Alsacienne de Constructions Mecaniques, Mulhouse, Haut-Rhin, France, a company of France

Original application Sept. 3, 1959, Ser. No. 837,922, now Patent No. 3,074,119, dated Jan. 22, 1963. Divided and this application Aug. 28, 1962, Ser. No. 219,831

Claims priority, application France, Sept. 12, 1958

4 Claims. (Cl. 19—225)

1. A control device for a rectilinear comber having a combing cylinder, comprising a suspension rod having upper and lower ends, means pivotally securing the upper end of said rod to a fixed point above the axis of the cylinder, upper and lower nippers, each nipper having a nose end and a rear end, a feed rack slidably mounted on said lower nipper, said feed rack having forward and rearward end portions, said nippers and feed rack being mounted for free oscillation on the lower end of said suspension rod around an axis on either side of which their own weight is equally distributed, a bell-crank lever having one arm articulated at the rearward end portion of said feed rack, slideways for separately guiding without any sliding friction the rear ends of said nippers so that whenever the suspension rod is oscillated about said fixed point the nose ends of said nippers are caused to follow predetermined reciprocating paths including a common terminal portion to cause cyclic closing and opening of said nose ends of said nippers, as well as a predetermined cyclic relative motion between the nose ends of the nippers when closed and said combing cylinder, a slideway parallel to the lower nipper guiding slideway, means for guiding the other arm of said bell crank lever in said slideway parallel to the lower nipper guiding slideway, and means to create relative translational displacement between said parallel slideways to cause feed and withdrawal reciprocation of said feed rack with respect to said lower nipper.



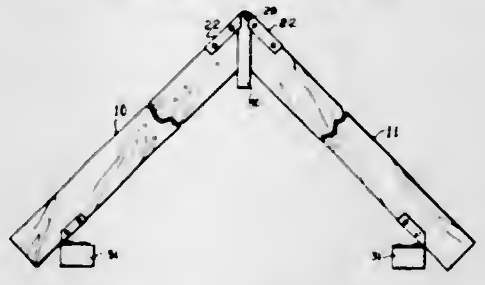
3,184,800

RAFTER SUPPORT

Permil N. Nelson, Galesburg, Ill., assignor to Lynn H. Ewing, doing business as Blackhawk Company, Rock Island, Ill.

Filed Oct. 23, 1961, Ser. No. 146,999

1 Claim. (Cl. 20—1)



A pair of rafter erection and supporting brackets for connecting a pair of roof rafters to opposite sides of a ridge pole, a ridge pole and first and second rafters angularly disposed with respect to said ridge pole, first and second brackets each comprising,

(*a*) a metallic body having a medial plate portion providing along opposite longitudinal edges spaced apart parallelly extending lateral flanges,

(*b*) an extension member extending from one end of said medial plate portion of said body and angularly disposed with respect thereto,

(*c*) an insert tongue of a width less than the width of said extension member carried by and depending from the free end of said extension member,

(*d*) said medial plate portion of said body having formed therein adjacent said one end of said body an opening of a size equal to the width of said insert tongue,

(*e*) said lateral flanges of said body of said first bracket embracing therebetween said first rafter and the flanges of said second bracket embracing therebetween said second rafter, with the extension member of said first bracket being in overlying abutment with the upper longitudinal edge of said ridge pole with its insert tongue inserted between said ridge pole and said second rafter, and with the extension member of said second bracket being in overlying abutment with the extension member of said first bracket with its insert tongue inserted into the opening in said first bracket and between said ridge pole and said first rafter, and

(*f*) means for connecting said flanges and said extension member to their respective roof rafters and to said ridge pole.

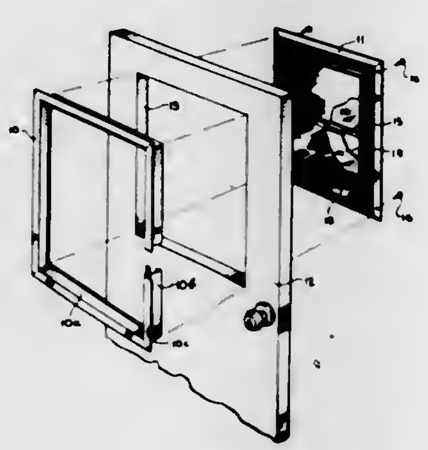
3,184,801

TRIM UNIT FOR FACILITATING THE INSTALLATION OF LIGHTWEIGHT WINDOW UNITS

George H. Fletcher, Orlando, Fla., assignor of one-third to Julian C. Renfro, Winter Park, Fla.

Filed Apr. 2, 1962, Ser. No. 184,103

7 Claims. (Cl. 20—11)



3. A trim unit for use with a window unit constructed of lightweight channeled material, in the channels of which at least one window panel is slidable, said trim unit and said window unit being received on opposite sides of an aperture in which a window unit is to be installed, said trim unit comprising a frame-like device involving top, bottom and side edges and arranged to interfit with the side of said window unit opposite the channels thereof, tightening means extending between said units at spaced locations for selectively drawing said units together into clamping relation about opposite peripheries of said aperture, said trim unit in cross section comprising a plurality of portions secured together in an integral manner and angularly disposed with respect to each other about a common juncture, one of said portions being disposed at an angle with respect to the plane of said trim unit and being brought into contact with said window unit during the drawing together of the pair of units, for enhancing the appearance of the side of the window unit nearest the trim unit.

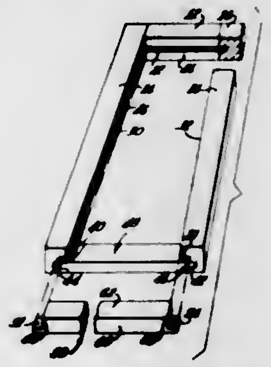
3,184,802

FRAME STRUCTURE

William Levy, 833 Chestnut St., Franklin Square, N.Y.

Filed Nov. 8, 1962, Ser. No. 236,327

5 Claims. (Cl. 20—15)



1. A frame for a decorative panel comprising:

a parallel pair of grooved stile members;

a bottom cross bar joining one end of said pair of stile members, said cross bar having a pair of spaced outer faces, a grooved inside edge, and an outside edge, the grooves in said stile members and said bottom cross bar being in the inside edges and in contiguous relationship;

a top cross bar joining the other ends of said stiles and having an outer face in the same plane as the outer faces of said stiles and an inner face level with the edge of the stile grooves, said stile members, said bottom cross bar and said top cross bar defining three complete sides and a partial fourth side of a rectangular rigid frame; and

an elongated closure member removably positioned between said stile members and overlaying said top cross bar in the assembled condition, said closure member having an inside edge of the same dimension as said stile from its outer face to said groove and an outer edge extending from its outer face to said top cross bar, and a pair of tongue members extending from opposed ends, said tongue members being dimensioned to mechanically interlock with the stile grooves said closure member defining the fourth complete side of the rigid frame.

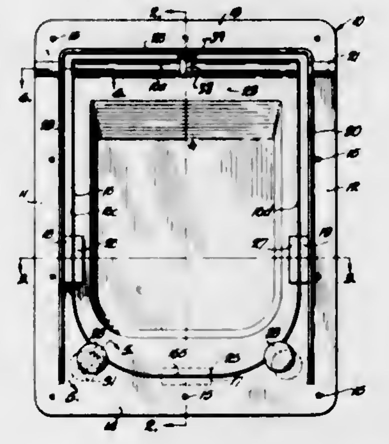
3,184,803

PET DOOR

Stuart W. Peel, 10201 Dearborn Drive, Overland Park, Kans.

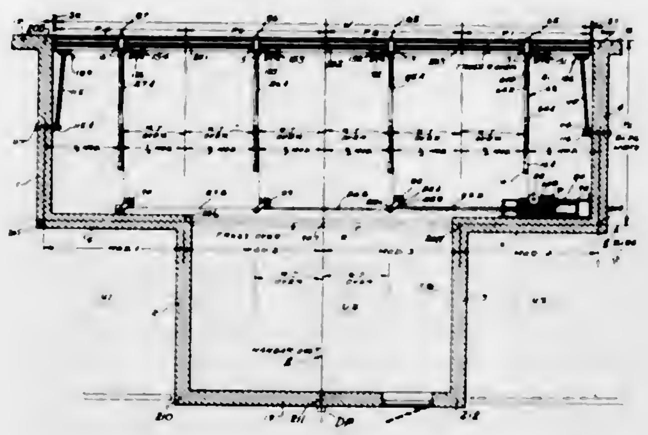
Filed July 25, 1962, Ser. No. 212,272

1 Claim. (Cl. 20—16)



A pet outlet door comprising, in combination, a frame, said frame having an opening therein enclosed thereby, said frame adapted to be normally positioned in a vertically oriented plane whereby to have upper and lower edges thereof connected one to the other by side edges, a door pivotally mounted adjacent the upper portion thereof relative to said frame and in the opening thereof, said door adapted to substantially fill said opening, the lower portion of said door freely swingable through and past both sides of said frame, magnetically attracting means attached to each one of said frame and door and cooperating in close proximity with one another to normally retain the latter solely by magnetic attraction in the same vertical plane as the frame and closing off the opening therein while permitting said freely swingable action thereof, an additional means for securing the door lower edge against pivotal movement within said opening, said door lower edge securing means comprising at least one slot in said frame adjacent said opening therein, a shaft movable to and fro in said slot, an enlarged head on one end of said shaft, the other end thereof externally threaded, and enlarged head means for threadably engaging said externally threaded end of said shaft, the enlarged shaft head and enlarged head engaging means each adapted to overlie the door edge on opposite sides thereof when the shaft is at one end of said slot.

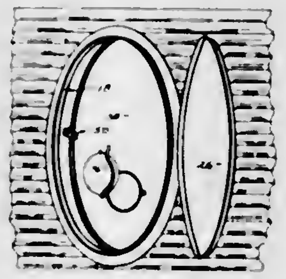
3,184,804
DOOR
Ralph L. Dugger, Box 121, Rte. 1, Hopkins, Minn.
Filed Dec. 21, 1960, Ser. No. 77,331
6 Claims. (Cl. 20—19)



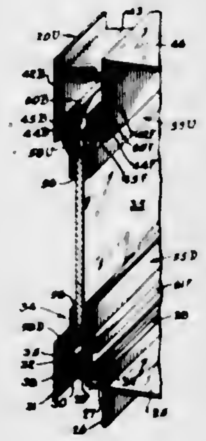
1. A widespan overhead door for closing a door opening in a building comprising a unitary flat door panel which in the upright position closes the door opening except for edge clearances, tracks extending into the interior of the building, each of said tracks being located in a vertical plane normal to the door when the door is closed, and positioned in a substantially common locating plane above the door extending into the interior of the building roller hangers in each of the tracks and pivotally connected to the head of the door, a plurality of cable hitch points on the front face of the door panel said cable hitch points being located at spaced intervals across the width of the door and in a common horizontal line across the door, a plurality of cables, each cable being pivotally connected to one of the cable hitch points, each cable then extending up the front face of the door, guide pulleys mounted within the building so as each to be in substantially vertical plane above the upper edge of the door panel and so as to present at least a portion of its pulley groove outwardly in respect to the front of the door and located, one above each cable hitch point of the door for receiving and guiding said cables, pulley means within the building for guiding said cables along running paths which are substantially parallel to each other and normal to the door and thence parallel to the door when the door is closed, drum means rotatably mounted in an elevated position in the building for receiving the cables where they move along said parallel running paths, counterweight means below said drum means, said cables being run over said drum means to and attached to said counterweight means, each cable being along a path composed of successive segments, adjacent segments being normal to each other, guide means on each edge of the door at substantially the vertical level of said cable hitch points and cooperating means on the building for guiding that portion of the door at the vertical level of said guide means along a predetermined path during door opening and closing movement, and power means for rotating said drum means for moving the cables equal amounts for each increment of door opening and closing movement.

3,184,805
DOOR STRUCTURE FOR GRAIN STORAGE BINS
Walter D. Behlen and Herbert P. Behlen, Columbus, Nebr., assignors to Behlen Manufacturing Company, Inc., Columbus, Nebr., a corporation of Nebraska
Filed June 27, 1962, Ser. No. 205,750
1 Claim. (Cl. 20—39)

In a door structure,
a supporting surface having an opening therein,
a frame secured to the periphery of said opening,
a first door panel on the outside of said frame,
a second door panel on the inside of said frame,
a hinge means on each of said door panels,
connecting means connecting said hinges to said frame whereby said door panels can be pivotally moved with respect to said frame,
connecting means for securing said door panels together when said door panels are in a position of engagement with the periphery of said frame at opposite sides thereof,
said inner door having an access opening therein,
an auxiliary door pivotally secured to said door adjacent said access opening,
said auxiliary door pivoting about an axis perpendicular to the surface of said inner door and adapted to close said access opening at times,
said auxiliary door being comprised of first and second door elements, said first and second door elements being in a parallel spaced relationship with respect to each other; said first door element being pivotally secured to the outer surface of said inner door; said second door element being pivotally secured to the inner surface of said inner door; means secured to said first and second door elements to pivotally move said door elements simultaneously,
and means on said auxiliary door and said inner door to limit the pivotal movement of said auxiliary door with respect to said access opening, said means on said auxiliary door comprised of a bolt passing through said first and second door elements which limits the opening and closing pivotal movements of said auxiliary door by engaging an edge of said access opening.



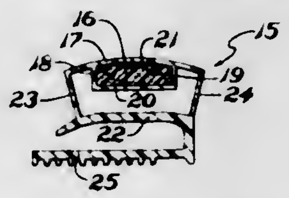
3,184,806
SLIDING CLOSURE STRUCTURES
Clifford I. Bragman, 4875 N. Cumberland Blvd., Whitefish Bay, Wis.
Filed Mar. 22, 1963, Ser. No. 267,089
11 Claims. (Cl. 20—52)



1. A sliding sash having horizontal and vertical frame members arranged in the shape of a rectangle, for mounting in a receiving structure,
the latter having a sill member, an upper horizontal header member, and two vertical jamb members, also arranged in the shape of a rectangle,
at least two of the three last-mentioned members being channeled, each channel being formed of a front surface, a rear surface parallel to the front surface, and an end surface joining the parallel surfaces,

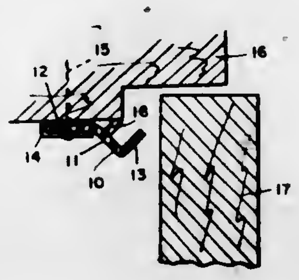
each parallel surface for sealing engagement of a correspondingly oriented surface of the sash frame member when said sash is mounted in said receiving structure and is in closed position,
said correspondingly oriented surfaces carrying weather strip means and said parallel surfaces having bulges adapted to engage in said closed position, their respective weather strip means to provide the sealing engagement,
the sill member having attached to it horizontally extending resilient weather strip means that is depressible by the underside of the lower horizontal sash frame member in said closed position for weather sealing,
said sill member being stepped so as to form towards its rear a vertical surface having a forward bulge,
the rear side of the lower horizontal sash frame member carrying weather strip means adapted to engage sealingly said forward bulge in said closed position,
at least one of those sash frame members which in said closed position is to engage a cooperating receiving structure member, being channeled and such cooperating member having a track that is disposed for projecting into the last-adverted-to channel,
a pair of blocks secured to, and disposed within the latter channel,
said blocks being notched for reception within the notches of said track to afford sliding movement on said track for said sash,
said track having at least two tooth-gap-like notches that are spaced apart from one another substantially the same distance as said blocks, and are located such that when said blocks drop into them, said sash is in said closed position.

3,184,807
GASKET CONTAINING A PERMANENT MAGNET
Robert E. Schornstheimer, Marietta, and Thomas R. Rohrer, Marion, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Nov. 24, 1958, Ser. No. 775,834
6 Claims. (Cl. 20—69)



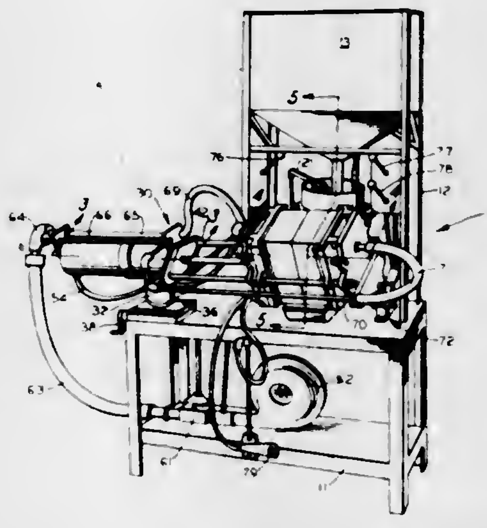
1. A peripherally continuous gasket for an opening in a wall member that is adapted to be closed by a hinged door member, the said gasket comprising an elongated base portion, integral attaching means on said base portion for mounting the gasket upon one of said members so as to extend parallel therewith in interconnected reaches on all sides of said opening, flexible walls defining an elongated hollow chamber, a pair of flexible walls of lesser thickness than said base portion interconnecting the latter to said walls defining the hollow chamber to resiliently support the latter in spaced parallel relationship to said base portion, and an elongated flexible permanent magnet in said chamber of at least one of the reaches other than that on the hinge side of the opening and extending as a single continuous piece substantially the length of the reach in which the magnet is located, the said magnet comprising finely-divided particles of permanent magnetic material united by a flexible binder with the particles of magnetic material comprising at least 87% by weight of the magnet and with the latter having a substantially planar surface on the side thereof adjacent said other member, said magnet being magnetized to provide the said substantially planar surface thereof with at least a pair of magnetic poles of opposite polarity.

3,184,808
WEATHERSTRIPS
Charles G. Lyon, 527 Gertrude Ave., Winnipeg, Manitoba, Canada
Filed Jan. 15, 1963, Ser. No. 251,571
1 Claim. (Cl. 20—69)



A weatherstrip for the doorway of a building, comprising: a resilient thin strap of even thickness; one side of said strap turned at an obtuse angle and the opposite side thereof turned at an approximate right angle and in the opposite direction to said first mentioned side, to leave a central flat area therebetween therealong and form a zigzag shape to said strap in cross section; an integral side tongue of thin even thickness projecting from the central part of said resilient strap therealong, in parallel relationship with said right angled side, and spaced therefrom; and a flattened U-shaped cover telescoped over said obtuse angled side, for contact with a door framework, and passage of fastening means therethrough.

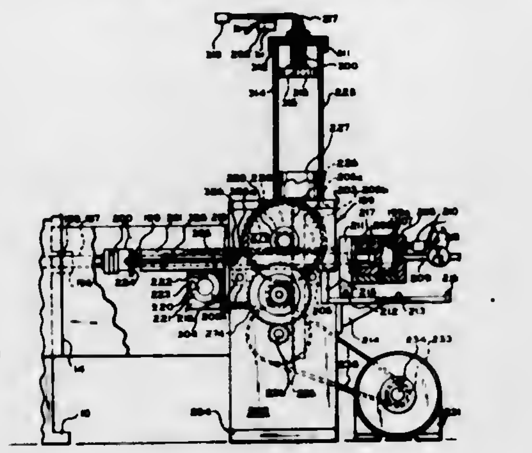
3,184,809
SHELL CORE FORMING APPARATUS
George W. Stewart, 948 Regal Road, Berkeley, Calif.
Filed Aug. 29, 1962, Ser. No. 220,212
3 Claims. (Cl. 22—10)



1. Shell molding apparatus comprising:
(*a*) a reservoir for molding sand including an inclined cover plate having discharge ports therein;
(*b*) means for discharging sand through said ports;
(*c*) clamping means releasably holding a pattern box having an end surface with an inlet opening provided therein;
(*d*) support means supporting said clamping means for swinging said box with said surface in a generally horizontal plane intersecting said cover plate and for tilting said box about a generally horizontal axis for positioning said pattern box with said surface and said cover plate in engagement and said inlet opening and said discharge ports in registration for admitting sand to said opening.

3,184,810
DIE CASTING AND PRESSURE MOLDING MACHINES

Joseph H. Hoern, 4161 El Monte, Saginaw, Mich.; W. L. Yeo, executor of said Joseph H. Hoern, deceased
Filed Nov. 1, 1960, Ser. No. 66,452
20 Claims. (Cl. 22—69)



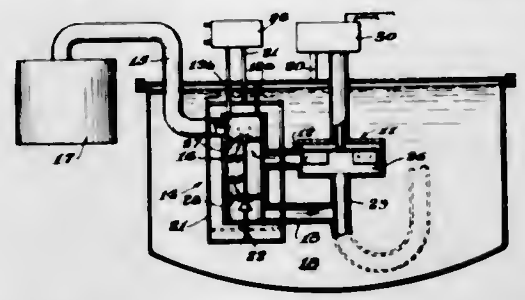
3. In die casting apparatus and the like; an openable die member assembly providing a die cavity having a material injecting passage leading to said cavity; means having an opening remote from said cavity for supplying material to said passage; a ram movable forwardly in said passage from a position outwardly of said opening to force a supply of material to said cavity; first electric motor means; means driven thereby operatively engaging said ram for moving said ram forwardly past said opening and thence operatively disengaging therefrom; and second electric motor means furnishing the power for shot injecting movement of said ram at a rapid speed once it has been moved relatively slowly past said opening by said first electric motor means and for returning the ram at a slower speed.

12. Apparatus for driving a die casting machine shot inpecting plunger comprising; motor means; a drive shaft; a pair of disengageable members between said motor means and shaft comprising peripherally spaced surfaces, one of which is generally polygonal and the other generally annular, to provide spaces of normal width between said surfaces and spaces of decreased width; wedge members of a diameter less than the normal spaces between said surfaces but greater than the decreased spaces between them; a power member connected with said drive shaft for driving it at a high rate of speed; means controlling said wedge members to move them to wedged position to engage said motor means and shaft only after the force of the power member is somewhat expended and said high rate of speed has abated; and selectively operative means for operating said means controlling said wedge members.

3,184,811
METERING AND DELIVERY APPARATUS FOR MOLTEN METAL AND METHOD OF USE

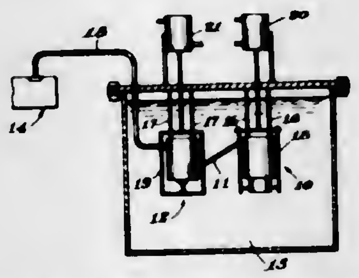
Foster C. Bennett, Frank E. Robbins, and Ray E. Warnock, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 14, 1962, Ser. No. 173,272
4 Claims. (Cl. 22—70)

1. A metering and pumping apparatus for transferring predetermined quantities of a molten metal which comprises in combination a centrifugal pump, a double in-line valve assembly, a first and second conduit joining said pump and said valve assembly, an outlet tube attached to said valve assembly, and an activating means for opening and closing said valve assembly in a predetermined controlled time cycle, one end of said first conduit attached to the pump chamber and the other end of said first conduit attached to the valve body between the double valves of said valve assembly and establishing communication between said pump and said valve assembly, said second conduit connected to the inlet tube of said pump and to the valve body near the end of said valve body opposite that containing said outlet tube and on the side of the valve seat opposite that adjacent the connection of said first conduit and said valve body thereby establishing communication between said pump inlet and said valve assembly.



3,184,812
METERING AND DELIVERY APPARATUS FOR MOLTEN METAL AND METHOD OF USE

Foster C. Bennett, Frank E. Robbins, and Ray E. Warnock, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 14, 1962, Ser. No. 173,273
3 Claims. (Cl. 22—70)



1. A metering and pumping apparatus for transferring predetermined quantities of a molten metal which comprises in combination a piston pump, double valve assembly, a conduit connecting said pump and said valve assembly, an outlet tube attached to said valve assembly and positive action driving means for said pump and valve assembly, said piston pump having a port, said double valve assembly having two valve heads mounted one above the other in line on a single valve stem and cooperating with separate valve seats mounted in a single valve body, one end of said valve body being open ended and the other end being capped, one end of said conduit being attached to said port in said pump and the other to a port in the side wall of said valve body between the two valves, said outlet tube being attached to said valve body near its capped end and between the cap and the valve adjacent said cap, and said positive action driving means activating said pump and valve assembly cooperatively in a predetermined time cycle thereby assuring the delivery of measured amounts of molten metals.

3,184,813
METAL CASTING PROCESS

Patrick J. O'Shea, Hazel Crest, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Nov. 7, 1963, Ser. No. 322,049
13 Claims. (Cl. 22—139)

1. A method of inhibiting erosion of the surface of the base member of a metal mold used to cast ingots, which erosion normally occurs during contact of said surface with flowing molten metal, while subsequently preventing adherence of said ingots to said base member upon ingot formation; which comprises the steps of applying to said surface a slurry comprising a refractory suspended in a binder, said slurry being applied in an amount sufficient to form a coating of sufficient thickness to inhibit said erosion and prevent said adherence and allowing said slurry to dry whereby a protective solid coating is formed upon said base member, said slurry comprising at least one refractory selected from the group consisting of vitreous silica, crystalline silica, aluminum silicate, alumina, graphite, zirconium silicate, magnesium silicate and clay suspended in at least one binder selected from the group consisting of a colloidal silica sol, aluminum phosphate and ethyl silicate, with said binder being present in an amount sufficient to bind the refractory particles together to thereby form a tightly adherent coating which is bonded to said surface.

3,184,814
PROCESS OF FORMING A FOUNDRY MOLD WITH AN ACID CURABLE BINDER

Lloyd H. Brown, Crystal Lake, Ill., assignor to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey
No Drawing. Filed Sept. 12, 1963, Ser. No. 308,361
13 Claims. (Cl. 22—193)

1. A process comprising forming a molding composition curable at room temperature by mixing together sand, an aqueous acid solution, and an acid-curable, polymerizable binder; said binder being present in sufficient quantity to bind said sand particles together when cured; the acid in said aqueous acid solution being present in sufficient quantity but insufficient concentration to cause curing of said binder at room temperature, forming said molding composition into desired shape, and increasing the concentration of acid in said aqueous acid solution of the shaped composition at substantially room temperature by removing water therein in a substantially uniform manner at least until said acid is present in sufficient concentration to commence rapid curing of said binder.

3,184,815
METAL CASTING PROCESS

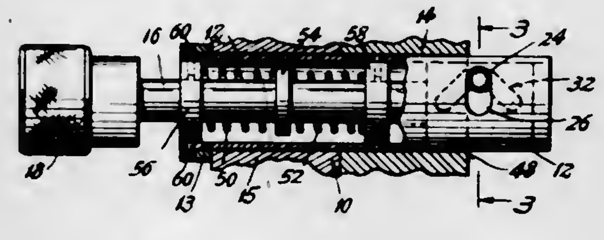
Raymond Reuter, Palos Park, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Nov. 7, 1963, Ser. No. 322,043
15 Claims. (Cl. 22—216.5)

1. A method of inhibiting erosion of the surface of the base member of a metal mold used to cast ingots, which erosion normally occurs during contact of said surface with flowing molten metal, while subsequently preventing adherence of said ingots to said base member upon ingot formation; which comprises the steps of applying to said surface a slurry comprising a refractory selected from the group consisting of vitreous silica, crystalline silica, magnesium silicate, aluminum silicate, alumina, graphite, zirconium silicate and clay suspended in an aqueous alkali metal silicate binder, said slurry being employed in an amount adequate to form a coating of sufficient thickness to inhibit said erosion and prevent said adherence, and allowing said slurry to dry whereby a protective solid coating is formed upon said base member, said binder being present in an amount sufficient to bind the refractory particles together to thereby form a tightly adherent coating bonded to said surface.

3,184,816
QUICK-RELEASE FASTENING AND LOCKING DEVICE

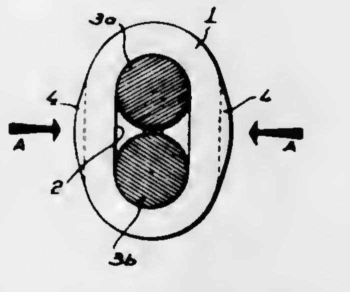
John J. McCarthy, Weston, Conn., assignor to Norco Incorporated, Ridgefield, Conn., a corporation of Connecticut
Filed Aug. 18, 1961, Ser. No. 132,379
19 Claims. (Cl. 24—211)

1. Fastening means comprising a shank; a release member movable with respect to the shank and having a cam which is movable in a direction along the axis of the shank; and a single elongate locking member all portions of which are immovable with respect to each other, said locking member being carried by, and movable laterally of the axis of, the shank between positions thereon wherein it protrudes laterally at the side of the shank or does not protrude at all from the shank, said locking member having at its two ends exposed abutment portions and being operatively connected to said cam to be actuated thereby, said shank having guide means engaged with the locking member to guide the latter for said movement and in a path whereby the said two abutment portions of the locking member simultaneously move non-radially and in parallel directions along straight lines from projecting positions to substantially non-projecting, retracted positions on the shank and from said substantially non-projecting, retracted positions to said projecting positions, said cam effecting said guided movement of the locking member in at least one direction in response to movement of the release member in one direction.



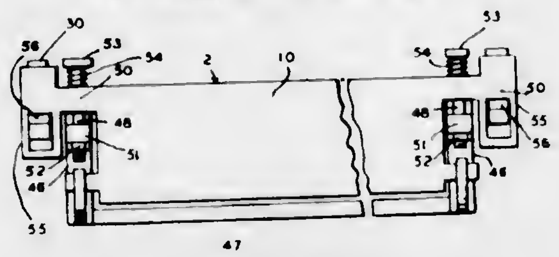
3,184,817
CABLE CLAMPS

Marie Archer, nee Chesnais, 2 Hameau des Perdrix, La Celle-Saint-Cloud, France
Filed Apr. 2, 1963, Ser. No. 270,091
Claims priority, application France, Apr. 5, 1962, 893,374
2 Claims. (Cl. 24—123)



1. A cable clamp comprising a deformable tubular sleeve which is originally of uniform, substantially oval cross-section throughout its length, said sleeve having an internal bore for receiving two branches of at least one cable which are to be joined together with the branches in side-by-side relation throughout the entire length of said sleeve, said bore originally having opposed, parallel, flat planar inner wall surface portions throughout its length at the opposite sides of the plane of symmetry of the sleeve which is coincident with the major axis of its oval cross-section, the distance between said parallel, flat planar inner wall surface portions being at least slightly larger than the diameters of the cable branches so that the latter may be easily inserted therebetween with two free internal spaces remaining between said flat planar inner wall surface portions and the two cable branches at the opposite sides of the contact line of the latter, and said sleeve further having external longitudinal bosses extending along the entire length of the sleeve at the opposite sides of said plane of symmetry and located in correspondence with said two free internal spaces.

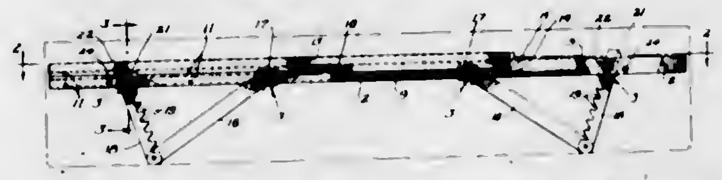
3,184,818
AUTOMATIC MIX REGULATING DEVICES FOR CEMENT BLOCK MOLDING MACHINES
Eugene E. Crile, 1400 N. 20th Ave., Phoenix, Ariz.
Filed Oct. 19, 1953, Ser. No. 386,716
10 Claims. (Cl. 25—104)



6. A block making machine including,

(*a*) a mold,
(*b*) a feed drawer that moves back and forth across the mold to deposit a successive charge of material in the mold for each cycle of operation of the machine,
(*c*) a strike-off bar carried by the feed drawer,
(*d*) vibrators for the mold,
(*e*) and means for changing the height of the block including
(*f*) a controller that raises and lowers the strike-off bar,
(*g*) and a device responsive to the height of the charge in the mold at a time in the cycle of operation of the machine for controlling the operation of said means for changing the height of the block.

3,184,819
ADJUSTABLE CASKET BED
John L. White, Knightstown, Ind., assignor to Cas-Craft, Inc., Knightstown, Ind., a corporation of Indiana
Filed Oct. 30, 1962, Ser. No. 234,189
4 Claims. (Cl. 27—12)

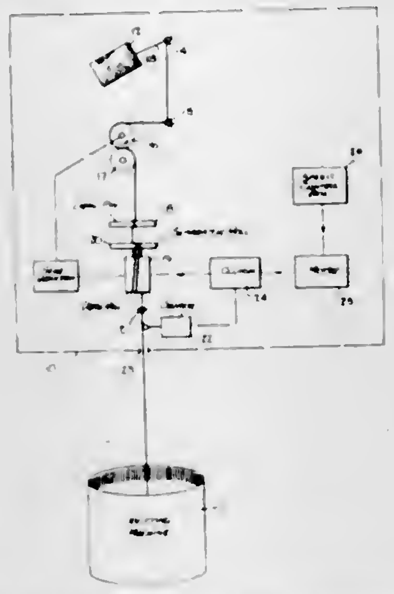


1. For a casket having a shell defining a body receiving space, a separable bed unit adapted to fit within said space, said unit comprising: .

(*a*) a substantially rectangular frame comprising elongated side members, lateral spacing elements between said side members, flexible joint means between said side members and said spacing elements, said flexible joint means permitting twisting movement of said side members with respect to each other;
(*b*) a flexible body receiving tray secured to said elongated side members;
(*c*) said frame and said flexible tray defining a longitudinally warpable surface;
(*d*) a pair of axially spaced legs mounted on each side member for supporting said bed within the body receiving space;
(*e*) and means for independently varying the height of each of said legs.

3,184,820
APPARATUS FOR ORIENTING THE STRUCTURE OF SYNTHETIC YARN
Maurice S. Kanbar, 105 E. 15th St., New York, N.Y.
Filed Apr. 29, 1963, Ser. No. 276,279
6 Claims. (Cl. 28—71.3)

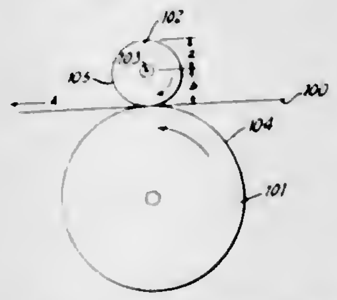
1. An attachment for a machine adapted to process an oriented synthetic yarn to render said machine operable with undrawn yarn, the yarn demand of said machine being intermittent, said attachment comprising a supply package of undrawn synthetic yarn, feed rolls, draw rolls, motor means to drive said draw rolls at a high speed relative to said feed rolls, means to guide yarn from said package successively through said feed rolls and draw rolls to effect stretching thereof to an extent determined by the ratio of speed therebetween, means to guide said stretched yarn from said draw rolls to said machine to process same, and control means to discontinue the drive of said motor means when the yarn demand of said machine is interrupted and to continue said drive when yarn demand is resumed.



3,184,821
TREATMENT OF FILAMENTARY MATERIAL
Robert W. Singleton, New York, N.Y., and Harry S. Pulaski, Elizabeth, N.J., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 29, 1961, Ser. No. 120,497
18 Claims. (Cl. 28—72)

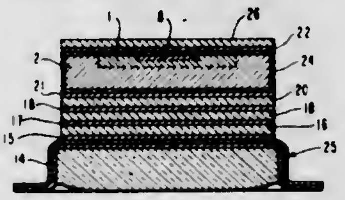
1. Method of improving filamentary material comprising an oxymethylene polymer which comprises heating said filamentary material to an elevated temperature between about 5° and about 45° C. below the crystalline melting point of the polymer and maintaining said filamentary material at said elevated temperature under sufficient tension to prevent its surface fusion for a period sufficient to increase its crystallite size by at least 5%.

3,184,822
METHOD FOR MANUFACTURE OF SPATULATED FIBRE
Gilbert Shaw, Middlebury, Vt.
Filed Aug. 15, 1962, Ser. No. 217,000
5 Claims. (Cl. 28—72)



1. A method for making a spatulated fiber comprising: applying a deforming compressive force upon a synthetic fiber to effect deformation of said fiber along its longitudinal axis with respect to the cross-sectional profile of the fiber prior to application of the compressive force, the extent to which said compressive force deforms said fiber increasing from a comparatively small extent at a first point along the longitudinal axis of the fiber to a comparatively large extent at a second point along its longitudinal axis, such increase in deformation between said first and said second point resulting in an increasingly spatulated portion between said first and said second points, said increasingly spatulated portion having varying cross-sectional shape along the length of the fiber, a progressive decrease in thickness, a corresponding increase in width and a corresponding decrease in stiffness of the fiber in the direction of the applied compressive force.

3,184,823
METHOD OF MAKING SILICON TRANSISTORS
William A. Little, Richardson, and Stacy B. Watelski, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Sept. 9, 1960, Ser. No. 55,036
5 Claims. (Cl. 29—25.3)

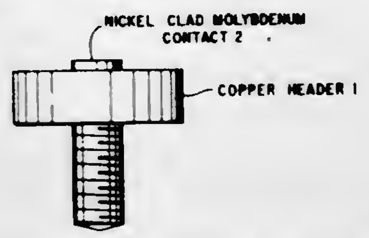


1. The method of fabricating a high-current transistor which comprises polishing a first surface of a rectangular, parallelepiped-shaped wafer of P-type silicon, diffusing an N-type impurity material into all the surfaces of said wafer to a depth of approximately 3 mils, lapping said first surface of said wafer to reduce the thickness of the wafer to approximately 4 mils, polishing the lapped surface of the wafer, forming an oxide film on all surfaces of the wafer, applying a thin film of photosensitive material to the lapped and polished surface of said wafer, superimposing over said film a first stencil bearing a centrally located opaque E-shaped indicia, exposing portions of said photosensitive material by exposing it to light through said stencil, dissolving the undeveloped portion of said material, dissolving the E-shaped portion of the oxide film which is exposed upon said lapped and polished surface to thereby expose an E-shaped area centrally located on said lapped and polished surface, removing the developed portion of the photosensitive material, diffusing N-conductivity type phosphorous pentoxide into said exposed E-shaped area of said lapped and polished surface to a depth of approximately 0.1 mil to form the emitter region of said transistor, dissolving the portion of said oxide film remaining on the surfaces of said wafer, diffusing P-type impurity material into said lapped and polished surface, applying a thin film of photosensitive material to said polished and lapped surface, superimposing over said film a second stencil bearing a centrally located, opaque, E-shaped indicia outlined by a narrow transparent band, developing the portion of the photosensitive material underlying the transparent band by exposing it to light through said stencil, removing the unexposed photosensitive material remaining on said transistor, sandblasting said lapped and polished surface, plating approximately 100 microinches of nickel on said sandblasted surface, sandblasting a second surface of said wafer lying opposite said nickel-plated surface, plating approximately 100 microinches of nickel on said second surface, and removing the developed photosensitive material.

3,184,824
METHOD FOR PLATING A SUPPORT FOR A SILICON WAFER IN THE MANUFACTURE OF A SEMICONDUCTOR DEVICE
John D. Fairbairn, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 27, 1963, Ser. No. 268,328
9 Claims. (Cl. 29—25.3)

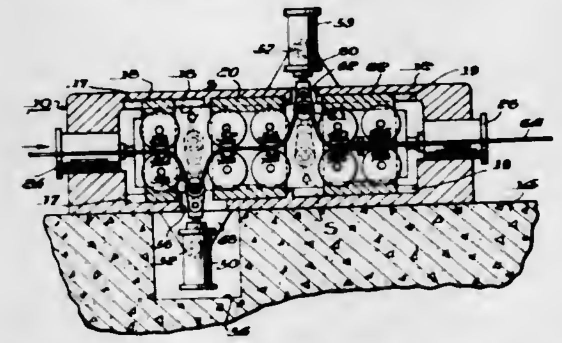
6. A method for plating a support for a silicon wafer in the manufacture of a semiconductor device, which support includes a copper header and a nickel-clad molybdenum contact attached thereto, comprising the steps of:

(*a*) masking the exposed face of the nickel-clad molybdenum contact,



(*b*) nickel-plating the copper header and the unmasked surface of the contact,
(*c*) removing the mask,
(*d*) gold-plating the header and the contact,
(*e*) and securing the silicon wafer to the gold-plated contact.

3,184,825
SCALE BREAKER
Bernard L. Jones, Matanzas, Venezuela
(Kennilworth Apts., 5700 Center Ave., Pittsburgh, Pa.)
Filed Mar. 25, 1963, Ser. No. 271,038
6 Claims. (Cl. 29—81)

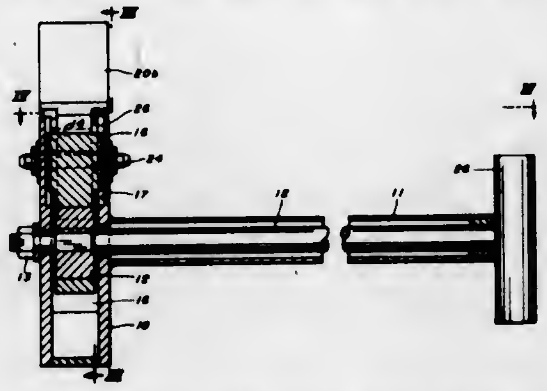


1. In the method for removing scale from metal strip having scale on its surfaces, the steps of passing the strip through a substantially flat planar path over a small diameter scale breaking roll having a pair of large diameter back-up rolls on either side thereof, the axes of said back-up rolls being parallel with the axis of the scale breaking roll, the scale breaking roll being on one side of a plane extending through the axes of the back-up rolls and with one side of the strip facing the scale breaking roll and the other side facing said back-up rolls, moving the scale breaking roll between the back-up rolls to a point on the other side of said plane extending through the axes of the back-up rolls to bend the strip into a general V-shape between the back-up rolls, and finally moving at least one of said back-up rolls toward the other back-up roll whereby the back-up rolls will engage said V-shaped configuration to cause the strip to pass around said scale breaking roll through an arc greater than 180°.

3,184,826
PORTABLE SCRAPER FOR GRIPPER DIES OF STRIP WELDER
James S. Taylor, Morrisville, and William A. Turner, Lower Makefield Township, Bucks County, Pa., assignors to United States Steel Corporation, a corporation of New Jersey
Filed May 27, 1963, Ser. No. 283,489
6 Claims. (Cl. 29—81)

1. A tool for scraping the adjacent corners of spaced pairs of spaced elongated parallel electrode gripper-jaw bars, comprising a head of elongated open-topped box construction adapted to extend between the two bars of both said pairs, said head having a lateral extension adapted to fit between two corresponding bars, one from each of said pairs, an elongated manipulating handle extending normal to the length of said head, a pair of

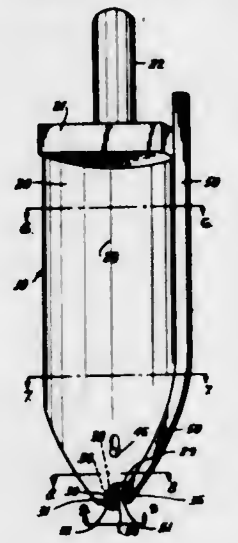
spaced opposed scraper blocks having cutting-edge portions of dihedral shape adapted to fit closely the corners of two bars, one from each of said pairs, said blocks



fitting snugly in said head and being slidable therein, means movable in said head for moving said blocks away from each other and a control-member in said handle for rotating said means.

3,184,827
TREPANNING TOOL FOR TREPANNING TAPERED METAL SHAPES

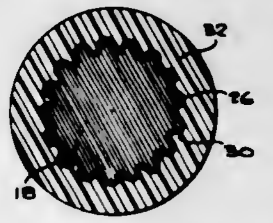
John R. Melvin, Parma, Ohio, assignor to The Brush Beryllium Company, Cleveland, Ohio, a corporation of Ohio
Original application Sept. 20, 1960, Ser. No. 57,316, now Patent No. 3,109,232, dated Nov. 5, 1963. Divided and this application July 19, 1963, Ser. No. 304,709
7 Claims. (Cl. 29—95)



1. A trepanning tool comprising an elongated thin, wide blade having a leading edge and a trailing edge and lateral faces each extending from one of said edges to the other of said edges, one of said faces being concave about an axis extending lengthwise of the blade and the other of said faces being convex about an axis extending lengthwise of the blade so that the blade has a shallow concavo-convex section which is elongated edgewise of the blade, said blade being feathered edgewise toward its leading edge and toward its trailing edge along at least the major portion of its length to provide decrescent thickness of the blade in opposite directions edgewise from a portion of the blade between, and spaced from, said edges, a holding shank connected to one end of the blade, a cutting tip connected to the other end of the blade, said cutting tip having a leading edge which is a cutting edge and which extends in a direction generally transversely of the blade and outwardly beyond the lateral faces of the blade, wear resistant pads on the blade in closely spaced relation to the tip end of the blade, at least one pad at each lateral face of the blade, each pad having a wear resisting surface facing outwardly from its associated lateral face of the blade, each pad projecting outwardly beyond its associated lateral face of the blade sufficiently far so that it can engage the side walls of a kerf when a kerf is being cut by the cutting tip, and thereby stabilize the blade.

3,184,828
ROLL COVERS

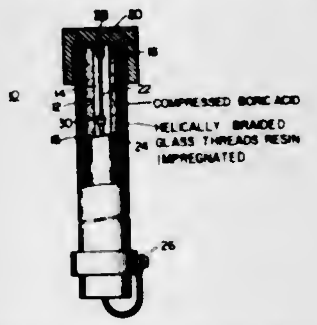
Carl W. Dames, Jr., Reading, Pa., assignor to Polymer Processes, Inc., a corporation of Pennsylvania
Filed Nov. 30, 1962, Ser. No. 241,305
15 Claims. (Cl. 29—129)



12. A roll body, a sleeve on and enclosing the body, and a stress relieved nylon cover overlying the sleeve and locked to the roll body by deformations in the sleeve in which complementary portions of the nylon are engaged.

3,184,829
METHOD OF MAKING ARC EXTINGUISHING SLEEVE

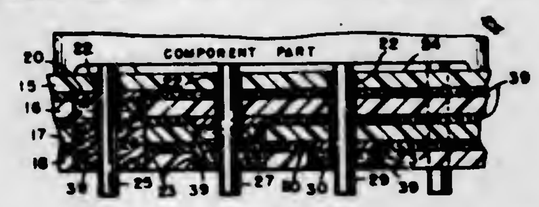
Samuel M. Shobert, R.R. 2, Ireland Road, Mishawaka, Ind.
Filed July 17, 1961, Ser. No. 124,733
4 Claims. (Cl. 29—155.5)



1. The method of making an arc confining and extinguishing sleeve comprising the steps of: forming an elongated inner sleeve of boric acid powder about a supporting mandrel and compressing said powder into tightly compacted form; forming a braid of glass threads on the outer surface of said sleeve; impregnating said braid with a resin material; curing said resin to bond the threads of said threads together and to said inner sleeve; and removing said mandrel from said inner sleeve.

3,184,830
MULTILAYER PRINTED CIRCUIT BOARD FABRICATION TECHNIQUE

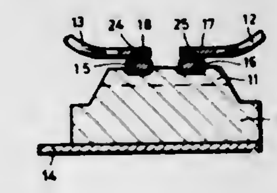
Weldon V. Lane, West Long Branch, and Edmund E. Malecki, Rumson, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Aug. 1, 1961, Ser. No. 128,596
6 Claims. (Cl. 29—155.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A method of making composite laminated circuit units comprising preparing a plurality of individual printed circuit boards having metallic circuits thereon designed to make functional connection with at least a portion of an electronic system, the system including projecting and interconnecting conductors, said circuits having terminal areas for connection with the interconnecting conductors of the system, applying solder to said terminal areas, forming clearance chambers in said boards at said terminal areas to receive said solder then applying dielectric cement to at least one interengaging face of said circuit boards, superposing said boards and applying pressure thereto until said cement hardens, then forming interconnecting conductor receiving holes at said terminal areas extending through the boards, the terminal areas and the solder, inserting said conductors in the holes, and then heating the solder to soldering temperature.

3,184,831
METHOD OF PRODUCING AN ELECTRIC CONTACT WITH A SEMICONDUCTOR DEVICE

Karl Siebertz, Munich-Obermenzing, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Nov. 7, 1961, Ser. No. 150,673
Claims priority, application Germany, Nov. 16, 1960, S 71,283
8 Claims. (Cl. 29—155.5)



1. The method of connecting a conducting metal part to a given conducting metallic spot of a semiconductor device, which comprises placing between the metal part and said metallic spot a solid body of plastically deformable and electrically good conducting metal of substantially spherical shape, and compressing the body between the part and the device under sufficient pressure to plastically deform and cold-weld the body to the part and the spot, whereby the part is firmly connected mechanically and electrically with the device at said spot.

3,184,832
METHOD OF MAKING AN EXPENDABLE ELECTRICAL CONNECTOR

James M. Perkins, Iowa City, Iowa, and Paul F. Graf, Ventura, and Frank R. Braun, Camarillo, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Original application June 12, 1961, Ser. No. 116,628, now Patent No. 3,136,842, dated June 9, 1964. Divided and this application Oct. 29, 1963, Ser. No. 319,891
2 Claims. (Cl. 29—155.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

2. The method of fabricating a separable umbilical connector for electrically joining a missile to its launcher prior to the launching operation, during which operation the electrical circuit between the missile and its launcher is broken when a separation force of predetermined magnitude is applied to said connector, said method comprising the steps of:

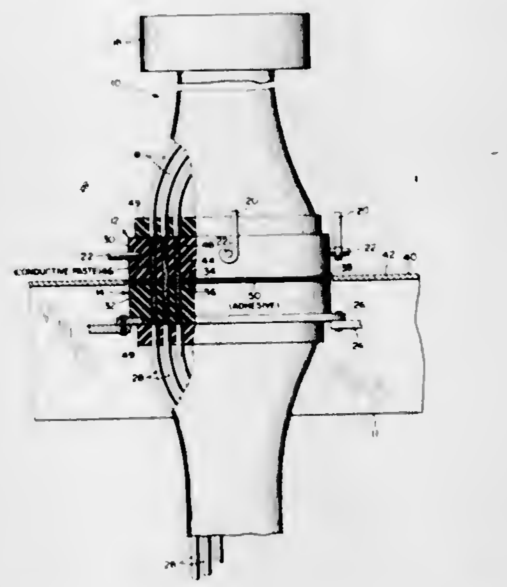
adhesively securing together a pair of connector bodies composed of electrically insulating material and having substantially planar abutting surfaces to be thus adhesively secured, said adhesive when hardened having a known and predetermined separation force;

drilling a plurality of apertures completely through the assembled connector bodies, the number of apertures so drilled being equal to the number of pairs of electrical conductors joining said missile to its launcher;

filling the apertures so drilled with an electrically conductive paste that is capable of hardening over a period of time;

embedding the bared ends of each pair of conductors into said conductive paste from opposite ends of the respective apertures so drilled in said connector bodies; and

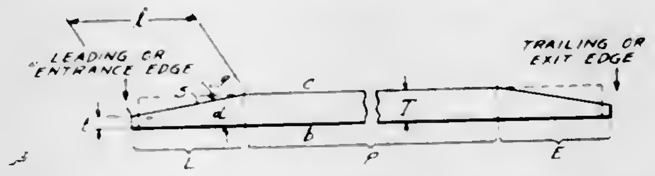
allowing said conductive paste to harden to form a frangible electrical connection between each of said



pairs of conductors, said conductive paste when hardened having a known separation force chosen to be equal to or less than the separation force applied to the hardened adhesive securing together said pair of connector bodies when the missile leaves its launcher during the launching operation.

3,184,833
METHOD OF MAKING VANES FOR HYDRAULIC COUPLINGS

Reinhold C. Zeidler and William A. Barnes, Detroit, and Daniel W. Lysett, Birmingham, Mich., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application Feb. 1, 1956, Ser. No. 562,686, now Patent No. 2,989,004, dated June 20, 1961. Divided and this application Jan. 10, 1961, Ser. No. 81,866
3 Claims. (Cl. 29—156.8)



1. The method of making a liquid flow-controlling vane comprising the steps of providing a flat sheet of thin metal having substantially uniform thickness; stamping the sheet with a die to provide a vane having liquid entrance and exit portions with two spaced straight edges; and coining said portions of the vane to provide surfaces on said portions inclined at an angle to the plane of the vane and terminating at said edges thereof; and bending said vane to a predetermined desired curvature.

3,184,834
SELECTED Mo-Nb-Si-Ti COMPOSITIONS AND OBJECTS THEREOF

Max F. Bechtold, Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 19, 1961, Ser. No. 160,645
7 Claims. (Cl. 29—182)

1. A composition of matter in which molybdenum, niobium, silicon and titanium are present in the proportions, by weight, of 8–65% molybdenum, 2–30% niobium, 15–45% silicon, and 10–65% titanium.

3,184,835

PROCESS FOR INTERNALLY OXIDATION-HARDENING ALLOYS, AND ALLOYS AND STRUCTURES MADE THEREFROM

Charles D. Coxe and Allen S. McDonald, Jr., Fairfield, Conn., assignors to Handy & Harman, New York, N.Y., a corporation of New York

Filed Oct. 2, 1961, Ser. No. 145,528

6 Claims. (Cl. 29—182.5)

1. The coalesced product resulting from the extrusion of internally oxidation-hardened particles of a solid solution alloy, said product consisting essentially of copper as the solvent metal and at least one solute metal oxide of the group consisting of beryllium oxide and aluminum oxide the amount of said solute metal oxide being based on from about 0.35 to 1.6 atomic percent of the solute metal, said alloy particles having been completely internally oxidized entirely by the preferential oxidation of the solute metal alone, said particles being thus substantially free of copper oxide and of in situ reduced copper oxide, said coalesced product having substantially uniform hardness across the entire section and being substantially free of soft areas due to in situ reduced copper oxide, a tensile strength in excess of 60,000 p.s.i., being free from delayed brittle fracture, being capable of retaining at least 90% of the as-extruded strength after annealing in a neutral gas at 1400° F. for 1 hr. and an electrical conductivity in excess of 70% IACS at room temperature.

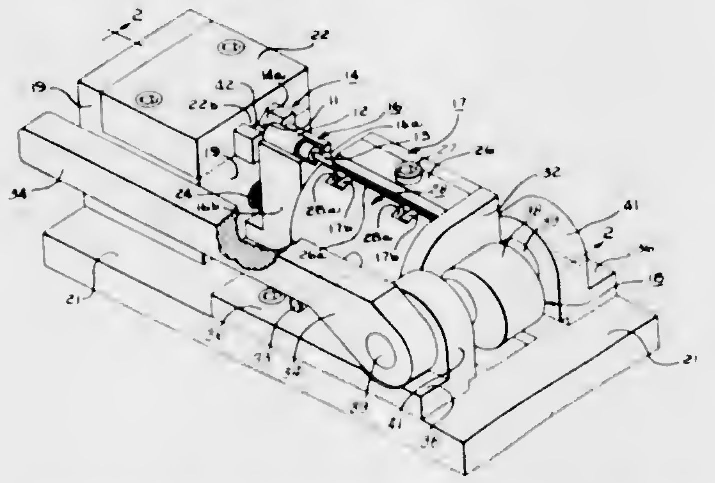
3,184,836

ARTICLE ASSEMBLING APPARATUS

Glenn E. Miller, Omaha, Nebr., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed May 7, 1962, Ser. No. 192,823

3 Claims. (Cl. 29—203)



1. Apparatus for assembling first and second pin members to opposite ends of an intermediate member so that the pin members project predetermined distances from the intermediate member, which comprises:

a plurality of carriage means for supporting the members with the first and second pin members adjacent the opposite ends of the intermediate member, said several carriage means being movable along substantially aligned paths and said carriage means for supporting the intermediate member including a portion having opposite sides spaced apart a distance equal to the distance between the ends of the member;

means for insuring that the opposite ends of the intermediate member are aligned with respective ones of the opposite sides of the portion of said carriage means for supporting the member during an assembling operation;

drive means for moving said carriage means for supporting the first pin member relative to and into engagement with said carriage means for supporting the intermediate member, to assemble the first pin member to its associated end of the intermediate member, and for moving said carriage means for supporting the intermediate member and the second pin member in the same direction as said carriage means for supporting the first pin member and relative to the second pin member to assemble the second pin member to its associated end of the intermediate member;

means on said carriage means for supporting the first pin member engageable with one side of the portion of said carriage means for supporting the intermediate member, for limiting relative movement between said carriage means;

fixed first stop means on said carriage means for supporting the first pin member and spaced from said movement limiting means on said carriage means the predetermined distance that the first pin member is to project from the intermediate member, for limiting movement of the first pin member on said carriage means for supporting the first pin member as said carriage means is moved relative to and into engagement with said carriage means for supporting the intermediate member by said drive means, so that the first pin member is assembled to its associated end of the intermediate member to project the predetermined distance therefrom;

fixed second stop means for limiting movement of the second pin member so that said carriage means for supporting the second pin member and the intermediate member moves relative thereto as said carriage means is moved by said drive means, to assemble the second pin member to its associated end of the intermediate member; and

fixed third stop means spaced from said second stop means the predetermined distance that the second pin member is to project from the intermediate member, and engageable by the other side of the portion of said carriage means for supporting the intermediate member to limit movement of said carriage means by said drive means, so that the second pin member is assembled to its associated end of the intermediate member to project the predetermined distance therefrom.

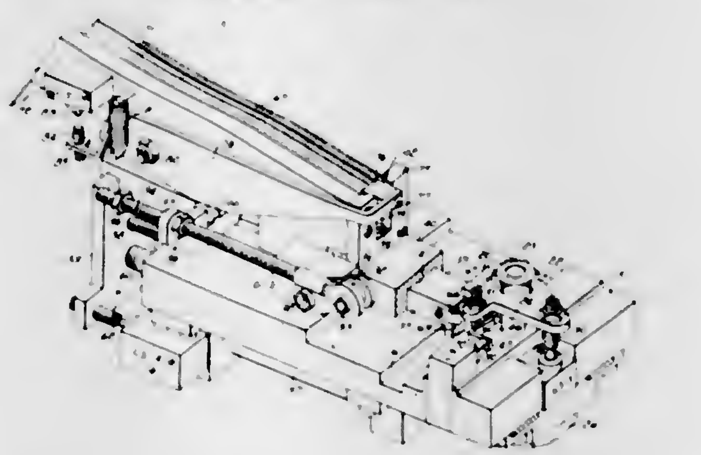
3,184,837

APPARATUS FOR MOUNTING ARTICLES

Frank Wahl, North Bergen, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 8, 1963, Ser. No. 271,315

12 Claims. (Cl. 29—203)



1. An apparatus for mounting apertured spool heads, having terminals initially lying adjacent like surfaces thereof in the areas of the apertures, singly on shanks of cores comprising:

a ram having a working end apertured to receive the shanks of successive cores,

a table to support the ram for reciprocable movement and adapted to support the cores successively in an operating position with the shanks thereof aligned with the aperture of the ram,

a chute mounted above the table to support the spool heads in stacked formation therein and having an exit end adapted to locate the spool heads successively above said operating position,

means supported by the table to reciprocate the ram to move the working end thereof between a receiving position, in general alignment with the exit end of the chute, and a mounting position relative to each shank,

a spool head conditiong unit disposed adjacent the exit end of the chute, and

a feeder supported by the table operable to feed the spool heads successively from the exit end of the chute into a first position adjacent the spool head conditioning unit and then into a second position adjacent the working end of the ram while the ram is in the receiving poistion for mounting thereby on the shanks of the cores singly.

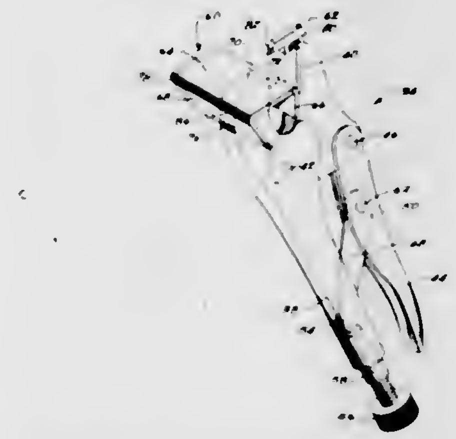
3,184,838

PLIER TYPE TOOL HAVING A HEEL MEMBER AND PUNCH BIT FOR ALIGNING MEANS

Thomas B. Johnson, Ambridge, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 10, 1963, Ser. No. 271,980

2 Claims. (Cl. 29—271)



1. In alignment apparatus, the combination comprising:

a plier-like tool having opposed jaw means;

a generally rectangular heel plate secured to the end of one of said jaw means, said heel plate having a face which resides in a plane extending substantially perpendicular to said opposed jaw means;

a fulcrum comprising an edge of said face which is remote from both of said jaw means and coplanar with said face and about which said tool may be pivoted; and

bite means secured to the end of the other of said jaw means; said bite means extending toward said heel plate and having a pointed end adjacent thereto.

3,184,839

METHOD AND DEVICE FOR RECONDITIONING WORN RAILROAD RAILS

Karl Gerlach, Homberger Strasse 86, Moers, Lower Rhineland, Germany

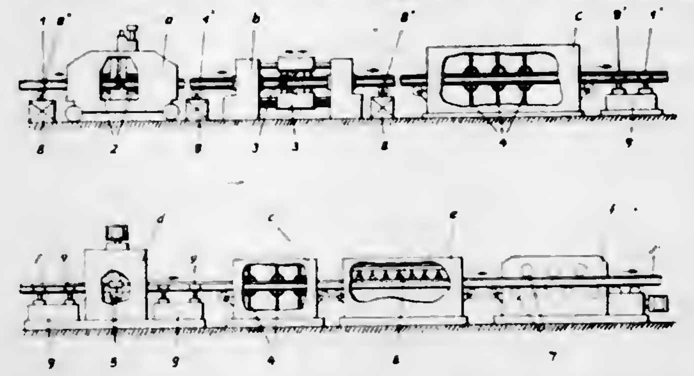
Filed Dec. 18, 1962, Ser. No. 245,516

Claims priority, application Germany, Dec. 27, 1961, G 33,904

5 Claims. (Cl. 29—401)

1. Method for conditioning steel rails including the steps of welding together the ends of rails to form a continuous rail track, removing the beads at the welded joint by a shearing operation and subjecting the entire length of the rail track progressively to a heat treatment preferably in a continuous type furnace at a temperature ranging slightly above the conversion point Ac_3 of the normal annealing temperatures of rail steel.

5. Equipment for conditioning steel rails substantially



as herein described, comprising in series arrangement a butt welding machine, a weld bead shearing machine, a mechanical hammer for reprofiling the head of a rail including means for heating and tempering the rail head, and a plurality of rollers arranged before, after and intermediate said machine, hammer, heating and tempering means for guiding and moving rails longitudinally.

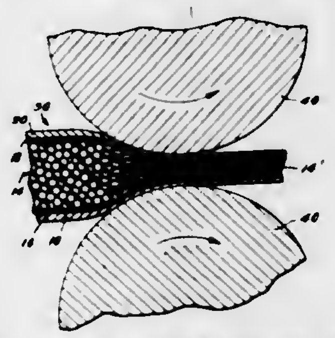
3,184,840

METHODS OF MAKING VARIEGATED STOCK

William R. Byrne, Plainville, and Norman L. Brillon, South Attleboro, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 1, 1962, Ser. No. 214,136

4 Claims. (Cl. 29—420.5)

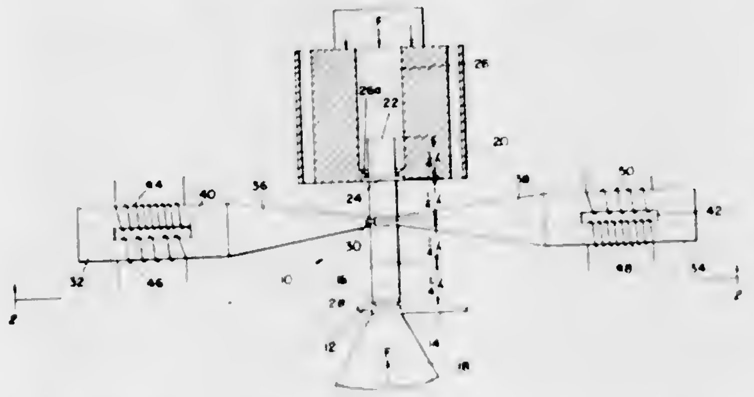


1. The method of making variegated metal stock comprising the steps of providing clean metallic fragments formed of a plurality of metallic materials having different and contrasting colors; mixing and interspersing said fragments; providing a metal layer and applying a bond-deterrent coating to one surface thereof; disposing said layer in a jacket with said bond-deterrent coated surface abutting the bottom of said jacket; disposing said mixed fragments on said metal layer in said jacket; providing a second metal layer, applying a bond-deterrent coating to one surface of said layer and assembling said second layer in said jacket with the uncoated surface thereof against said fragments; applying a cover to said jacket externally of and against the bond-deterrent coated surface of said second layer; heating said jacket and contents to a temperature which lies within the range which extends from approximately the recrystallization temperature of the material having the lowest recrystallization temperature to the lowest of those temperatures at which liquid phase material or a brittle intermetallic compound would form in an appreciable amount; rolling said jacketed assembly while hot to compact and solid-phase bond said fragments into solid, dense stock and to solid-phase bond said fragments to said first and second metal layers without the production of a liquid phase material; dejacketing the stock as bonded; and removing one of said metal layers from the stock by abrading after dejacketing to leave a composite material comprising a layer of variegated metal solid-phase bonded to a second layer of metal;

said variegated layer having a variegated surface pattern with the different colored materials each being distinctly outlined on the surface in an elongated irregular shape.

3,184,841
METHOD AND APPARATUS EMPLOYING VIBRATORY ENERGY FOR BONDING METALS

James Byron Jones, West Chester, and Carmine Frank De Prisco, Glen Mills, Pa., assignors, by mesne assignments, to Sonobond Corporation, West Chester, Pa., a corporation of Pennsylvania
Filed June 3, 1958, Ser. No. 739,555
32 Claims. (Cl. 29—470)



1. A method of welding metal workpieces which comprises placing to-be-welded faces of the metal workpieces together, applying a force to the metal workpieces in a direction and of a magnitude to hold the contacting to-be-welded faces of the metal members in intimate contact at the intended weld zone and to couple mechanical vibratory energy into said zone, and introducing through a torsionally vibrating element contacting one of the to-be-welded metal workpieces adjacent the weld zone mechanical vibration having a frequency of between about 59 and 300,000 cycles per second, whereby the peripheral portion of said element which engages the workpieces oscillates circumferentially, with the direction of the mechanical vibration delivered to the workpieces by the peripheral portion of said element being substantially parallel to the interface of the workpieces at the weld zone and with the vibratory energy introduced to said workpieces from said vibrating element being at a sufficient energy level to weld the metal members together.

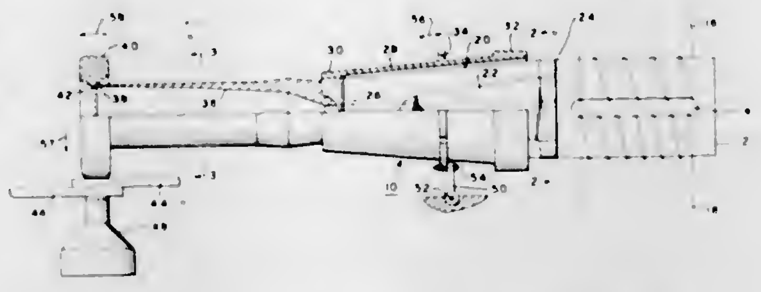
18. In a welding device for welding together the contacting surfaces of a plurality of non-compliantly supported metal members comprising a metal jaw, means for impelling an end surface on one end of said jaw into contact with one of the metal members so as to maintain the metal members in intimate contact at the intended weld zone, said end surface being adapted to lie in a plane parallel to the plane of the interface between the metal members, and means coupled to said jaw for torsionally vibrating said jaw so that the outer peripheral portion of said jaw oscillates circumferentially, with the torsional vibratory energy of said jaw end surface being at a sufficient energy level to weld the metal members together.

3,184,842
METHOD AND APPARATUS FOR DELIVERING VIBRATORY ENERGY

Nicholas Maropis, West Chester, Pa., assignor to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania
Filed Aug. 3, 1961, Ser. No. 129,105
15 Claims. (Cl. 29—470)

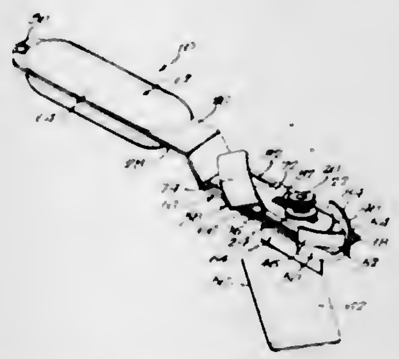
3. A method of delivering vibratory energy comprising the steps of axially vibrating a coupler at a frequency of between 59 and 300,000 cycles per second, torsionally vibrating a toroid by using the axial vibrations in said coupler, said last-mentioned step including coupling one end of said coupler to said toroid in a manner so that the center of mass of said toroid is intermediate its periphery and the area of said toroid to which said coupler is coupled.

12. Apparatus comprising a means for generating vibratory energy at a frequency of between 59 and 300,000 cycles per second, a coupler bar axially joined at one end to said means, a toroid resonant at said frequency, and means mounting said toroid on the other end of said coupler bar so that the outer periphery of said toroid delivers torsional vibratory energy for performing useful work, the center of mass of said toroid being closer to the outer periphery of said coupler bar than said outer periphery of said toroid.



3,184,843
CARTON OPENING TOOL WITH GUIDE PLATE SPACING CUTTING BLADE FROM ONE FACE OF CARTON

August J. Lurie, 7018 35th St., Berwyn, Ill.
Filed Nov. 20, 1963, Ser. No. 324,974
1 Claim. (Cl. 30—2)



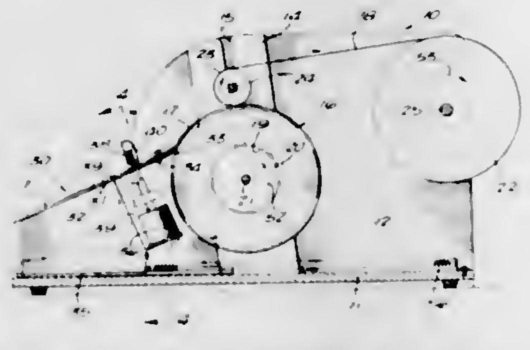
A tool for opening a heavy paperboard carton and simultaneously forming a merchandise display tray from a portion of the carton, comprising in combination, a cutting blade, a handle to carry said blade, said handle being formed of complementally shaped halves with each of said halves having a bulged portion at one end to form a grip, the opposite and forward ends of the halves being offset from said grip and being shaped into male and female portions to define a blade receiving passage therebetween when said halves are aligned from which passage two adjacent corners of the blade project, said halves at said forward end being provided with upstanding flanges adjacent said projecting blade corners adapted to ride against the face of the carton being opened, a guide having a locking portion formed complementally to said forward male portion handle end, a guiding plate parallel to said cutting blade and projecting across and well beyond said forward handle ends at the face thereof opposite to that of said forward male portion handle end in the direction of one of said projecting blade corners, and a connecting portion along the side of said forward handle ends opposite from said projecting guiding plate, aligned apertures in said cutting blade, said forward handle ends and said locking portions of said guide, and a clamping stud passing through said apertures to hold said tool parts in adjusted position, wherein said upstanding flanges on said male portion handle end have their inner ends spaced to define a slot therebetween, and said

---

locking portion on said guide is formed with a projection which is engaged in said slot when said guide is in guiding position.

3,184,844
CHEESE DISPENSING APPARATUS

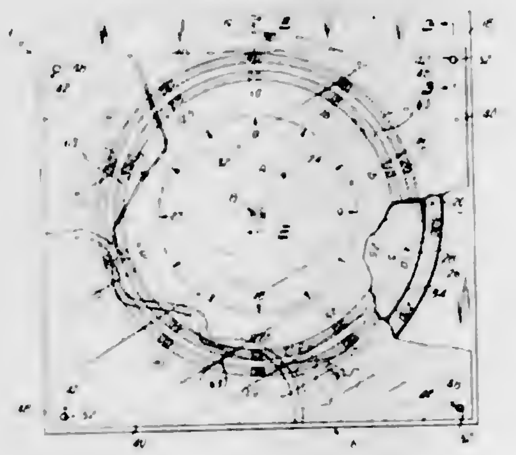
Charles M. Cunningham, 7332 Donna Ave., Reseda, Calif., and Maurice B. McCadam, Van Nuys, Calif.; said McCadam assignor of five percent to William H. Mahr, Los Angeles, Calif.
Filed Feb. 19, 1962, Ser. No. 174,091
9 Claims. (Cl. 31—5)



9. In an apparatus for dispensing slices of cheese from a length of cheese positioned on a continuous length of web and packaged in a roll, the combination of means for rotatably supporting the roll of cheese and web, a rotatably supported drum for wrapping the web on, means for rotating said drum to pull the web from the roll of cheese and web and thereby rotate the roll, a pallet having a surface for receiving the length of cheese and being movably mounted relative to the roll of cheese and web, said pallet having means for engaging the roll of cheese and web for separating the outer layer of cheese from the layer of web remaining on the roll as the roll is rotated, and means for resiliently urging said pallet into engagement with the roll of cheese and web.

3,184,845
NAVIGATION INSTRUMENT

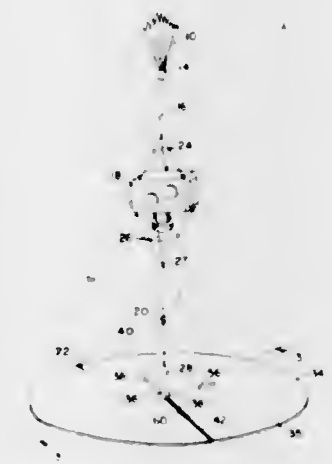
Robert Sanders, 2612 Tilden St. NW., Washington, D.C.
Filed Nov. 16, 1960, Ser. No. 69,709
1 Claim. (Cl. 33—1)



A navigation instrument for aircraft, comprising: a first translucent disc formed with an opening at the center thereof and having calibrations spaced along its outer circumference to designate azimuth and a radially extending reference line coinciding with the zero degree calibration; a second translucent disc formed with an opening at the center thereof and having a scale of miles calibrated along its outer circumference and a line following an Archimedean spiral, all points along said line being spaced from the center of said second disc by distances proportional to the mileage indicated by the calibrations spaced radially outwardly therefrom; a translucent map having a specific geographic reference point at the center thereof and having the compass direction indicating North spaced radially outwardly from said reference point, said second disc having a series of different scale-of-miles calibrations arranged concentrically adjacent its outer circumference; a baseboard having an upper surface; a picot pin projecting above said upper surface adjacent the center thereof, said first disc being mounted for rotation about its center on said pin, said second disc being mounted for rotation about its center above said first disc on said pin, and said map being mounted on said baseboard above said second disc with its center in alignment with said pin and with the intersection of said radial reference line with said spiral line being visible therethrough, said azimuth calibrations of said first disc arranged for cooperative alignment with said compass direction North of said map, said scale-of-miles calibrations of said second disc arranged for cooperative alignment with said radial line of said first disc, said map having a series of concentrically arranged opaque rings overlying all except a preselected one of said concentrically arranged scale-of-miles calibrations, the point of intersection of said radial reference line and said Archimedean spirial line when projected onto said map designating the exact position of said aircraft thereon when said reference line of said first disc is set to coincide with the exact direction of the aircraft from said geographic reference point and said second disc is set with the calibration designating the exact distance from said geographic reference point coinciding with said reference line of said first disc.

3,184,846
DIRECTION AND POSITION INDICATING APPARATUS FOR VEHICLES SUCH AS AIRCRAFT

Leslie R. Flink, St. Paul, Minn., assignor, by mesne assignments, to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed Jan. 12, 1961, Ser. No. 82,271
3 Claims. (Cl. 33—1)

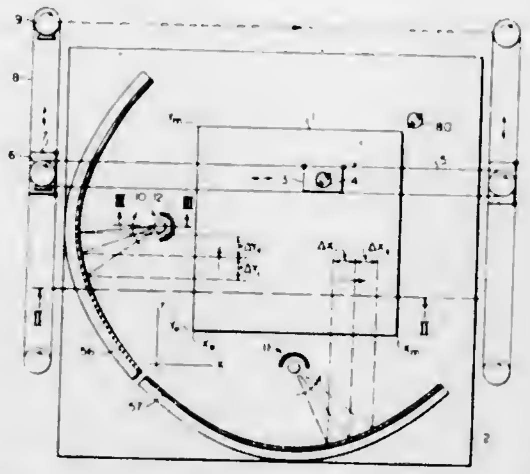


1. An aerial survey device comprising an aircraft, a position and direction indicating apparatus including, a flat plate, a post connected to said plate normal to the surface thereof, an elongate magnet connected to said plate, said magnet being magnetized so that there exists a north pole at one end and a south pole at the other end, indicia means projecting radially from the post coextensive with the axis of said elongate magnet to distinguish said magnet from the surface of said plate, means for suspending said apparatus below said aircraft, pivot means connected between said apparatus and said aircraft for allowing said apparatus to rotate with respect to said aircraft about the axis of said post, the weight of said plate and said post being adapted to maintain said plate in a horizontal plane and the axis of said post in a vertical position regardless of changes and orientation of said aircraft with respect to the earth.

3,184,847
DIGITAL COORDINATE RESOLVER

Leo Rosen, Middletown, Conn., assignor to Anelex Corporation, Boston, Mass., a corporation of New Hampshire

Filed Apr. 14, 1961, Ser. No. 103,161
2 Claims. (Cl. 33—1)

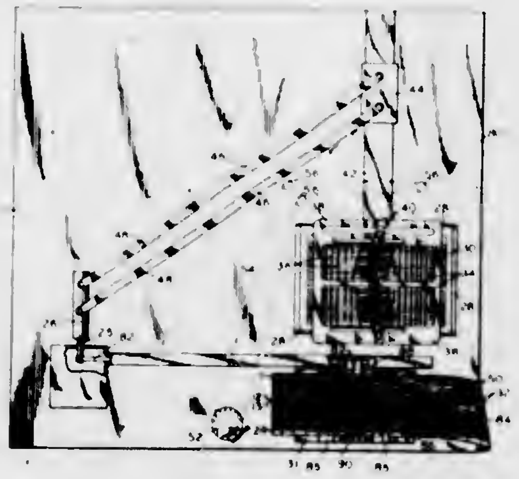


1. Apparatus for converting the position of a stylus movable on a plotting area into digital position coordinates on orthogonal reference axes, comprising, in combination, first and second parabolic mirrors disposed facing the plotting area to reflect light from their foci thereacross in orthogonal directions parallel to said axes, a rotatable light beam source disposed at the focal point of each mirror, means for shielding said sources from direct radiation over said plotting area, means for rotating said sources at a constant rate 180° out of phase, a pulse counter, means controlled by said rotating means for supplying pulses to said counter when said rotating means reaches a reference position during each half revolution of the light sources, a photocell mounted on the stylus and positioned to be illuminated by reflected light from either source, means controlled by said photocell when illuminated, for terminating the supply of pulses to said counter, means controlled by said photocell when illuminated for registering the state of said counter, and means controlled by said rotating means at the end of each half revolution of said sources for resetting said counter to a reference state.

3,184,848
STATIC CORRECTION PLOTTER

Franklin L. Lawrence, Tulsa, Okla., assignor, by mesne assignments, to Esso Production Research Company

Filed Oct. 17, 1961, Ser. No. 145,708
8 Claims. (Cl. 33—1)

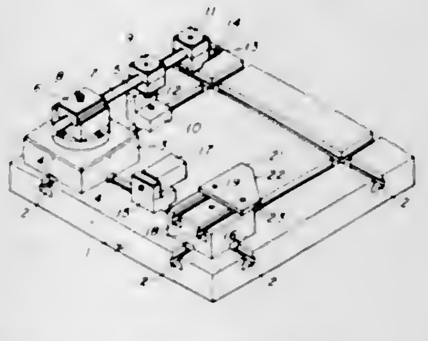


1. A static correction plotter for use in marking time-phase corrections on a static correction card from a graphic seismic record, comprising, a seismic record holder for receiving and supporting said seismic record; a movable indicator member extending across said seismic record as said seismic record is supported by said seismic record holder; said indicator member having a line reference formed thereon; a static correction card holder for receiving and supporting said static correction card in a stationary position; a substantially non-flexible pivotably positionable slope adjustment arm movably supported over and adjacent said static correction card as said static correction card is supported by said static correction card holder; means supported by said slope adjustment arm providing a multiplicity of marking edges adjacent said static correction card; and movement coupling means extending from said indicator member to said slope adjustment arm.

3,184,849
MINI-CAM TRACER PLATE

Edward J. Sass, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 21, 1962, Ser. No. 239,387
6 Claims. (Cl. 33—23)



1. A cam tracer plate device comprising:

(*a*) a plate,

(*b*) a tracer arm assembly adjustably and pivotally mounted on said plate,

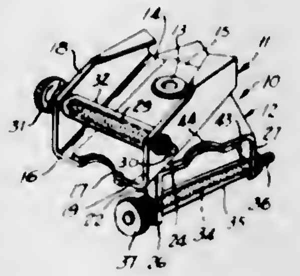
(*c*) said tracer arm assembly comprising a rigid arm pivotally mounted on said plate and control stylus guide means adjustably mounted on the rigid arm and engageable with a control stylus, and

(*d*) cam means so placed on said plate as to continue surface generation on a workpiece after said cam means disengages the control stylus.

3,184,850
CLAMP FOR PANTOGRAPH ARMS

Frank A. Muller, 20 S. Center Ave., Rockville Centre, N.Y.

Filed Apr. 27, 1962, Ser. No. 190,714
4 Claims. (Cl. 33—25)

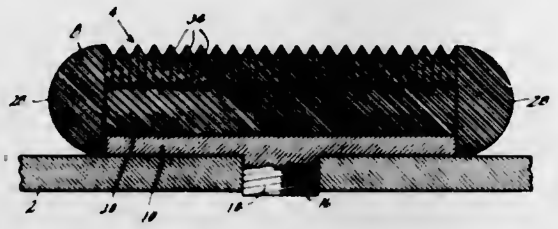


1. A clamp for use in connecting together a pair of intersecting pantograph arms, said clamp comprising a pair of clamping members each comprising a pair of opposed angle pieces having back flanges extending in parallel overlapping relation, and a side flange integral with each of said back flanges and extending substantially normal thereto, each pair of angle pieces forming a channel like structure adapted to embrace one arm of said pair of intersecting pantograph arms, means swingably connecting each pair of angle pieces to each other and said clamping members to each other in back to back relation, and unreleasable means carried by said side flanges for urging said side flanges into contact with said pantograph arms.

3,184,851
GUN SIGHT

Ernest P. Simmons, 2510 Lafayette, Kansas City, Kans.

Filed Jan. 10, 1963, Ser. No. 250,529
3 Claims. (Cl. 33—47)



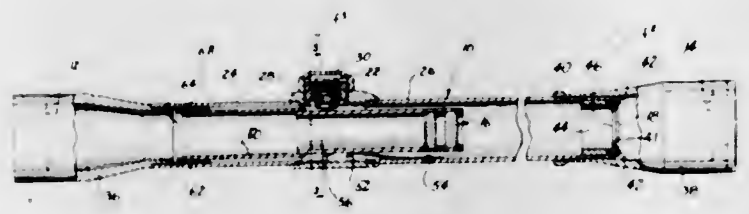
1. A gun sight comprising:

(*a*) a generally cylindrical plug of translucent material having a light refractive index, and means for mounting said plug rigidly relative to a gun barrel with its axis generally parallel to the axis of said barrel and with at least a portion of its cylindrical surface exposed, said exposed surface having a series of grooves formed peripherally therein, said mounting means including a channel-shaped mount of substantially U-shaped cross-sectional contour having a planar base and a pair of parallel side walls disposed respectively at opposite sides of said base, said base being adapted to engage the barrel of said gun directly, said plug being disposed longitudinally in said mount and having one end thereof projecting outwardly from said mount, said plug having a notch formed in the lower portion thereof receiving the base of said mount, the vertical depth of said notch corresponding to the vertical thickness of said base so that the projecting end portion of the plug, when viewed axially of said plug, appears to rest directly on said gun barrel.

3,184,852
TELESCOPIC SIGHT

Chester Wray Hageman, Cromwell, Conn., assignor to The Lyman Gun Sight Corporation, Middlefield, Conn., a corporation of Connecticut

Filed Sept. 20, 1961, Ser. No. 139,396
3 Claims. (Cl. 33—50)

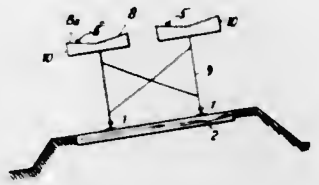


1. A telescopic sight having a housing and internal adjusting means for shifting the line of sight, said internal adjusting means comprising a supporting tube pivoted horizontally and vertically within said housing, said supporting tube having a pivot portion on which it is pivotally movable, means for pivoting said supporting tube, a sleeve for pivotally mounting said supporting tube fixed within said housing, a rounded bead positioned on and extending circumferentially completely around at least one of said pivot portion and sleeve for pivotal engagement with the other, and a single pivot pin through said mounting sleeve and supporting tube connecting the pivot portion of said supporting tube with said mounting sleeve for pivotal movement of said supporting tube both horizontally and vertically about said pivot pin.

3,184,853
TRACK LEVEL INDICATING DEVICE

Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria, and Egon Schubert, Sturzgasse 17, Vienna, Austria

Filed Aug. 17, 1961, Ser. No. 132,192
Claims priority, application Austria, Sept. 28, 1960, A 7,377/60
3 Claims. (Cl. 33—60)



1. A track aligning arrangement including

(1) a reference line associated with at least one of the track rails and extending in the direction of track elongation vertically spaced from said rail; and

(2) a track level indicating device associated with said track rail for indicating the level of said rail and comprising

  (*a*) a frame positioned upon said rail,

  (*b*) an indicating means mounted on the frame and

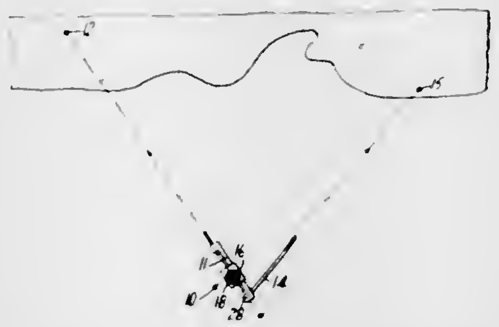
  (*c*) a level indicating edge on said indicating means and engaging the reference line;

(3) the track defining a first plane, the level indicating edge extending in a third plane vertically spaced from the first plane and transverse of a second plane through said associated rail and perpendicular to the first plane, said edge having one edge part enclosing a fixed angle with a fourth plane which is vertically spaced from, and parallel to, the first plane, said fixed angle being at least nearly the same as the angle between the horizontal and the first plane where said first plane deviates from the horizontal, said angles facing in opposite direction.

3,184,854
POSITION PLOTTER

Walter F. Grasse, Northport, N.Y., assignor to Fairchild Hiller Corporation, a corporation of Maryland

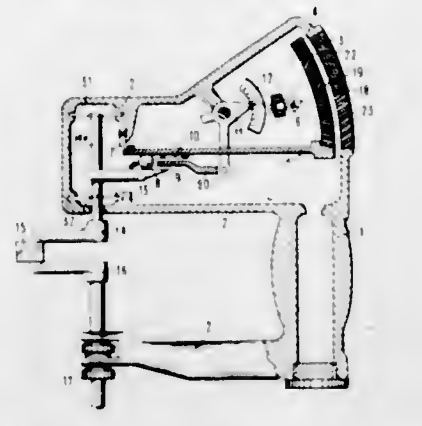
Filed Jan. 10, 1961, Ser. No. 81,805
5 Claims. (Cl. 33—67)



1. A position plotter, comprising a first arm, a compass carried by said first arm for obtaining and indicating the bearing of a first landmark relative to the axis of the earth, a mirror and a second arm for simultaneously measuring the sighting angle subtended from the position of said plotter by said first landmark and a second landmark, arresting means for selectively maintaining a constant angular orientation of the bearing indicated by said compass with respect to said arms, and means at the vertex of said sighting angle facilitating placement of marks on a chart.

3,184,855
MEASURING INSTRUMENT HAVING A RESILIENTLY MOUNTED FEELER AND A SPRING LOADED POINTER BEAM AND OPTICAL INDICATION

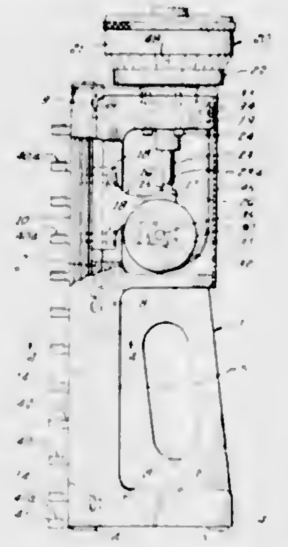
Peter Sebastiani, Uberlingen, Owingerstrasse 1, Bodensee, Germany
Filed Mar. 6, 1961, Ser. No. 114,577
9 Claims. (Cl. 33—147)



1. In a measuring instrument, the combination comprising, a housing having a handle, a measuring feeler projecting from the housing and being resiliently mounted therein, a pointer beam, a leaf spring having one end secured to the housing and the other end rigidly fastened to the pointer beam to pivotally fasten said pointer beam in said housing, a transmitting lever rigidly fastened to the measuring feeler, an indicating means comprising a slitted blind carried by the pointer beam, a second slitted blind in the housing opposite the first blind, and a light source within the housing adjacent the blinds.

3,184,856
MICROGAUGE

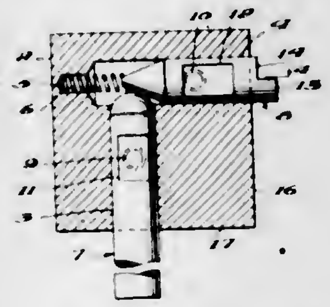
Fred Theuerkauf, Mentor Township, and Donald M. Satava, Wickliffe, Ohio, assignors to The Pipe Machinery Company, Wickliffe, Ohio, a corporation of Ohio
Filed May 1, 1962, Ser. No. 191,577
8 Claims. (Cl. 33—169)



1. A multi-step height microgauge comprising a gauge body, an elongated carrier, preloaded rollable antifriction bearing means supporting the carrier on the body for lineal movement relative to the body endwise of the carrier along an upright fixed path, a plurality of permanent steps on the carrier and projecting laterally from one upright face thereof in spaced relation to each other in an upright row extending endwise of the carrier, gauge blocks detachably bonded to the steps, respectively, with a bonding material of which the bond can be destroyed, and thereby permit removal and replacement of a block at a temperature below that which can affect the precise dimensions and shape of the carrier and its mounting, each gauge block having an upwardly facing gauging face disposed above the level of the adjacent face of its associated step, said gauging faces being precisely spaced predetermined distances from each other, means including a micrometer for causing movement of the carrier endwise to position said faces at precisely measured positions endwise relative to the body, and said body having a base with supporting gauging surface means thereon facing endwise of the carrier away from the carrier and operable to support the body on a horizontal surface with the carrier in upright position.

3,184,857
FLUSH PIN GAUGE

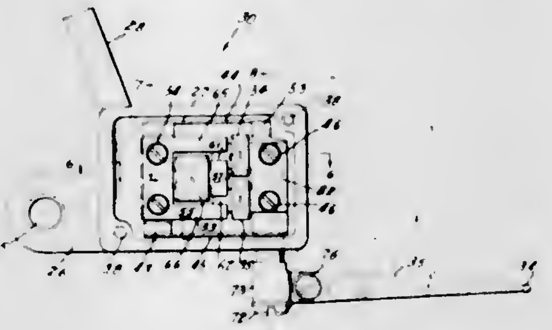
George H. Buechl, 64 Westerleigh Road, Rochester, N.Y.
Filed Mar. 20, 1963, Ser. No. 266,716
8 Claims. (Cl. 33—169)



1. An amplifying flush pin depth gauge comprising a gauge body having first and second holes therein, each of said holes extending from an outside surface of said gauge body and terminating within the interior thereof, said holes intersecting within the interior of the gauge body, a gauge pin slidably fitted within said first hole, a step pin having a stepped outer end and slidably fitted within said second hole, said step pin and said gauge pin adapted to contact one another at inner ends thereof within the gauge body, said gauge pin being of a length whereby a portion of the gauge pin extends beyond a surface of said gauge body when the internal end of said gauge pin is in contact with the inner end of said step pin.

3,184,858
HEIGHT GAGE

Harry B. Shaper, Roslyn, N.Y., assignor to Dyna-Empire Inc., Garden City, Long Island, N.Y.
Filed Sept. 25, 1962, Ser. No. 225,978
8 Claims. (Cl. 33—172)



1. A transducer of the class described comprising means defining a magnetic circuit of relatively low reluctance, said circuit comprising a first and a second portion, said first portion being generally E-shaped and including a first, a second, and a third leg and a web from which said legs extend, said second portion being generally U-shaped and including a first and a second arm and a web from which said arms extend; mounting means for normally maintaining said portions in a neutral position wherein said first and said second legs overlap said first and said second arms, respectively; said mounting means constructed to guide movement of one of said portions, in the plane thereof, relative to the other of said portions; said portions being arranged such that movement of said one portion in a first direction from said neutral position increases the overlap between said first leg and said first arm while decreasing the overlap between said second leg and said second arm thereby controlling magnetic flux in different parts of said circuit in a manner indicative of the amount said one portion has been displaced from said neutral position; said webs positioned remote from each other with said legs extending in one direction and said arms extending in the opposite direction, said mounting means comprising a leaf spring means with said one portion carried at one end of said spring means and said other portion carried at the other end of said spring means, said spring means extending generally perpendicular to said first direction, said third leg position between the other legs with a first gap between said first and said third legs and a second gap between said second and said third legs; said first and said second arms spanning said first and said second gaps, respectively, whereby as said one portion moves in said first direction there is a combined overlap between said third leg and said arms which remains substantially constant.

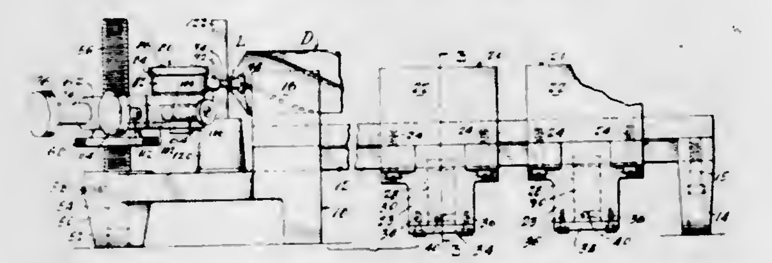
3,184,859
DOOR HINGE RECESS JIG

Rex E. Patrick, 460 Washington St., South Beloit, Ill.
Filed Oct. 18, 1963, Ser. No. 317,215
3 Claims. (Cl. 33—197)

1. A hinge recess jig for locating a first set of vertically spaced recesses in the face of a door jamb and a second set of alined recesses in the vertical edge of a door to be hinged on the jamb, said jig including, in combination, an elongated rail longer than the work area on the jamb and having one flat side surface for lying in a vertical position against the jamb and an opposite flat side surface for lying against the door edge, a set of longitudinally spaced and vertically alined template openings through said rail and said surfaces corresponding in number and spacing to the number and spacing of said recesses and having edges for guiding a tool along first paths along the jamb defining said first set of recesses, at least two lugs pivoted on said rail at vertically spaced points for rotation about horizontal axes and having stop surfaces facing edgewise of the rail and disposed in a common vertical plane spaced horizontally from one side of each template opening a distance correlated with the width of the recesses to be formed in the jamb, each lug being rotatable from an inactive position in the plane of said rail into one alternate position in which it projects outwardly from said one side of the rail for engagement with a vertical locating surface of the jamb, and into another alternate position in which it projects outwardly from said opposite side for engagement with a vertical locating surface of said door whereby said lugs serve in said alternate positions to locate said template openings to define mirror images on said jamb and said door edge, and an additional stop surface extending along one longitudinal edge of said rail for engaging a vertical wall of a rabbet in said jamb, the location and spacing of said additional stop surface and said template openings being correlated to position the template openings over the area to be recessed when the stop surface engages the rabbet wall.

3,184,860
GAUGE

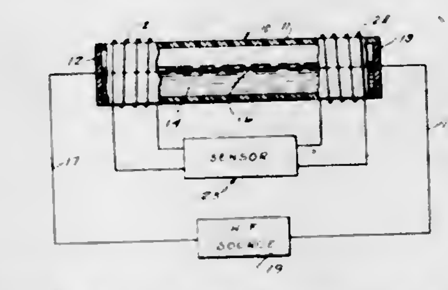
Clifford L. Garrison, Adrian, Mich., assignor to Oliver Instrument Company, Adrian, Mich., a corporation of Michigan
Filed May 22, 1962, Ser. No. 196,651
5 Claims. (Cl. 33—201)



1. A gauge construction particularly for determining the characteristics of the cutting lips of a fluted twist drill comprising, in combination, a frame including an elongated bar of noncircular cross-section, a drill supporting cradle mounted on said bar for slidable movement lengthwise of the bar, said cradle means including a V-shaped configuration adapted to receive and support a twist drill, abutment means mounted by the frame arranged for engagement with a twist drill to position the latter with respect to the frame, indicating means having a movable component arranged for engagement with a cutting lip of a drill supported in the cradle means, mounting means for the indicator, said mounting means including a vertical post, a block arranged to be supported by the post, a rod extending transversely from the block, an element carried by said rod, a slot formed in said element providing spaced leg portions, a clamping member disposed between said leg portions, a tenon portion provided on the indicator, said leg portions and said clamping member having openings to accommodate the tenon on said indicator, a manipulating screw arranged to clamp the tenon on the indicator to said member and to clamp said member on the rod, and means arranged to adjust the vertical position of said block with respect to said frame.

3,184,861
POSITION DEVIATION SENSING DEVICE UTILIZING SKIN EFFECT

Theodore T. Conrad, Mayfield Heights, Ohio, assignor to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 2, 1962, Ser. No. 184,233
5 Claims. (Cl. 33—206)

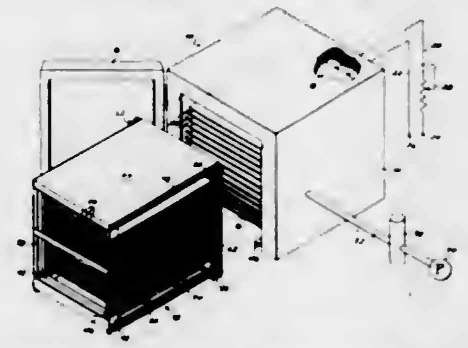


3. A position sensing device comprising
a non-magnetic liquid-tight casing,
a liquid electrolyte partially filling said casing,
a conductor extending through said casing in contact with said electrolyte,

a pair of coils in spaced relation along said casing, said coils being wound to produce equal and opposite induced voltages upon equal energizations,
a high frequency electromagnetic energy source connected to said conductor,
and a sensing means connected to said coils and arranged to detect an unbalance in the induced voltages in said coils upon deviation of said casing from a predetermined position.

3,184,862
APPARATUS FOR DRYING COMPRISING A REMOVABLE CART WITH TRAY-SUPPORTING SHELVES

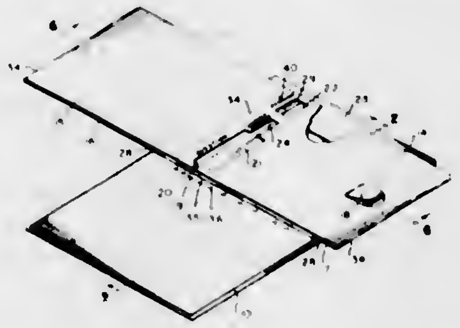
Raymond G. Frank, Ambler, Pa., assignor, by mesne assignments, to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 6, 1961, Ser. No. 157,427
6 Claims. (Cl. 34—87)



1. Apparatus comprising an enclosure having a plurality of shelves disposed in spaced horizontal planes one above the other, a portable cart adapted to enter said enclosure, said cart including a plurality of cantilever beams disposed in spaced horizontal planes, said beams being disposed so as to be between and spaced from juxtaposed shelves when said cart is disposed within said enclosure, a reciprocable channel support traversing said beams and interconnected therewith for reciprocation therealong, and means mounted in said enclosure for supporting the weight of said beams when said cart is disposed within said enclosure.

3,184,863
DEVICE FOR PROGRAMMED INSTRUCTION

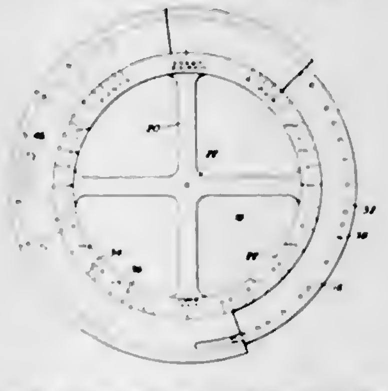
Alphons J. Hackl, 3824 Legation St., Washington 15, D.C.
Filed Mar. 6, 1962, Ser. No. 177,767
1 Claim. (Cl. 35—9)



An educational device comprising a cover member consisting of two panels hingedly joined together, one of said panels having a guide channel, a slide mask member consisting of four panels hingedly joined together to form a loop slidably mounted in said guide channel, programmed educational material in the form of a book having pages of preselected length and width supported on said two panels with a given question and answer portion of the material on the guide channel and in the loop, at least two opposed panels of said four panels having a length and a width greater than the length and the width of the pages of the programmed material whereby the four panels can be moved about the hinges to form an open ended box of a height at least equal to the width of the page to allow the page to be turned from a position in the loop to a position overlaying the other of said two panels, aperture means in one of said two opposed panels located to provide a view of the question of the programmed material when the four panels are moved about the hinges to form a flat closed loop in a first position, to provide a view of the answer when the loop is slid in the channel to a second position, and to provide access to the material for recording the answer to the question when the loop is in the first position and a window covered by a transparent material adjacent the access portion of the aperture means for viewing the recorded answer when the loop is in the second position.

3,184,864
COLOR BLEND PROPORTION INDICATING DEVICE

Clarence Johnson, Milford, Mich.
(1343 Milford Road, Highland, Mich.)
Filed Dec. 17, 1962, Ser. No. 245,000
1 Claim. (Cl. 35—28.3)

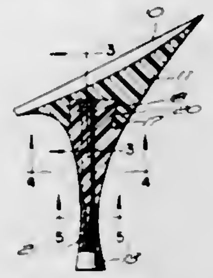


A color blend proportion indicating device consisting of a circular wheel, a raised circular rib projecting from one side thereof, said side being substantially flat aside from said rib, said rib being spaced inwardly from the periphery of said wheel so as to form a circular supporting shoulder, and a plurality of segments positioned on said shoulder about said wheel, said segments being arcuate in shape and conforming to the circular shoulder, the inner edge of each segment being engaged against the rib, indicia on said wheel, said indicia being located so as to proportion said shoulder into a plurality of separate groups of equal length portions, each group corresponding to a different predetermined number of segments with the portions of each group forming a circular pattern, the number of segments used determining the group to be used, a plurality of mounting and locating holes through the shoulder, one hole corresponding to each indicium, a single depending tab fixed to each segment and received within a predetermined one of said holes, the segments each being of a length equal to or greater than the length of the equal length portions of the group which includes the next greater number of portions than the largest group which contains portions which when halved will be no smaller in length than the length of the portions of the largest group of the plurality of groups, said segments being of a length equal to or less than the length of the equal length portions of the smallest group, said segments being overlapped in the formation of any group having portions of a different length than the segments.

3,184,865
MOLDED COMPOSITE HEEL AND REMOVABLE TAP

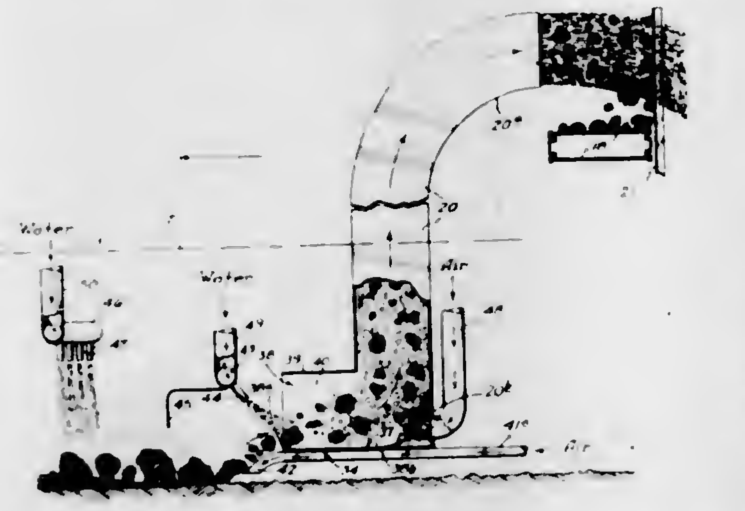
Fernando M. Ronci, Providence, R.I.
(2 Atlantic Blvd., Centredale, R.I.)
Filed Feb. 15, 1963, Ser. No. 258,687
2 Claims. (Cl. 36—34)

1. A molded plastic heel for a woman's shoe comprising a heel-seat portion having a broad top angularly disposed to the horizontal, said heel-seat portion tapering downwardly to a narrow vertical portion, the bottom end of said vertical portion flaring outwardly, a tubular hardened steel reinforcing core embedded in said narrow portion and extending from said bottom end upwardly through said narrow portion, said core having a longitudinal gap, the material of said heel entering said core through said gap, and a tap removably mounted at the bottom end of said narrow portion, said heel-seat portion molded to said narrow portion to form an interlocking joint between said portions, the top of said narrow portion having an integral rectangular block, said block being encased in said heel-seat portion to form said interlocking joint, said block having horizontal openings and the material of said heel-seat portion entering said openings.



3,184,866
SHELLFISH GATHERING MACHINE

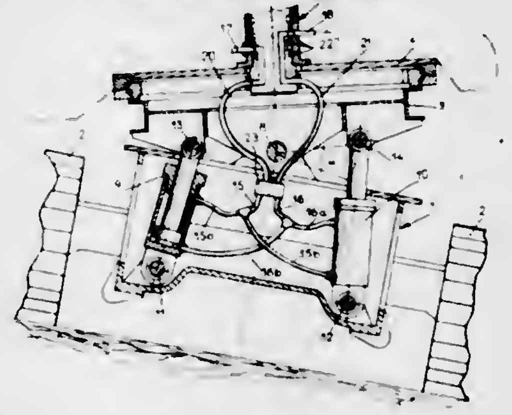
David C. McMillin, Shelton, Wash., assignor to Olympia Oyster Company, Shelton, Wash., a corporation of Washington
Filed Nov. 2, 1962, Ser. No. 235,003
5 Claims. (Cl. 37—55)



1. A shellfish gathering apparatus comprising an elongated sled adapted to be pulled over a submarine bed underlying a body of water, having a forward end and an aft end, said sled having a pair of spaced elongated runners each having a horizontally disposed plane surface of predetermined breadth adapted to support said sled upon said bed and to slide thereover, said sled being devoid of any portion lying below the plane of the surfaces of said runners, an imperforate pan extending generally in a horizontal plane, spaced above the plane of said runner surfaces and spanning the lateral space between them, a plurality of vertically disposed, laterally spaced water nozzles spanning the space between the forward ends of said runners adapted to discharge jets of water a predetermined distance forward of the forward edge of said pan, a plurality of flushing water nozzles spaced above the forward edge of said pan, positioned and arranged to emit jets downwardly and rearwardly of the said forward edge and sweeping over the upper surface of said pan, a forwardly opening throat member overlying and vertically spaced from said pan, closing the sides and back portions thereof, a vertically disposed discharge stack communicating with the interior of said throat adjacent the back thereof and extending upwardly to a point above the surface of said overlying body of water, an air supply line having a point of discharge into the bottom of said stack so that when air is discharged into the stack it constitutes an airlift, a series of agitating conduits jointed to said air supply line underlying said pan and projecting forwardly thereof, the forward terminal ends thereof defining agitating air nozzles projecting downwardly and forwardly immediately ahead of the forward edge of the pan, being positioned and arranged to sweep over the bed, to loosen shellfish growing on said bed, and to lift them upwardly above the forward edge of the pan and into the path of the flushing nozzles, which force them rearwardly over said pan into the throat member and thereafter into the airlift.

3,184,867
EARTHMOVING MACHINE HAVING PROTECTED TURNTABLE SEAL

William D. Symmank, Lyon, France, assignor to Societe dite: Yumbo, Genas, France, a corporation of France
Filed Feb. 25, 1963, Ser. No. 260,438
Claims priority, application France, Dec. 12, 1962, 918,408
2 Claims. (Cl. 37—103)



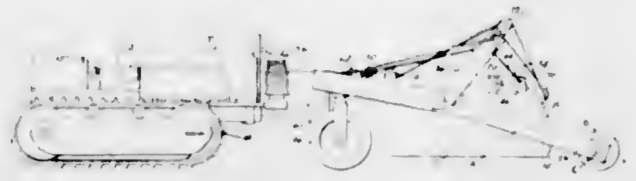
1. A self-propelled earthmoving machine comprising a frame structure carried by axles, a horizontal shaft on said frame structure extending at right angles to said axles, a platform pivotally mounted on said shaft, a turntable having a vertical pivot axis mounted on said platform, a rotary seal member on said pivot axis, said rotary seal being connected to ducts fed with a compressed fluid and having packings submitted to the pressure of said compressed fluid, at least two hydraulic cylinders, each one of said cylinders having a slidable piston rod system and being pivoted on said frame structure and on said platform, a hydraulic circuit for controlling the operation of said hydraulic cylinders, said hydraulic circuit comprising flexible tubings connected to said rotary seal, a valve fed by said flexible tubings, and feed lines connecting said valve to each one of said hydraulic cylinders whereby said rotary seal is isolated from said cylinders by said valve.

3,184,868
PUSHER TYPE CARRIER SCRAPER

Carl P. Knight, 407 N. Service Drive, Alexandria, Va.
Filed Mar. 18, 1963, Ser. No. 266,108
10 Claims. (Cl. 37—126)
(Granted under Title 35, U.S. Code (1952), sec. 266)

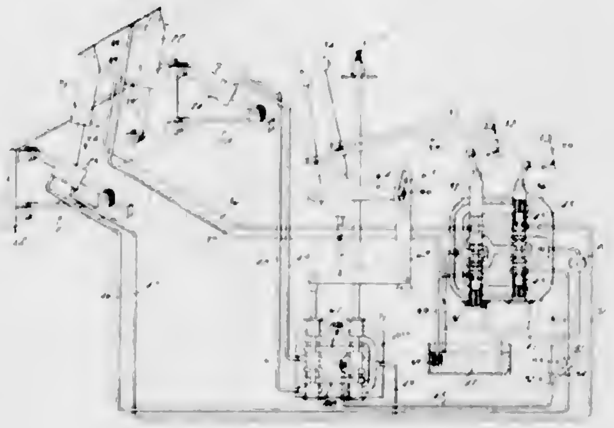
1. In combination, a prime mover and a pusher type carrier scraper comprising a frame, a bowl pivotally mounted on said frame and mounted on an axis transverse to said frame having a forward digging edge and a pair of substantially parallel sides, a bottom for said bowl, said digging edge having a hinge mounting edge, hinge means for pivotally mounting said bottom connected to said hinge mounting edge, a pivotally mounted closing apron having two ends one of which is adjacent one of said sides,

connecting means between the rear of said prime mover and the rear of said scraper, suspension means for said frame, first controlled operating means connected to each of the ends of said apron and said hinged bottom for sequentially opening said apron and raising said bottom.



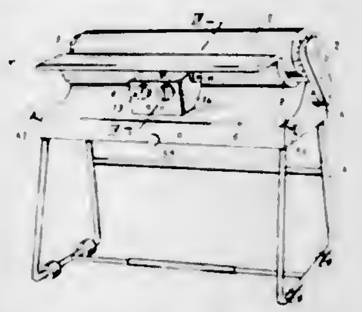
second controlled operating means for positioning the height of said digging edge, said first and second controlled operating means being disposed substantially parallel and coplanar with said parallel sides whereby the bowl is open for top loading.

3,184,869
DOZER HYDRAULIC TILT AND PITCH CONTROL
Norman G. Olsen, Highland Park, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 30, 1963, Ser. No. 312,467
3 Claims. (Cl. 37—144)



3. In combination:
a pair of laterally spaced push beams adapted at their rear ends for connection to a propelling vehicle, and
a dozer blade pivotally connected on a transverse axis to the front ends of said push beams,
a pair of double acting hydraulic pitch jacks operatively connected, respectively, to laterally spaced points on said dozer, and connected, respectively, to said push beams,
a pitch and tilt control system for said pitch jacks including
a pair of supply conduits,
a first pair of branch conduits connecting opposite ends of one of said pitch jacks to said supply conduits,
a second pair of branch conduits connecting opposite ends of the other of said pitch jacks to said supply conduit in parallel relation to said one jack,
means for blocking the flow of fluid from one of said pitch jacks through one of said branch conduits when said one branch conduit is not supplied pressurized fluid,
hydraulic valve means operatively connected to said supply and branch conduits for effecting expansion and contraction of said pitch jacks in unison to pitch said blade and for effecting expansion of one of said pitch jacks and contraction of the other of said jacks to tilt said blade, and
flow divider means connected to only one of said supply conduits and to the two branch conduits connected thereto for effecting substantially equal flow in said two branch conduits.

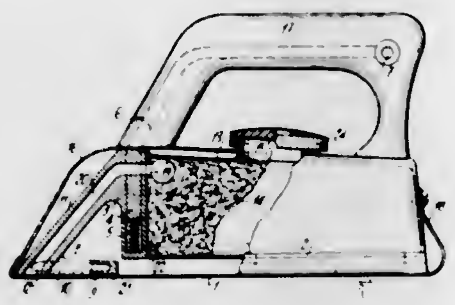
3,184,870
IRONING MACHINE
Hans Buchner, Karlsruhe-Durlach, Germany, assignor to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany, a corporation of Germany
Filed Feb. 6, 1964, Ser. No. 343,052
Claims priority, application Germany, Feb. 9, 1963, P 31,119
15 Claims. (Cl. 38—59)



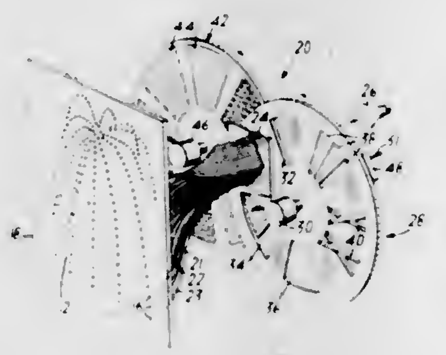
1. In an ironing machine, a frame, a hollow shaft journalled in said frame, a heating pad mounted upon said frame, an ironing roller for cooperation with said pad, a guide board for feeding ironing material to said pad and roller, said board being mounted in relative rotative relation to said frame and operable between a normal position and at least one control position, a swiveling support including means to rotatively support said roller and being connected to said shaft, first drive mechanism including a cam and follower device, to rotate said shaft and to operate said roller into pressure engagement with and to retract it from said pad, respectively, during alternate half-turns of a full revolution of said device, second drive mechanism including a further shaft journalled within said hollow shaft, to rotate said roller, a reversible electric motor, multiple selective coupling means connecting said motor with said first and second mechanisms and comprising an input coupling member driven by said motor, a pair of output coupling members each operably connected with one of said mechanisms, intermediate coupling means interposed between said input coupling member and each of said output coupling members and being effective in establishing coupling connection of said input member with either of said output members in dependence upon the direction of revolution of said input member, respectively, and electric circuit and control means for said motor operably connected with said board and said support, to start said motor in a first direction and to operate said roller into pressure engagement with said pad by said first mechanism, and to subsequently arrest and re-start said motor in the opposite direction, to rotate said roller by said second mechanism, by operation of said board from its normal position to and release from said control position.

3,184,871
FLAT-IRON PROVIDED WITH A STEAM EJECTION DEVICE
Joseph d'Alessandro, 5 Chemin Chennaz, Thonex, Geneva, Switzerland
Filed Jan. 21, 1963, Ser. No. 252,692
Claims priority, application Switzerland, Feb. 6, 1962, 1,434/62
5 Claims. (Cl. 38—77)

5. In a flat-iron comprising a base plate, a casing fastened to said base plate and provided with a handle, a metallic mass, a container protected by said casing and adapted to contain a water supply, a heating body for heating said metallic mass and said base plate, steam ejecting bores extending through said base plate, said metallic mass comprising three integral parts: the first part of said metallic mass being located in the fore end of said casing parallel and contiguous to said base plate and having a hollow interior communicating with said bores, the second part of said metallic mass comprising a duct interconnecting said hollow interior and said container, the second part connecting rigidly and metallically said first part to a third part of said metallic mass constituted by a wall extending in a plane perpendicular to said base plate, said wall containing said heating body and forming a radiator heating the fore end of said container as well as said first part of said metallic mass located parallel to the fore end of said base plate whereby said base plate heated by said first part of said metallic mass solely through its fore end has a temperature decreasing from its fore end toward its rear end.

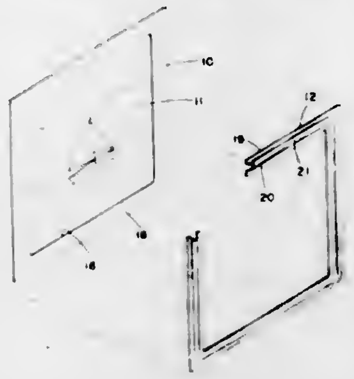


3,184,872
MOVING PATTERN SIMULATOR
Frederick L. Way, Whitestone, N.Y., assignor to Mobilcolor, Inc., New York, N.Y.
Filed Dec. 31, 1962, Ser. No. 248,648
5 Claims. (Cl. 40—106.53)



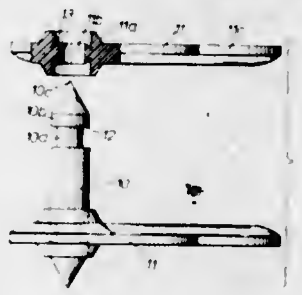
1. A movable pattern simulator unit comprising display means having a plurality of lighting element locations arranged in a predetermined pattern, a plurality of light-conducting fiber means, one end of each of which is received in and extends from one of the lighting element locations on the display means, support means receiving the other ends of said light-conducting fiber means and retaining them in predetermined relation according to desired moving patterns on the display mean, light source means for illuminating said other ends of the light conducting fiber means, movable means interposed between the light source means and the fiber means, said movable means including a member having a first arrangement consisting of at least one opening therein arranged to transmit a first predetermined pattern of light in a first predetermined sequence to said plurality of light conducting fiber means and a second arrangement spaced from said first arrangement consisting of at least one opening therein arranged to transmit a second predetermined pattern of light in a second predetermined sequence to said plurality of light conducting fiber means, the second pattern and second sequence being substantially different from the first pattern and first sequence, respectively, and means including different colored light filters for providing a first color for the first pattern and a second color for the second pattern.

3,184,873
TRANSPARENCY MOUNT
Eugene L. Turner, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed May 28, 1962, Ser. No. 198,322
1 Claim. (Cl. 40—158)



An assembly comprising a photographic transparency mounted within a substantially flat frame, the frame having an opening therethrough through which the transparency may be viewed, a continuous metal member having coplanar edge portions cemented to one side surface of said frame and surrounding said frame opening, and said metal member defining a continuous closed channel between said coplanar edge portions and extending around the periphery of said frame for thereby stiffening the assembly.

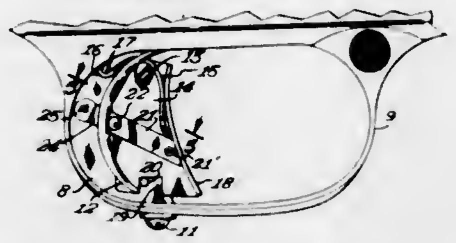
3,184,874
IDENTIFICATION TAGS
Hubert Percival Schofield, "Langdale," Hatchet Lane, Windsor Forest, England
Filed June 4, 1963, Ser. No. 285,363
Claims priority, application Great Britain, June 15, 1962, 23,034/62
6 Claims. (Cl. 40—301)



1. An animal identification seal comprising a pin of rigid, non-hydroscopic material, and two separately formed tags of synthetic resin assembled on the opposite end portions of said pin; said pin having sharp points at its opposite ends projecting beyond the adjacent tags and annular grooves extending around said end portions of the pin and spaced from the adjacent points and from each other, each of said grooves defining a neck of reduced diameter located between shoulders, and the portion of said pin between said necks defining a shank; and each of said tags having a bore receiving the related end portions of said pin, the thickness of said tag, at least in the region of said bore, being greater than the axial extent of the related neck, said bore having a central portion of a diameter and axial extent substantially equal to the diameter and said axial extent of the neck and closely receiving the latter, and said bore having counterbores opening at the opposite sides of the tag and of a diameter equal to that of said pin immediately next to said necks to define shoulders at the ends of said central portion of the bore engaging said shoulders on the pin and shrouding the necks and shoulders of the pin for avoiding unauthorized separation of the tags from the pin without obvious mutilation thereof.

3,184,875
FIRING CONTROL DEVICE FOR THE TRIGGER MECHANISM OF REPEATING SHOTGUNS

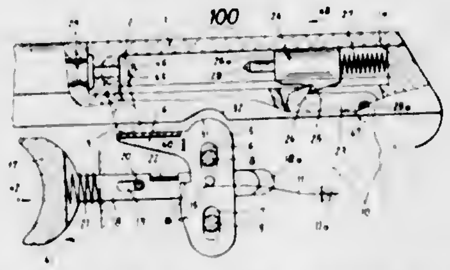
Erich O. Klebe, Rte. 1, Zimmerman, Minn.
Filed May 14, 1964, Ser. No. 367,345
3 Claims. (Cl. 42—69)



1. A safety firing control device for the primary trigger mechanism for repeating shotguns of the slide action type comprising in combination, a secondary trigger mechanism mounted on the trigger guard bow of said repeating shotgun, a mounting plate rigidly secured to said guard bow at the rear end portion thereof and a secondary trigger mechanism pivotally mounted on inside surface of the mounting plate and having engagement with the primary trigger whereby said primary trigger is manipulated to discharge the firearm, spring means secured to the mounting plate extending into engagement with the secondary trigger to thus position the same for succeeding release after each round of ammunition has been discharged from said shotgun and stop means formed in the lower edge portion of the secondary trigger cooperating with a stop pin mounted on, and extending inwardly of the mounting plate in register with said stop means on the secondary trigger to thus limit the pivotal movement of said secondary trigger, actuating means rigidly mounted on the secondary trigger for engagement with the primary trigger when the secondary trigger is pulled, said actuating means having engagement at its rear end portion with cam means in the form of a ramp whereby said primary trigger actuating means is transversely moved out of engagement with said primary trigger at the end of the rearward movement of the primary trigger to thus release the same from engagement with the secondary trigger for return to normal released position by means of its arm spring return means.

3,184,876
FIRING PIN SAFETY MECHANISM FOR FIREARMS

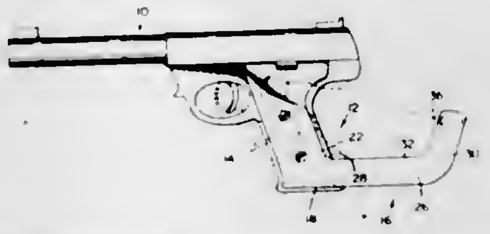
Fritz Walther, Wettersteinweg 4, Ulm (Danube), Germany
Filed Mar. 15, 1962, Ser. No. 179,948
Claims priority, application Germany, Mar. 18, 1961, W 29,674
6 Claims. (Cl. 42—70)



1. A safety mechanism and a firearm having a chamber, a trigger and a firing pin means for engaging the primer of a cartridge, said mechanism comprising pivotally mounted safety lever means positioned between said firing pin means and the primer of the cartridge to be fired and adjacent said primer; said safety lever means being movable between a first and a second position; trigger locking means movable between a first and second position; bias means urging said trigger locking means towards said first position; said trigger locking means preventing movement of the firearm trigger when said trigger locking means is in said first position; said safety lever means urging said trigger locking means toward said second position when said lever means is rotated to said second position; said lever means and said trigger locking means permitting said firing pin means to engage the primer and said firearm trigger to be actuated when in their respective second positions.

3,184,877
PISTOL STABILIZER

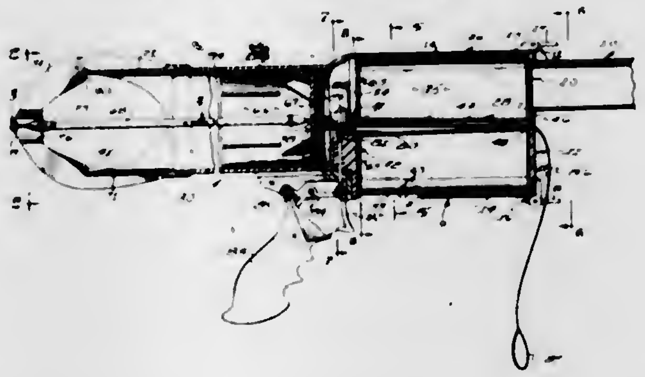
William G. Andrews, 504 Athania Parkway, Metairie, La.
Filed May 28, 1964, Ser. No. 371,008
4 Claims. (Cl. 42—72)



1. A pistol comprising
a barrel,
a frame,
a hand grip extending downwardly from the barrel and secured to said frame,
an integral arm extending rearwardly from the bottom of the grip away from the barrel and disposed substantially parallel to the barrel,
said arm being confined generally to the plane of one side of the grip away from the direction of the palm when the grip is held in the hand,
and a stabilizing hook integral with the rear of the arm for extending over the wrist-forearm region of the hand engaging the grip for resisting upward tilt of the pistol in the hand of the user.

3,184,878
UNDERWATER SUCTION GUN FOR TRAPPING MARINE LIFE

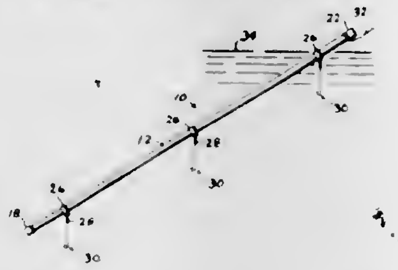
David Louis Senne, La Habra, Calif., assignor to W. J. Voit Rubber Corp., a corporation of California
Filed June 27, 1963, Ser. No. 291,121
8 Claims. (Cl. 43—4)



1. A suction gun for trapping small aquatic life, said gun comprising a front barrel having an open front end and a flap valve at its inner end, a multi-chamber rotatable wheel having a plurality of vanes subdividing said wheel into a plurality of chambers and having means for positioning one chamber at a time in line with said flap valve and said barrel, and a pump connected to said wheel and having an opening in line with said barrel and said flap valve, said pump having a cylinder, a piston in said cylinder, an elastomeric member connected with its inner end to said piston and with its outer end to the outer end of said cylinder; means for moving said piston into its inner position within said cylinder and adjacent to said wheel, and a trigger mechanism for holding said piston in said inner position, said trigger mechanism having a trigger for releasing said trigger mechanism and said piston, whereupon said elastomeric member pulls said piston to its outward position in said cylinder for creating suction in said barrel, in the chamber aligned with said barrel and in that portion of the cylinder which is adjacent to said wheel, said suction inducing said aquatic life into the aligned chamber through said front barrel.

3,184,879
FISHING AND TROLLING ROD

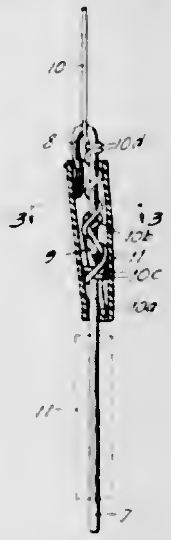
Noah E. Ruhl, Rte. 2, Box 136, Oklahoma City, Okla.
Filed Mar. 18, 1964, Ser. No. 352,743
1 Claim. (Cl. 43—42.74)



A convertible float and sinker, comprising: an elongated imperforate tubular member having threads at its opposing ends; a centrally apertured cap removably engaged threadedly with one end of said tubular member; a second cap threadedly engaged with the other end of said tubular member, said second cap having a closed end; a clip secured to the inner surface of the closed end of said second cap; clamps surrounding said tubular member in spaced-apart relation intermediate its ends; and a clip secured to each said clamp for removably receiving snelled fishhooks, said snelled fishhooks being optionally engagable with said first named clip for storage within said tubular member.

3,184,880
LINE ATTACHMENT AND SAFETY DEVICE FOR FISHING TACKLE

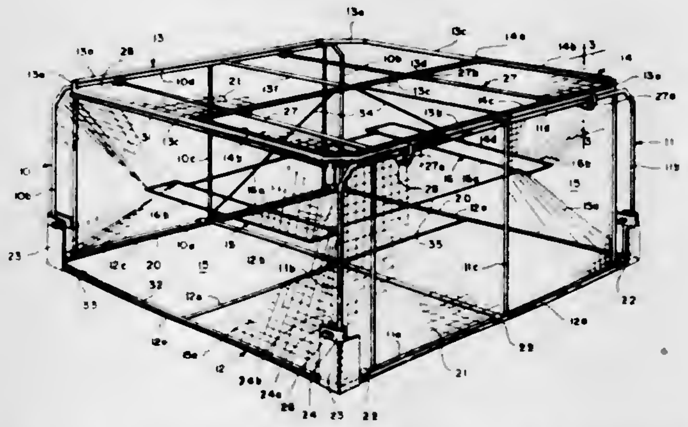
Robert W. Ratte, White Bear Lake, Minn., assignor to Water Gremlin Company, White Bear Lake, Minn., a corporation of Minnesota
Filed Nov. 30, 1961, Ser. No. 155,981
3 Claims. (Cl. 43—44.86)



1. The combination of a fishing tackle member having a terminal shank portion formed with a downwardly open hook-shaped member on its normally upper end and a laterally projecting member spaced downwardly from said hook-shaped member for connection with a fish line, and a resilient flexible tubular guard slidable along said shank portion from a retracted position, wherein said hook-shaped member and projecting member are uncovered for attachment of the line thereto, to a line-fastening position in which said tubular guard closes said hook-shaped member, and said portion of the line attached to said shank portion is confined within the resilient grip of said tubular guard, said guard being formed with an elongated slot extending downwardly from its normally upper end to a point substantially above its lower end, the surfaces defining the lateral sides of said slot being disposed to receive said laterally projecting member between them when the guard is in line-fastening position and said slot having a length greater than the distance between the open end of said hook shaped member and the lower side of said projecting member.

3,184,881
KING CRAB POT

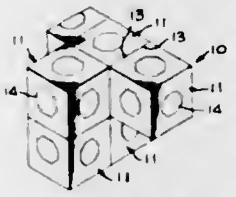
Orlo Thomas Jatzeck, Valdez, Alaska, assignor of one-half to James T. Johnson
Filed Mar. 25, 1963, Ser. No. 267,635
4 Claims. (Cl. 43—102)



1. A crab pot comprising a collapsible open framework having top and bottom frames, front and back frames hingedly connected at the front and back of said bottom frame for folding inwardly toward one another in overlapping relation to said bottom frame, track means on said top frame extending from the front to the back thereof, slide means mounted on the top of said front and back frames and slidably mounted on said track means for holding said top frame on said front and back frames and for lowering said top frame responsive to said folding of the front and back frames, releasable locking means for locking said front and back frames upright, a tapered crab entry tunnel between said front and back frames, and webbing covering said framework including said tunnel.

3,184,882
MAGNETIC TOY BLOCKS

Paul E. Vega, 6618 Bellingham Ave., North Hollywood, Calif.
Filed Sept. 5, 1962, Ser. No. 221,538
6 Claims. (Cl. 46—25)

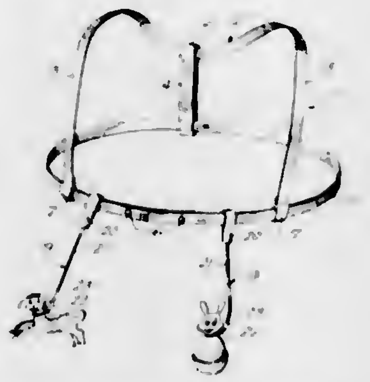


6. A set of toy blocks having faces movable into proximity, and including means forming magnetic poles in said faces for securing a pair of the blocks together, individual ones of said faces being of essentially regular polygonal configuration and being defined essentially by a series of at least three main peripheral edges of essentially equal length, said poles including a number of pairs of north and south poles equal to the number of said main peripheral edges, said pairs being associated with different ones of said edges respectively, the north pole of each of said different pairs of poles being in essentially the same orientation with respect to the south pole of said pair and with respect to the associated one of said peripheral edges, both as to spacing from said edge and orientation with

respect to the extremities of the edge, as are all others of said north poles with respect to the south poles with which they are paired and the associated peripheral edges, said magnetic poles of each said pair thereof being positioned symmetrically at opposite sides of a plane which extends perpendicularly through the center of the associated one of said peripheral edges.

3,184,883
BABIES' SNAP-BACK TOY HARNESS AND EXERCISER

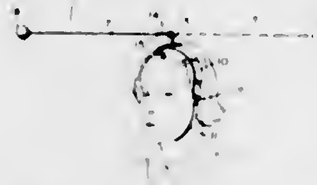
Mildred T. McCook, P.O. Box 324, Chester, Va.
Filed June 25, 1962, Ser. No. 204,821
1 Claim. (Cl. 46—32)



Body harness including a flat body encompassing band, sized to fit a child for whom the harnses is designed, a toy tether, means mounting said tether on said band in such a position so that the length of the tether when unstressed is less than the extended reach limit of the seated child wearing said harness, said mounting means including a tab of flexible material over-folded to form a substantially flat loop closely embracing the sides of said band, said tab being circumferentially slidably adjustable upon the forward arc of said band and being closed transversely above and below said band with limited clearance between the interior ends of said loop and the edges of said band sufficient to allow sticking engagement of said tab with the edges of said band when canted, said tether including an elastic portion unitary with said tab having coupling means at its free end for a toy, said elastic tether portion tending to stretch in a longitudinal direction when stressed and tending to return to its original length when unstressed, said tether, including said tab, being free to swing radially at any point at which said tab may be adjustably positioned whereby the child, upon grasping tethered toy, may move it to the limit of his reach, thereby stretching the tether so that it snaps the toy back when the toy is let go, said tab being lockingly canted when the direction of pull by the child is such as to create a force component approximately tangential to the band at the position point of the tab.

3,184,884
ROTATING HEAD-CARRIED TOY

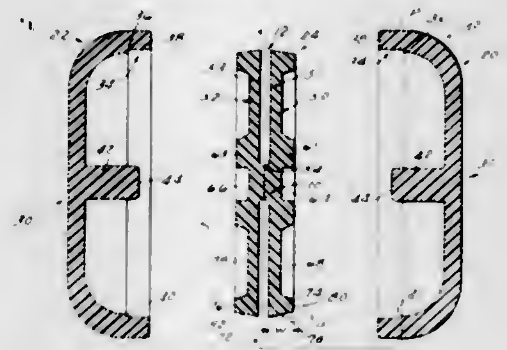
Jilio J. Petrucelli, Lecker Road, St. Marys, Pa.
Filed Apr. 4, 1963, Ser. No. 270,589
2 Claims. (Cl. 46—51)



1. A rotating head-carried toy including a relatively narrow headband, a pintle issuing from the top of the band, an assembly carried by the band including a support vertically positioned on the band, provided with axial recesses in its upper and lower terminals, the recess in the bottom of the support complementing and being slidably engaged on the pintle, the assembly also including a pin, one end of which is slidably mounted in the axial recess in the top of the support, the pin extending through one end of an arm, a flexible cable, one end of which is secured to the outer end of the arm, the opposite end of the cable being equipped with a ball, the arm being pivotally mounted on the pin, to permit swirling movement of the ball when the head of the user is moved, said arm being of such length as to permit the ball to hang as a pendulum in front of the face of the user, or in back of the head, and to be operated in an up and down substantially vertical plane, an elastic strap, the ends of which are secured to the ends of the band, to flex the ends of the latter against the head of the user, and prevent displacement of the band when the head of the user is moved in whirling the ball of the assembly in a predetermined path.

3,184,885
PLASTIC TETHERED AERIAL TOP

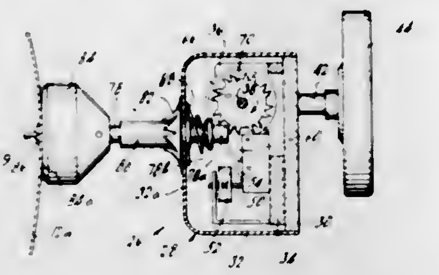
James E. Gibson, Jr., High Point, N.C.; Wachovia Bank & Trust Co., executor of said James E. Gibson, Jr., deceased
Filed Feb. 6, 1963, Ser. No. 256,745
8 Claims. (Cl. 46—61)



1. A Yo-Yo comprising: first and second cup-shape plastic cover members, each of said cover members having an at least substantially planar and generally circular base and an arcuately-shaped upstanding ring skirt integral with said base, said skirt having an inwardly opening recess in the interior wall thereof and adjacent the peripheral edge thereof remote from said base, said recess terminating at an inwardly extending shoulder disposed substantially parallel to said base, and a core member cooperating with said first and second cover members, said core member comprising first and second plastic discs disposed in parallel spaced apart relation and a central shaft member traversing the space between said discs, said discs having at least substantially planar opposed inner facing surfaces defining a channel of uniform width therebetween and extending about said shaft member, the periphery of each of said discs being contoured to conformingly and matingly frictionally engage said wall within said recess in each of said cover members whereby said first and second discs maintain respectively said first and second cover members in overlying surrounding relation thereto, said recess being dimensioned to receive the disc with the inner surface of said disc at least substantially coextensive with said peripheral edge, each of said cover members having an inwardly extending post integral therewith, said posts being centrally disposed on said base and within said skirt and terminating in a plane disposed perpendicularly thereof lying between said shoulder and said peripheral edge, each of said discs having an outer surface including a central hub portion, said central hub portion having a bore therein dimensioned to frictionally receive one end portion of said posts, the post of each of said cover members frictionally being engaged in the bore of the hub portion of the disc disposed thereunder, and a string looped about said central shaft member.

3,184,886
DOLL INCLUDING A COMBINED SOUND AND MOTION PRODUCING MECHANISM

Julius Weih, Ozone Park, N.Y., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Feb. 26, 1962, Ser. No. 175,465
7 Claims. (Cl. 46—118)



6. A doll including a stuffed body having a flexible chest wall motion producing mechanism mounted within said body behind said chest wall and arranged to produce recurring movements of said chest wall, said mechanism including a cam having plural teeth thereon, means operatively connected to and mounting said cam for rotating about an axis extending longitudinally of said body, a drive for rotating said cam, a plunger extending substantially at right angles to said axis and including a terminal portion in engagement with said teeth in said cam, means operatively connected to and mounting said plunger for reciprocating movement, a spring operatively connected to said plunger for urging the terminal portion thereof against said teeth on said cam, and means connecting said plunger to said chest wall to impart movement thereto in response to reciprocation of said plunger.

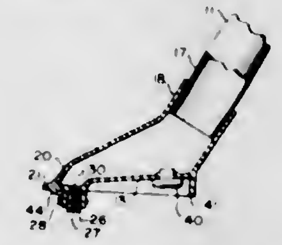
3,184,887
PROCESS OF PRODUCING GLYCOSIDES FROM LIVING PLANTS

Arrien G. Winter, deceased, late of Bonn, Germany, by Ilse Winter, heir, Bonn, Germany, assignor to Dr. Madaus & Co. Kommanditgesellschaft, Cologne-Merheim, Germany, a corporation of Germany
No Drawing. Filed Mar. 14, 1961, Ser. No. 101,617
Claims priority, application Germany, Mar. 14, 1960, M 44,664
8 Claims. (Cl. 47—1.2)

1. The process of producing a metabolized glycoside from a living plant which comprises cultivating said plant on a nutrient medium containing a glycosidizable compound and a carbohydrate capable of inducing said plant to form said glycoside, and isolating said metabolized glycoside from said cultivated plant.

3,184,888
LIQUID APPLICATOR DEVICE

Hal F. Fruth, 5032 Morse Ave., Skokie, Ill., and Carl J. Mitchell, R.F.D. 3, Woodstock, Ill.
Filed May 21, 1963, Ser. No. 282,100
6 Claims. (Cl. 47—1.5)

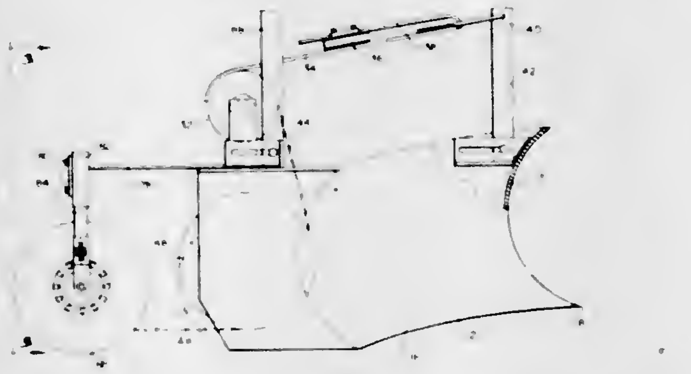


1. A fluid weed-killing applicator device adapted to be used between rows of plants susceptible to the weed-killing fluid being applied, comprising

(*a*) a hollow handle means,
(*b*) a hollow reservoir means secured to handle means and in fluid communication therewith, said reservoir means extending transversely of said handle means, said reservoir means extending normal to said handle means and being adapted to move between spaced rows of plants,
(*c*) an elongated receiving means on the underside of said reservoir means having a cavity therein into which is fed the weed-killing liquid,
(*d*) an applicator means secured within the cavity in said receiving means receiving said weed-killing fluid, the lower portion of said applicator means extending downwardly of said receiving means and said reservoir means for engagement with the weeds, said applicator means being elongated and transversely extending relatively to said handle means, and adapted to engage the area of weeds between a pair of rows of plants,
(*e*) a bumper means on the outer surface of said reservoir means to engage the plants extending from the rows into the area therebetween, and
(*f*) a barrier means at least partially encircling said applicator means to prevent fluid from flowing across the underside of said reservoir means to said bumper means.

3,184,889
PLASTIC MULCH LAYING MACHINE

Charles E. Gray, Tolleson, John F. Morgan, Phoenix, and Andrew O'Neal, Glendale, Ariz., assignors, by mesne assignments, to Union Carbide Corporation, a corporation of New York
Filed Nov. 23, 1962, Ser. No. 239,429
4 Claims. (Cl. 47—9)

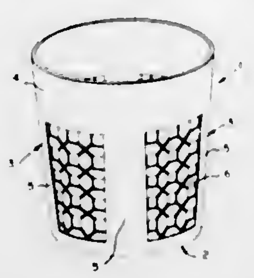


3. In a plastic mulch laying machine the combination of: a substantially V-shaped plow having a forwardly directed pointed portion and backwardly diverging plant portions; lower edges of said plate portions sloping outwardly and downwardly from the forwardly pointed portion of said plow thereby disposed to provide a convex surface or a surface having a high point in the middle of a plant row of soil and sloping from the middle downwardly and outwardly toward furrows at opposite sides thereof; means following said plow for dispensing a strip of plastic on said plant row of soil comprising means for holding a roller containing a strip of plastic material; wheels carried by said plow and bearing down to engage said plastic strip at opposite sides of the middle portion thereof and to hold it down on top of said convex surface formed by said plow to thereby draw the plastic taut over the middle portion of said plant row of soil; and means carried rearwardly at opposite sides of said plow disposed to plow soil onto opposite edges of said plastic material following said wheels; means frictionally engaging said roll of plastic material to maintain it taut; and spring loaded struts tending to force said wheels downwardly into engagement with said plastic to hold it frictionally on said ground so that when said plow is drawn forwardly at its pointed end, said plastic in frictional engagement with said soil and held down by said wheels will be dispensed longitudinally of said row whereby subsequent plowing of soil onto opposite edges thereof will fix said plastic strip in intimate contact with the middle portion of said plant row of soil.

3,184,890

PLANTING POT

Leo S. McKey, 1965 23rd Ave., San Francisco 16, Calif.
Filed Oct. 3, 1963, Ser. No. 313,542
4 Claims. (Cl. 47—37)



1. A container for a plant adapted to be placed in the soil to prevent injury to the roots of such plant by burrowing animals, said container comprising:

a generally frusto-conical pot formed of plastic and including a circular bottom wall and frusto-conical sidewalls extending upwardly from said bottom wall,

said bottom wall and said sidewalls being formed with relatively thin spaced apart sections integral with the remainder of said walls,

said sections being formed with spaced apart rectangular apertures joined by lines of weakness permitting enlargement of said apertures by growth of roots extending through said apertures.

3,184,891

METHOD OF TREATING SOIL AND GROWING PLANTS

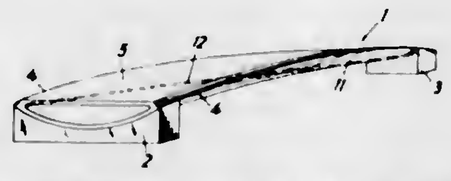
Karl Herman Frantzen, Omaha, Nebr., assignor to Northern Gas Products Company, Omaha, Nebr., a corporation of Delaware
No Drawing. Filed Sept. 18, 1962, Ser. No. 224,539
16 Claims. (Cl. 47—58)

1. The agronomical practice which comprises permeating soil with an alkane gas in liquid form but which is gaseous at room temperature, can be liquefied at above —60° F. and is heavier than air.

3,184,892

CONCRETE CONSTRUCTION ELEMENT AND PROCESS FOR MAKING THE SAME

Wilhelm J. Silberkuhl and Ernst Haeussler, both of Brunnenstr. 29, Essen (Ruhr), Germany
Original application Oct. 15, 1959, Ser. No. 846,611. Divided and this application Dec. 12, 1960, Ser. No. 81,210
Claims priority, application Germany, Oct. 20, 1958, S 60,311
2 Claims. (Cl. 50—52)

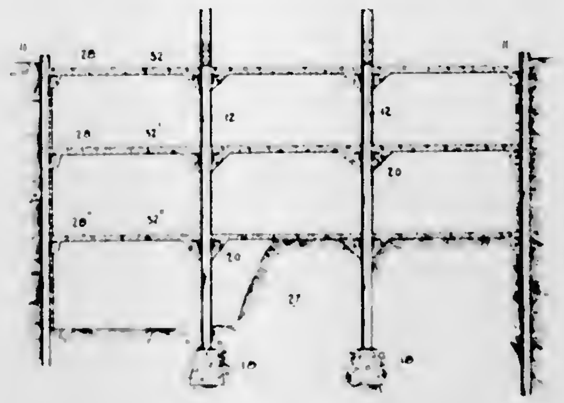


1. A hollow beam comprising an upwardly concave horizontal concrete shell approximately shaped as a shallow segment of a one-sheet hyperboloid of substantially rectangular outline having parallel longitudinal edges, said shell being internally provided with elongated prestressing elements extending the full length of said shell substantially along the diagonals of said rectangular outline along straight-line generatrices of said hyperboloid, and a concrete slab of substantially rectangular configuration conforming to said outline, said shell and said slab being cambered upwardly with identical curvature in the longitudinal plane of symmetry of said segment, said slab spanning the concave side of said shell and being firmly bonded to it at said edges to form an integral unit therewith.

3,184,893

CONTACT FOUNDATION METHOD

Weldon S. Booth, Hastings on Hudson, N.Y., assignor to Contact Foundation, Inc., New York, N.Y., a corporation of New York
Filed Apr. 11, 1960, Ser. No. 21,282
10 Claims. (Cl. 50—532)



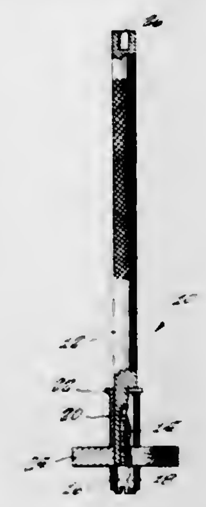
1. The method of constructing a multi-floor building in which a portion of the structure is to be below grade in an area wherein the character of the soil to be excavated requires the erection of an earth retaining wall, which includes: installing a plurality of soldier beams vertically in the ground about the perimeter of the area to be excavated; installing vertical supporting columns within said area, said columns being provided with attachment means for structurally joining concrete floor slabs to the columns, surfacing the soil within the building line at ground floor level to a predetermined contour to comprise a generally horizontal form upon which a concrete floor slab or the like may be poured; pouring a first floor slab on said form while leaving open at least one selected area in said slab; said floor slab being poured so as to be structurally joined by said attachment means to certain of said columns; excavating the earth beneath said first floor slab through said open area to form a sub-floor area; attaching sheeting members to said soldier beams as excavation proceeds to form an earth retaining wall at the periphery of said area; laterally bracing said retaining wall against said floor slab to resist through the floor slab system lateral forces from the retained earth; surfacing the soil at the bottom of the sub-floor area to a predetermined contour to comprise a generally horizontal sub-floor form upon which a sub-floor slab may be poured; and pouring a sub-floor slab on said sub-floor form so that said sub-floor slab is structurally joined by said attachment means to certain of said columns.

3,184,894

PORTABLE TAP VALVE GRINDER

Lionel Roy Bayes, R.R. 3, Salmon Arm, British Columbia, Canada
Substituted for abandoned application Ser. No. 10,451, Feb. 23, 1960. This application Sept. 23, 1963, Ser. No. 310,953
3 Claims. (Cl. 51—241)

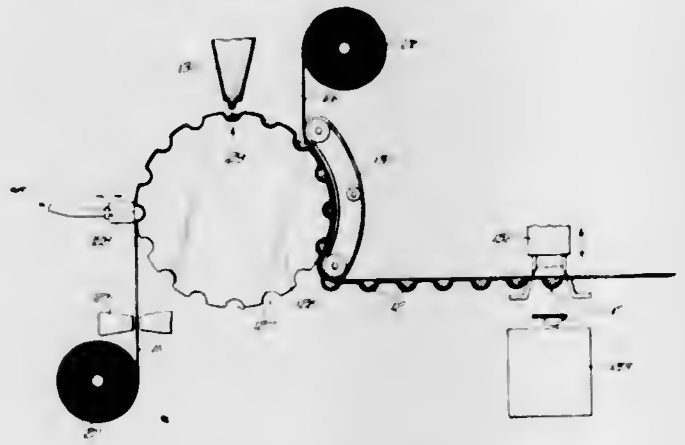
1. A portable tap valve grinder comprising in combination a main shaft, said main shaft being knurled over a major central portion thereof, coupling means at one end of said main shaft for connection to a hand drill, a grinding stone, mounting means carried at the opposite end of said main shaft releasably securing said grinding stone thereupon and guide means carried upon said main shaft intermediate said one end and said grinding stone centering said shaft in coaxial relationship with a valve seat of a valve being ground, said coupling means comprising a non-circular recess in one said end of said main shaft for receiving an adaptor of a power operated portable hand drill and said mounting means comprising a machine screw having a sleeve integrally mounted upon the head thereof for abutment with one outer side of said grinding wheel for maintaining said grinding wheel in assembled relationship with said shaft, and said guide means having an outwardly extending head at its end which is opposite the end adjacent said grinding wheel.



3,184,895

METHOD OF PACKAGING

Donal J. O'Connor, Chicago, Ill., assignor to Morton Salt Company, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 38,190, June 23, 1960, which is a division of application Ser. No. 628,740, Dec. 17, 1956, now Patent No. 2,956,710, granted Oct. 18, 1960. This application Aug. 4, 1964, Ser. No. 388,347
5 Claims. (Cl. 53—28)

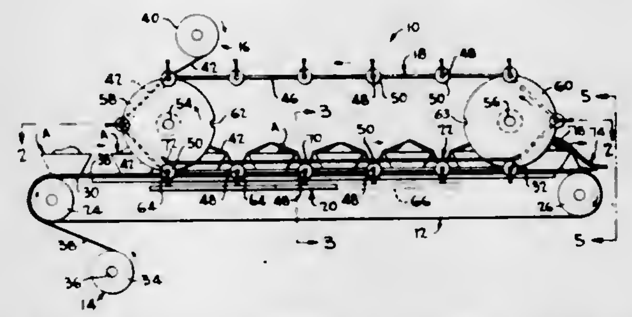


1. A process of packaging quantities of flowable materials each in separate packets so as to preselect the flow rate at which each of the packaged quantities of materials is subsequently dispensable, comprising the steps of forming a series of pockets in a first shape-retaining flexible sheet each having a storage area and a relatively long and narrow tapered neck opening into said area, the necks of said pockets having their maximum cross section at said opening which is large enough that the flowable materials when placed in said pockets can freely flow therethrough and which necks gradually and progressively taper therefrom along their full length to a minimum cross section at their outer end remote from said storage area, then placing quantities of one said flowable material in some said pockets and placing quantities of other said flowable material in other said pockets, aligning a second sheet with the first sheet to cover the open side of said pockets and intimately joining the two sheets together throughout the area of the first sheet between the pockets so as to seal said flowable materials within the pockets, thereafter severing the joined sheets along lines disposed intermediate the pockets to form individual packets each containing at least one sealed pocket and a surrounding flat margin, weakening a linear section of the first sheet across the neck of each said pockets intermediate said maximum and minimum cross sections along which each packet may be folded back to expose a dispensing orifice communicating with the flowable material sealed within the pocket, and locating said weakened linear sections at one distance from the outer end of the necks of some of said pockets and at another distance for other of such pockets, said distances being such that the size of orifices produced by said folding back will enforce the flow characteristics required to dispense the flowable material sealed within each said packets.

3,184,896

WRAPPING APPARATUS

William S. Peppler, Chappaqua, N.Y., assignor to Diamond International Corporation, a corporation of Delaware
Filed Aug. 7, 1962, Ser. No. 215,414
6 Claims. (Cl. 53—180)



1. Apparatus for applying a wrapper of heat-sealable material about a continuously conveyed article, comprising in combination conveyor means comprising an endless conveyor belt including a substantial horizontal, continuous upper run defining a substantially single plane of travel, said upper conveyor run comprising a continuous upper, flat, pressure-receiving surface providing a base for receiving longitudinally spaced articles thereon, a combined heat-sealing and pressure-applying means disposed in overlying longitudinally spaced relation along said upper conveyor run and including a plurality of longitudinally spaced heat-sealing bars supported for movement along said conveyor run and disposed transversely of and engageable on the upper surface of said conveyor run for pressurized engagement thereon, said bars including terminal abutments and terminal contacts for engagement with a source of current to energize and heat said bars, electrical energizing means comprising elongated bus bars disposed outwardly of and parallel to said upper conveyor run for engagement by said terminal contacts to energize said bars during an increment of travel of said bars and conveyor, and pressure applying guide means comprising elongated track elements disposed parallel to and along the side edges of said conveyor run for engagement on said terminal abutments at the ends of said heat bars during an increment of travel for retaining the bars in pressurized engagement on the upper surface of said conveyor run during energization of said bars.

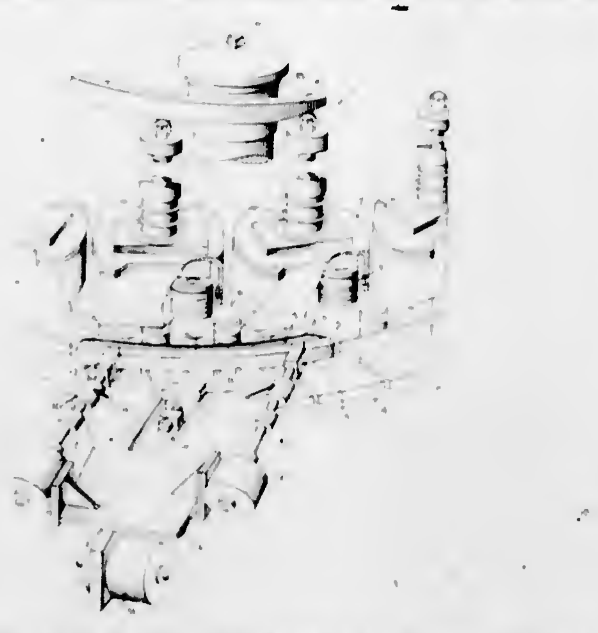
3,184,897

CONTAINER PRESSURE DEVICE

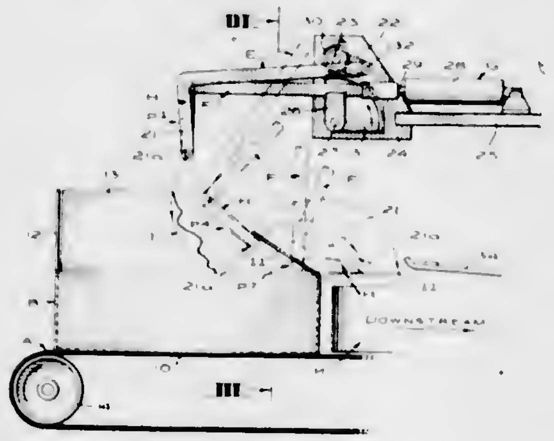
William E. Shriner and Joseph C. Runco, Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Oct. 8, 1962, Ser. No. 228,844
11 Claims. (Cl. 53—331.5)

1. A container sealing machine comprising the combination of a container moving means, an elongated container engaging member adjacent thereto and substantially restricted against movement in the direction of movement of the moving means, a motor for resiliently supporting said member permitting movement generally laterally of the direction of said moving means, said motor compris-

ing a cylinder and cooperating piston, and means to supply a compressible fluid under pressure to said cylinder for pressing said container engaging member through a range of movement toward the containers to apply a constant force to said containers.



3,184,898
FLAP POSITIONING MACHINE
Joseph C. Berney, San Mateo, Calif.
(2437 Bamboo, Newport Beach, Calif.)
Filed Oct. 1, 1962, Ser. No. 227,392
11 Claims. (Cl. 53—382)



1. In a flap positioning machine:
(*a*) a conveyor having a reach disposed to receive and support a case, the latter being provided with a leading end flap and a trailing end flap:
(*b*) a flap-positioning swing arm mounted above the reach for swinging between raised and lowered positions, and including a hook;
(*c*) and means coacting with the swing arm and being operable to move the hook in a substantially sinuous locus of travel, with the hook descending in a path into a position underneath a selected end flap, and then moving the hook in an ascending path to carry the selected end flap into a predetermined position relative to the case.

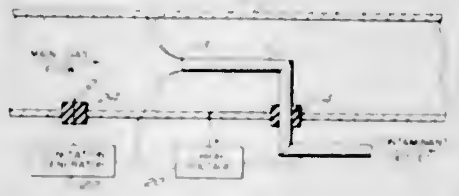
3,184,899
HELIUM SEPARATION
David Frazier, Hudson, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 31, 1958, Ser. No. 784,062
4 Claims. (Cl. 55—16)

4. A process of separating a gas enriched in helium from a gaseous mixture containing the same comprising contacting within a closed vessel said gaseous mixture with a mass of small, hollow, imperforate particles formed from a glass through which helium selectively diffuses relative to the other components of said gaseous mixture, maintaining a positive helium partial pressure differential across the glass walls of said particles with the high pressure on the exterior of said particles whereby helium diffuses into the hollow interior of said particles, removing at least part of the residual gases remaining on the outside of said particles, maintaining the helium partial pressure inside the glass walls of said particles higher than the helium partial pressure outside of said particles so that the helium diffues out of the hollow interior of said particles, and collecting the helium diffused out of said particles.

3,184,900
METHOD OF PURIFYING GASEOUS FORMALDEHYDE
Franco Codignola, Cesare Reni, and Jakob Ackermann, Milan, Italy, assignors to Societa Italiana Resine, Milan, Italy
No Drawing. Filed Oct. 15, 1962, Ser. No. 230,671
Claims priority, application Italy, Oct. 30, 1961, 19,568/61
4 Claims. (Cl. 55—31)

1. The method of purifying raw gaseous monomeric formaldehyde containing impurities comprising water, methyl alcohol and formic acid, wherein a flow of the gaseous formaldehyde is contacted with a solid adsorbent selected from the group consisting of alkali metal salts of an acidic ion exchange resin and alkaline earth metal salts of an acid ion exchange resin, said resin being selected from the group consisting of sulphonated polystyrene, sulphonated polyphenol, and cross-linked polyacrylic resins and wherein the exhausted adsorbent is regenerated at a temperature higher than the adsorption temperature.

3,184,901
GASEOUS CONCENTRATION AND SEPARATION APPARATUS
Robert M. Main, Oakland, Calif., assignor, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Dec. 8, 1959, Ser. No. 858,284
7 Claims. (Cl. 55—102)

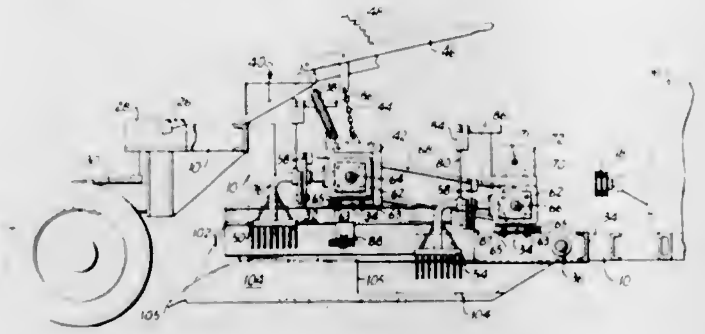


6. Apparatus for selectively removing a first gas admixed within a stream of a second base gas flowing within a conduit comprising, an outlet formed with an orifice within said conduit and adapted to withdraw gas in the vicinity of said conduit from said stream, means including said outlet in the region of said orifice for establishing an electrostatic field extending substantially axially upstream within said conduit, means for preferentially ionizing one of said first and second gases upstream of said orifice, said electrostatic field being of intensity and configuration whereby said ionized gas is substantially segregated from the remainder of gas in said stream in the region of said orifice.

3,184,902
BEAN POD STRIPPER
Jack D. Maffei, Gustine, Calif., assignor to L. D. Maffei Seed Co., Inc., Newman, Calif., a corporation of California
Filed Feb. 7, 1962, Ser. No. 171,760
17 Claims. (Cl. 56—19)

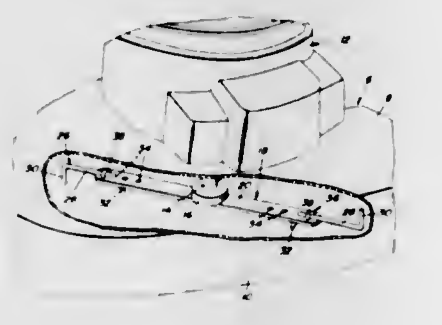
1. A bean pod picking apparatus comprising
(A) a chassis adapted to be moved along a row of bean plants and having

(1) a front end and
(2) a plant receiving zone extending longitudinally of said chassis through which a row of plants passes as said chassis is moved,
(B) forward picker means mounted on said chassis adjacent said front end for picking bean pods from plants in an upper portion of said zone without picking bean pods from plants in a lower portion of said zone,



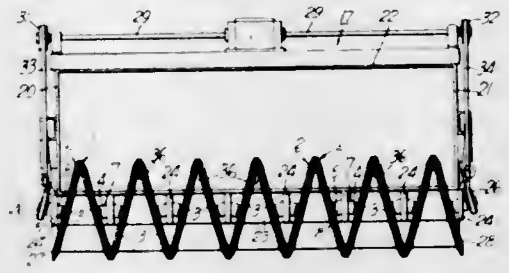
(C) rearward picker means mounted on said chassis remote from said front end for picking bean pods from plants in said lower portion of said zone, and
(D) cutter means mounted on said chassis between said forward and rearward picker means for topping bean plants along a generally horizontal plane which is positioned between the centers of said upper and lower portions of said zone.

3,184,903
ATTACHMENT FOR ROTARY LAWN MOWER
Leonard R. Fjelstad, R.F.D. 2, Jeffers Road, Eau Claire, Wis.
Filed Sept. 25, 1963, Ser. No. 311,482
5 Claims. (Cl. 56—25.4)



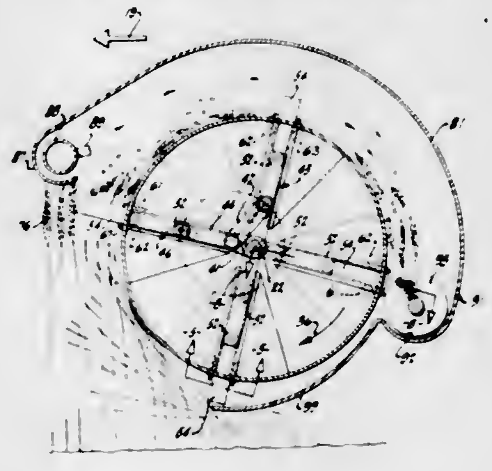
1. In a power-operated rotary-type lawn mower, in combination, a housing having a horizontal top wall marginally surrounded by a vertically depending complemental skirt-like wall, a rotary power-driven shaft depending from a central axial portion of said top wall into the wall enclosed space of said housing, and a dead leaf gathering, disintegrating and mulching attachment, said attachment comprising a rigid horizontal bar mounted intermediate its ends on a lower end of said power driven shaft, said bar replacing the conventional removable mower blade and disposed parallel to said top wall and confined in said space, said bar having terminal end portions terminating short of and spaced radially inward from the encompassing skirt-like wall, leaf agitating, beating and pulverizing fingers detachably, adjustably mounted on the terminal end portions of said bar, each of said fingers comprising a spring steel rod having inner and outer ends both of which are disposed relative to said terminal end portions and walls of said housing to disintegrate and mulch leaves trapped in said space.

3,184,904
CENTRIFUGAL DISK SEED HARVESTER
Bruce H. Fiedler, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 21, 1962, Ser. No. 225,308
5 Claims. (Cl. 56—126)



1. A machine for separating grain kernels from stalks without contacting said kernels comprising a pair of disks each having a side wall, a resilient stalk engaging surface positioned on the outer periphery of said side wall, means for rotatably mounting said disks so that the radial planes of said disks are inclined relative to each other to define an acute included angle between them and present portions of said side wall stalk engaging surfaces in face to face abutting relation to each other, the apex of said acute angle being disposed above the axis of rotation of said disks so that adjacent pairs of disks will define a forwardly opening grain stalk entry passage, and means for rotating said disks at high speeds, whereby said stalks upon being gripped between said stalk engaging surfaces are initially subjected to high velocity acceleration so that the force of inertia in the grain spikes and the subsequent centrifugal force causes separation of the grain kernels.

3,184,905
GRAIN HARVESTER
Ramon L. Hillier, 827 33rd St., Sacramento, Calif.
Filed May 25, 1964, Ser. No. 369,668
10 Claims. (Cl. 56—130)



1. A grain harvester comprising:
(*a*) a wheeled frame adapted to be advanced in a field in a predetermined direction;
(*b*) a drum rotatably mounted on said frame for rotation about a horizontal axis transverse to said direction, said drum including a plurality of rows of transversely extending slots, said slots in each of said rows being in alignment with each other;
(*c*) means for rotating said drum as said frame advances;
(*d*) a plurality of sets of grain stripping fingers disposed within said drum, each of said sets of fingers projecting radially through a corresponding one of said slots for reciprocating movement therethrough between a first, retracted position and a second, projected position, each of said sets including a plurality of spaced, parallel elongated fingers laterally mov-

able between a first, expanded position and a second, contracted position;

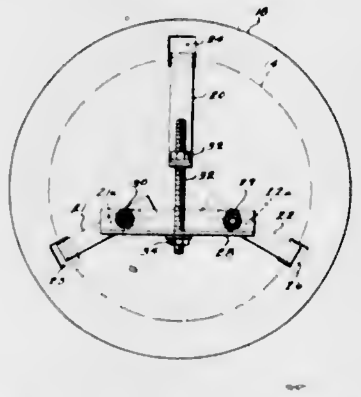
(*e*) means for reciprocating said sets between said first, retracted position and said second, projected position in dependence upon the angular, rotational position of said drum;

(*f*) means for laterally moving said fingers between said first, expanded position and said second, contracted position in dependence upon the angular rotational position of said drum; and

(*g*) a plurality of radially disposed, parallel barriers interposed between said fingers, said barriers being laterally movable with the adjacent of said fingers and being effective to maintain said adjacent fingers in parallel spaced relationship in said second, contracted position thereof.

3,184,906
LAWN EDGE TRIMMER

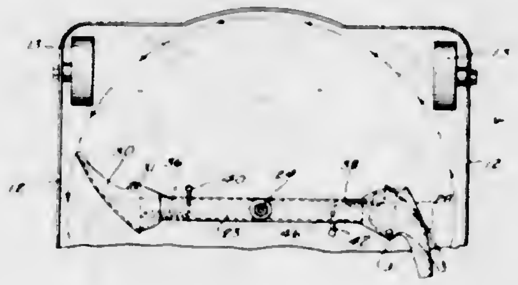
Jack R. Congalton, 1389 Homeland Drive,
Rocky River 14, Ohio
Filed Apr. 17, 1963, Ser. No. 273,608
2 Claims. (Cl. 56—256)



1. A lawn edge trimmer adapted for mounting on an outside power driven wheel of a power mower comprising in combination, a metallic disk of greater diameter than the wheel to which it is attached, said disk having a plurality of circumferentially spaced slots below its periphery, a radially adjustable wheel clamping means on said disk having radially extending arms with right angle ends positioned through said circumferentially spaced slots over the wheel periphery, and adjusting means for radially adjusting said arms relative to said disk and drawing the ends thereof tightly about said wheel periphery.

3,184,907
POWER MOWER

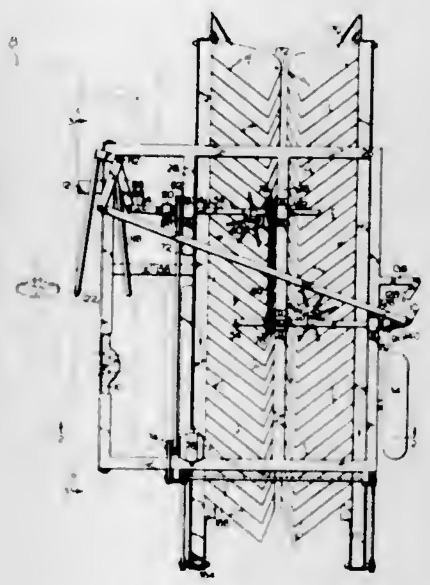
Werner B. Harloff, 40 Mar-kan Drive, Northport, N.Y.
Filed Mar. 16, 1964, Ser. No. 352,046
2 Claims. (Cl. 56—295)



1. A power mower having a revolvable hollow arm disposed substantially horizontal to the ground over which the mower is operated, means for revolving said arm, a blade hingedly connected to each end of said arm, each of said blades being arcuate in shape, a spring disposed within the arm, one end of said spring being connected within the arm and the other end being connected to said blade.

3,184,908
BERRY HARVESTING APPARATUS

Donald Rust, Rte. 2, Box 313, Troutdale, Oreg.
Filed Aug. 16, 1962, Ser. No. 217,393
7 Claims. (Cl. 56—330)



1. A berry harvesting machine comprising a frame adapted for movement along the ground adjacent rows of berry vines, the frame having a longitudinal opening therethrough wherein it is arranged to straddle a row of berry vines, a first vertically disposed vine engaging member supported for free rotation on said frame on one side of said opening for engaging one side of the vines in the straddling movement of the frame with a row of vines, a second vertically disposed vine engaging member supported for free rotation on said frame on the other side of said opening for engaging the other side of the row of vines, a plurality of fingers projecting outwardly from said vine engaging members, and means on the frame for reciprocating said two vine engaging members, said fingers in the reciprocation of said vine engaging members being arranged to abut against and shake berry vines for removing berries therefrom.

3,184,909
EPICYCLIC CLOCK DRIVE MECHANISM

Gerald W. Lohf, Milwaukee, Philip F. Walker, Wauwatosa, and Alonzo Ray Ellsworth, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a Wisconsin corporation
Filed Oct. 30, 1963, Ser. No. 320,070
10 Claims. (Cl. 58—2)

1. In a clock mechanism for a tower type clock having an hour hand shaft and a minute hand shaft combined with a dial train which supplies substantial torque to said shafts, said dial train comprising,

(*a*) drive means for a spider gear means which gear means is attached at a center hub thereof to said minute hand shaft,

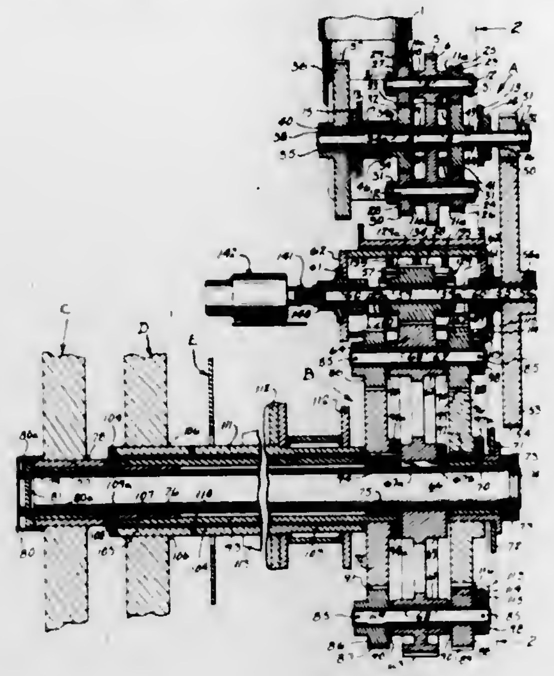
(*b*) said spider gear means comprising at least one gear shaft hub near the periphery thereof,

(*c*) gear shaft means located in each gear shaft hub and free to rotate therein,

(*d*) first and second differential pinion means attached to each gear shaft,

(*e*) first sun gear means attached to said hour hand shaft which is concentric with said minute hand shaft, and

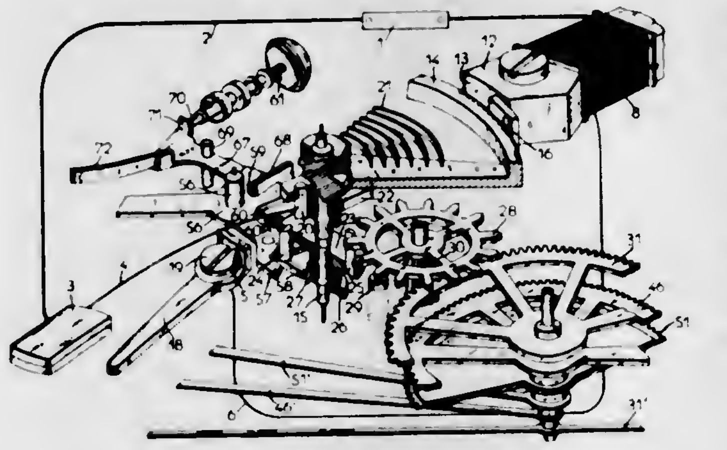
(*f*) a second sun gear means attached to a fixed shaft concentric with said minute hand shaft,



(*g*) said first and second differential pinion means in rotatable contact with said first and second sun gear means respectively.

3,184,910
ELECTRIC WATCHES

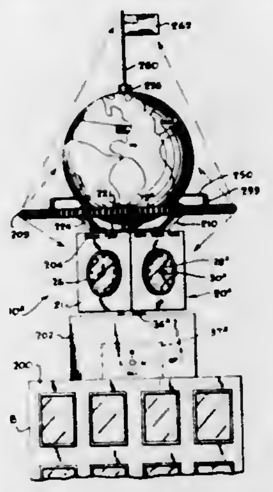
Jean Georges Henri Laviolette, Besancon, France, assignor to Lip Societe Anonyme d'Horlogerie, Besancon-Palente, Doubs, France, a corporation of France
Filed Nov. 16, 1962, Ser. No. 238,134
Claims priority, application France, July 10, 1962, 903,585
7 Claims. (Cl. 58—28)



1. An electric watch comprising indicator hands and a wheel work for driving said hands, a drive wheel having a pinion for driving said wheel work, an electromagnetic coil winding, a battery, an electric circuit fed by said battery and energizing said coil winding, a resilient contact wire in said electric circuit, a hairspring balance wheel mounted on a rotatable arbor, a freely oscillating flat lock member for limiting the amplitude of oscillation of said balance wheel, said lock member having a forked portion, a disc secured on said arbor, said disc carrying a drive pin for driving said drive wheel and an anchor pin engaging said forked portion of said lock member and causing said lock member to oscillate, a locking device adapted to hold said lock member against oscillation in the position in which said forked portion engages said anchor pin and prevents said arbor from rotating, a hand setting mechanism having a sliding stem adapted to cause said locking device to hold said lock member against oscillation, a cam mounted in frictional contact on said arbor and carrying a stud coacting with said resilient wire and causing the latter to temporarily close and open said electric circuit, the angular setting of said cam being so selected that the contact between said stud and said resilient wire is discontinued when said locking device holds said lock member in the position in which it prevents said arbor from rotating.

3,184,911
COMBINED MULTIPLE CLOCK AND RADIO

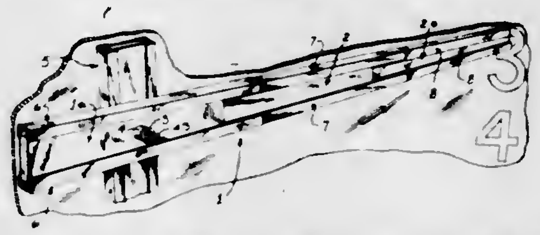
Pietro Canale, 103—39 52nd Ave., and Antonio Canale, 50—30 103rd St., both of Corona, N.Y.
Filed Sept. 4, 1962, Ser. No. 221,285
2 Claims. (Cl. 58—44)



1. A clock and globe map display, comprising a support, a casing rotatably mounted on a vertical axis on said support, said casing having a plurality of walls facing in different horizontal directions, an electric clock mounted on each of the walls, a globe inscribed with a map rotatably mounted on a vertical axis on top of said casing, a lamp means carried by the casing to illuminate both the clocks and map, a first motor in said support driving the casing, a second motor in said casing driving the globe, circuit means connected to the lamp means, clocks and motors for energizing the same, and a selector switch in said circuit means for selectively energizing the lamp means and motors individually and all together, said lamp means being a circular ring lamp structure surrounding the globe and casing, a frame supporting said lamp structure on the casing, said ring lamp having a series of equally spaced division markings thereon, and a pointer carried by the globe and circumferentially passing along the lamp markings to indicate passage of time as the globe rotates.

3,184,912
CLOCK HANDS

Walter S. Freeburg and Alonzo Ray Ellsworth, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 30, 1963, Ser. No. 320,107
5 Claims. (Cl. 58—126)



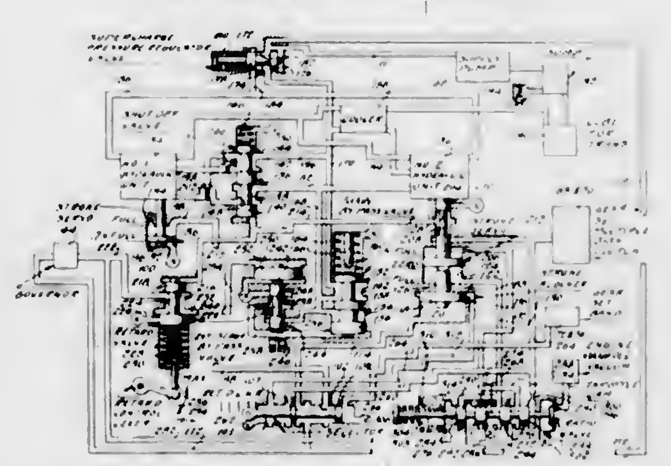
1. In combination with a tower type clock having a hand shaft, a balanced clock hand comprising:

(*a*) a base section having a hub means about which said hand is balanced located intermediate first and second ends thereof for attachment of said clock hand to said shaft with that portion of said base section between said hub and first end acting to balance the remainder of said hand.

(*b*) said base section comprising structural means which form a box-like support means,

(*c*) first sheet-like means surrounding said box support so as to cover said support means,
(*d*) second sheet-like means formed in substantially the same shape as said first sheet-like means,
(*e*) said first and second sheet-like means being telescopically attached at the second end of said base section,
(*f*) said second sheet-like means comprising internal support means, and
(*g*) said first and second sheet-like means comprising two parallel side sheet means connected at either end by channel means.

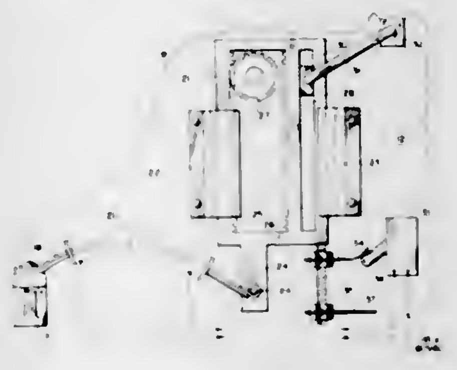
3,184,913
CONTROL SYSTEM FOR INFINITELY VARIABLE POWER TRANSMISSION MECHANISM
Arnold E. Anderson and Charles C. Bookout, Livonia, Mich., and Robert E. Kaptur, Birmingham, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 18, 1963, Ser. No. 324,481
21 Claims. (Cl. 60—19)



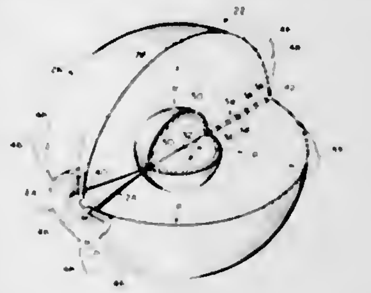
1. In a control system for a power transmission mechanism capable of delivering driving torque from an engine to a driven member, a governor valve assembly comprising a governor body drivably connected to said engine, a valve chamber in said valve body, a valve element mounted within said chamber and adapted for radial displacement with respect to the axis of rotation of said body, valve spring means normally urging said valve element in a radially inward direction, a source of control pressure, a pressure supply passage communicating with said valve chamber and extending from said source, a governor pressure passage in said body and communicating with said valve chamber on the radially inward side and on the radially outward side of said valve element and an exhaust port communicating with said valve chamber, said valve element being urged against the opposing influence of said spring means by centrifugal force to decrease progressively the degree of communication between said governor pressure passage and said exhaust port while simultaneously progressively increasing the degree of communication between said pressure supply passage and said governor pressure passage whereby the pressure made available to said governor pressure passage is related in magnitude functionally to engine speed.

3,184,914
THERMAL MOTOR FOR ROTATING A ROTISSERIE SHAFT
Samuel W. Cole, Maywood, Ill., assignor to General Electric Company, a corporation of New York
Filed Dec. 20, 1960, Ser. No. 77,060
2 Claims. (Cl. 60—23)

2. For use in a cooking appliance having a chamber provided with a spit to be rotated relative to a heating unit for cooking a foodstuff carried by said spit:
the improvement in spit rotating means comprising a shaft adapted to engage a spit,
means for mounting said shaft for rotation,
a pinion on said shaft,
a discontinuous walking rack having two rack members disposed on opposite sides of said pinion and alternately engageable with said pinion to rotate the same in a single direction upon reciprocation of said rack,
a link member pivoted remote from said rack for rotation relative to said rack,
a friction member carried by the free end of said link member in slidable frictional engagement with said rack whereby according to the direction of movement of said rack relative to the pivot point of said link member one or the other of said separate parallel rack members will operatively engage said pinion,
means for guiding said rack for rectilinear movement relative to said pinion,
a heat motor engaging with said rack to effect movement thereof, said motor being arranged upon heating to operate the rack in one direction and on cooling to operate the rack in the opposite direction,
electric resistance heating means disposed in heat transfer relation with said heat motor,
electric switch means in circuit with said heating means,
and means interposed between said rack and said switch means to cyclically operate said switch means between open and closed circuit conditions according to the direction of movement of said rack.

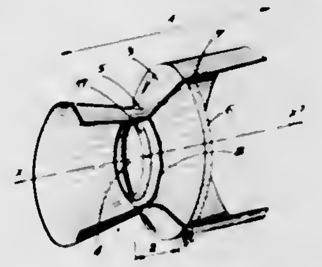


3,184,915
ELECTROSTATIC PROPULSION SYSTEM WITH A DIRECT NUCLEAR ELECTRO GENERATOR
Charles A. Low, Jr., Cleveland, and William R. Mickelsen, Berea, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 21, 1963, Ser. No. 253,006
24 Claims. (Cl. 60—35.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



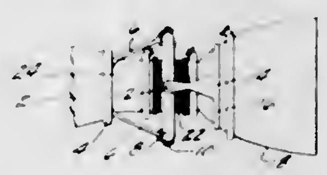
1. A propulsion system comprising alpha radioisotope means for providing alpha particles, collector means for accumulating said alpha particles, said collector means being in nonelectrical communication with said alpha radioisotope means whereby a cell of electrical potential is formed, and a colloidal electrostatic rocket thruster providing negative charged particles, said electrostatic rocket thruster being interconnected with said alpha radioisotope means and said collector means, said thruster utilizing the electric potential created between said radioisotope means and said collector means to accelerate the negative charged particles in said rocket thruster whereby thrust is produced.

3,184,916
SELF-EFFACING NOZZLE FOR RAMJET
Maurice Ravel, Morsang-sur-Orge, France, assignor to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France
Filed Oct. 30, 1961, Ser. No. 148,426
Claims priority, application France, Feb. 23, 1961, 853,662
9 Claims. (Cl. 60—35.6)



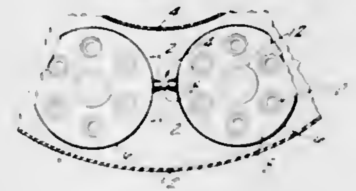
1. In a ramjet including a normal outlet nozzle having at least a convergent portion,
a self-effacing outlet nozzle comprising a convergent body whose minimum cross-section is less than the minimum cross-section of said normal outlet nozzle, said body formed of a material which melts at low temperature and mounted in said normal outlet nozzle coaxially therewith, adjacent for a portion of its length along the inner wall of the convergent portion of said normal outlet nozzle,
securing means fixing the two said nozzles together,
at least one line of preferential rupture in said body of said self-effacing nozzle, comprised by a reduction in the quantity of material forming said body along said line of rupture, rupturing under the action of heat, said at least one line of preferential rupture being arranged in any suitable configuration adapted to reduce said self-effacing nozzle to a plurality of elementary portions after heating, which are shed before complete melting, thereby enabling said self-effacing outlet nozzle to be shed in a plurality of stages,
each of said portions being smaller in overall bulk than the unobstructed area at the outlet of said normal outlet nozzle.

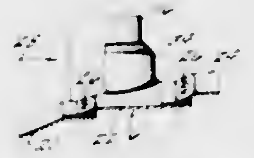
3,184,917
REENFORCED SEAL FOR ROCKET NOZZLE
Zephirin A. Caouette, Vernon, and David L. Fitton, Hazardville, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 15, 1961, Ser. No. 110,060
3 Claims. (Cl. 60—35.55)



1. A rocket nozzle having a fixed annular throat portion defining a nozzle throat portion and a moveable annular divergent discharge portion downstream thereof and through which rocket exhaust gases are discharged to atmosphere, gimbal means connecting said portions and providing for vectoring movement of the discharge portion, said portions being radially spaced apart downstream of said throat to provide for the vectoring movement, in combination with sealing means extending between said portions externally of the radial spacing and substantially at said throat to define a chamber with said portions which chamber communicates with the rocket nozzle interior through said radial spacing to receive exhaust gases and become pressurized thereby, the pressure in said chamber acting against said moveable discharge portion to balance the thrust of exhaust gases acting against the interior thereof, said seal including a convoluted ring having end attachment devices thereon, each of said portions having attachment means in spaced relation for engagement with the attachment devices, and support rings surrounding and engaging with the convoluted ring for re-enforcement of said ring.

3,184,918
COOLING ARRANGEMENT FOR CROSSOVER TUBES
Robert L. Mulcahey, East Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 18, 1963, Ser. No. 288,823
3 Claims. (Cl. 60—39.66)



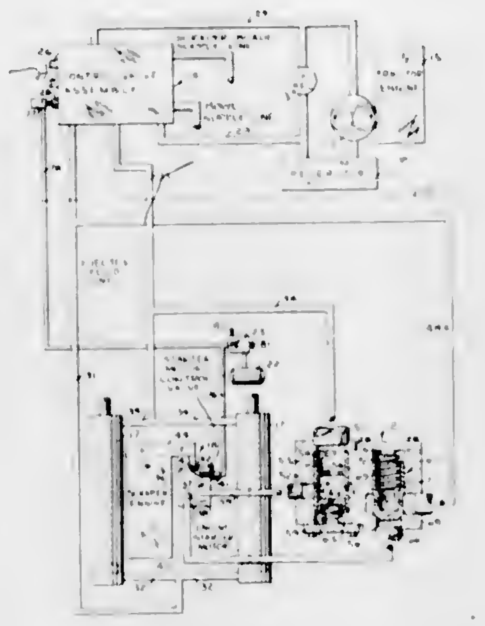


1. A flametube for a combustion chamber, said tube having an annular wall with openings therein for the flow of air into the tube, said tube having a partially closed upstream end, a laterally extending crossover tube mounted in a side opening in the annular wall and projecting outwardly therefrom with the inner end of the lateral tube substantially in alignment with the annular wall, said lateral tube being welded to the flametube over substantially the upstream half of the lateral tube and having an outwardly projecting flange on the downstream half thereof located within and extending parallel to the adjacent flametube wall, the lateral tube being spaced from the edge of the opening in the flametube wall over substantially the downstream half of the lateral tube to form a passage for air between the lateral tube and the flametube wall and a substantially semicylindrical shield extending around and located in spaced concentric relation to the lateral tube in the downstream side thereof, said shield being secured along its outer edge to the crossover tube at a point spaced from the flametube wall and being secured at its inner edge to the edge of the opening in the flametube within which the lateral tube is positioned for directing air entering the space between the shield and the lateral tube into the passage between the lateral tube and the flametube wall.

3,184,919
HYDRAULIC STARTING SYSTEM FOR ENGINES
David S. Vinton, Washington, and Gavin C. Bristow and Frank H. Winters, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 18, 1962, Ser. No. 203,309
8 Claims. (Cl. 60—52)

1. In a hydraulic starting system for an engine of vehicle normally drawn by an engine driven draft vehicle, wherein the drawn vehicle has a hydraulically actuated component which is supplied with actuating fluid from a pump driven by the propulsion engine of the draft vehi-

cle, the combination comprising: a hydraulically driven starting motor mechanically connectable to the engine of the drawn vehicle; and a fluid conduit connecting said starting motor to the engine driven pump wherein the portion of said conduit from the pump to the drawn vehicle is the same conduit used to supply fluid to the hydraulically actuated component of the drawn vehicle.



ERRATUM

For Class 60—53 see:
Patent No. 3,185,557

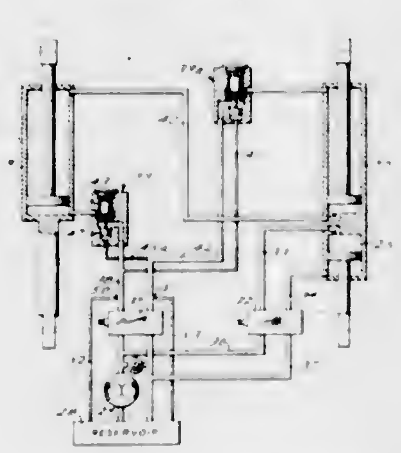
3,184,920

LEAKAGE CONTROL FOR BULLDOZER PITCH JACK CIRCUIT

Kenneth R. Lohbauer and James E. Scheidt, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed June 12, 1963, Ser. No. 287,424

2 Claims. (Cl. 60—54.5)



2. In a hydraulic circuit comprising a pair of jacks and a conduit communicating between the head end of one jack and the rod end of the other jack whereby both jacks can be moved in one direction by directing fluid under pressure to one end of one jack, a source of fluid under pressure, a valve for directing pressure selectively to one end of either jack, a normally closed check valve means for each jack preventing reverse flow from said jacks and leakage at said valve, means actuated by pressure directed to either jack to open said normally closed check valve for the other jack, and separate means cooperating with the check valve to modulate fluid flow from the jacks to the source.

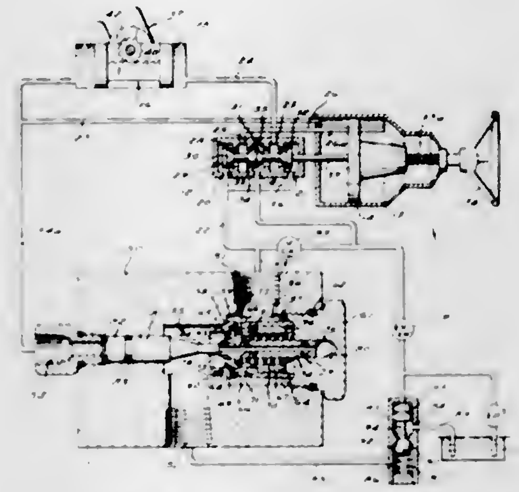
3,184,921

REMOTE CONTROL HYDRAULIC SYSTEM

John D. Allen, South Euclid, Ohio, assignor to Fawick Corporation, a corporation of Michigan

Filed Jan. 20, 1964, Ser. No. 338,729

12 Claims. (Cl. 60—54.5)



1. A remote control for a hydraulically driven device comprising:
a master cylinder, a master piston in said master cylinder;
a slave cylinder, a slave piston in said slave cylinder;
valve means for selectively establishing the inlet flow of hydrauic liquid to one side of said master piston or to one side of said slave piston and establishing the return flow from said one side of the other of said pistons;
captive passage means connecting the opposite side of said master piston to the opposite side of said slave piston for the flow of captive liquid trapped therebetween;
and means responsive to the liquid pressure in said captive passage means for controlling said return flow.

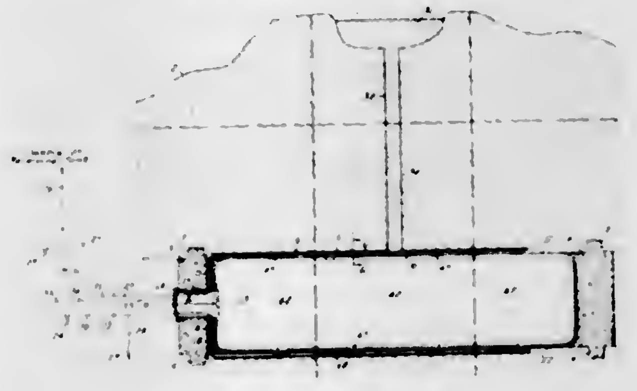
3,184,922

METHOD OF AND MEANS FOR STORING LIQUEFIED PETROLEUM GASES UNDERGROUND

Mark Anton, West Orange, N.J., assignor to Suburban Propane Gas Corporation, Whippany, N.J., a corporation of New Jersey

Filed July 12, 1960, Ser. No. 42,266

8 Claims. (Cl. 61—.5)



1. Means for the underground storage of liquefied petroleum gases, including a sealed underground cavity having a predetermined surface area, an oversize collapsible container positioned in said cavity for holding liquefied gases and having a wall surface area greater than the surface area of said cavity when the wall is substantially free of tensile strains, means for supplying and discharging liquefied gas to and from the container, separate means for supplying and discharging pressurized fluid to and from said container, and pressure control means for

maintaining said container filled and the walls thereof in engagement with the walls of said cavity as said liquefied gas is supplied to and discharged from said container.

3,184,923

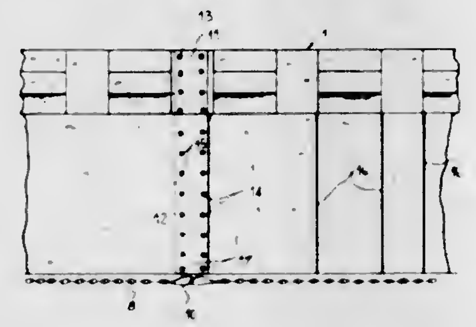
METHOD OF COLLECTING OIL OR OTHER RESIDUES ON THE WATERS OF PORTS AND ELEMENTS FOR CARRYING OUT SAME

**Lucien Galvaing, 75 Rue du President Wilson,
Levallois-Perret, France**

Filed Mar. 6, 1961, Ser. No. 93,516

Claims priority, application France, Mar. 7, 1960, 820,755

12 Claims. (Cl. 61—1)



1. A barrage element for catching and collecting residues from the surface of port waters, comprising a substantially vertical sheath having an upper edge and a lower edge extending parallel to the water surface, said upper edge being above the water surface and said lower edge being below the water surface, a plurality of substantially vertical pockets provided in spaced relationship in and along said sheath and each one connected to the adjacent one by a length of said sheath, a plurality of substantially vertical plates enclosed each one in one of said pockets and provided each one on each side thereof with one substantially horizontal float mounted externally of said sheath, both floats of each vertical plate being horizontally aligned.

3,184,924

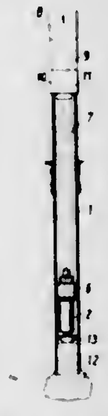
METHOD OF FORMING CONCRETE PILE IN SITU

**Heinz Staunau, Hamburg, Germany
(Strandredder 1, Lubeck-Travemunde, Germany)**

Filed Nov. 6, 1961, Ser. No. 150,313

Claims priority, application Germany, May 31, 1961, St 17,893

4 Claims. (Cl. 61—53.6)



1. A method for the production of concrete piles in situ comprising the steps of filling at least the lower end of an upright tube open at both ends with concrete while the lower end of the tube engages the ground for forming a concrete plug in said lower end; anchoring a pressure device in the interior of the tube in engagement with the upper end of the concrete therein; imparting impacts onto the upper end of the tube for driving the lower end of the tube with the concrete plug therein into the ground while preventing with said anchored pressure device the plug from moving upwardly in the tube; exerting by means of said anchored pressure device a downwardly directed pressure onto the concrete plug to move the latter downwardly with respect to the tube while simultaneously transmitting through said anchored pressure device the counterpressure created by said pressure to the tube to raise the latter so that part of said plug will be located in the ground below the lower open end of the tube; and driving the tube further into the ground by imparting impacts onto the upper end thereof while preventing with said anchored pressure device the remaining part of the plug in the tube to move upwardly with respect thereto to compress the part of the plug located below the lower end of the tube in axial direction and to cause it to expand laterally beyond the tube.

3,184,925

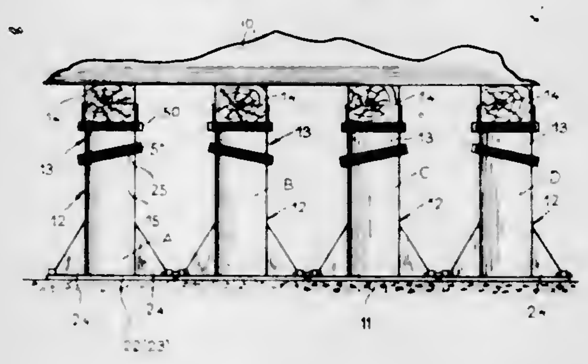
KEEL-BLOCKS

Edmond Raymond Casas, Marseille, France, assignor to Ateliers Provencaux de Reparations Navales et Industrielles, Marseille, France, a corporation of France

Filed Apr. 4, 1962, Ser. No. 184,993

Claims priority, application France, Jan. 16, 1962, 884,973

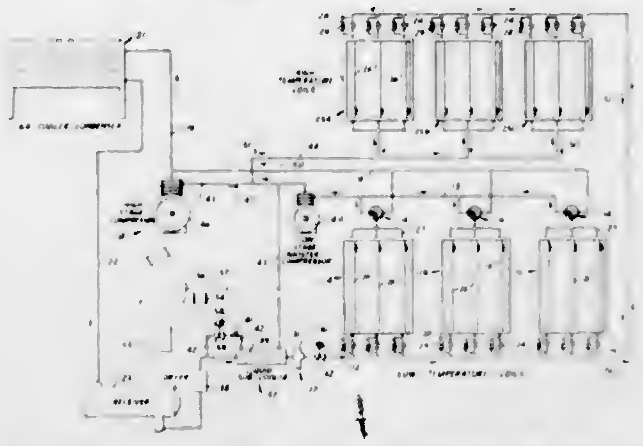
8 Claims. (Cl. 61—66)



1. A line of keel-blocks adapted to bear plank-forming supporting elements for a ship, said line of blocks comprising, a series of substantially parallel rows of identical vertical barrels having bevelled tops and horizontal bases, each row comprising an inclined joining plate interconnecting said tops and a horizontal base plate interconnecting said bases, said parallel rows being disposed at right angles to the longitudinal axis of the line of blocks and resting on the ground by means of said base plates, two adjacent rows having their top joining plates inclined in opposite directions, in symmetrical relationship with respect to a vertical center plane located between and extending parallel to said two adjacent rows, and a series of parallel rows of wedge means, each row comprising identical vertical barrel means and having horizontal tops and inclined bottoms, an upper plate connecting said horizontal tops and a lower plate connecting said inclined bottoms, said lower plate having the same inclination as said inclined top joining plate and being mounted in sliding engagement thereupon, each of said plank-forming supporting elements resting on each of said upper plates, jacking means being provided to apply pulling or pushing forces respectively between two adjacent rows of wedge means in order to engage or disengage said wedge means between said top joining plates and said plank-forming supporting elements respectively, and corresponding rows of wedge means each resting on said inclined joining plate through the medium of a bottom plate which has a matching degree of inclination and being provided at its summit with a top plate which is substantially horizontal when the wedge rests on the row of corresponding barrels, the top plate of each wedge in turn supporting planks, in such a manner that by applying temporary pulling or pushing forces it be possible to engage or disengage said wedge means in order to respectively clamp or dismantle the corresponding row in the line of blocks.

3,184,926
REFRIGERATION SYSTEM

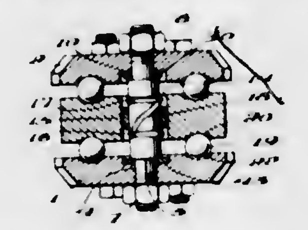
Julian H. Blake, Belmont, Calif., assignor to Ray Winther Company, South San Francisco, Calif., a corporation of California
Filed Oct. 10, 1963, Ser. No. 315,174
11 Claims. (Cl. 62—155)



1. A refrigeration system, comprising a liquid refrigerant supply line, a compressor suction line, a plurality of low temperature evaporators connected in parallel between said liquid refrigerant supply and the compressor suction line, a low stage compressor in position to receive gas from the compressor suction line, a high stage compressor, a connecting line between the low stage compressor and the high stage compressor, a high temperature suction line connected to said connecting line, a high temperature coil between said high temperature suction line and said liquid refrigerant supply line, means for simultaneously shutting off the high stage compressor and the supply to the liquid refrigerant supply line during a timed period when the low temperature evaporators are maintained in refrigeration condition whereby the low stage compressor will supply hot gaseous refrigerant in reverse flow through the high temperature coils to defrost the coils and liquefy the gas which then enters the liquid refrigerant supply line to supply liquid refrigerant to the low temperature evaporators and back to the low stage compressor to complete the cycle.

3,184,927
UNIVERSAL HOMOKINETIC JOINT

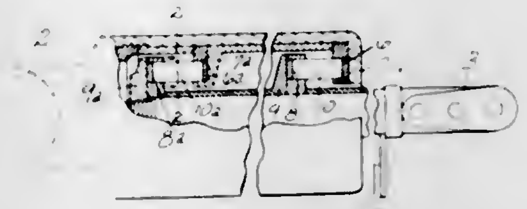
Andrea Bellomo, Strada Sant'Anna 82, Turin, Italy
Filed Aug. 2, 1963, Ser. No. 299,826
Claims priority, application Italy, Aug. 2, 1962, 15,639/62
6 Claims. (Cl. 64—21)



1. A homokinetic universal joint comprising two members, a pair of spaced plates extending from one member, a third plate extending from the other member and projecting between said spaced plates, runways in the opposed faces of said spaced plates and in the faces of said third plate, the axis of each runway in a face of one of the plates of said pair of plates intersecting the axis of a runway in the adjacent face of said third plate, the points of intersection lying symmetrically in the plane which bisects the angle between the axes of said members and which includes the point of intersection of said axes, balls located between each of said pair of plates and the adjacent faces of said third plate, each said ball engaging in two runways at the point of intersection of the axes thereof, and a coupling member positively engaging each of said pair of plates and holding said pair of plates in fixed spaced relationship, said third plate having a cylindrical bore therethrough, said coupling member having carried thereby within said bore a part with a spherical surface engaging the interior wall of the bore around its whole periphery.

3,184,928
BEARING

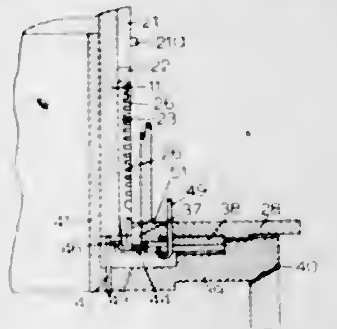
Ramesh R. Desai and Leon Wallerstein, Jr., Erie, Pa., assignors to Lord Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Apr. 29, 1963, Ser. No. 276,386
3 Claims. (Cl. 64—27)



1. A load carrying bearing having spring characteristics in at least one direction comprising a load transmitting member, a load receiving member, two pairs of axially spaced load carrying parts in opposed relation to each other, one part of each pair being fixed to one member and the other part of each pair being fixed to the other member, an annular array of strips of structural material with the individual strips extending endwise between and fixed at opposite ends to the parts of each pair, the strips lying generally in planes through the axis of the bearings, said bearings holding the members in substantially fixed relation under loads endwise of the strips and radial to the axis of the bearing while providing a torsionally resilient connection between the members.

3,184,929
CIRCULAR KNITTING MACHINES

John Maurice Reymes Reymes-Cole, 4 Enderby Road, Blaby, England
Filed Mar. 20, 1962, Ser. No. 181,018
Claims priority, application Great Britain, Mar. 20, 1961, 10,064/61
4 Claims. (Cl. 66—50)

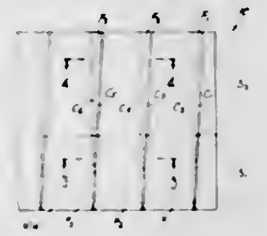


3. In a circular knitting machine of the independent needle type, the combination comprising a needle cylinder formed with tricks, needles slidable in the tricks of said cylinder, selecting instruments slidable in the tricks of the cylinder to co-operate with the needles, said instruments being provided with operating and selecting butts and with tails at their ends remote from the needles, a hump cam positioned below the cylinder for engagement with projecting tails of the selecting instruments, a slide mounting said hump cam for movement outwardly and inwardly into and out of position to engage with said tails, a fixed guideway for said slide means for moving said slide along said guideway to bring said hump cam into and out of operative position, selecting means for depressing selected ones of the instruments moved out by the hump cam back into their tricks by co-operating

with the selecting butts on the instruments, and cam means for acting on the operating butts of instruments not so depressed to raise such instruments along their tricks.

3,184,930
METHOD OF MANUFACTURING KNITTED FABRIC

August F. Breitinger, Westport, Conn., assignor to Jared Knitting Mills, Inc., New York, N.Y., a corporation of New York
Original application Dec. 28, 1961, Ser. No. 162,646. Divided and this application July 2, 1962, Ser. No. 206,896
4 Claims. (Cl. 66—200)

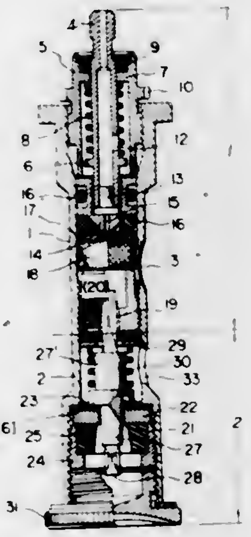


1. A method of manufacturing a knitted fabric having a plurality of longitudinally extending pleats of decreasing widths separated by a plurality of longitudinally extending folds on a knitting machine of the type having front and rear needle beds which are laterally shiftable relative to each other including the steps of knitting plural courses of a first swath including spaced first groups of wales of double-faced rib stitching providing a first set of pleat segments, spaced second groups of wales of double-faced rib stitching providing a first set of fold segments, and at least on wale of jersey stitching intermediate and joining successive pleat and fold segments of said first and second sets and providing cusp segments, forming said wales of jersey stitching on said first swath such that there is a natural tendency for said first set of fold segments to lie beneath said first set of pleat segments, shifting said front and rear beds relative to each other to provide a greater separation between adjacent and alternately formed cusp segments in a further swath, and thereafter knitting plural courses of at least one further swath including spaced first groups of wales of double-faced rib stitching providing a further set of pleat segments, spaced second groups of wales of double-faced rib stitching providing a further set of fold segments, and at least one wale of jersey stitching intermediate and joining the successive further pleat and fold segments of said further groups and providing further cusp segments, forming alternate ones of said wales of jersey stitching on said further swath such that there is a natural tendency for said further set of fold segments to lie beneath said further set of pleating segments.

3,184,931
GAS LIGHTER AND METHOD OF CARBURETION OF LIQUEFIED FUEL

Zenzaburo Yoshino, 7–1 1-chome, Toshin-cho Itabashi-ku, Tokyo, Japan
Filed June 18, 1963, Ser. No. 288,774
1 Claim. (Cl. 67—7.1)

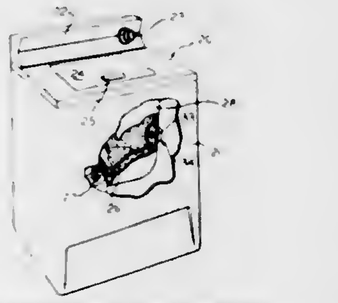
In a gas lighter a substantially cylindrical container, a fuel storage tank and first and second side ports formed in said container communicating the interior thereof with said fuel storage tank, said container including a porous metal block in communication with said first side port, an impregnant band in contact with said block disposed between said band and said first side port, a throttle valve within said cylinder and firmly embracing said band, a plunger, a passage formed in said throttle valve adjacent said band, a spring normally pressing said plunger downwardly toward said passage, normally closed valve means actuated by said plunger normally closing said passage, means whereby said plunger can be raised against the force of said spring to carburet fuel from said impregnant band and actuate said normally closed valve means to release said carbuetted fuel, a push member adjacent to and pressing on said porous block on the side thereof away from said throttle valve, the amount of fuel contained in said impregnant band being determined by the force with which said push member pushes on said porous block, said push member having a groove formed therein, a valve rod within said container adjacent said second port with a portion thereof movably disposed within said groove, an



entrance port formed in said container, an annular valve member within said container between said entrance port and said second side port, a valve portion of said valve rod, a valve formed by said valve portion and said valve member, and spring means yieldingly urging said valve rod into a normal position whereby said valve is closed and fuel to be supplied to said storage tank can enter said entrance port and open said valve by movement of said valve rod against the force of said spring means and within said groove allowing passage of fuel through said second side port.

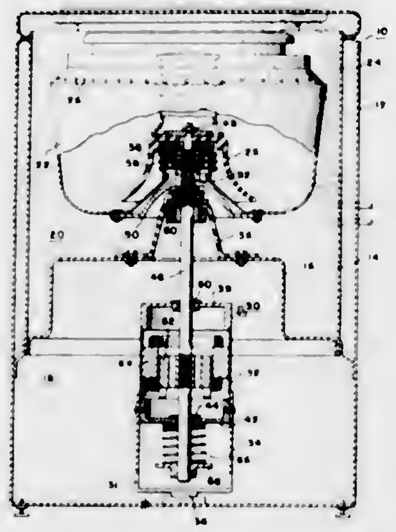
3,184,932
CLOTHES WASHING MACHINE WITH MEANS FOR CONTROLLING DURATION OF EXTRACTING CYCLE

Clifton A. Cobb and Edward E. Wiessner, St. Joseph, Mich., and James T. Williams, Riverside, Ill., assignors to Whirlpool Corporation, St. Joseph, Mich., a corporation of Delaware
Continuation of application Ser. No. 833,002, Aug. 11, 1959. This application Feb. 19, 1963, Ser. No. 264,995
13 Claims. (Cl. 68—12)



11. Centrifuging apparatus comprising
a rotatable container for retaining wet articles,
drive means for rotating said container at speeds sufficient for centrifugally extracting liquid from said articles and for discharging the extracted liquid from the container,
and control means positioned radially outwardly of said container directly in the discharge path of centrifugally extracted liquid and responsive to variations in the rate of liquid impinged thereon for controlling said drive means.

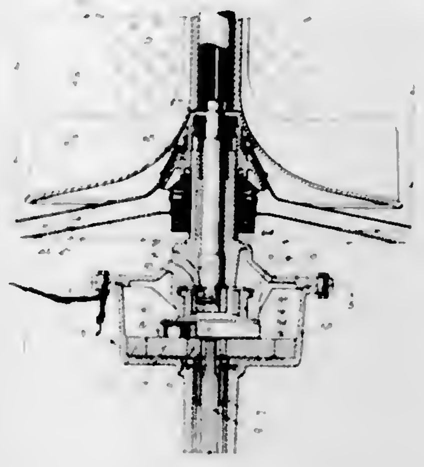
3,184,933
WASHING MACHINE WITH A RECIPROCATABLE AND ROTATABLE DRIVE MOTOR
Richard S. Gaugler, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 11, 1963, Ser. No. 264,356
7 Claims. (Cl. 68—23)



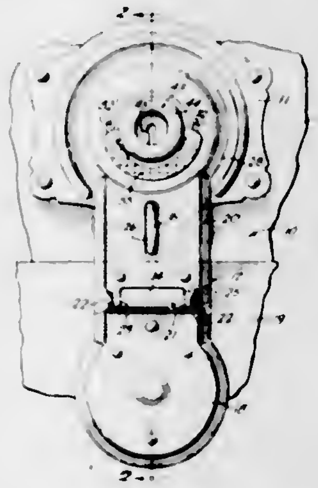
1. In a washing machine, tub means, agitating means in said tub means for agitating, means for rotatably supporting said tub means, and prime mover means for selectively rotating said tub means and for reciprocating said agitating means, said prime mover means including a stationary motor stator means, a motor rotor means rotatably drivably connected to said tub means and reciprocatingly drivably connected to said agitating means and supported in said motor stator means for rotational and axial movement relative to said motor stator means, said motor rotor means having a first position below the motor stator means and a second position at the magnetic center of said motor stator means, and spring means for biasing said motor rotor means to said first position, said motor stator means being energizable in one manner to pull said motor rotor means to said second position thereby to store energy in said spring means for return movement of said motor rotor means to said first position when said motor stator means is deenergized thereby to reciprocate said agitating means, said motor stator means being energizable in another manner to rotate said motor rotor means in said second position thereby to rotate said tub means, and means for periodically energizing said motor stator means in said one manner to facilitate the continuous reciprocation of said agitating means.

3,184,934
CLOTHES WASHING MACHINE HAVING A CYCLOIDAL GEAR CASE
Thomas R. Smith, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Aug. 13, 1962, Ser. No. 216,667
4 Claims. (Cl. 68—133)

1. In a device for cleaning fabrics, the combination comprising: a tub member for containing a body of fluid and fabrics to be cleaned, agitator means in said tub member, means for driving said agitator means with relatively high-amplitude, low-frequency undulations in said body of fluid, and means for superimposing on said high-amplitude, low-frequency undulations relatively low-amplitude, high-frequency pulsations, said means for driving said agitator means with undulations and pulsations including a power shaft member, means for rotating said power shaft member, an agitator shaft member and transmission means including in a housing member, an eccentric member drivably connected to said power shaft member, an annular reaction plate member secured to said housing and having an engagement surface on the inner circumference thereof, a cam plate member eccentrically driven by said eccentric member and having an outer circumference smaller than the inner circumference of said reaction plate member and disposed for engagement therewith an eccentric drive member connected to said cam plate member, and means connecting said eccentric drive member and said agitator shaft member whereby movement of said eccentric drive member effects said undulations and pulsations of said agitator shaft member.



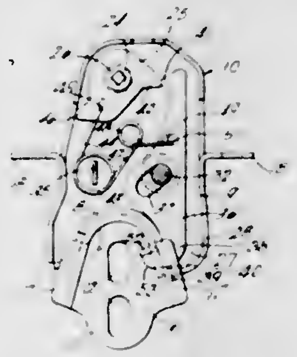
3,184,935
TRUNK LOCK
Wallace E. Atkinson, Petersburg, Va., assignor to Long Manufacturing Company Inc., Petersburg, Va., a corporation of Virginia
Filed Oct. 1, 1963, Ser. No. 312,972
3 Claims. (Cl. 70—75)



1. A lock for trunks or the like, comprising a latching plate for attachment to one of the relatively moveable parts of the trunk having a circular keeper opening therein, a hasp assembly having an attachment plate to be affixed to the other of the relatively moveable parts of the trunk, a hasp member hingedly connected to said attachment plate having a free end portion adapted to overlie parts of the latching plate when in mated position, a hollow cylindrical bolt housing of cup-shaped configuration fixed to and projecting rearwardly of said hasp member to nest in said keeper opening when said hasp member and latching plate assume said mated position, said bolt housing including a cylindrical wall having a pair of diametrically opposite bolt openings therein, a pair of latching bolt members supported in said bolt housing for movement along axes paralleling a diameter of the bolt housing and continuously spring biased to project end portions thereof through said bolt openings to automatically interlock with shoulder portions surrounding said keeper opening in said latching plate when projected into the same, rotatable actuator means including a cylindrical portion journaled on said hasp member and rotatable about a selected axis adapted to be aligned with the

axis of said keeper opening when the hasp member is in mated position having means intercoupled with said latching bolt members to withdraw said bolt members to an unlocked position upon rotation of said actuator means through a selected arc, said cylindrical portion having a handle portion located externally of the hasp member to be grasped and manipulated by the user for manual rotation of the actuator means, and a locking bar slidably supported by said actuator means against rotation relative thereto within said bolt housing for reciprocative movement diametrically of the bolt housing and operable by a key to assume a position projecting an end portion of said locking bar into one of said bolt openings for interlocking said actuator means with said hasp member against relative rotation to prevent manipulation forcing said bolt members to unlatched position.

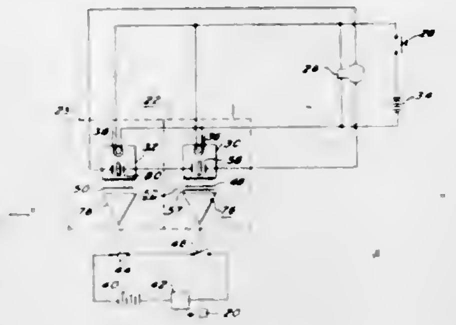
3,184,936
AUTOMOBILE REAR DECK LOCK
Joseph R. Kirk, Rockford, Ill., assignor to Atwood Vacuum Machine Company, Rockford, Ill., a corporation of Illinois
Filed Nov. 14, 1962, Ser. No. 237,483
5 Claims. (Cl. 70—151)



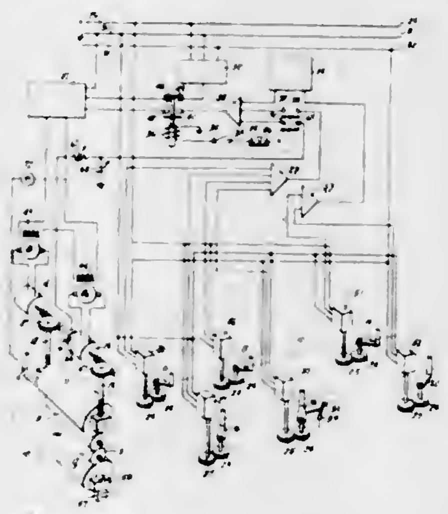
1. A latch structure of the character described comprising an upright support, an upright elongated latch element slidably pivoted intermediate its ends on said support by means of a pivot pin on the support entered in an elongated inclined slot provided in said latch element extending transversely thereof so as to allow compound movement of said latch element, namely, laterally and upwardly and return, the lower end of said latch element having a keeper-engaging projection extending laterally therefrom in one direction relative to said pivot, the projection having an outer edge with acute angle inclination oppositely with respect to said slot, the upper end of said latch element having a generally V-shaped lateral projection in the same direction as said keeper-engaging projection, a rotary locking pawl having a narrow lateral projection extending in the opposite direction toward the last-mentioned lateral projection and by blocking engagement of the outer end of the pawl projection with the outer end of the latch projection holding said latch element in locked position, said pawl being normally disposed in blocking relation to said latch element but being rotatable to a retracted position withdrawing its projection from blocking relationship to the lateral projection on said latch element, and spring means urging said locking pawl to turn normally to locked position and urging said latch element endwise and to turn so as to engage the keeper-engaging projection under the keeper.

3,184,937
VOICE CONTROLLED LOCK MECHANISM
Irving H. Sher, Philadelphia, Pa., assignor to Institute for Scientific Information, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 27, 1963, Ser. No. 268,294
9 Claims. (Cl. 70—277)

1. A voice controlled lock mechanism comprising audio spectral analyzing means, pickup means for transmitting audio signals to said audio spectral analyzing means, said audio spectral analyzing means being coded to respond to a specific spectrum of audio frequencies from said pickup means, sensing means, said sensing means being operative from said audio spectral analyzing means upon receipt of the predetermined spectrum of audio frequencies from said pickup means, a lock mechanism, said sensing means being operative to control said lock mechanism in accordance with the output of said audio spectral analyzing means.



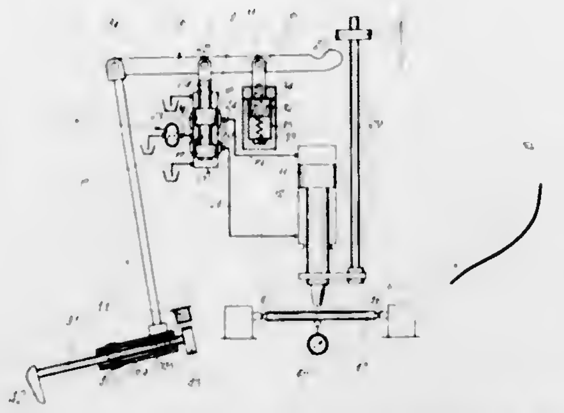
3,184,938
METHODS AND APPARATUS FOR AUTOMATICALLY THREADING STRIP ROLLING MILLS
George E. Terwilliger, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 28, 1961, Ser. No. 155,408
18 Claims. (Cl. 72—11)



1. The method of automatically threading a rolling mill in which a strip of material is subjected to pressure at displaced points in its travel through the mill comprising:
- measuring the curvature of the head end of the strip by contacting an edge of the strip adjacent the head end at a pair of predetermined points after such head end has passed a pressure point and
- using such measurement to vary the pressure across the width of the strip at the pressure point to produce a horizontal bending of the head end in a direction to guide it toward the center line of the mill.

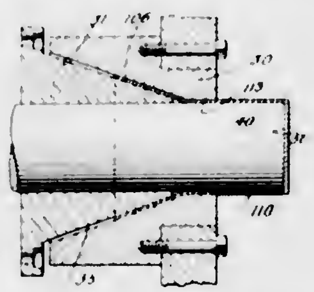
3. Apparatus for automatically threading a rolling mill of the type in which a strip of material is subjected to pressure at successive points as the material passes through the mill comprising:
- means for measuring the displacement from a desired position of the edge of the head end of a strip of material at a plurality of points after it has travelled a predetermined distance past a pressure point, and
- means responsive to said measuring means for varying the pressure on the material at the point to control the horizontal position of the head end of the material.

3,184,939
HYDRAULIC STRAIGHTENING PRESS
Hans-Georg Eitel, Wikingerstrasse 13, Karlsruhe, Baden, Germany
Filed Nov. 13, 1961, Ser. No. 151,982
Claims priority, application Germany, Nov. 16, 1960, E 20,189
8 Claims. (Cl. 72—22)



1. In a straightening press having a straightening ram, the combination for controlling the length of the stroke of the ram: first means moving with said ram; second means movable in a first direction and a second opposite direction for engagement at a first part thereof by said first means during at least a part of the stroke of the ram to move said second means in said second direction; movable first pivot means located at a second part of said second means for permitting pivotal movement in said first and second directions thereto; third means pivotally connected to said second means intermediate of said first and second parts and movable in said first and second directions when said second means pivots about said first pivot; fourth means including stop means for limiting the movement of said third means in said first direction and means biasing said third means against said stop means; fifth means, the position of which controls said ram, pivotally connected to said second means intermediate of said second part and said third means, whereby the pivoting of said second means controls the position of said fifth means; and sixth means for determining any one of a plurality of fixed positions for said movable first pivot means.

3,184,940
METAL WORKING
Claus L. Sporck, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed Mar. 9, 1959, Ser. No. 798,033
5 Claims. (Cl. 72—68)



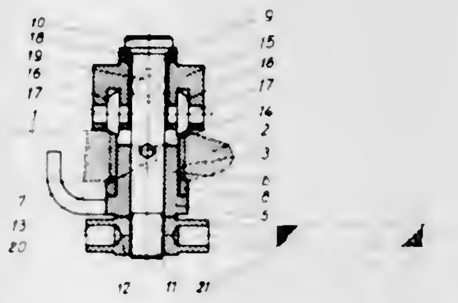
1. The method of forming an article of manufacture having a tubular section comprising the steps:

spin forming a blank against a rotating spindle by forcing strata thereof to assume positions which are generally parallel to the rotational axis of the spindle and extending in helix-like form along said axis to form the same into a conical shaped part, the major diameter of the part being given by $\sqrt{4dH \text{ sine } \alpha+d^2}$; and

exerting on said conical shaped part compression forces acting around its axis and tensile forces acting along its axis to gradually form the conical part into tubular shape and thereby form said tubular section and exerting said forces so as to maintain the included angle in the unworked portion of the part and to cause the diameter of the tubular section to be the same as the minor diameter of said conical-shaped part, the variables of said formula being defined as:

d=the minor diameter of said conical shaped part;
H=the height or length of said tubular shape; and
$\alpha=\frac{1}{2}$ the included angle of said conical shaped part.

3,184,941
APPARATUS FOR FASTENING A BUSHING IN AN EYE-HOLE OF A WAGON TONGUE
Friedrich Schneider, Werderstrasse 8, Heidelberg, Germany
Original application Mar. 14, 1960, Ser. No. 14,732. Divided and this application Jan. 22, 1962, Ser. No. 167,717
1 Claim. (Cl. 72—126)



An apparatus for fastening a bushing in an eye-hole of a wagon tongue comprising

a hollow guide disposed in and engaging the inner face of a bushing to be fastened,

means securing said guide against rotation,

a tapered ring mounted on said guide and engaging one end face of said bushing,

a shaft having a head portion extending through said guide from the side opposite said tapered ring and having at the end disposed adjacent said tapered ring a threaded portion,

an adjusting nut threadedly secured to said threaded portion of said shaft,

said guide having at its end disposed in said bushing an axial slot extending from its inner face,

said shaft having a safety bolt projecting radially from its outer surface and received in said axial slot of said guide, thus permitting

a relative axial movement between said shaft and said bushing, yet also preventing a rotating movement of said shaft,

a support rotatably mounted on said shaft between said head portion and said wagon tongue,

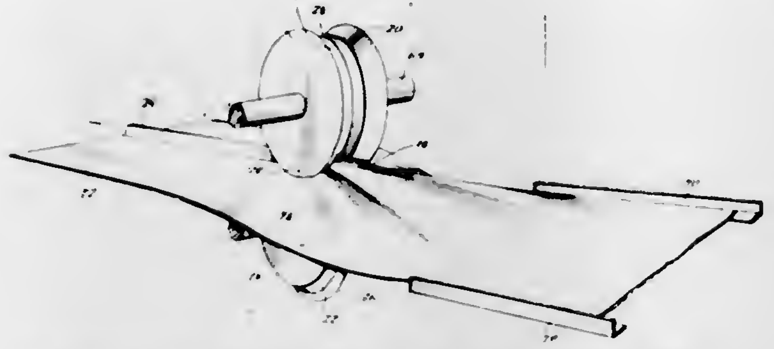
a plurality of shafts disposed radially relative to said shaft and mounted in said support,

a pressure roller secured to and rotatable with each of said shafts and engaging one side of said bushing, and

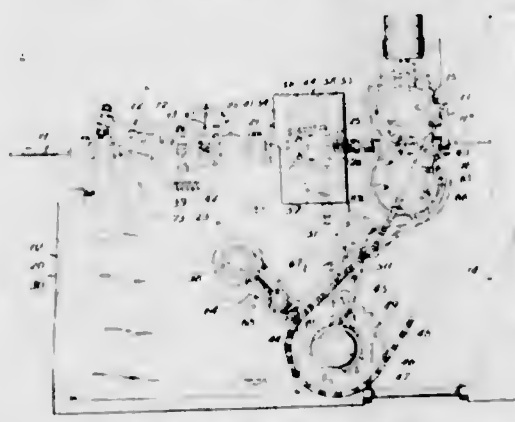
means for turning said support about said shaft simultaneously rotating said pressure rollers, so that one edge portion of said bushing is secured to said eye-hole of said wagon tongue.

3,184,942
MACHINE AND METHOD FOR SHAPING SHEET METAL
William Cookson, Fareham, England, assignor to Cookson Sheet Metal Developments Limited, London, England
Filed May 26, 1960, Ser. No. 32,014
Claims priority, application Great Britain, June 2, 1959, 18,842/59
5 Claims. (Cl. 72—179)

1. A machine for the continuous formation of a relatively deep longitudinal rib in a metal sheet, the width of which sheet is substantially greater than the width of the portion of the sheet from which the rib is to be formed, said machine comprising a pair of rib forming rolls consisting of a lower male roll and an upper female roll disposed in a vertical plane to engage the sheet intermediate the lateral edges thereof, means in advance of and in spaced relation to the rolls for supporting the sheet at a level substantially lower than the nip of the rolls, whereby the sheet when supported by said supporting means and with the leading end of the sheet seating on the crest of the lower male roll will have its lateral side portions unsupported and progressively transformed into a shape having an inverted valley cross-section, the apex portion of said valley cross-section providing the portion of the sheet from which the rib is formed as the sheet passes through the rolls.



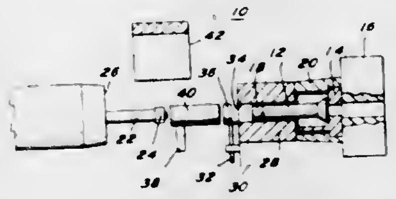
3,184,943
WIRE SHAPING AND DRAWING
Ben F. Ware, Euclid, Ohio, assignor to The Ajax Manufacturing Company, Euclid, Ohio, a corporation of Ohio
Filed Sept. 6, 1960, Ser. No. 54,260
12 Claims. (Cl. 72—206)



1. In wire drawing apparatus, the combination with a reciprocable slide carrying a drawing die and movable by swingable lever means through a drawing stroke in a direction along a wire held against backward movement by a grip device, of a flattening device movable along the wire by said slide and comprising co-operating pressure rolls effective on the wire to flatten the same, said flattening device being located on the entry side of said drawing die for flattening the wire prior to the drawing thereof, said die having an orifice defined in part by a flat portion on the die to co-operate with the flat portion formed on the wire by said rolls.

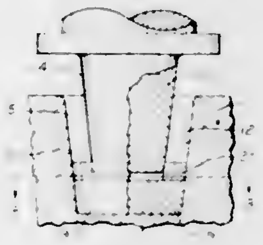
11. The method of shaping and drawing wire by cold working for direct feeding to a fabricating machine substantially without twist; comprising the steps of intermittently advancing the wire in a forward direction toward the fabricating machine and along a path of feed movement extending in succession through a shaping means, a drawing means and a gripping means located in a relatively closely spaced relation along said path; gripping a portion of the wire which has already been shaped and drawn to prevent backward movement of the wire; and shaping the wire as to cross-section, and drawing the shaped wire to a similar but smaller cross-section, by pushing the shaping means and the drawing means conjointly and in a tandem relation over portions of the wire, which are spaced in the backward direction from the gripping means, while the wire is being thus held from backward movement by said gripping means.

3,184,944
EXTRUSION PRESS
Guenter W. Sibler, Media, Pa., assignor to Baldwin-Lima Hamilton Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 18, 1963, Ser. No. 309,679
16 Claims. (Cl. 72—255)



1. Extrusion apparatus comprising a horizontally disposed stationary stem, a die mounted on one end of said stationary stem, said stationary stem having a passage therethrough axially aligned with said die, a container having a passage therethrough mounted for axial movement from a closed position wherein said stationary stem is within said container passage and an open position when said stationary stem is axially aligned with and spaced from said container passage, an extrusion press stem axially aligned with said container passage and on the side of said container opposite from said stationary stem when said container is in the open position, billet loading means for loading billets to a position axially aligned with and spaced between said extrusion press stem and said container, and a selectively operative rigid spacer, said rigid spacer being selectively placeable between said extrusion press stem and said container, said spacer providing a one-way mechanical linkage between said extrusion press stem and said container, said extrusion press stem having an extrusion portion thereof fitting within said container passage, said spacer having a passage therethrough for allowing said extrusion portion to pass therethrough.

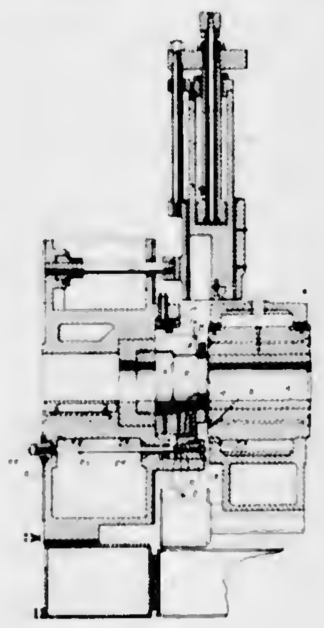
3,184,945
METHOD AND APPARATUS FOR HOT PRESSURE FORMING AND BACK EXTRUDING
Michael B. Hornak, South Euclid, and John G. Klein, Euclid, Ohio, assignors to The Brush Beryllium Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 29, 1962, Ser. No. 183,580
6 Claims. (Cl. 72—256)



1. An apparatus for hot forming metal billets into preselected shapes and comprising a female die member having a rigid imperforate base for supporting a billet and a peripheral wall extending away from the base and defining therewith an open end die cavity, a pressure ram member, means supporting said members for movement relative toward and away from each other along a predetermined path, said ram member having a peripheral wall and, upon said relative movement of the members toward each other, being receivable endwise in said cavity through the open end of the cavity with the peripheral wall of the ram member spaced from the peripheral wall of the cavity a substantial amount more than operating clearance for receiving metal from a heated billet in the cavity when

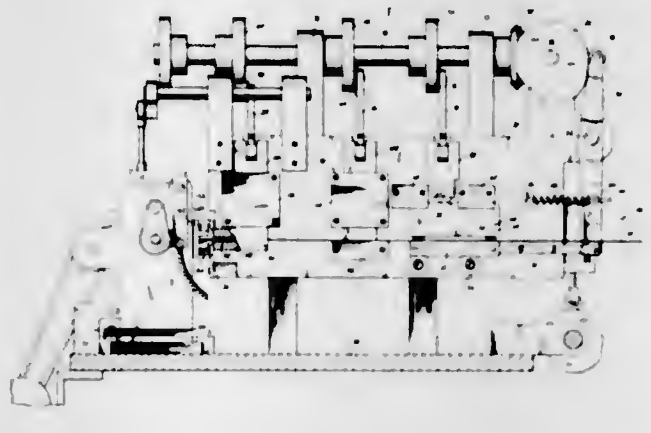
the billet is placed under pressure in the cavity by movement of the ram toward fully inserted position, a metal restrainer disposed initially wholly within the cavity and having at one end an outer face facing away from the base and toward the open end of the cavity, and spaced from the base and open end, and at the other end an inner face facing toward, and spaced from, the base and open end so that at least a portion of the inner face can overlie that peripheral margin of a billet in, and facing toward the open end of, the cavity when the billet is being formed in the cavity by the ram member, said restrainer substantially bridging the space between the peripheral walls before the ram is fully inserted in the cavity, said restrainer being capable, when heated to the temperature of the billet to be formed, of deformation in a direction away from the base by pressure of billet metal flowing in the cavity due to pressure exerted on the metal by the ram member, constraining means on at least one of the members and positively engageable with part of the restrainer, upon said relative movement of the ram member endwise in the cavity toward the base for pressure forming the billet, for restraining bodily movement of the restrainer and limiting movement of said overlying portion of the restrainer in a direction away from said base to movement due to said deformation of the restrainer and to a sufficient distance to permit displacement of part of the heated billet metal from the cavity into part of said space, by the pressure of the metal of the billet being displaced by the ram member when the ram member is forced under pressure fully into the cavity.

3,184,946
DIE SLIDE GIB ADJUSTMENT ON AN EXTRUSION PRESS
William L. Govan, Brighton, N.Y., assignor to Farrel Corporation, a corporation of Connecticut
Filed Jan. 29, 1962, Ser. No. 169,308
1 Claim. (Cl. 72—263)



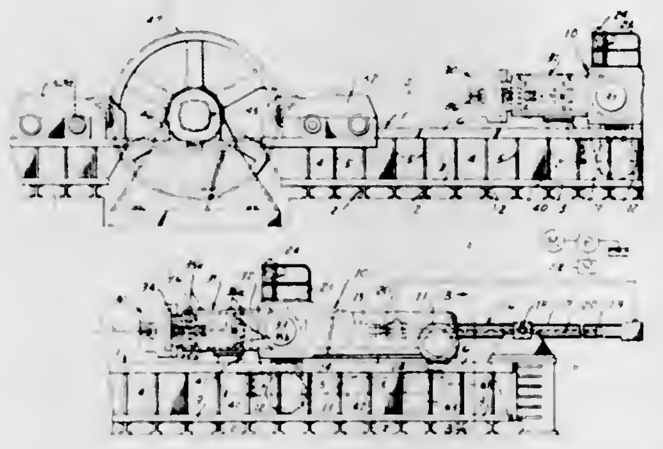
A horizontal hydraulic extrusion press having an end platen with a die slide at one end thereof, an upper and lower gib for supporting said die slide at said one end, a wedge assembly for adjustably supporting said lower gib on said one end of said end platen including a plug having a flattened upper surface inclined about a horizontal axis transverse to the press axis toward the tail end of the press, a flattened lower surface on said lower gib inclined to mate with the inclined surface of the plug, and means including a rod extending between said plug at said one end of said end platen and a round nut at the other end of said end platen, said rod attached at one end to said plug and threadably engaged at the other end by said round nut, which is rotatably journaled and axially restrained at the said other end of said end platen for moving said plug in and out along the direction of the press axis to raise and lower said lower gib and thereby said die slide, said rod extending through said other end of said end platen so as to enable said plug to be horizontally adjusted from outside of said extrusion press.

3,184,947
STUD FORMING AND TRANSFER MECHANISMS
George B. Erskine and Stanley J. Gartner, Emporium, Pa., assignors to Emporium Specialties Co., Inc., Emporium, Pa., a corporation of Pennsylvania
Original application Oct. 3, 1957, Ser. No. 687,913, now Patent No. 2,951,933, dated Sept. 6, 1960. Divided and this application Jan. 22, 1960, Ser. No. 4,119
1 Claim. (Cl. 72—294)



In a machine for the manufacture of studded electrodes, a stud-forming and transfer mechanism for forming successive studs from a length of wire and for transferring said studs to a swaging position, said mechanism comprising a feeder, a clamping device and a cutting die arranged along a wire feed path in succession, said feeder including feed jaws arranged to engage said wire and actuating means for moving said feed jaws through a forward stroke to advance a prescribed section of said wire through said cutting die, said feed jaws including a pair of jaws mounted for simultaneous movement along the wire feed path and for rotative movement toward and away from each other, roller means mounting said pair of feed jaws for movement along said wire feed path, spring means interposed between the feed jaws biasing same into an opened position, an operating member in roller engagement with one of said feed jaws for wire-engaging movement of same toward the other of said feed jaws and for allowing feeding movement of said feed jaws along the wire feed path, and feed stroke means operatively connected to at least one of said feed jaws for advancing and retracting same along said wire feed path, said clamping device including clamping jaws arranged to engage said wire in a clamping position and jaw-operating means for bringing said clamping devices into said clamping position after each forward feeding stroke of said feeding jaws, stud-transfer means movable transversely of said wire feed path to said swaging position and including transfer jaws mounted for movement toward and away from each other and for reciprocal movement along a transfer path transverse to said wire feed path and positioned to receive said prescribed section of wire, and operating means for bringing said transfer jaws in gripping engagement with said prescribed section of wire, a stationary cutter positioned to cooperate with said cutting die, and actuating means operable in timed relation to the operating means for said clamping device and said stud-transfer means for moving said cutting die relative to said stationary cutter to cut off said prescribed section of wire when supported by said transfer jaws, to move said feed jaws into feeding engagement with a length of wire and to activate said feed stroke means to move said jaws through a feeding stroke along said wire feed path, and means at said swaging position for acting on said studs at the cut ends thereof to swage same.

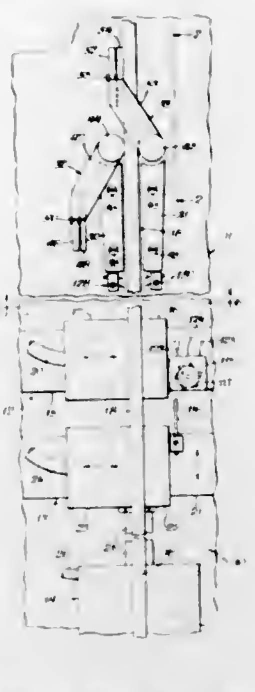
3,184,948
HEAVY DUTY STRETCH FORMING MACHINE
Cyril J. Bath, Chagrin Falls, Ohio, assignor to The Cyril Bath Company, Solon, Ohio, a corporation of Ohio
Filed Oct. 16, 1962, Ser. No. 230,930
3 Claims. (Cl. 72—297)



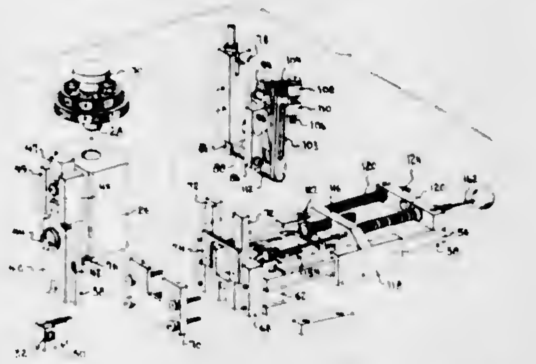
1. A stretch forming machine comprising an elongated frame, an upwardly facing trackway on the frame, a die support mounted on the frame at one end of the trackway for rotation about a horizontal axis extending transversely of the length of the trackway, a power operated gripper carried by the die support for gripping one end of a length of stock which is to be stretched about a die on the support, a carriage mounted on the trackway for movement therealong endwise thereof, a stretch head supporting arm mounted on the carriage for rocking about a horizontal axis parallel to the rotational axis of the support, said arm having a portion extending from the rocking axis of the arm endwise of the trackway toward the support, a stock gripping head carried on said portion of the arm in spaced relation to the rocking axis and adapted to grip the other end of the length of stock for applying tension to the stock endwise of the stock by concurrent rotation of the support and controlled travel of the carriage along the trackway, driving power means connected to the support for rotating the support, stretch forming power means connected to the carriage for controlling the movement of the carriage along the trackway so as to tension the stock into a range above its elastic limit as the stock is wrapped onto a die on the support, counterbalance means connected to the arm and operative to move the arm and thereby the stretch head upwardly away from the track to a predetermined position and to hold the head yieldably in said predetermined position, and said counterbalance means being adjustable for changing the counterbalancing force applied to the arm.

3,184,949
AUTOMATIC TUBE BENDER
Raymond G. Olson, Niles, Ill., assignor to Ray Laboratories, Inc., a corporation of Illinois
Filed Oct. 31, 1962, Ser. No. 234,405
15 Claims. (Cl. 72—307)

1. In a tube bending arrangement, a pair of tube bending arms, means rotatively carrying said bending arms for cooperation with a length of tubing, means for substantially simultaneously rotating said tube bending arms to bend said tubing with one of said arms and to position the other of said arms preparatory to bending when said pair of arms are rotated in one direction and to bend said tubing with said other of said arms and to position said one of said arms preparatory to bending when said pair of arms are rotated in the opposite direction.

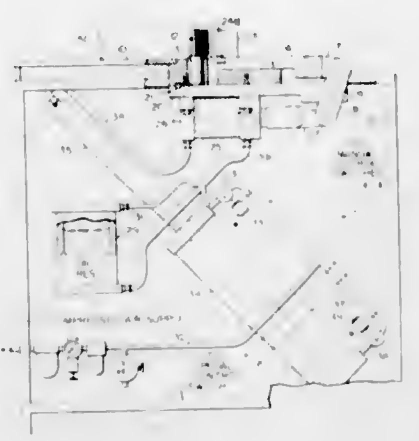


3,184,950
CONNECTOR FEEDING DEVICE
Gilbert C. Sitz, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 2, 1961, Ser. No. 142,270
2 Claims. (Cl. 72—331)



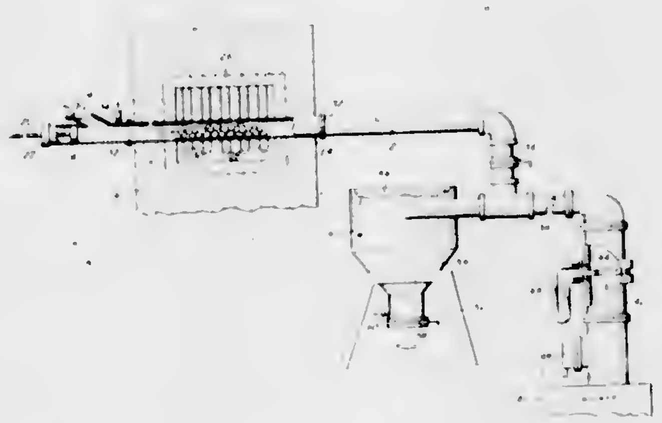
1. An electrical terminal applicator comprising, a frame, a reciprocable ram in said frame, a movable crimping die mounted on said ram, a fixed crimping die mounted on said frame for cooperation with said movable crimping die, a feed platform adjustably secured to said frame for relative adjusting movement towards and away from said dies, a feed path on said platform for terminals in strip form, a feed slide on said platform, means acting between said ram and said slide for reciprocating said slide, a feed finger pivotally mounted on said slide, said feed finger being yieldable about its pivotal axis when moving in the non-feeding direction of said strip and being non-yieldable about its pivotal axis when moving in the feeding direction of said strip, a shear plate on said feed platform, said plate being disposed adjacent to said dies and being reciprocable transversely of said feed path to shear the leading terminal of said strip therefrom, a coupling betwen said shear plate and said ram, said coupling permitting movement of said plate relative to said ram upon adjustment of said platform, a resilient stop adjustably mounted on said platform between said shear plate and said feed slide, said stop being engageable with periodic shoulders on said strip and permitting movement of said strip in its feeding direction while preventing movement in the reverse direction, said applicator being adjustable to accept varying lengths of terminals upon adjustment of the position of said platform, upon adjustment of the position of said stop relative to the position of said shear plate, and upon adjustment of the stroke of said slide.

3,184,951
POWER-OPERATED BENDING MACHINE
Clarence Gray Hilton, 269 Maple St., Lynn, Mass.
Filed Oct. 24, 1961, Ser. No. 147,321
3 Claims. (Cl. 72—453)



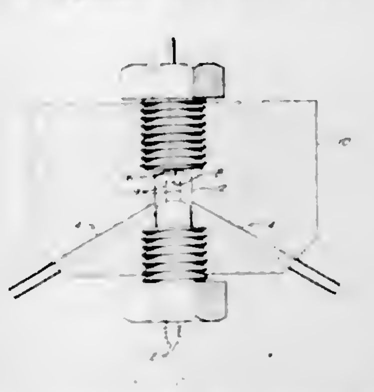
1. In a fluid pressure operated bending machine, means for actuating a bending tool comprising a double acting cylinder, an oil reservoir connected to the tool-retracting end thereof, a compressed air cylinder connected to the reservoir for transferring oil therefrom under pressure to the said tool-retracting end, and a high pressure cylinder operated by the compressed air cylinder for transferring oil under high pressure to the tool advancing end of said double-acting cylinder, whereby the said cylinder is operated in both directions under oil pressure.

3,184,952
METHOD AND APPARATUS FOR DETERMINING COKE STRENGTH
Kenneth K. Humphreys, Wilkinsburg, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed July 14, 1961, Ser. No. 124,072
4 Claims. (Cl. 73—12)



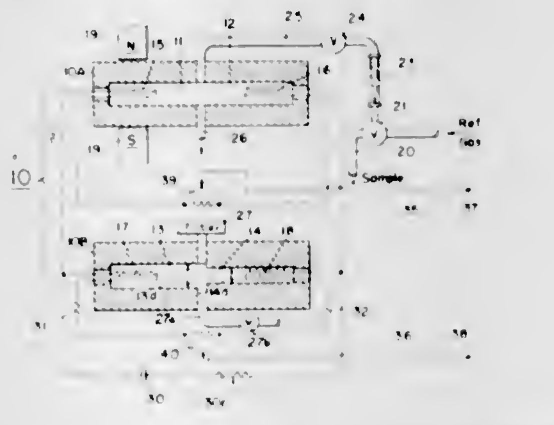
1. A method of testing a charge of particles having a predetermined minimum starting size substantially greater than the size of particles when disintegrated to a powder, to determine their resistance to being abraded to smaller particles, comprising placing a charge of particles of at least said minimum starting size in a horizontally disposed cylinder, applying heat to the cylinder, then, after the charge has been heated to a predetermined temperature, pushing a piston through said cylinder and quickly displacing the charge therefrom with minor abrasion thereto, immediately injecting the charge into an impact chamber in a stream of compressed gas and controlling the force exerted by said gas to abrade the charge therein to a limited degree, but insufficient to effect impact-disintegration thereof to a powder, and finally collecting the abraded charge.

3,184,953
GAS CHROMATOGRAPHIC APPARATUS
James A. Petrocelli, North Versailles Township, Allegheny County, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 27, 1961, Ser. No. 162,536
14 Claims. (Cl. 73—23.1)



1. A thermal conductivity cell, comprising a heat absorbing body enclosing a gas detection chamber therein, said chamber being provided with a capillary tube gas inlet having an inside diameter of about 0.006 to 0.055 inch, said capillary tube gas inlet also having a discharge orifice adapted to discharge into said chamber, said capillary tube gas inlet being adapted to form a direct capillary connection between said gas detection chamber and the discharge end of a capillary chromatographic column, said gas detection chamber also being provided with a gas outlet spaced apart from the discharge orifice of said capillary tube gas inlet, a thermistor bead electrical resistance element within the gas detection chamber and spaced apart from the walls thereof, at least a major portion of said element being positioned within the included angle of the zone of discharge from the discharge orifice of the capillary tube gas inlet, said resistance element being spaced apart from said discharge orifice by a small distance, about 1 to 12 times the diameter of said capillary tube gas inlet, said small distance being effective to keep small the diffusion of gaseous materials discharged from said orifice away from the axis of flow prior to contact with said resistance element.

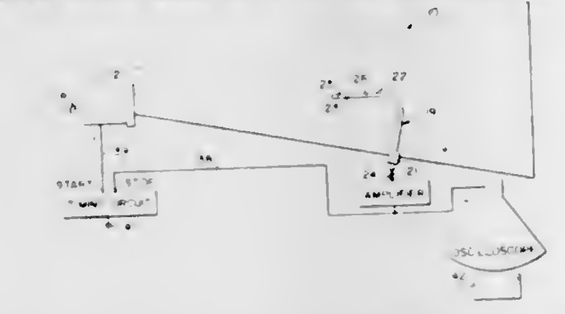
3,184,954
GAS ANALYZING SYSTEMS
Joseph F. Klein, Philadelphia, Pa., assignor to Leeds and Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 17, 1961, Ser. No. 103,354
14 Claims. (Cl. 73—27)



4. In a gas analyzer for paramagnetic gases of the type including

a thermal conductivity measuring cell,
a first thermal conductivity reference cell,
each of said cells including therein a temperature-responsive element connected in adjacent arms of a Wheatstone bridge,
each of said cells having the same unobstructed gas space about its said element,
said cells being in communication to receive a sample of a paramagnetic gas, which changes in pressure in response to changes in ambient pressure,
said measuring cell being disposed in a magnetic field, the improvement comprising
compensating means for rendering the output of said bridge independent of the effect of changes in ambient pressure upon a paramagnetic gas in said measuring cell including
a thermal conductivity compensating cell exposed to said ambient pressure changes and including a temperature-responsive element in a third arm of said bridge adjacent the arm including said measuring cell and having an unobstructed gas space about said last-named element for development of thermal convection currents which change in magnitude with change in ambient pressure upon said compensating cell,
a second reference cell exposed to said ambient pressure changes and including a temperature-responsive resistor in the fourth arm of said bridge having a free space of volume materially less than that of said compensating cell, and
resistors in said third and fourth arms of said bridge for decreasing the current through said elements in said third and fourth arms of said bridge to a value which for said gas space about said elements in said third and fourth arms of said bridge modifies the output of said bridge to compensate for the effect on the output of said bridge of a changing ambient pressure on said measuring cell.

3,184,955
EXPLOSIVE DRIVEN CONICAL SHOCK TUBE
William S. Filler, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 27, 1960, Ser. No. 78,794
10 Claims. (Cl. 73—35)
(Granted under Title 35, U.S. Code (1952), sec. 266)

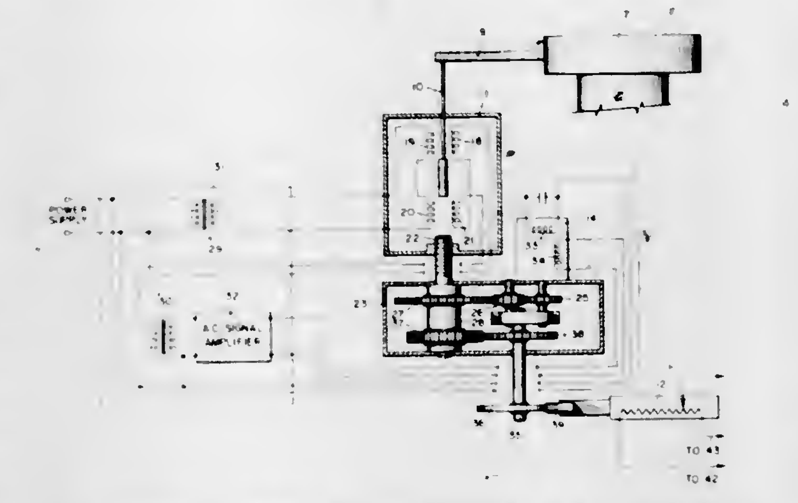


1. Test apparatus for greatly amplifying the blast effect of a small high explosive charge comprising a rigid frustoconical tube for amplifying a shock wave, a firing block having a firing chamber therein in communication interiorly with said tube and disposed in abutting relationship with the small end thereof, and a small solid high explosive detonating charge disposed within said chamber for generating a shock wave upon detonation and having a pair of firing leads connected thereto and extending through said block, and a piezo-electrical air blast pressure gage disposed within said tube at a selected distance from said charge for sensing the blast effect from said high explosive detonating charge.

3,184,956
FUEL RATINGS
Oliver G. Lewis, Westfield, and Herbert R. Jacobus, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 31, 1962, Ser. No. 248,436
3 Claims. (Cl. 73—35)

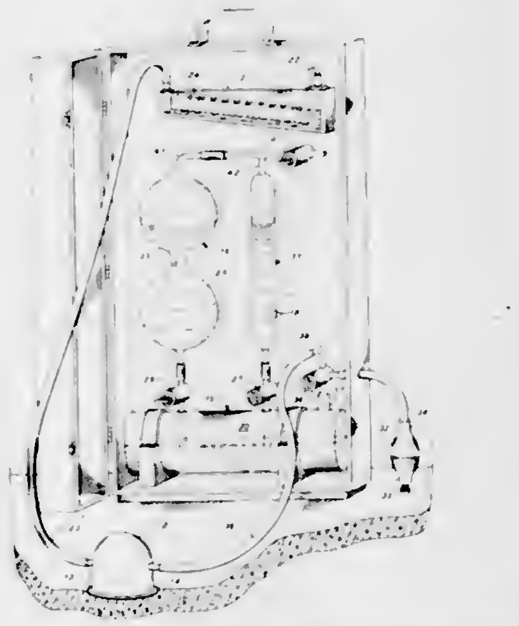
1. In a detonation meter associated with a knock motor of variable compression ratio, said detonation meter having means for converting normal and abnormal pressure variations within said knock motor into electrical signals, means for eliminating electrical signals below a fixed predetermined level, and means for measuring electrical signals above said fixed predetermined level, the improvement which comprises in combination:

(*a*) a differential transformer having multiple coils and a core adjustable in and out of a null position by physical movement,
(*b*) means for automatically moving said core out of said null position when the compression ratio of said knock motor is changed,



(*c*) automatic means for establishing a new null position for said core and said transformer when said core is moved out of said null position,
(*d*) means for automatically changing said predetermined level in response to changes in said null position whereby changing the compression ratio of said knock motor automatically changes the level for eliminating signals in a predetermined variable manner thus eliminating electrical signals corresponding to normal pressure variations within said knock motor.

3,184,957
ASPHALT PERMEABILITY MEASUREMENT APPARATUS
William H. Ellis, El Segundo, and Robert J. Schmidt, El Cerrito, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed June 28, 1961, Ser. No. 120,358
2 Claims. (Cl. 73—38)

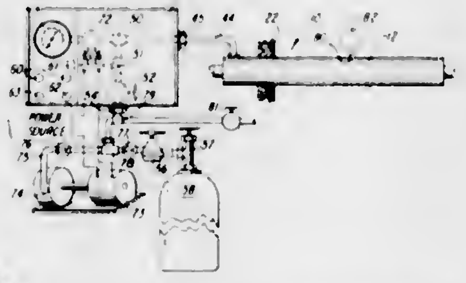


1. For use in an asphalt concrete permeability tester wherein a given air pressure differential is applied to a limited area of said concrete and the air flow rate is

measured, a cup member including a flanged member around the rim of its open end, said flanged member including a pair of annular sealing gaskets to define an annular space for retention of a sealing material therebetween, passageways formed in the body portion of said cup member connecting with said annular space between said gaskets, means for supplying sealing material to said passageways and a pair of air ports formed in said cup member, said ports including pipe nipples connectable thereto for attachment of flexible hoses to said permeability measuring tester.

3,184,958
CONDUIT SYSTEM

Burton E. Eaton, Deerfield, Ill., assignor to Midwesco-Enterprise, Inc., a corporation of Illinois
Filed Mar. 11, 1963, Ser. No. 264,250
2 Claims. (Cl. 73—40.5)



2. In a conduit system, a conduit section adapted to be installed in the ground comprising a first inner pipe for conducting a fluid and a second outer pipe concentric to and spaced from said inner pipe so as to define an annular space therebetween, there being undesirable heat transfer between the fluid in said inner pipe and said outer pipe, means for sealing a predetermined portion of said annular space to define a closed compartment, means for introducing pressurized inert, low-moisture content gas into said closed compartment to minimize said heat transfer and to maintain a dry atmosphere, thereby reducing oxidation within said closed compartment, means for sensing the pressure loss within the sealed compartment to detect a leak, and pump means operative in response to a predetermined pressure loss in said closed compartment for pumping a pressurized fluid into said closed compartment at a pressure at least equal to the pressure from the ground water adjacent said conduit section to keep said closed compartment free from ground water in the event there is a leak in said outer pipe.

3,184,959
VELOCITY OF SOUND METER

Fred J. Suellentrop, Mountain View, Alvin E. Brown, Sunnyvale, and Eric Rule, Palo Alto, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Apr. 3, 1961, Ser. No. 100,185
1 Claim. (Cl. 73—53)

A velocity of sound measuring device for fluids comprising:

(*a*) a substantially U-shaped frame including an elongated member forming the cross bar of said U and a pair of substantially parallel transducer mounts having apertures therethrough depending from said elongated member forming the legs of said U whereby fluid substantially surrounds said mounts when said device is immersed in a liquid,

(*b*) a first transducer mounted in one of said transducer mount apertures and a second transducer mounted in the other of said transducer mount apertures

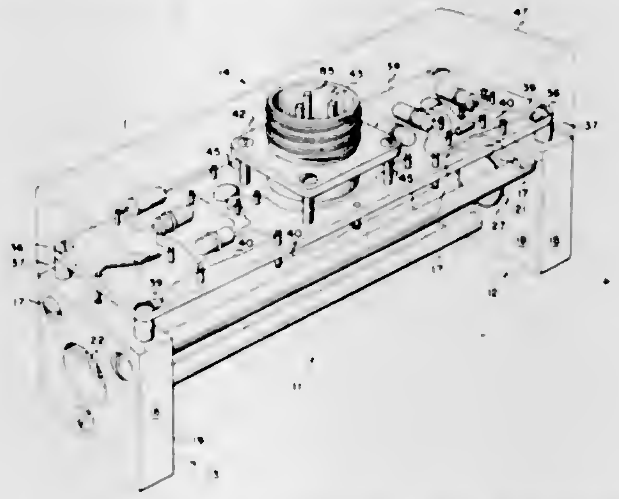
(*c*) a non-conductive, non-corrosive chemical compounds securing said transducers in said aperture,

(*d*) a solid-state type pulse generating device operatively connected to an output terminal and to the input of said first transducer for applying an electrical pulse thereto,

(*e*) said pulse generating device operatively connected to the output of the second transducer for generating a pulse in response to an electrical output signal therefrom,

(*f*) said pulse generating device including means for bypassing frequencies less than the resonant frequency of said transducers whereby said pulse generating device generates a pulse only when the output frequency of said second transducer is greater than said resonant frequency,

(*g*) said pulse generating device being embedded in non-conductive, non-corrosive chemical compound, said compound protecting said pulse generating device from corrosion due to environment,



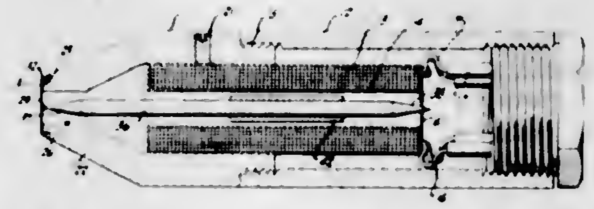
(*h*) a single lead wire operatively connected to said output terminal for transmission of the electrical pulse generated by said generating device and for supporting said velocity of sound measuring device at approximately its longitudinal center of gravity in a normally substantially horizontal position,

(*i*) the ground lead being connected to the exterior of said device whereby when said device is immersed in a fluid, a circuit is completed through the liquid, and

(*j*) said pulse generating device having a low impedance output, including a capacitive coupling between said lead wire and the liquid.

3,184,960
ELECTRIC TONOMETER

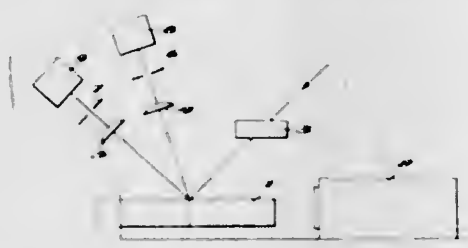
William C. Murr, El Sobrante, and George J. Eilers, Jr., Oakland, Calif., assignors to Bio-Engineering, Inc., Berkeley, Calif.
Filed July 15, 1963, Ser. No. 294,964
5 Claims. (Cl. 73—80)



1. In a tonometer handpiece, a casing formed with a tip, said tip formed with central bore defining a window and a relatively flat annular end surrounding said bore, a thin, flat, flexible, metallic diaphragm closing off the window at the end of said bore and overlying said flat end, means for securing said diaphragm in place on said tip, a rod in said bore fixed for movement with said diaphragm, mounting means mounting said rod in said bore for movement in an axial direction responsive to deflection of said diaphragm from a planar condition, an armature moveable with said rod, and a differential transformer electrically centered relative to said armature, the bottom end of said rod fitting against the inside of the center of said diaphragm, said bottom end of said rod cemented to said diaphragm.

3,184,961
OPTICAL STRAIN GAUGE

James F. Bell, Baltimore, Md., assignor to Marvalaud Incorporated, Westminster, Md., a corporation of Maryland
Continuation of abandoned application Ser. No. 823,277, June 25, 1959, which is a division of application Ser. No. 645,050, Mar. 11, 1957, now Patent No. 2,929,242. This application Mar. 23, 1962, Ser. No. 181,940
8 Claims. (Cl. 73—88)



1. A device for measuring strain of a structural element comprising, in combination, a diffraction grating on the structural element, a light source to direct light to said diffraction grating, a pair of means positioned to receive light reflected and diffracted from the diffraction grating and separate means for each of said receiver means to vary the response of said receiver means as the angles of the light from said diffraction grating vary.

3,184,962
STRAIN TYPE TRANSDUCERS

Herman P. Gay, Rte. 1, Box. 360, Aberdeen, Md.
Filed July 13, 1962, Ser. No. 209,804
1 Claim. (Cl. 73—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

In a constant sensitivity strain-type transducer, the combination of a deformable element, a strain element comprising a single filament made of one continuous material whose electrical resistance varies with its strain, and means so bonding said single filament to the surface of said deformable element that the said single filament is directly responsive to a change of physical phenomena associated with said deformable element, said deformable element being made of such heat-treated alloy that

$$na+m\frac{1}{E}\frac{dE}{dT}$$

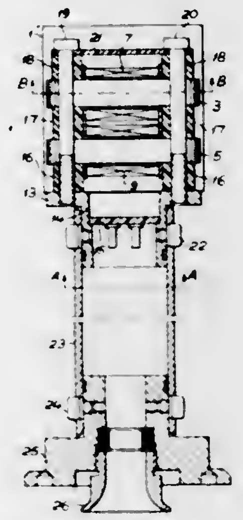
substantially equals

$$\frac{1}{R}\frac{dR}{dT}$$

where a is the thermal expansion coefficient of the deformable element, n and m are constants dependent upon the physical phenomenon being measured, E is Young's modulus of the deformable element, R is the electrical resistance of said single filament bonded in place, and T is the temperature, wherein the combination is so selected that the characteristics of said single filament combined with those of the deformable element result in substantially zero changes in sensitivity and electrical resistance of said single filament.

3,184,963
MEANS FOR MEASURING TENSILE OR COMPRESSIVE STRESSES IN AN OBJECT OF MAGNETOSTRICTIVE MATERIAL

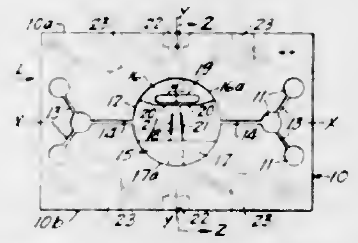
Orvar Dahle, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Dec. 10, 1962, Ser. No. 244,239
Claims priority, application Sweden, Dec. 23, 1961, 12,932/61
2 Claims. (Cl. 73—88.5)



1. Means for measuring tensile or compressive stresses in an object of magnetostrictive material having a cylindrical bore, comprising a cylindrical body having therein four separate, barshaped magnetic cores, said cores being arranged parallel to each other and to a diameter of said cylindrical body, the end faces of said magnetic cores being positioned at the corners of a quadrangle, which, on the development of the surface of said body, is symmetrical to a diagonal of said quadrangle, each of said cores having a winding, means connecting the windings of two diagonally situated cores in series to each other and to an alternating current source, and means connecting the windings on the other two cores in series to each other and to a voltage-sensitive-measuring device.

3,184,964
THRUST MEASURING DEVICE

William S. Hedrick, Spring Park, and John H. Wastvedt, Minneapolis, Minn., assignors to FluiDyne Engineering Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed May 15, 1961, Ser. No. 110,073
14 Claims. (Cl. 73—141)

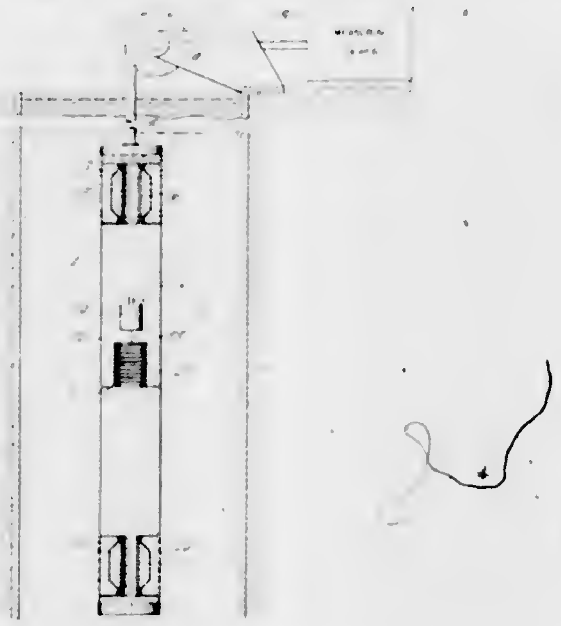


1. A force measuring device comprising flexure structure having opposed portions capable of relative parallel movement therebetween, means interconnecting said portions and resisting said relative movement therebetween, said means including an elongate strain member lying in a plane parallel to the plane of said relative movement whereby the force required to effect said movement is transmitted to a given point on said strain member intermediate the ends thereof, said member being axially deformed in said plane in proportion to said force, the portion of said member on one side of said point being placed in tension by said force, the portion of said member on the other side of said point being placed in compression by said force, and strain gauge means

mounted on both of said portions of said member and deformable therewith and capable of measuring said force in accordance with the degree of said deformation.

3,184,965
APPARATUS FOR EXAMINING FLUID-FILLED BORE HOLES

Simon Philippe Noik, Hericy-sur-Seine, France, assignor to Schlumberger Overseas S.A., Port of Spain, Trinidad, British West Indies, a corporation of Panama
Filed July 17, 1962, Ser. No. 211,949
Claims priority, application France, May 2, 1958, 764,676; Nov. 22, 1961, 880,064
10 Claims. (Cl. 73—152)



1. Apparatus for examining fluid-filled boreholes and the like comprising an elongated casing closed at both ends and adapted to be immersed vertically in the borehole at adjustable levels, a pair of yielding diaphragms carried by said casing at vertically spaced points thereon and subjected to the pressure of the fluid in the borehole upon immersion of the casing, perforated means extending outside of each of said diaphragms to provide inlets for the transmission of static pressure of the borehole fluid onto the corresponding diaphragm sensitive means carried by the casing and responsive to the difference between the pressures transmitted to said diaphragms to provide an output manifestation thereof, and measuring means controlled by said sensitive means to indicate the extent of said manifestation.

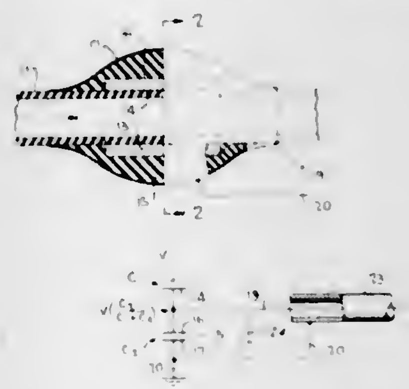
3,184,966
ELECTROMAGNETIC FLOWMETER

William E. Thornton, Chapel Hill, N.C., and Isaac R. Cherry, Torrance, Calif., assignors to Avionics Research Products Corporation, Venice, Calif., a corporation of California
Filed July 13, 1961, Ser. No. 123,767
1 Claim. (Cl. 73—194)

In a flow meter for measuring the flow of a fluid pulsating through a conduit within a predetermined frequency range the combination of means for providing a flux field in said fluid so that movement of said fluid through said field will generate a voltage between diametrically opposite sides of said conduit, said field having a flux density which varies as a square wave and at a frequency which is above the range of frequencies at which said fluid pulsates, a pair of electrodes adapted to engage said conduit at said opposite sides for sensing said voltage to provide a signal proportional to the flow of said fluid, high pass filter means for suppressing signals in said first range of frequencies and for passing signals in a frequency range including the frequency of said flux field, gating means operatively interconnected with said additional filter means for sampling the filtered signal once during each cycle, and filter means having a frequency roll off to compensate for distortion of transients passed by said high pass filter so that said transients in said signals will be substantially equal to zero during the middle of said sampling period, and D.C. responsive means for measuring the filtered signals to provide an indication of said flow.

3,184,967
ELECTRIC CHARGE FLOW METER

Elmer B. Rogers, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 14, 1962, Ser. No. 237,772
2 Claims. (Cl. 73—194)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A fluid flow device for measuring the rate of flow through an electrically insulating conduit of a fluid having dispersed therein a plurality of electrically charged particles comprising

(*a*) a band of electrically conducting material having an inner surface and an outer surface, said band of electrically conducting material completely surrounding said conduit with said inner surface in intimate contact with said conduit and being susceptible to having an electrical charge induced thereon by the passage of an electrically charged particle through said conduit thereby exhibiting the behavior of a first capacitor in series with a source of D.-C. voltage,

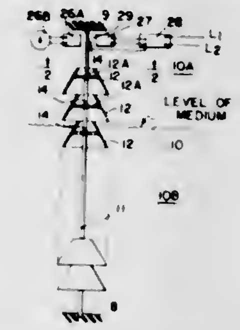
(*b*) an electrically insulating material completely covering and in intimate contact with the outer surface of said band of electrically conducting material,

(*c*) a sheet of electrically conducting material completely surrounding said electrically insulating material and defining the outer boundary thereof and being susceptible to having an electrical charge induced thereon by a charge appearing on the outer surface of said band of electrically conducting material due to a charge having been induced on the inner surface of said band of electrically conducting material thereby exhibiting the behavior of a second capacitor in series with said first capacitor, and

(*d*) first and second electrical conductors, said first electrical conductor being electrically connected to said band of conducting material and said second electrical conductor being connected to said sheet of electrically conducting material whereby the instantaneous voltage between said first and second electrical conductors is directly proportional to the charge appearing on said outer surface of said band of electrically conducting material and therefore directly proportional to the charge density in the fluid and inversely proportional to the velocity of fluid flowing in said conduit.

3,184,968
LEVEL INDICATOR

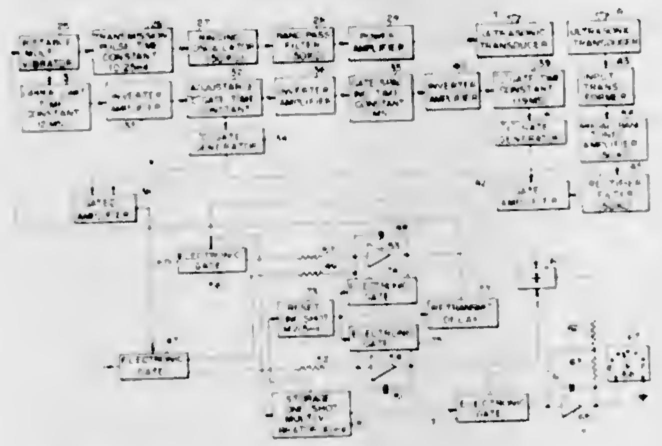
Frank D. Werner, Minneapolis, Minn., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed May 23, 1962, Ser. No. 197,013
6 Claims. (Cl. 73—290)



1. A level indicator comprising an elongated vibrator, anchorage means for the vibrator for supporting it in the space wherein changes in level of a change-in-phase of material in said space is to be indicated, means for imposing a vibration on said vibrator, means responsive to said vibration for indicating said level, said vibrator having discrete elements attached to it at intervals therealong, said elements being shells open at the top and bottom and having outwardly and downwardly sloping outer and inner surfaces.

3,184,969
LIQUID LEVEL INDICATION SYSTEM

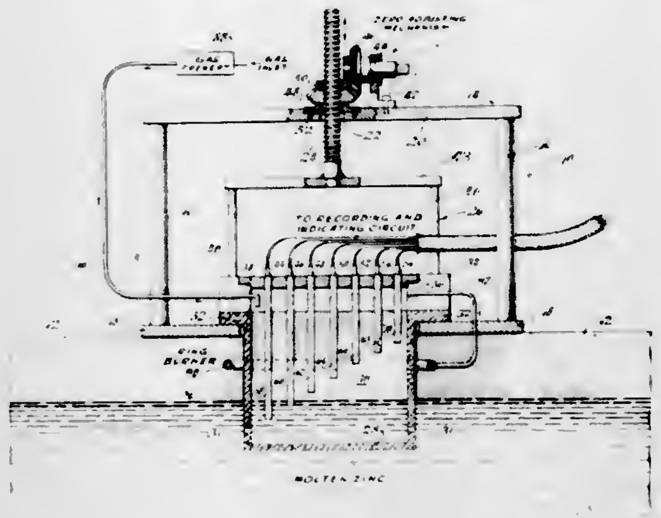
Norman A. Bolton, Scottsville, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed June 10, 1963, Ser. No. 286,596
10 Claims. (Cl. 73—290)



1. A liquid level indication system for indicating continuously the level of liquid in a tank comprising, means for producing a succession of energy pulses, means for detecting parts of the energy pulses reflected from both the liquid surface spaced from the producing means and a fixed reflective surface positioned therebetween, signal producing means coupled to the pulse producing and pulse protecting means for producing a first signal in response to the elapsed time between producton of any energy pulse and the detection of a portion thereof reflected from said fixed reflective surface and a second signal in response to the elapsed time between the production of said energy pulse and the detection of a portion thereof reflected from the liquid surface, circuit means responsive to said signal producing means for providing an output signal corresponding to said first signal modified by said second signal, and liquid level indication means responsive to said circuit means for indicating the level of liquid in said tank.

3,184,970
MOLTEN METAL LEVEL INDICATOR

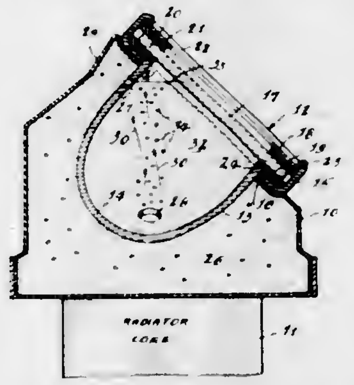
George W. McNelly, Hammond, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 13, 1962, Ser. No. 187,409
9 Claims. (Cl. 73—304)



1. Apparatus for indicating the level of molten metal, said apparatus comprising a frame; a sensing unit; means adjustably mounting said sensing unit on said frame for limited vertical movement; said sensing unit including means defining a closed chamber, means for introducing molten metal into said chamber, and a plurality of electrodes of varying lengths mounted in said chamber in a manner that successive electrodes are immersed as the level of the molten metal rises; means for introducing a nonoxidizing gas into said chamber to prevent oxidation of the molten metal in said chamber; and means for indicating the number of electrodes immersed in said metal as a measure of the level of the molten metal.

3,184,971
SIGHT GLASS FOR A RADIATOR

Thomas A. Piasecki, Racine, Wis., assignor to Modine Manufacturing Company, a corporation of Wisconsin
Filed Nov. 30, 1961, Ser. No. 156,085
3 Claims. (Cl. 73—334)

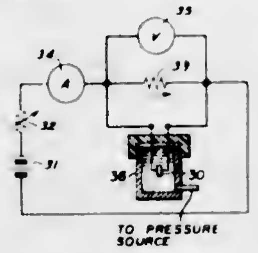


1. In a radiator system for a coolant liquid, apparatus for viewing said liquid comprising: a light transmitting member in said system for observing the interior of a part of the system; housing means adjacent said light transmitting member having a portion of said coolant liquid therein, the junction of the upper end of said housing means and the light transmitting member creating a gas trap adjacent said light transmitting member and in contact with said portion of liquid to provide a liquid-gas interface observable through said light transmitting member; and means for maintaining a current of liquid, carrying bubbles, in said housing coolant liquid portion, said

means for maintaining said current including an element so located as to transfer bubbles from said current to said gas trap to maintain gas in said body.

3,184,972
PRESSURE TRANSDUCERS

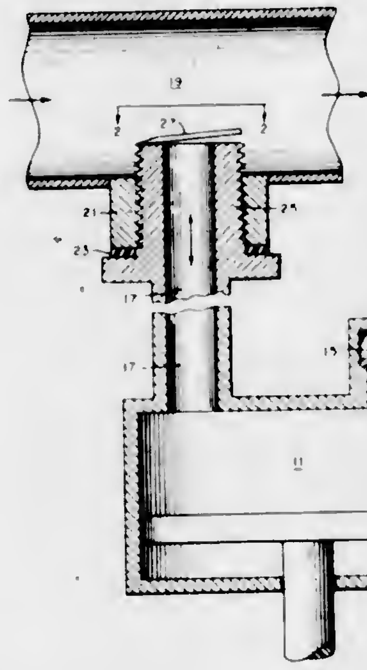
Mathew E. Sikorski, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 24, 1961, Ser. No. 104,994
7 Claims. (Cl. 73—398)



1. A pressure transducer comprising a diode means having a pressure responsive p-n junction, said diode means exhibiting a current-voltage characteristic a portion of which is essentially parallel to one of the axes of the characteristic, means for applying an electrical bias to the diode means with a load line approximately parallel to said one of the axes and intersecting said portion, means for subjecting the junction of said diode means to variations in pressure and means for measuring the electrical response of said diode means to the pressure variations.

3,184,973
MUD SAMPLE PUMP

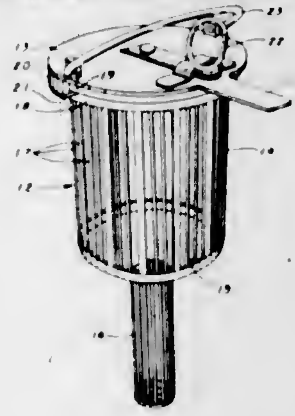
John S. Bradley, Dallas, Tex., assignor to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 29, 1961, Ser. No. 155,557
3 Claims. (Cl. 73—422)



1. A system for obtaining fluid samples from reservoir means having drilling fluid flowing therethrough, said drilling fluid carrying particle-form solids and being used in earth borehole drilling, which system comprises in combination a pump means having a chamber into which drilling fluid is drawn during the intake stroke of said pump means and out of which drilling fluid is forced during the exhaust stroke of said pump means, first passage means fluidly communicating with said chamber in said pump means and a sample receiving means, one-way valve means in said first passage adapted to remain open during said exhaust stroke of said pump means, second passage means connecting said reservoir means with said chamber in said pump means, said second passage means being adapted to permit the passage of drilling fluid therethrough during both the intake and exhaust strokes of said pump means, and straining surface means in said reservoir means adapted to block the passage of at least part of said particle-form solids in said drilling fluid, said straining surface means being formed by a row of parallel bars aligned with the direction of flow of said drilling fluid, said bars being spaced so that said drilling fluid may flow therebetween and traversing the opening in the end of said second passage means.

3,184,974
MEASURING DEVICE FOR PARTICULATE MATERIAL

William T. Riley, Chicago, Ill., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Jan. 29, 1963, Ser. No. 254,799
4 Claims. (Cl. 73—432)

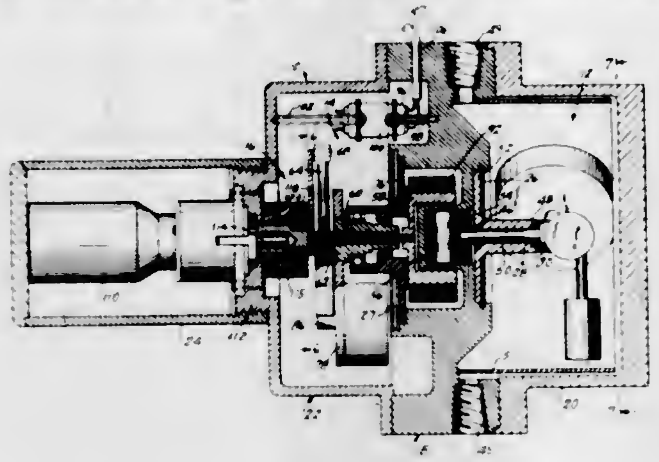


1. A measuring device comprising a shell, a cage removably fitted in said shell and adapted to receive a sample of particulate material, and a cover removably fixed to said cage, said cage having a relatively large upper section, a relatively small lower section, and an intermediate wall connecting said sections, the side walls of both said sections being formed of bars uniformly spaced apart to enable undersize particles to be washed from a sample inside the cage through the spaces between bars, said lower section having a predetermined volume relation to the total volume of the cage, whereby the oversize particles of a sample of the desired size consist fill one of said sections after the undersized particles are washed therefrom.

3,184,975
DIGITAL MEASURING INSTRUMENT AND DENSIMETER

Robert E. Lindemann, Franklin Township, Somerset County, and Milton H. November, Montclair, N.J., assignors to David M. Potter, Far Hills, N.J.
Filed Oct. 25, 1960, Ser. No. 64,876
8 Claims. (Cl. 73—453)

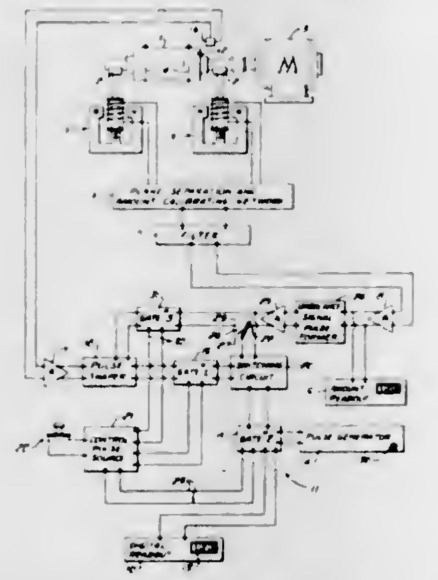
5. In a densimeter, a submersible balancing sensor comprising, in combination,
a shaft,
means supporting the shaft for movement about a substantially horizontal axis,
a series of radially extending arms on the shaft including
a buoyancy float arm,
a range float arm and
a span float arm,
a comparatively large, comparatively low specific gravity buoyancy float supported on the buoyancy float arm, and
comparatively small, comparatively high specific gravity range and span floats mounted, respectively, on the range and span float arms, each with capacity for adjustment toward and away from the shaft axis, the several arms being fixed angularly in relation to one another and to the shaft, with the range and span arms disposed at right angles to one another and with the range and buoyancy arms disaligned by a small but substantial angle less than 90° whereby when



said shaft moves within the range of said angle last mentioned in response to variation in density of the liquid, such angular movement is substantially constantly proportional to said variation and the angular position of said shaft is a measure of the density sought.

3,184,976
DIGITAL MEASURING SYSTEM

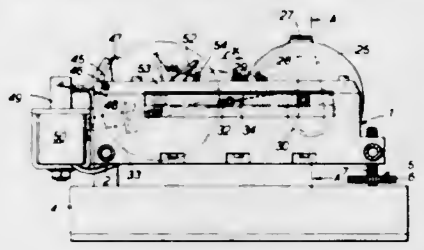
Richard A. Greiner, Madison, Wis., assignor to Gisholt Machine Company, Madison, Wis., a corporation of Wisconsin
Filed May 8, 1961, Ser. No. 108,404
9 Claims. (Cl. 73—462)



2. In balancing equipment having a digitally driven output means and including reference signal means establishing a reference pulse once each revolution of a member and transducer means establishing an unbalance-related pulse in synchronism with the unbalance, a source of clock pulses establishing a train of substantially identical pulses, gate means operably connecting the source to the output means, reference coupling means connecting said reference signal means to said gate means, unbalance coupling means connecting the transducer means to said gate means, the reference coupling means and the unbalance coupling means being connected such that one of the coupling means opens the gate means and the opposite coupling means closes the gate means upon establishment of a reference pulse and unbalance-related pulse respectively to actuate the output means in accordance with the phase angle between the reference pulse and the unbalance-related pulse, and means coupling the output of the gate means to the coupling means opening the gate means to effectively disconnect the latter coupling means from the gate means in response to transmission through the gate means.

3,184,977
BRAKE TESTERS

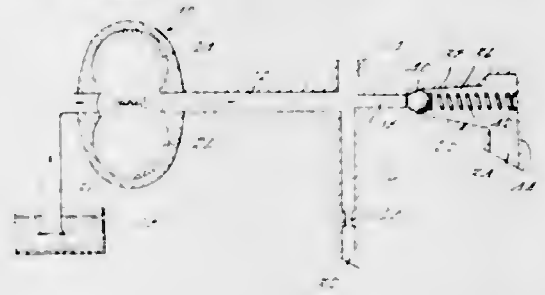
Walter Wilson Hugh Clarke, Woking, Surrey, England, assignor to Inertia Switch Limited, a company of Great Britain
Filed Apr. 19, 1963, Ser. No. 274,267
11 Claims. (Cl. 73—492)



1. Apparatus for measuring the acceleration of a horizontally moving vehicle comprising: a base for secural to the vehicle, the base defining a straight horizontal track extending longitudinally thereof; a flywheel mounted for rolling movement along the track; means to release the flywheel at a predetermined starting point along the track at the start of measurement for movement in a predetermined direction along said track under the influence of vehicle acceleration; spring means to exert a force on the flywheel to impart thereto an acceleration opposite to the influence of vehicle acceleration thereon, said spring means being spaced in the direction of initial travel relative to the flywheel when at its starting point for application of said force only after a predetermined travel of said flywheel; and means to register the distance traveled by said flywheel along the track in said predetermined direction from said starting point.

3,184,978
FLUID PRESSURE GOVERNOR MECHANISM

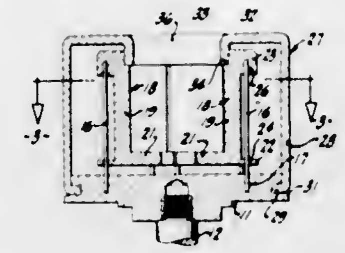
Norman T. General, Orchard Lake, and Robert P. Zundel, Wayne, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 17, 1963, Ser. No. 273,654
4 Claims. (Cl. 73—523)



1. A fluid pressure regulating mechanism comprising, in combination, a rotatable fluid pressure pump providing a source of fluid under pressure varying as a function of the speed of said pump, fluid supply and vent lines connected to said pump, and a plurality of flow restricting orifice means in said lines controlling the pressure of the fluid from said pump, said means including a variable area orifice for controlling the rate of change of the fluid pressure differential across the remaining of said orifices, said variable area orifice means comprising an annular fluid chamber in the line associated therewith having a tapered wall progressively increasing in area, valve means in said chamber slidable from a position in contact with said chamber wall to block said latter line to positions along said chamber increasing the communication of fluid through said chamber from said line, means biasing said valve to a line blocking position, said valve being movable

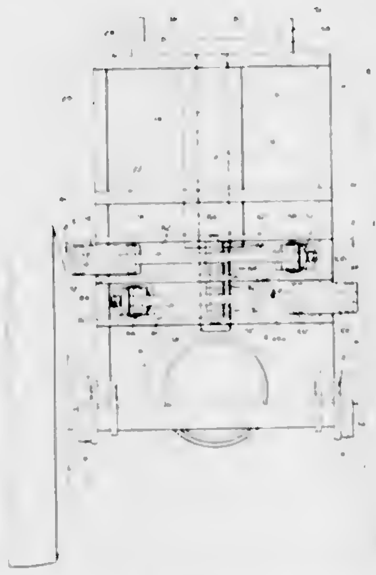
in opposition to the force of said biasing means in response to a change in the fluid pressure in the line associated therewith.

3,184,979
FLY WEIGHT GOVERNOR ASSEMBLY
Thomas B. Martin, % Micro-Pump Corp., P.O. Box 392, Danville, Calif.
Filed May 20, 1963, Ser. No. 281,518
8 Claims. (Cl. 73—539)



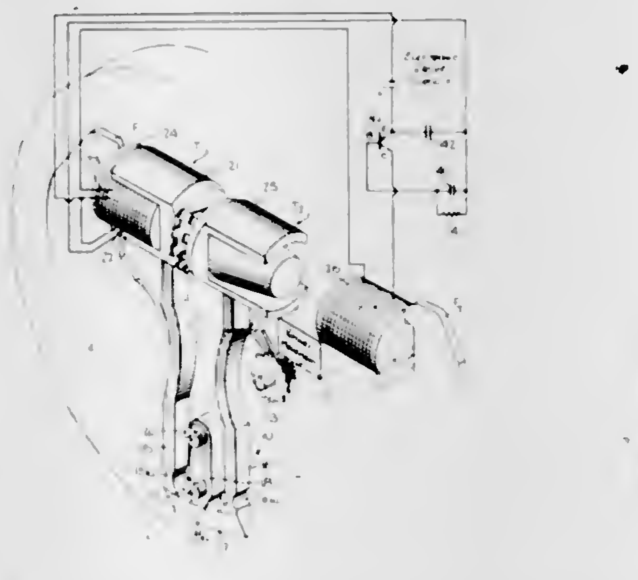
1. A governor comprising a rotatable base, a plurality of fly weights, a pair of flexible members for each said fly weight of substantially equal length fixed at one end to said base, said fly weight formed with first apertures adjacent said base for passage of said flexible members and with second apertures remote from said base to receive said flexible members, said flexible members slidable in said first apertures, said fly weights further formed cut away from said flexible members intermediate said first and second apertures, said flexible members free to deflect between said apertures.

3,184,980
SWING MECHANISM FOR CRANES AND THE LIKE
James D. Schell, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 28, 1962, Ser. No. 248,115
6 Claims. (Cl. 74—102)



1. For use with a support structure and a member journaled in the support structure for pivotal movement, a swing mechanism comprising first and second double-acting piston and cylinder type fluid motors connected to the support structure and disposed so that the pivotal member is intermediate said motors and first and second linkages connecting respectively said first and second fluid motors and the pivotal member, said first fluid motor and linkage and said second fluid motor and linkage being vertically spaced apart and allochirally related to each other, each linkage including an arm secured to the pivotal member and extending outwardly therefrom, a lever pivotally connected intermediate the ends thereof to the support structure and pivotally connected adjacent one end thereof to the respective fluid motor and a connecting link pivotally connected to the outer end of said arm and to the other end of said lever, the pivotal connections of said levers to the support structure being substantially coaxial and disposed intermediate said fluid motors.

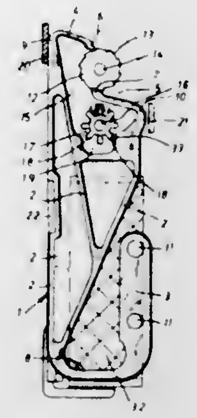
3,184,981
ELECTRONICALLY-CONTROLLED TIMEPIECE AND MOTION TRANSFORMER THEREFOR
William O. Bennett, Bayside, N.Y., and William W. Mutter, Paramus, and Egbert Van Haaften, Closter, N.J., assignors to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York
Original application Jan. 19, 1961, Ser. No. 89,896. Divided and this application Aug. 19, 1963, Ser. No. 302,956
3 Claims. (Cl. 74—142)



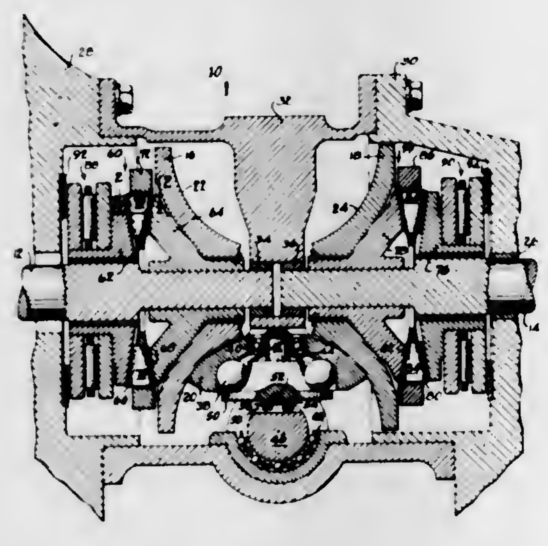
1. In an electronic timepiece wherein an electromagnetically-actuated tuning fork mounted on a pillar plate constitutes the timekeeping standard and wherein the gear works of the timepiece are driven by a toothed index wheel; a motion transformer for translating the vibratory action of the fork into rotary motion, said transformer comprising an index finger fixedly attached to one tine of said fork and engaging the teeth of said wheel to transmit turning impulses thereto, and a pawl adjustably mounted on said pillar plate to engage said index wheel at a position relative to said index finger at which the phase between said finger and pawl is several teeth plus one-half tooth.

3,184,982
DRIVING DEVICE FOR IMPULSE COUNTER
Ulrich Wolfgang Auer, Geneva, Switzerland, assignor to Sodeco, Société des Compteurs de Genève, Geneva, Switzerland, a firm
Filed June 11, 1963, Ser. No. 287,062
Claims priority, application Switzerland, July 14, 1962, 8,505/62
4 Claims. (Cl. 74—143)

1. A driving device for electric impulse counters of the type comprising a base member, an actuating member to which the electric impulses to be counted impart a to-and-fro movement, a ratchet wheel for operating the counter, a plastic member mounted on said base for flexible deformation by said actuating member and having two pawls in engagement with said ratchet wheel for rotatively driving same, said driving device being characterized by the fact that each of said two pawls is mounted at the extremity of a lever, said two levers which are integral with, and protrude from, said actuating member, being oppositely turned and substantially parallel to the direction of displacement of said actuating member, said two pawls being substantially tangent to the periphery of said ratchet wheel and diametrically positioned with respect to said wheel, locking means being provided to limit the amount of rotation of said ratchet wheel by the respective pawls as said plastic member is flexed and restored.

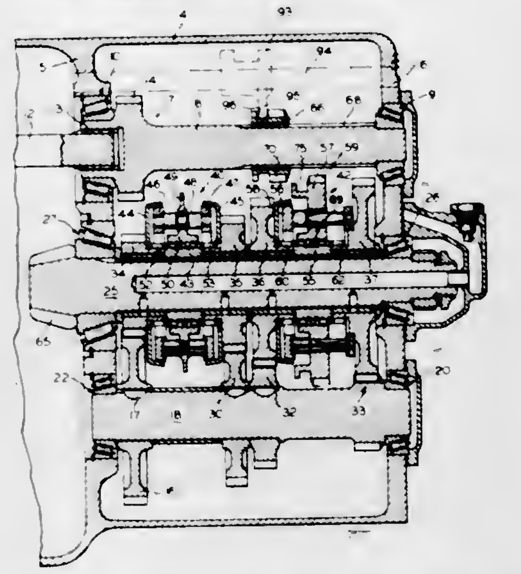


3,184,983
TOROIDAL TRANSMISSION MECHANISM WITH TORQUE LOADING CAM MEANS
Charles E. Kraus, Franklin Lakes, N.J., assignor to Excelermatic, Inc., a corporation of New York
Filed Oct. 30, 1963, Ser. No. 320,152
4 Claims. (Cl. 74—200)



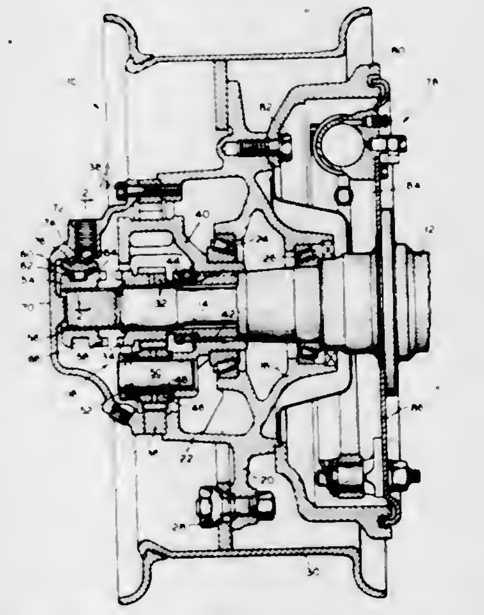
2. A variable speed transmission comprising
(*a*) coaxial input and output members having facing toric surfaces;
(*b*) a plurality of circumferentially-spaced rollers disposed between and in contacting engagement with said toric surfaces for transmitting torque from said input member to said output member and supported for speed-ratio-changing movement across said toric surfaces to vary the speed of said output member relative to the speed of said input member;
(*c*) cam means supported adjacent said input member for transmitting an axial loading force against said input member in accordance with input torque supplied to said transmission and including a first member, a plurality of conically-shaped circumferentially-spaced cam rollers and a second member, and said first member having cam surfaces thereon engaging each said cam roller in straight line contact over substantially the entire length of said cam roller and said second member having a plane curved surface there on engaging each said cam roller only at a portion substantially at the center of the conical surface of said cam roller.

3,184,984
TRANSMISSIONS
William C. Erdman and William F. Leonard, Jackson, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Mar. 4, 1963, Ser. No. 263,097
4 Claims. (Cl. 74—333)



1. A transmission comprising an input shaft, an output shaft, and a countershaft, first gear means between said input shaft and said countershaft for effecting rotation of said countershaft by said input shaft, second gear means between said countershaft and said output shaft, means associated with said second gear means comprising clutch means operable in its engaged position for effecting clutching of said second gear means to effect rotation of said output shaft in one direction by said countershaft, said last named means including a gear member connected to said output shaft, and gear means associated with said input shaft engageable with said gear member for selectively effecting rotation of said output shaft in the other direction by said input shaft in the disengaged position of said clutch means.

3,184,985
REDUCTION DRIVE WHEEL
Melvin E. Dreitzler, Buchanan, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed May 19, 1961, Ser. No. 111,288
4 Claims. (Cl. 74—377)

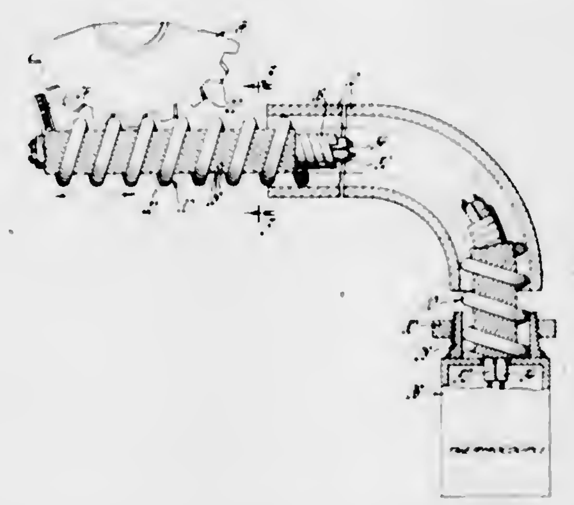


1. In combination, a non-rotatable tubular axle housing, a rotatable wheel carried by said axle housing, a rotatable drive axle shaft disposed within said axle housing and extending past one end thereof, a gear set disposed within said wheel and operable to transmit power from said drive shaft to said wheel, said gear set including

a sun gear rotatably mounted on said drive axle shaft, a collar secured to said drive axle for rotation therewith and slidable axially thereof, means for connecting said collar and sun gear for rotation together, said connecting means including an axially extending tooth clutch portion on said sun gear and an axially extending tooth clutch portion on said collar in facing relation with said first mentioned tooth clutch portion, said tooth clutch portions being arranged such that said second mentioned tooth clutch portion can be actuated selectively into and out of engagement with said first mentioned tooth clutch portion for selectively connecting said sun gear with said collar for rotation with said drive axle and disconnecting said sun gear from said collar, and means for selectively actuating said second mentioned tooth clutch portion into and out of engagement with said first mentioned tooth cluch portion, said actuating means including a cap member mounted on said wheel, a control shaft extending through said cap member and pivotally journaled therein, a lever arm secured to the inner end of said control shaft and engaging said second-mentioned clutch portion so that pivotal movement of said control shaft causes an axial movement of said second-mentioned clutch portion along said drive shaft and detent means disposed in said cap member and cooperating with said lever arm for maintaining said second-mentioned clutch portion in an engaged or disengaged position.

3,184,986
DRIVABLE HOLLOW CABLE

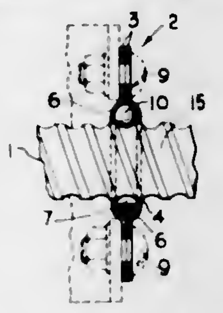
Andrew J. Kompanek, Jr., and Fred Machate, Lansdale, and George M. Zieber, Jr., King of Prussia, Pa., assignors to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Feb. 2, 1962, Ser. No. 170,720
6 Claims. (Cl. 74—422)



1. A hollow drivable cable adapted to be movably supported within a conduit, said cable comprising a flat closely coiled inner member the adjacent convolutions of which are adapted to be in abutting relationship, a plurality of wire members laid about said inner coil with a relatively long helix, a stiff wire element tightly wrapped about said plurality of wire members and in a direction opposite to the lead of said plurality of wire members, the diameter of said wire element being at least twice the diameter of any one of said plurality of wire members, the adjacent convolutions of said wire element being equally spaced longitudinally of said cable, said wire element being adapted to transmit a longitudinal driving force to said cable, said wire element including an inner surface adapted to contact a portion of the outer surfaces of said plurality of wire members, one of said contacting surfaces being formed to provide an interlocking contact between said wire element and said plurality of wire members tending to resist relative longitudinal movement between said wire element and said plurality of wire members during the application of said longitudinal driving force to said wire element.

3,184,987
MOTION-TRANSMITTING DEVICE

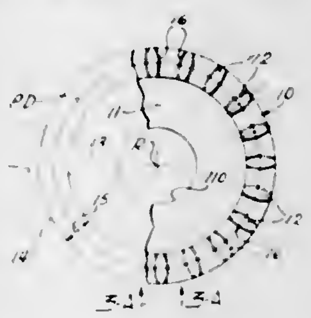
Eldon L. Beatty, Lansing, Ill., assignor to The Anderson Company, a corporation of Indiana
Filed Aug. 31, 1961, Ser. No. 135,203
8 Claims. (Cl. 74—424.8)



1. A nut structure comprising a body having an opening therethrough for the free passage of a multiple thread shaft, a wall defining the opening having at least one annular groove encircling the shaft, a plurality of bearing means located in the groove and corresponding in number to the number of threads on the shaft, said bearing means received by the threads of the shaft to form a driving connection between the nut and shaft, and spacer means having portions slidably engaging said groove for spacing the bearing means peripherally about the shaft.

3,184,988
INVOLUTE FACE GEARING AND INVOLUTE INTERNAL CONICAL GEARING

Joseph J. Osplack, 14001 Piedmont, and Rodman J. Osplack, 15367 Vaughan, both of Detroit, Mich.
Filed Feb. 12, 1963, Ser. No. 257,896
8 Claims. (Cl. 74—457)

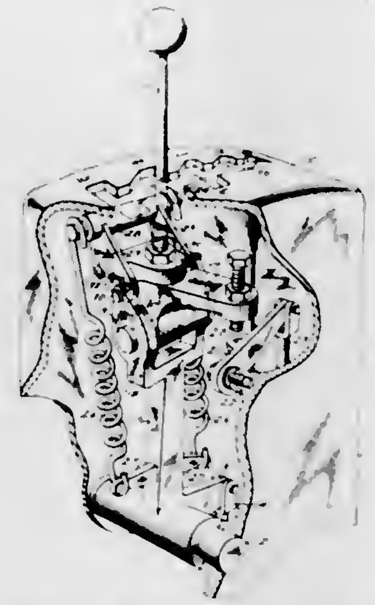


1. An involute face gear having barrel-shaped teeth formed in a circular plane 90 degrees in respect to its axis of rotation, said teeth being conjugate to a basic rack form, said gear having point contact with any gear with which it is mated.

3,184,989
CONTROL LEVER HOLDING MEANS

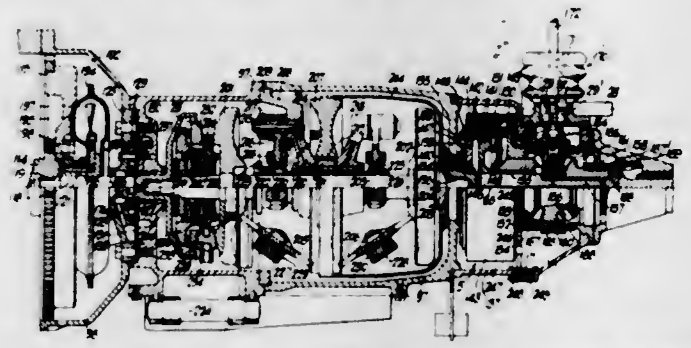
Sammy J. Rhodes, Decatur, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 31, 1962, Ser. No. 248,608
1 Claim. (Cl. 74—471)

A transmission control apparatus comprising, a shaft, a bell crank rotatably mounted on said shaft and having a yoke at the end of one arm thereof, the other arm having a work performing abutment at the end thereof, a spring anchor on said one arm near said shaft, a pin carried by said yoke in a plane parallel to the plane containing the said shaft, the axis of said pin being 90 degrees to the said axis of the shaft, a T-shaped lever having first and second arms extending laterally from a leg, a cane extending from said leg at 90 degrees to said arms, said leg being pivotally mounted in said yoke by said pin, said first arm terminating in a second work performing abutment, said second arm having pin means extending laterally therefrom, a U-shaped lever having the side arms thereof rotatably mounted in the yoke outwardly of said pin, said U-shaped lever having elongated openings formed in the side arms thereof, said laterally extending pin means being disposed within said openings, a spring extending between the base of the U-shaped lever and the spring anchor.



3,184,990
TRANSMISSION CONTROL SYSTEM

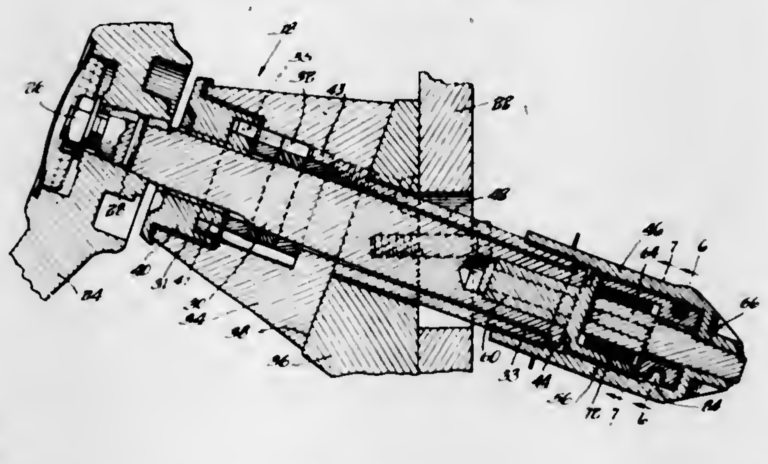
Forbes George de Brie Perry, Felbridge, East Grinstead, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Mar. 2, 1962, Ser. No. 177,085
Claims priority, application Great Britain, Mar. 6, 1961, 8,168/61
20 Claims. (Cl. 74—472)



1. A transmission system for coupling a prime mover to a load comprising a variable ratio transmission unit of the rolling friction type having a plurality of rollers which provide a driving connection between toroidal surfaces of coaxial driving and driven discs, support means for the rollers permitting them to assume different attitudes with respect to the axis about which the discs rotate to vary the transmission ratio through the transmission unit, the said support means comprising roller positioning means to oppose torque reaction to which the rollers are subjected and to adjust the position of each roller along a line substantially tangential to the torus of which the said disc surfaces form part to initiate ratio changes on the part of the rollers by precession, at least one ratio control fluid pressure operated actuator associated with the said roller positioning means, a clutch between the transmission unit and the load to connect and disconnect the transmission unit to and from the load, a fluid pressure operated actuator to actuate the clutch, a fluid pressure pump coupled to an input member of the transmission unit, a fluid line connecting the pump to the ratio control actuator and to the clutch actuator, a demand member and a coupling therefrom to a fuel regulator of the prime mover, fluid pressure modifying means to modify pump output in the said fluid line, and a coupling between the demand member and the fluid pressure modifying means.

3,184,991
STEERING CONTROL

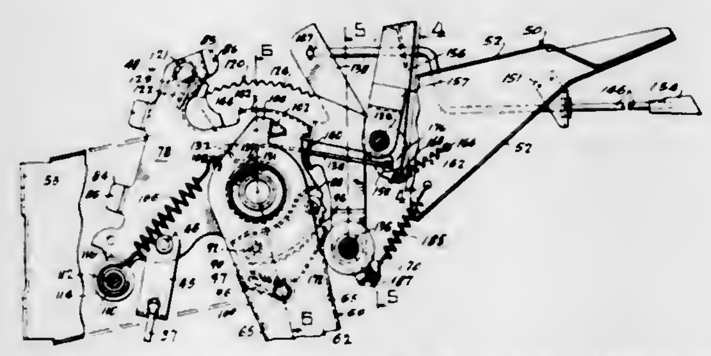
Arthur L. Bomberger, Philadelphia, Pa., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Dec. 23, 1960, Ser. No. 78,107
8 Claims. (Cl. 74—507)



1. A marine steering control comprising a rotatable steering shaft, a rotatable toothed member disposed adjacent said shaft, fixed means rotatably supporting said shaft and said member, a toothed element meshing with said toothed member and connectable with a member to be turned, and means between said shaft and said toothed member and located between parts of said fixed means for drivingly connecting said shaft to said toothed member when said shaft is rotated in either direction in response to torque applied thereto, and brake means for locking said toothed member with respect to said fixed means upon any tendency of said toothed member to rotate in response to torque applied thereto by said toothed element.

3,184,992
MECHANISM CONTROL

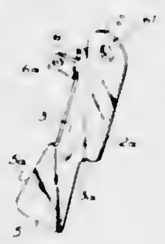
Robert S. Hinsey, Toledo, Ohio, and Charles S. Davidson, La Salle, Mich., assignors, by mesne assignments, to Universal American Corporation, a corporation of Delaware
Filed Feb. 1, 1960, Ser. No. 5,959
6 Claims. (Cl. 74—534)



1. Mechanism for controlling the parking brakes of a vehicle including, in combination, a relatively stationary support, a foot-operated lever member fulcrumed on said support, an element journaled on the support for rotation about the axis of the lever fulcrum relative to said lever member adapted to be connected to the parking brakes for actuating the brakes, pawl and ratchet members arranged for engagement for retaining said element in brake-setting positions, said pawl member being mounted on said element and said ratchet member being mounted on the support, cooperating means on said lever and said element whereby successive movements of said lever

member in one direction about its fulcrum effect successive movements of said element in one direction to set the parking brakes, abutment means for supporting the ratchet member in a position to be engaged by the pawl member, a first arm pivotally mounted by the support, a release rod connected with said first arm, means on said element for moving said first arm and release rod upon relative rotation of said element, spring means biasing said first arm toward one position, a second arm pivotally mounted on the support operatively connected with said ratchet member supporting means, resilient means biasing said second arm toward ratchet member supporting position, resilient means independent of said element normally biasing said lever member toward its initial position, said rod being movable to a position engaging said first arm with said second arm to move said ratchet member supporting abutment means to a position to effect disengagement of said ratchet member from said pawl member to release said element for movement to brake release position.

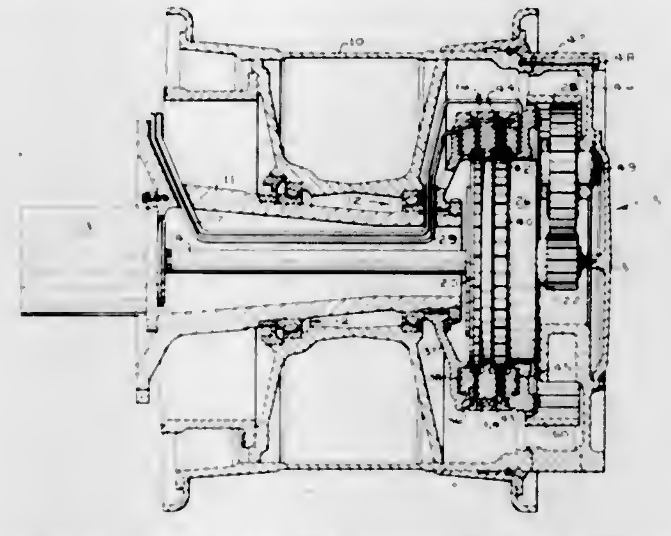
3,184,993
DERAILLEUR GUARD
Carl A. Swenson, 615 N. Berlyn Ave., Ontario, Calif.
Filed Dec. 11, 1963, Ser. No. 329,831
6 Claims. (Cl. 74—611)



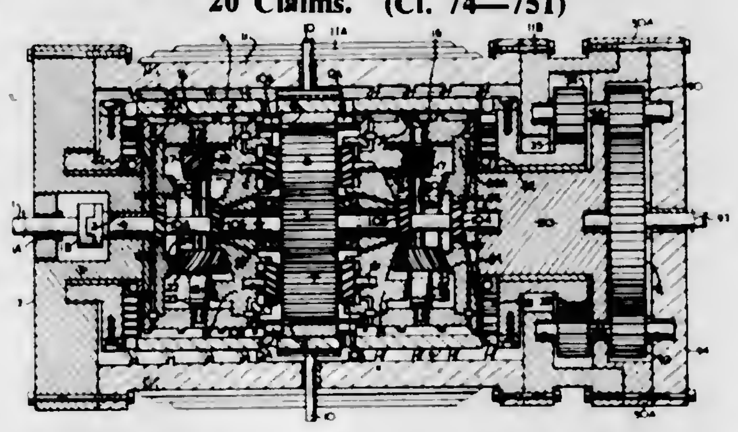
1. In a guard for a bicycle change-speed unit of the Derailleur type, a parallelogram shaped mid-portion, a rearwardly bent portion extending from the lower vertical side of the said parallelogram shaped portion, being disposed normally thereto and formed integrally therewith, a forwardly bent portion extending from the upper vertical side of the said parallelogram shaped mid-portion, being disposed normally thereto and formed integrally therewith, a relatively small lug being bent rearwardly from the said parallelogram shaped mid-portion at a point adjacent the upper end of the upper oblique side thereof, the said lug being disposed normally thereto and formed integrally therewith.

3,184,994
WHEEL DRIVE MECHANISM
Sebald K. Stahl, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Nov. 5, 1962, Ser. No. 235,415
4 Claims. (Cl. 74—674)

1. A wheel drive mechanism comprising a wheel arranged on a spindle, axially aligned bearing means rotably mounting said wheel on said spindle, a rotatable drive shaft arranged within, and parallel to, the axis of said spindle and extending the length thereof, a motor fixed to said spindle interiorly thereof and drivingly connected to said drive shaft; a planetary transmission means having a high speed drive ratio and a low speed ratio, said planetary transmission means mounted axially exteriorly of said bearing means and operatively connected to said drive shaft and said wheel for selectively driving said wheel, said transmission means comprises a first sun gear mounted on said drive shaft for rotation therewith, said first sun gear drivingly engaged with first planet gears arranged therearound, a second sun gear rotatably mounted on said drive shaft and operatively connected to said first planet gears to receive a first portion of the driving torque therefrom during said low speed drive and all of the torque therefrom during said high speed drive, second planet gears mounted around and in driving engagement with a third sun gear, said third sun gear mounted for rotation about said second sun gear, said third sun gear and said second planet gears arranged to be operatively connected to said first planet gears and said second sun gear, respectively, for transmitting a second portion of the driving torque to said second sun gear during said low speed drive and third planet gears mounted around and in driving engagement with said second sun gear, said third planet gears drivingly connected to said wheel, a braking means arranged substantially radially outwardly of said transmission gears, for selectively providing a low speed split torque drive or a high speed drive to said wheel.

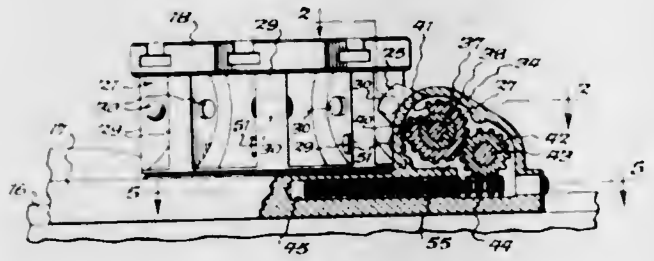


3,184,995
VARIABLE TRANSMISSION POWER PLANT
Clifford Eric Smith, 45 Abbotsford Road, Homebush, New South Wales, Australia
Filed Mar. 25, 1963, Ser. No. 267,519
20 Claims. (Cl. 74—751)



1. Transmission mechanism comprising a hollow casing, an input shaft extending into the casing at one end, a sun wheel secured on the input shaft within the casing, a first fixed member forming part of the casing and surrounding the input shaft between the sun wheel and the input end of the casing, a hypoid type gear carried by the inner face of the fixed member substantially coaxial with the input shaft, a first gear carrier rotatable on the input shaft between the sun wheel and the fixed member, a hypoid type gear substantially coaxial with the input shaft carried on the face of the first gear carrier opposite the gear carrying face of the fixed member, a hollow cylindrical shaft carrier rotatable on the first fixed member and the first gear carrier and substantially coaxial with the input shaft, two spaced pinion carrier shafts in the shaft carrier between the first fixed member and the first gear carrier and rotatably mounted at their ends in the shaft carrier, two spaced hypoid type pinions on each carrier shaft, one meshing with the fixed member gear and the other with the first gear carrier gear, a second gear carrier rotatable on the input shaft on the opposite side of the sun wheel from the first gear carrier, a hypoid type gear substantially coaxial with the input shaft carried on the face of the second gear carrier remote from the sun wheel, a second fixed member surrounding the input shaft on the side of the second gear carrier remote from the sun wheel, a hypoid type gear substantially coaxial with the input shaft carrier on the face of the second fixed member adjacent to the second gear carrier, a second hollow cylindrical shaft carrier similar to the first and rotatable on the second gear carrier and second fixed member and substantially coaxial with the input shaft, two additional spaced pinion carrier shafts in the second shaft carrier between the second fixed member and the second gear carrier and rotatably mounted at their ends in the second shaft carrier, two spaced hypoid type pinions on each additional shaft, one meshing with the second fixed member gear and the other with a second gear carrier gear, spaced planetary shafts substantially parallel to the input shaft and substantially equally radially spaced from it, each mounted on and between the first and second gear carriers, a planetary gear on each planetary shaft adapted to be driven by the sun gear, an output power take-off cylinder surrounding the shaft carriers and sun and planet gears and rotatable in the casing and an internal gear on the output cylinder meshing with the planetary gears.

3,184,996
INDEXING MEANS FOR TURRETS
Francis D. Catlin, Horseheads, N.Y., assignor to Hardinge Brothers, Inc., Elmira, N.Y.
Filed Oct. 31, 1961, Ser. No. 148,944
5 Claims. (Cl. 74—822)



1. A turret assembly which is unlocked and then indexed by a common activating mechanism, comprising,

(*a*) a turret which is rotatably supported on a frame and has a plurality of work stations,

(*b*) a locking means on said frame which is engageable with said turret so that any one of said work stations may be held in fixed operative position,

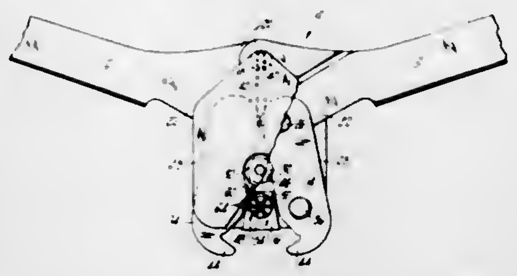
(*c*) said locking means being movable in and out of engagement with said turret so that the turret may be rotated when the locking means is not in engagement therewith,

(*d*) turret moving means directly connected to said turret and including a gear mechanism so that any mechanical movement of any part thereof will act to turn said turret in a given direction,

(*e*) a shaft forming a common activating means mechanically connected to both said turret moving means and said locking means for disengaging said locking means from said turret and moving said indexing means, and

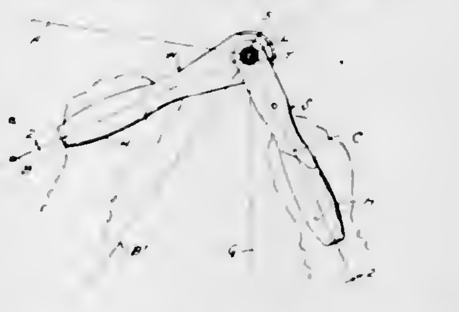
(*f*) lost motion means connected between said shaft activating means and said turret moving means which allows initial movement of the shaft in a given direction to first disengage said locking means from said turret while transmitting no moving force to said turret through said moving means, and then on further movement of said shaft said lost motion means transmitting mechanical force to said turret to index it to the next work station after said turret has been unlocked, so that the turret is unlocked and indexed in a single movement of said common activating means.

3,184,997
SEALING TOOL
Edward C. Rutty, Portland, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Sept. 16, 1963, Ser. No. 308,941
2 Claims. (Cl. 81—9.1)



1. A sealing device for strapping and the like comprising a pair of pivotally mounted jaws each having seal-forming surfaces; an adjustable anvil located between said jaws and spaced from said surfaces; said anvil having a longitudinal bore extending therethrough; an eccentric pin extending through said bore and having a plurality of splineways at one end thereof; and a spring detent cooperating with one of said splineways thereby locking said pin against movement and fixing the position of said anvil relative to said seal-forming surfaces.

3,184,998
IMPACT WRENCH WITH STABILIZER HANDLE
Merrill A. Young, Gates Mills, Ohio, assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed July 15, 1963, Ser. No. 295,111
2 Claims. (Cl. 81—52.3)

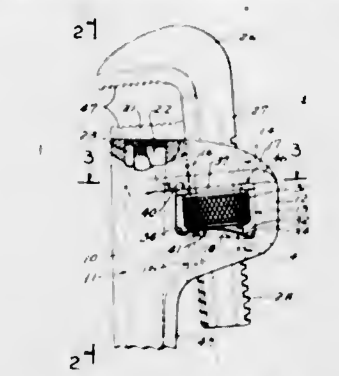


1. In combination with a manual impact wrench having a rotary toolhead, an operating handle supporting the toolhead and extending therefrom transversely of its working axis, said wrench having a power spring and cam-operated escapement mechanism capable of imparting successive unidirectional rotary impacts to the toolhead when the toolhead is torque-connected to a threaded fastener and the handle is moved back and forth through a predetermined angle about the axis of the toolhead, the improvement comprising a stabilizer handle mounted on the wrench to pivot on the axis of the toolhead and extending therefrom transversely of said axis in the plane of angular movement of the operating handle.

3,184,999
WRENCH OF THE PIVOTED JAW TYPE
Ottavio A. Capra, 152—14 84th Drive, Jamaica, N.Y.
Filed Nov. 20, 1962, Ser. No. 258,936
6 Claims. (Cl. 81—101)

1. A wrench comprising a handle having an axis, frame means projecting laterally from the handle at one end thereof including a frame, a jaw at the end of the handle, the frame having a nut aperture extending laterally through the frame, the upper surface of the nut aperture tapering upwardly at about 5° from a line normal to the handle axis, the frame having a longitudinally extending shank hole and connecting with the nut aperture and having at least the side thereof adjacent to the handle tapering outwardly toward the handle from the nut aper-

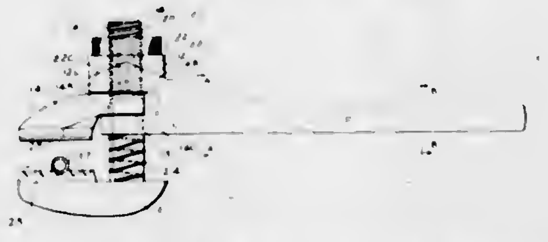
ture, a hook jaw having a shank received in the shank hole, screw threads on the shank, a nut having screw threads engaging the screw threads on the shank and received in the nut aperture, the edge of the nut engaging the inner corner of the frame means for pivoting of the shank and hook jaw relatively to the handle jaw, a spring of convex form having a hole therethrough for receiving the shank and positioned between the nut and the lower surface of the nut aperture, and the convexity of the spring being from inner wall to outer wall of the nut aperture whereby the point of contact of the spring with the nut moves outwardly as the spring flattens to give an increasing lever arm for the spring pressure on the nut.



3,185,000

LEVER-CAM OPERATED SLIDABLE JAW WRENCH

Wayne K. Bergman, 927 Butler St., Toledo 5, Ohio
Filed May 14, 1963, Ser. No. 280,197
3 Claims. (Cl. 81—128)

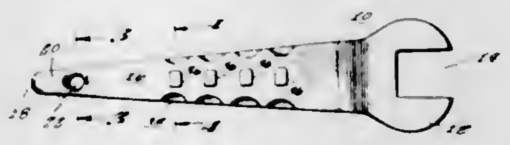


1. In a device of the class described, a lever handle, a bifurcated end portion on one end portion of and integral with said lever handle, said bifurcated end portion comprising an upper arm and a lower arm extending from said lever handle, a cam surface on the upper surface of said upper arm and substantially flat surfaces on the underside of said upper arm and the upper surface of said lower arm; an upper gripping jaw, a rear portion on said gripping jaw having substantially flat upper and under surfaces, and said rear portion fitting snugly within and between said upper and lower arms of said bifurcated end portion; a protruding forward gripping portion on said upper gripping jaw; a lower gripping jaw corresponding to said upper jaw forward gripping portion, a non-circular bolt with an upper threaded portion, and said bolt being integral with and extending vertically from the rear portion of said lower jaw and said bolt extending through circular apertures provided in the center of said upper and lower arms and a non-circular aperture provided in the center of said rear portion of said upper jaw, said circular apertures being such as to snugly permit rotation of said bolt within it, and said non-circular aperture being such as to fit snugly around said non-circular bolt and permitting vertical movement but no rotation movement around said bolt, so that said upper and lower jaws move laterally in alignment with each other; a removable cam portion for mating with said cam surface on said upper arm of said bifurcated end portion, said removable cam portion being provided with a non-circular aperture also to snugly fit around said bolt and to remain in permanent alignment with said upper and lower jaws; a threaded nut for screwing on said upper threaded bolt portion and adjusting position of lower jaw; a compression spring surrounding said bolt and positioned between said lower jaw and said lower arm of said bifurcated end portion to urge said upper and lower gripping jaws apart.

3,185,001

WRENCH-TOOL HANDLE GRIP

Rodney A. Viator, New Orleans, La.
(P.O. Box 273, Delcambre, La.)
Filed Nov. 12, 1963, Ser. No. 322,946
4 Claims. (Cl. 81—177)

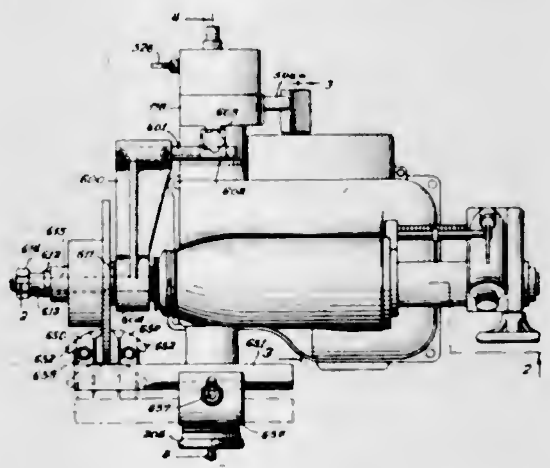


1. A wrench comprising an enlongated handle having a work engaging head at one end, said handle carrying a plurality of spaced apart vertical bores extending transversely therethrough, said handle further carrying a like plurality of spaced apart horizontal bores extending transversely therethrough, each of said horizontal bores being aligned with and intersecting the corresponding vertical bore, and each of said aligned bores being provided with suitably shaped compressable and expandable resilient means extending into the aligned bores for gripping engagement by the hand of the user.

3,185,002

LATHE SPINDLE LOCK

Walter P. Kushmuk, Niles, Ill., assignor to Ammco Tools, Inc., Chicago, Ill., a corporation of Illinois
Filed May 28, 1963, Ser. No. 283,939
5 Claims. (Cl. 82—2)



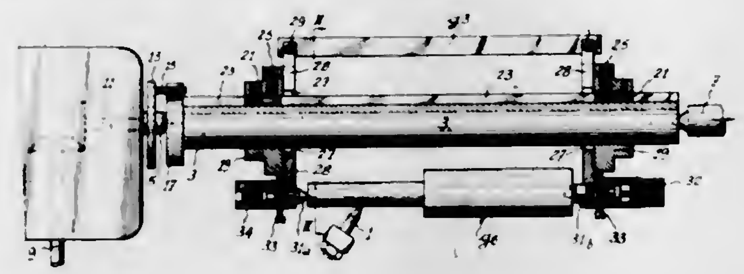
1. A lathe comprising a base, workpiece carrying means rotatably supported by said base and having an outwardly facing exposed shoulder, a rigid member rigidly supported on said base, a sleeve journaled in said rigid member and receiving said workpiece carrying means therethrough and means for clamping a workpiece on said workpiece carrying means relatively to one end of said sleeve and for clamping the other end of said sleeve against said shoulder.

3,185,003

MACHINE-TOOLS FOR COPYING

Jules Louis Jeanneret, 13–21 Rue H. Gelin, Niort, Deux-Sevres, France
Filed Mar. 29, 1961, Ser. No. 99,282
4 Claims. (Cl. 82—14)

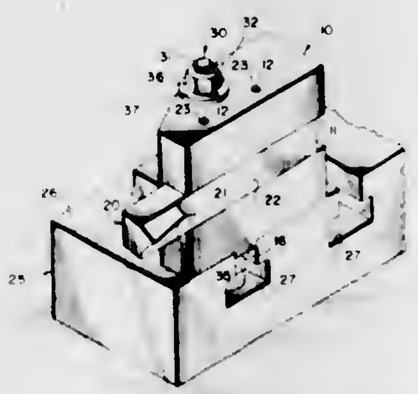
1. In a machine of the type having a feeler operatively associated with a tool to control a machining operation of a workpiece, the provision of template holder means adapted for supporting a plurality of different templates each of which is adapted for successively cooperating with the feeler to control the tool, said template holder means comprising a shaft having an axis of rotation and adapted for rotation in step-by-step movement between angular positions respectively corresponding to successive machining stages of operation, at least two cheeks slidably supported on said shaft for rotation therewith and extending radially of the shaft, means for securing the cheeks to the shaft in axially adjusted positions, said cheeks having outside diameters substantially greater than that of the shaft, a plurality of templates being provided each of which corresponds to a different machining stage in orderly sequence, said templates having opposite ends, means supporting said templates at said ends thereof from said cheeks detachably and for adjustment in a direction radially of said shaft, and means for securing the ends of the templates individually in the respective cheeks in respective adjusted positions in the cheeks.



3,185,004

TOOL HOLDING ASSEMBLY

Howard L. Faust, Bethlehem, and Richard Garland, Philadelphia, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed May 28, 1963, Ser. No. 283,874
5 Claims. (Cl. 82—37)



1. A tool holding assembly for a machine having a bed with an inverted T-slot, comprising:

(*a*) a block for holding a tool and having a bore therethrough that is counterbored at one end to form an annular flange;

(*b*) a base member adapted to be slidably disposed in an inverted T-slot in a machine bed;

(*c*) a post member extending through the bore to pivotally support said block, having one end adapted to extend into the slot in which the base member is disposed, and being connected to said base member;

(*d*) said members being movable axially relative to one another into frictional engagement with the slot in which said base member is disposed to lock said base member against movement;

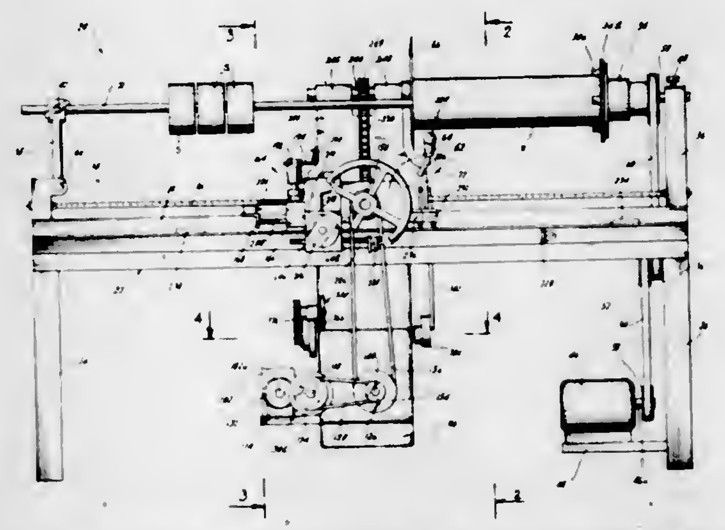
(*e*) spring means disposed in the counterbore having one end engaging the formed flange and its other end adapted to engage the bed with the slot in which said base member is disposed for biasing said block away from said base member; and

(*f*) means mounted on the other end of said post member from said base member to hold said block on said post member and being movable axially relative to said post member to urge said block against the spring means into engagement with the bed having the slot in which said base member is disposed to lock said block against pivoting.

3,185,005

CUTTING MACHINE

David N. Judelson, New York, N.Y., assignor to Oscar I. Judelshon, Inc., New York, N.Y., a corporation of New York
Filed Mar. 18, 1958, Ser. No. 722,301
15 Claims. (Cl. 82—48)



1. In a cutting machine including a roll supporting and turning mechanism for supporting a roll of material wound on a core and for turning said roll about its axis and a carrier including a rotary cutting knife movable through a cutting cycle having a forward stroke in which said rotary cutting knife approaches, penetrates and cuts transversely through said roll and core and a return stroke in which said knife retracts from said roll and moves to a clearance position, the improvement comprising a variable speed actuating and controlling unit operatively connected to said carrier for moving said carrier through said cutting cycle at different rates of speed, said unit including a drive motor having a selectively energizable electric clutch and brake, means coupling said clutch to said carrier to move said carrier through said forward stroke at a relatively high speed for rapid approach to said roll, sensing means adjustable in accordance with the diameter of said roll and operable in response to the approach of said carrier to a roll-penetrating position for said knife relative to said roll, means responsive to operation of said sensing means for energizing said electric brake and deenergizing said electric clutch for a prescribed time interval, and means operable after said prescribed time interval for deenergizing said electric brake and energizing said electric clutch to move said carrier through a further portion of said forward stroke for a further prescribed time interval at a relative low speed for penetration into said roll.

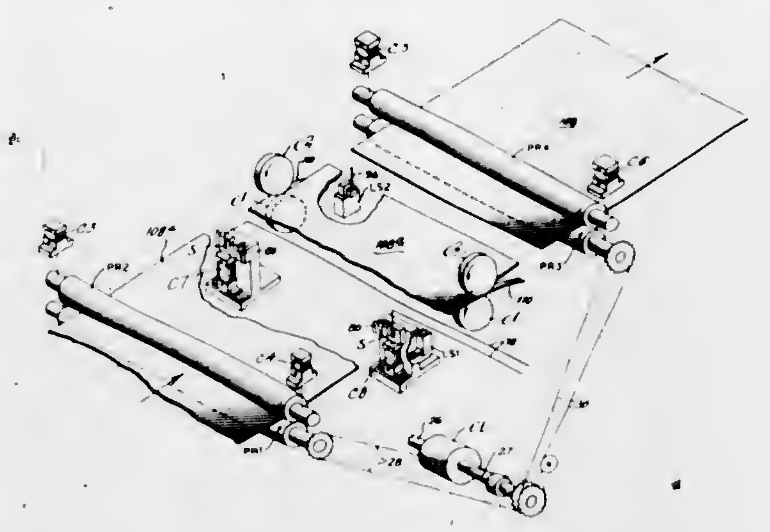
3,185,006

METHOD FOR TRIMMING EDGES OF SHEETS

Robert T. Mercer, Lima, Ohio, Laurence W. Secrest, Alexandria, Va., and Frank J. Zsebo, Silver Spring, Md., assignors to Lennox Industries, Inc., Marshalltown, Iowa, a corporation of Iowa
Original application June 18, 1962, Ser. No. 203,178, now Patent No. 3,153,962, dated Oct. 27, 1964. Divided and this application Nov. 12, 1963, Ser. No. 322,706
3 Claims. (Cl. 83—33)

1. A method for trimming the two opposite side edges of a sheet comprising the steps of cutting a desired length of sheet from a web of sheet, moving said length of sheet longitudinally by friction to engage its leading edge with a pair of stops spaced laterally of the sheet to angularly orient said leading edge, gripping the oriented sheet only

after said leading edge has engaged both of said stops, moving it as oriented longitudinally, and trimming the

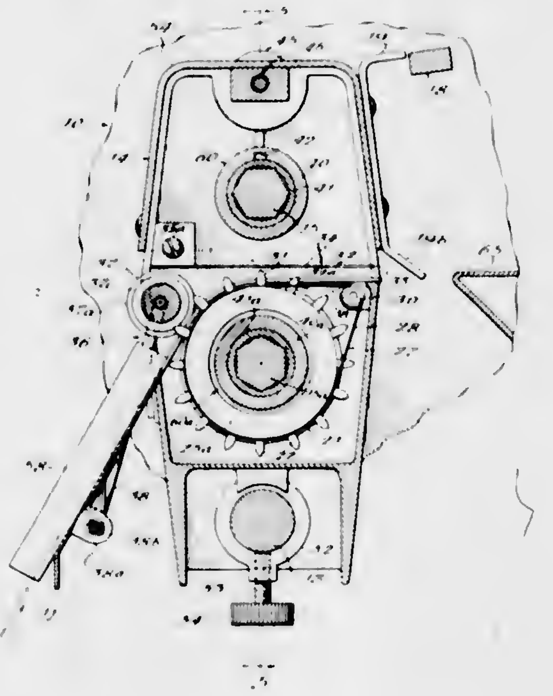


side edges thereof at predetermined angles relative to the oriented leading edge thereof.

3,185,007
PAPER CONTROL FOR BUSINESS MACHINES

Robert M. Pine, Chicago, and Charles L. Peterson, Crystal Lake, Ill., assignors to Uarco Incorporated, a corporation of Illinois

Filed July 2, 1962, Ser. No. 206,898
3 Claims. (Cl. 83—163)

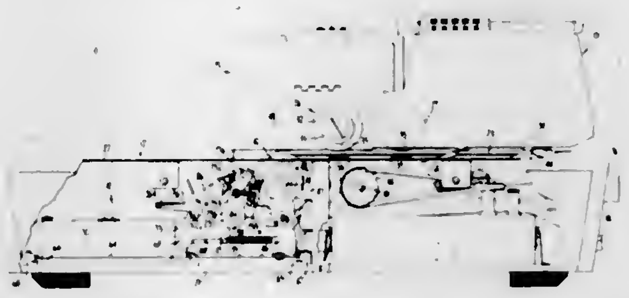


1. In a business machine adapted to accept marginally perforated control punched stationery therein, means for controlling and guiding stationery therethrough, comprising: a driven pinwheel mounted on a driven shaft, said pinwheel having generally radially extending pins adapted to engage perforations in said stationery and advance the same through said unit; and means for maintaining said stationery in a generally linear path of travel along a line tangential to a point of separation from said pinwheel and in linear alignment with the pins thereof, including a moving element positioned between said stationery and said pinwheel impaled on and driven by the pins of pinwheel and having a number of openings in excess of the pins on said pinwheel, said moving element having a portion traveling in general parallelism with the line of paper separation from the pinwheel.

3,185,008
POSTAL METER HAVING MEANS FOR SELECTIVELY CONTROLLING MAGNITUDE OF WORK FEED INCREMENT

Charles S. Balaz, Hayward, and Ingemar H. Lundquist, Oakland, Calif., assignors, by mesne assignments, to Friden, Inc., San Leandro, Calif., a corporation of Delaware

Filed Nov. 30, 1962, Ser. No. 241,395
5 Claims. (Cl. 83—224)

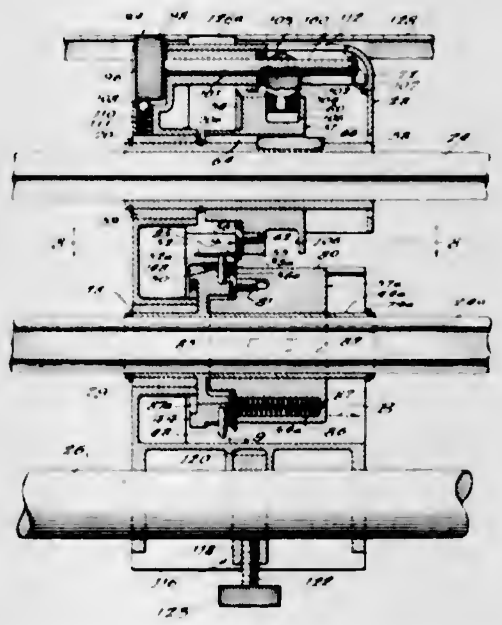


1. In a tape feeding device, the combination of a source of tape supply, a feed roller for advancing the tape from said source of supply, a disk associated with said feed roller for rotation therewith having a series of peripheral notches therein, each notch representative of an angularly rotated position of said feed roller, a cutting means for severing the advanced portion of the tape to form a strip of a selected length, means engageable selectively in one of the series of notches in said disk operable to terminate the rotation of said feed roller in a predetermined angularly rotated position thereof and to effect operation of said cutting means, an actuating means for driving said disk movable differentially to control the angular rotation of said feed roller, means operable to control operation of said engageable means subsequent to the operation of said actuating means, a power-operated means for effecting differential movement of said actuating means, and means settable to control the differential movement of said actuating means by said power-operated means.

3,185,009
TRIMMER HAVING MANUALLY OPERABLE MEANS TO ADJUST TRIM WIDTH WHILE TRIMMER IS IN OPERATION

Raymond S. Meter, Evergreen Park, and Robert M. Pine, Chicago, Ill., assignors to Uarco, Incorporated, a corporation of Illinois

Filed July 19, 1962, Ser. No. 210,981
17 Claims. (Cl. 83—423)

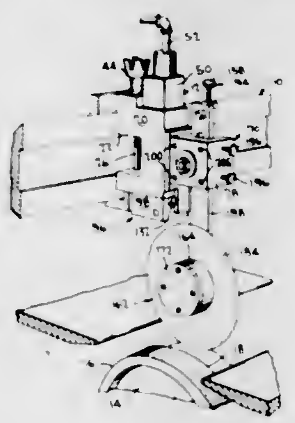


1. A trimming mechanism for removing marginal material from stationery of different widths, comprising: a pair of driven shafts spaced apart for passage of stationery therebetween; a mounting shaft spaced from and parallel to said driven shafts; a pair of trim units releasably mounted on said mounting shaft for movement therealong and being operatively connected with said driven shafts, each trim unit including a pinwheel for advancing stationery therethrough and a cutting disc mounted on one of said driven shafts and a second cutting disc mounted on the other driven shaft for cooperation with the first cutting disc; means interconnecting said discs with said shafts for lateral movement relative to said shafts and said pinwheel and the trim units; a traversing member mounted in each trim unit, said traversing member manipulatable by a user's finger; and a lateral motion imparting member mounted on said traversing member for lateral movement responsive to finger manipulation of said traversing member, said lateral motion imparting member operatively connected to one of said cutting discs for imparting lateral motion to at least one of the cutting discs responsive to finger manipulation of the traversing member to move said discs along said shaft relative to said pinwheel and to hold said discs in selected positions of adjustment simultaneous with the cessation of finger manipulation of said traversing member to adapt said trim unit for removing different marginal widths from stationery.

3,185,010
SLITTING MECHANISM FOR ENDLESS WEB MATERIAL

Warren G. Printz, Middletown, Dimitrijs Rubenis, Monroe, and William Lithgo, Middletown, Ohio, assignors to Diamond International Corporation, a corporation of Delaware

Filed June 3, 1963, Ser. No. 284,915
14 Claims. (Cl. 83—482)

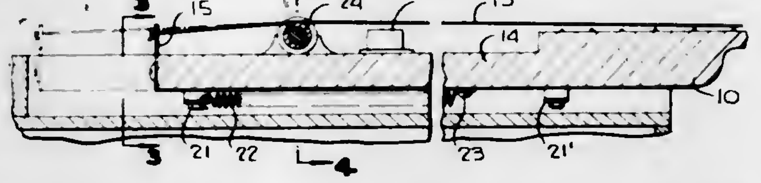


1. Apparatus for slitting a continuous web of material comprising a support member, a body member mounted on said support member, first cutter means having a circular cutting edge and mounted below said body member, a slitter assembly including a depending second cutter means having a circular cutting edge and journaled on said slitter assembly on a fixed axis of rotation for driving, shear-angle engagement with said first cutter means, said slitter assembly and body member including means pivotally and reciprocably mounting said slitter assembly on said body member on an axis of rotation above and substantially normal to the axis of rotation of said first cutter means, fluid motor means on said body member operatively connected to said slitter assembly for reciprocating said slitter assembly at said means pivotally and reciprocably mounting said slitter assembly and moving said second cutter means edge toward said first cutter means edge, means on said slitter assembly normally urging said second cutter means edge away from first cutter means edge and cam means on said body member and said slitter assembly and including camming portions for pivoting said slitter assembly and said second cutter means edge bodily toward and away from said first cutter means edge during reciprocable movement of said slitter assembly during operation of said fluid motor means.

3,185,011
STRINGED MUSICAL INSTRUMENT

Earl F. Anderson, Raymondville, Tex.

Filed Nov. 22, 1963, Ser. No. 325,555
10 Claims. (Cl. 84—293)

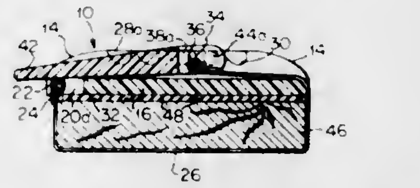


1. A musical instrument comprising a body, a neck slidably mounted for movement longitudinally of said body, a plurality of strings having their ends connected to the ends of said neck, and a rotatable bridge mounted on said body extending beneath and in bearing engagement with said strings.

3,185,012
CAPO TASTO

James Dunlop, 926 37th St., Richmond, Calif.

Filed Nov. 3, 1964, Ser. No. 408,597
6 Claims. (Cl. 84—318)

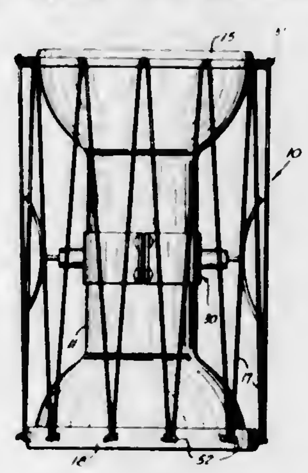


1. A capo tasto for stringed instruments comprising a channel including a floor portion having an outer surface and secured thereto a pad of elastic material and a pair of transversely spaced side flanges having longitudinal edges and provided therein a plurality of transversely aligned pairs of notches; a lever having beads of a size to fit into said notches secured to the outer sides at one end thereof; and a band connecting one end of said channel to said lever at a point inwardly removed from the bead supporting end thereof.

3,185,013
MUSICAL DRUM

William Gussak, 31 Parker Ave., Deal, N.J.

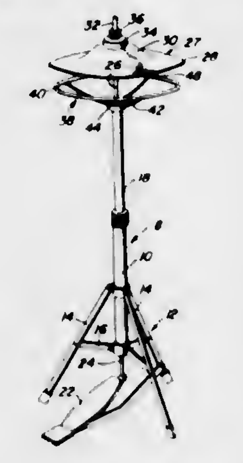
Filed May 24, 1963, Ser. No. 282,974
5 Claims. (Cl. 84—411)



1. In combination with a musical drum having a cylindrically shaped central portion and enlarged outwardly curved cup-shaped open end portions, drum heads of different materials covering each of said open end portions and stretching means for maintaining each of said drum heads in a tensioned condition over said open end portions; a device for simultaneously gripping and tuning said drum during playing, said device comprising knee rest portions, means resiliently supporting said

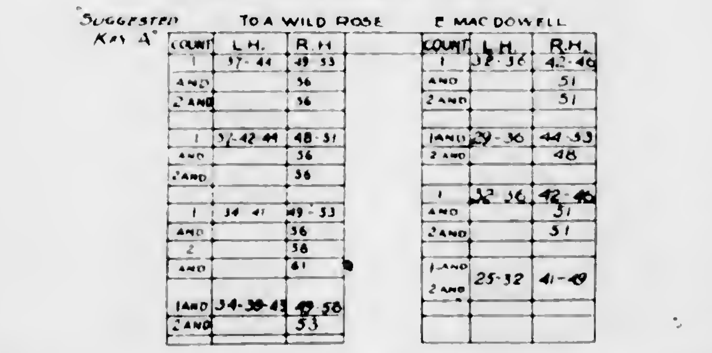
knee rest portions upon said central portion, and a plurality of tensioning cords extending over said knee rest portions and interconnecting said stretching means, whereby pressure exerted by the knees upon said knee rest portions will simultaneously vary the tensioning of said tensioning cords, so that the drum can be simultaneously gripped, tuned and played.

3,185,014
STAND WITH IMPROVED SOCK CYMBALS
Russel Ross, P.O. Box 411, Punxsutawney, Pa.
Filed Dec. 4, 1962, Ser. No. 242,152
4 Claims. (Cl. 84—422)



1. For use by a percussionist, a trap drummer, for example, cadence setting and rhythm beating means comprising upper and lower paired cymbals similarly diametered and structurally matched, related and structurally connected for companion use, one of said cymbals, either upper or lower, constituting a primary cymbal and having a hub portion and the other a companion cymbal, either upper or lower, constituting a secondary cymbal and providing an anvil against which the marginal edge of the primary cymbal is adapted to be clapped, pounded, or otherwise impacted, said primary cymbal being made of highly sensitive vibratory sheet material, said secondary cymbal constituting a dummy cymbal, being adapted to be substituted, when it is being used, for a standard cymbal, being made of material without particular regard to inherent vibratory characteristics, whereby said primary cymbal, if as usual, of Turkish quality, will produce cymbal sound effects comparably equal to a matched pair of cymbals which are both made of corresponding vibratory material and properties.

3,185,015
APPARATUS FOR PIANO PLAYING IN ANY KEY, FOR WRITING MUSIC, AND FOR TRANSPOSING MUSIC FROM ONE KEY TO ANOTHER
Raymond Henry Wencil, 2904 N. Keating Ave., Chicago 41, Ill.
Filed Oct. 1, 1962, Ser. No. 227,278
1 Claim. (Cl. 84—478)

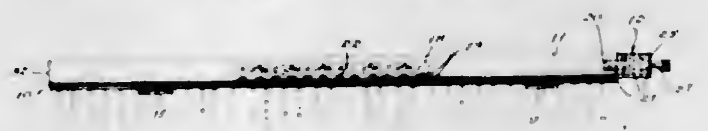

SUGGESTED KEY A TO A WILD ROSE E MAC DOWELL

COUNT	L.H.	R.H.
1	37-44	49-53
AND		56
2 AND		56
1	37-42-44	48-51
AND		56
2 AND		56
1	34-41	49-53
AND		56
2		58
AND		61
1 AND	34-39-45	49-58
2 AND		53

COUNT	L.H.	R.H.
1	32-36	42-46
AND		51
2 AND		51
1 AND	29-36	44-53
2 AND		48
1	32-36	42-46
AND		51
2 AND		51
1-AND 2 AND	25-32	41-49

An apparatus for facilitating the playing of a piano in any desired key; comprising a sheet of music having the music count designated in successive series of numbers, and arranged in columns numbered consecutively, said sheet having a column for the right hand notes and a column for the left hand notes to be played at each count, the said right hand notes and left hand notes being designated by one or more numbers opposite each number for each music count to be played simultaneously at each count and the numbers of the notes to be played, being the note numbers of a consecutive series of numbers beginning at number one at the left end, which appear on an elongated strip of material, adapted to be inserted on the keyboard of a piano, in the crack behind the black keys on top the rear portion of the white keys, in a vertical position, the said strip bearing on its front side, a number in series of consecutive numbers beginning with number one, for each white key, and a number for each black key in consecutive order in the series on said strip, the spacing between the numbers and the spacing of the black keys and the white keys on the keyboard being approximately one-half inch space per key, so that the numbers each register with a black key and a white key, and the numbers indicate the keys of the piano of said series, the said strip being placed with the number one of said series on said strip, behind the key of the music, in which the music is to be played, and the strip being movably mounted to slide in the crack behind the black keys into any selective position to cause the number one to register with any key, automatically transposing the music to any desired key at which number one is located on the keyboard, to be played at that key by using the same music sheet.

3,185,016
CHORD TEACHING DEVICE
Herman B. Stinson, Jr., Kirkwood, and Ivor G. Noon, St. Louis, Mo., assignors of twenty percent to William H. Magidson, University City, Mo.
Filed Mar. 6, 1963, Ser. No. 263,267
11 Claims. (Cl. 84—478)



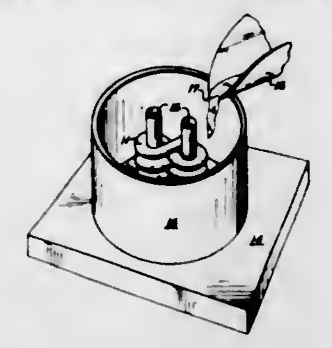
1. A chord teaching device for a keyboard, comprising in combination:

(*a*) an outermost tubular member having means by which it may be supported adjacent to and against the keyboard in an axially and angularly locked position and having a series of 12 reference means aligned in a row therein, spaced along said member to be disposed respectively adjacent to 12 consecutive keys of the keyboard; and

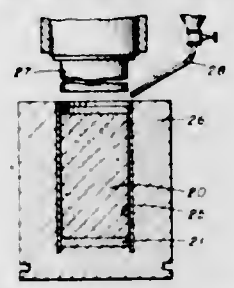
(*b*) an inner member movably disposed within and supported by said outermost tubular member and projecting at one end therefrom at all times, and having indicia fixed thereon, various combinations of which are selectively alignable with said reference means to indicate a group of keys to be played in combination.

3,185,017
METHOD OF MAKING AN EXPLOSIVE BOOSTER
Melvin A. Cook and Douglas H. Pack, Salt Lake City, Utah, assignors to Intermountain Research and Engineering Company, Inc., Salt Lake City, Utah, a corporation of Utah
Original application July 13, 1959, Ser. No. 826,539, now Patent No. 3,037,453, dated June 5, 1962. Divided and this application Oct. 24, 1960, Ser. No. 70,884
2 Claims. (Cl. 86—1)

1. The method of making a booster for insensitive explosives comprising supporting a rod on a base in upstanding relation thereto, wrapping a flexible tube containing Primacord-sensitive explosive around said rod, compacting a sheath of Primacord-insensitive explosive on said base about said rod and tube and removing said rod and base from said compacted sheath to provide a perforation through the sheath adapted to receive a detonating fuse.



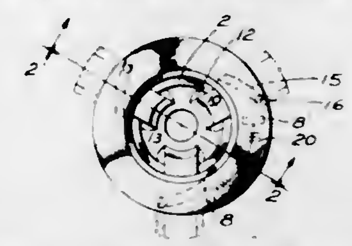
3,185,018
METHOD OF FUEL UNIT ASSEMBLY
Glenn H. Damon, Arlington, Va., John Ribovich, McKeesport, Pa., and Joseph A. Herickes, Annandale, Va., assignors to the United States of America as represented by the Secretary of the Navy
Original application Aug. 18, 1961, Ser. No. 135,398, now Patent No. 3,118,380, dated Jan. 21, 1964. Divided and this application Mar. 29, 1963, Ser. No. 275,784
1 Claim. (Cl. 86—20)
(Granted under Title 35, U.S. Code (1952), sec. 266)



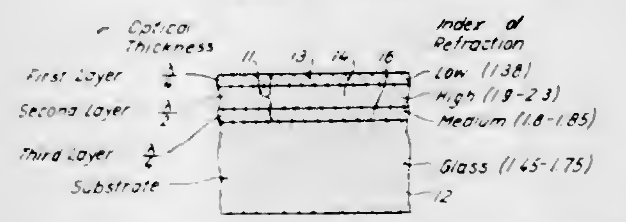
A method for assembling fuel units comprising the steps of enclosing the sides and bottom of a thin-walled, open-end cylinder of combustible material in a heavy walled steel mold, coating the inside of the cylinder with a lubricant-bonding material consisting essentially of 10–40 percent by weight of alcohol wet nitrocellulose and 60–90 percent by weight of dibutyl-phthalate, placing powdered fuel into the cavity formed by the cylinder, compacting the powdered fuel with a close tolerance plunger with pressures up to 45,000 pounds per square inch, withdrawing the plunger, re-coating the remaining height of the cylinder wall, placing additional powdered fuel into the cavity formed by the cylinder, compacting the newly added powdered fuel with a close tolerance plunger with pressures up to 45,000 pounds per square inch, withdrawing the plunger, repeating the last three steps until the fuel unit is filled to the desired level, and allowing the lubricant-bonding material to dry whereby the lubricant-bonding material lubricates the cylinder and the plunger thereby preventing erosion thereof resulting from the adherence thereto of fuel particles and agglomerates, and whereby the lubricant-bonding material fills the interstices on the peripheral surface of the compacted fuel so as to prevent undesirable peripheral burning and bonds the compacted fuel to the cylinder.

3,185,019
SHELL CASING HOLDER
Edgar D. Shoffstall, 615 Porterville Road, East Aurora, N.Y.
Filed Sept. 5, 1962, Ser. No. 221,531
5 Claims. (Cl. 86—44)

1. A shell casing holder comprising a base, a cap mounted on said base for rotation about an axis, three movable jaws spaced apart 120° around said axis for gripping a shell casing in centered relation to said axis, said jaws being guided for movement toward and away from said axis to alternately grip and release a shell casing thereat, motion translating means interconnecting said cap and said jaws for retracting said jaws from said axis when said cap is rotated in one direction and extending said jaws toward said axis when said cap is rotated in the opposite direction, and return spring means urging said cap in said opposite direction upon rotation thereof in said one direction, wherein said base has a circular peripheral portion with a circumferential groove therein, said cap having a skirt encircling said base portion and having a part entering said groove and movable therealong upon rotation of said cap.



3,185,020
THREE LAYER ANTI-REFLECTION COATING
Alfred J. Thelen, Santa Rosa, Calif., assignor to Optical Coating Laboratory, Inc., Santa Rosa, Calif., a corporation of Delaware
Filed Sept. 7, 1961, Ser. No. 136,479
2 Claims. (Cl. 88—1)



1. In the combination of a body having a normal light reflecting surface and an index of refraction from 1.45 to 1.58 and a non-absorbing substantially colorless multiple layer anti-reflection coating disposed on said surface, the anti-reflection coating comprising a transparent first layer having an optical thickness of one-quarter of the design wavelength of anti-reflection coating and having an index of refraction of approximately 1.38, said first layer being formed of magnesium fluoride, a transparent second layer having an optical thickness of one-half of the design wavelength of the anti-reflection coating and having an index of refraction ranging from 1.9 to 2.3, said second layer being formed of zirconium oxide, and a transparent third layer having an optical thickness of one-quarter of the design wavelength of the anti-reflection coating and having an index of refraction from 1.8 to 1.85, said third layer being formed of cerium fluoride, said third layer also being formed of a material having an index of refraction n_3 which is determined from the equation

$$n_1^2 \approx n_3^2/n_s$$

where n_1 is the index of refraction of the material forming the first layer and n_s is the index of refraction of the material forming the body.

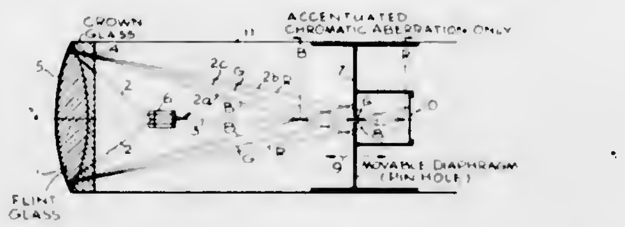
3,185,021
FOCAL ISOLATION MONOCHROMATOR EMPLOYING ACCENTUATION OF LONGITUDINAL CHROMATIC ABERRATION
James S. Thompson, Los Angeles, Calif., assignor, by mesne assignments, to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Mar. 27, 1961, Ser. No. 98,640
2 Claims. (Cl. 88—14)

1. In a focal isolation monochromator having a predetermined optical axis:

a compound lens system for folusing light rays of different wavelengths to different longitudinally spaced focal points along said axis;

input means for introducing light rays to said lens system from a position substantially along said axis on one side of said lens system;

means including a reflecting surface, positioned adjacent the other side of said lens system, for redirecting said light rays once more through said lens system and thereby to said different focal points;


CROWN GLASS
ACCENTUATED CHROMATIC ABERRATION ONLY
MOVABLE DIAPHRAGM (PIN HOLE)
FLINT GLASS

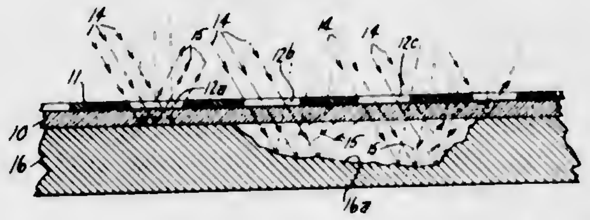
and diaphragm means having an aperture therein positioned along said axis at the one of said focal points which corresponds to a selected wavelength;

with said compound less system including convergent and divergent refracting elements formed respectively of a high dispersion material and a relatively low dispersion material for substantially accentuating the normally occurring longitudinal chromatic aberration while simultaneously reducing spheral aberration to an acceptable amount to thereby provide improved discrimination against wavelengths other than said selected wavelength.

3,185,022

OPTICAL GAGE FOR TESTING SURFACE IMPERFECTIONS

John M. Holeman, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 15, 1961, Ser. No. 117,412
1 Claim. (Cl. 88—14)



An optical testing gage comprising a light transparent supporting member formed to a shape complementary to that of the general configuration but not the discrete imperfections of a surface to be tested, and an opaque surface carried by said supporting member and having a plurality of regularly spaced light transmitting generally circular apertures formed therein, with adjacent apertures being separated by a distance substantially equal to their diameters and with such diameters being substantially equal whereby upon the gage being positioned over a surface to be tested and light being directed through the apertures, light striking unblemished portions of the test surface will be reflected back out through the apertures, and light striking imperfections in the test surface will be occluded by the opaque portions of the gage.

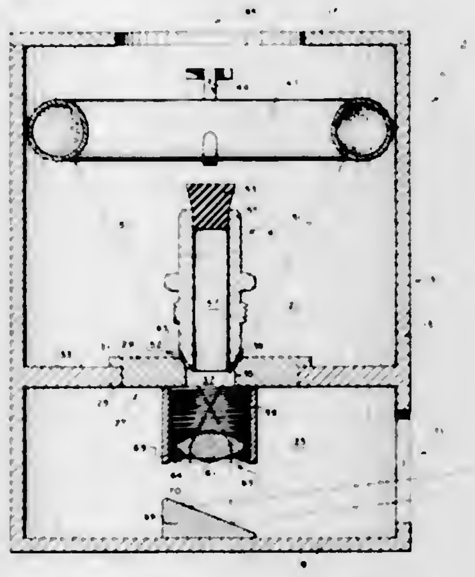
3,185,023

OPTICAL INSPECTION APPARATUS

Willis G. Groth, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 26, 1961, Ser. No. 148,001
2 Claims. (Cl. 88—14)
(Granted under Title 35, U.S. Code (1952), sec. 266)

2. An inspection apparatus for detecting deviations of a cone surface of a component, comprising:

- (*a*) a housing having an inner chamber;
- (*b*) a gauge supported by said housing and dividing said inner chamber into an upper portion and a lower portion;
- (*c*) said gauge having an inner circumferential surface defining a circular passageway which communicates said upper and lower chambers;
- (*d*) said inner circumferential surface adjacent said upper portion of said chamber being shaped into a toroidal convex surface;

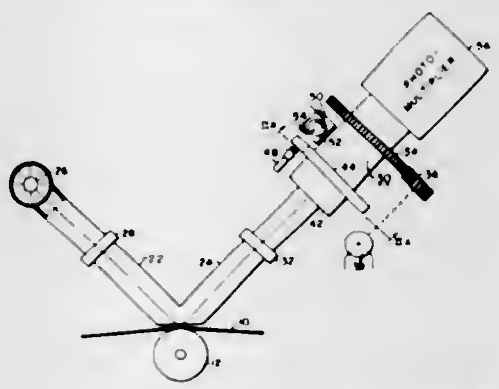


- (*e*) said passageway serving to receive the component to be tested so that the component's cone surface is in a contiguous relationship with the toroidal convex surface and any deviation of the component's cone surface will result in incomplete contact with the toroidal surface and form a slit or gap;
- (*f*) a light source in the upper portion of said chamber; and
- (*g*) optical means for detecting light passing through said slit or gap.

3,185,024

METHOD AND APPARATUS FOR OPTICALLY MEASURING THE THICKNESS OF THIN TRANSPARENT FILMS

Richard A. McCreanor, Baldwin, Pa., assignor to Donart Electronics Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 8, 1962, Ser. No. 178,322
11 Claims. (Cl. 88—14)



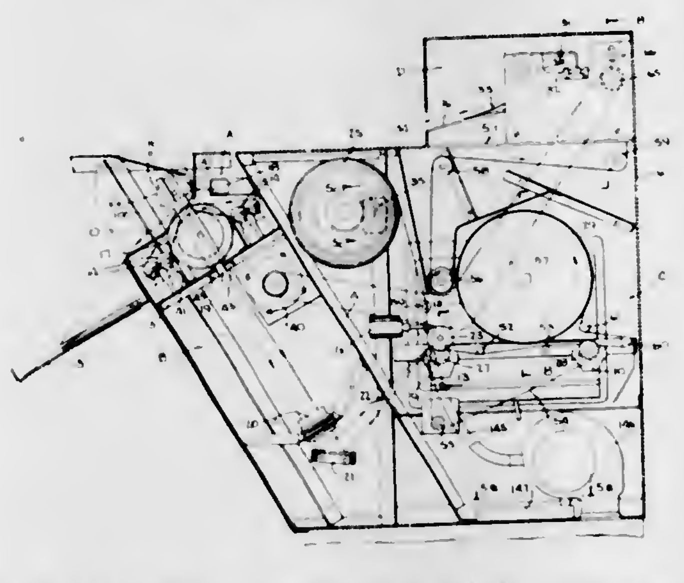
2. In apparatus for determining the thickness of a thin transparent film applied to a continuously moving strip of reflective material by passing said material through film coating apparatus, the combination of first continually rotating analyzer means positioned adjacent said moving strip ahead of the coating apparatus and adapted to produce a first electrical signal which varies as a function of the ellipticity of polarized light reflected from the strip without the film applied, second continually rotating analyzer means positioned adjacent the moving strip beyond the coating apparatus and adapted to produce a second

electrical signal which varies as a function of the ellipticity of polarized light reflected from the strip with the film applied, and means responsive to said first and second electrical signals for producing an output electrical signal which varies as a function of the thickness of the film applied to the strip.

3,185,025

PHOTOCOPY MACHINE

William A. Pfaff, Huntington, Francis T. Arnold, Port Jefferson, Edgar A. Kniffin, Stony Brook, Selah S. Brewster, Jr., Port Jefferson, and George B. Crouse, Wading River, N.Y., assignors to Peerless Photo Products, Inc., Shoreham, N.Y., a corporation of New York
Filed Aug. 8, 1960, Ser. No. 48,141
9 Claims. (Cl. 88—24)

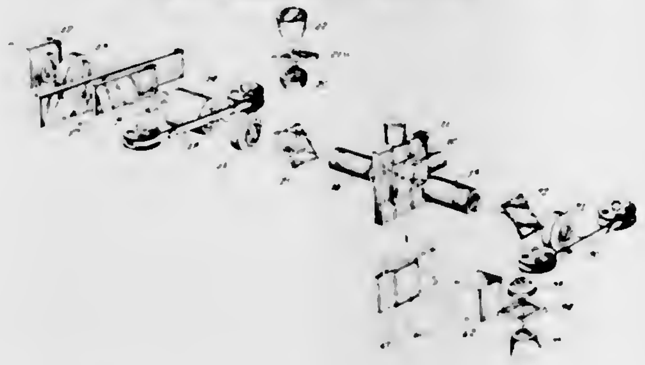


1. In a photocopy machine, a feeder roller and a transparent cylinder in contact with said feeder roller adapted to receive an original therebetween, a light source adjacent said feeder roller adapted to be actuated by said original to turn on said light source, said cylinder being adapted to permit the image of said original to be passed through it to a sheet of photosensitive paper to expose a portion of said paper, means for notching said sheet at predetermined intervals, means for processing said photosensitive paper, and means responsive to said notch for cutting said exposed portion of said sheet.

3,185,026

METHOD AND APPARATUS EMPLOYING METACHROMATIC MATERIAL FOR FORMING A PLURALITY OF INDIVIDUAL MICRO-IMAGES

Carl O. Carlson, Los Angeles, David B. Congleton, Manhattan Beach, and David A. Grafton, Santa Monica, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed May 22, 1961, Ser. No. 111,759
16 Claims. (Cl. 88—24)

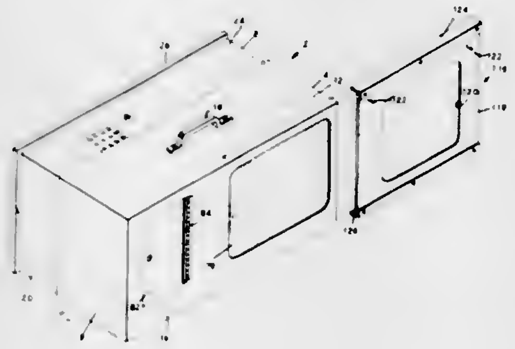


1. An optical system for forming micro-images on photographic film comprising: light source means for providing a beam of light including frequencies within a first waveband, said beam containing an image of an object which is to be formed into a micro-image; storage micro-image means disposed normal to and in the path of said beam and including reversible metachromatic material in which images may be formed in response to light of frequencies within said first waveband, said reversible metachromatic material being selectively excitable to a relatively opaque state upon exposure to said beam of frequencies without requiring the formation of a latent image; imaging means disposed between said light source means and said metachromatic means for receiving said beam of light and projecting a micro-image of said object onto the metachromatic material; accessing means to selectively position said metachromatic material within said beam of light; said light source means including means to provide a second beam of light containing frequencies not within said first waveband for the quenching of said image; said light source means also including means to provide a third beam of light capable of transmitting the micro-image formed on said metachromatic material while the micro-image thereon remains substantially unaffected; and photographic film receiving means onto which the micro-image is transferred by said third beam.

3,185,027

PORTABLE VIEWING APPARATUS

Claude D. Hodges, 6547 27th St. N., and David L. Frederi[illegible] 702 Highland St. N., both of Arlington, Va.
Fi[illegible] Sept. 27, 1961, Ser. No. 141,134
11 Claims. (Cl. 88—24)



1. In an apparatus for viewing transparencies and the like, an outer cabinet, an inner cabinet telescopically received within said outer cabinet, said outer cabinet including a front panel having an opening therein, a viewing screen of translucent material secured within said opening, means within said inner cabinet for mounting projection equipment, and a mirror mounted within said inner cabinet and so arranged relative to said projection equipment and said screen that an image projected thereupon by said equipment will be reflected unto said screen.

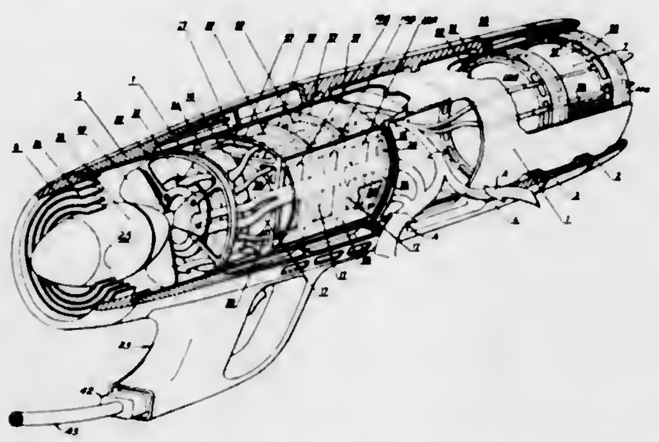
3,185,028

LIGHT AND IMAGE PROJECTORS

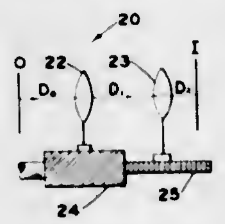
Gianni Andreoli, Lucerne, Switzerland, assignor to Mitralux Establishment, Vaduz, Liechtenstein
Continuation of application Ser. Nos. 819,728, June 11, 1959 and 161,714, Dec. 22, 1961. This application May 31, 1962, Ser. No. 198,805
Claims priority, application Switzerland, July 15, 1958, 61,786
13 Claims. (Cl. 88—24)

11. A projector comprising a tubular casing open at each end for the axial flow of a stream of cooling air therethrough, fan means connected to said casing for circulating air through the interior of said casing, means for mounting a projection lamp in said casing, lens means disposed in said casing, supporting and positioning means for said lens means in said casing defining an axial air flow path around the periphery of said lens means, means defining air inlet intermediate said casing length, means defining an annular air flow path extending from said air inlet

around the interior of said casing and thence into the axial flow stream of cooling air in the vicinity of said projection lamp mounting means, and means connected into said casing directly adjacent said projection lamp mounting means for directing an additional cooling air flow into the axial air flow path at the location of said projection lamp mounting means.



3,185,029
LINEAR ZOOM OPTICAL SYSTEM
William G. Peck, Rochester, and Richard J. Pegis, Hilton, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Jan. 23, 1961, Ser. No. 84,004
5 Claims. (Cl. 88—57)



1. The combination in a zoom optical system of a plurality of optically aligned, mutually spaced and axially movable lens members, a stationary object surface of which said members form an image at a variable magnification, and a corresponding plurality of interconnected linear drive mechanisms which are individually connected to said members and are so operatively constructed and arranged as to provide the dual functions of continuously and progressively varying the magnifications of said image and simultaneously compensating the axial shift of said image position such that it is held within optimal small and predictable limits by moving all of said lens members simultaneously at different linearly related optimum rates with reference to said surface during movement through the magnification range, the construction of said mechanisms and the respective values of focal lengths and the sign thereof as well as the values of the axial spaces lying between said object surface and image being specified by the mathematical expressions herebelow,

$$e'(u)=\frac{S(u)}{M(u)}=\frac{[-D_0, K_1, -D_1, K_2, -D_2, \cdots, K_n, -D_n]}{[-D_0, K_1, -D_1, K_2, -D_2, \cdots, -D_{n-1}, K}$$

wherein

[ ] are Gaussian brackets, n is the number of lenses in said system, $e'(u)$ gives the position of the image with respect to its position at $u=0$ (and represents the image shift away from the desired plane),

u is a mathematical parameter which is chosen such that $0 \leqslant u \leqslant 1$, the value of u thus being given at any point in the zooming movement of said members by the ratio of the distance traveled by the members at that point in said movement to the total distance traveled by said members corresponding to the complete magnification range,

S(u) is a polynomial of degree $n+1$ in u having relatively small values on the interval over which u varies,

M(u) gives the reciprocal of the magnification for any value of u, D_0 represents the space from said object surface to the first lens member, and

$D_0=d_0+p_0u$ wherein d_0 is the first space at $u=0$, p_0 is the total change in space D_0 going from $u=0$ to $u=1$, D_1 represents the space between the first lens member and the ith lens member,

$$D_1=d_1+p_1u \quad (1\leqslant i \leqslant n)$$

wherein d_1 is the space between the ith and $i+1$st lens at $u=0$ and p_1 is the total change in space D_1 going from $u=0$ to $u=1$, $K_1=1/f_1$, wherein f_1 is the focal length of the ith lens $(1\leqslant i\leqslant n)$,

said zoom optical system being further characterized by the following specific values

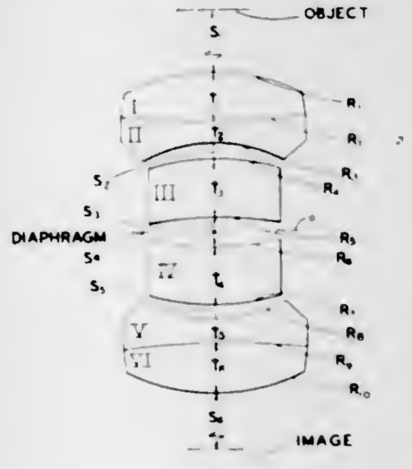
$$n=2$$
$$S(u)=-(u^3-1.5u^2+.5625u-.03125)$$
$$M(u)=-(2u^2+u+1)$$

Focal lengths	Separations
$f_1=+1.9671765$ $f_2=+1.1208430$	$D_0=0.2669365-1.8647794$ u $D_1=2.1142868+2.3647794$ u $D_2=2.1208430-.5000000$ u

n denotes the number of movable zoom lens members, f_1 and f_2 represent the respective focal lengths of said members, and

D_0 to D_2 represent the successive axial lens spacing between the object and image.

3,185,030
SYMMETRICAL PROJECTION OBJECTIVE
Nathan Rickless, Brighton, and Paul L. Ruben, Rochester, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Aug. 22, 1962, Ser. No. 218,691
1 Claim. (Cl. 88—57)



A symmetrical type of projection objective for process work using light in the range λ=440 to 580 mu, said objective comprising

a pair of negative compound lens members of meniscus form which are concave toward each other, and

a pair of positive singlet lens members of thick meniscus form which are spaced between the compound members and have adjacent concave surfaces between which a diaphragm is interposed,

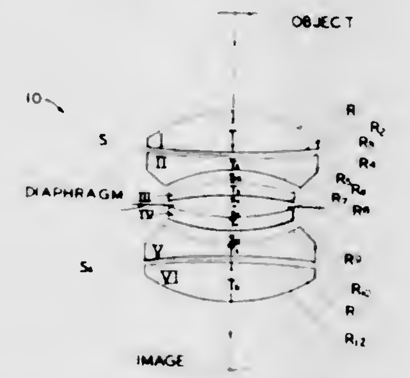
the values for the radii R_1 to R_{10} of the successive lens surfaces, the lens thicknesses t_1 to t_6, the successive interlens airspaces S_2 to S_5, the respective refractive indices n_D and Abbe number ν, the focal lengths of the respective lens elements I to VI being designated F_I to F_{VI} being given in the chart herebelow,

[E.F.L.=310.9 mm. f/16.0]

Lens	Focal length	Radii	Spaces	Thicknesses	n_D	ν
		$R_1=74.473$				
I	92.28			$t_1=18.8$	1.611	57.2
		$-R_2=220.8$				
II	−77.23			$t_2=9.1$	1.559	45.5
		$R_3=55.463$				
			$S_2=4.3$			
		$R_4=87.902$				
III	209.20			$t_3=23.6$	1.566	53.8
		$R_5=136.77$				
			$S_3=6.0$ $S_4=6.0$			
		$-R_6=136.77$				
IV	209.20			$t_4=23.6$	1.566	53.8
		$-R_7=87.902$				
			$S_5=4.3$			
		$-R_8=55.463$				
V	−77.23			$t_5=4.3$	1.559	45.5
		$R_9=220.8$				
VI	92.28			$t_6=18.8$	1.611	57.2
		$-R_{10}=74.473$				

The minus sign designates lens surfaces which are concave toward entrant light, and the air-glass surfaces of the objective having an anti-reflection film formed thereon which passes light of a range of wavelengths from 440 mu to 580 mu.

3,185,031
SYMMETRICAL PROJECTION OBJECTIVE
Ellis I. Betensky, Rochester, and Nathan Rickless, Brighton, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 4, 1962, Ser. No. 220,977
4 Claims. (Cl. 88—57)



1. A symmetrical projection objective for copying and process work substantially at unity magnification comprising a pair of double convex lenses, in mutual optical alignment and spaced apart,

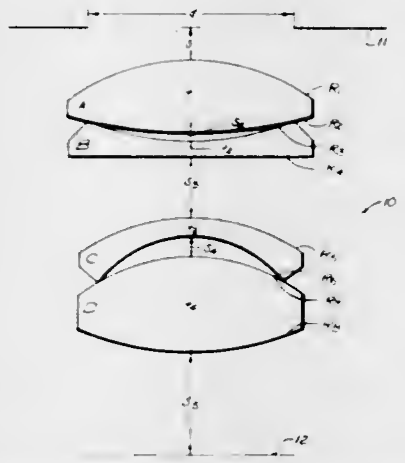
a pair of double concave lenses, optically aligned between and spaced from the double convex lenses, and

a pair of meniscus lenses aligned between and spaced from said double concave lenses on opposite sides of a central diaphragm, each meniscus lens having a concave surface facing said diaphragm.

the values of radii, which are designated R_1 to R_{12} of the successive lens surfaces, numbering from the entrant side of the objective and designating those surfaces which are concave to the entrant rays by a minus sign, being given in the table of mathematical statements herebelow along with the values of the successive lens thicknesess which are designated t_1 to t_6, and the values of the successive lens spacings which are designated S_1 to S_6, and further specifying the refractive index n_D and Abbe number ν for the lens materials of the successive lenses I to VI,

$$.2275F<R_1<.2515F$$
$$1.660F<-R_2<1.824F$$
$$1.331F<-R_3<1.459F$$
$$.1772F<R_4<.1958F$$
$$.2872F<R_5<.3174F$$
$$.451F<R_6<.496F$$
$$.451F<-R_7<.496F$$
$$.2872F<-R_8<.3174F$$
$$.1772F<-R_9<.1958F$$
$$1.331F<R_{10}<1.459F$$
$$1.660F<R_{11}<1.824F$$
$$.2275F<-R_{12}<.2515F$$
$$.0611F<t_1=t_6<.0675F$$
$$.0207F<t_2=t_5<.0227F$$
$$.02425F<t_3=t_4<.02665F$$
$$.00726F<S_1=S_6<.00802F$$
$$.0199F<S_2=S_5<.0219F$$
$$.01483F<S_3=S_4<.01593F$$
$$1.605<n_D\ (I)=n_D\ (VI)<1.617$$
$$1.538<n_D\ (II)=n_D\ (V)<1.545$$
$$1.575<n_D\ (III)=n_D\ (IV)<1.605$$
$$55.0<\nu\ (I)=\nu\ (VI)<65.0$$
$$45.0<\nu\ (II)=\nu\ (V)<50.0$$
$$56.0<\nu\ (III)=\nu\ (IV<66.0$$

3,185,032
MODIFIED PETZVAL TYPE PHOTOGRAPHIC OBJECTIVE
Nathan Rickless, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 27, 1962, Ser. No. 226,537
4 Claims. (Cl. 88—57)



1. A photographic objective of modified Petzval type having a relative aperture as large as $f/1.2$ and being corrected in a superior manner for chromatic and spherical aberrations, coma, astigmatism and field curvature, said objective comprising

a front group of lenses spaced from and optically aligned with a rear group of lenses and a diaphragm located in spaced relation to the object side of said front group,

said front group including a double convex positive lens A in contact with the concave side of a rearward plano concave negative lens B, both lenses being singlets,

said rear group including a negative meniscus lens C having a concave side in contact with a rearwardly located positive double convex lens D, both lenses being singlets,

the values of radius for the successive lens surfaces R_1 to R_8 being given in the table of mathematical inequalities herebelow

$$.710F<R_1<.868F$$
$$1.778F<-R_2<2.172F$$
$$1.213F<-R_3<1.503F$$
$$R_4>\pm F$$
$$.699F<R_5<.853F$$
$$.402F<R_6<.490F$$
$$.600F<R_7<.732F$$
$$1.256F<-R_8<1.534F$$

wherein the minus (—) sign applies to radii whose centers of curvature lie to the left of the vertex of the surface as shown on the drawing, and F designates the equivalent focal length of said objective,

the values of the successive lens thicknesses designated t_1 to t_4, and the successive axial lens spacings S_1 to S_5 between said diaphragm and the image plane of the objective being as specified in the table of mathematical statements herebelow,

$$.241F<t_1<.307F$$
$$.0569F<t_2<.0695F$$
$$.0669F<t_3<.0817F$$
$$.215F<t_4<.385F$$
$$.103F<S_1<.125F$$
$$.0202F<S_2<.0246F$$
$$.246F<S_3<.300F$$
$$.0686F<S_4<.0838F$$
$$.356F<S_5<.434F$$

the values of refractive index n_D (A) to n_D (D) and the values of Abbe number ν (A) to ν (D) for the glasses in the successive lenses A to D being specified in the table of mathematical statements herebelow,

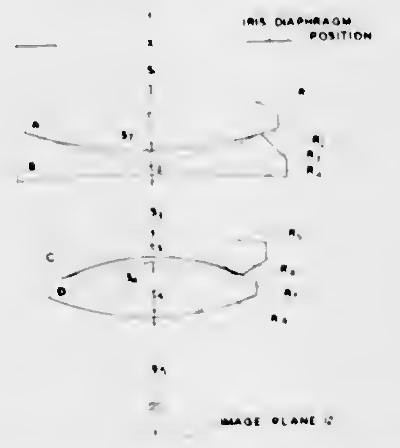
$$1.685<n_D\ (A)<1.710$$
$$1.860<n_D\ (B)<1.875$$
$$1.860<n_D\ (C)<1.875$$
$$1.685<n_D(D)<1.710$$
$$50.0<\nu\ (A)<60.0$$
$$25.0<\nu\ (B)<37.0$$
$$25.0<\nu\ (C)<37.0$$
$$50.0<\nu\ (D)<60.0$$

3,185,033
MODIFIED PETZVAL TYPE PHOTOGRAPHIC OBJECTIVE

Ellis I. Betensky, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Sept. 27, 1962, Ser. No. 226,642

3 Claims. (Cl. 88—57)



1. A photographic objective of modified Petzval type having a relative aperture as large as $f/1.6$ and being corrected in a superior manner for chromatic and spherical abberrations, coma, astigmatism and field curvature, said objective comprising
- a front group of lenses spaced from and optically aligned with a rear group of lenses and a diaphragm located in spaced relation to the object side of said front groups,
- said front group including a double convex positive lens A in contact with the concave side of a rearward plano concave negative lens B, both lenses being singlets,
- said rear group including a negative meniscus lens C having a concave side in contact with a rearwardly located positive double convex lens D, both lenses being singlets,
- the values of radius for the successive lens surfaces R_1 to R_8 being given in the table of mathematical inequalities herebelow wherein F designates the equivalent focal length of said objective,

$$.809F<R_1<.987F$$
$$1.038F<-R_2<1.268F$$
$$.682F<-R_3<.846F$$
$$4.36F<R_4<5.32F$$
$$3.08F<R_5<3.76F$$
$$.565F<R_6<.689F$$
$$.817F<R_7<.999F$$
$$.678F<-R_8<.828F$$

wherein the minus (—) sign applies to radii whose centers of curvature lie on the object side of the vertex of the lens surface,

the values of the successive lens thicknesses designated t_1 to t_4, and the successive axial lens spacings S_1 to S_5 between said diaphragm and the image plane of the objective being as specified in the table of mathematical statements herebelow,

$$.1733F<t_1<.2117F$$
$$.0429F<t_2<.0523F$$
$$.0461F<t_3<.0575F$$
$$.1375F<t_4<.1693F$$
$$.1012F<S_1<.1248F$$
$$.0202F<S_2<.0246F$$
$$.1661F<S_3<.2029F$$
$$.017778F<S_4<.02172F$$
$$.669F<S_5<.817F$$

the values of refractive index $n_D(A)$ to $n_D(D)$ and the values of Abbé number $\nu(A)$ to $\nu(B)$ for the glasses in the successive lenses A to D being specified in the table of mathematical statements herebelow,

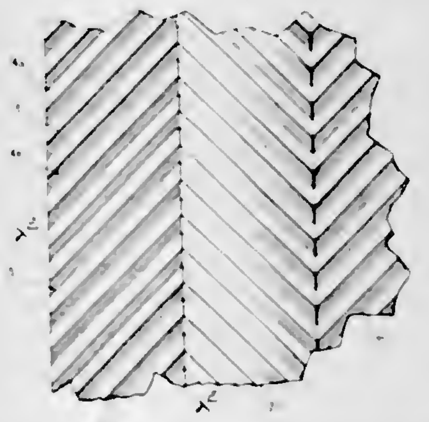
$$1.652<n_D(A)<1.662$$
$$1.644<n_D(B)<1.654$$
$$1.644<n_D(C)<1.654$$
$$1.652<n_D(D)<1.662$$
$$45.0<\nu(A)<55.0$$
$$30.0<\nu(B)<38.0$$
$$30.0<\nu(C)<38.0$$
$$45.0<\nu(D)<55.0$$

3,185,034
PATTERNED GLASS

Charles J. Youngblood, Jr., Berkeley, Mo., assignor to Mississippi Glass Company, St. Louis, Mo., a corporation of New York

Filed Sept. 26, 1961, Ser. No. 140,832

3 Claims. (Cl. 88—60)



1. A patterned glass sheet comprising one flat surface and a second surface formed to provide a series of adjacently disposed portions, each of portions having a plurality of ridges and grooves connected by flat sloping sides, with an included angle of the order of 90 degrees and with the ridges and grooves of each said portion of said second surface being uniformly angularly disposed relative to such ridges and grooves in each adjacent portion thereof to provide the effect of alternating relatively light and dark patterns regardless of the angle of view or the angle of light incident upon the glass.

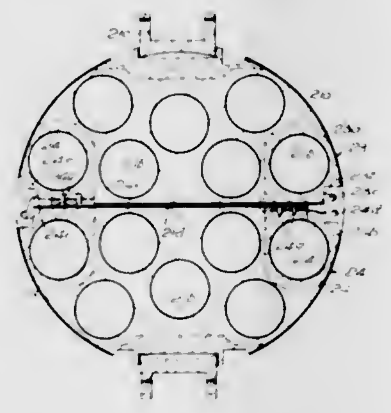
3,185,035
ROCKET LAUNCHERS

Eric William Gregory-Humphries, Old Knebworth, England, assignor to Thomas French & Sons Limited, a British company

Filed May 29, 1962, Ser. No. 198,615

Claims priority, application Great Britain, May 31, 1961, 19,600/61

6 Claims. (Cl. 89—1.7)



1. A rocket launcher comprising an elongated semicylindrical first launcher having a flat face, a nest of tubes in said first launcher, a recess in said launcher at one end of said flat face, a first hook pivoted in said recess and extending beyond said face, a recess at the other end of said flat face, a first pin in said other end extending longitudinally and adapted to receive a second hook, an elongated semi-cylindrical second similar launcher, having a second flat face adapted to fit against said first flat face, a recess in said second launcher at said other end of said second flat face, a second hook pivoted in said second face and extending beyond said second face and engaging said first pin, a second pin in said first end of said second face extending longitudinally and adapted to receive said first hook, said launchers together constituting a cylinder.

3,185,036
FAIL-SAFE DEVICE FOR PORTING STORED ROCKET MOTORS

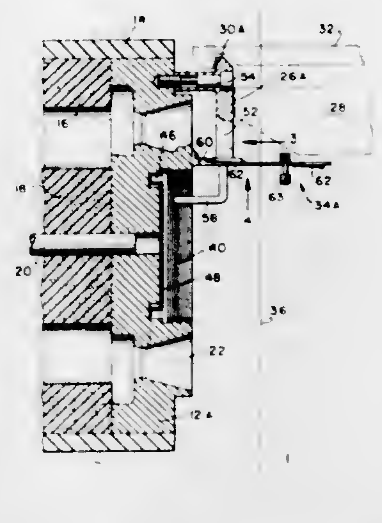
Ernest N. Oeland, Jr., West Covina, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Dec. 16, 1963, Ser. No. 331,072

9 Claims. (Cl. 89—1.7)

(Granted under Title 35, U.S. Code (1952), sec. 266)

1. Safety apparatus for use with a missile propelled by a rocket motor and adapted to be launched from a launcher, said rocket motor having a predetermined exhaust nozzle area at its rear end to normally produce predetermined thrust for a predetermined time of burning of the motor propellant, comprising, in combination:
- (*a*) an aperture in the rear end of the motor providing additional exhaust area sufficient to materially increase the burning time of the propellant and render the motor substantially non-propulsive, said aperture being accessible from the rear end of the launcher when the missile is loaded in same,
- (*b*) removable closure means for closing said aperture, adapted to be manually applied to the aperture after the missile has been loaded into the launcher and, when so applied, positively closing said aperture against passage of gas therethrough irrespective of the pressure within the motor, said closure means being so constructed to lock itself in the aperture as it is being manually applied thereto, and
- (*c*) means adapted to be secured to the missile only when said closure means is removed from the aperture having an abutment thereon for permitting loading of the missile into the launcher.

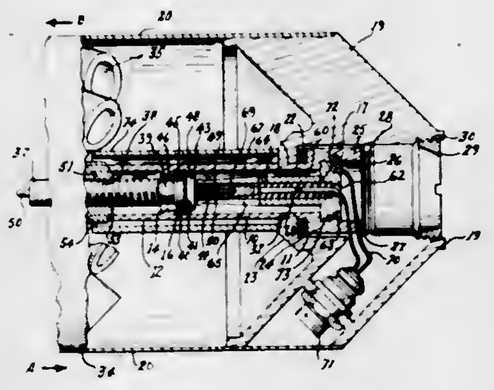


3,185,037
DEVICE FOR PROVIDING SPIN ROCKET PRE-RELEASE DWELL TIME

David L. Hammond, Fullerton, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Jan. 27, 1964, Ser. No. 340,575

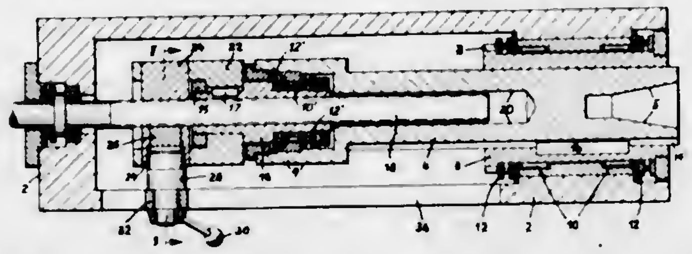
5 Claims. (Cl. 89—1.7)



1. In a rocket launcher, a launching tube adapted to receive a spin rocket for launching, retaining means for retaining said rocket in said tube and releasing means for releasing said retaining means when a predetermined number of spins of said rocket has been effected, said retaining means comprising a threaded stud rigidly secured to said rocket to rotate therewith and extending rearwardly and centrally in said launching tube, a thrust bearing on said stud at its rearward end, said thrust bearing providing also a first element of a locking device, a spring collet, detent means on said spring collet providing the second element of said locking means for engaging said first element to retain said rocket in said launching tube, a base on said spring collet, keying means on said base for preventing rotation of said spring collet with respect to said launching tube, a walking nut threadedly engaged on said stud, projecting ears on said nut for keying said nut to said collet, said releasing means comprising interengaging cam surfaces on said nut and said collet whereby said first and second elements are detached to free said rocket from said launching tube when said walking nut reaches said thrust bearing.

3,185,038
CLAMPING DEVICE

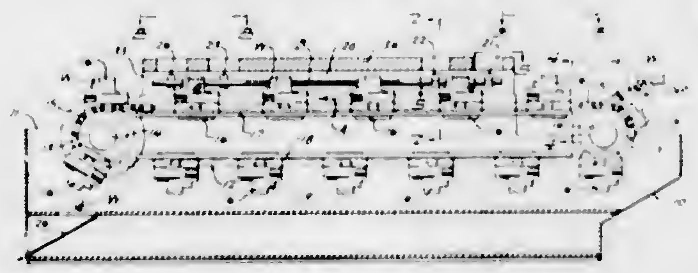
Horst Lanzenberger, Munich, Germany, assignor to Hans Deckel, Munich, Germany, and Friedrich Wilhelm Deckel, Zug, Switzerland
Filed Oct. 31, 1962, Ser. No. 234,412
Claims priority, application Germany, Nov. 2, 1961, D 37,371
5 Claims. (Cl. 90—16)



1. A device of the character described comprising, an axially displaceable machine tool spindle, a threaded spindle mounted for rotation relative to said machine tool spindle carrying a non-self-locking thread thereon and disposed coaxially with said machine tool spindle, a nut rotatably connected with said machine tool spindle and threadably engaged with said threaded spindle for axial displacement thereon with said machine tool spindle upon rotation of said threaded spindle, and means connected with said nut for rigidly clamping said nut on said threaded spindle at selected axial positions.

3,185,039
MACHINE FOR CONTINUOUS INTERNAL BROACHING

Ernest H. H. Graf, Birmingham, Mich., and Albert E. J. Randall, Studley, England, assignors of one-half each to Detroit Broach & Machine Company, Rochester, Mich., a corporation of Michigan, and B.S.A. Tools Limited, Birmingham, England
Filed Aug. 30, 1963, Ser. No. 305,614
12 Claims. (Cl. 90—86)



1. A continuous internal broaching machine comprising

a frame including a pair of longitudinal ways thereon and an endless chain conveyor operatively mounted on said frame having its upper flight running parallel to said ways,

a broach extending longitudinally of said ways and disposed in parallel spaced relationship thereto,

a plurality of work holders adapted to carry work to be broached internally mounted in longitudinal spaced relationship on said chain conveyor formed to travel on and along said ways,

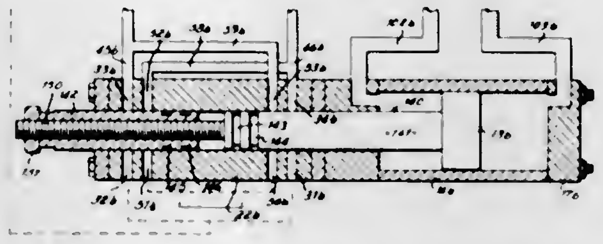
said work having an aperture therein disposed in alignment with said broach and of sufficient size to admit of said work being telescoped over the lead end of said broach,

at least two pair of broach holder jaws at each of the lead end and the tail end of said broach supporting said broach on said machine frame parallel to said ways,

and means sequentially opening and closing each said pair of broach holder jaws permitting said work holders and work to pass therethrough with at least one of the pairs of broach holder jaws adjacent each end of said broach engaging said broach at all times, the broach holder jaws at the lead end of said broach engaging said broach and holding the same against longitudinal movement in addition to supporting said broach responsive to the closing of either of said pairs of broach holder jaws at the lead end of the broach.

3,185,040
HYDRAULIC RECIPROCATING SYSTEM

D. Elmon Ligon, Denver, Colo., assignor to American Brake Shoe Company, New York, N.Y., a corporation of Delaware
Filed Apr. 15, 1963, Ser. No. 273,090
5 Claims. (Cl. 91—277)



1. A variable stroke hydraulic reciprocating system comprising,

a hydraulic cylinder,

slidable means including a piston and piston rod mounted within said cylinder,

a plurality of ports associated with said cylinder,

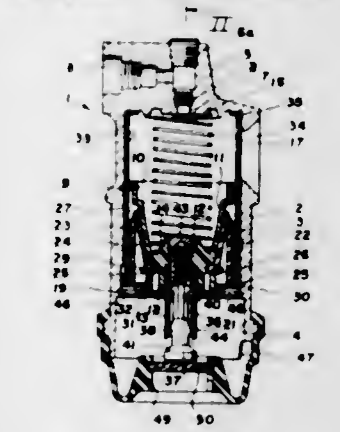
valve means operable to control fluid flow to opposite ends of said piston,

said slidable means having a plurality of fluid passageways operable to selectively connect said ports to said valve means and thereby control said valve means, and

means for varying the spacing between said ports and said passageways to alter the length of the stroke of said piston within said cylinder.

3,185,041
FILTER GAUGE

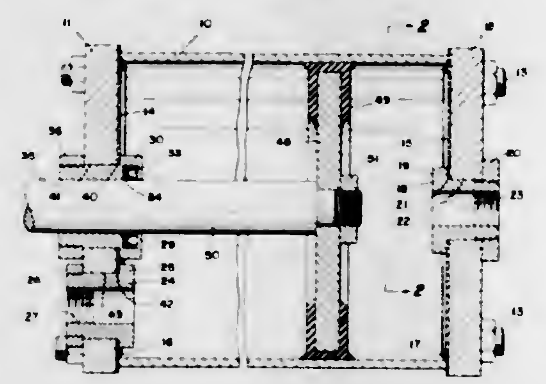
Joseph A. Stein, Pittsburgh, Pa., assignor to Bacharach Industrial Instrument Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1962, Ser. No. 230,665
6 Claims. (Cl. 92—94)



1. In a gauge of the character described having a central cavity therein closed at one end by a head portion having a suction inlet opening therein communicating with said cavity, the combination of an air impervious liner within said cavity and having one end of the liner sealed against said head portion and encircling said suction inlet opening, a hollow cup disposed within said liner for movement longitudinally thereof and having converging side walls connected by a transverse bottom wall, a collapsible diaphragm disposed within said liner in spaced relation to said head portion for receiving said movable cup member, said diaphragm having freely flexible inner converging side walls enclosing and aligned with said cup converging side walls and terminating at one end in an attachment to said cup bottom wall, outer semi-rigid diaphragm side walls disposed adjacent said liner and terminating in flanges extending beneath the open periphery of the adjacent end of said liner for sealing said end opening, the adjacent upper end of said outer diaphragm walls having an inwardly curved portion forming a continuation of the adjacent ends of said inner diaphragm walls, and coil spring means disposed between and abutting said head portion and said cup bottom wall within said cup side walls.

3,185,042
FLUID PRESSURE MOTOR

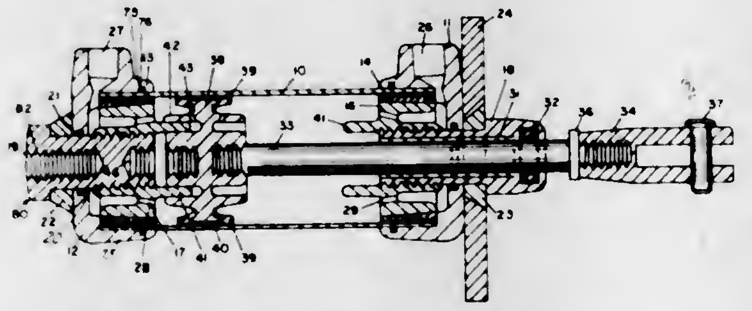
Douglas A. Hastings, Glen Ellyn, Ill., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed July 16, 1963, Ser. No. 295,343
19 Claims. (Cl. 92—128)



1. A fluid pressure device comprising a cylinder tube with closure means at each end thereof, a piston movable within the cylinder, a liner plate on the inner side of at least one of said closure means, said liner plate having means for centering the tube thereon.

3,185,043
CYLINDER ARRANGEMENT

Ansel W. Dunham, P.O. Box 242, Tilton, N.H.
Filed Feb. 13, 1962, Ser. No. 172,967
~~15 Claims.~~ (Cl. 92—164)



1. An improved high strength-to-weight cylinder comprising:

a cylinder barrel having smooth inner and outer walls,

cylinder beads at each end of said barrel, each having a smooth axial bore and having an integral annular flange of predetermined length forming a socket slidably receiving an end of said barrel and adapted to resist outward pressure,

pressure openings in said heads to pass pressure fluid into said cylinder barrel,

said cylinder heads normally being urged outwardly by internal pressure within said barrel,

means at each opposite end of said barrel for retaining said heads on said barrel ends, each said means comprising:

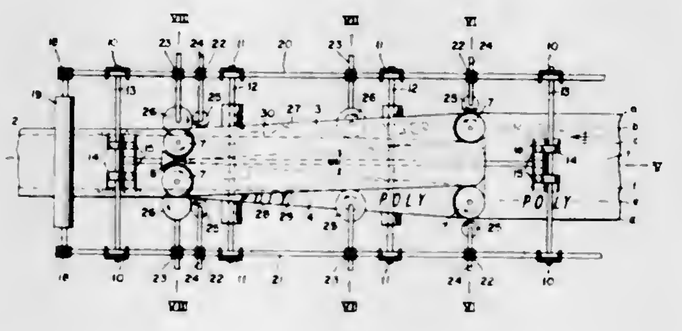
an outwardly expansible locking ring of hard metal, within the socket of each said head, said ring having sharp protuberances engaging the inner cylinder barrel wall opposite the flange of said head,

a locking ring expanding member for urging outward expansion of said locking ring against said inner wall, and

a lockup screw in said axial bore, and operable from outside said head for drawing together said cylinder head and said expanding member to thereby cause said locking ring to expand against said barrel within said socket.

3,185,044
FOLDING FLATTENED TUBES

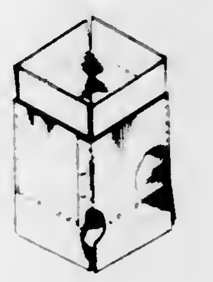
Andreas Ahlbrandt, Lauterbach, Hesse, Germany, assignor to Walter Durbeck Papiersackfabriken G.m.b.H., Lauterbach, Hesse, Germany
Filed Dec. 10, 1962, Ser. No. 243,285
Claims priority, application Germany, Dec. 13, 1961, D 37,664
11 Claims. (Cl. 93—20)



3. An apparatus for folding endless flat running tube-like webs along at least one edge for producing bag-like closed containers comprising guide elements spaced in the form of circular plates over which the web is fed, means to open out the flattened web and turn the web about its longitudinal axis half the width of the lateral web portion, and folding elements in the form of circular plates mounted between the guide elements to fold each lateral web portion inwardly along longitudinal crease lines formed in the web, the folding elements being equi-centrally disposed at an exit end displaced laterally of each other by the width of the part of the tubular web to be followed.

3,185,045
METHOD OF CONSTRUCTING A CORRUGATED CONTAINER

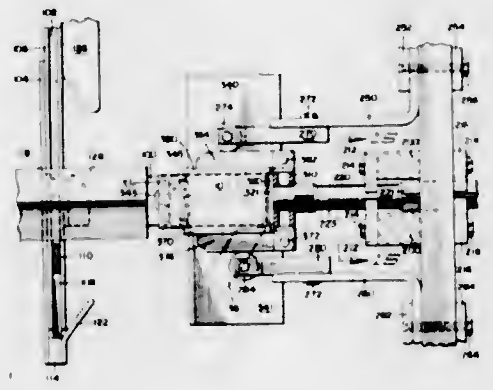
William H. Bronte, Oakland, and Stanley E. Lingenfelter, Concord, Calif., assignors to Corrobilt Container Co., Alameda County, Calif., a corporation of California
Original application July 26, 1960, Ser. No. 45,489, now Patent No. 3,063,615, dated Nov. 13, 1962. Divided and this application Aug. 27, 1962, Ser. No. 268,508
1 Claim. (Cl. 93—36)



A method of constructing corrugated paper containers which comprises identically transversely scoring first and second blanks to form a plurality of spaced fold lines, longitudinally scoring each blank inwardly of a longitudinal edge to form a lengthwise extending fold line, slitting each blank coincidently with each transverse fold line inwardly from said longitudinal edge to said lengthwise extending fold line to form bottom wall portions on the first blank and reinforcing panels on the second blank, adhesiving securing the blanks together to form a laminate with the uncut longitudinal edge of each blank being aligned with longitudinal fold line of the other blank, folding the laminate along the transverse score lines to form a container with the second blank constituting an interior wall, connecting the terminal ends of the first blank to hold the container in a formed condition, folding the reinforcing panels downwardly over subjacent portions of the first panel to form a peripheral reinforcing edge about the open upper portion of the container, affixing said panels to the contacted areas of the first blank, and folding the bottom wall portions of the first blank inwardly to form a bottom wall for the container.

3,185,046
APPARATUS FOR AND METHOD OF CARTON ERECTION

Frank C. Gross, 863 Ridge Road, Wilbraham, Mass.
Filed Dec. 17, 1962, Ser. No. 245,948
21 Claims. (Cl. 93—36.01)



5. In an assemblage cooperant with a support structure carrying a reciprocating forming mandrel reciprocable linearly along an axis in carton-erecting and retrograde directions and driving means therefore for simultaneously forming during a carton-erecting cycle a sheet of liner material and an economy style blank of a type die cut and prescored to provide a bottom panel and opposite front and rear panels articulated to opposite edges of the bottom panel and an end panel articulated to each opposite end edge of the front panel and a rear panel glue tab articulated to each opposite end edge of the rear panel with the front and rear and end panels and the rear panel glue tabs being erectable angularly relative to the plane of the bottom panel and the rear panel glue tab and end panel at each end of the structure being rotated inwardly on timed relationship relative to each other for sealed interengagement, said assemblage comprising, a stationary structure fixed to the support structure, prefolding mechanisms fixed to the support structure along an axis coaxial with the axis of reciprocation of the forming mandrel, a bottom panel plate arranged transversely relative to and fixed to one end of said slide shaft, an end panel and glue tab folding and sealing plate hingedly connected to opposite end edges of said bottom panel plate, a front panel folding plate and a rear panel folding plate hingedly connected to opposite side edges of said bottom panel plate, pressure roll means mounted on said stationary structure and operationally coacting with cam means mounted on each said end panel and glue tab folding and sealing plate, actuating roll means mounted on said stationary structure and operationally coacting with each said front panel and rear panel folding plate, said bottom panel and end panel and glue tab folding and sealing and front and rear panel folding plates being traversible concomitantly in the carton-erecting direction from normal non-operative positions in directions linear with the main axis of and according to the carton-erecting movement of the forming mandrel and said end panel and glue tab folding and sealing and front and rear panel folding plates being swingable into carton-erected positions relative to said bottom panel plate by said pressure roll and actuating roll means respectively, and return means for motivating said slide shaft in the retrograde direction with said bottom panel and end panel and glue tab folding and sealing and front and rear panel folding plates being traversible therewith for returning to non-operative positions.

3,185,047
METHOD FOR PRODUCING AND ASSEMBLING A MULTI-COMPARTMENTED CONTAINER

Glenn E. Struble, Hamilton, and Earl F. Borgemenke, Cincinnati, Ohio, assignors to Diamond International Corporation, a corporation of Delaware
Original application Sept. 13, 1962, Ser. No. 223,318, now Patent No. 3,135,454, dated June 2, 1964. Divided and this application Nov. 7, 1963, Ser. No. 327,169
1 Claim. (Cl. 93—37)

The method of assembling a multi-compartmental container from a blank comprising, in order, two pairs of rectangular, alternately disposed, side wall panels foldably connected on mutually parallel fold lines, said blank including a free side edge margin at one side edge of one panel of one of said pairs of side wall panels, a single, planar combined container-glue-flap-and-partition panel glue flap panel foldably connected to the side edge of the one of the panels of said other pair of side wall panels remote from said free side edge margin, a partition panel foldably connected to said combined panel, and a partition panel glue flap foldably connected to said partition panel, said combined panel being of greater width than said partition panel glue flap, said partition panel being substantially the same width as said other pair of sidewall panels, including the steps of:

(*a*) applying a glue strip on one side of said combined panel adjacent to the fold line by which said combined panel is connected to said partition panel and covering a portion of the width of said combined panel;

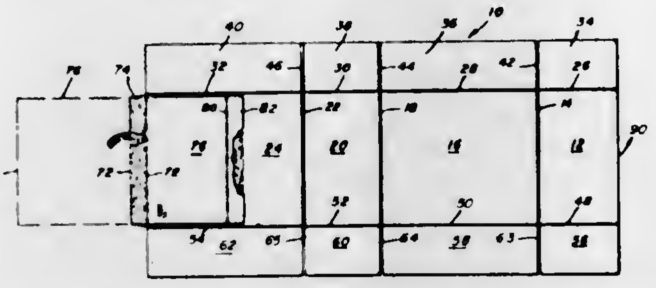
(*b*) folding said partition panel glue flap, partition panel, combined panel and one panel to which the combined panel is foldably connected in overlying, juxtaposed relation to the remaining side wall panels and adhesively securing said glue strip on said combined panel to the next adjacent side wall panel at which said fold is made;

(*c*) simultaneously applying a glue strip to said partition panel glue flap and the remaining portion of the width of said combined panel on the side of said blank opposite said first mentioned glue strip and spaced therefrom and while simultaneously cutting and separating the combined panel intermediately of said opposed glue strips on opposite sides of said combined panel; and

(*d*) folding said side wall panel having said free edge margin onto the next adjacent side wall panel in juxtaposition on said second mentioned glue strips with the free margin engaged on said container glue flap and the side wall panel including said margin engaged on said partition panel glue flap severed from said combined panel.

3,185,048
METHOD OF PRODUCING INTERMEDIATE PARTITIONED PANEL CARTON

Glenn E. Struble, Hamilton, Ohio, assignor to Diamond International Corporation, a corporation of Delaware
Application Sept. 5, 1962, Ser. No. 221,530, now Patent No. 3,135,453, dated June 2, 1964, which is a continuation of application Serial No. 115,415, June 7, 1961. Divided and this application Nov. 7, 1963, Ser. No. 328,150
5 Claims. (Cl. 93—37)



1. The method of producing a partitioned container having a blank comprising a single sheet of paper product material including, in order, two pairs of rectangular wall panels secured on parallel hinge score lines for forming opposed walls of a rectangular container, said wall panels of one pair being disposed at opposite side edges of one of said panels of said other pair, one of said panels having hingedly secured along the side edge thereof, in order, a combined container glue-flap and first partition panel glue-flap, a partition panel and a second partition panel glue-flap each connected by hinge lines parallel to the hinge lines of said two pairs of wall panels, said combined container glue-flap and first partition panel glue-flap including an intermediate portion parallel to said hinge lines and forming a separation line between said first partition panel glue-flap and said container glue-flap when said container is erected, said method comprising the steps of:

(*a*) applying an adhesive to the glue-receiving surface of one of said partition panel glue-flaps and folding said partition panel and said one partition panel glue-flap in overlying juxtaposed relation to one of one pair of said wall panels and securing said one partition panel glue-flap thereto;

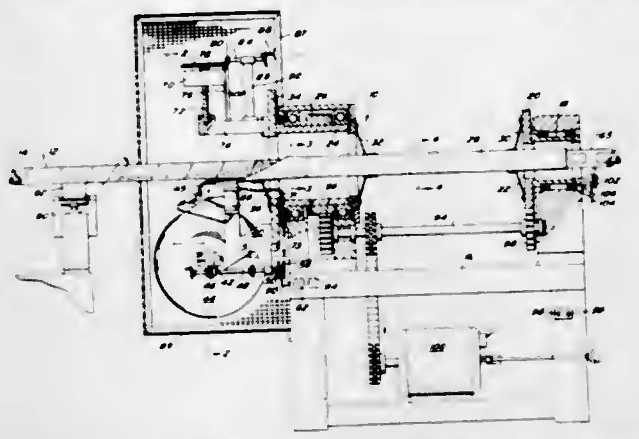
(*b*) applying an adhesive to the glue-receiving surfaces of said other partition panel glue-flap and said container glue-flap; and

(*c*) disposing the other of wall panel of said one pair of wall panels in juxtaposed relation on the glue-receiving surface of said other partition panel glue-flap and securing it thereto and securing said container glue-flap receiving surface to the marginal edge of said blank opposite that to which the container glue-flap is hinged and having one of each of pairs of said wall panels disposed in alternate, juxtaposed relation with respect to each other.

3,185,049
TUBE MAKING AND LABEL APPLYING MACHINE

Reginald Couzens, Wallingford, Pa., assignor of fifty percent to Michael Young, Philadelphia, Pa.
Filed Sept. 18, 1962, Ser. No. 224,411
11 Claims. (Cl. 93—80)

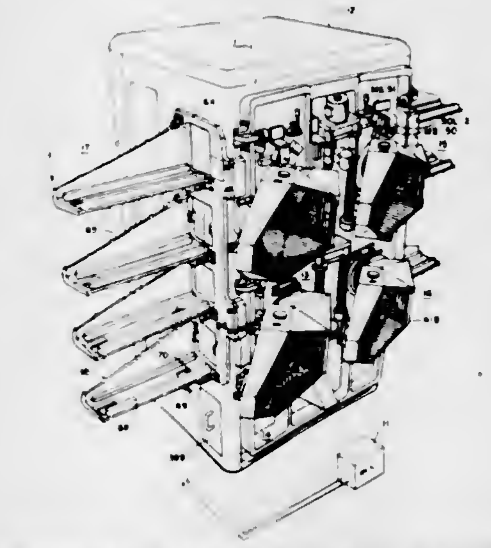
1. Apparatus comprising a mandrel, means for supporting one end of said mandrel, means for continuously forming a tube on said mandrel by spirally winding paper-like material about said mandrel, means for continuously shaping and applying label stock to the circumferential periphery of the tube in a manner so that the side edges of the label stock extend substantially parallel to the longitudinal axis of the tube while the tube is rotating about the axis of said mandrel, a motor coupled to said last-mentioned means for rotating the same at approximately the same speed of rotation as the tube being formed on said mandrel, and means for cutting the tube



having label stock applied to its circumferential periphery into unit lengths.

3,185,050
XEROGRAPHIC IMAGE PROCESSOR PROJECTOR

Charles L. Huber, Marion, Allen M. Hitchcock, Rochester, Onni W. Niemi, Pittsford, Hazen L. Hoyt III, Webster, and Lyman H. Turner, Pittsford, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 26, 1961, Ser. No. 140,842
6 Claims. (Cl. 95—1.7)



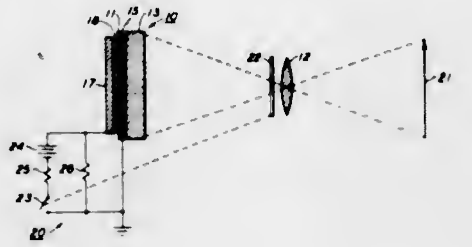
2. A xerographic processing apparatus including a first turret mounted for rotation about an axis, a second turret mounted for rotation about a second axis in spaced relation to said first axis, means on said first turret to support an image plate previously dusted with powder, means on said second turret to support a xerographic plate, means to angularly index each of said turrets separately into operative relation with a plurality of process stations, one of said stations including a common developing station whereat plates on their respective turrets are arranged opposite one another, means to effect substantially face-to-face contact between plates when in said last-recited relation, and means to regulate the time period of said face-to-face contact.

3,185,051
XEROGRAPHIC METHOD

William L. Goffe, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 16, 1962, Ser. No. 230,941
14 Claims. (Cl. 95—1.7)

1. Apparatus for xerographic image formation comprising:

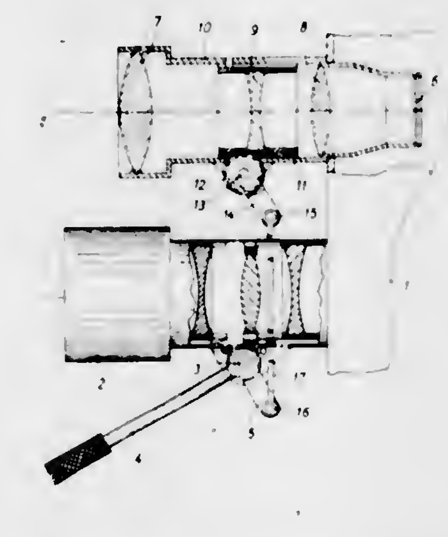
(*a*) means to position a conductive electrode coated with an electroscopic pigmented particulate material in compressive contact against the photoconductive insulating surface of a xerographic plate comprising a transparent supporting substrate coated with a transparent conductive layer which in turn is coated with a photoconductive insulating layer of vitreous selenium,



(*b*) means to expose said plate to an image pattern to be reproduced, and

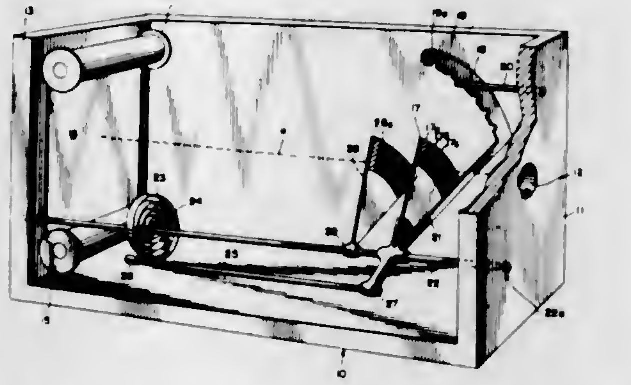
(*c*) means to apply a direct current voltage pulse between said electrode and said plate simultaneously with exposure.

3,185,052
STRUCTURE FOR CONTROLLING THE LIGHT WHICH REACHES A PHOTOSENSITIVE ELEMENT OF A CAMERA
Hans Rudolf Baron, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany
Filed Nov. 29, 1961, Ser. No. 155,698
Claims priority, application Germany, Dec. 15, 1960, A 16,027
6 Claims. (Cl. 95—10)



1. In a camera, in combination, a camera objective capable of having its focal length adjusted; a photosensitive element forming part of a light-measuring structure; a second objective capable of having its focal length adjusted and located in front of said photosensitive element so that the light reaches the latter through said second objective; a pair of adjusting means respectively connected operatively to said objectives for adjusting the focal lengths thereof; and coupling means coupling said pair of adjusting means to each other for simultaneous operation so that said second objective will be adjusted simultaneously with the camera objective, said pair of adjusting means and coupling means cooperating to automatically direct light through said second objective to said photosensitive element from a viewing angle which is identical with the viewing angle of the camera objective, said pair of adjusting means respectively including a pair of movable elements and said coupling means including a linkage system having a pair of links respectively fixed to said pair of movable elements for movement thereof.

3,185,053
CAMERA LIGHT CONTROL MECHANISM
Emil S. Wieszeck, Box 175, Salem, N.H.
Filed Sept. 5, 1962, Ser. No. 221,551
11 Claims. (Cl. 95—10)



1. For a film development camera having a casing equipped with lens means and means for supporting film spaced from said lens means, an image light control mechanism comprising:

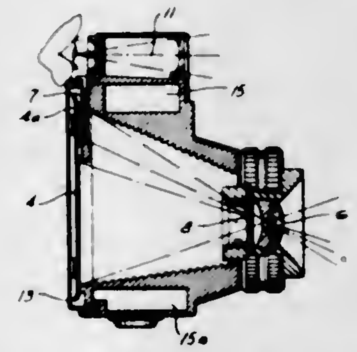
(A) first light inhibition means in said casing interposed in the path of light rays passing through said lens means to said film,

(B) means for positioning said first light inhibition means as a function of the light intensity external of said casing,

(C) second light inhibition means in said casing interposed in said light path, and

(D) means connected to said second light inhibition means for movement thereof, said connected means including thermally responsive means whereby said second light inhibition means is positionable independently of said first light inhibition means to compensate for temperature changes within said casing, both of said light inhibition means having variable light transmissive capabilities.

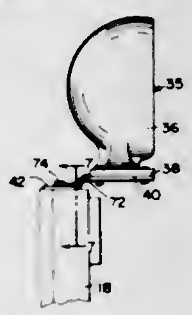
3,185,054
CAMERA FOR PHOTOGRAPHIC FILM
Curt Niggeloh, Kaiserstrasse, Fichtenhof, Radevormwald, Rhineland, Germany
Filed Nov. 24, 1959, Ser. No. 855,080
Claims priority, application Germany, Nov. 26, 1958, A 30,818; Dec. 10, 1958, K 36,436
13 Claims. (Cl. 95—11)



1. A camera for a photographic film, which comprises a casing, means supporting a film for movement within said casing and a single objective carried by said casing for exposing a picture area of said film, said objective having a central longitudinal axis and said film having a longitudinal middle line, said camera being characterized in that the central longitudinal axis of said objective is located to the side of the longitudinal middle line of the film, whereby only a part of the width of the film is exposed during photographing and whereby another portion of said film remains unexposed during photographing, and a picture-defining device within said casing, at least a portion of said device being located in alinement with

the unexposed portion of said film, the single objective and the picture defining device being arranged transversely to the direction of movement of the film.

3,185,055
PHOTOGRAPHIC ILLUMINATION APPARATUS
Alan C. Curtiss, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed May 21, 1962, Ser. No. 196,370
6 Claims. (Cl. 95—11)



1. In combination with a photographic camera arrangement:

(*a*) a first flashgun including a first reflector and a first bulb receptacle;

(*b*) attaching means for fixedly mounting said first flashgun on a portion of said camera;

(*c*) a second flashgun including a second reflector and a second bulb receptacle;

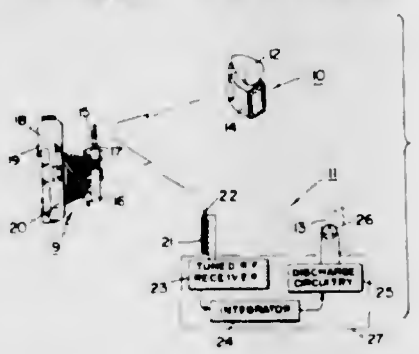
(*d*) a flash synchronizing circuit electrically connected to said first bulb receptacle;

(*e*) electrical contact means extending rigidly from an anchored position on said second flashgun and electrically connected to said second bulb receptacle;

(*f*) means for detachably mounting said second flashgun on said camera; and

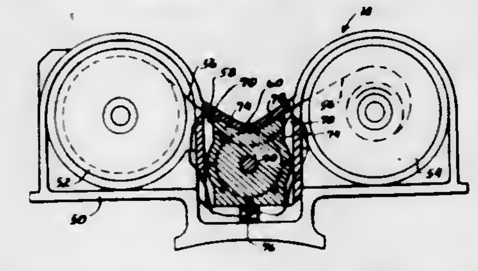
(*g*) positioning means for so fixing the relative positions of said first and second flashguns when the latter is mounted on said camera that said electrical contact means extend into said first bulb receptacle, making electrical contact therewith, thus including said second bulb receptacle in said flash synchronizing circuit.

3,185,056
ELECTRONIC FLASH-PHOTOGRAPHY
Nathan Gold, Sharon, Sholly Kagan, Natick, and Harry J. Watters, Weston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed June 20, 1962, Ser. No. 203,988
21 Claims. (Cl. 95—11.5)



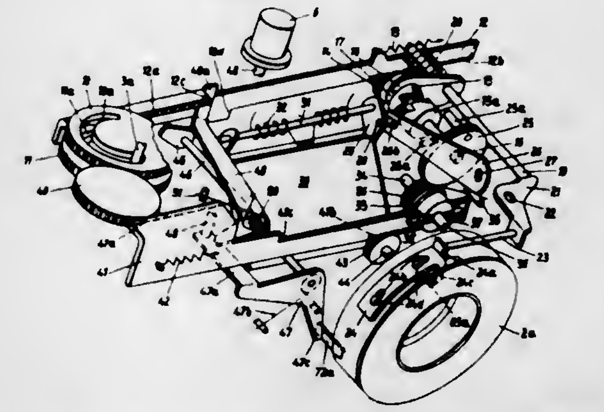
1. Flash-photography apparatus comprising a camera having a shutter mechanism and reaching substantially a maximum exposure setting a predetermined time after initial actuation of the shutter mechanism, a normally-open flash synchronizing switch actuated by said shutter mechanism and closeable a first predetermined interval after each initial actuation of said shutter mechanism, said shutter mechanism closing said switch for at least a second predetermined interval following said first interval, the total of said first and second intervals being at least equal to said predetermined time for said camera to reach substantially said maximum exposure setting, a transmitter for emitting a burst of radio signals responsive to and persisting during each closure of said switch, a flash lamp for briefly illuminating a subject to be photographed, means for intercepting said signals remotely from said transmitter and for producing related output signals of the same duration as said signals, and means responsive to said output signals of duration equal to the time between the beginning of said second interval and said predetermined time for firing said flash lamp immediately thereafter while said shutter mechanism opens said camera substantially to said maximum exposure setting.

3,185,057
PANORAMIC CAMERA WITH REMOVABLE FILM CASETTE
Guy H. Hearon, Northridge, and Rouel R. Campbell, Canoga Park, Calif., assignors, by mesne assignments, to Bank of America National Trust and Savings Association
Filed May 17, 1962, Ser. No. 195,471
7 Claims. (Cl. 95—34)



2. A photographic film casette for cameras comprising, a casing, a film supply spool and a film take-up spool mounted within said casing for rotation on spaced parallel axes, said casing having a front wall between said spools which is provided with an exposure aperture, a pressure plate behind said aperture, resilient means to bias said pressure plate toward said aperture to guide and support the film as it passes the exposure aperture, a roller that contacts with the film along an edge portion thereof, and a shaft to which the roller is secured, the shaft and the roller being held in a forward position by said resilient means and being rotated by said film as the film passes the exposure opening.

3,185,058
SINGLE LENS REFLEX CAMERA
Franz Singer, Munich, Germany, assignor to Compur-Werk Gesellschaft mit beschränkter Haftung & Company, Munich, Germany, a company of Germany
Filed Jan. 31, 1963, Ser. No. 255,338
Claims priority, application Germany, Feb. 20, 1962, C 26,273
13 Claims. (Cl. 95—42)

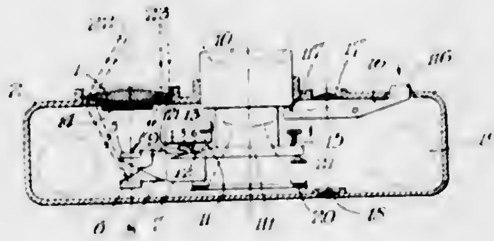


1. A reflex camera of the single lens type having a conventional shutter, adjustable diaphragm, shutter actuating means and film winding means, comprising, in combination, means coupled to said film winding means for cocking the shutter actuating means, a mirror, means

for pivoting the mirror from an operative viewing position to an inoperative position and for shifting the shutter from an open to a closed position and for simultaneously shifting the diaphragm from an open to a preset adjusted position, spring means urging the mirror into the operative position thereof and for urging the shutter and diaphragm into open positions, means coupled to said film winding means for actuating said mirror pivoting means and said shutter shifting means, clutch means included in said actuating means, means operatively interconnecting said clutch means and the shutter actuating means for engaging the clutch when the shutter is cocked and for disengaging the clutch when the shutter is run down whereby the mirror is swung to an inoperative position, the shutter closed and the diaphragm moved to a preset position when an exposure is made by said actuating means through the engaged clutch and, after the shutter has run down, the clutch is disengaged and the spring means moves the mirror to operative position and the shutter and diaphragm to open positions.

3,185,059
POSITIONING ARRANGEMENT FOR AN OBJECTIVE LENS

Julius Durst, Brixen, near Bozen, Italy, assignor to Julius Durst, Luis Oberrauch, and Heinz Oberrauch, Bozen, Italy
Filed Sept. 6, 1961, Ser. No. 136,717
Claims priority, application Italy, Oct. 7, 1960, 17,314/60
13 Claims. (Cl. 95—44)



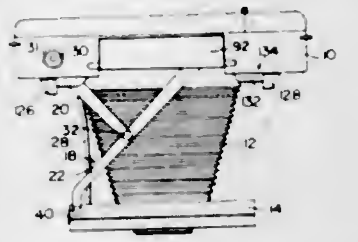
1. An arrangement for positioning an objective lens at the optimum focal distance from photosensitive material that it is exposing, said arrangement comprising a pair of photocells, a transducer, a light differentiating means having a field of view substantially corresponding to that of said objective lens, said light differentiating means being arranged to direct light from relatively distant objects upon one of said photocells and light rays from relatively nearer objects upon the other of said photocells, circuit means connecting said photocells to said transducer in a manner which causes the output of said transducer to represent a function of the relative amounts of light received by said objective lens from said nearer and said distant objects, said objective lens being mounted to be movable from positions closer and farther from said photosensitive material, adjusting means connected with said objective lens and said transducer for adjusting said objective lens to said optimum focal distance in accordance with the output of said transducer, said transducer being a galvanometer, said galvanometer including a movable indicator, and said objective lens having a surface which engages said movable indicator for adjusting said objective lens to its optimum position.

3,185,060
PHOTOGRAPHIC APPARATUS

Robert S. Borghesani, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Aug. 3, 1962, Ser. No. 214,560
11 Claims. (Cl. 95—45)

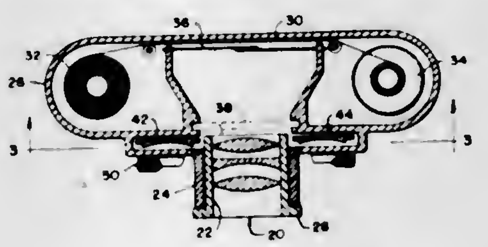
1. In a folding photographic camera having a camera body and an objective lens mounted upon a lens board, apparatus for extending and focusing said lens relative to the film plane of said camera body, said apparatus comprising, in combination:

(*a*) a movable member mounted upon said camera body for sliding movement relative thereto in a direction transverse to the direction of extending and focusing movement of said lens;
(*b*) at least one rigid link having one end pivotally mounted upon said lens board;
(*c*) a slot in said movable member extending substantially parallel to the direction of movement thereof and having an enlarged portion at one end thereof;
(*d*) a pin extending perpendicularly from the other end of said link and slidably mounted in said slot; and
(*e*) an enlarged portion on said pin which substantially corresponds in size to and is inserted in said enlarged portion of said slot when said pin is moved to said one end of said slot, thereby fixing the relative positions of said movable member and said other end of said link.



3,185,061
MULTIFOCAL CAMERA

Leonard F. Westphalen, 5234 S. Dorchester Ave., Chicago, Ill.
Filed Aug. 13, 1962, Ser. No. 216,674
6 Claims. (Cl. 95—45)

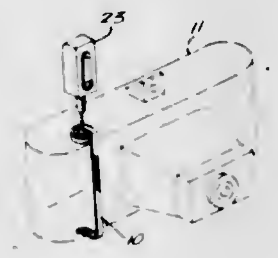


1. In a camera having a film plane, the combination of a housing enclosing said film plane and including a pair of telescoping members axially aligned with said film plane, the first of said telescoping members being mounted on the housing, the second being axially adjustable within the first member, and an objective of given focal length mounted within the second of said telescoping members so as to be axially aligned with the film plane, said second member being adjustable axially inwardly of the first member toward the film plane so as to locate the objective at a first position spaced in front of the film plane where it is effective alone to focus an image of an object on the film plane, said second member being adjustable axially outwardly of the first member to axially move the objective away from said first position to an alternate position more axially remote from the film plane, at least one supplementary negative lens and supporting structure therefor, said housing having a portion thereof defining an entrance adjacent said first position of the objective through which said negative lens and its supporting structure are movable in a plane transversely of the axis of the telescoping members to locate the negative lens between the objective and film plane in axial alignment therewith when the objective has been moved by the second member to its alternate position, the second member being in the path of movement of the negative lens supporting member when the objective is at said first position to inhibit movement thereof and location of the negative lens in axial alignment with the objective, whereby the objective is used alone at said first position to focus an image

of an object at said film plane, and the negative lens having a power such as to shift the second principal plane of the combination of the negative lens and objective forwardly of the location of the second principal plane of the objective when used alone whereby to magnify the image of an objective focussed by the combination over that focussed by the objective when used alone at said first position.

3,185,062
CAMERA ACCESSORY

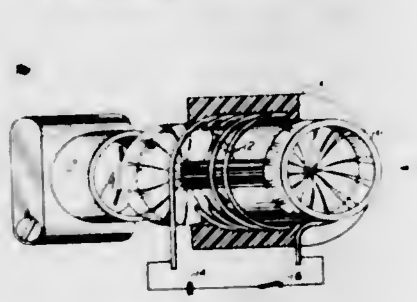
Richard D. Aurandt, 2469 Wild Oak Drive, Hollywood, Calif.
Filed Aug. 23, 1961, Ser. No. 133,386
7 Claims. (Cl. 95—53)



1. A shutter actuator mechanism support for a camera having a movable projection for operating the shutter thereof, said support comprising: a substantially U-shaped member having an upper leg to extend over the top of the camera, a medial portion to extend downwardly along the side of the camera, and a lower leg to extend under the bottom of the camera, said upper leg having means for connection with a shutter actuating mechanism, said medial portion being bent in a direction away from said legs, whereby it may be sprung to a shape such that it may be mounted around on the camera; and a loop fixed to said member in a plane substantially perpendicular to said medial portion in a position under said upper leg to surround said projection.

3,185,063
MAGNETICALLY ACTUATED SHUTTER

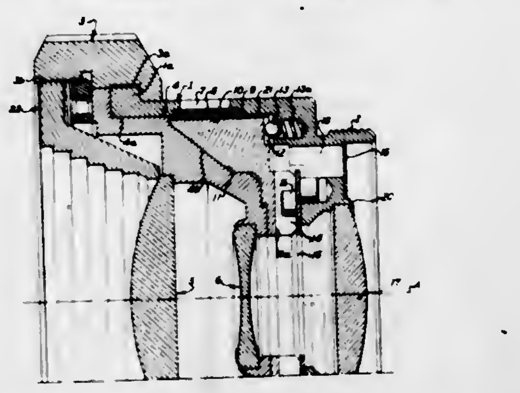
Franklin C. Ford, Pleasanton, Calif., Edwin B. Nelson, Albuquerque, N. Mex., and William M. Trimble and Samuel G. Zizzo, Livermore, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 12, 1962, Ser. No. 202,032
8 Claims. (Cl. 95—53)



1. A light shutter comprising an electrically conductive tube in combination with means for providing a first rapidly changing magnetic field effective to induce eddy currents in said tube productive of a second magnetic field opposing the change in said first rapidly changing magnetic field to increase the magnetic flux density to a high value in a short time interval in the space between said means and said tube productive of a pressure of a predetermined direction and strength to transversely crush at least a portion of said tube.

3,185,064
ILLUMINATED INDICATOR DEVICE

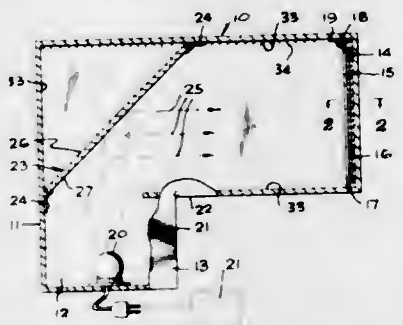
Eugen Armbruster and Franz Xaver Leitmeier, Munich, Germany, assignors to Optische Werke G. Rodenstock, Munich, Germany
Filed Jan. 16, 1963, Ser. No. 251,789
Claims priority, application Germany, Feb. 16, 1962, O 8,550
8 Claims. (Cl. 95—64)



1. In an optical system usable in a projector, a rotatable light permeable ring having an inner conical surface, an outer cylindrical surface and a planar surface; the planar, cylindrical and conical surface of the ring defining a triangular cross-section and respectively constituting light inlet, light outlet and reflective surfaces; said conical surface being positioned relative to said light inlet and outlet surfaces to reflect the light admitted through the inlet surface in a direction perpendicular to the outlet surface, first and second members encircling the cylindrical surface of said ring respectively, one of said members being fixed and the other rotatable with said ring, one of the said fixed and rotatable members having an index and the other having a scale, the member rotatable with the ring being illuminated by light from said ring, and an iris coupled to said ring such that rotation of said ring operates said iris.

3,185,065
APPARATUS AND METHOD FOR PRINTING PHOTOGRAPHS WITH ULTRAVIOLET LIGHT

Wendell S. Miller, 1341 Comstock Ave., Los Angeles, Calif.
Filed Apr. 30, 1962, Ser. No. 190,940
7 Claims. (Cl. 95—73)



1. Apparatus for making a copy on photographic material sensitive to ultraviolet of an image formed on a negative by silver particles whose transmissivity for ultraviolet is greater for wave lengths in a predetermined portion of the ultraviolet range at and near a peak transmissivity point of about 3080 Angstroms than at other wave lengths in said range, said apparatus comprising a source of ultraviolet light, means for selectively removing from said light ultraviolet in said predetermined portion of the ultraviolet range at and near 3080 Angstroms and thereby leaving ultraviolet of predominantly said other wave lengths, and means for holding said negative and photographic material at a location to pass said ultraviolet of predominantly said other wave lengths through the film and onto said photographic material.

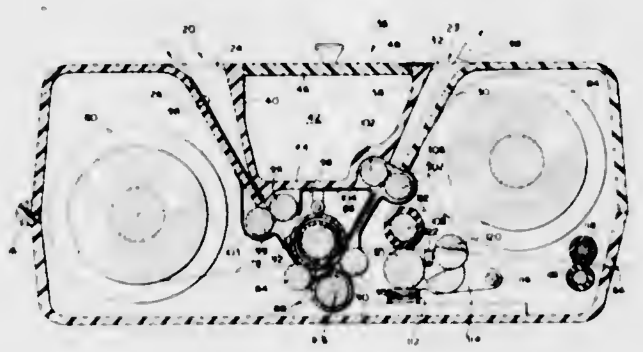
6. The method of making a photographic copy of an image formed on a negative by silver particles whose transmissivity for ultraviolet is greater for wave lengths in a predetermined portion of the ultraviolet range at and near a peak transmissivity point of about 3080 Angstroms than at other wave lengths in said range; said method including producing ultraviolet light, selectively removing from said light ultraviolet in said predetermined portion of the ultraviolet range at and near 3080 Angstroms and thereby leaving ultraviolet of predominantly said other wave lengths, and passing said ultraviolet of said other wave lengths through said negative and onto photographic material sensitive to ultraviolet.

3,185,066
PHOTOGRAPHIC DOCUMENT COPYING APPARATUS

Paul B. Mason, Magnolia, and Arthur J. Sable, Boston, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Sept. 28, 1962, Ser. No. 226,999

7 Claims. (Cl. 95—75)



1. In photographic document copying apparatus including advancement means for feeding original documents into said apparatus into superposition with successive areas of an image-recording sheet, a housing formed with an opening through which a container of processing liquid can be introduced into said apparatus, pressure means movable into engagement with said container to dispense said liquid contents during withdrawal of said container from said apparatus through said opening, manually driven actuating means for moving said image-recording sheet through said apparatus to expose said areas of said image-recording sheet in superposition with said originals, distributing said processing liquid in contact with said exposed areas and advancing successive portions of said sheet, each including one of said areas, from said apparatus, and cutting means for severing each of said portions from the remainder of said sheet within said apparatus, in combination, interlock means for insuring that all of the operations required to be performed on and by said apparatus to produce a copy of an original are performed and in proper sequence, said interlock means comprising, in combination:

first control means coupled with said actuating means and including arresting means for permitting operation of said actuating means through a predetermined operating cycle and then arresting the operation of said actuating means at the end of said operating cycle;

first manually operable drive means for moving said pressure means into engagement with said container;

closure means including a closure member movable between a closed position across said opening at which introduction of a container through said opening is precluded and an open position to one side of said opening;

second manually operable drive means for actuating said advancement means to feed the leading end of said original into said apparatus and move said closure member into said open position;

second control means coupled with said first and second drive means for releasably restraining said first and second drive means against operation; and

coupling means actuated by operation of said cutting means for coacting with said second control means to cause the latter to release said second drive means for operation;

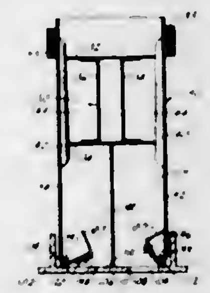
said second control means including means responsive to operation of said second drive means for releasing said first drive means for operation, and means coupled with said first control means and responsive to operation of said first drive means for causing said first control means to permit the operation of said actuating means through an operating cycle.

3,185,067
SLOT DIFFUSER

William L. Batchelor, Newington, Conn., assignor to Allied Thermal Corporation, New Britain, Conn., a corporation of Connecticut

Filed Sept. 8, 1961, Ser. No. 136,945

11 Claims. (Cl. 98—40)



1. An air diffuser comprising, a housing having one pair of relatively long generally upstanding closely spaced side walls connected by a second pair of relatively short end walls and inlet and outlet openings and forming an elongated narrow air outlet passageway with substantially downward air flow, an elongated lip extending laterally inwardly in the plane of the outlet opening from a first of said one pair of side walls forming an elongated lip edge defining one lateral edge of the outlet opening, and an air deflector member pivotally mounted within the housing about an axis parallel to the lip edge and adjacent a second of said one pair of side walls, said deflector member being movable between a first position overlapping the outlet opening for preventing air flow therethrough and a second position, said deflector member forming a deflector edge lying substantially parallel to the lip edge, said deflector member when in its second position having its deflector edge a distance from the lip edge which is no greater than the distance between the lip edge and the first side wall, and said deflector member when in its second position further having its deflector edge a distance from the outlet opening which is no less than one-third of and no greater than three times the distance between the lip edge and the first side wall, said lip edge and said deflector edge being related with the deflector in said second position to discharge the air passing downwardly through the elongated narrow air outlet passageway through the outlet opening into a path parallel to the outlet opening.

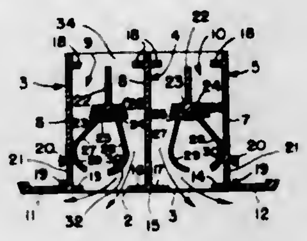
3,185,068
AIR DISTRIBUTION DEVICES

Harold E. Straub, Cedar Falls, and Eugene F. Averill, Waterloo, Iowa, assignors to Titus Manufacturing Corporation, Waterloo, Iowa, a corporation of Iowa

Filed Apr. 9, 1963, Ser. No. 271,728

5 Claims. (Cl. 98—40)

1. A slot diffuser comprising a pair of spaced, oppositely disposed, elongated, side walls defining the opposite sides of an elongated air flow channel, an elongated lip on the longitudinal, downstream edge of each of said walls, each lip extending inwardly into said channel at the downstream portion thereof, said lips defining therebetween an open, elongated, unobstructed air discharge slot along the downstream side of said diffuser, a vane support member, means supporting said member in spaced relation to and between said elongated walls and upstream from said discharge slot, an elongated first vane extending longitudinally of said channel, an elongated second vane extending longitudinally of said channel in substantially side-by-side relationship with said first vane, means pivotally supporting the upstream longitudinal edges of said vanes on said vane support member with substantially parallel, adjacent pivot axes thereof extending longitudinally of said channel and spaced from said elongated walls, either of said vanes adapted to be set in open position directing air flow through said channel into respective paths along respective opposite walls and against the upper surfaces of the respective flanges thereof, the downstream, longitudinal edges of said vanes being near but upstream of said slot when said vanes are in open position, and said vanes having a transverse width sufficient to allow said vanes to be pivoted individually into contact with a respective one of said elongated walls, whereby each vane can be individually, pivotally adjusted to positions between full open position and full closed position to set the air discharge pattern from said slot.

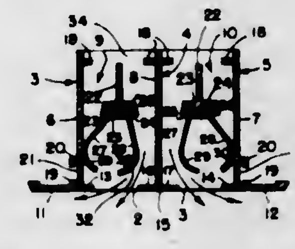


3,185,069
AIR DISTRIBUTION DEVICES

Harold E. Straub, Cedar Falls, and Eugene F. Averill, Waterloo, Iowa, assignors to Titus Manufacturing Corporation, Waterloo, Iowa, a corporation of Iowa

Filed July 29, 1964, Ser. No. 385,875

8 Claims. (Cl. 98—40)



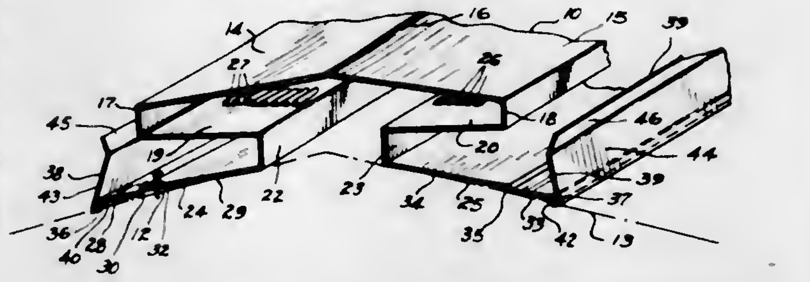
1. A slot diffuser comprising a pair of substantially parallel, elongated side walls defining an elongated air flow channel therebetween, a lip on the downstream edge of each of said walls, each lip directed inwardly toward the center of said channel, said lips defining therebetween an open, elongated air-discharge slot, vane support means in said channel disposed about midway between said elongated walls, two side-by-side, elongated vanes depending from said vane support means with their upstream edges pivotally supported on said means and with the pivot axes thereof substantially parallel with said walls, said vanes each having a transverse curvature in at least the downstream portions thereof and providing a convex surface facing oppositely outwardly and toward a respective wall, the curved downstream portions of said vanes being in close proximity to but spaced upstream from said slot, elongated seating means extending along the downstream edge of said vane support means and adapted to seat the free edges of said vanes and screening the space between said vanes from the view of one looking into said slot from a distance.

3,185,070
ROOF RIDGE VENTILATOR

Lester L. Smith, Peoria, Ill.
(P.O. Box 68, Princeville, Ill.)

Filed Jan. 24, 1963, Ser. No. 253,671

7 Claims. (Cl. 98—42)



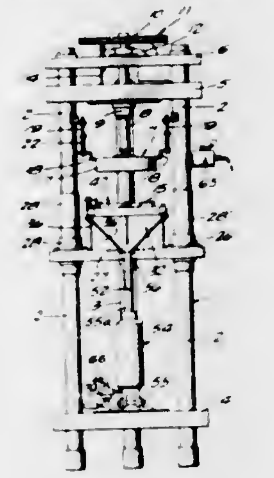
1. A roof ridge ventilator comprising, in combination, opposite and adjoined side portions symmetrical with respect to a longitudinal central plane and each including a top cover part sloping downwardly from the horizontal away from said central plane, outer side wall means extending downwardly from the top cover part remote from said central plane, a panel extending inwardly from the outer side wall means in spaced and opposed relationship to the top cover part and facing downwardly, the inward extent of said panel from said outer side wall being to a position spaced from said central plane, an inner side wall extending downwardly from the inner edge of said panel in generally parallel relationship to said central plane, a side flashing portion extending laterally outward from the bottom of the inner side wall and having an outer marginal portion which extends outwardly beyond the top cover part and panel, said panel having louvered openings therein, and means providing a baffle extending upwardly from the outer edge of said side flashing portion to a level above that of said panel, said baffle having a top marginal portion spaced outwardly from and extending along said outer side wall in opposed relationship thereto.

3,185,071
CITRUS FRUIT JUICE EXTRACTOR

Harry A. Foss and Herman L. Jones, Winter Haven, Fla., assignors to Brown Citrus Machinery Corp., Whittier, Calif., a corporation of California

Filed Sept. 14, 1962, Ser. No. 223,645

21 Claims. (Cl. 100—53)

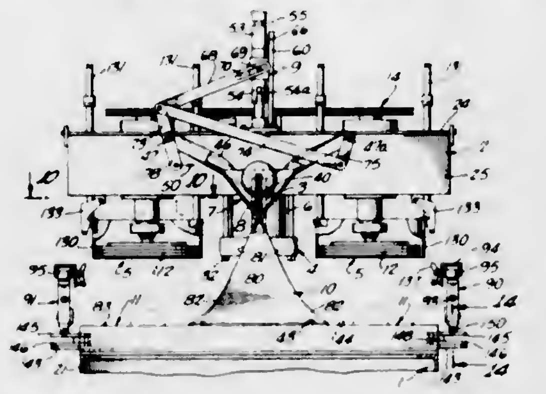


1. A citrus fruit juice extractor, comprising: a frame; a pressure member; a fruit engaging member; one of said members having perforations therein to pass juice therethrough; means mounting said members on said frame for relative movement into and from a position for engaging and applying juice extracting pressure to a fruit half disposed between said members; means for rotating one of said members while said members are in said position for applying juice extracting pressure; operating means for effecting said relative movement of said members operable and controllable independently of operation of said means for rotating said one member, and

means for controlling said operating means to maintain said members in contact with said fruit half for a predetermined period of time while said rotating member is engaged with the fruit half.

3,185,072
JUICE EXTRACTOR

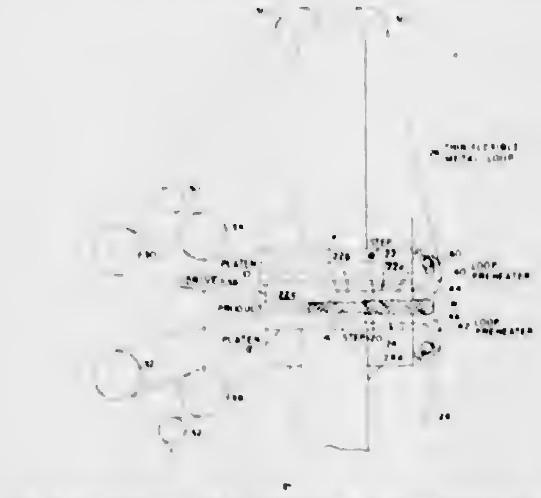
Donn J. Rickard, Glendora, Calif., assignor to Brown Citrus Machinery Corp., Whittier, Calif., a corporation of California
Filed June 21, 1963, Ser. No. 289,620
33 Claims. (Cl. 100—53)



1. A citrus fruit juice extractor comprising: a frame member; a beam member; means connecting said members including power operated means for effecting relative movement of said members; whole fruit bisecting means cooperatively supported by members; grid means on one of said members for supporting bisected fruit in position to have juice extracting pressure applied thereto; means cooperable with said bisecting means for gravitationally disposing the bisected fruit cut faces downmost in predetermined positions with respect to said grid means; positioning means on said one member for moving the bisected fruit from said predetermined positions onto said grid means; pressure applying means on the other of said members for subjecting bisected fruit on said grid means to juice extracting pressure in response to predetermined relative movement of said members; and actuating means interconnecting said bisecting means and said positioning means with said members and operable in response to relative movement of said members for actuating said bisecting means and said positioning means.

3,185,073
APPARATUS FOR PREVENTING BELT DISTORTION

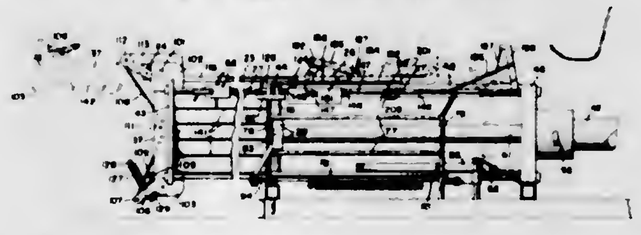
Carroll H. Van Hartesveldt and Buddy D. Wahl, Toledo, Ohio, assignors to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Feb. 12, 1963, Ser. No. 258,085
6 Claims. (Cl. 100—93)



6. In a machine for forming a product in sheet form, first and second stationary platens having opposed compressing surfaces for engaging opposite surfaces of the product, first and second endless loops of thin flexible metal having a high tensile strength and positioned to move over the respective surfaces of said first and second platens, means for driving each of said loops over the platen surfaces so that the product will be drawn between the platens by frictional engagement of the loops with the surfaces of the product, means in said platens for heating the platens and thus the portions of the loops between the platens, the portions of said loops not between said platens being exposed to conditions which tend to lower the temperature thereof so that the portions of said loops advancing toward said platens are below the temperature of the portions of said loops between said platens, and loop pre-heat means in heat transfer relationship with said loops at locations in advance of said platens for applying heat to the loops at a controlled temperature gradient to increase the temperature of the metal of the loops at such locations to approximate the temperature of those portions of the loops which are between the platens and the product.

3,185,074
MACHINE FOR RECOMPRESSING BALED HAY

George Jay, 602 Merle Lane, and Everett V. Rankins, 904 Trinity St., both of Manteca, Calif.
Original application Mar. 9, 1959, Ser. No. 797,932, now Patent No. 3,082,588, dated Mar. 26, 1963. Divided and this application May 10, 1962, Ser. No. 193,882
10 Claims. (Cl. 100—98)

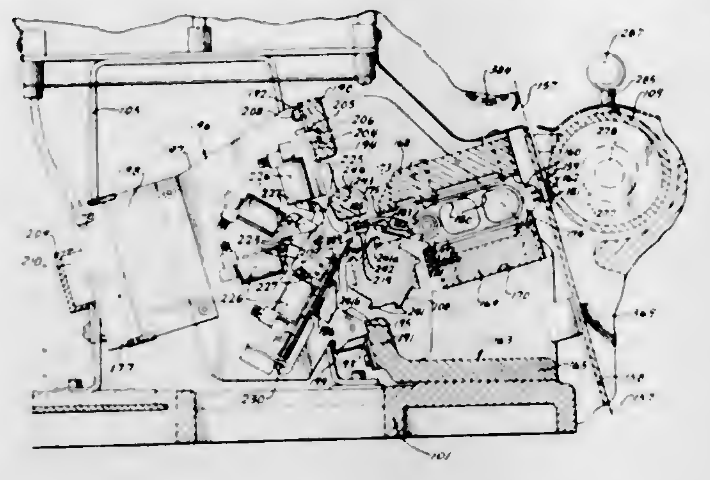


3. A rebaling machine comprising a baling column formed with an open discharge end and an opening in one side which opens horizontally outward and is dimensioned to receive a bale, said column being closed off between said opening in said side and said discharge end, the length of said opening being substantially equal to the distance between said discharge end and the nearest edge of said opening, said distance being substantially equal to the length of one bale; a swingable gate having a latch to close the open discharge end of said column, a ram reciprocable in said column, fluid-actuated means for reciprocating said ram in said column from a position on the discharge end of said opening to a position on the side of said opening opposite said discharge end, bale inserting means for inserting a bale in said column through said opening; means biasing said latch to latched position, and unlatching means for unlatching said latch and in which said unlatching means is actuated by said ram on its return stroke.

3,185,075
HIGH SPEED PRINTER WITH PRINT HAMMER CONTROL

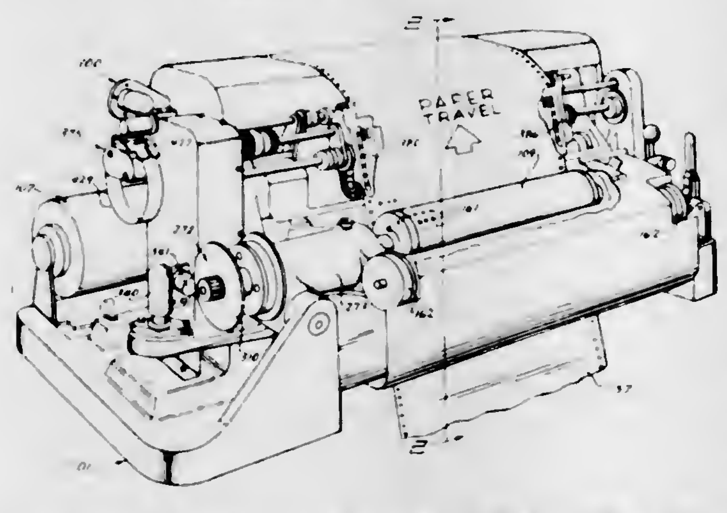
Arvin D. McGregor, Birmingham, and James M. Irvine, Jr., Detroit, Mich., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 14, 1961, Ser. No. 138,157
24 Claims. (Cl. 101—93)

1. In a printer having a print drum with characters to be printed formed thereon, a print hammer mounted for reciprocating movement toward and away from said drum and a continuously rotated cam for impacting said hammer against one of said characters on said drum, the combination of a movable armature, a plurality of cooperating levers operatively associating said armature with said hammer, spring means biasing said armature in one direction, and means for holding said armature against the force of said spring means, said holding means comprising a pole piece attracting said armature and a coil adapted when energized to cancel the attracting force of said pole piece and thereby release said armature, for movement in said one direction, respective cooperating levers each having an impact surface thereon, said surfaces on cooperating levers being sequentially engaged by said cam during continued rotation of said cam for driving said hammer in one direction and for thereafter adjusting the positions of said levers.



3,185,076
HAMMER CONTROL CIRCUIT IN HIGH SPEED PRINTERS

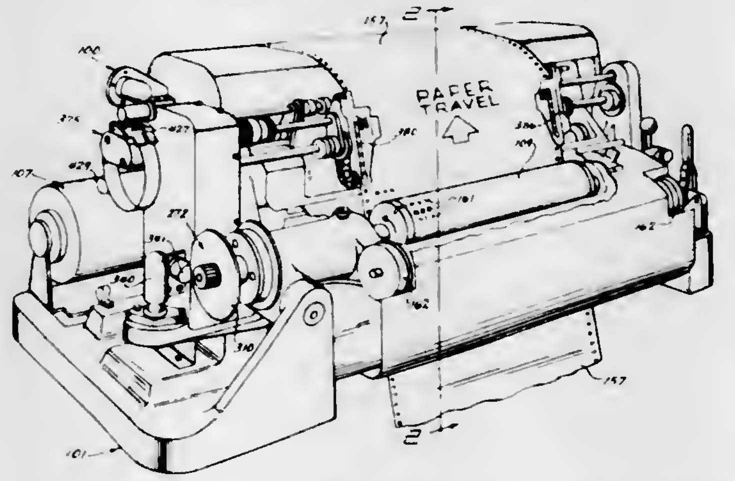
Frederick E. Booth, Jr., Birmingham, Mich., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 18, 1961, Ser. No. 138,818
5 Claims. (Cl. 101—93)



1. A control system for a printer of the rotating drum type wherein the printer has an element which rotates at a speed corresponding to the drum and wherein the printer further has an interdependent mechanical portion including said element, and an electronic portion operable interdependent mechanical and electronic portions operable to cycle the electronic portion of the printer through reset, read and type command times sequentially in synchronism with the operation of the mechanical portion; said control system comprising separate printer reset, read and type command buses, electromechanical means for periodically producing an electric synchronizing signal at intervals determined by the speed of operation of said element of the mechanical portion of the printer, means connected to said electro-mechanical means and responsive to the synchronizing signal produced thereby for producing a reset signal output on said reset bus for a predetermined time after production of a synchronizing signal, means connected to the means for producing the reset signal and responsive to termination of the reset signal after said predetermined time for producing a printer read signal on said printer read bus of a second predetermined duration, and means connected to both the means for producing a reset signal and the means for producing a printer read signal and responsive to the reset signal and read signal for producing a type command signal on the type command bus between the end of the printer read signal and the beginning of a second reset signal.

3,185,077
HAMMER CONTROL MEANS IN HIGH SPEED LINE PRINTERS

Samuel N. Irwin, Grosse Pointe Woods, and Frederick E. Booth, Jr., Birmingham, Mich., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 21, 1961, Ser. No. 139,678
4 Claims. (Cl. 101—93)



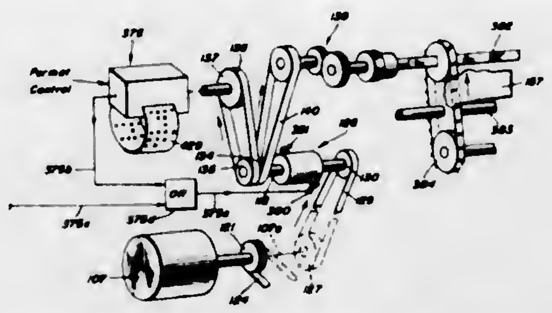
1. In a printer for typing lines of print on a record in response to received coded signals, wherein the printer has a record advance means, a drum, a plurality of print hammers adapted to be selectively addressed, and mechanical means to actuate the addressed hammers by driving the addressed hammers against the record for impact with said drum; the improvement comprising cyclically operable synchronizing means responsive to said mechanical means to provide synchronizing signals in time with the actuation of said mechanical means, electronic cycling means responsive to said signals to provide sequential sub cycle signals including read enable and type command signals for predetermined durations, thereby establishing a read time and a type time gating means operatively associated with said cycling means and responsive to the received coded signals for decoding said coded signals and for addressing the hammers in accordance with the decoded signals only during said read time, said mechanical means being operable at a predetermined time after said synchronizing signal and after the hammers are addressed to actuate the addressed hammers, means under the control of said cycling means and said gating means for providing a record advance signal operable to actuate said record advance means after typing a line of print, and said record advance signal providing means including a circuit for inhibiting said read enable signal for a predetermined time after the record-advance signal to enable the record and record-advance means to become settled.

3,185,078
PAPER DRIVE MECHANISM IN A HIGH SPEED PRINTER

Frank G. Pensavecchia, Orchard Lake, Mich., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 21, 1961, Ser. No. 139,679
11 Claims. (Cl. 101—93)

1. In a line printer having means for advancing paper through distances equal to one or more print-line spaces depending upon the desired format; first means for advancing said paper; a driven means to provide a signal

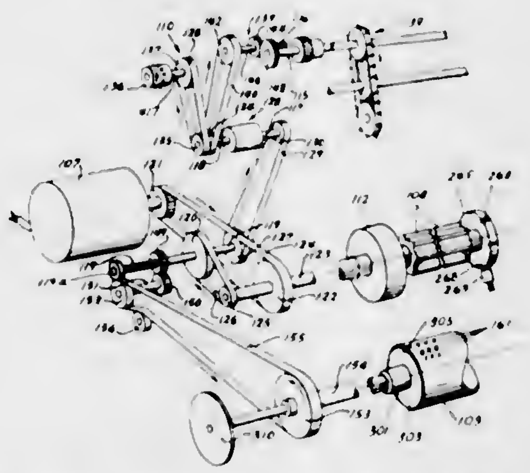
for controlling the number of said spaces which said paper is to be advanced; and actuating means to simultaneously actuate said first and said driven means, said actuating means operatively connected with and controlled by said driven means and including a ratchet having one tooth for each space that the paper is advanced, and an electrically operated latch engageable with a tooth of said ratchet and actuated upon the siganl from said driven means to automatically release one tooth of said ratchet, and said latch being re-engageable with another tooth of said ratchet to thereby enable said first means to advance the paper through a distance equal to one print-line space.



3,185,079
BELT AND GEAR DRIVE FOR HIGH SPEED PRINTER SYSTEMS

Arvin D. McGregor, Birmingham, and Earl G. Goetsch, Detroit, Mich., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 22, 1961, Ser. No. 139,930
4 Claims. (Cl. 101—93)

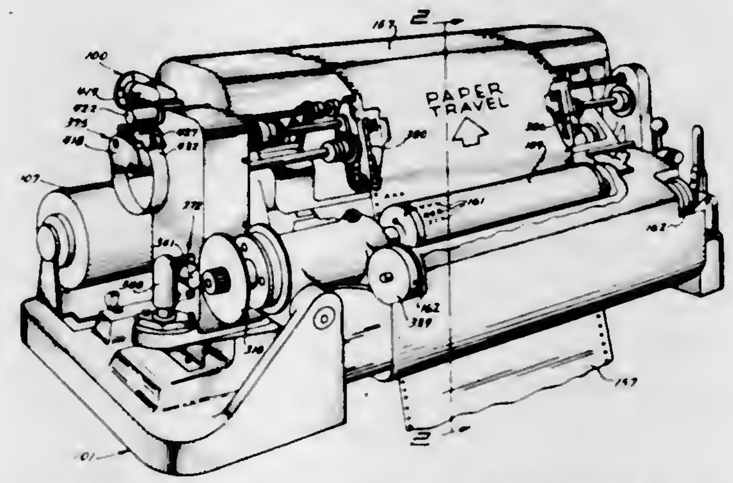


1. In a drum printer to print on paper, a frame, a rotary print drum on which characters to be printed are formed, means pivotably connecting said drum to said frame for movement from a first position in which said drum is operable for printing to a second position in which said drum is in a non-print location, an elongated cam for impacting print hammers against said print drum when in said first position, mechanism for driving the paper on which characters are to be printed, mechanism for controlling said paper drive mechanism, a clutch device, a drive train comprising a main drive motor, and a non-slipping belt and pulley means driven by said motor for driving said print drum and said cam and said paper drive mechanism and said control mechanism and said clutch device in a timed relationship, and means for maintaining said relationship when said drum is pivoted to said second position at which the axis of said print drum is at approximately right angles with the axis of said elongated cam, said maintaining means including a retainer member for preventing lateral displacement of the belt associated with said print drum, a fixed member containing a hole therethrough, a stem fixed to said retainer member and slidably located in said hole, and resilient means compressed between said fixed member and said retainer member for maintaining tension in said belt when said belt is moved against said retainer member by the pivotal movement of said drum in moving between said first and said second positions.

3,185,080
HAMMER MAGNET GATE SYSTEM IN HIGH SPEED PRINTERS USING TRANSISTOR CIRCUITS

Merlin D. Spitsbergen, Rochester, and Harrison I. Craig, Detroit, Mich., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 25, 1961, Ser. No. 140,613
19 Claims. (Cl. 101—93)

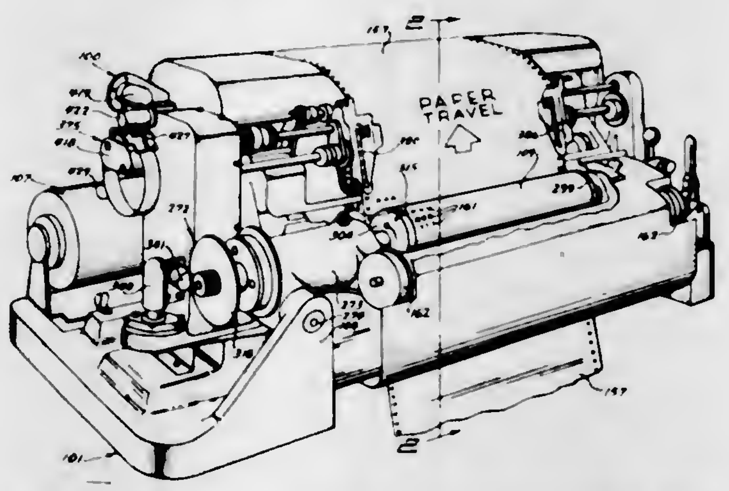


1. In a printer for typing lines of information in response to received signals including a separate printer hammer at each character address in a line of type, a hammer gating system comprising a separate electronic circuit associated with each printer hammer including a grounded emitter semi-conductor device which is operable on being turned on to cause actuation of the hammer associated therewith on reception of a type command by the circuit, means for receiving signals defining particular character addresses in a line of type, and means operable between the signal receiving means and said circuits for selecting and turning on the semi-conductor devices at the character addresses defined by the received signals.

3,185,081
HAMMER CONTROL MEANS IN HIGH SPEED LINE PRINTERS

Merlin D. Spitsbergen, Rochester, Mich., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 25, 1961, Ser. No. 140,615
7 Claims. (Cl. 101—93)

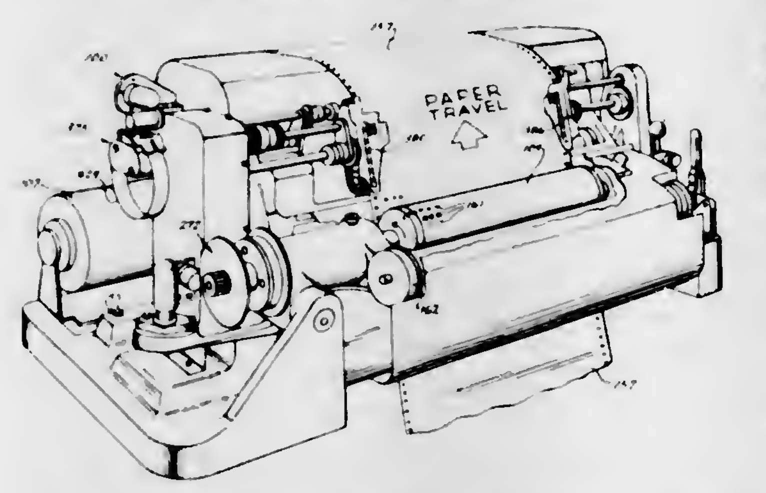


1. In a printer for typing lines of information in response to received signals and having interdependent mechanical and electronic portions wherein the mechanical portion includes a plurality of printer hammers, and means for selectively conditioning certain hammers for actuation; and wherein said electronic portion includes a power supply and a drive motor; means actuated by said power supply for preparing the printer hammers for operation by positioning all of said hammers in a predetermined initial position, means operatively associated with said hammer preparing means for developing a plurality of voltages for application to the electronic portion of the printer including said motor, means driven by said motor to actuate the conditioned hammers, means operatively associated with said preparing means and with said voltages developing means for energizing said motor to actuate the mechanical portion of the printer including said means to actuate the conditioned hammers, and means for sequentially energizing at least said hammer preparing means and said voltages developing means.

3,185,082
HAMMER CONTROL CIRCUIT FOR HIGH SPEED PRINTERS

Harrison I. Craig, Detroit, and Arvin D. McGregor, West Bloomfield Township, Mich., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 25, 1961, Ser. No. 140,616
16 Claims. (Cl. 101—93)



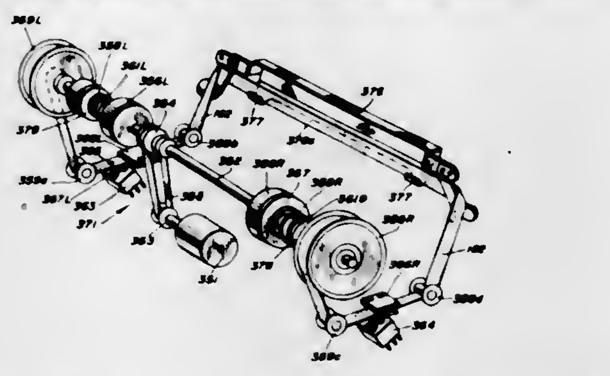
1. In a printer for typing lines of information in response to received signals having a power supply energized through a control circuit for providing the printer with an unregulated voltage and means for cycling the printer through reset, read and type command times including a plurality of type command buses, a reset bus and a strobe signal bus and means for producing predetermined signals on each of said buses during the reset time on predetermined cycling of the printer, means for checking the cycling the printer, comprising a relay in said control circuit operable on being deenergized to deenergize the printer power supply, a voltage checking circuit connected to said relay for energizing said relay when the voltage input thereto is above a predetermined magnitude and a cycle checking circuit connected to each of said buses and said voltage checking circuit for providing said voltage checking circuit with a voltage above said predetermined magnitude only when the signals on each of the buses are at ground potential.

3,185,083
RIBBON DRIVE MECHANISM

Frank G. Pensavecchia, Orchard Lake, and Hugh R. Barnes, St. Clair Shores, Mich., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 21, 1961, Ser. No. 139,680
7 Claims. (Cl. 101—96)

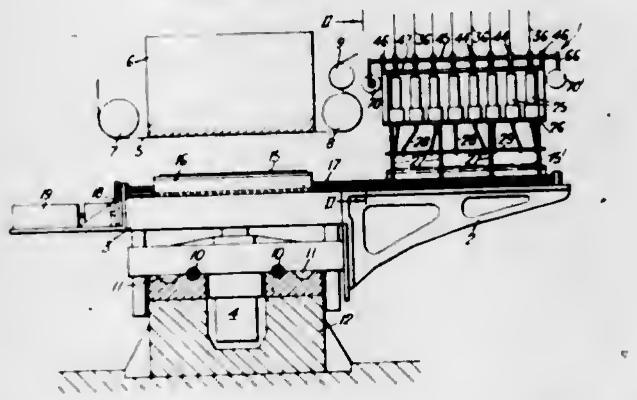
1. A printer ribbon drive mechanism, comprising a continuously driving motor, an intermediate shaft driven by said motor, end shafts aligned with said intermediate shaft, a ribbon spool mounted on each of said end shafts, a magnetic clutch connection between said intermediate shaft and each of said end shafts, a typewriter type ribbon having ends secured to said spools and threaded through said printer, spring means for maintaining said ribbon in tension, and means for automatically reversing the direction of the ribbon drive, said reversing means including a switch mounted adjacent each of said spools, a switch actuating arm pivotally fastened to each of said switches, a pair of metal eyelets fastened on said ribbon substantially near the ends thereof, a plate mounted immediately above each of said switch actuating arms so as to prevent any upward movement of said ribbon and said eyelets, said plates further causing said switch actuating arms to be depressed downwardly to actuate one of said switches upon being contacted by one of said metal eyelets, and a relay for energizing one of said magnetic clutches and de-energizing the other of said clutches once one of said switches is operated by one of said actuating arms.



3,185,084
DYEING OF PILE FABRICS

Howard Dempster Short and Sandor Major, Brighouse, England, assignors to Kosset Carpets Limited, Brighouse, England, a corporation of Great Britain

Filed Oct. 19, 1962, Ser. No. 231,776
Claims priority, application Great Britain, Oct. 25, 1961, 38,240/61
7 Claims. (Cl. 101—115)



1. In an apparatus for dyeing pile fabric wherein a length of pile fabric with the pile facing downwardly is supported above a printing form having an upwardly facing printing surface and a plurality of open receptacles for containing coloring agents formed thereon by thin upstanding walls defining a design to be applied to the fabric, the combination which comprises:

- (*a*) a support positioned beneath said length of pile fabric;
- (*b*) a slide movably mounted on said frame and carrying a printing form having upwardly facing open receptacles thereon;
- (*c*) said slide and the printing form being movable on the support in a horizontal plane from a first position beneath the length of pile fabric to be dyed to a second position where the printing form is removed from beneath the fabric and the open receptacles thereon are in a position to be filled from above with measured quantities of coloring agents,

- (*d*) a plurality of metering devices corresponding in number to the number of receptacles on the printing form positioned above the printing form at said second position of the form,
- (*e*) each of said metering devices being connected to a source of a coloring agent, and
- (*f*) conduit means leading from each of the metering devices to a point immediately above one of the open receptacles on the printing form.

3,185,085

METHOD OF ADDING HYDROPHOBIC IMAGES TO THE HYDROPHILIC SURFACE OF POSITIVE OR NEGATIVE PAPER OFFSET PLATES

Clifford E. Herrick, Jr., Concord, Mass., and Armin E. Wimmer, Vestal, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 9, 1961, Ser. No. 81,281

3 Claims. (Cl. 101—149.2)

1. A process of forming an offset printing plate comprising coating a base with a copolymer of vinyl methyl ether and maleic anhydride to form a first layer of the copolymer on said base, coating said copolymer layer with a composition comprising a mixture of an alkali resistant resin and a light-sensitive diazo oxide to form a second layer, exposing the thus formed plate to light under a pattern, removing the mixture from the exposed portions of said second layer by treatment with a polyhydroxy compound to thereby form a hydrophobic grease resistant image of the pattern on the plate, treating the plate with an alkylolamine to hydrolyze the portion of the surface of the copolymer of said first layer from which the mixture was removed, thereby rendering said portions hydrophilic, rinsing the thus formed plate with water to remove processing liquids, drying the plate and manually forming a second image on said hydrophilic portions by applying thereto an ink comprising an alkali soluble hydrophobic polyvinyl compound, an alkali and a volatile organic solvent.

3,185,086

METHOD AND ARRANGEMENT FOR REPRODUCING AN IMAGE

Wilhelm Ritzerfeld, Schorlemer Allee 14, Berlin-Dahlem, Germany, and Gerhard Ritzerfeld, Franzensbader Str. 21, Berlin-Grunewald, Germany

Filed June 28, 1961, Ser. No. 120,243

Claims priority, application Germany, May 18, 1960, R 27,980; May 19, 1960, R 27,989; July 6, 1960, R 28,269

7 Claims. (Cl. 101—149.4)

1. A method of forming a transferable reproduction of an image, comprising the steps of forming a multilayer structure including in the indicated sequence sheet means defining an image comprising image forming and image free portions, a layer including a first dye component, a layer including a second dye component adapted at a predetermined elevated temperature to react with said first dye component to form a transferable, alcohol soluble, colored dye, and a backing sheet, at least the layer including said first dye component adhering to said backing sheet, said image forming portions of said sheet means having a greater specific heat transfer capacity than said image free portions thereof so that upon exposure of said sheet means to predetermined infrared radiation portions of said first and second dye components corresponding to said image forming portions will be heated to said predetermined elevated temperature and thus react so as to form said transferable, alcohol soluble dye while portions of said layers of dye components corresponding to said image free portions will remain below said predetermined elevated temperature; exposing said multilayer structure to said predetermined infrared radiation so as to heat and react the portions of said first and second dye components corresponding to said image forming portions, whereby a hectographic master sheet will be produced consisting of said backing sheet with said transferable, alcohol soluble dye formed thereon of said reacted first and second dye component portions corresponding to the image forming portions of said sheet means; separating said hectographic master sheet consisting of said backing sheet with said transferable alcohol soluble dye thereon; and making duplicate copies from said thus obtained hectographic master sheet by an alcohol duplicating method.

3,185,087

THERMOGRAPHIC DUPLICATING PROCESS

Douglas A. Newman, Glen Cove, and Harold F. E. Dixon, Douglaston, N.Y., assignors to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York

Filed Sept. 14, 1962, Ser. No. 223,776

4 Claims. (Cl. 101—149.4)

1. In the thermographic method of imaging a copy-receiving sheet comprising the steps of:

- (*a*) superposing original infrared radiation-absorbing images together with a copy-receiving sheet and a transfer sheet having a layer of heat-transferable composition which does not absorb substantial amounts of infrared radiation and which is positioned in contact with the surface of the copy-receiving sheet,
- (*b*) exposing said superposed sheets to a light source rich in infrared radiation which is absorbed by said original images, converted to heat and conducted to corresponding areas of said heat-transferable layer to cause said areas to soften and adhere to the surface of the copy-receiving sheet, and
- (*c*) separating said transfer and copy-receiving sheets whereby the softened areas of the transfer layer remain adhered to the copy-receiving sheet and transfer thereto; the improvement which comprises using as the copy-receiving sheet a glazed paper on which the glazed surface which is in contact with the transfer layer has a planal levelness having a Chapman F value of at least 12 measured at 700 p.s.i.

2. The method of claim 1 wherein the copy-receiving sheet is a hectograph master sheet and the layer of heat-transferable composition on the transfer sheet comprises hectograph imaging material.

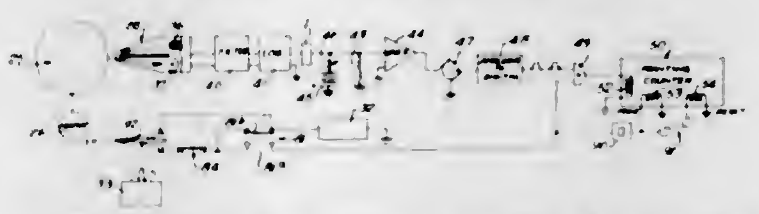
3,185,088

METHOD AND APPARATUS FOR PREDETERMINING SETTINGS FOR INK FOUNTAIN KEYS

Robert K. Norton, Twinsburg, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Filed Dec. 1, 1961, Ser. No. 156,393

21 Claims. (Cl. 101—426)



1. The method of presetting a plurality of ink control devices for controlling the flow of ink to respective circumferential zones on a printing cylinder of a printing press to control the density of ink in corresponding image zones on an image to be printed comprising the steps of optically scanning an image corresponding to the image to be printed by zones which correspond to said image zones to provide an electrical signal corresponding to each zone of the image to be printed by one of said cylinder zones with the magnitude of the signals being a function

of the image density of the corresponding image zone, and adjusting each of the ink control devices to control the ink flow to the zone of the printing cylinder controlled thereby in accordance with the magnitude of the electrical signal for the corresponding image zone.

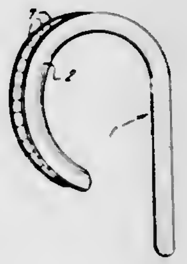
3,185,089

FLEXIBLE LINEAR SHAPED CHARGE FOR UNDERWATER USE

Robert F. Parkhurst, Morrisville, and William L. Weber, Levittown, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed June 28, 1962, Ser. No. 205,928

8 Claims. (Cl. 102—24)



1. A linear shaped charge comprising a continuous and integral strip of elastomeric material formed with a continuous groove at one side having opposed inclined walls converging in the material, a liner for said continuous groove having side walls closely fitting the walls of said groove, and said liner being divided into short unconnected segments with each segment having a length longitudinally of the strip of elastomeric material less than its width and with the segments arranged in end to end relation for free movement relative to each other to permit the linear shaped charge to be flexed in any direction.

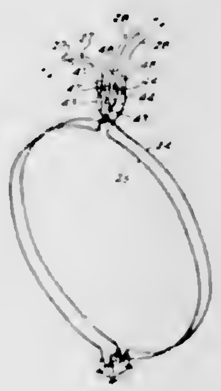
3,185,090

DUAL SHAPED CHARGE SEPARATION SYSTEM

William L. Weber, Levittown, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Feb. 1, 1963, Ser. No. 255,571

8 Claims. (Cl. 102—24)



1. An explosive separation device for separating a structure into separate sections, first and second linear explosive charges extending across an area of the structure to be cut, means for initiating explosion of the separate charges successively to provide a timed delay therebetween so that the second charge will be exploded if the first charge fails, and the separate linear explosive charges crossing each other adjacent at least one end connected to the initiating means whereby the charge first exploded cuts the other charge to prevent explosion of both charges.

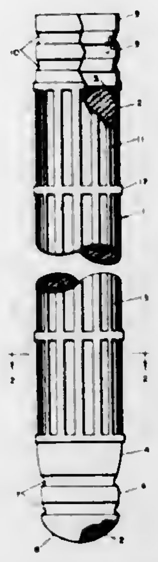
3,185,091

EXPLOSIVE CONTAINER WITH YIELDABLE SEAL

John F. Hamilton, San Antonio, Tex., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 10, 1964, Ser. No. 336,955

10 Claims. (Cl. 102—24)



1. A container for explosives adapted for interconnection with like containers to form an explosive column assembly, which comprises:

- (*a*) a thin-wall elongated substantially cylindrical blown plastic container having explosive disposed therein throughout the major length of the container and having a yieldable seal within the container adjacent the explosive,
- (*b*) a male coupling and end closure on one end of the container, said male coupling having at least one peripheral bead,
- (*c*) a female coupling on the other end of the container, said female coupling having at least one peripheral bead compatible with the bead of the male coupling, and
- (*d*) the male coupling having a reduced external diameter relative to the internal diameter of the female coupling and the end closure of said male coupling having protrusion means to contact and to force the yieldable seal of a like container into the explosive adjacent thereto so that like containers of explosive slidably interconnected by yielding engagement of the beads thereof to form an explosive column assembly have the end closures of the male couplings exerting compressive force on the yieldable seals and adjacent explosive of the female couplings.

3,185,092

EXPLOSIVE CONTAINER WITH YIELDABLE SEAL

John F. Hamilton, San Antonio, Tex., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware

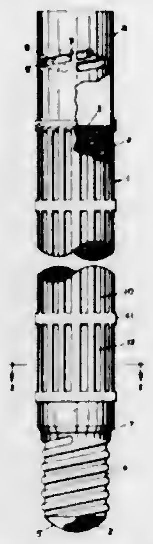
Filed Jan. 10, 1964, Ser. No. 337,090

13 Claims. (Cl. 102—24)

1. A container for explosives adapted for interconnection with like containers to form an explosive column assembly, which comprises:

- (*a*) a thin-wall elongated substantially cylindrical blown plastic container having explosive disposed therein throughout the major length of the container and having a yieldable seal within the container adjacent the explosive,
- (*b*) an externally threaded male coupling and end closure in the thin wall on one end of the container,
- (*c*) an internally threaded female coupling in the thin wall on the other end of the container, the female coupling extending beyond the yieldable seal the remaining length of the container, and

(*d*) the male coupling having a reduced external diameter relative to the internal diameter of the female coupling and the end closure of said male coupling having protrusion means to contact and to force the yieldable seal of a like container into



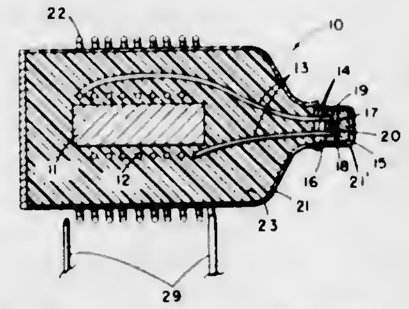
the explosive adjacent thereto so that like containers of explosive threadedly interconnected by the male and female couplings to form an explosive column assembly have the end closures of the male couplings exerting compressive force on the yieldable seals and adjacent explosive of the female couplings.

3,185,093
HIGH FREQUENCY IMMUNE SQUIB

Dale G. Hollnbeck, Madison, Wis., assignor to Bjorksten Research Laboratories for Industry, Inc., Madison, Wis., a corporation of Wisconsin

Filed Feb. 8, 1962, Ser. No. 171,931

4 Claims. (Cl. 102—28)



1. Means to initiate a rapid self-sustaining chemical reaction comprising, in combination with a member which is heated by passing electric current through the member and reactant substances adjacent said member:

a substantially cylindrical housing of magnetic material, an electro-explosive device comprising said member, said device also comprising a metal container which entirely encloses the other portions of said device except for having a single opening in said container, said cylindrical housing having a first opening at a first end and a second opening at a second end, said metal container of said device joined by conductive means to the first end of said cylindrical housing in unapertured conductive sealing engagement to provide communication between the said opening in said metal container of said device and the first opening at the first end of said cylindrical housing, a core of magnetic material extending axially in said cylindrical housing and having each of its ends in at least close proximity to the magnetic material of said housing, a secondary coil wound on said core and having electrical conductors extending from the ends of said coil to said member, a metal electromagnetic shield joined at all of its peripheral edges in unapertured conductive sealing engagement to portions of said core and housing to substantially entirely electrically isolate from ambient radiation said secondary coil and said conductors and said member, a primary coil within said housing provided with said core extending substantially axially through its center and electrical conductors extending from the ends of said coil through the second opening in said second end of said cylindrical housing.

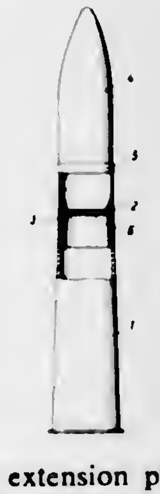
3,185,094
CARTRIDGE CASE EXTENSION PIECE FOR USE WITH PROJECTILES

Paul Zehfeld, Dusseldorf, Germany, assignor to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany

Filed June 10, 1963, Ser. No. 286,750

Claims priority, application Germany, June 20, 1962, R 32,961

6 Claims. (Cl. 102—38)



1. A cartridge case extension piece for use with projectiles and cartridge cases for inter-connection purposes comprising a tubular sleeve of combustile material, said sleeve having a longitudinal axis and a front end for embracing a tail portion of a projectile and a rear end to be plugged into a cartridge case, an external annular shoulder on said sleeve formed between said front end and said rear end in a plane transverse to said longitudinal axis for limiting the movement of the extension piece into a cartridge case when plugging it therein, said front end comprising a socket portion on said sleeve for the reception of the tail portion of a projectile, said socket portion having a front portion defined by said front end of said sleeve and a rear portion for receiving the tail end of said projectile tail portion, said rear portion being formed in a second plane transversely to said longitudinal axis of said sleeve near said first-mentioned plane.

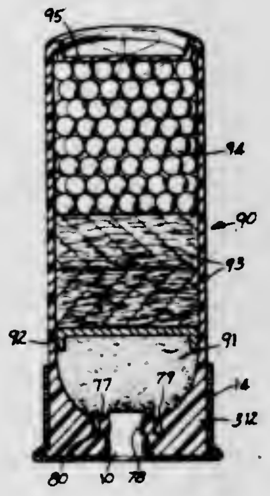
3,185,095
CARTRIDGE CASE HEAD

Alfred A. Mayer, West Haven, and Charles E. Miller, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Feb. 15, 1963, Ser. No. 258,751

8 Claims. (Cl. 102—44)

1. A shotgun cartridge comprising a primer, and an axially extending cartridge body integral with a base of deformable thermoplastic material such as high density linear polyethylene and the like crystalline polymer having an undersize aperture through said base and receiving said primer, with frictional retention therein for forming with said base part of the enclosing surface of the cartridge cavity receiving an explosive propellent, said primer having a lateral portion intermediate its ends deformed inwardly, said thermoplastic material being formed at said surface adjacent said aperture to provide a coaxial ring and a coaxial groove in said base, said groove being separated from said primer by the thickness of said coaxial ring of said material contracted at the inner end of said aperture about said primer, said ring having a portion extending into said deformed lateral primer portion to retain said primer, said ring being shaped as a ridge, having a relatively thin root on said base and extending upwardly to a relatively thick surface crest between said groove and primer, said groove being in communication with said cavity for applying the gas pressure generated by said propellent radially inwardly against said ring thereby creating a gas seal at said aperture between said base and primer and increasing said retention of said primer in said base.



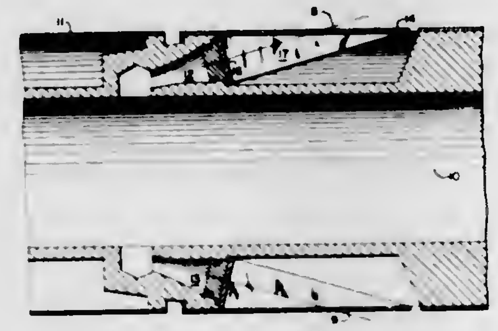
3,185,096
THRUST REVERSAL UNIT FOR ROCKET MOTOR

Roland G. Daudelin, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 31, 1959, Ser. No. 837,292

6 Claims. (Cl. 102—49)

(Granted under Title 35, U.S. Code (1952), sec. 266)



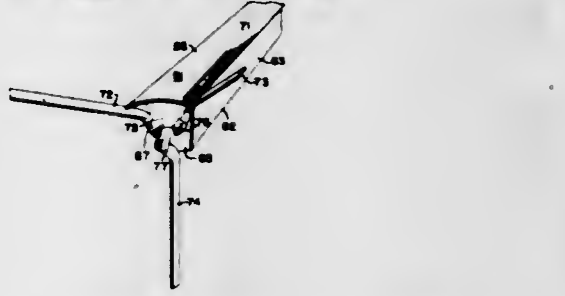
1. A thrust cancellation device in combination with a single rocket motor of the solid propellant type having a combustion chamber, a main exhaust nozzle communicating at its forward end with the combustion chamber and an open rear end to provide an exit for gases of propulsion, said device comprising a plurality of thrust reversing nozzles arranged on the periphery of the combustion chamber and longitudinally displaced from the thrust end of the rocket motor to prevent accidental actuation of said thrust reversing nozzles until the rocket reaches a safe distance from a launching site, a plurality of plugs respectively disposed in each of said reversing nozzles, a single four segmented clamp band for maintaining said plugs in all of said thrust reversing nozzles, explosive bolts for holding said segmented clamp band in place, an integrating accelerometer means located entirely in the rocket for determining when the rocket motor has attained a sufficient acceleration and for closing an electrical circuit during the acceleration period to said explosive bolts whereby at least one of the explosive bolts is fired releasing the band and simultaneously opening all of the thrust reversing nozzles.

3,185,097
MISSILE STABILIZING MEANS

Vincent J. Cushing, Winnetka, and Walter A. Beaudry, Chicago, Ill., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Original application Aug. 2, 1956, Ser. No. 601,848. Divided and this application June 25, 1957, Ser. No. 673,997

2 Claims. (Cl. 102—50)



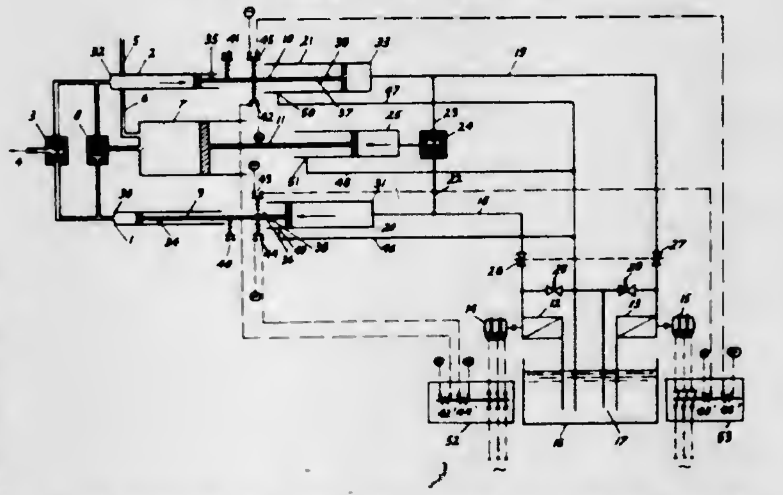
1. In a missile comprising a body having a fin on the rear end thereof movable between a forwardly folded position and a rear unfolded position, means rotatably mounting said fin, said means comprising a standard on the rear of the body, said standard having a bore therein, a shaft on said fin journalled for rotation in said bore, said shaft having a threaded portion outside said bore, a nut threaded on said threaded portion, retaining means engaging said nut and said standard to hold the nut stationary with respect to the standard, and a washer of deformable material disposed between the nut and the standard, movement of the fin from folded to unfolded position rotating said shaft to draw the nut tighter to the standard and thereby deform the washer, deformation of the washer absorbing some of the energy of rotation to retard movement of the fin to the unfolded position thereof.

3,185,098
APPARATUS FOR THE CONTINUOUS EJECTION OF MATERIAL

Karl Gustav Lundh, Vaduz, Liechtenstein, assignor to Anstalt Unda, Vaduz, Liechtenstein

Filed Mar. 1, 1962, Ser. No. 176,757

3 Claims. (Cl. 103—49)

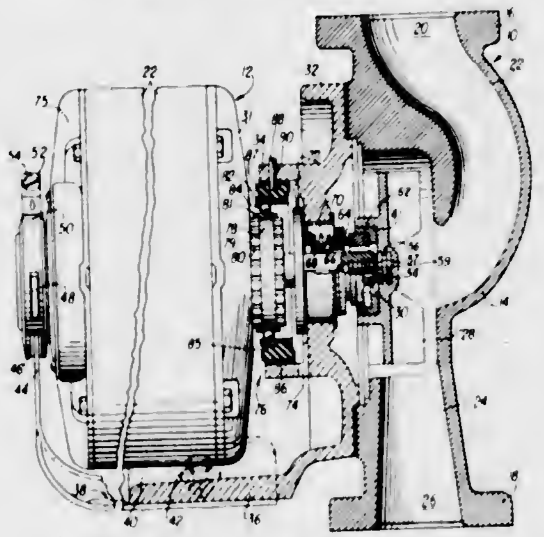


1. Apparatus for the continuous ejection of pressed material, comprising, in combination, two alternately operating presses, each of said presses comprising a cylinder, a piston movable in said cylinder, and piston-actuating means connected with said piston, the two pistons being movable in opposite directions from front end positions to rear end positions and vice versa; means forming a single outlet for the ejected material, means connected with the last-mentioned means and said cylinders for feeding the material to be pressed into a cylinder and causing the material to move the piston located in that cylinder into its rear end position before the piston in the other cylinder has reached its front end position, and a separate hydraulic device for moving the two pistons alter-

nately from their rear end positions to their front end positions to alternately eject the material which has been fed to said pistons with substantially the same ejection speed through said outlet, said device comprising means actuated by the piston-actuating means of one piston while said one piston is being moved by the material toward its rear end position for moving the other piston from its rear end position to its front end position, and separate means actuated by the piston-actuating means of said other piston while said other piston is being moved by the material toward its rear end position for moving said one piston from its rear end position to its front end position, the two last-mentioned means moving a piston from its rear end position toward its front end position before the other piston has reached its front end position.

3,185,099
MOTOR MOUNTING ARRANGEMENT FOR LIQUID CIRCULATOR

Hans Spring, Reading, Mass., assignor to Watts Regulator Company, a corporation of Massachusetts
Filed Mar. 18, 1963, Ser. No. 265,684
4 Claims. (Cl. 103—87)

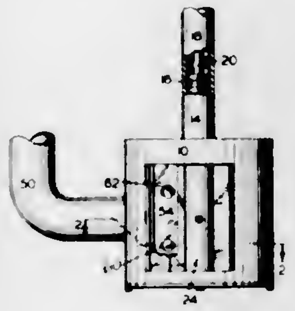


1. A liquid circulator comprising, in combination: a vaned impeller having means adapted to be coupled to a rotating shaft, an electric motor of the type having opposite ends of a rotor-mounting drive shaft extending therefrom, one end of the drive shaft being close-coupled directly to said vaned impeller, and motor mounting means disposed between the vaned impeller and the motor for confining movement of the motor in both axial and radial directions and for minimizing sound and vibration emanating from said motor, said motor mounting means comprising a ballmount assembly affixed to the housing of the motor; an annular ring formed of resilient, compressible material surrounding and engaging said ballmount assembly; and shell means spaced from the ballmount and engaging said annular resilient ring for retaining the annular ring of resilient material in a compressed state while isolating the ballmount from direct contact with the shell means.

3,185,100
COMMINUTING PUMP

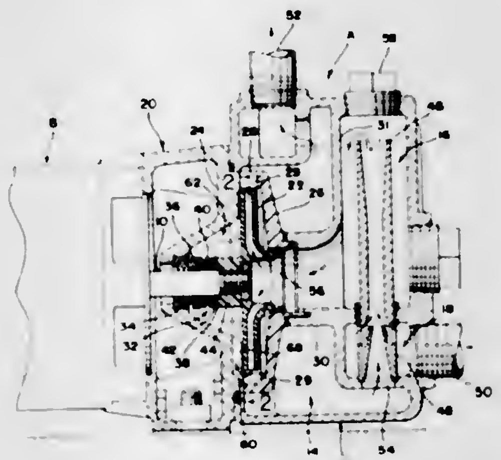
Ralph T. Secrest, P.O. Box 322, Elma, Wash.
Filed Sept. 10, 1962, Ser. No. 222,511
2 Claims. (Cl. 103—96)

1. A comminuting pump comprising a vertical housing having a cylindrical side wall and upper and lower closure plates, means secured to said housing for suspending the latter in a liquified mass, a rotatable hub coaxially disposed in said housing, cutter and pumping blades projecting radially from said hub and having outer axially extending cutting edges disposed for movement in a path in close proximity to the inner surface of said side wall, top and bottom annular flanges secured to said hub at the top and bottom of said blades to confine coarse material in the liquid being pumped in a pump chamber formed between said annular flanges and the side wall of the housing, said cutting edges extending between said annular flanges, means in said side wall defining spaced inlet and outlet openings providing substantially horizontal intake and outlet of material to be pumped, said inlet opening having an axially extending far side edge in the direction of rotation of the cutter and pumping blades, said outlet opening having a cut-off edge located approximately 90° around the side wall of the housing from the far side edge of the inlet opening in the direction of travel of said cutter and pumping blades, and a shear plate on the far side edge of said housing intake and extending axially the full height of said intake opening, and cooperating with the axially extending cutting edges of said cutter and pumping blades to comminute the material being pumped.



3,185,101
PUMP

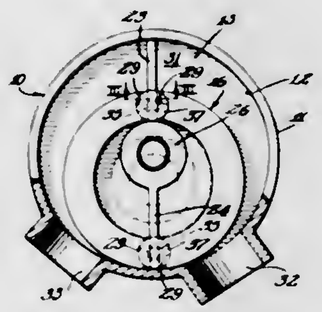
Eugene T. Brooks, Lisbon, and James A. La Monica, Salem, Ohio, assignors to Crane Company, New York, N.Y., a corporation of Illinois
Filed Mar. 6, 1963, Ser. No. 263,206
2 Claims. (Cl. 103—111)



1. In an axial feed, centrifugal pump comprising a casing having an impeller chamber and a shaft opening communicated with said chamber; an impeller in said chamber; a drive shaft extending through said opening and operably connected onto said impeller; a discharge means spaced radially from said impeller for accepting pressurized liquid from said impeller; and a packing means in said opening and around said shaft for sealing said opening, the improvement comprising: said impeller being closely spaced from said casing at the side of said impeller facing said opening to prevent substantial leakage of pressurized liquid between said casing and said impeller, a conduit means in said casing, said conduit means having an inlet radially outward of said impeller and in said discharge means for positively diverting a portion of liquid from said impeller into said conduit means, and said conduit means having an outlet directed toward said packing means, said conduit means being formed integrally with said casing and comprising a channel opening toward said impeller and communicated with said outlet.

3,185,102
VANE PUMP SEALING GLANDS

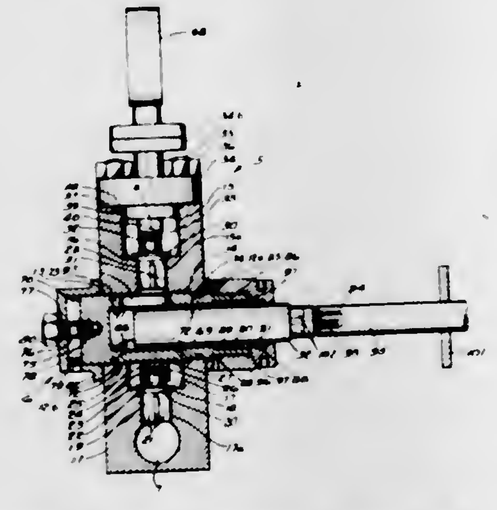
Donald W. Partain, Rocky River, and James E. Yingst, Chagrin Falls, Ohio, assignors to Thompson Ramo Wooldridge Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 13, 1964, Ser. No. 337,461
12 Claims. (Cl. 103—144)



1. In a rotary vane pump, a housing having an interior cylindrical wall and parallel spaced end walls, an annular rotor journalled for rotation within said housing about an axis eccentric of the axial center thereof, a pair of vanes extending radially of the axial center of said housing and mounted for pivotal movement about said axis and having surface contact with said cylindrical wall, sealing glands pivotally mounted in said rotor and having facing flat faces forming slidable guides for said vanes, and means independent of said vanes exerting separating forces on said sealing glands and biasing the facing flat faces of said sealing glands outwardly with respect to said vanes and maintaining said sealing glands into intimate pivotal contact with said rotor.

3,185,103
READILY DISMOUNTABLE RECIPROCATING PUMP ASSEMBLY

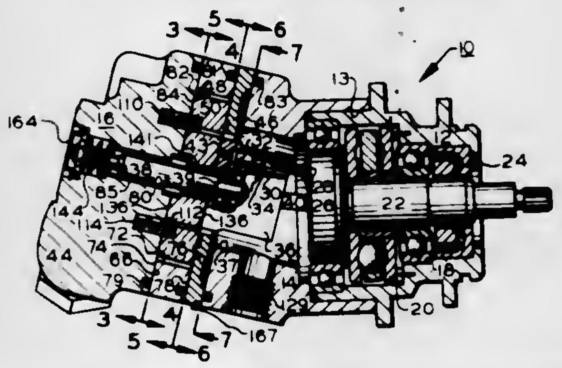
Reinhard A. Yohpe, Battle Creek, Mich., assignor to Union Pump Company, Battle Creek, Mich., a corporation of Michigan
Filed Dec. 12, 1960, Ser. No. 75,314
14 Claims. (Cl. 103—153)



1. In a pump having a cylinder block with a bore opening therethrough and having inlet and outlet ports extending laterally in said block from the sides of said bore, the combination therewith of a closed end pump sleeve within said bore and having an externally threaded portion at the opposite end thereof extending out of said cylinder block, said sleeve having a longitudinal bore extending from said closed end and out of the externally threaded opposite end of same, means at the closed end of said sleeve for pulling same endwise and when tightened holding same fixed relative to the movement of the closed end portion of said sleeve further into said bore, said open end portion of said sleeve being counterbored, packing and packing compression sleeve means in said counterbore, an internally threaded cap threadedly engaging the external threads on the open end of said sleeve, said cap having an outer end means engaging the outer end of said compression sleeve means so that tightening said cap against said compression sleeve means will compress said packing, said cap also including means serving as an endwise movement stop in abutment with said block for said sleeve when said pulling means at the closed end of the latter is tightened with said cap in place on said sleeve, a plunger movable back and forth within said sleeve during pumping operation, said packing in said sleeve forming a seal with said plunger, inlet and outlet ports in said sleeve substantially at opposite sides of same and adjacent said closed end thereof, means holding said sleeve so that the inlet and outlet ports of same are alined with and in communication with said inlet and outlet ports of said cylinder block, inlet and outlet valves in said inlet and outlet ports of said cylinder block, and means for holding same in operable position.

3,185,104
POWER TRANSMISSION

Clarence E. Liles, Los Angeles, Calif., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Jan. 14, 1959, Ser. No. 786,734
6 Claims. (Cl. 103—162)



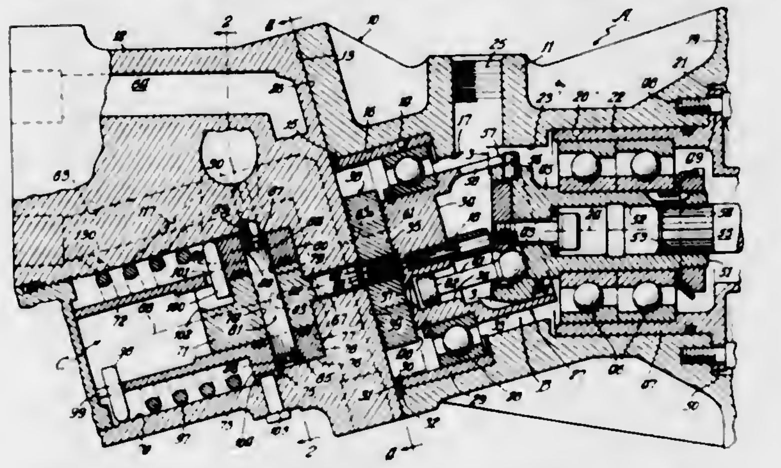
6. A variable displacement fluid energy translating device comprising a hollow casing having a mounting face with an axial opening, pumping mechanism within the casing including a rotary cylinder barrel with axially reciprocating pistons and having ports associated with the pistons opening to a valve face, means forming a pump head secured to the mounting face, said pump head including a block member with inlet and outlet passages opening to a valving face, a rotor rotatably mounted on the pump head having opposed valving faces in fluid sealing engagement respectively with the block member and cylinder barrel valving faces and having inlet and outlet ports extending therethrough opening to the said opposed valving faces, pressure responsive means for rotating the rotor comprising vanes operatively connected to said rotor, and means forming a pressure supply passage leading to the pressure responsive vane means.

3,185,105
VARIABLE DISPLACEMENT HYDRAULIC APPARATUS

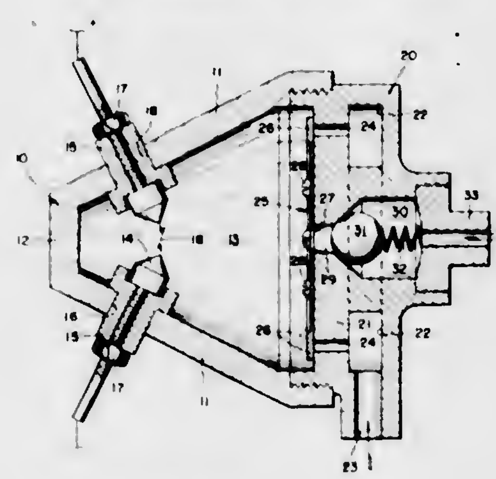
William W. Headings, Willoughby, and Howard E. Rose, Hudson, Ohio, assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 30, 1959, Ser. No. 802,821
2 Claims. (Cl. 103—162)

1. A hydraulic apparatus comprising: a housing having a chamber and an inlet and an outlet leading respectively to and from said chamber; a block disposed in said chamber and having a cylinder formed therein; a piston disposed

in said cylinder, said piston being adapted to be reciprocated relative to said block in order to provide an intake stroke and a discharge stroke; a movable valve plate disposed in said chamber between said block and said inlet and outlet and being adapted to interconnect said cylinder with said inlet and outlet; and means for moving said valve plate relative to said block to interconnect said cylinder with said inlet during at least a portion of said discharge stroke and with said outlet during at least a portion of said intake stroke to vary the displacement of said apparatus, said last-named means including a motor interconnected with said valve plate and comprising means defining a bore in said housing, a rotatable shaft disposed in said bore and being interconnected with said valve plate, biasing means operatively interconnected with said shaft and tending to maintain said valve plate in a predetermined rotational position relative to said housing providing for maximum displacement of said apparatus, means defining a motive surface on said shaft, and valve means for selectively applying and disapplying pressure fluid against said motive surface whereby the force of said fluid acting against said motive surface rotates said valve plate from said predetermined position in opposition to said biasing means to decrease the displacement of said apparatus.

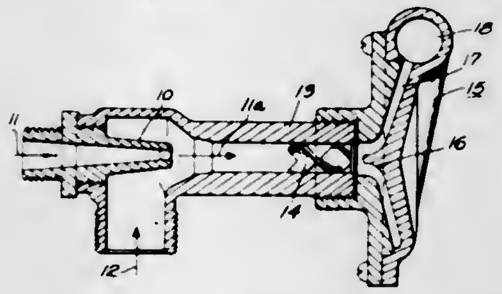


3,185,106
SPARK PUMPS
Ralph C. Smith, Brooklyn, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 28, 1963, Ser. No. 305,041
13 Claims. (Cl. 103—255)



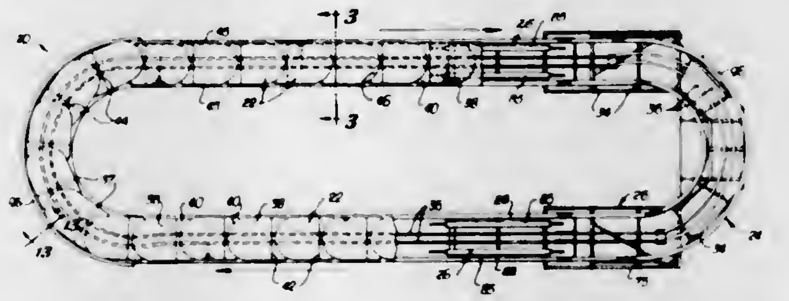
1. A pump comprising:
(*a*) a housing defining a conical pump chamber with an inlet adapted to receive liquid to be pumped and an outlet for pumped liquid at the larger end of the pump chamber;
(*b*) a pair of electrodes supported by the housing having tips within the chamber in spaced relation to one another for forming a gap to be jumped by a spark for pumping;
(*c*) the pair of electrodes being adapted to be connected to a source of electrical energy to provide a spark;
(*d*) check valve means disposed in the housing being biased to normally close the inlet and outlet; and
(*e*) the check valve means being responsive to the reaction of a spark across the formed gap for opening the outlet to pass pumped liquid and to a pressure differential between the inlet and the pump chamber for opening the inlet after pumping to admit liquid to be pumped to the pump chamber.

3,185,107
VORTEX JET PUMP
Adiel Y. Dodge, 206 S. Main St., Rockford, Ill.
Filed Nov. 19, 1962, Ser. No. 238,549
3 Claims. (Cl. 103—263)



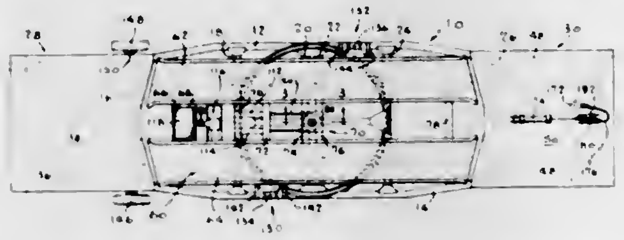
1. A vacuum pump comprising means forming a mixing chamber having an opening for fluid to be pumped, a jet nozzle discharging a second fluid into the mixing chamber to impel said first fluid through the mixing chamber, a helical vane in the mixing chamber to set fluid passing therethrough into a swirl, a vortex chamber connected to the mixing chamber to receive the swirling fluid and further convert velocity to static pressure by means of centrifugal force, the foregoing elements arranged in the series set forth herein.

3,185,108
PEDESTRIAN CARRIER
Donald C. Muller, Whittier, Calif., assignor to C. F. Butz Engineering, Azusa, Calif., a corporation of California
Filed July 10, 1963, Ser. No. 293,952
10 Claims. (Cl. 104—25)



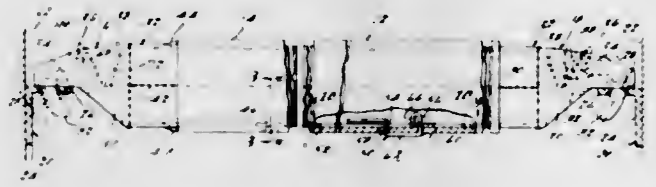
1. An articulated generally planular horizontal pedestrian transporting structure comprising a supporting track means, a guide track means disposed within said supporting track means, a plurality of articulated platform members disposed contiguous one to the next in linear series, each of said platform members including a forward major section and a rear minor section hingedly connected one to the other thereby allowing each major section generally unrestricted vertical movement independent from the connected minor section, each minor section being provided with bearing supports movably engaging the supporting track means, each major section being provided with a follower element movably engaging the guide track means, said bearing supports each including a tie member pivotally connected to a next in series follower element in a substantially remote location from the hinged connection between the major and minor sections thereby allowing each platform movement laterally independent from each other, and drive means imparting linear movement to at least one of the platform members through said bearing supports.

3,185,109
VEHICLE TURNTABLE
William F. Mengel, % F. F. Mengel Co., Wisconsin Rapids, Wis.
Filed June 27, 1963, Ser. No. 291,206
16 Claims. (Cl. 104—45)



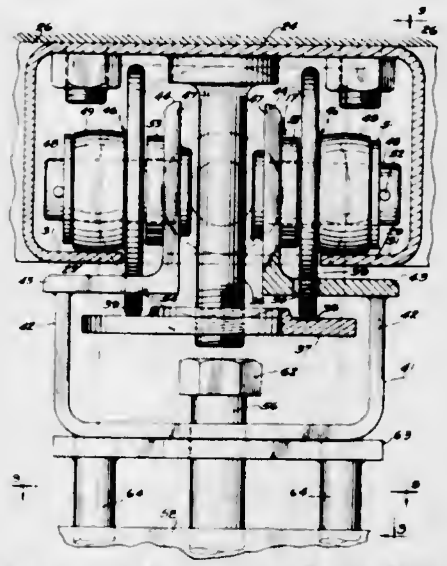
1. Apparatus comprising, in combination, an elongated frame, a turntable, means supporting said turntable on said frame for movement about a generally vertical axis, retractable wheels supported on said frame to provide means for transporting said apparatus, means for vertically moving said wheels to selectively raise and lower said frame so that said frame can be seated on the ground for operation of said turntable and raised from the ground for transportation on said wheels, drive means for rotating said turntable about said vertical axis, and hitch means on said apparatus for connection externally of said apparatus and operative, when so connected, to raise a portion of said frame for transportation.

3,185,110
FREIGHT BRACING APPARATUS
Jackson A. Shook, Northville, and Herbert E. Rolfe, Jr., Garden City, Mich., assignors to Evans Products Company, Plymouth, Mich., a corporation of Delaware
Filed Aug. 24, 1962, Ser. No. 219,295
14 Claims. (Cl. 105—369)



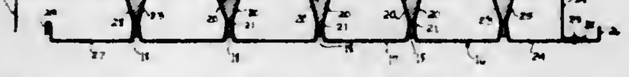
10. An end fitting for a crossbar for bracing freight and adapted to be connected to and disconnected from a belt rail mounted on a supporting wall structure and having a horizontally extending flange having apertures therealong and to permit such connection and disconnection to be made either with or without any relative movement of the parts of the end fitting, said end fitting having one end adapted to be connected to said crossbar and said end fitting comprising a body adapted to engage and be supported upon the upper surface of said flange, a latch having pin means movable therewith, means mounting said latch on said body for pivotal movement between a latched position and a retracted position about a horizontal axis extending transversely of said end fitting, said pin means being curved in a plane longitudinally of said end fitting and so disposed that when said latch is in said latched position the upper portion of said pin means extends generally vertically for extending through said apertures in said belt rail and said pin means curves downwardly from said upper portion and in a direction toward said one end of said end fitting and out of vertical alignment with said apertures.

3,185,111
LOAD-GATE POSITIONING ARRANGEMENT
Francis M. Hess, Pinellas Park, Fla., Cornelius Arentze, Chicago, Ill., and William R. Shaver, Munster, Ind., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Apr. 18, 1963, Ser. No. 274,038
6 Claims. (Cl. 105—376)



1. A trackway system and gate suspension arrangement for guiding and suspending a load dividing gate within a railway car, said trackway comprising a longitudinally extending track means, a transversely extending track means intersecting said longitudinally extending track means, a transfer table immovably mounted at said intersection of said longitudinal and transverse track means, said gate suspension means including a carriage movable along said track means and turnable on said transfer table so that said gate suspension means may be shifted for movement along either said longitudinal or transverse track means.

3,185,112
FREIGHT CAR CONSTRUCTION
Charles Richard Johnston, 80 E. Jackson Blvd., Chicago, Ill.
Filed Aug. 11, 1961, Ser. No. 130,890
4 Claims. (Cl. 105—409)

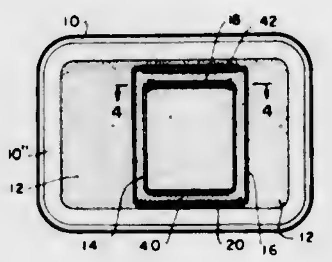


1. A prefabricated nailable panel for use in construction of a wall and the like comprising an inner and outer continuous sheet of metallic material with the outer sheet providing a substantially flush wall surface,
(*a*) said inner sheet having a load-engaging wall surface provided throughout its longitudinal length with spaced apart parallelly extending grooves substantially triangular in cross section,
(*b*) said grooves having their vertical angles open and interrupting the load engaging wall surface of said inner sheet,
(*c*) a portion of the opposite walls of each of said triangularly shaped grooves between said inner sheet and said outer sheet and adjacent to their open vertical angle crimped in the direction of each other to provide therebetween a restricted nail receiving and retaining passage,
(*d*) said outer sheet of material connected to and extending between the base portion of each of said triangularly shaped grooves throughout the length and width of said inner sheet so as to space its substantially flush wall surface from said load engaging wall surface of said inner sheet a distance substantially equal to the depth of said grooves, and

(*e*) means provided by the sheets of each panel for connecting the longitudinal edges thereof to corresponding longitudinal edges of adjacent panels to provide an all nailable self-supporting load bearing wall.

3,185,113
ATTACHMENT FOR ARM-CHAIR

Jacques I. Nathan, 4400 Allan Drive, and Robert M. Tubiana, 868 Park Ave., both of Baltimore, Md.
Filed Jan. 31, 1963, Ser. No. 255,399
1 Claim. (Cl. 108—47)



An article of manufacture comprising in combination:

(*a*) a rigid portable support including a substantially flat bottom surface;

(*b*) two separate oppositely disposed loop-like gripping elements, each formed from a single continuous rod having a closed end and an open end opposite the closed end;

(*c*) one of the loop-like gripping elements being smaller than the other and adapted to lie within the area outlined by the larger loop-like gripping element and in the same plane therewith adjacent the bottom surface of the support;

(*d*) two separate oppositely disposed engaging members attached to the bottom surface of the support adapted to engage the open ends of the respective gripping elements to form a hinge for hingedly attaching the gripping elements to the bottom surface of the support;

(*e*) the hinge of the smaller gripping element being positioned within the confines of the area defined by the larger gripping element and adjacent the closed end of the larger gripping element;

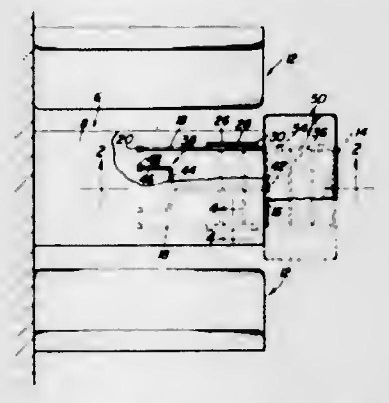
(*f*) means cooperating between the loop-like gripping elements adjacent their open ends and the means engaging the open end of the gripping elements for resiliently holding the two gripping elements in the same plane adjacent the bottom of the support, the resilient means having such range as to provide for the gripping element to take various gripping positions when the closed ends of the elements are rotated about their hinged ends out of contact with the bottom surface of the support;

whereby, the smaller gripping element lies within the same area bound by the larger gripping element on the bottom of the support and are out of contact with each other in all positions.

3,185,114
RETRACTABLE TABLE TOP SHELF

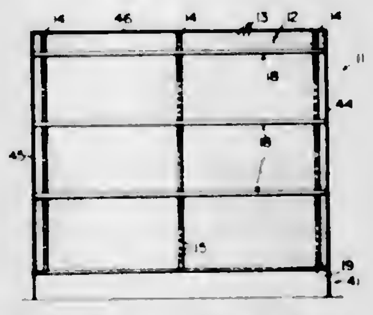
George J. Consin, 207 E. Lake Forest St., Knoxville, Tenn.
Filed June 18, 1963, Ser. No. 288,834
3 Claims. (Cl. 108—65)

1. For use in conjunction with a pair of companion spaced parallel booth-type restaurant benches disposed in spaced-apart parallelism and having opposed coplanar elongated dual occupant seats, the improvement comprising a restaurant table structure adapted to be located in an intervening space between the aforementioned benches and having a horizontal table top with one end thereof accessible to a waitress, a pair of spaced parallel coplanar adapter brackets underlying and affixed to an underneath side of said accessible end portion of said table top and having open-ended complemental supporting and guide tracks, a manually extensible and retractable U-shaped frame also underlying said underneath side, situated in the space between said brackets and in a plane generally coplanar therewith and embodying limbs slidingly mounted in their respective tracks, said limbs being of a length appreciably greater than the length of their respectively cooperable brackets and being joined together and rigidified by intervening crossbraces, said frame being of a size in plan that when in its extended usable position it is ample to support a serving tray such as is commonly used by the aforementioned waitress and being of a length appreciably greater than the length of the respectively cooperable brackets and provided with a supporting and stabilizing leg having an upper end hingedly mounted on a median part of the bight portion of said U-shaped frame, said leg having a lower end portion provided with an integral inverted U-shaped yoke which when in use provides a floor-engaging foot, said leg and foot being in a common plane and of an overall length substantially the same as the length of said frame, and in combination, a panel-like member constituting an auxiliary table top and functionally designed and structurally adapted to serve as an optionally usable extra leaf for said table top, and means carried by the underside of said panel-like member permitting the latter to be laid for use atop said U-shaped frame member, said means embodying a plurality of depending spring clips, said clips being arranged relative to each other and to the component parts of said frame whereby they may be releasably snapped into retaining positions on the arms of said U-shaped frame, said arms being oriented and coordinated therewith.



3,185,115
DISPLAY STAND

Morris Rand, Boston, Mass., assignor to Rand Associates, Inc., South Boston, Mass., a corporation of Massachusetts
Filed May 13, 1963, Ser. No. 280,168
7 Claims. (Cl. 108—108)



1. A display stand comprising a base,

a support panel mounted on said base and located in a substantially vertical plane,

support means for mounting said panel on said base and preventing distortion of said panel as well as angular movement of said panel with relation to said base,

said support means comprising a downwardly opening U-shaped bar having two vertically arranged legs and a joining section extending between upper portions of said legs,

said U-shaped bar having a substantially uniform sectional configuration throughout,

said configuration comprising a peripheral outer coextensive pair of wings lying on either side of an inwardly extending continuous rib,

said rib lying essentially in a single plane, and joined to and in facing relation with one side of said panel,

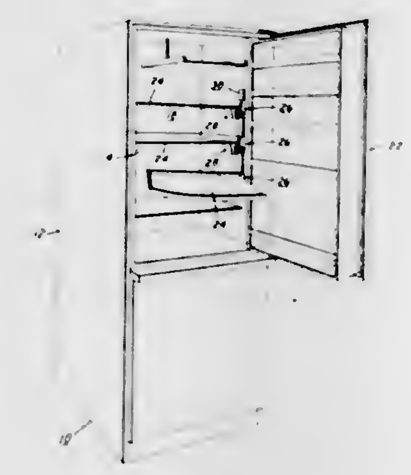
means located on said base contacting lower ends of said legs for anchoring said support means,

a plurality of substantially vertically extending rigid standards provided adjacent to and on either side of said panel in back to back relationship forming pairs with selected ones of said pairs having ends interengaging said rib to rigidly support said panel and interlock it with said rib, and

a plurality of substantially horizontally extending shelves supported by said standards on either side of said panel.

3,185,116
REFRIGERATING APPARATUS

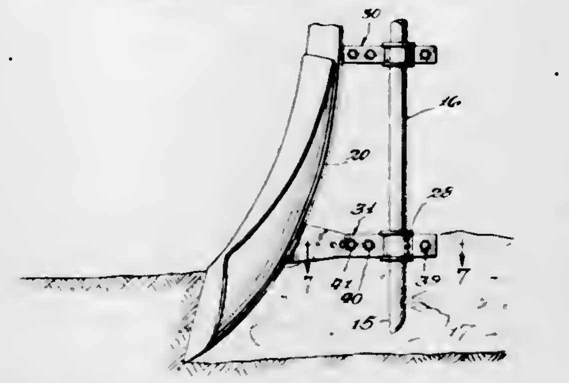
Gordon L. Gilbert, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 6, 1963, Ser. No. 263,220
1 Claim. (Cl. 108—141)



A vertically adjustable pivotal shelf structure for use in a refrigerator cabinet comprising, an elongated rack adapted to be fixedly secured to a side wall of the refrigerator cabinet, a housing slidably supported on said rack, a shelf cantilevered outwardly from said housing, means connecting said shelf to said housing for pivoting said shelf relative to said housing, said housing having a front face, a knob supported on said front face, a first shaft rotatably supported by said housing having one end thereof fixedly secured to said knob, means forming an opening interiorly of said housing, actuator means located within said opening including a worm element fixedly secured to said first shaft for rotation therewith and a gear having the teeth thereof meshed with said worm, a second shaft directed transversely of said first shaft having the ends thereof rotatably supported by said housing, said second shaft being fixedly secured to said gear, said second shaft having an end extension thereon directed exteriorly of said housing, a drive gear fixedly secured to said shaft extension having the teeth thereon meshing with the teeth of said rack whereby upon rotation of said knob said housing and shelf are vertically adjusably positioned with respect to said rack within the refrigerator cabinet.

3,185,117
PROPANE GAS DISPENSER ASSEMBLY

Karl H. Frantzen, Omaha, Nebr., assignor to Northern Gas Products Company, Omaha, Nebr., a corporation of Delaware
Filed Apr. 4, 1963, Ser. No. 270,623
2 Claims. (Cl. 111—7)



1. In a soil furrowing apparatus having a tine, said tine having a cutting edge and a gas dispenser attached thereto, a gas discharge assembly for dispensing gas into the soil following a furrowing operation, said assembly comprising:

a tubular discharge member extending into the valley formed during said furrowing operation, said member having an opening near the hollow of said valley and said member spaced from the tine along the entire length of the member to minimize heat transfer from the tine to said member;

a sleeve having flanged ends, said sleeve adhesively attached to said member;

a first bracket rigidly attached to said tine behind and away from said tine cutting edge, said bracket having a series of horizontal apertures located therein;

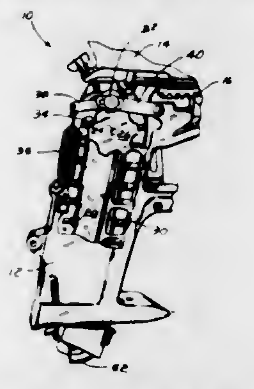
a plurality of clamping brackets having apertures located at their respective ends and the contour of the outer surface of said sleeve formed in portions of said brackets;

a first fastening means for adjustably fastening said clamping brackets to said first bracket; and

second fastening means for tightening and releasing said clamping brackets for frictional engagement with said sleeve.

3,185,118
CORN PLANTER SIGNALING MEANS

Elwood Greene, 1115 SW. Summer, Humboldt, Iowa
Filed Sept. 9, 1963, Ser. No. 307,464
3 Claims. (Cl. 111—51)



1. In a corn planter, comprising in combination,

a hollow shank member,

a shaft extending through the upper end of said shank member,

a valve sprocket on one end of said shaft, adjacent the exterior of one side of one side of said shank member,

a drill shaft operatively connected to said valve sprocket,

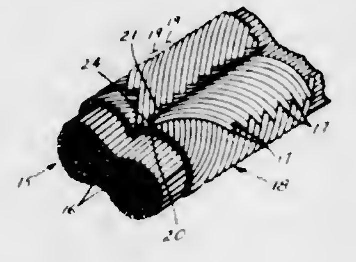
a chain flight conveyor in said shank connected to said shaft,

a pin element positioned on the inside of said valve sprocket and extending towards said shank, a normally open micro switch mounted on said shank and having a trigger means disposed in the path of said pin element for engagement with said pin element once each revolution of said valve sprocket,

said switch being closed during contact with said pin element,

and an electrical power supply and light means coupled to said switch whereby said light means is lit when said switch is closed.

3,185,119
MATS
Chojiro Choshi, 100 Shinzaike Minamimachi 3-chome, Nada-ku, Kobe, Japan
Continuation of application Ser. No. 46,926, July 29, 1960. This application Aug. 19, 1963, Ser. No. 303,115
1 Claim. (Cl. 112—412)



In a coiled mat, a coil cord construction simulating braiding comprising a plurality of longitudinally extending inner strands defining a core, said strands being arranged to configure said core relatively flat with upper and lower faces and sides, and a plurality of outer yarns completely surrounding and covering said core, a first group of said yarns extending spirally around said core in one angular direction and a second complementary group of said yarns extending spirally about said core in an opposite angular direction to said first group, each yarn of either group, in one complete turn of the yarn, starting at a point along a central longitudinal line on said upper face of said core, extending under all yarns of the other group to a point along a central longitudinal line on one side of said core, then extending over all yarns of the other group to a point along a central longitudinal line on said lower face of said core, then extending under all yarns of the other group to a point along a central longitudinal line on the other side of said core and finally extending over all yarns of the other group to a point along said central longitudinal line on said upper face of said core, all of the exposed yarns on either side of the central longitudinal line on each face of the core belonging to a single group and being in successive abutting relation, the resulting opposite angular inclination of the exposed yarns on the respective sides of the central longitudinal line on each face of the cord simulating the appearance of braid, the width of said core being approximately twice the height thereof.

3,185,120
HYDROFOIL BOAT
John Bader, Montgomery County, Md.
(4513 Sangamore Road (Apt. 101), Washington, D.C.)
Filed July 30, 1964, Ser. No. 386,466
15 Claims. (Cl. 114—66.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. An improved hydrofoil craft having sides and a bottom, said craft having surface piercing strut means supporting propeller means, comprising:

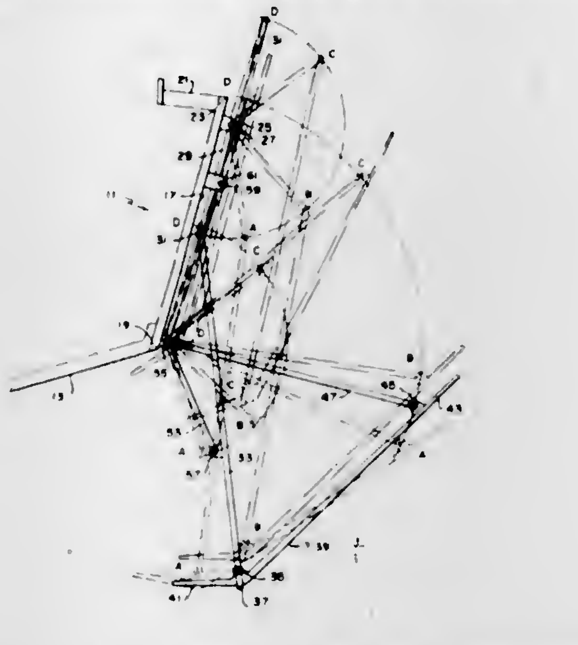
at least one primary hydrofoil unit having separate hydrofoil elements located symmetrically about and displaced transversely outward of the centerline of the craft, said hydrofoil unit being mounted forwardly on the craft;

retraction means for said hydrofoil elements;

said retraction means comprising a plurality of support elements hingeably mounted on the external sides of the craft and connected to the hydrofoil element;

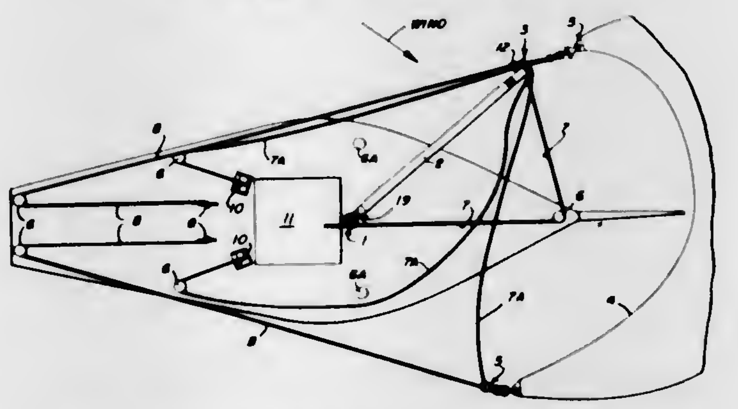
said support elements when extended forming with the side a plurality of rigid triangular braces connecting the hydrofoil element to the sides;

said support elements being collapsible by relative rotation thereof about the respective hinged interconnections to raised positions essentially flush alongside the sides of the craft and essentially above the displacement water line of the hull;



a secondary hydrofoil unit including foil means mounted on the propeller strut means an appreciable distance above the propeller means.

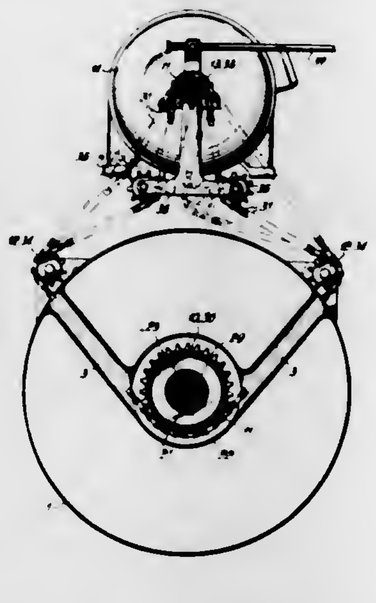
3,185,121
SPINNAKER SAIL JIBE
Leif Nilsen, 165 N. 9th St., Lindenhurst, N.Y.
Filed Aug. 14, 1963, Ser. No. 302,022
3 Claims. (Cl. 114—103)



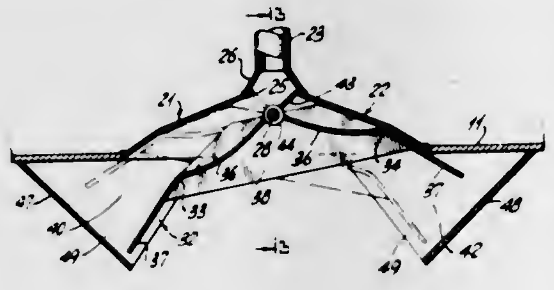
1. The combination of a spinnaker sail and the pole by which it is controlled comprising such sail having clews in each end of its skirt to each of which one aft guy and one sheet rope is shackle snapped while each guy is slidably connected to the outboard end of the spinnaker pole.

3,185,122
PROPULSION UNIT FOR WATERCRAFT
Friedrich Wilhelm Pleuger, Juthornstrasse 80, Hamburg-Wandsbek, Germany
Filed Mar. 25, 1964, Ser. No. 354,524
Claims priority, application Germany, Mar. 30, 1963, P 31,480
5 Claims. (Cl. 114—151)

1. A driving device for propulsion unit arranged in a horizontal transverse passage of a vessel, comprising a driving motor, installed in the interior of the vessel, an endless chain for coupling said driving motor with said propulsion unit, hollow struts supporting said propulsion unit along the central axis of said transverse passage, said chain running through said hollow struts, deflecting pulleys within the vessel, movable in front of the apertures of said hollow struts, said struts extending tangentially to said propulsion unit in direction of motion of said chain, means varying the angle of incidence of the propeller blades, and an additional chain, arranged parallel to said first chain inside hollow struts and coupled with said variation means, and deflecting pulleys within the vessel in front of the apertures of said hollow struts, said two chains running over said deflecting pulleys.

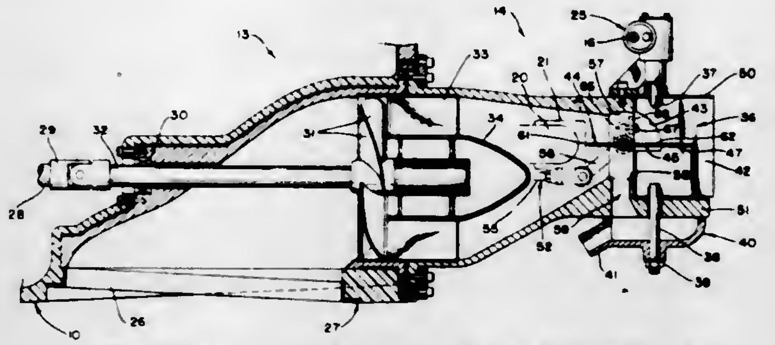


3,185,123
MARINE ENGINE COOLING SYSTEM
Silvan Schiffer, Brooklyn, N.Y., assignor to Silvan Schiffer, Brooklyn, and Monroe Levitan, Forest Hills, N.Y.
Filed Aug. 8, 1963, Ser. No. 300,863
8 Claims. (Cl. 115—.5)



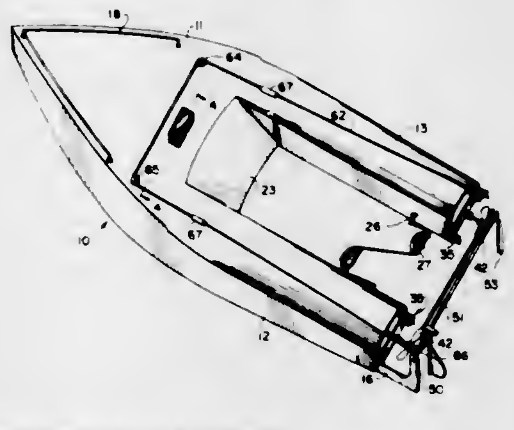
1. In combination with a power boat including a hull and an internal combustion engine having a water cooling system, the apparatus comprising a water intake member mounted on said hull and communicating with the exterior of said hull below the water line thereof and including downwardly facing front and rear sections, a conduit connecting said water intake member to said cooling system, and a flap member responsive to the direction of flow of water along said hull and alternatively movable to a first position diverging from said water intake front section to delineate therewith an open forwardly directed first scoop and engaging said water intake rear section to delineate therewith a closed rearwardly directed second scoop, and a second position diverging from said water intake rear section and engaging said water intake front section to effect the closing and opening of said first and second scoops respectively, said first and second positions being effected with rearward and forward flow of water along said hull respectively.

3,185,124
STERN STEERING FOR HYDRAULIC JET BOAT
Henry U. Spence, 819 Eastwood Drive, Painesville, Ohio
Filed July 17, 1961, Ser. No. 124,414
9 Claims. (Cl. 115—12)



1. In a directional control means for a hydraulic jet turbine, a Venturi section having a main propulsion opening, a main shut-off valve in said Venturi section comprising a horizontally pivoted member closing said opening, a main rudder disposed in the path of said water through the Venturi, a reversing nozzle connected to said rudder, and having a nozzle opening forward therefrom, a passageway into said reversing nozzle from said Venturi section, sad valve being able to close the Venturi nozzle selectively either to stop flow of water through the Venturi section or to direct water into the reversing nozzle.

3,185,125
MANUALLY POWERED AQUATIC DEVICE
John F. Haman, Box 413, Rte. 2, DeLand, Fla.
Filed Sept. 10, 1962, Ser. No. 222,463
13 Claims. (Cl. 115—26.3)

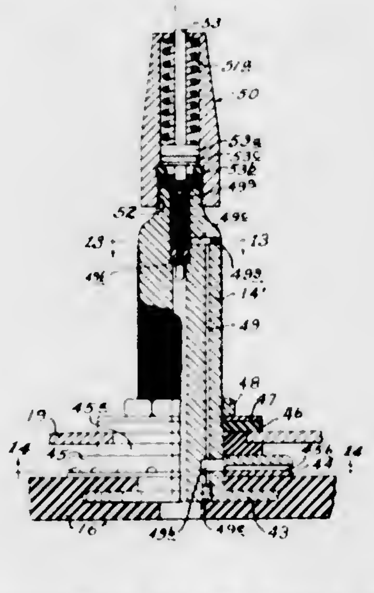


1. An aquatic vehicle comprising
(A) a body having
  (1) a forward portion,
  (2) rearwardly extending spaced parallel portions,
  (3) a U-shaped side forming member extending rearwardly of said spaced parallel portions,
(B) propelling means for said body including
  (1) a crankshaft connecting the spaced parallel portions of said body,
  (2) a pair of foot engaging pedals on said crankshaft having
    (*a*) means for retaining the feet of an operator on said pedals,
  (3) a pair of bevel gears mounted one adjacent each end of said crankshaft,
  (4) a frame pivotally mounted on each end of said crankshaft and straddling said bevel gears,
  (5) a propeller shaft rotatably mounted in bearings carried by said frames,
  (6) a pinion gear on one end of said propeller shaft and meshing with said bevel gear to drive said propeller shaft,
  (7) a propeller on the opposite end of said propeller shaft,
  (8) means for adjusting the angularity of said frames,

(C) direction controlling means for said body including
  (1) a pair of rudders,
  (2) a rudder bar for each rudder,
  (3) a control cable connecting one rudder bar with the opposite rudder bar.

3,185,126
TIRE VALVE ASSEMBLY AND AIR LEAK INDICATOR FOR PNEUMATIC TIRES WHICH UTILIZE INNER TUBES

Odis Walker, 5114 Cameron Road, Austin, Tex.
Filed Sept. 23, 1963, Ser. No. 310,719
14 Claims. (Cl. 116—34)

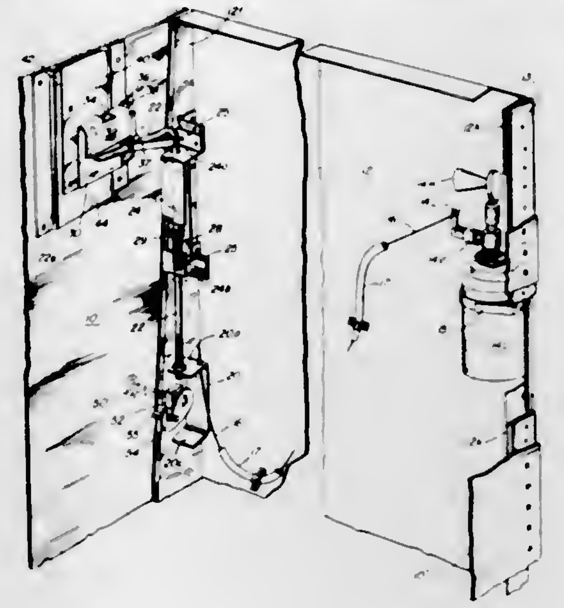


1. An air leak indicator for use with a pneumatic tire and rim assembly, which rim is perforate, which tire has an inner tube therein, which tube has an independent, self-contained air cavity therein, which air leak indicator comprises;
- (*a*) a valve stem mounted on the inner tube and having dual conduits formed therein,
  - (1) one of which conduits is adapted to be in fluid tight communication with the tube receiving cavity of the penumatic tire exterior of the inner tube,
  - (2) the other of the conduits being in fluid tight communication with the independent, self-contained cavity within the inner tube,
- (*b*) a pressure indicator on said valve stem exterior of said rim and adapted to be in fluid communication with said conduit which is in fluid tight communication with the tire cavity, exterior of the inner tube.

3,185,127
ALARM SYSTEM

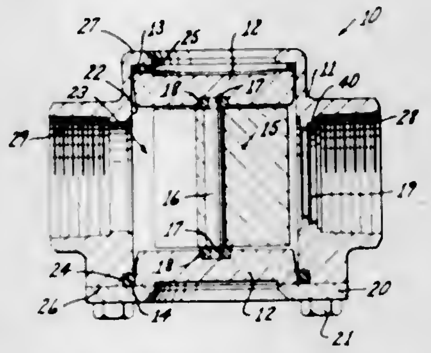
Ronald K. Chedister, Chatham, N.J., assignor, by mesne assignments, to Falcon Alarm Company, Springfield, N.J., a partnership of New Jersey
Filed Dec. 11, 1962, Ser. No. 243,910
10 Claims. (Cl. 116—86)

1. An enclosure having a back section, a door section hinged thereon, and a key-operated lock including a member on one section operable by a key to engage or disengage a member on the other section for holding said door section closed or to release it, in combination with an alarm system comprising an audible sound-producing device and mechanical means inaccessible from outside said enclosure to actuate said audible device, said audible device and said means both being mounted on the same enclosure section as said key-operated lock, means on the other enclosure section rendered effective by relative movement between itself and said actuating means on forced opening of said door a crack to cause operation of said actuating means in one direction and actuation of said sound-producing device, said means on said other enclosure section including secondary locking means causing relocking of said door section upon movement of said actuating means in said one direction and means operated by unlocking of said key-operated lock to prevent movement of said actuating means in said one direction.



3,185,128
SIGHT-GLASS INDICATOR OR THE LIKE

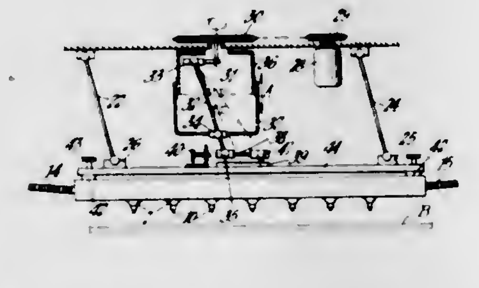
Glenn E. Moore, Fairfield, and James L. Hughes, Cincinnati, Ohio, assignors to Dover Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed June 6, 1963, Ser. No. 286,003
7 Claims. (Cl. 116—117)



1. A fluid flow indicator comprising a housing body having a bore extending therethrough and opening at opposite ends through opposite sides of the body and forming a fluid chamber, said bore at one open end being bordered by an annular inwardly projecting flange, the said flange forming an inwardly facing shoulder and defining a window opening of materially smaller diameter than the bore, said bore at its other end having a counter-bore forming an annular counter-bore recess providing a shoulder facing outwardly away from said inwardly facing shoulder, axially aligned fluid inlet and outlet ports in said housing body directed transversely of and opening into said chamber, a transparent disc body in and partitioning the chamber forming bore at said one open end, a gasket between said inwardly facing shoulder and said transparent disc and forming a seal therebetween, a ring gasket in said counter-bore recess, a transparent frusto-conical disc extending into said other end of said bore through said ring gasket with the apical end thereof directed into the chamber and having the tapered side thereof engaging and compressing said ring gasket laterally in said recess, a flow indicating vane within said chamber between said discs and comprising an elongate hub disposed in the axial center of the said bore and carrying longitudinally extending radially projecting blades, means positioning the ends of said hub adjacent to and in opposed relation with the centers of said discs for free rotation of said vane between said discs, means secured to the housing body and engaging and pressing said transparent frusto-conical disc inwardly and securing the chamber containing parts in operative position in the chamber and also effecting compression of said gaskets against said shoulders, and means in said inlet port for deflecting in-flowing fluid toward and against the vane blades on one side of said hub.

3,185,129
APPARATUS FOR DECORATING FILLED CHOCOLATES, PASTRY, AND THE LIKE

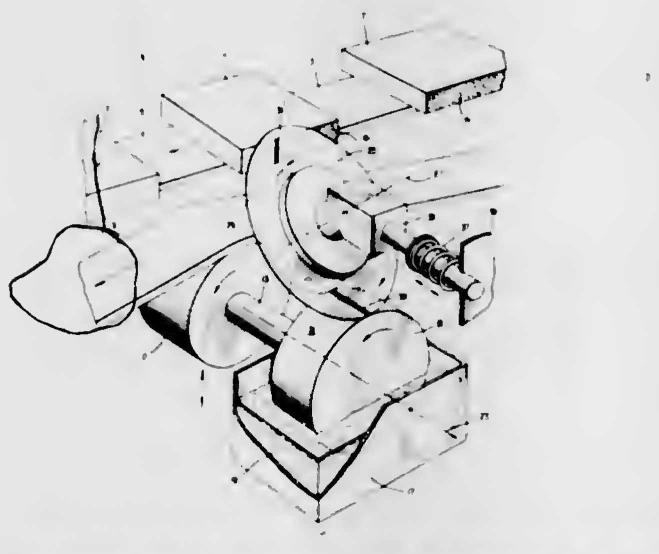
Helmut Sollich, Bad Salzuflen, Germany, assignor to Baker Perkins Holdings Limited, Peterborough, England
Filed Dec. 14, 1961, Ser. No. 159,325
Claims priority, application Germany, Dec. 16, 1960, S 71,698
10 Claims. (Cl. 118—14)



1. In a device for decorating confectionery products; tube means; a plurality of nozzles therein; axially reciprocable needles for said nozzles for opening and closing said nozzles; means for reciprocating said needles; means mounting said tube means for swinging translatory movements in a substantially horizontal plane in paths angularly disposed to one another; and adjustable means for effecting said movements.

3,185,130
MULTIPLE ROLLER COATING APPARATUS

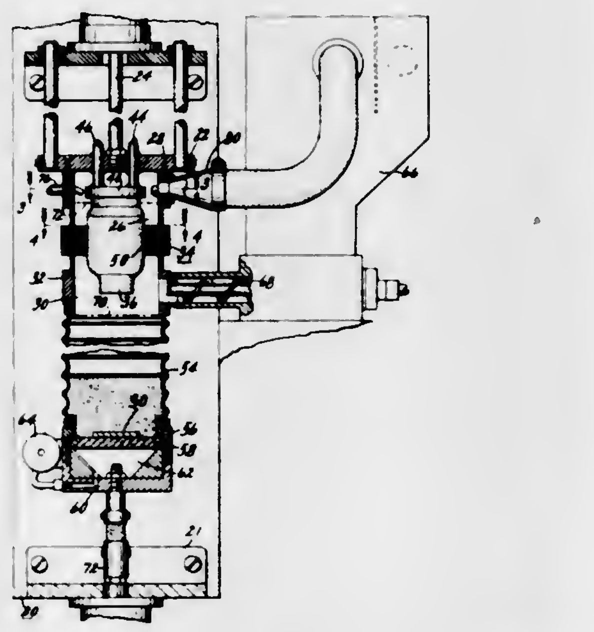
Donald C. Pratt, Iselin, N.J., assignor, by mesne assignments, to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 12, 1962, Ser. No. 172,487
10 Claims. (Cl. 118—228)



5. Coating apparatus comprising a reservoir for liquid coating material, a pick-up roller rotatable about a first axis and having a lower portion disposed in the reservoir and having a first contact surface that is a figure of revolution about said first axis, an applicator roller rotatable about a second axis disposed at a substantial angle to said first axis and having a second contact surface that is figure of revolution about said second axis, said first and second contact surfaces having continuous contact with each other along a line disposed at a substantial angle to all planes perpendicular to either of said first and second axes, and means mounting the applicator roller for bodiiy movement relative to the pick-up roller parallel to said line of contact.

3,185,131
APPARATUS FOR COATING ARTICLES IN A FLUIDIZED BED

Charles E. Manning, Warren, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 24, 1960, Ser. No. 64,324
2 Claims. (Cl. 118—421)



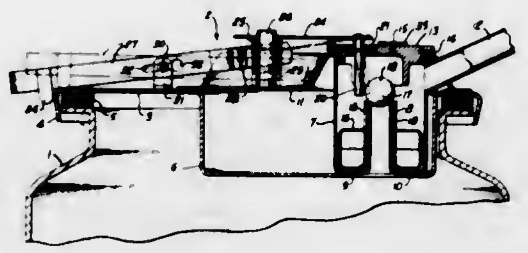
1. An apparatus for coating the surface of a hollow article with thermoplastic coating wherein the article is preheated to a temperature above the melting point of said thermoplastic coating comprising in combination; a closed chamber composed of a movable lower portion and a movable upper portion, said lower chamber portion comprising a surface adapted to receive and support the article to be coated, an inflatable masking means located within said upper chamber portion, means operable to move said movable upper chamber portion into engagement with and away from the hollow article to be coated when the article is supported by said lower chamber portion, a pressure fluid source and control means connected to said masking means whereby it is deflated and received within the hollow article when said movable upper chamber portion is brought into engagement with the article, a lower chamber housing member axially aligned with said lower chamber portion and connected thereto by a hollow flexible bellows means, a screen member in said lower chamber housing member to receive and support thermoplastic powder particles, means positioned to discharge pressurized gas beneath said screen and mix said thermoplastic powder particles in a fluid cloud which is not in contact with the hollow article, said masking means being inflated by said control means to engage and protect specified surfaces of the hollow article prior to formation of the fluid cloud, and means operable to raise said lower chamber housing whereby said cloud within said housing and said bellows is raised to contact the hollow article and coat desired surfaces thereof, said control means being actuated to deflate said masking means when the coating opertaion is completed and said upper chamber portion is moved away from the hollow article by its operating means.

3,185,132
AUTOMATIC RELEASE MECHANISM FOR MILKING APPARATUS

Gordon H. Allard, Milwaukee, Wis., assignor, by mesne assignments, to Sta-Rite Products, Inc., Delavan, Wis., a corporation of Wisconsin

Filed Nov. 5, 1962, Ser. No. 235,276

14 Claims. (Cl. 119—14.08)



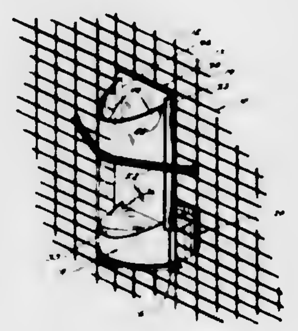
1. In an automatic shut-off apparatus for a milking system, a closed cup having an inlet opening connected to an animal's teat and having an outlet opening spaced above the bottom of the cup and connected to a source of vacuum, a valve to open and close the outlet opening, a resilient plug secured in sealed relation within an aperture in a wall of the cup, an actuating member extending through the plug and sealed thereto, the inner end of said actuating member being disposed in spaced relation to the valve and adapted to selectively engage the valve and open the outlet opening, and operating means located on the exterior of the cup and operably connected to the outer end of said actuating member for moving the actuating member and opening said valve.

3,185,133
ANIMAL CAGE FEEDING DEVICE

Merrill S. Bird, 1218 44th St., Des Moines, Iowa

Filed Aug. 20, 1963, Ser. No. 303,363

6 Claims. (Cl. 119—18)



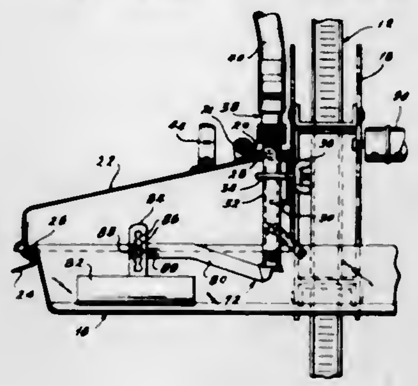
6. In a feeding station,
a base compartment which is semi-circular in cross-section, and including a bottom portion with a vertical wall portion extending upwardly therefrom,
an access opening provided by said wall portion defined by vertical edges thereon,
a cylindrical container resting on the bottom of said compartment and adapted to extend into an access opening provided in a wall means of a cage structure,
the vertical edges of said wall portion being adapted to be positioned adjacent said wall means of said cage structure,
a vertical plate having flanges on its side edges, said flanges gripping said wall portion adjacent the vertical edges thereof,
shoulders on the top of said container extending upwardly therefrom,
the lower side edges of said plate engaging said shoulders on said container.

3,185,134
VALVE MEANS FOR WATERERS AND THE LIKE

Ray H. Sheets, St. Louis County, Mo., assignor to Jackes-Evans Manufacturing Company, St. Louis, Mo., a corporation of Missouri

Filed June 1, 1962, Ser. No. 199,395

4 Claims. (Cl. 119—80)



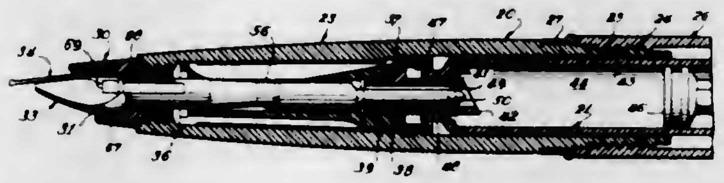
1. A poultry waterer or the like comprising a substantially horizontal water trough, and means for controlling the water level in the trough, said last named means including a valve having a tubular portion extending downwardly into the trough, means for connecting the upper end of the tubular portion to a source of water, valve means in said tubular portion including a stationary valve seat inside the tubular member, a valve member in the tubular member movable toward and away from the valve seat, and operator means engageable with the valve member, said last named means including a rigid arm pivotally connected at an offset position to the tubular member, an offset toggle locking and operating means comprising a first elevated surface on said arm adjacent to the pivot engaging the movable valve member in one position, a second cam surface on said arm adjacent to the first surface and removed away from said arm pivot and so constructed and arranged to cam the movable valve member into a toggle locking closed position, both said surfaces being in locking contact with said valve member in said closed position when said arm is rotated about said offset pivot to a substantially vertical position while simultaneously locking said arm and float in the said vertical position, and a float member connected to the arm and engageable with the water in the trough, said float positively moving the arm on its pivotal connection in response to changes of water level in the trough to positively control the position of the valve member relative to the valve seat.

3,185,135
FOUNTAIN PEN

Homer T. Green and Ray A. Lawton, Milton, Wis., assignors to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin

Filed Dec. 7, 1960, Ser. No. 74,289

6 Claims. (Cl. 120—50)



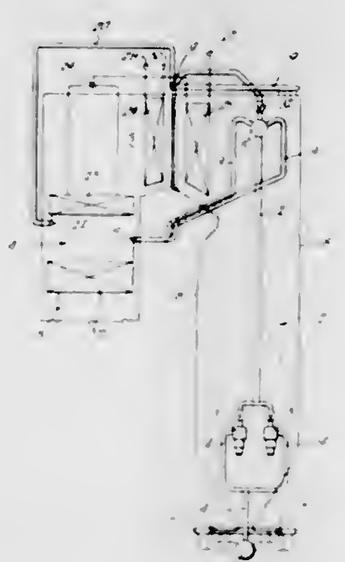
6. In a fountain pen of the type including a writing point, an ink reservoir, and a capillary feed passageway interconnecting said reservoir and said writing point; and means for inhibiting leakage of ink from said writing point comprising an elongated, hollow, collector shell forming a portion of the pen body, a generally cylindrical plug positioned in the cavity of said shell, at least a portion of the external wall of said plug being spaced from the internal wall of said shell to define a longitudinally extending annular chamber of capillary thickness, said walls of said plug and said shell meeting at one end of said chamber at a sharp, acute angle, said plug having a longitudinally extending radial slot of capillary dimension opening into the apex of said acute angle and extending annular chamber of capillary thickness, said annular chamber, said chamber communicating with said reservoir exclusively through said slot.

3,185,136
STEAM GENERATOR ORGANIZATION

Florindo Cozza, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed Nov. 26, 1963, Ser. No. 325,905

1 Claim. (Cl. 122—406)



A supercritical once through-flow vapor generator comprising: a through-flow system; a furnace, the through-flow system including generally vertical tubes on the furnace walls, the furnace being hung from its upper region; a plurality of headers at the lower end of the tubes; a recirculating system superimposed on the system to recirculate fluid through the tubes on the furnace walls; a spherical chest below the lower extremity of the furnace, and in the recirculating system; means supplying the chest with a mixture of fluid that has traversed the tubes and colder fluid that has yet to traverse the tubes, with the proportions varying with varying loads, this means including a downcomer from which the chest is effectively hung; tubular supply members drainably arranged connecting the chest with the headers, having sufficient length to acommodate differential movements between the chest and the lower end of the furnace encountered during operation.

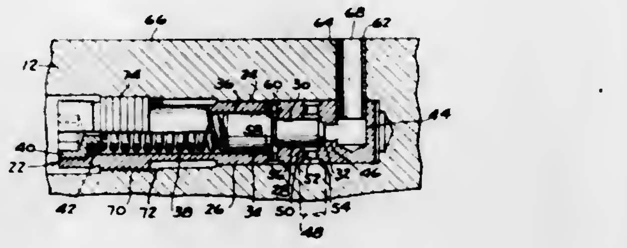
3,185,137
VALVE MOUNTING AND SEALING STRUCTURE

Herman T. Dreyer, Detroit, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia

Filed June 26, 1963, Ser. No. 290,704

5 Claims. (Cl. 123—48)

1. In an internal combustion engine piston having first and second coaxial parts movable axially relative to one another in the direction of reciprocation of the piston and having a pressure fluid chamber between said parts which varies in internal volume as a result of said relative movement, that improvement which comprises one of said parts having a first passage therein adapted to communicate with the chamber and a bore extending into said one part from an exterior surface thereof and intersecting said first passage, a valve casing fitted in said bore and having a passage therein registering with said first passage, a tubular member having one portion thereof secured in said first passage and another portion thereof secured in said casing passage for anchoring said valve casing in said bore and for sealing fluid tight the space between said member and said passages, said tubular member having an interior passage adapted for conducting fluid between the chamber and said valve casing passage, and means including a valve mechanism operably disposed within said valve casing for controlling fluid flow in said casing and tubular member passages.

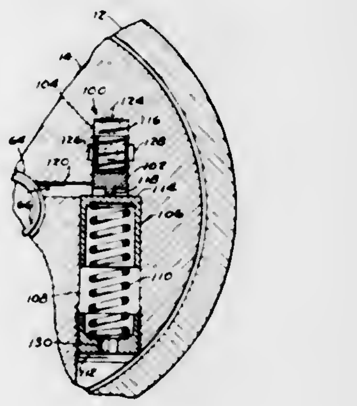


3,185,138
PRESSURE REGULATING PISTON AND VALVE

Frank C. Druzynski, Birmingham, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia

Filed June 26, 1963, Ser. No. 290,707

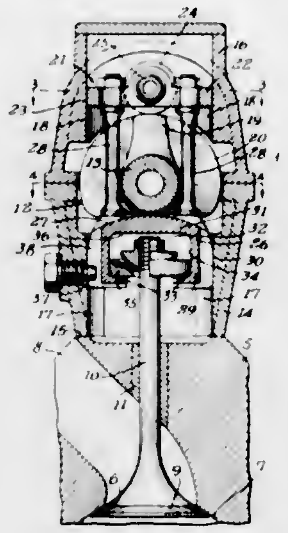
7 Claims. (Cl. 123—48)



1. In an internal combustion engine piston having first and second parts movable relative to one another in response to reciprocation of the piston and a pressure fluid containing chamber within said piston which varies in internal volume in response to said relative movement and to variations in the quantity of pressure fluid therein, the combination therewith of a supply and discharge valve assembly for said chamber including a bore in one of said parts, inlet and outlet passages communicating with said chamber and said bore at axially spaced points therealong, a spool valve movable in said bore to open said inlet and close said outlet passages and vice versa for controlling flow of fluid therethrough to thereby vary the quantity of fluid in said chamber, means for yieldably biasing said valve toward closed position to thereby regulate the pressure of the fluid in said chamber, speed compensating means including a supply passage communicating with said bore and with a source of pressure fluid which varies in pressure with the velocity of said piston and a movable follower exposed to pressure fluid in said supply passage and operably connected to said valve and biasing means for translating a velocity-related pressure variation in said source into a compensating force for said valve so that it is operable to provide substantially uniform regulation of the fluid pressure in said chamber regardless of the velocity of said piston.

3,185,139
VALVE-RECIPROCATING CAGE WITH GUIDE MEANS THEREFOR

Niel C. Thuesen, 6021 Compton Ave., Los Angeles, Calif.
Filed Jan. 25, 1965, Ser. No. 427,738
7 Claims. (Cl. 123—90)



1. Poppet valve mechanism having a rotating cam shaft with reciprocal cams for moving the valve between open and closed positions, said mechanism comprising:

(*a*) a cage connected to said valve and having opposite longitudinal cylindrical faces, said cage comprising inner and outer parts on opposite sides of the cam shaft with a set of rods connecting said parts,

(*b*) one of said cams being disposed in a plane coinciding with the axis of the poppet valve and engaged with the inner cage part to move the same in valve-opening direction,

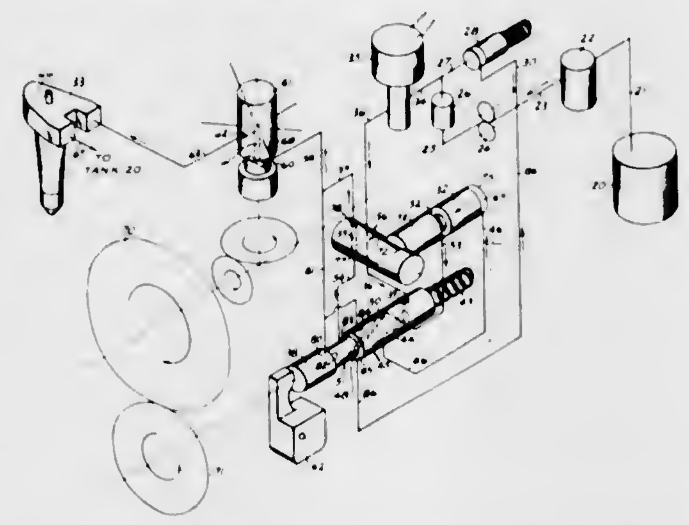
(*c*) the reciprocal cams being disposed laterally on either side of said one cam and engaged with lateral portions of the outer cage part to move the same in valve-closing direction,

(*d*) a fixed housing provided with longitudinal cylindrical bore faces reciprocatively and rotationally engaged with the mentioned cylindrical faces of the cage, and

(*e*) means carried by the housing and having engagement with the inner cage part to slidingly guide and rotationally limit the movement of said cage part.

3,185,140
FUEL SUPPLY SYSTEM FOR COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES

Clessie Lyle Cummins, Jr., Mill Valley, Calif., assignor to Clessie L. Cummins, Sausalito, Calif.
Filed July 2, 1963, Ser. No. 292,326
20 Claims. (Cl. 123—140)



1. In a fuel system for use with a compression ignition engine having fuel injectors and engine-speed responsive means, said system having a housing with a bore in which a shuttle piston moves with its ends defining first and second ported chambers, one in each end of said bore, a fuel source, a fuel pump connected to said fuel source, conduit means for charging fuel under pump pressure to each said chamber alternately, thereby to move said shuttle piston and discharge fuel from the opposite chamber, and conduit means for connecting each said chamber at discharge to a said fuel injector, a manually controlled throttle having a cam face operatively engageable with one end of said shuttle piston to determine the extent of movement of the shuttle piston in one direction, and movement-limiting means engageable by the other end of said shuttle piston to determine its extent of movement in the other direction, the combination therewith of:

a normally-closed throttle-controlled first valve means in said housing, said throttle opening said first valve means when said throttle is opened,

a passage in said housing bypassing said first valve means, and

a normally open second valve means in said passage, said speed responsive means closing said second valve means at all speeds above idle speed,

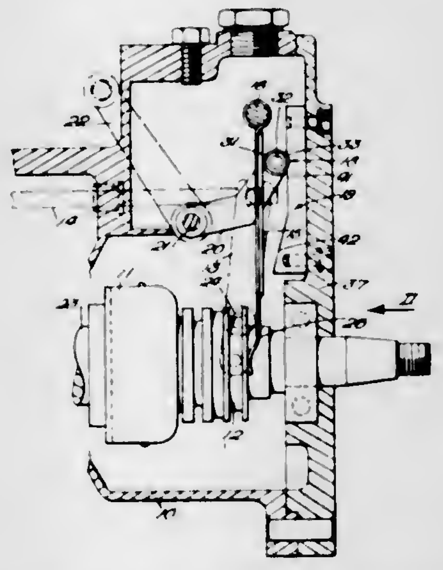
whereby when said engine is operating at a speed above idle and said throttle is open, said second valve means is closed and all of the fuel pumped from said first and second ported chambers passes through said first valve means, and

when said engine is operating at or below the idle speed with said throttle closed, said second valve means is open to provide a flow of fuel to said injectors even though said first valve means is closed, and

when said engine is operating above idle speed and said throttle is closed, both said first and second valve means are closed, thereby shutting off all fuel to the injectors so that the engine decelerates at a maximum rate to facilitate gear shifting and to prevent fuel wastage during coasting.

3,185,141
VARIABLE RATE SPRING DEVICES

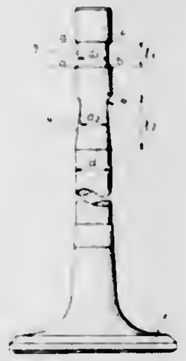
Zdislav Stanislav Miracki and Anthony Lindsay, London, England, assignors to Simms Motor Units Limited, London, England, a British company
Filed Jan. 28, 1964, Ser. No. 340,658
Claims priority, application Great Britain, Jan. 29, 1963, 40,827/63
3 Claims. (Cl. 123—140)



2. A variable rate spring device comprising a longitudinal leaf spring arranged to exert a resilient thrust at a thrust position along its length in a direction transversely of its length; fixing means for fixing the spring at a fixing position, spaced apart along its length from the said thrust position, against movement at least in the said transverse direction; and loading means for exerting a loading thrust on the spring in the said transverse direction at a loading position which is variable along the length of the spring, whereby variation of the loading position along the length of the spring causes variation of the rate of change of thrust at the said thrust position with change of deformation of the spring in the said transverse direction at that position; which spring comprises two longitudinally extending spring parts spaced apart transversely of the said transverse direction; and there is provided means for varying the loading position as aforesaid which means includes an arm member extending through the space between the two spring parts.

3,185,142
POPPET VALVES OF INTERNAL COMBUSTION ENGINES

Lucien Péras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Jan. 27, 1964, Ser. No. 340,396
Claims priority, application France, Jan. 30, 1963, 923,192, Patent 1,354,983; Oct. 28, 1963, 952,004, Patent 84,593
3 Claims. (Cl. 123—188)

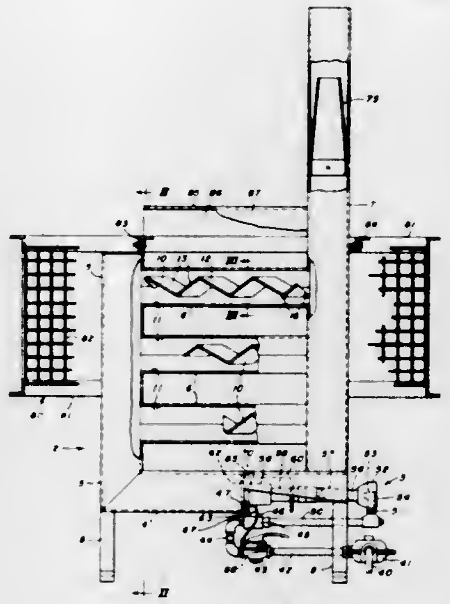


1. In a poppet valve comprising an elongated valve stem and a valve head at the lower end thereof, said stem having an annular groove located near the upper end of said stem and adapted to receive a valve cotter, a longitudinal portion of said stem between said groove and said head being reduced in diameter over a length greater than the height of said groove, said longitudinal portion of reduced diameter being of a frusto conical shape with the minor diameter being located at the upper part of said stem adjacent said groove and with the major diameter located at the lower part of said stem adjacent said head, the peripheral junction between said portion of reduced diameter and the normal diameter of the stem being defined by a fillet and a rounded portion, said fillet having a larger diameter than said rounded portion.

3,185,143
SPACE HEATER

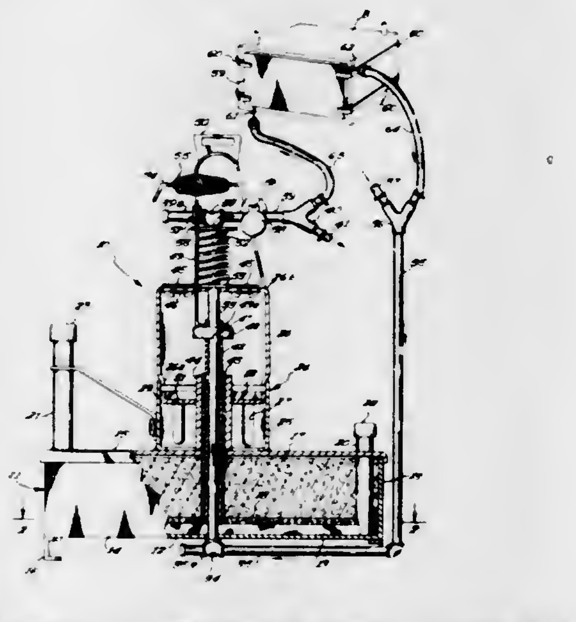
Charles G. Wilson, Sr., McKeesport, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Oct. 18, 1963, Ser. No. 317,250
2 Claims. (Cl. 126—91)

1. A space heater comprising the combination with a horizontal manifold, a fuel burner firing into one end thereof, a vertical header communicating with the other end of said manifold for conveying combustion gases upwardly therefrom, a horizontal radiant tube of substantially rectangular cross-section communicating at one end with said header and receiving said combustion gases therefrom, a vertical exhaust stack communicating with said radiant tube at the other end of said tube, a baffle within said radiant tube comprising a series of deflecting plates each disposed at an angle to the flow of gases through said tube to promote turbulent flow, whereby said radiant tube absorbs heat from said gases undergoing turbulent flow and radiates it outwardly therefrom, said tube being disposed with one diagonal of its rectangular cross-section substantially horizontal for maximum heat radiation to the space laterally surrounding said heater, additional horizontal radiant tubes stacked above said first mentioned tube, and baffles in all of said last named radiant tubes, the lengths of said baffles increasing progressively from the bottom tube to the top tube.



3,185,144
WICK-TYPE HEATER DEVICE

William R. Price, 13200 E. 14th Ave., Aurora 8, Colo.
Filed Sept. 6, 1963, Ser. No. 307,198
7 Claims. (Cl. 126—350)



1. A heater device for pre-heating liquid coolant of a conventional liquid cooled internal combustion engine to facilitate starting of said engine in cold weather, said device comprising

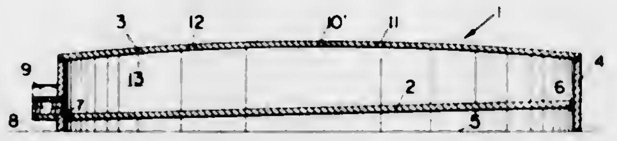
a heater housing structure normally oriented in upright relation,

a reservoir structure having a combustible liquid fuel therein and being connected to said housing structure adjacent the lower end thereof,

an elongate conduit extending through said reservoir and housing structures and having opposite ends thereof adapted to be connected in communicating relation to the block of a liquid cooled internal combustion engine to permit the liquid coolant to circulate therethrough,

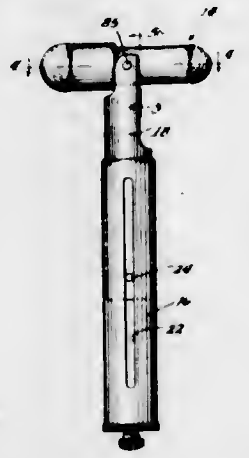
and elongate wick means disposed exteriorly of said conduit and having one end disposed in said reservoir structure and having the other end thereof positioned in said housing structure whereby when said wick means is ignited said conduit and the liquid coolant therein will be heated.

3,185,145
HEATER FOR DRUMS
Earl P. McGinn., Verona, N.J., assignor to Drew Chemical Corporation, a corporation of Delaware
Filed Aug. 1, 1962, Ser. No. 213,965
5 Claims. (Cl. 126—369)



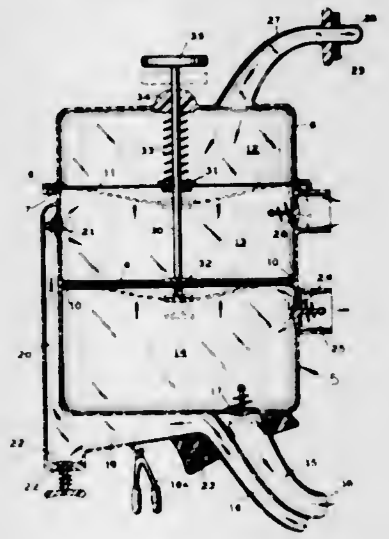
1. A heating means for drums and the like comprising a closed container for heated fluid having an upstanding continuous side wall, an upwardly convexed top plate, and a sloped bottom plate disposed within said side wall and above the lower edge thereof, means for introducing heated fluid into said container, means for removing fluid from said container at the lowermost portion of said bottom plate, a series of relatively small holes in the central part only of said top plate, said holes being in a plurality of concentric circles and the radius of said top plate being about twice the radius of the outermost circle of holes, said container being adapted to heat a drum placed on said top plate with said drum covering said holes, extending beyond the outermost holes and being in metal to metal contact with said top plate.

3,185,146
NEUROLOGIST'S HAMMER
Norbert Leopoldi, 4180 Marine Drive, Chicago, Ill.
Filed Aug. 14, 1962, Ser. No. 216,921
6 Claims. (Cl. 128—2)



1. A collapsible neurological hammer comprising an extensible handle having outer and inner elongated telescoping members relatively lengthwise slidable between an extended use position and a retracted storage position, interlocking means engaging said telescoping members to regulate relative lengthwise sliding movement of said members between said use position and said storage position, said inner member having a free end comprised of endwise extending sidewall portions defining a socket that is open endwise and that has oppositely directed side face openings, one long and one short, a hammer head having oppositely directed large and small ends each equipped with a resilient impact element, said small end being movable through said long opening to nest within said socket and said large end presenting peripheral shoulder structure as large as the end of said outer member, and pivot means engaged in said sidewall portions and mounting a central region of said hammer head to rotate about a transverse axis through said sidewall portions to permit said hammer head to be rotated between an axial storage position wherein said small end is nested within said socket and said large end projects endwise from said socket and presents said peripheral shoulder structure for engagement with said outer member to limit retraction of said inner member into said outer member, and a transverse use position wherein said large end is adjacent to said short opening and said small end projects through said long opening.

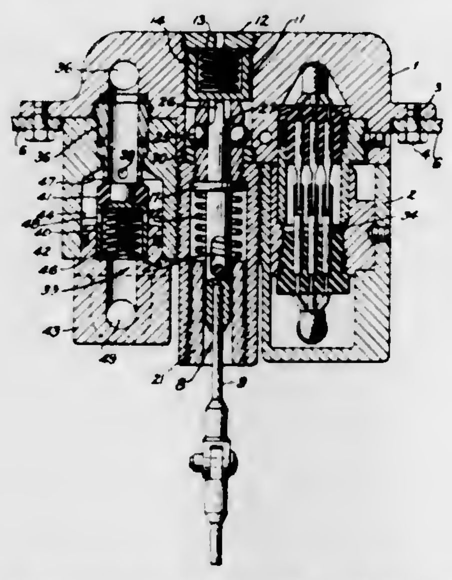
3,185,147
RESUSCITATOR
George L. Champagne, 4530 SW. 30th St., Hollywood, Fla.
Filed Sept. 13, 1961, Ser. No. 137,884
9 Claims. (Cl. 128—29)



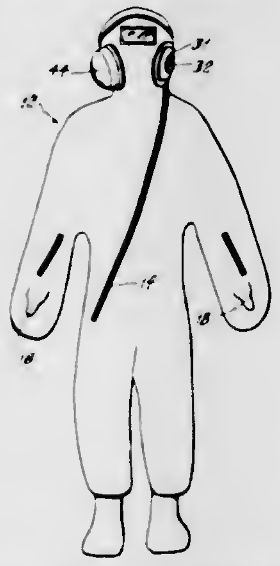
1. A resuscitator comprising, a cylindrical housing provided at one end with an outlet terminating in a mouthpiece, a closure cap at the opposite end of the housing, a pair of spaced flexible diaphragms within the housing dividing the same into upper, lower and intermediate chambers, a rod axially movable through the housing, said rod being fixedly attached to the upper diaphragm and attached with a lost-motion connection to the lower diaphragm whereby the rod has a limited axial movement relatively to the lower diaphragm, a check valve in the lower chamber permitting the egress of air therefrom into the mouthpiece, a second check-valve in the lower chamber permitting the entry of air thereinto from atmosphere, a mouthpiece attached to the closure cap and communicating with the upper chamber, a check valve permitting the egress of air from the intermediate chamber, a scavenging passage extending co-extensively with the mouthpiece and communicating with the intermediate chamber, and a check valve permitting the egress of air from said scavenging passage and the entry of such air into the intermediate chamber.

3,185,148
DISCONNECT DEVICE FOR SURVIVAL KITS
John Alden Gaylord, San Rafael, Calif., assignor to H. Koch & Sons, Corte Madera, Calif., a corporation of California
Filed Mar. 22, 1962, Ser. No. 186,579
14 Claims. (Cl. 128—142)

2. In a disconnect device actuating and control devices in an aircraft survival kit,
a kit disconnect body adapted to be secured to said kit,
an aircraft disconnect body,
and separable coacting devices in said disconnect bodies to establish connections for said actuation and control of devices in said survival kit when said bodies are secured together,
releasable means to secure said bodies together comprising a tubular catch head projecting from one of said bodies into the other body, having openings through its sides
a plurality of catch elements laterally adjustable in said tubular catch head so as to be adapted to be confined within the contour of said catch head and selectively to project through said openings beyond said contour,
means in the body into which said tubular catch head projects engageable by said catch elements when projected beyond the contour of said tubular catch head so as to prevent separation of said bodies,
a reciprocating member in said tubular catch head normally urging said catch elements outwardly to project beyond the contour of said tubular catch head,
and means for transmitting a pull to said reciprocating element to pull said element out of engagement with said catch elements so as to permit withdrawal of said catch elements into said tubular catch head.

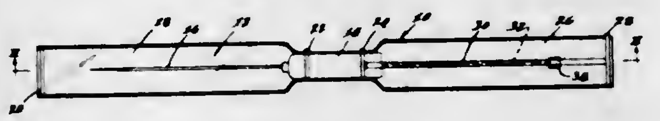


3,185,149
PROTECTIVE GEAR
Samuel B. Rentsch, Jr., 242 Hubbard St., Glastonbury, Conn.
Filed July 9, 1964, Ser. No. 381,598
10 Claims. (Cl. 128—144)
(Granted under Title 35, U.S. Code (1952), sec. 266)



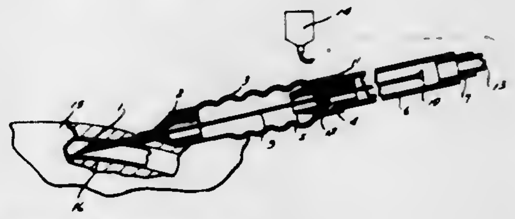
1. In combination with a watertight, hooded protective garment, face mask means, a snorkel device and ambifunctional valve means, said face mask means providing a wearer with access to atmospheric air and comprising an outer mask integral with the hood of said garment and an inner mask affixed thereto, said inner mask being of the anesthetic type and having a port therein, and said outer mask having an air-intake valve which is directly coupled with said inner-mask port, said snorkel device comprising sealing means adapted to be moved into contact with said outer-mask air-intake valve to effect a water-tight closure thereof, a pivotable arm at one end of which said sealing means is mounted, means mounted upon said outer face mask for supporting said pivotable arm, and a float mounted at the other end of said pivotable arm, the buoyancy of said float when said mask means is immersed in water acting to pivot said sealing means against said air-intake valve thereby sealing it against entry of water when the outside water reaches a preselected level relative to said air-intake valve and unsealing it when the water drops below said preselected level, and said ambifunctional valve means connected to said inner mask to permit exhalation of air therethrough at all times and to permit inhalation of air therethrough whenever said outer-mask intake valve is sealed by said snorkel device.

3,185,150
INTRAVENOUS CATHETER PLACEMENT UNIT
James L. Sorenson, 2341 Logan Circle, Salt Lake City, Utah
Filed Oct. 6, 1961, Ser. No. 143,478
1 Claim. (Cl. 128—214)



A catheter placement unit comprising,
a hollow needle,
a hub on one end of said needle,
temporary protective means for said needle to maintain the same sterile until used,
a catheter having one end portion extending into said needle hub,
means on the other end of said catheter for positioning the same and connecting the catheter to an infusion system,
a flexible envelope intimately engaging said needle hub and enclosing the catheter outside said hub and said means,
said envelope being sealed at the end remote from said hub,
said catheter being positionable through said needle into the body of a patient while in said envelope,
a tear strip around the sealed end of said envelope to open the same and permit connection of said means with an infusion system before removal of the envelope,
means to release said envelope from said hub, and a tear strip extending lengthwise of said envelope to disrupt the same lengthwise and permit complete removal of the envelope sidewise from the catheter and infusion system connection.

3,185,151
CATHETER PLACEMENT UNIT
Vasil P. Czorny, Salt Lake City, Utah, assignor to Sorenson Research Corp., Salt Lake City, Utah, a corporation of Utah
Filed June 19, 1962, Ser. No. 203,554
6 Claims. (Cl. 128—214)



1. In a catheter placement unit,
a cannulated needle,
a hollow hub on the outer end of said needle,

a tubular catheter sheath of which the outer end is connectable to an infusion tube,

a hollow fitting at the inner end of said sheath,

a one-way valve in said fitting,

a nose on said fitting shaped to seat in said needle hub,

a circumferentially corrugated resilient tube connecting the needle hub and said fitting, and

a catheter within said sheath extending through said fitting, valve and tube, whereby

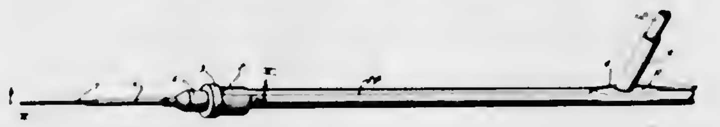
said catheter may be advanced through said needle by a pumping movement of said fitting relative to said needle hub.

3,185,152
INTRAVENOUS CATHETER PLACEMENT UNIT AND METHOD OF USE

Wallace H. Ring, Salt Lake City, Utah, assignor to Sorenson Research Corp., Salt Lake City, Utah, a corporation of Utah

Filed June 19, 1962, Ser. No. 203,555

12 Claims. (Cl. 128—214)



1. In a catheter placement unit for positioning a catheter in the body of a patient,

a cannulated needle having a hollow hub,

a closed sheath engaged with the needle hub,

a catheter in said sheath,

hollow connecting means attached to an end of the catheter for placing the catheter in communication with an infusion system and having an end projecting outside said sheath,

a removable cap on the projecting end of said means, and

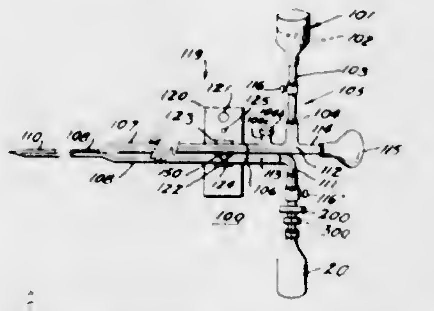
means for disrupting said sheath lengthwise when the catheter is positioned, whereby the catheter may be positioned while sheathed and during infusion.

3,185,153
AUTOMATIC REGULATING DEVICE FOR BLADDER IRRIGATION DEVICES

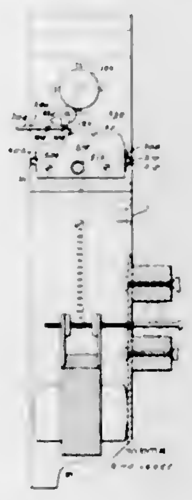
Gino Leucci, 1022 Wakeling St., Philadelphia, Pa.

Filed Apr. 16, 1962, Ser. No. 187,720

19 Claims. (Cl. 128—227)



1. Apparatus for irrigating the bladder of a patient comprising first flexible means for supplying sterile fluid, second means connected to said first means for transferring said fluid to said bladder, third flexible means for withdrawing said sterile fluid from said bladder, said first and third flexible means adapted to cooperate with one another to form a manually operable means for removing constrictions occurring in said apparatus, automatic means operatively connected to said irrigation apparatus for controlling the insertion and withdrawal of fluid in said first and third flexible means, said first and third means each having inner diameters greater than said second means, said automatic means having first and second stationary walls, said first and third means positioned between said walls, a reciprocating member positioned between said first and third members and intermediate said walls, said reciprocating member being movable between a first and second position; said first member being clamped between said reciprocating member and said first wall when said reciprocating member is in said first position; said second member being clamped between said reciprocating member and said second wall when said reciprocating member is in said second position, electronic control means for moving said reciprocating member between said first and said second positions, said control means including adjustable means for generating a signal to control the time period during which said reciprocating member is in said second position.



17. Electronic valve control means comprising a housing, first and second stationary members projecting from said housing and positioned to receive first and second conduits therebetween; said housing having a slot between said first and second members substantially perpendicular to said members; a valve control member extending through said slot and mounted to reciprocate between said first and second members; bias means for urging said valve control member towards one of said stationary members; electronic means for moving said valve control member towards the other of said stationary members; timing means for energizing said electronic means at predetermined times; said timing means including manually settable control means adjustable to alter the length of the timing cycle of said timing means; said control means comprising a rotating means, a shaft connected to said rotating means, a plurality of discs secured to said shaft and rotatable therewith; each of said discs having projections along its periphery; switch means biased to an open position mounted in close proximity to said discs; manually operable means for positioning said switch means in a plurality of discrete positions, each of said positions being associated with one of said discs; the disc projections of each of said discs being adapted to engage said switch means when said switch means is placed in the discrete positions associated with said discs; said switch means being moved to the closed position when engaged by said projections; the number of projections on each disc being different from the number of projections on the remaining discs for generating a plurality of timing cycles of varying length.

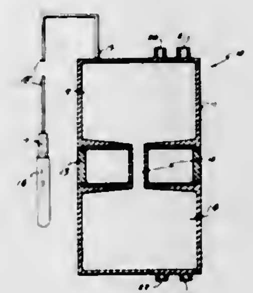
3,185,154
APPARATUS FOR COLLECTING, SEPARATING, STORING AND DISPENSING WHOLE BLOOD

Joseph F. Caccavo, 1975 Ocean Parkway, and William J. Piemonte, 2135 80th St., both of Brooklyn, N.Y.

Filed Aug. 14, 1962, Ser. No. 216,928

2 Claims. (Cl. 128—272)

1. An apparatus for the collection, centrifuging, storing and dispensing of whole blood in a completely hermetically sealed container comprising two separated chambers, in which said two chambers are boxlike in form and inherently rigid, each chamber comprising four side walls, a top and a bottom wall, said bottom wall of one chamber and said top wall of the other chamber each having an aperture, a duct extending from one aperture to the other, said duct and said two chambers being integrally formed of a polyvinyl chloride resin base material, said duct being adapted to be easily severed to provide two separate chambers, said duct also being adapted to be heat sealed and a pair of U-shaped, spacer elements having, flat, upstanding side walls of a width slightly less than the length of said duct positioned around said duct with open ends abutting, said spacer wall engaging the said bottom wall of said one chamber and said top wall of said other chamber so that the said container retains its shape when under stress in a centrifuge.

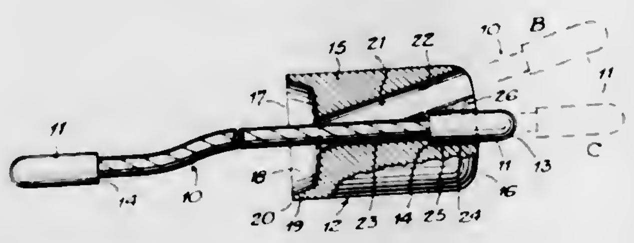


3,185,155
VEIN STRIPPER

John M. Slaten and Christopher L. Waal, Milwaukee, Wis.; said Waal assignor to said Slaten, Milwaukee, Wis.

Filed Mar. 13, 1963, Ser. No. 264,815

3 Claims. (Cl. 128—303)



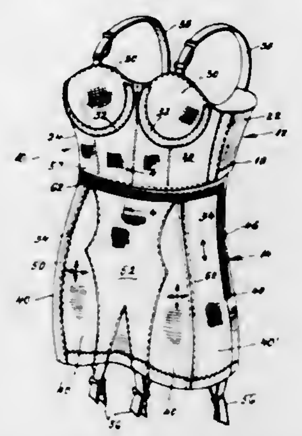
1. In a vein stripper having a stripping head for detachable mounting on a flexible traction cable with an enlarged tip representing an annular shoulder at its inner end, said stripping head comprising a one-piece head member having a generally circular front end presenting a continuous peripheral stripping edge, said head member having a passage extending longitudinally therethrough, said passage including a cable-receiving groove extending along the axial region of the head member and communicating at its rear end with an axially disposed tip-receiving socket-forming bore opening at the rear end of said member, said socket-forming bore having a rearwardly facing shoulder at its front end engageable by the annular cable tip shoulder, said passage also including an inclined cable-introducing bore adapted to admit the tip-carrying cable therethrough from the front end of said head member, the diameter of said inclined bore being as large as the diameter of the socket-forming bore, the open front end of said inclined bore being disposed approximately centrally of said head member, and the open rear end of said inclined bore being radially offset from the open rear end of said socket-forming bore, the front end of said cable-receiving groove intersecting the front portion of said inclined bore, and said passage further including a radial cable-admitting slot connecting said inclined bore with said groove and socket-forming bore, the width of said cable-receiving groove and slot being smaller than the diameter of said inclined bore and said socket-forming bore.

3,185,156
COMBINED BRASSIERE AND GIRDLE ATTACHED TOGETHER BY ZIPPER MEANS

Dora Steinberger, 677 West End Ave., New York, N.Y.

Filed Mar. 19, 1964, Ser. No. 353,088

1 Claim. (Cl. 128—438)



In a foundation garment construction, the combination of a brassiere structure and a corselet structure, the lower front edge of the brassiere structure being detachably connected to the upper front edge of the corselet structure, the lower rear edge of the brassiere structure being free with respect to the upper rear edge of the corselet structure, said brassiere structure comprising a band with a front section and with rear sections with eyelets and hooks on the rear sections for detachably connecting the rear sections together, said corselet structure comprising a front panel constituted by side piece front portions of two-way stretch material, extending downwardly from the upper front edge thereof, opposed side panels of two-way stretch material connected to the respective side edges of the side piece front portions, a rear central panel of one-way stretchable material extending downwardly from the upper rear edge of the corselet structure, the outer side edges of the rear central panel being connected to the outer side edges of the respective opposed side panels, the outer side edge portion of one side panel and the adjacent edge of the rear panel being open, coacting separable fastener means extending along the open edges of said panels, and a narrow panel of non-stretchable material extending from the top to the bottom of the front panel reinforcing said front panel, the connection between the lower front edge of the brassiere structure and the upper front side of the corselet structure, including a tape secured along the bottom edge of the brassiere structure, teeth depending from said tape, a tape secured along the upper portion of the corselet structure, upright teeth fastened to the top edge of said latter tape, and a slidable member slidable along the teeth for interlocking or separating said teeth.

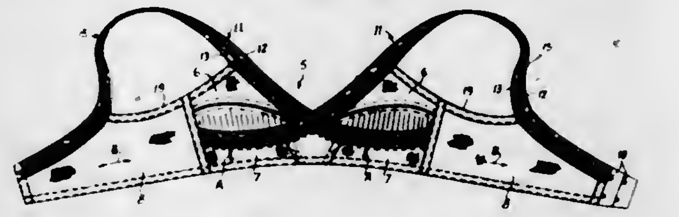
3,185,157
BRASSIERE WITH ELASTIC SUPPORT STRAPS

Marcel Gingras, St. Foy, Quebec, Canada, assignor to Dominion Corset Company, Limited, Quebec, Quebec, Canada

Filed Aug. 14, 1963, Ser. No. 302,134

Claims priority, application Canada June 25, 1963

7 Claims. (Cl. 128—483)

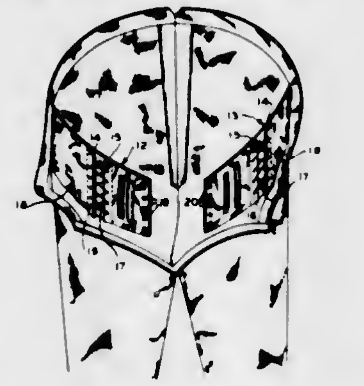


1. A brassiere comprising a front body band section, a pair of breast pockets secured at their lower edges to the adjacent upper edge of the front body band section, and a pair of side panels secured at their front ends to the

adjacent edges of said front body band section and to the adjacent edges of said breast pockets, and a pair of straps of elastic material, each of said pair of straps having one edge thereof secured along one end portion of its length to an upper longitudinal edge portion of each of said side panels and along an upper and inwardly facing edge portion of the breast pocket adjacent to the side panel to which the strap is attached, the portion of each strap between its attachment to the side panel and breast pocket being looped free to form shoulder straps, each of said straps continuing past the medial centerline of the brassiere in cross-over relation and under the lower portion of the opposite breast pocket towards the adjacent side panel to which the said latter breast pocket is attached, the said straps at their point of cross-over being free to move independently of each other, each of the said straps being secured along its lower edge portion only to the lower edge portion of the breast pocket to which it is passed under and to the adjacent upper edge portion of the said front body band section, the unattached portion of the strap below each breast pocket forming an upstanding flexible support to the under portion of the breast pockets.

3,185,158
ADJUSTABLE AND DETACHABLE, LOWER ABDOMINAL SUPPORT FOR TROUSERS

Francis V. Gattuso, 225 Main St., Belleville, N.J.
Filed Feb. 13, 1963, Ser. No. 258,315
3 Claims. (Cl. 128—519)

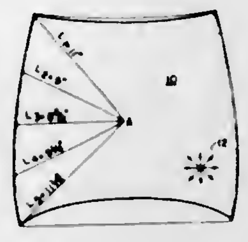


2. An adjustable and detachable, lower abdominal support for trousers comprising,

(*a*) a pair of trousers,
(*b*) a pair of elongated, generally rectangular unitary, non-stretching webs, each web being secured at one end to the trousers in proximity to one of the interior side seams thereof,
(*c*) a pair of generally vertical, vertically spaced apart opposed lacing tabs on each web, each tab having a generally vertical row of eyelets secured thereto,
(*d*) a lace passing through alternate, opposed eyelets on the tabs on each web, and
(*e*) cooperative fasteners on the inside end of each web adapted to secure the webs together.

3,185,159
UNIVERSAL STRETCH GIRDLE WITH ABDOMINAL STRESS CONTROL

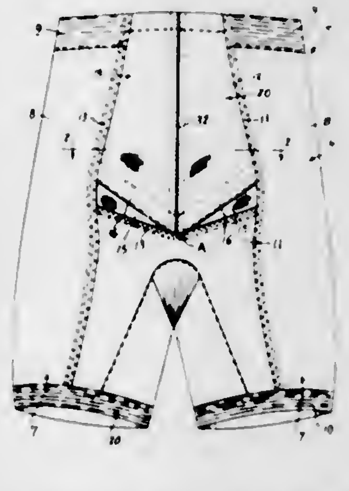
Abraham N. Spanel, Princeton, N.J., assignor to International Latex Corporation, Dover, Del., a corporation of Delaware
Filed June 29, 1961, Ser. No. 120,552
4 Claims. (Cl. 128—521)



1. A universal stretch girdle made of sheet rubber of generally uniform thickness and uniform modulus of elasticity in all radial directions, provided with waist and leg openings, having a circumference less than the circumference of the body to thereby cause the girdle to embrace the body restrictively, said girdle having a front abdominal region having lateral areas positioned between the sides of the girdle and the center of the abdominal region, provided with an abdominal control and support means comprising a plurality of unstretchable longitudinally extending straight flexible tapes positioned symmetrically on the rubber wall and stitched thereto, one along each of the lateral areas of the abdominal region when in position on the body and each having a uniform width sufficient to substantially compensate the stress paths but not so wide as to substantially interfere with the resilient character of the encircling garment of stretchable rubber, and extend approximately vertically down from the top edge of the girdle for a length not less than the longitudinal extent of the abdominal region, to provide a means for more nearly equalizing stresses in the universal stretch rubber wall, resulting in increased control, support and comfort.

3,185,160
PANTY GIRDLE

Marcel Gingras, St. Foy, Quebec, Canada, assignor to Dominion Corset Company, Limited, Quebec, Canada
Filed Feb. 25, 1963, Ser. No. 260,667
Claims priority, application Canada, Jan. 12, 1963, 866,379
1 Claim. (Cl. 128—528)



In a foundation garment including a body encircling upper portion and leg portions, a pair of side panels, a lower front panel stitched to the side panels, a main front panel stitched to the side panels, the main front panel including three layers, comprising an inner, intermediate and outer layer, the inner layer stitched to both of said side panels and to the upper edge of the lower front panel, the intermediate and outer layers of the main front panel being formed by two sections, each of said sections being folded upon itself along a vertical fold line, said two sections being stitched together along the vertical fold lines thereof, one layer of each folded section forming the intermediate layer of the main front panel and the other layer of each folded section forming the outer layer of the main front panel, the intermediate and outer layers being stitched to the side panels, the intermediate layer extending downwardly beyond the folded over portion forming the outer layer and the intermediate layer being stitched to the lower front panel, the lower edge of the outer layer being free of stitching whereby substantial flexibility is provided in the lower region of the front panel and stresses in the garment are transmitted to a mid portion of the lower front panel.

3,185,161
TOBACCO MANUFACTURE

Joseph Vincent Fiore, 205 Steiner St., Fairfield, Conn.; Harry Allison Hooper, 23 Mayhew Ave., Larchmont, N.Y.; Matthew Sallee Monte, 181 Highland Ave., Stratford, Conn.; Raymond Joseph Moshy, 6 Hyatt Court, Westport, Conn.; and Otto Karl Schmidt, 20 Gilford St., Springdale, Conn.
No Drawing. Original application Dec. 5, 1960, Ser. No. 73,562. Divided and this application Sept. 9, 1964, Ser. No. 404,198
4 Claims. (Cl. 131—17)

1. In a reconstituted tobacco sheet material made from a major proportion by weight of finely divided tobacco and a minor proportion by weight of a water soluble adhesive material holding together said finely divided tobacco, the improvement consisting of a thin hydrophobic coating on the surface of said sheet material which consists principally of a synthetic water insoluble cellulose polymer.

3,185,162
PROCESS FOR MAKING RECONSTITUTED SHEET TOBACCO

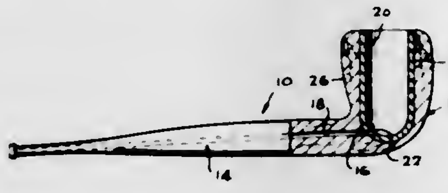
Joseph Vincent Fiore, Fairfield, Conn., Harry Allison Hooper, Larchmont, N.Y., and Matthew Sallee Monte, Stratford, Raymond Joseph Moshy, Westport, and Otto Karl Schmidt, Springdale, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
No Drawing. Filed Dec. 5, 1960, Ser. No. 73,562
1 Claim. (Cl. 131—140)

In the process of making a moisture resistant tobacco product comprising the steps of:

(A) forming a sheet of tobacco by mixing a major proportion of finely divided tobacco by weight with a minor proportion by weight of water soluble adhesive in aqueous solution and
(B) drying said sheet, the improvement consisting of the steps of:
  (I) coating the surface of said dried sheet with a solution of ethyl cellulose, and
  (II) finally drying the coating on the sheet to produce a thin, flexible surface coating which
    (*a*) protects the water soluble adhesive and the tobacco from attack and degradation by external moisture and
    (*b*) is compatible with the smoking quality of the tobacco product.

3,185,163
SMOKING ELEMENT

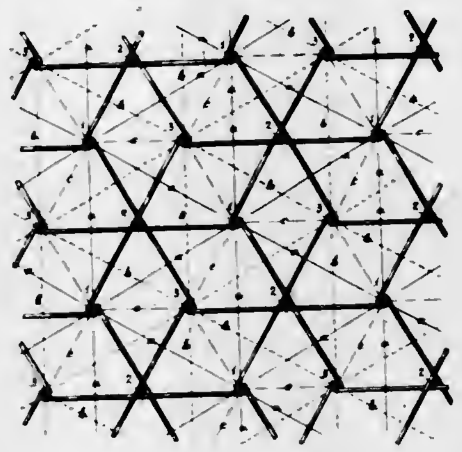
Edgar C. Buckingham, San Marino, Calif., assignor to Super-Temp. Corporation, Santa Fe Springs, Calif., a corporation of California
Filed Aug. 12, 1963, Ser. No. 301,260
6 Claims. (Cl. 131—194)



1. A smoking pipe bowl element having an internal surface and comprising a crucible for receiving tobacco and being composed of pyrolytic graphite, said pyrolytic graphite having carbon atoms oriented in laminae, the laminae of said pyrolytic graphite being oriented substantially parallel to the surface of said crucible, and being apertured adjacent the bottom of the crucible to permit outward passage of tobacco smoke from said crucible.

3,185,164
THREE DIMENSIONAL RETICULAR STRUCTURE

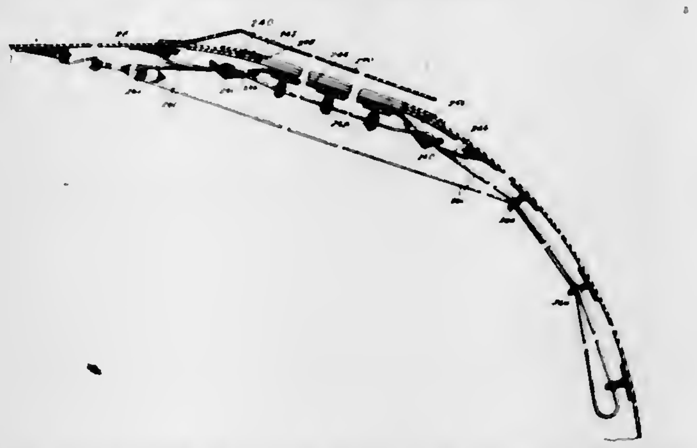
Emilio Perez Piñero, 4 Perez Galdos St., Madrid, Spain
Filed Nov. 15, 1961, Ser. No. 152,567
Claims priority, application Spain, Apr. 21, 1961, 266,801
7 Claims. (Cl. 135—4)



1. A folding three-dimensional reticular structure comprising a plurality of rods pivotally connected at their upper and lower ends by couplings to one another to form an assembly of rods which is foldable and extensible, each rod being articulated at at least three points respectively located at both ends of the rod and at an intermediate point, each rod having substantially parallel articulation axes corresponding to said articulation points and located in a plane common to the axis of the rod, said couplings being positioned at the said points of articulation of each rod and having cross arms to each of which a rod is pivotally joined for articulation, flexible elements interconnecting the upper couplings and similar flexible elements interconnecting the lower couplings to prevent extension of the assembly beyond a preselected limit while permitting the assembly to fold into a compact form with all the rods adjacent each other, and stays releasably attached between upper and lower couplings of different rods to prevent folding and impart rigidity to the unfolded reticular structure.

3,185,165
BAFFLE VENT FOR AIR SUPPORTED BUILDING

Walter W. Bird, Williamsville, George F. Reitmeier, East Aurora, and Anson T. Baschmann, Elma, N.Y., assignors to the United States of America as represented by the Secretary of the Army
Original application May 2, 1960, Ser. No. 26,382, now Patent No. 3,150,670. Divided and this application May 7, 1964, Ser. No. 371,865
6 Claims. (Cl. 135—14)

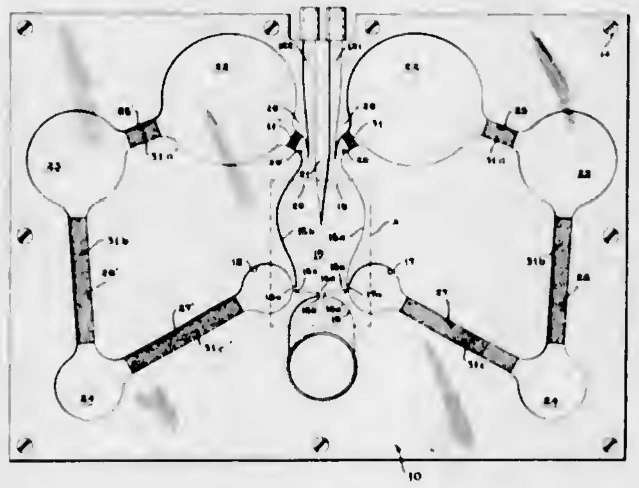


1. In an air-erected and supported building structure comprising a substantially airtight flexible envelope constantly maintained under a pressure in excess of atmospheric to maintain the structure erected and having a vent opening in one portion of the wall thereof, a baffle closure of flexible material to close said vent opening, flexible track-forming slides adjacent opposite sides of said vent opening, said track-forming slides being displaced laterally

inwardly from the edges of said baffle closure means to form a sliding connection between said baffle closure and said flexible slides comprising grommets attached to said baffle closure and engaging said slides to guide said baffle closure as same is opened or closed, and halyards connected to directly opposite sides of said baffle closure for pulling the same in opposite directions along said slides to expose more or less of said vent opening.

3,185,166
FLUID OSCILLATOR

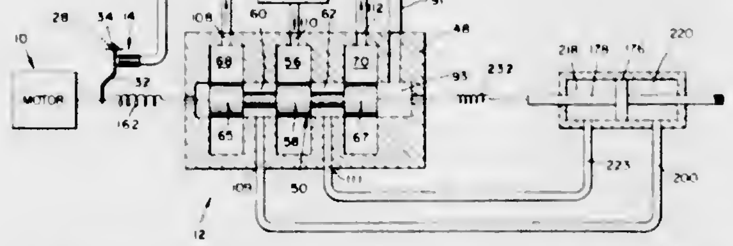
Billy M. Horton, 9712 Kensington Parkway, Kensington, Md., and Romald E. Bowles, 12712 Meadowood Drive, Silver Spring, Md.
Filed Apr. 8, 1960, Ser. No. 21,062
38 Claims. (Cl. 137—81.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A fluid oscillator in which there are no moving parts other than the moving fluid, comprising a pure fluid amplifier, means supplying fluid energy to said amplifier, and means for storing fluid energy constructed and arranged so as to receive, store and feed back a portion of said fluid to said amplifier in phase with the desired oscillating output signal from said oscillator.

3,185,167
ELECTRO-HYDRAULIC SERVO VALVE UNIT

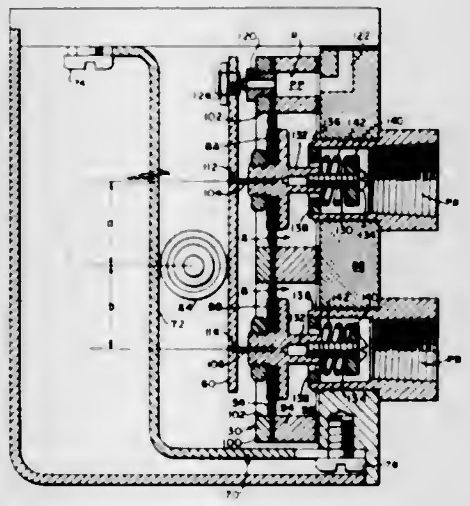
Zenny Olsen, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed May 18, 1961, Ser. No. 114,591
20 Claims. (Cl. 137—85)



1. A hydraulic actuator assembly comprising, in combination, a tubular housing having a bore extending therethrough, an electro-hydraulic servo valve having a first movable valving member disposed at one end of said bore, said first valving member being mounted for movement along the axis of said bore, movement of said first valving member controlling the flow of fluid between a valve input port and a first control port in said servo valve, a piston in said bore, means closing said bore on at least one side of said piston to form a pressure chamber between said piston and said bore closing means, means connecting said control port to said pressure chamber, said servo valve unit also including an electrical force motor, means forming a second chamber bounded in part by an axially facing surface of said first valving member, means admitting fluid under pressure to said second chamber, a pilot valve in said assembly and actuated by said force motor to control the pressure in said second chamber, a first negative feedback spring connected between said first valving member and said motor, and a second negative feedback spring connected between said first valving member and said piston.

3,185,168
PNEUMATIC FUNCTION GENERATOR

James W. Phillips, South Bend, Ind., assignor to Robertshaw Controls Company, a corporation of Delaware
Filed Aug. 17, 1962, Ser. No. 217,728
34 Claims. (Cl. 137—85)

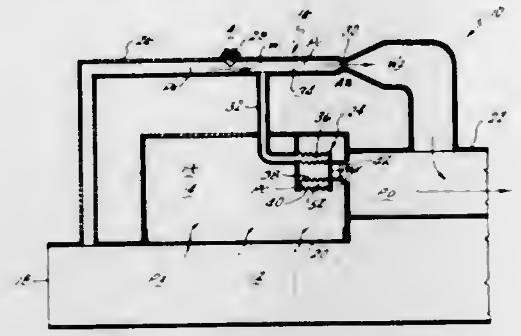


1. A pneumatic function generator for producing a modulated output pressure as a pre-selected function of a plurality of input pressures comprising a force bridge including first and second balance levers, adjustable fulcrum means for said levers and pressure means responsive to said pressures for applying variable forces to opposite ends of said levers; and servo-means controlled by said force bridge as a function of the deviation of said force bridge from a balanced condition and connected with said adjustable fulcrum means to selectively position said fulcrum means on said balance levers to rebalance said force bridge; said pressure means for applying variable forces to opposite ends of said levers comprising a pressure plate having a plurality of pressure chambers therein, a flexible diaphragm element co-extensive with said plate and clamped thereto defining a displaceable wall portion for each of said pressure chambers, and means mounted on each of said displaceable wall portions of said diaphragm and adapted to receive one end of one of said balance levers, whereby said balance levers may be mounted between selected pairs of said displaceable wall portions.

3,185,169
INTERCOMPARTMENT PRESSURE RATIO REGULATOR

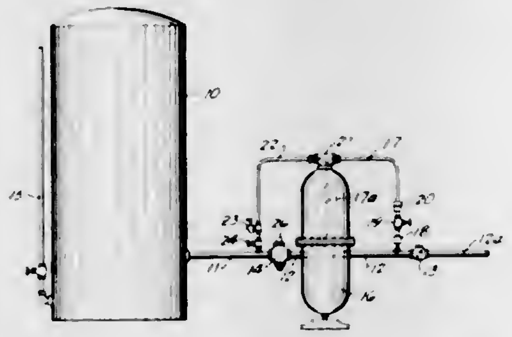
Eugene R. Bruun, Hartford, Theodore A. Flanders, Windsor, and Milton Marcus, West Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 10, 1963, Ser. No. 250,572
6 Claims. (Cl. 137—98)

1. In a flight vehicle having first and second compartments with a first and second pressure therein respectively, means to control the ratio between said first and second pressures comprising valve means located in second compartment and controlling communication between said second compartment and a lower pressure and subjected over a selected area on one side to said second pressure, valve position control means defining a control pressure chamber on the opposite side of said valve from said one side and defining an effective area on said opposite side of said valve equal to said selected area on said one side of said valve and including fluid flow conduit means with spaced orifices therein and with the area therebetween communicating with said control pressure chamber, means to pass fluid at said first pressure through said conduit means to establish a reference pressure between said orifices and in said control pressure chamber which is a function of said first pressure, means to balance all other pressures acting on said valve, the area of said orifices being selected so that the ratio between said first and second pressures is a selected value.



3,185,170
LIQUID PURIFICATION APPARATUS

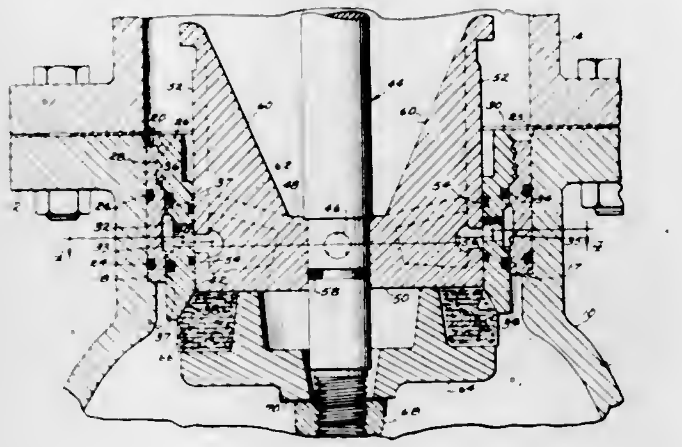
George H. Westman, 14 Swallow Lane, North Oaks, St. Paul, Minn.
Filed June 22, 1961, Ser. No. 118,794
1 Claim. (Cl. 137—268)



Water purification apparatus comprising: a water supply conduit having a first member connected to a source of water under pressure and a second conduit member; a manually adjustable first valve interconnecting said first conduit member to said second conduit member for effecting a pressure drop between said members which varies proportionately to the rate of flow of water therethrough, said first valve being set to a position to provide a predetermined range of pressure drop in accordance with the flow rate; a container normally filled with a stratified treating solution which varies in density from a substantially saturated solution in the lower portion of said container to a solution of substantially constant, relatively low potency in the upper portion of said container; a branch conduit of said first conduit member connected at a point substantially removed upstream from said first valve and connected to said container for supplying water under pressure directly into said substantially saturated solution in said container; and a branch conduit of said second conduit member connected thereto at a point substantially removed downstream from said first valve and communicating with the upper portion of said container for supplying treating solution from the container to said second conduit member; an adjustable needle valve controlling flow through said branch from said first conduit member and set for restricting the flow to said container to a degree whereby the proportion of treating solution supplied by the branch of said second conduit member is in the range of ½ to 6 parts per million parts of water passing through said second conduit member irrespective of the rate of flow of water through said first valve.

3,185,171
VALVING STRUCTURE FOR FIRE HYDRANT

Frank H. Mueller and John J. Smith, Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed Dec. 19, 1961, Ser. No. 161,339
8 Claims. (Cl. 137—283)



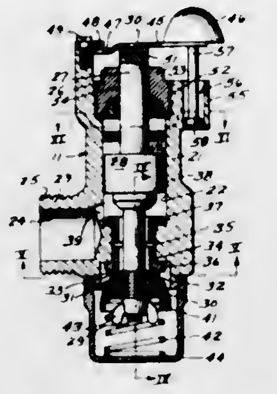
1. In a fire hydrant the combination comprising: a hydrant shoe having an upwardly-opening mouth provided with a smooth interior surface; a bushing lining said mouth and having a smooth exterior surface opposed to said interior surface; drain tubes snugly fitting pairs of aligned radial apertures in said shoe and bushing for retaining the latter in the former; means defining circumferential grooves between the opposed surfaces of said shoe and said bushing, one above and one below said drain tubes; a resilient pressure-deformable sealing ring in each of said grooves and engaged with the bottom thereof and with the corresponding one of said opposed surfaces to form a seal between said bushing and shoe; a valve seat ring threadedly engaged within said bushing and having on its inner end a downwardly facing valve seat, said ring also having a radial drain valve port; means defining a circumferential groove between the opposed surfaces of said bushing and ring and providing communication between said port and said tubes; a reciprocating valve stem carrying a valve washer for seating and unseating cooperation with said seat; slide valve means carried by said stem for cooperation with the inner end of said port to open the latter when said washer is seated on said seat and close said port when said washer is unseated; and noncircular interfitting means carried by said stem and ring for restraining relative rotation therebetween.

3,185,172
PUSH BUTTON FAUCET WITH ALTERNATELY SEATING VALVES

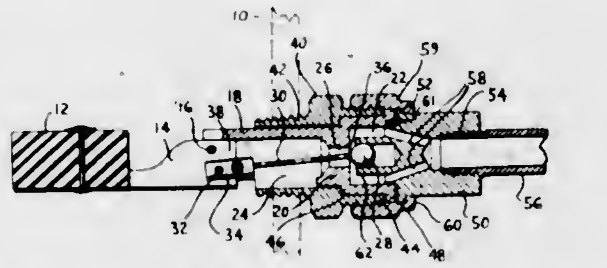
William F. Hajek, 909 W. 20th Place, Chicago 8, Ill.
Filed Sept. 25, 1961, Ser. No. 140,480
3 Claims. (Cl. 137—315)

1. A faucet comprising a valve body having a passage therethrough, a valve stem reciprocable in said valve body and having a pair of valves spaced apart thereon, a pair of valve seats in said passage alternatively and selectively engageable with the valves, an inlet above one of the valve seats, an outlet below the other of the valve seats, means urging the valve for the other of the valve seats into closing relation therewith, a lever at the end of said valve stem opposite said valves, a slot in said end of said valve stem, a boss in said lever received in said slot, means on the body fulcruming one end of the lever, the other end of the lever being selectively depressible to operate the valves, said means urging the valve for the other valve seat into the closing relation therewith including

a spring, a cup shaped member threaded on a valve body, a bearing retainer for the valve for the other valve seat and a wing nut threaded on the valve stem to maintain the bearing retainer against the said valve for the other valve seat, the boss on the lever and the slot in the valve stem coacting as a screw driver to prevent angular rotation on the valve stem during release of the wing nut upon removal of the cup shaped member for ready assembly and disassembly of the faucet.



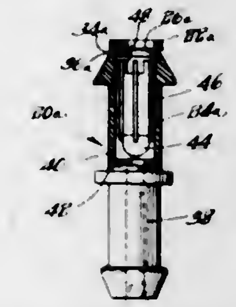
3,185,173
FLOAT VALVE
Hugh H. Pase, Wallingford, Conn., assignor to The Houston Company, Cheshire, Conn., a corporation of Connecticut
Original application June 23, 1959, Ser. No. 822,232, now Patent No. 3,055,405, dated Sept. 25, 1962. Divided and this application May 17, 1962, Ser. No. 195,613
2 Claims. (Cl. 137—443)



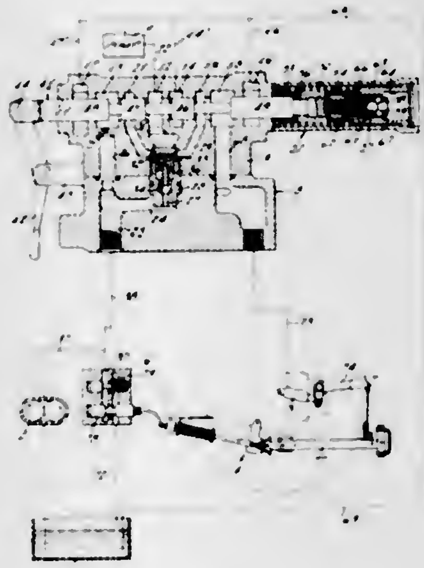
1. A float valve for a tank-filling system comprising in combination a housing, inlet and outlet ports in said housing, a valve-seat in said outlet port, a valve-closure member supported within said housing for movement into and out of closing relation with said valve-seat, said valve-closure member being urged by the fluid in said housing into closed relation with said valve-seat, valve-actuating means comprising an arm pivoted to said valve-housing outwardly of said outlet port and in axial alignment therewith, said valve-closure member having a valve stem which extends through said outlet port and is connected to said arm such that said closure member is moved into and out of closing relation with said valve seat upon pivotal movement of said arm, a float mounted adjacent the outer end of said arm substantially in line with said outlet port such that the stream of fluid passing through said outlet port impinges on said arm and float when not immersed in the liquid in said tank and exerts a force on said arm in the direction tending to open said valve, said force being dissipated when said arm and float are immersed in liquid.

3,185,174
DIRECT RESPONSE VALVE
Bryant Edwards, Oak Park, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 801,532, Mar. 24, 1959. This application Apr. 18, 1963, Ser. No. 273,893
2 Claims. (Cl. 137—533.21)

2. A valve structure comprising one piece molded plastic body means including first substantially elongated bore means having a first diameter and second bore means of substantially smaller diameter concentric with and communicating with said first bore means, annular valve seat means on said body means at the junction between said first and second bore means, and an elongated valve member movable in said first bore means and having an end portion of a cross-sectional dimension less than said first bore means and cooperable with said valve seat means for controlling the flow of fluid therethrough, one of said first bore means and said valve member including a plurality of substantially elongated vane means for guiding movement of the valve member in the first said bore means, said vane means having a cross-sectional dimension for maintaining said valve member substantially concentric with said first bore means during movement of the valve member for permitting the fluid flow through first said bore means and past said valve member when the valve member is spaced from said valve seat mean, said body means including a first annular section having a certain radial thickness around said first bore means and axially spaced from said seat means, said body means including a second annular section having a certain radial thickness around said first bore means between said first section and said seat means, and said body means including a third annular section between and integrally joining said first and second annular sections, said third section projecting radially inwardly of adjacent inner surfaces of said first and second sections and providing an annular bead having an internal diameter less than said first diameter, said bead being engageable with said valve member for retaining the valve member within said first bore means.

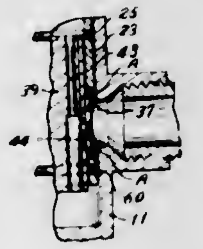


3,185,175
DIRECTIONAL HYDRAULIC CONTROL VALVE
John R. Plate, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 3, 1962, Ser. No. 241,702
5 Claims. (Cl. 137—596.12)



1. A directional hydraulic valve comprising, a casing having a valve bore and axially spaced radial enlargements thereof presenting, respectively, a first and second inlet chamber, a first and a second transfer chamber, a first and a second exhaust chamber, and a delivery chamber; internal passage means presenting a first inlet passage connected with said first inlet chamber; a second inlet passage having a primary branch connected with said first inlet chamber and with said first and second transfer chambers, and a secondary branch connected with said second inlet chamber, check valve means positioned within said primary branch and coacting therewith for preventing return flow of fluid therethrough to said second inlet passage and fluid flow from said primary branch into said first inlet chamber, and a valve spool in said valve bore and provided with axially spaced apart lands and said lands being cooperable with said bore so as to selectively direct fluid flow from said first inlet chamber and delivery chamber to said first and second exhaust chambers, respectively; and to selectively direct fluid flow from said first and second inlet chambers either jointly or separately to said delivery chamber; said lands including a first land operative to control fluid passage from said first inlet chamber to said first exhaust chamber, and to control fluid flow from said first transfer chamber to said delivery chamber; second and third lands operative alternately to control fluid passage between said second inlet chamber and said second transfer chamber; and a fourth land operative to control fluid passage between said delivery chamber and said second exhaust chamber.

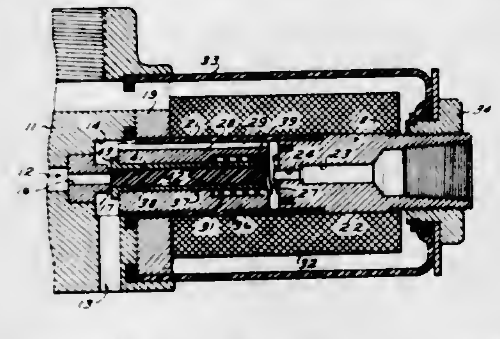
3,185,176
SEALING MEANS FOR VALVES
Ernest C. Webb, Cleveland, Ohio, assignor to Stephen C. Peplin, trustee, North Olmsted, Ohio
Filed June 20, 1962, Ser. No. 203,891
2 Claims. (Cl. 137—625.17)



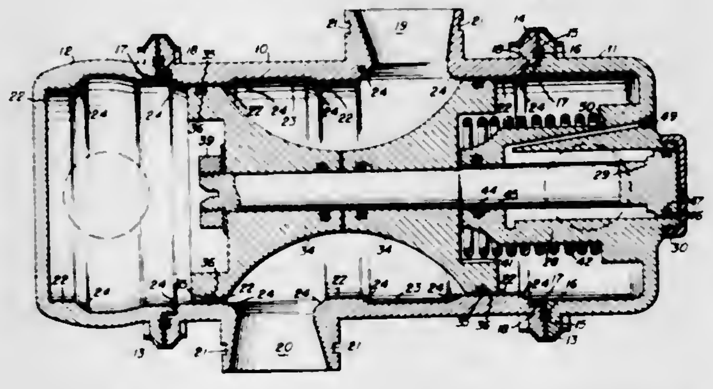
1. In a hydraulically balanced mixing valve assembly including a valve body having an axial bore, a pair of fluid inlets communicating with the bore, an outlet passage in the body for the mixed fluids, a valve sleeve member in the bore closing one end thereof and having openings therein in register with the respective fluid inlets, a valve element slideable and rotatable along and about a single axis within said sleeve member, O-ring seals carried in the inlet openings of the sleeve member and surrounding the fluid inlets, and static seal means interposed and supported between the sleeve member and the bore of the valve body, the diameters of the O-ring seals with respect to their associated inlet openings of the sleeve member and the cross-sectional areas of the O-ring seals with respect to the thickness of the sleeve member being such that the seals will be subjected to a build-up of fluid pressure in response to the seal effected by said static seal means to effectively seal against fluid leakage between the outer peripheral surface of the valve element and the inlet openings in the sleeve.

3,185,177
THREE-WAY SOLENOID VALVE
Karl A. Brandenberg, San Leandro, and Loren R. Bart, Hayward, Calif., assignors to Modernair Corporation, San Leandro, Calif., a corporation of Ohio
Filed Sept. 28, 1962, Ser. No. 226,959
4 Claims. (Cl. 137—625.27)

1. A solenoid valve comprising means defining an inlet passage terminating in an inlet seat within a valve chamber, said inlet passage connectable to a pressurized air source, means defining an outlet passage communicating with said chamber, a stem assembly including means defining a guide bore coaxially extending from said chamber and means defining an exhaust passage terminating in an exhaust seat at an end wall of said bore in coaxial opposition to said inlet seat, a solenoid disposed about said stem assembly for generating a magnetic field within said bore upon energization of the solenoid, a plunger slidably disposed within said bore for movement coaxially thereof, said plunger spring loaded in the direction of said inlet seat and magnetically attractable by said magnetic field in the direction of said exhaust seat, and a seal pin coaxially transpiercing said plunger in slidable relation thereto, said pin having a head on one end thereof engageable by the end of said plunger facing said inlet seat, said seal pin having two limits of axial movement respectively in engagement with said inlet seat and said exhaust seat.



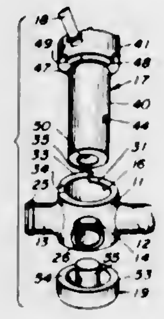
3,185,178
CYLINDRICAL SQUEEZE-TYPE DIRECTIONAL VALVE
Armand A. Bonnard, 101 Sherwood Drive, Santa Barbara, Calif.
Filed Oct. 15, 1962, Ser. No. 231,330
1 Claim. (Cl. 137—625.29)



A cylindrical type directional valve comprising; a cylindrical housing having axially spaced end portions, a first cap member sealingly mounted on one end portion, a second cap member sealingly mounted on the other end portion, said cylindrical housing and cap members defining a valve chamber, an annular piston valve member slidably mounted in said valve chamber, sealing means carried about each end of said piston, a pair of spaced ports in said cylindrical housing intermediate said sealing means in one position of said piston valve for fluid communication therebetween, each end cap member having a port communicating with the interior thereof, each of said sealing means in said one position of the piston valve blocking the cap member ports from the ports in said cylindrical housing, a power cylinder depending from said first cap member, a piston slidably, sealingly mounted in said cylinder, a shaft connecting said piston with said piston valve, said shaft passing through an opening in the cylinder and sealingly engaged with the walls thereof, passage means communicating with one side of said piston for supplying fluid to urge said piston valve to said first position, spring means between said first cap member and said piston valve for urging the piston valve to a second position whereat one of the sealing means is located intermediate said cylinder ports thereby preventing communication therebetween.

3,185,179
DISPOSABLE VALVE

Andrew Harautunelan, Gardena, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed May 5, 1961, Ser. No. 108,127
20 Claims. (Cl. 137—625.47)



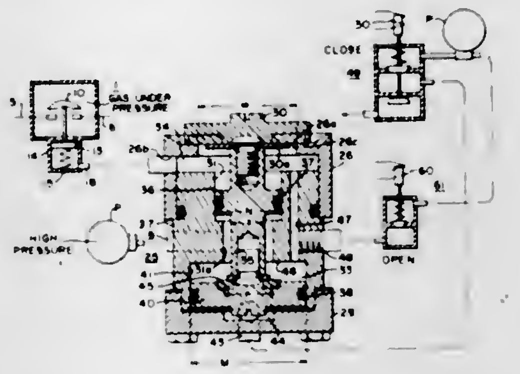
3. A disposable plastic valve comprising: a body having a tapered bore; a tapered core rotatably seated in said bore and extending above and below said body; a handle associated with one of the extending ends of the core; an inwardly tapering bore in the other end of the core; a retaining member associated with said end of the core, said member having an integral tapered plug wedged tightly into the core bore; and means integral with said plug and extending beyond the periphery of said core, said means bearing against the bottom surface of the body and urging the core tightly into the body.

13. A method of making a plastic valve comprising: forming of a plastic material which loses its rigidity somewhat at elevated temperatures a body member having a bore; forming a core member and a retaining member of a different plastic material which maintains its rigidity at temperatures higher than the plastic material of the body member; pressing the core tightly into the body bore with an end portion of the core extending beyond said body; axially pressing the retaining member onto the extending end portion of the core; heating the valve to temperatures at which the valve body loses slightly its rigidity but at which said core and retaining member do not, said body relieving radially outwardly to precisely conform its inner surface to an outer surface of said core; and cooling said valve to room temperatures where said relieved body regains its rigidity and maintains a precise fit with said core.

3,185,180
FLUID-CONTROL VALVE WITH AUTOMATIC FLUID LATCHING

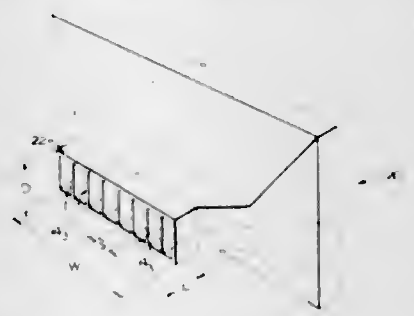
William A. Fish, Jr., Wilkins Township, Allegheny County, and Charles B. Wolf, North Huntingdon Township, Westmoreland County, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 18, 1963, Ser. No. 296,015
2 Claims. (Cl. 137—625.66)

1. A fluid-control valve for pressurizing or exhausting the operating cylinder of a fluid motor comprising, in combination, a valve body having an axial bore with a restricting portion therein, a piston-actuated exhaust valve having a valve stem portion extending through said axial bore, said valve body bore having a first enlarged space defining an operating cylinder on one side of said restricting portion and a second enlarged space on the other side of said restricting portion, said valve body having a motor control port connected with said second enlarged space, high-pressure fluid supply means for constantly supplying high-pressure fluid to said axial bore, an actuating piston disposed at one end of said valve-stem portion and reciprocally operable within the first-mentioned enlarged space, a gasket seal carried by said valve stem and arranged for sealing against said restricting portion in the exhaust position of the fluid-control valve, an intermediate piston portion secured to the valve stem and disposed on said other side of the restricting portion, the annular piston area of said intermediate piston portion being larger than the annular area of the gasket seal exposed to the constant high-pressure fluid when in the exhausting position of the control valve, a bypassing channel paralleling said axial bore and interconnecting the two enlarged spaces, and the annular area of the exhaust valve exposed to fluid pressure being less than the exposed annular area of the actuating piston when in the pressurized condition of the control valve.



3,185,181
DIFFUSER SWIRL ELIMINATOR

Charles W. Demyan, Somerville, N.J., assignor to Research-Cottrell, Inc., Bridgewater Township, N.J., a corporation of New Jersey
Filed Dec. 13, 1962, Ser. No. 244,302
2 Claims. (Cl. 138—37)

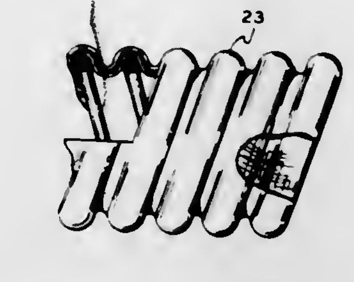


1. Gas flow control means for a subsonic gas flow passage including a subsonic wide-angle divergent diffuser and an inlet passage therefor, a plurality of planar gas flow control vanes mounted in said inlet passage with the plane faces of the vanes positioned in parallel spaced relationship to each other and extending in planes parallel to a plane including the longitudinal axis of the inlet passage a predetermined distance such that the ratio of said distance to the intervane spacing is substantially equal to the reciprocal of the tangent of the approach angle of the flow of gas to the faces of the vanes.

3,185,182
REINFORCED FLEXIBLE CONDUIT

Russell B. Waddell, Jr., Chesterland, Ohio, and Carroll H. Osborn and Richard Dale Medford, Waynesville, N.C., assignors to Dayco Corporation, a corporation of Ohio
Continuation of application Ser. No. 807,389, Apr. 20, 1959. This application Nov. 16, 1964, Ser. No. 412,881
8 Claims. (Cl. 138—122)

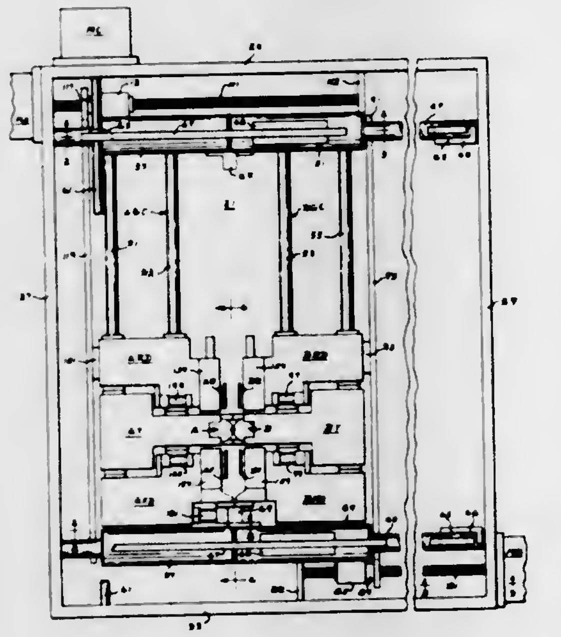
1. A reinforced flexible corrugated conduit comprising a helical reinforcement of plastic coated wire having axially spaced coils, an elastomeric tube bonded to said coils, a longitudinally stretchable but unstressed tubular fabric member enveloping said tube, and a second elastomeric tube enveloping said member.



6. A method for the manufacture of reinforced flexible corrugated conduits comprising the steps of forming a helical reinforcement, successively placing a first tube of elastomeric material, a tubular reinforcing member, and a second tube of elastomeric material around said reinforcement, with the ends of said tubes and said member in alignment with each other and extending beyond the ends of said reinforcement, and applying internal pressure to the resulting assembly to align the ends of said tubes and said member with said reinforcement.

3,185,183
WIRE CONNECTING APPARATUS

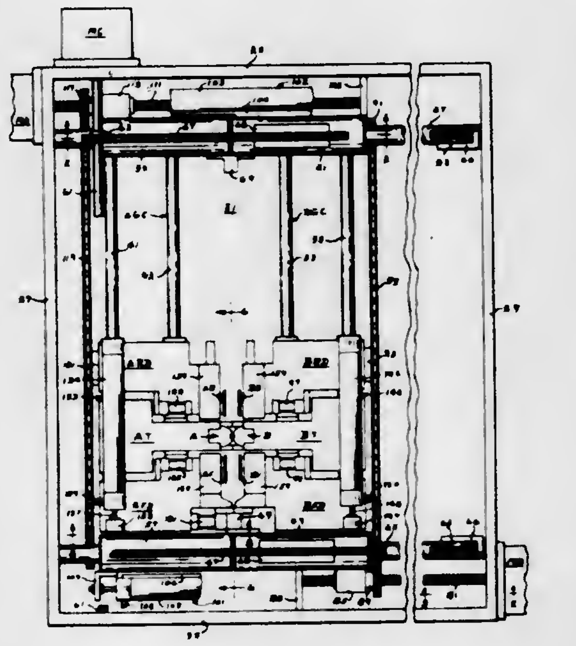
Fred W. Loy, Fruitland Township, Muskegon County, Mich., assignor to Gardner-Denver Company, a corporation of Delaware
Filed Sept. 26, 1960, Ser. No. 58,380
14 Claims. (Cl. 140—71)



7. In automatic wiring apparatus the combination comprising:
a first wiring tool movable along two transversely disposed coordinate axes; a second wiring tool movable relative to said first tool along said two transversely disposed coordinate axes and having means for carrying a wire with respect to said first tool;
first and second dressing fingers disposed on either side of said second tool, movable with said second tool relative to said first tool along one of said coordinate axes and individually movable relative to said second tool along the other of said coordinate axes;
third and fourth dressing fingers, disposed on either side of said first tool, movable with said first tool along said one of said coordinate axes and individually movable relative to said first tool along said other of said coordinate axes;
and said dressing fingers being engageable with a wire suspended between said tools to define, with said tools, predetermined patterns for said wire.

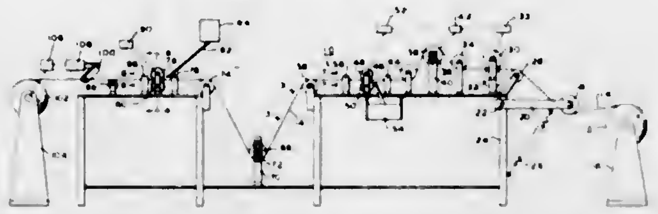
3,185,184
POSITIONING APPARATUS

Fred W. Loy, Fruitland Township, Muskegon County, and Lane T. Wells, Grand Haven Township, Ottawa County, Mich., assignors to Gardner-Denver Company, a corporation of Delaware
Filed Feb. 1, 1962, Ser. No. 170,452
10 Claims. (Cl. 140—71)



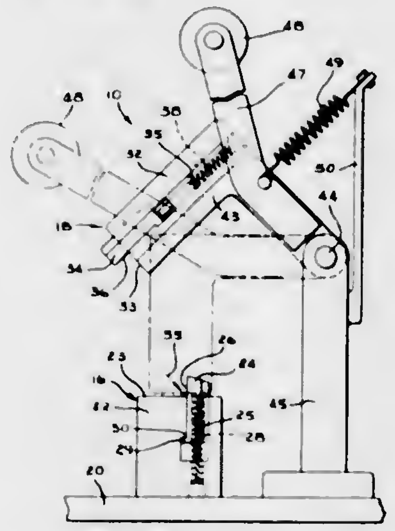
7. In wire positioning apparatus:
a frame having an elongated guide track;
a driving carrier and a driven carrier mounted adjacent to each other, on said guide track, for rectilinear movement; said carriers each including an elongated guide track disposed transversely of said frame guide track; drive means for moving said driving carrier; means for coupling said driven carrier to said driving carrier for movement with the latter;
first, second and third wire working devices mounted, in a trainlike relation, on the guide track of said driving carrier for rectilinear movement; drive means for moving said first device; means for coupling said second device to said first device, and said third device to said second device, for movement with said first device;
fourth, fifth and sixth wire working devices mounted, in a train-like relation, on the guide track of said driven carrier for rectilinear movement; drive means for moving said fourth device; means for coupling said fifth device to said fourth device, and said sixth device to said fifth device, for movement with said fourth device;
means for selectively disengaging said coupling means; said drive means being operable, in cooperation with respective disengaging means, to position said carriers and said devices selectively at separated positions on the respective guide tracks;
a collapsing mechanism connected between said driving and driven carriers; a collapsing mechanism connected between said first and third devices; and a collapsing mechanism connected between said fourth and sixth devices; said collapsing mechanisms being extended during relative separating movement of respective carriers and devices; and means for actuating said collapsing mechanisms to move the respective carriers and devices toward each other into contiguous relation on the respective guide tracks.

3,185,185
WIRE SHAPING APPARATUS
Adolf G. Pfund, Easton, Pa., assignor to Sobel Metal Products, Inc., Easton, Pa., a corporation of Pennsylvania
Filed Jan. 4, 1961, Ser. No. 87,049
2 Claims. (Cl. 140—105)



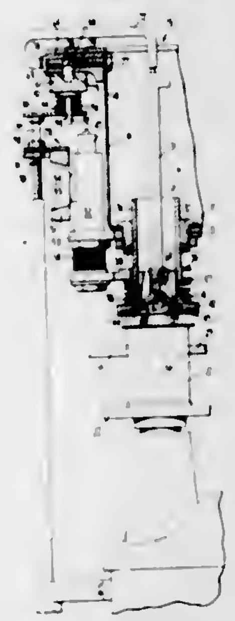
1. Apparatus for making a sinusoidally shaped wire spacer which is V-shaped in transverse cross-section comprising a rotatably mounted supply of wire, a mechanism for bending said wire into a planar sinusoidal shape, a means for feeding said wire to said mechanism, a pair of mating roller dies having juxtaposed V-shaped peripheral surfaces for deforming said sinusoidally shaped wires into a sinusoidally shaped spacer which is V-shaped in transverse cross-section, means for rotatably driving one of said roller dies, a rotatably mounted wind up spool for winding up said V-shaped sinusoidal spacer, means between said dies and said mechanism for tensioning the planar sinusoidal shaped wire, and a motor means for driving said feed means, mechanism and wind up spool.

3,185,186
ARTICLE STRAIGHTENING DEVICE
Charles F. Kinser, Downers Grove, and Walter Lach, Chicago, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 6, 1962, Ser. No. 208,064
4 Claims. (Cl. 140—147)



1. A device for straightening an elongated article comprising:
- a pair of composite jaws, each composite jaw having a first member provided with a first flat article-straightening surface, and having a second member slidably mounted on said first member for movement transversely of said first flat surface and provided with a second flat article-straightening surface cooperating with said first surface to form a V-shaped nest for receiving an elongated bent article;
- resilient means on said jaws for urging said second members to normal extended positions on said first members; and
- means for effecting relative movement between said composite jaws to a closed position in engagement with each other and for continued movement thereafter along a path obliquely to said article-straightening surfaces and in a predetermined relation to each other so that as said composite jaws come into engagement with each other, the extremities of said second members engage the first flat surfaces of said first members of the opposite jaws and in response to continued movement therebetween are pushed inwardly thereby, and the several members cooperate with one another to form a tubular enclosure of substantially equilateral cross-section about the article with said first members and said second members respectively being in opposed relation to and movable toward each other to press the bent article into straightened condition.

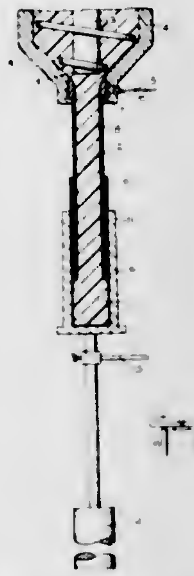
3,185,187
CONTAINER FILLING APPARATUS AND METHOD
Paul E. Luther, Oakland, Calif.
(30873 Vanderbilt St., Hayward, Calif.)
Filed May 7, 1962, Ser. No. 192,729
6 Claims. (Cl. 141—7)



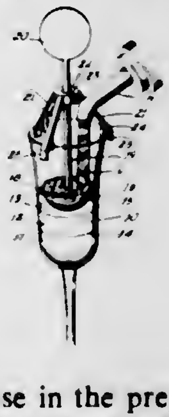
3. A method of filling containers having solid articles therein with liquid which comprises moving a series of containers along a single horizontal plane with their open ends uppermost, moving a plurality of liquid filler valves each having a sealing member in a horizontal plane overlying said first mentioned plane and a valve head, sequentially lowering said valves during the horizontal movement thereof to engage said containers with said sealing members, applying vacuum to said containers following engagement by said sealing members, holding vacuum in said containers while continuing downward movement of the valve heads so as to open said valves, permitting liquid to enter said containers through said open valves, removing vacuum from said containers while maintaining said valves in lowered open condition so as to continue said filling operation, and then raising and closing said valves.

3,185,188
METHOD AND APPARATUS FOR PACKAGING PLASTIC MATERIALS IN ELONGATED CONTAINERS
Ian Ross Brander, Ardrossan, and John Bryan Seed, West Kilbride, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed July 6, 1961, Ser. No. 122,300
Claims priority, application Great Britain, July 6, 1960, 23,612/60
17 Claims. (Cl. 141—12)

1. A method of filling plastic material into an elongated container closed at least temporarily at one end comprising the steps of: positioning one end of an elongated hollow tube means in an easy fit within said container and yieldingly holding the latter with its closed end close to said one end of the tube means; forcing the plastic material under pressure into and through said tube means to form a column of plastic material; injecting a stream of fluid into the tube means in proximity to the position where the plastic material enters the same and about the column of plastic material, to form a substantially continuous layer between the plastic material and the interior walls of the tube means; and collecting the plastic material emerging from said tube means in said container, said container receding at a linear velocity less than the linear velocity at which material emerges from said tube means.



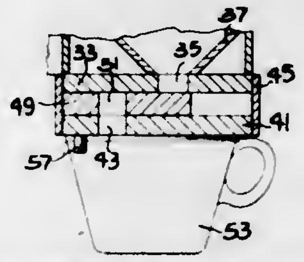
3,185,189
DEVICE FOR USE IN THE PREPARATION OF LAYER DRINKS
Robert Joseph Reid, 910 Jean Drive, Apt. B, Campbell, Calif.
Filed Apr. 23, 1962, Ser. No. 189,557
6 Claims. (Cl. 141—100)



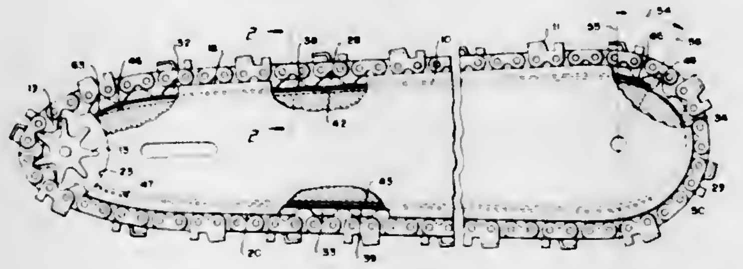
1. In a device for use in the preparation of varied layer drinks conventionally known as "Pousse Cafe" by pouring liqueurs of different colors, one after another, into a glass such as a cordial glass, the combination comprising a float adapted to fit loosely into the cordial glass which has solid imperforate side walls, said float being adapted to float on the liquid in said glass, said float having means engaging said glass for holding said float in a predetermined orientation with respect to said glass so that liquid poured on said float is directed in sheet-like manner to inner surfaces of said solid imperforate side walls of the glass and flows down said inner surfaces to form a distinct liquid layer in the glass showing a distinct boundary between it and the liquid previously poured into the glass.

3,185,190
DISPENSER FOR INSTANT COFFEE AND THE LIKE
Thomas E. Crawford, 5205 Edenshire, Memphis, Tenn.
Filed Oct. 12, 1961, Ser. No. 144,691
5 Claims. (Cl. 141—360)

1. A dispenser for granular material comprising a vertically disposed hollow container having an inside wall surface defining the interior of said container, said container having an inlet for introducing granular material into said interior of said container, said container including a first bottom having an aperture therethrough, said container including a second bottom spaced below said first bottom and having a hole therethrough offset from said aperture, a block slidably disposed between said first and second bottoms and provided therethrough with a passageway of the size of a predetermined amount of granular material, said block being positioned in a normal loading position wherein said passageway is in alignment with said aperture to permit a measured quantity of granular material to move from said aperture to said passageway for measuring a predetermined amount of granular material, a pair of pegs fixedly attached to said block and depending below said second bottom for movement by a cup pushed thereagainst, said block being movable in a first direction in response to movement of said pegs by a cup, means for limiting movement in said first direction of said block to stop said block in a dispensing position with said passageway in alignment with said hole for dispensing a measured amount of granular material from said passageway through said hole, when said block is in said dispensing position said pegs being so positioned that a cup being pushed thereagainst is disposed beneath said hole whereby a measured amount of granular material dispensed through said hole is adapted to fall into the cup.



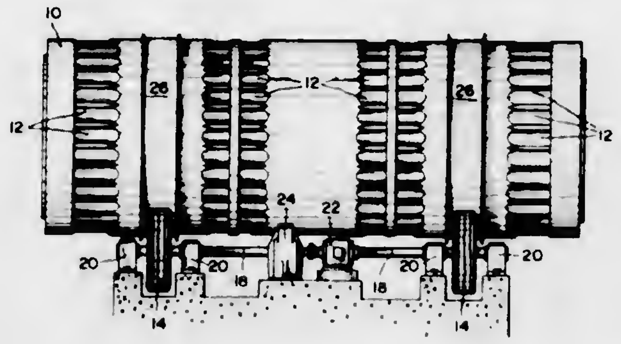
3,185,191
CHAIN SAW CUTTER BAR AND METHOD OF MANUFACTURING SAME
Emil A. Olsen, 7510 Aubrey St., North Burnaby, British Columbia, Canada
Filed July 16, 1962, Ser. No. 210,003
8 Claims. (Cl. 143—32)



1. A chain saw cutter bar comprising a flat solid bar plate having an inner end, two longitudinal edges and a curved outer end with a curved edge extending between the longitudinal edges, a continuous peripheral groove in said edges and opening outwardly therefrom adapted to receive driving lugs of a saw chain when mounted on the bar plate in the standard manner, said groove having sections in the longitudinal edges deeper than necessary for the chain lugs, a narrow groove cut in the bottom of each longitudinal section of the peripheral groove to form shoulders on opposite sides of said narrow groove, a wall secured in each longitudinal section of the peripheral groove and bearing against said shoulders to cover said narrow groove and thereby form an oil passage within the bar plate, each of said oil passages having an inlet opening out at one end thereof from the plate near the inner end of said plate and an outlet near the other end thereof opening into the peripheral groove at said curved outer end.

3,185,192
MOUNTING AND DRIVE MEANS FOR BARKING APPARATUS

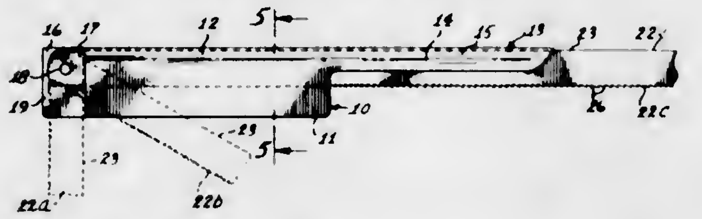
Henri A. Delcellier, Beaurepaire, Quebec, Canada, assignor to Canadian Ingersoll-Rand Co., Ltd., Montreal, Canada, a corporation of Canada
Filed Nov. 14, 1963, Ser. No. 323,835
3 Claims. (Cl. 144—208)



1. In a log debarking apparatus, the combination comprising:
(*a*) drum means rotatable about an axis;
(*b*) reinforcing and guide means connected to the drum means and axial y spaced from one another;
(*c*) rotatable means for supporting the drum means including a pair of axially spaced fluid filled tires below the drum means on each side of the axis of rotation which engage the reinforcing and guide means;
(*d*) the rotatable means including an extended rim associated with each tire to prevent displacement of the drum means in the event the associated tire collapses;
(*e*) the contacting surfaces of the tires and the reinforcing and guide means being roughened to provide positive traction therebetween; and
(*f*) drive means for rotating the drum about its axis on the rotatable means.

3,185,193
HACKSAW BLADE HOLDER

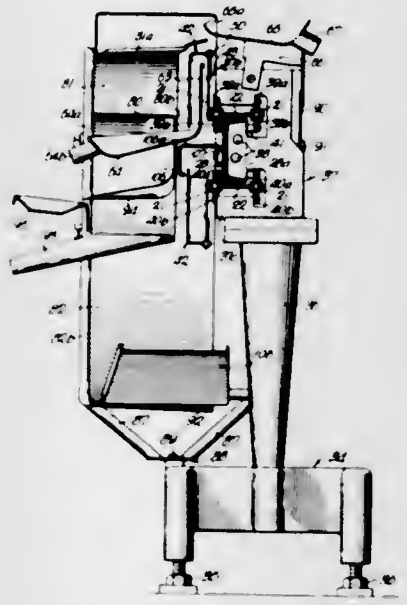
Marion B. Orr, 257 W. 9th Place S., Mesa, Ariz.
Filed Feb. 12, 1964, Ser. No. 344,391
2 Claims. (Cl. 145—31)



1. A handle for use with a hacksaw blade having:
(*a*) cutting teeth along one edge of the blade,
(*b*) a back edge opposite said cutting teeth,
(*c*) and a mounting hole in each end thereof,
(*d*) a manipulating handle adapted to be attached to said hacksaw blade including,
(*e*) a pair of laterally spaced side portions,
(*f*) facing inner surfaces on said side portions adapted to yieldingly engage side points on said cutting teeth to retain said blade in operative position in said handle,
(*g*) a loading and unloading cut-away slot formed in one of said side portions at the rear of said handle,
(*h*) and a pivot pin fixed to the other of said side portions and extending laterally in said slot adapted to receive a mounting hole in one end of said saw blade so that said saw blade may be swung about said pivot pin to and from operative position between said laterally spaced side portions of said handle whereby engagement of the side points of said teeth between the facing inner surfaces of said side portions provides the sole means for securing said saw blade in operative position in said handle.

3,185,194
EGG SEPARATING APPARATUS

Earle B. Ellis, Mission, and Carl E. Chesney, Kansas City, Kans., assignors to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware
Filed May 16, 1963, Ser. No. 280,918
16 Claims. (Cl. 146—2)



1. In an egg separating apparatus, the combination of an endless carrier having substantially horizontal, vertically spaced upper and lower flights, means supporting and driving said carrier for movement of the upper flight in a selected direction, a plurality of collecting units spaced serially along and connected with said carrier, each said unit including a pair of cup members set to one side of the carrier, the said cups in each pair upwardly open and vertically spaced during movement of the members across the upper flight, and a separating baffle located at that end of the carrier toward said selected direction and disposed between the cup members of each pair during their transition passage from the upper flight to the lower flight, said baffle operating to receive the gravity discharged contents of the advancing lowermost cup of each pair.

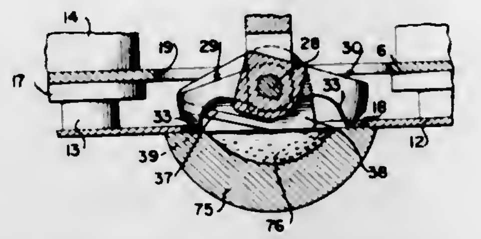
15. In an egg separating apparatus, the combination of an endless chain-type carrier, a bracket member connected with and extending to one side of the carrier, said bracket member including a frame-like element having an upper stationary bar and a lower resiliently displaceable cross member, and a cup structure releasably mounted on said frame, said cup structure including locking elements positioned to be engaged respectively by said bar and cross member and releasable from the frame by displacement of said cross member.

3,185,195
PEACH PITTER

Earl R. Anderson, Campbell, Calif., assignor to Fliper Corporation, San Ramon, Calif., a corporation of California
Original application Aug. 6, 1956, Ser. No. 602,096, now Patent No. 3,075,566, dated Jan. 29, 1963. Divided and this application Nov. 16, 1962, Ser. No. 238,234
5 Claims. (Cl. 146—28)

1. A device for pitting a drupe half having a cut face and pit adhered in the concave pit cavity therein, comprising:
(*a*) pit engaging means for engaging an outer peripheral edge of said pit at a point adjacent to said cut face;

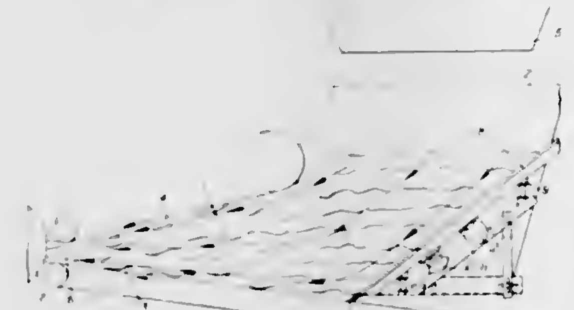
(*b*) drupe supporting means for supporting said half in a position for said engagement of said pit by said pit engaging means;



(*c*) means supporting said pit engaging means for arcuate movement into said pit cavity and transversely of the plane of said cut face and past said plane to a point adjacent to the bottom of said cavity along a path generally following the concave curvature of the surface of said cavity when said drupe half is in said position;
(*d*) actuating means connected with said pit engaging means for so moving the latter along said path whereby said pit will be ejected from said cavity by and ahead of said pit engaging means.

3,185,196
MACHINE FOR CUTTING LEAF TOBACCO

Harry Ward, London, England, assignor to Robert Legg Limited, London, England, a British company
Filed Aug. 1, 1963, Ser. No. 299,276
4 Claims. (Cl. 146—119)

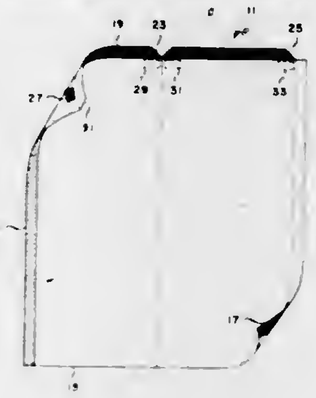


1. A tobacco cutting machine which comprises a shredder, a mouthpiece adjacent the shredder, a substantially horizontal duct leading to the mouthpiece and of progressively reducing depth, its base being defined by a first conveyor belt, a feeding area to the duct through which tobacco may be fed to the duct and a compactor comprising a surface mounted at an obtuse angle to the direction of movement of the belt and transversely to the belt such that the vertical projection of the surface is substantially co-extensive with the feeding area, and means for imparting orbital movement to the surface.

3,185,197
MODULAR PROTECTIVE COVER

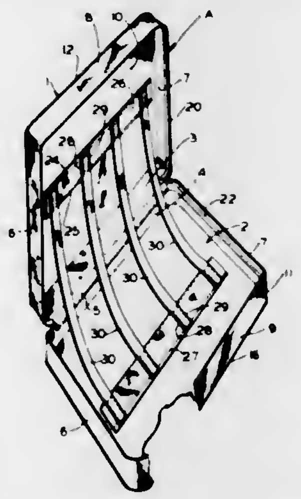
Lloyd W. Spiro, Canoga Park, and Frank G. Peterson, Sherman Oaks, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Mar. 12, 1963, Ser. No. 264,618
1 Claim. (Cl. 150—52)

A flexible protective cover comprising first and second side panels each of which has front and back sides, upper and lower horizontal edges and right and left vertical edges, the front side having a first belt disposed along the left vertical edge thereof and a second belt disposed along the upper horizontal edge thereof, the back side having a third belt disposed along the right vertical edge thereof, the back side including first, second, third and fourth latching members disposed adjacent to and below said upper edge wherein said first and fourth members are respectively adjacent said right and left vertical edges and said second and third members are disposed in spaced apart relation and adjacent the center portion of said upper horizontal edge, a top panel having a belt disposed about the entire periphery thereof, the belt of said top panel, said first belt and said first and second latching members being made of small flexible hooks, said second and third belts and said third and fourth latching members being made of a fibrous material wherein the fiber and hooks may be connected and disconnected by the application of compression and tension forces respectively, the first belt of said first panel being operatively connected to the third belt of said second panel, the third belt of said first panel being operatively connected to the first belt of said second panel, the second belts of said first and second panels being operatively connected to the belt disposed about the entire periphery of said top panel, whereby each of said first and second panels may be disconnected and folded back upon itself such that the first and fourth latching members and second and third latching members are respectively connected to support the disconnected portion of each panel.



3,185,198
FIRE FIGHTING DEVICES

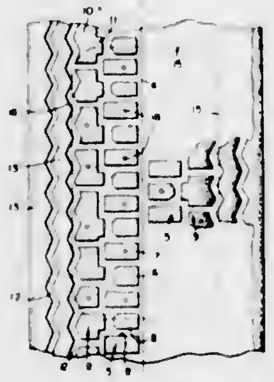
Eugene D. Bryan, 8830 Jordan, St. Louis 47, Mo.
Filed Sept. 23, 1963, Ser. No. 310,674
6 Claims. (Cl. 150—52)



1. A device for retaining and transporting mattresses and similar large and bulky ignitable elements, said device comprising a foldable container constructed of a flexible material which is capable of being folded a plurality of times into a small compact unit, said container being divided into two sections which are adjoined and pivoted with respect to each other along a common margin, said sections having spaced opposed walls, securement means operatively associated with at least one of said sections along the remaining margins thereof for securing each of said sections, support strips secured to and extending lengthwise along each of said opposed walls, and a plurality of flexible straps operatively secured to the support strips on each of said opposed walls for maintaining said ignitable element in spaced relation to the wall having said common margin.

3,185,199
TREAD STRUCTURE FOR PNEUMATIC VEHICLE TIRES

Georg Klingemann, Hannover-Herrenhausen, and Friedel Klöhn, Hannover, Germany, assignors to Continental Gummi-Werke, Aktiengesellschaft, Hannover, Germany
Filed Feb. 20, 1963, Ser. No. 259,972
Claims priority, application Germany, Feb. 22, 1962, C 26,295
4 Claims. (Cl. 152—209)



1. A pneumatic tire having a tread strip provided with circumferential ribs arranged at the marginal portions only of said tread strip and separated from each other by circumferential groove means, said ribs having a width equalling a multiple of the width of said groove means so as to be relatively stiff, said tread strip also being provided with circumferentially extending rows of blocks arranged between the innermost ones of said ribs and separated from each other by grooves extending in the direction toward the respective adjacent row of blocks, at least some of said blocks differing in length from each other and having their longitudinal extension substantially transverse to the circumferential direction of said tire, said circumferential ribs forming marginal tread surfaces of rounded cross-sectional contour with the curvature thereof in a direction transverse to the direction of rotation of said tire, said circumferential ribs being so arranged that under normal conditions of operation of the tire at least the major surface portion of said ribs will at all times throughout each complete revolution of the tire be set back with regard to the road contacting surface of said tire so that under normal conditions of operation of the tire, the said ribs will be free from contact with the road surface over which the tire moves, said ribs being adapted to engage said road surface in response to said tire driving over a surface inclined in a direction transverse to the driving direction of the tire.

3,185,200
COMBUSTION CHAMBER WITH HOLLOW DUCT AND MEANS TO RECIRCULATE COMBUSTION PRODUCTS THEREAROUND

Rallston M. Sherman, Glastonbury, Conn., assignor to The Silent Glow Oil Burner Corporation, Hartford, Conn., a corporation of Connecticut
Continuation of application Ser. No. 127,197, July 27, 1961, which is a division of application Ser. No. 439,654, June 28, 1954, now Patent No. 2,994,367, dated Oct. 1, 1961. This application June 16, 1964, Ser. No. 376,302
1 Claim. (Cl. 158—1)

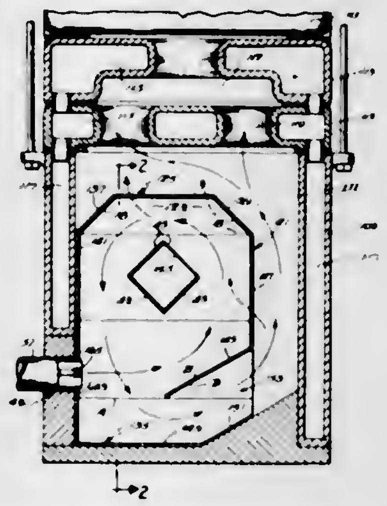
For installation and use in a fluid heating medium heater of the type having a lower section defining a firebox with enclosing bottom and vertical walls and a top opening to an upper heater section containing fluid medium space and flue provision for passage of combustion products from the firebox, a combustion chamber for installation in such firebox for burning mixtures of fuel and air in the chamber and for discharging the products of substantially complete combustion from the combustion chamber through surrounding space of the firebox and upwardly into such upper heater section,

said combustion chamber comprising a box-like structure including bottom, top, side and end walls formed of heat refractory metal sheets adapted to be heated to incandescence and being shaped and proportioned for installation within such firebox upon one bottom wall thereof and in spaced relation to the vertical walls thereof at least at the side walls and one end wall of the chamber and with the chamber top wall spaced below the top of the lower section of the heater so as to provide flow passage for combustion products discharging from the combustion chamber and between it and the firebox vertical walls to the upper heater section,

said chamber structure including inwardly inclined side wall portions forming a generally horizontal, elongate, trough-like, flow-directing passage extending between said chamber end walls,

means at one said end wall of said chamber for projecting initially horizontally into and along the length of said passage a primary flame blast of burning mixture of fuel and combustion air, said primary flame burning mixture having combustion products and heating the walls of said passage to incandescence,

inclined first baffle means closing said trough-like passage at the other said end wall of said chamber and for deflecting said blast vertically from said trough-like passage,



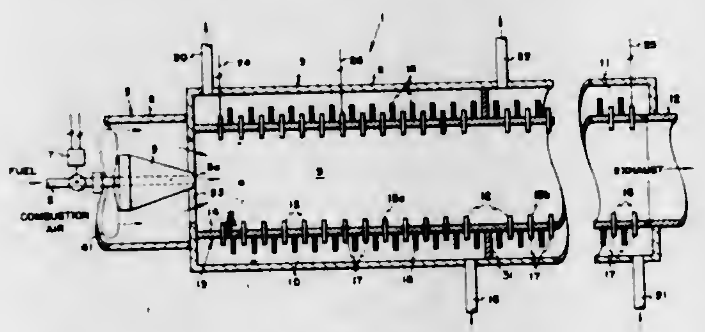
said chamber structure including a tubular cross member extending horizontally across it vertically and transversely of said trough-like passage and joined at its opposite ends to said chamber side walls, said cross member formed to present downwardly and upwardly facing inclined baffle surfaces,

said baffle surfaces of said cross member forming with said chamber end walls and of one of said chamber top and bottom walls a passage turning said blast and the products of combustion thereof vertically from said first baffle means and then horizontally and then vertically again in a closed loop flow in which said combustion products are returned to cross said trough-like passage, passing through and around said primary flame and between it and said incandescent-heated trough-like passage walls, said primary flame and said trough-like passage walls thereby acting upon the looped back combustion products to raise the temperature of said combustion products sufficiently to produce a secondary flame by which the residual oxygen of said combustion products burns the residual fuel values of those products,

and means defining an exit passage opening from said chamber into said firebox, said exit passage arranged to receive said closed-loop-returned combustion products following their said cross flow through said primary flame and trough-like passage and to discharge said combustion products to the exterior of said combustion chamber and into said surrounding space of said firebox and thereupon into said upper section of said heater.

3,185,201
COMBUSTION DEVICE WITH THERMO-ELECTRICALLY POWERED BURNER

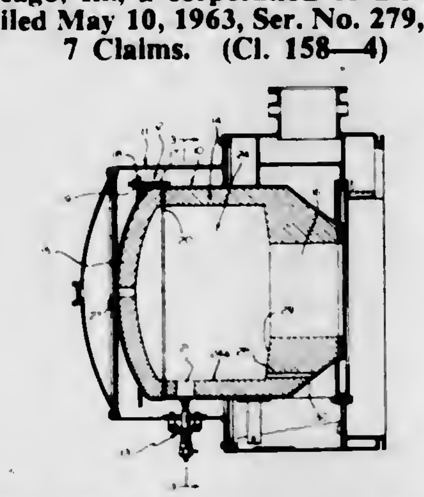
Walter A. Herbst, Union, Robert L. Weeks, Scotch Plains, and James A. Wilson, Stanhope, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed July 6, 1961, Ser. No. 122,268
4 Claims. (Cl. 158—4)



1. In apparatus of the character described, the combination which comprises a power operated liquid fuel burner, housing means adjacent said burner and enclosing a wall which defines a combustion chamber for said burner, said wall being spaced from said housing, partition means between the said wall and housing so arranged as to provide partitioned first and second heat exchange compartments, said combustion chamber having first and second zones adapted to operate at different temperature ranges, said first heat exchange compartment being adapted to contain a heat exchange fluid and being located adjacent said first zone, a first series of thermoelectric couple means operable to produce maximum electrical output within a first temperature range having hot junctions within said first zone and cold junctions in said first heat exchange compartment, said second heat exchange compartment being adapted to contain a heat exchange fluid and being located adjacent said second zone, a second series of thermoelectric couple means operable to produce maximum electrical output in a second and different temperature range having hot junctions within said second zone and cold junctions in said second heat transfer compartment, and connecting means for combining the power outputs of both said series to supply operating power to the burner.

3,185,202
BURNER FOR A BOILER

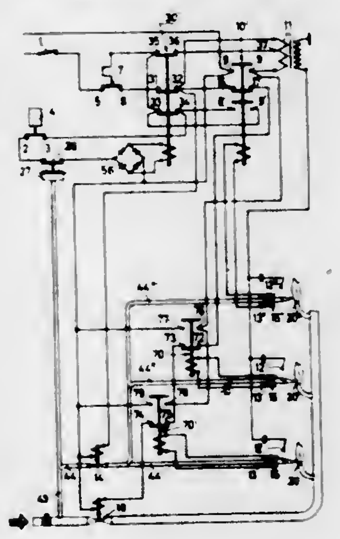
Gerald T. Mitchell, Wilmette, Ill., and Richard Cunningham, Jr., Houston, Tex., assignors to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed May 10, 1963, Ser. No. 279,463
7 Claims. (Cl. 158—4)



1. A burner for a boiler comprising, a fire pot having a cylindrical body defining a combustion chamber, a dome-shaped end wall closing one end of said body and a choke at the other end of said body, a plurality of combustion throats having inner and outer ends and being circumferentially and equally spaced around said body along a single transverse plane spaced closely adjacent to said end wall, and a burner nozzle for each throat, the longitudinal axis of each burner nozzle and each throat being coaxial and being angularly displaced from a radial line projecting from the longitudinal axis of the fire pot and intersecting the axis of the associated throat and burner nozzle at the inner wall of the fire pot so that each burner nozzle is arranged to direct its spray pattern across the spray pattern of an adjacent spray nozzle, means positively delivering combustion air through said throats, and means for providing an air curtain along the inside walls of said body to cool same, said air curtain means including a plurality of holes extending through said body at the choke end thereof and being parallel to the longitudinal axis of said body, said holes opening adjacent to the inside walls of the body.

3,185,203
FULLY AUTOMATIC FLAME PROTECTION DEVICE

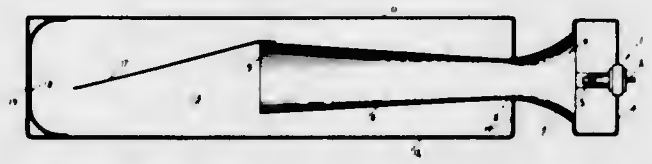
Richard Hassa, Hasbergen, Kreis Osnabruck, Germany, assignor to G. Kromschroder A.G., Osnabruck, Germany, a German corporate body
Filed Apr. 25, 1963, Ser. No. 275,776
Claims priority, application Germany, Apr. 26, 1962, K 46,573
3 Claims. (Cl. 158—125)



1. In an automatic protection device adapted to be connected to electric mains and for a plurality of main gas burners each having a pilot gas burner with electrically operated ignition means, electrically operated main gas valve means to control the flow of gas to the main burners, electrically operated pilot gas valve means to control the flow of gas to the pilot burners, and burner operation sensing means associated with each pilot burner, the improvement comprising: a thermoelectric relay for each pilot burner, each relay including an actuating coil, a normally opened contact and a normally closed contact, each coil being connected to the respective sensing means to be energized upon the respective sensing means being heated by the respective pilot burner; monitor relay means including an actuating coil and normally opened contact means; and circuit means including switch means connected to said monitor relay means and adapted to be connected to the mains to energize the monitor relay coil when the switch means is closed, said normally closed contacts of each thermoelectric relay being connected in parallel with each other and in series with said ignition means and with said normally opened contact means of said monitor relay means to energize said ignition means when said monitor relay means is energized and when any one of the normally closed contacts is closed, said normally opened contacts of the thermoelectric relays

being connected in series with each other and in series with said main valve means and with said normally opened contact means of said monitor relay means to open said main valve means only when said monitor relay means and all of said thermoelectric relays are energized; said pilot valve means being connected to said normally opened contact means of the monitor relay means to be energized when the monitor relay means is energized.

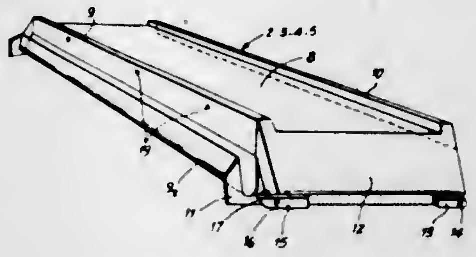
3,185,204
RADIANT GAS FIRED BURNER
Abraham P. Loeb, Penn Township, Allegheny County, and Morgan P. O'Laughlin, Pittsburgh, Pa., assignors to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 14, 1961, Ser. No. 159,316
2 Claims. (Cl. 158—114)



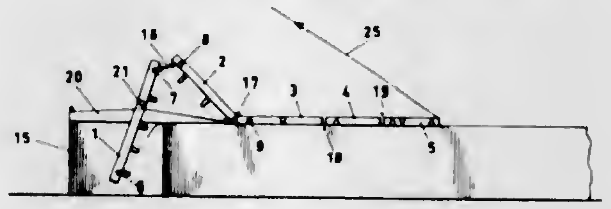
1. An infrared gas heating burner, comprising,
a manifold portion of substantially rectangular shape having top, side and end walls defining a gas and air mixture emitting bottom opening,
peripheral flange means on said side and end walls about said opening,
a venturi type gas and combustion air mixing tube disposed within said manifold,
said mixing tube being disposed adjacent said manifold top wall with the inlet end of the tube projecting through one end wall of the manifold and the outlet end of the tube disposed in spaced relation to the opposite end wall of the manifold,
an open mesh screen mounted upon said manifold peripheral flange, and
a second open mesh screen overlying the first named screen in outwardly spaced relation thereto and connected with said manifold,
means for deflecting the stream of air-gas mixture issuing from the outlet end of the mixing tube towards the juncture of the adjacent manifold end and side walls for reversing the flow of the mixture rearwardly of the manifold to effect substantially uniform pressure of said mixture over the entire adjacent face of the manifold screen, comprising a plate like portion extending from said manifold top wall and adjacent one side of the tube outlet opening for the height thereof and forwardly from said opening to adjacent the juncture between the adjacent end wall and opposide side wall, and a connection between said plate like portion and the adjacent tube.

3,185,205
REMOVABLE ROOF ON RAPID-MOVING VEHICLES
René Caillet, 26 Rue de la Republique, Saint-Germain-en-Laye, France
Filed Jan. 9, 1961, Ser. No. 81,425
Claims priority, application France, Jan. 19, 1960, 816,017
2 Claims. (Cl. 160—133)

1. In a removable roof assembly for vehicles, a series of transverse roof panel units arranged in a longitudinal series, the longitudinal dimension in the direction of arrangement of said series decreasing progressively from the initial terminal unit to the final terminal unit to permit nesting superposition thereof, each said panel unit having a central flat face, lateral faces on said unit extending in the direction in which said units are arranged, hinge means mounted on said lateral faces and adapted to hingedly interconnect adjacent ones of sad units in said series, said lateral faces sloping obliquely to the plane of said central flat face, and acting as rain baffle plates, each said unit being provided on a first one of its faces which adjoins an adjacent said unit in said series with a gutter structure having a re-entrantly turned edge adapted to collect rain falling on its said central flat face but extending below said central flat face without interferring with tight engagement of adjacent faces of said units, and each said unit further being provided on the second one of its faces which adjoins an adjacent said unit in said series with a heavy re-enforcing face porton extending perpendicularly to said central flat face thereof.



3,185,206
DEVICE FOR STOWING HATCH COVERS ON SHIPS
Carl Erik Ingemar Dahlin, Goteborg, Sweden, assignor to von Tell Trading Co. AB, Goteborg, Sweden, a corporation of Sweden
Filed Oct. 3, 1961, Ser. No. 142,571
Claims priority, application Sweden, Nov. 10, 1960, 10,797/60
4 Claims. (Cl. 160—193)

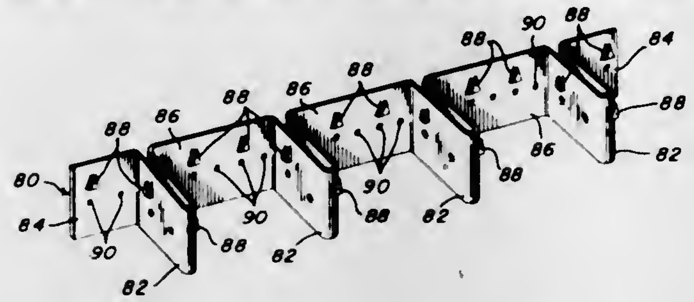


1. In a hatch cover of the kind comprising a number of interconnected cover sections which are movable on carrying roller means in an essentially horizontal position along a coaming around the hatch way so as to be stowed in vertical position one section beside the other one at one end of the hatch way, said coaming at this end having inclining roll paths for cooperation with pivot rollers on said cover sections, the cover section situated next to said stowing end being longer than the next section, said cover sections being interconnected by means of hinges and in pairs decreasing in length towards the end of the hatch way situated opposite said stowing end and said pivot rollers on every second cover section situated in such a way that at a pulling of the section situated farmost or next farmost from said stowing end by a pulling means attached to the section the rollers on said longest cover section situated next to said stowing end leave the hatch coaming and its pivot rollers run on said roll paths, this cover section thereby capable of being tilted downwards by gravity with its end situated closest to said stowing end and thereby to swing the corresponding end of the adjacent cover section upwards, the latter further capable of swinging the adjacent cover section with its adjacent end downwards when the pivot rollers on this section run up on said roll paths.

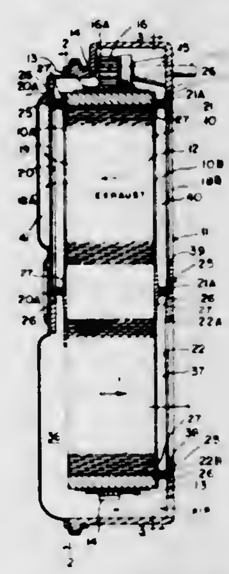
3,185,207
DECORATION STRUCTURE
David R. Humble, 4241 Brenan Ave., Dayton, Ohio
Filed July 2, 1962, Ser. No. 206,866
3 Claims. (Cl. 160—382)

1. Support structure for cloth-like sheet material, said structure comprising,

a generally flat strip of rigid material having at least two protuberances extending angularly outwardly from its surface between the ends thereof, there being flat attachment portions of said strip between said protuberances and adjacent the ends of said strip outwardly of said protuberances,
said flat portions being substantially co-planar with one another and each being provided with apertures for attaching said strip to a support surface,
the strip being provided with a plurality of pointed, outward extending projections at spaced positions along the length thereof, there being projections on each said flat portion, on the outermost end of each protuberance, and adjacent the angles formed between at least one side of the protuberances and the adjacent flat portion,
the projections being adapted to support the sheet material along the length of the strip as the protuberances cause a plurality of spaced folds to be formed in the sheet material.

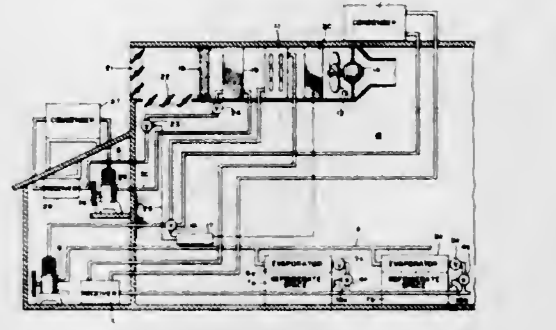


3,185,208
REGENERATOR SLIDING SEALS
Richard Chute, Huntington Woods, Mich., assignor to Continental Motors Corporation, Muskegon, Mich., a corporation of Virginia
Filed Nov. 13, 1961, Ser. No. 151,945
6 Claims. (Cl. 165—9)



1. In a rotary regenerative heat exchange apparatus having a housing and a matrix rotatably carried in said housing, a sealing means disposed between said housing and said matrix, said sea ing means comprising
(*a*) a sealing strip provided with a face portion and leg portion,
(*b*) a longitudinal slot being provided in said leg portion of said sealing strip,
(*c*) a resilient spring strip comprising a base portion secured to said housing, a medial arcuate portion integral with said base portion and an end portion integral with said medial portion,
(*d*) said end portion being return bent to provide a pair of spaced substantially parallel resilient strips,
(*e*) said spaced strips being received by said slot and resiliently engaging the sides thereof whereby said sealing strip is removably secured to said spring strip and said face portion is resiliently urged thereby into yielding contact with said matrix.

3,185,209
REFRIGERATION AND HEATING SYSTEM
Lester K. Quick, 795 W. 8th Ave., Eugene, Oreg.
Filed July 14, 1961, Ser. No. 124,117
8 Claims. (Cl. 165—30)

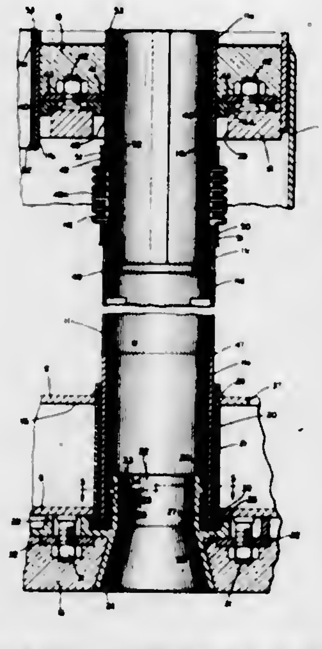


1. In an integral refrigeration and heating system for maintaining a room within a predetermined temperature range and refrigerating at least one refrigerated space including a compressor for compressing a refrigerant gas, a first condenser in communication with the room, a second condenser positioned outside the room, said condensers for condensing the compressed refrigerant gas, an evaporator positioned near said first condenser and in communication with the room, means for circulating air past the first condenser and said evaporator, thermostatically controlled valve means associated with the room for selectively feeding the compressed refrigerant gas to said first condenser in response to the room temperature, second thermostatically controlled valve means associated with the room for directing compressed-condensed refrigerant to the said evaporator for evaporating the said refrigerant to absorb heat from the air circulating past said evaporator in the event the first valve means is diverting all the compressed refrigerant to the second condenser and the air temperature of the room exceeds the maximum predetermined temperature, and at least one other evaporator positioned in each refrigerated space for evaporating compressed-condensed refrigerant to absorb heat from the refrigerated space.

3,185,210
HIGH TEMPERATURE RECUPERATOR
Heinz A. Kuhne and Jobst W. Seehausen, Pittsburgh, and Theodor von Gebhardi, Allison Park, Pa., assignors to The American Schack Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed May 23, 1962, Ser. No. 197,153
1 Claim. (Cl. 165—134)

In a high temperature recuperator wherein a plurality of heat exchange tubes extend through a heat exchange chamber formed by a vertical shell, wherein the upper and lower ends of the tubes are detachably mounted in upper and lower tube sheets at opposite ends of the chamber, wherein the shell has inlet and outlet ports for the heated medium, wherein a head wall is provided at one end of the shell forming an inlet head chamber on the side of one tube sheet opposite the shell chamber and another head wall is provided at the other end of the shell forming an outlet head chamber on the side of the other tube sheet opposite the shell chamber, wherein the inlet head chamber has an inlet port for the heating medium and the outlet head chamber has an outlet port for said medium, the improvement including a tube member on the lower end of each tube detachably mounted on the lower tube-sheet at the entry end of the tube, said member

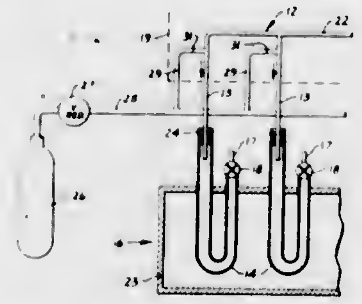
having an inner tubular wall forming a central bore and extending into the end of the tube and having an integral flared wall extending outwardly from the inner tubular wall and beyond the end of the tube, the tube inlet member also having a radial annular flange forming a shoulder facing the flared wall and having an outer tubular portion concentric with said inner tubular wall and forming a tube-receiving annular trough with the inner tubular wall, the inner tubular wall having a diameter less than and forming an annular clearance with the entry end of the tube, the tube and inner tubular wall having detachable interlocking members extending across the annular clearance, the outer tubular wall being shorter than the inner tubular wall and forming a tube-sheet contact surface on the end of said outer tubular wall opposite the shoulder, clamping means engaging the shoulder of the flange for detachably mounting the tube inlet member on the tube sheet with the tube-sheet contact surface against the tube sheet, and packing means within the clearance and the annular trough for sealing the interlocked members together.



3,185,211
FRACTION COLLECTOR

Wiley C. Crawford, Jr., San Francisco, and Richard H. Gundelfinger, Berkeley, Calif., assignors, by mesne assignments, to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.

Filed Nov. 29, 1962, Ser. No. 240,924
4 Claims. (Cl. 165—71)

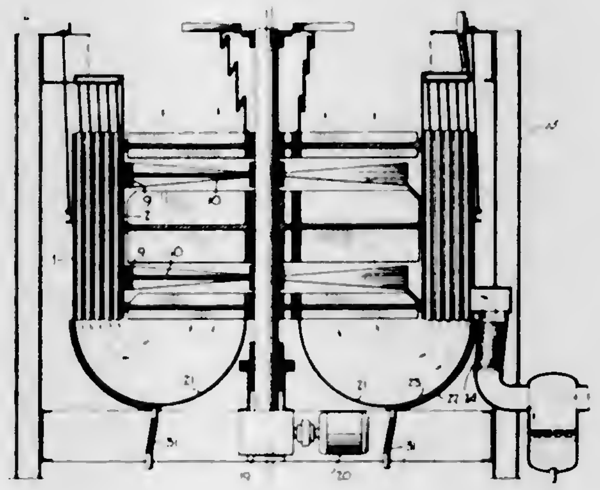


1. An automatic fraction collector for collecting fractions of gas components from the effluent stream of a gas chromatograph delivered at elevated temperature in a plurality of containers at low temperatures, comprising a heated manifold having an inlet duct for receipt of the effluent stream of a gas chromatograph and a plurality of outlet ducts, a plurality of containers in communication with said outlet ducts, means for supplying an inert purge gas to the outlet ducts in the heated manifold, means for cooling said containers below the temperature of said manifold to provide condensation of gas components therein, outlets on said containers, and valves on said outlets for controlling the flow of the effluent stream and purge gas through said containers.

3,185,212
FLUID HEAT TRANSFER SYSTEM

William H. Nebgen, Woodside, N.Y., assignor of two-fifths to Frank A. Howard, New York, N.Y.; Irma Amelia Howard, Frank A. Howard, Jr., and The Chase Manhattan Bank, executors of said Frank A. Howard, deceased

Filed Apr. 22, 1963, Ser. No. 274,679
14 Claims. (Cl. 165—86)



1. An apparatus for the exchange of heat between two fluids comprising a stationary support carrying a movable heat exchanger assembly, a shaft having an axis fixed with respect to the support and passing centrally through the assembly, eccentric bearings between the shaft and the assembly, liquid conduits of circular cross section carried by the assembly with their axes remote from and parallel with the shaft, means for introducing liquid into one end of such conduits and means for withdrawing it at the other end at a rate to prevent the conduits from filling with liquid, means for passing another fluid through the assembly in heat exchange relation to the liquid flowing through the conduits, connections between the assembly and the support for preventing rotation of the assembly around its own axis while permitting the assembly to gyrate with respect to its support, and means for rotating the shaft at a rate to set up centrifugal forces resulting from the gyratory motion to control the movement of liquid bodies contained in such partially filled conduits.

3,185,213
COMPACT AIRTYPE EXHAUST STEAM CONDENSER SYSTEM

Kurt Wilhelm Wartenberg, Kemmansweg 14, Kettwig (Ruhr), Germany

Filed Mar. 15, 1961, Ser. No. 95,963
Claims priority, application Germany, Mar. 22, 1960, D 32,924
9 Claims. (Cl. 165—124)

1. A device for condensing a vapor by heat exchange with a cooling gas comprising, in combination:

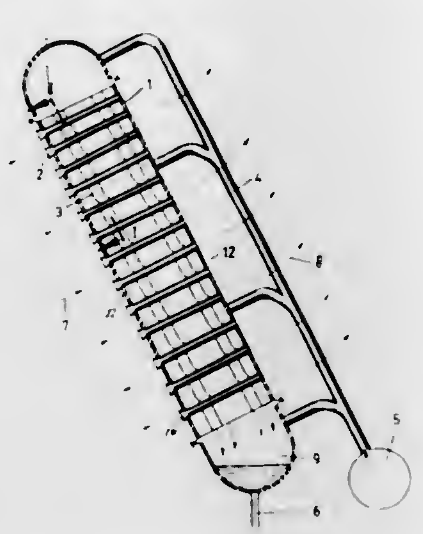
(*a*) a container enclosing a cavity therein;

(*b*) feeding means for feeding a condensable vapor to said cavity;

(*c*) collecting means for collecting condensed liquid from said cavity in a bottom portion of said container;

(*d*) a condensing tube passing through a portion of said cavity above said bottom portion and having a vertically extending outer wall in said cavity;

(*e*) pressure means for passing a cooling gas through said tube, whereby said vapor is condensed to liquid on a portion of said wall and said liquid is urged by gravity to flow downward along the remainder of said wall; and



(*f*) baffle means on said wall for deflecting said liquid from said remainder of said wall into a path leading to said collecting means and by-passing said remainder.

3,185,214
RECOVERY OF OIL FROM SUBTERRANEAN FORMATIONS

George G. Bernard and Orrin C. Holbrook, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio

No Drawing. Filed Mar. 4, 1958, Ser. No. 718,954
1 Claim. (Cl. 166—9)

The method of recovering petroleum oil from natural reservoirs consisting in injecting through an injection well into the oil-containing formation a solvent miscible with the oil in the reservoir in an amount equivalent to about 5–30 volume percent of the oil in the reservoir, said solvent containing in solution from about 20 to 5000 parts per million of a first reactant selected from the group consisting of ricinoleic acid and ricinoleic acid amine, injecting into the reservoir, immediately after said first reactant, an aqueous solution of a second reactant, namely, ethylene oxide, in an amount of 5 to 30 volume percent of the oil in the reservoir, said second reactant being capable under reservoir conditions of reacting with said first reactant to form a surfactant and being present in an amount about stoichiometrically equivalent to the first reactant, and thereafter injecting water free of surfactant in sufficient quantity to produce oil from the reservoir.

ERRATUM

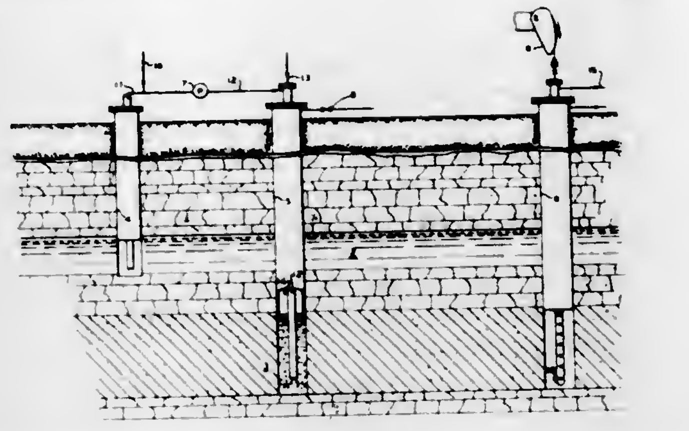
For Class 166—9 see:
Patent No. 3,185,634

3,185,215
CONTROLLING BACTERIA WITH HYDROCARBON GASES

Donald O. Hitzman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed May 1, 1959, Ser. No. 810,451
11 Claims. (Cl. 166—9)

1. A method for preventing the of growth of sulfate-reducing bacteria in a closed water system under pressure which comprises treating said water by incorporating into and retaining therein, for a time during which growth is to be inhibited, a quantity of a gas consisting essentially of a normally gaseous paraffin hydrocarbon sufficient to inhibit the growth of said sulfate-reducing bacteria in said water.



3,185,216
USE OF BACTERIA IN THE RECOVERY OF PETROLEUM FROM UNDERGROUND DEPOSITS

Donald O. Hitzman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 26, 1962, Ser. No. 247,376
12 Claims. (Cl. 166—42)

1. A method for the production of petroleum from underground deposits without plugging of the petroleum-containing formation which comprises:

drilling a well through a petroleum-bearing formation and a water-bearing formation;

inoculating said water-bearing formation with a microorganism which grows at the oil-water interface to facilitate the release of said petroleum;

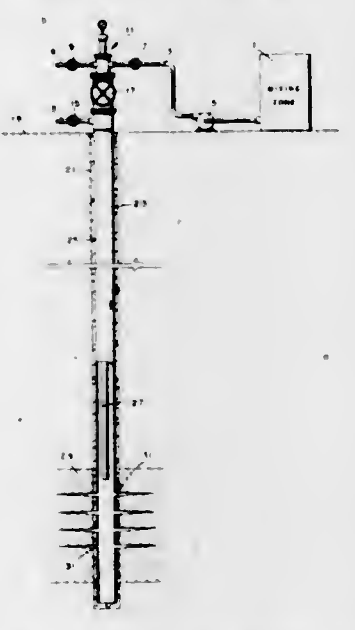
plugging said water-bearing formation to shut off the flow of water therefrom; and

producing said petroleum.

3,185,217
WELL TREATMENT TO REMOVE PERMEABILITY BLOCK

Fred A. Brooks, Jr., and Joseph G. Richardson, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed May 20, 1963, Ser. No. 281,692
6 Claims. (Cl. 166—42)



1. The method of restoring production of earth formation fluids through a well bore penetrating a hydrocarbon productive earth formation blocked by a water and oil emulsion surrounding a borehole, comprising:

admixing a quantity of water with 1 to 8 volumes of oil per volume of water, from .25 vol. percent to 5 vol. percent of an anionic surfactant, from .25 vol. percent to 5 vol. percent of a nonionic surfactant having a cloud point temperature less than and within 10 degrees of the temperature of the earth formation, and 0 to 4 weight percent of a film strengthening agent to form a viscous oil-in-water emulsion;

injecting the oil-in-water emulsion into the formation;

incubating the emulsion in the formation until the emulsion reverts to a low viscosity fluid; and

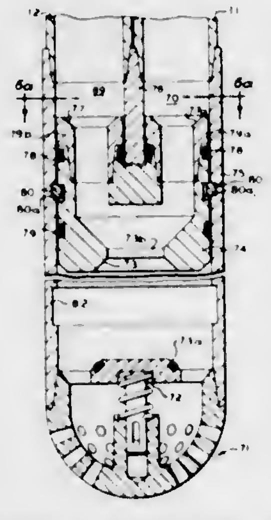
producing the resulting low viscosity fluid from the well to subject the native emulsion to the action of surfactant from the oil-in-water emulsion remaining in the formation.

3,185,218
CEMENT REVERSING OUT TOOL FOR CASINGLESS COMPLETIONS

Robert S. Hoch, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Original application Jan. 25, 1960, Ser. No. 4,537, now Patent No. 3,086,592, dated Apr. 23, 1963. Divided and this application Jan. 25, 1963, Ser. No. 253,869

6 Claims. (Cl. 166—156)



1. A valve structure comprising, in combination, a body member having a pair of inlet conduits the axes of which are vertically positioned; a wall separating said conduits from each other; a third and outlet conduit below said wall providing a passageway from one inlet conduit to the other; a slidable sleeve member extending from said outlet conduit into the inlet conduits and upward beyond the lower end of said wall and closing said passageway except thru said sleeve, the ends of said sleeve member extending into the inlet conduits being provided with valve seating surfaces; a separate valve plug insertable in each inlet conduit and positionable on said seating surfaces, the valve plugs being adapted upon exertion of fluid pressure downward upon the plugs to seat against said seating surfaces and force said sleeve member downward beyond the lower end of said wall thereby opening said passageway below the lower end of said wall from one inlet conduit to the other; and pressure releasable means holding said sleeve member in the position described.

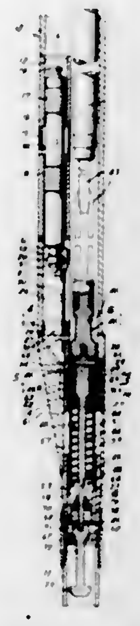
3,185,219
SHIFTING TOOL FOR VALVES

George G. Grimmer, Dallas, Tex., and Harry B. Schramm, deceased, late of Dallas, Tex., by Josephine Schramm, executrix, Dallas, Tex., assignors, by mesne assignments, to Otis Engineering Corporation, a corporation of Delaware

Original application June 23, 1958, Ser. No. 743,646, now Patent No. 3,100,452, dated Aug. 13, 1963. Divided and this application Nov. 9, 1962, Ser. No. 252,540

6 Claims. (Cl. 166—215)

3. A shifting tool including: an elongate mandrel; tubular carrier means longitudinally slidably mounted on said mandrel; locking means mounted on said carrier means for movement between retracted and expanded positions relative thereto; said mandrel having means disposed when said carrier means is in a first longitudinal position on said mandrel to allow movement of said locking means to retracted position; said mandrel having means thereon engageable with said locking means for holding said locking means in expanded position when said carrier means is in a second longitudinal position on said mandrel; and latch means mounted on said mandrel and engageable with said carrier means for releasably holding said carrier means in said first position and releasable to permit said carrier means to move to said second position on said mandrel.

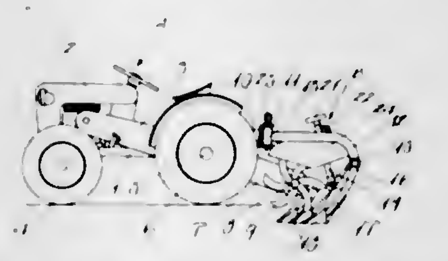


3,185,220
PLOW DEVICE

Tatsuo Tanoue, 2222 Oaza, Nakafuri, Hirakata-shi, Osaka, Japan

Filed Dec. 16, 1963, Ser. No. 330,681

6 Claims. (Cl. 172—66)



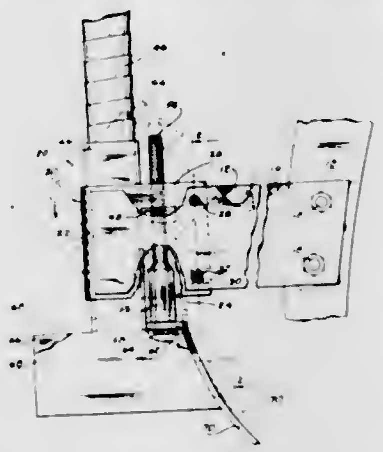
1. A plow device comprising: a plowbeam, a shaft rod connected to said plowbeam, a plurality of moldboard-plows, supporting arms connecting said moldboard-plows to said shaft rod, said moldboard-plows arranged with the central moldboard-plows positioned foremost and the front ends of the remaining moldboard-plows arranged progressively to the rear of the central moldboard-plow forming a V with the central moldboard-plow at the center of the V, the central moldboard-plow having mounted thereon a first moldboard facing to one side and a second moldboard facing to the opposite side, the remaining moldboard-plows having mounted thereon at least one moldboard facing away from the central moldboard-plow, a rotary cultivating member forward of said moldboard-plows having a plurality of rotary blades mounted thereon, at least one rotary blade adjacent each moldboard in the direction which the moldboards face, the rotary blades adjacent the outer moldboards being angularly bent in a direction opposite from that direction which their adjacent moldboard faces, the remaining of said rotary blades adjacent said moldboards being angularly bent in the same direction as that which their adjacent moldboards face, the rotary blades adjacent the moldboards of the central moldboard-plow extending rearwardly during a portion of their rotary movement to a point rearward of the front end of the central moldboard-plow.

3,185,221
TRIPPABLE FURROW OPENER

Malcolm E. Wright, Baton Rouge, La., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin

Filed Jan. 23, 1964, Ser. No. 339,666

7 Claims. (Cl. 172—270)



1. In a seed furrow opener construction the combination of a pair of

spaced plates, yoke means between the plates having side portions and a rear portion connecting said side portions, said side portions being in face-to-face contact with said spaced plates, an

opener shank fixed in relation to said yoke means, and

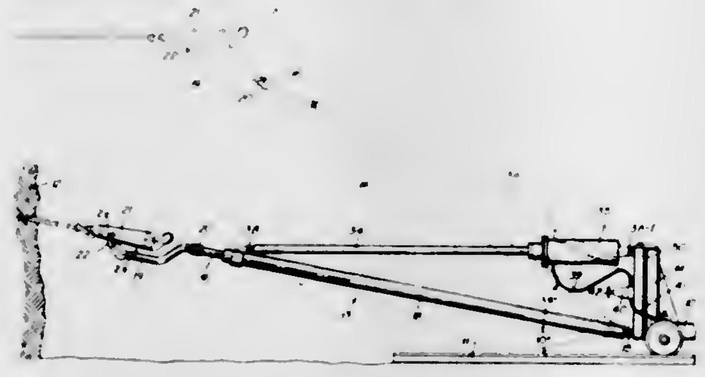
means clamping said side portions in frictional contact with said spaced plates to maintain said yoke means and said shank in position in opposition to normal soil reactions, but to provide for slipping of said yoke means for movement to relieve said shank, said yoke means and said plates from destructive stress if the opener hits an obstruction.

3,185,222
EXTENDIBLE AND RETRACTABLE MOUNTING FOR ROCK DRILLS

Paul C. O'Leary, Salt Lake City, Utah, assignor to Machinery Center, Inc., Salt Lake City, Utah, a corporation of Utah

Filed May 31, 1961, Ser. No. 113,896

8 Claims. (Cl. 173—44)



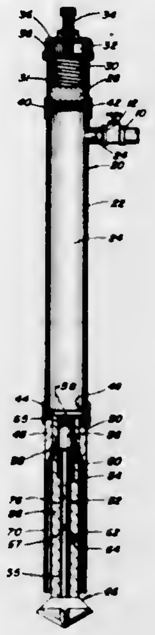
8. A mounting for rock drills, including support means; an extensible and retractable leg articulatively attached to said support means and having one end extending as a drill mount; and counterbalancing means, comprising a member pivotally connected to said leg and extending to said support means, and a counterbalancing device, said counterbalancing means holding the leg member in any extended position thereof to which it is manually moved.

3,185,223
FLUID ACTUATED IMPACT DEVICE

Donald A. Uhl, Columbus, Ohio, assignor of fifty percent to Marlowe D. Melvin, Evansville, Ind.

Filed July 6, 1962, Ser. No. 207,911

10 Claims. (Cl. 173—125)



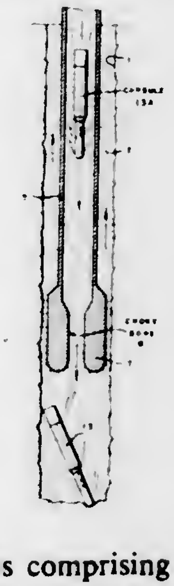
1. An impact device comprising, in combination, housing means including inner cylindrical wall means forming a chamber provided with an inlet port in the upper portion of said housing means, outlet port means of larger area than said inlet port, a first valve portion at said outlet port, and a hammer portion; means forming a resilient wall exposed to fluid pressure in said chamber; a piston valve and rod assembly slideably mounted for axial movement in the lower portion of said housing means and including an upper end forming a second valve portion cooperating with said first valve portion of said housing means and an anvil portion disposed below said hammer portion for receiving impact therefrom upon reciprocation of said housing means relative to said piston valve and rod assembly, the top surface of said upper end of said piston valve and rod assembly being exposed to fluid pressure in said chamber.

3,185,224
APPARATUS FOR DRILLING BOREHOLES

Leon H. Robinson, Jr., Houston, Tex., assignor, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware

Filed May 27, 1963, Ser. No. 283,173

2 Claims. (Cl. 175—2)



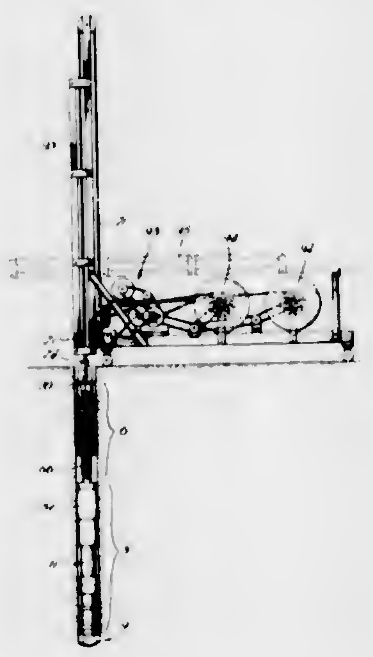
1. Drilling apparatus comprising:

an annular drill pipe having an annular drilling head at the lower end thereof with a reduced diameter choke therethrough;

an elongated housing having a maximum outside diameter slightly less than the diameter of said choke so as to pass through and out of the lower end of the drilling head;
a nondirectional explosive charge in the lower end of said housing;
an igniter squib in the upper end of said housing;
firing means in said housing for firing said igniter squib responsive to differential hydrostatic pressure of predetermined magnitude between the interior and exterior of said drill pipe; and
means including a line explosive connecting said igniter squib to said explosive charge adapted to detonate said explosive charge at least 4 seconds after firing of said igniter squib.

3,185,225
FEEDING APPARATUS FOR DOWN HOLE DRILLING DEVICE

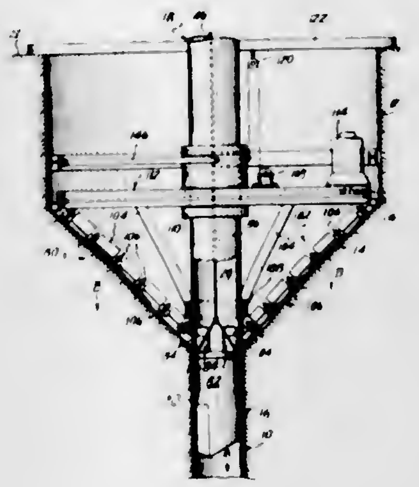
Wolstan Caruana Ginies, South Box Hill, Victoria, Australia, assignor to Wolstan C. Ginies Enterprises Proprietary Limited, Eltham, Victoria, Australia, a company of Victoria, Australia
Filed May 2, 1963, Ser. No. 277,654
Claims priority, application Australia, May 4, 1962, 17,294/62
29 Claims. (Cl. 175—94)



1. A machine for drilling bores in the earth comprising a drill section and a feed and anchor section, said drill section including a drill bit assembly and drive means connected to said drill bit assembly, said feed and anchor section including two anchor assemblies sequentially operable to provide a continuous engagement of the feed and anchor section with the wall of a bore, actuating means connecting the two anchor assemblies in the feed and anchor section for operating the anchor assemblies for engagement and disengagement with the bore wall, said actuating means being operable to feed the drill section through the bore away from the engaged anchor assembly, said anchor assemblies being operable in their disengaged position to move stepwise in the bore behind the drill section, said anchor assemblies each including a pair of diametrically opposed elongated bar members having arcuate outer surfaces provided with means for gripping the bore wall, said actuating means including hydraulic means for actuating said bar members, one of said anchor assemblies being oriented at 90° with respect to the other of said assemblies with the bars of an assembly being movable between and in close proximity to the bars of another assembly.

3,185,226
SHAFT SINKING APPARATUS

Richard James Robbins, 321 Grosvenor House, Seattle, Wash.
Filed Mar. 17, 1959, Ser. No. 800,000
5 Claims. (Cl. 175—102)

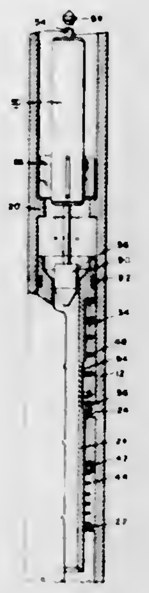


1. Apparatus for enlarging the cross-sectional area of an existing pilot hole,
said apparatus comprising, in combination,
an elongate open ended casing having a length greater than the depth of such pilot hole,
means supporting the casing with one end portion extending into such pilot hole with the other end portion thereof projecting above ground surface to define a continuous passageway from such pilot hole to ground surface,
said casing having a plurality of generally lateral openings disposed intermediate the end portions thereof at a location therealong which is spaced from the one end portion thereof a distance which is sufficient to define a loading zone therein,
excavating means carried by the casing and disposed thereon adjacent the lateral openings therein and projecting laterally outwardly therefrom for removing at least that portion of ground material which surrounds the casing intermediate the end portions thereof to expand the area of such pilot hole,
said excavating means being effective to remove such portion of ground material and enable same to pass through the lateral openings in the casing to the loading zone therein, and
means for removing the excavated portion of such ground material from the loading zone to an unloading zone at ground surface,
said last mentioned means being entirely disposed within the confines of the casing and movable through the passageway defined thereby throughout substantially the full longitudinal length thereof between the loading and the unloading zones.

3,185,227
WELL DRILLING APPARATUS

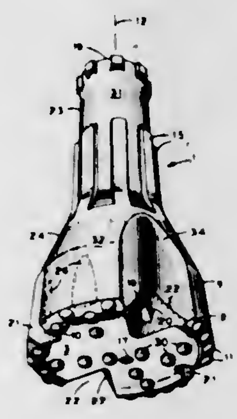
Fred B. Nelson, Chickasaw, Ala., assignor to Norman A. Nelson
Filed Mar. 2, 1962, Ser. No. 177,069
8 Claims. (Cl. 175—243)

3. In well drilling apparatus a tubular drilling string adapted to be lowered into a well bore, a drilling bit attached to the lower end of the string for rotation therewith in engagement with the bottom of the bore to form an annulus about the string and having a passageway through which fluid may flow downwardly through the string and upwardly in the annlus, a tubular mandrel movably disposed in the string for longitudinal movement therein, means forming a seal between the external surface of the mandrel and the internal wall of the string, valve means movably positioned in the string for longitudinal movement therein in one direction to position the valve means to restrict the flow of fluid through the mandrel and in the other direction to position the valve means to open the mandrel to unrestricted flow of fluid therethrough, means for resisting movement of mandrel away from the valve means to cause the mandrel and valve means to move together in said one direction and means for causing a reduction in such resistance to allow the mandrel to move away from the valve means when the mandrel and valve means reach a predetermined position of movement in said one direction.



3,185,228
ROTARY-PERCUSSION DRILL BIT WITH HEEL ROW INSERTS TO PREVENT WEDGING

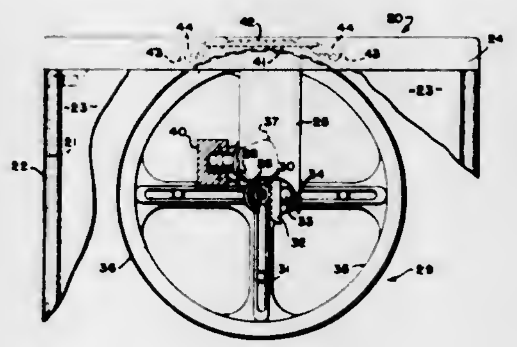
Joseph L. Kelly, Jr., Houston, Tex., assignor to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Filed Jan. 21, 1963, Ser. No. 252,794
7 Claims. (Cl. 175—410)



6. In a rotary-percussion bit comprising a bit body having a generally flat bottom surface and a generally cylindrical gage surface relieved by longitudinal grooves, a multiplicity of wear resistant inserts secured in said body with cutting tips protruding from said bottom surface and spaced apart in circumferential rows, and a flushing fluid passageway system which includes interconnected internal passages extending longitudinally from the top to the bottom of the bit body, the improvement comprising disposing the inserts of the outermost of said circumferential rows at an acute angle with respect to the longitudinal axis of the bit so that the inner ends of such inserts are buried within the body in spaced relation from both the bottom and gage surfaces and the cutting tips extend beyond both said surfaces at about the intersection thereof.

3,185,229
INDICATOR

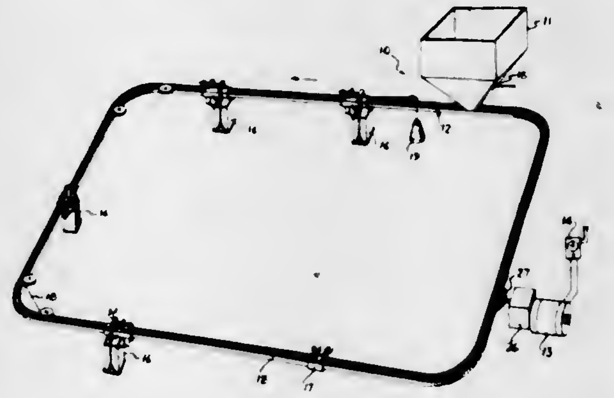
Robert E. Bell, Frederick C. Carroll, and William H. Gallo, Toledo, Ohio, assignors to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed July 16, 1962, Ser. No. 209,860
22 Claims. (Cl. 177—37)



1. A weighing scale comprising, in combination, a load responsive indicia-bearing chart, the chart and the indicia having first and second degrees of transparency, a translucent display screen, and means for projecting shadow images of the indicia onto one side of the screen, the indicia being located between the screen and the projecting means while their images are being projected and being so close to the screen while their images are being projected that no apparent magnification occurs.

3,185,230
APPARATUS FOR AUTOMATIC WEIGHING AND DISTRIBUTING FEED FOR LIVESTOCK

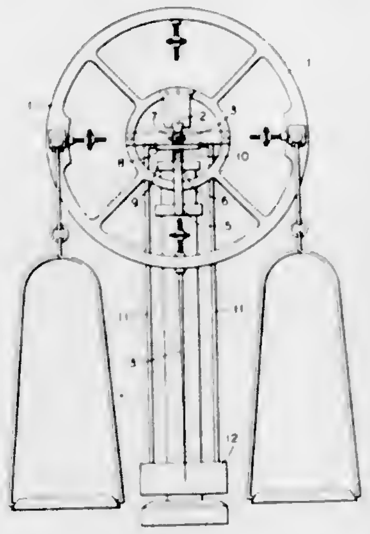
Ronald S. Blough, Fairfield, Iowa, assignor to Fairfield Engineering and Manufacturing Company, Fairfield, Iowa, a corporation of Iowa
Filed Apr. 2, 1963, Ser. No. 270,068
8 Claims. (Cl. 177—71)



1. In a livestock feed weighing and distributing mechanism, the combination comprising, a housing enclosing a feed conveyor means, a feed depositing unit mounted on said conveyor housing, said conveyor housing having an opening into said depositing unit, means for blocking said opening, weighing means for sensing a preselected weight of feed in said depositing unit, tripping means for first actuating said blocking means and then discharging said depositing unit in response to said weighing means sensing said preselected weight of feed, and means including a member engageable with said conveyor means for cocking said tripping means whereby said blocking means is removed from said opening and said weighing means is again conditioned to sense said preselected weight of feed.

3,185,231
MICROBALANCE WITH LOW-FRICTION BEARING

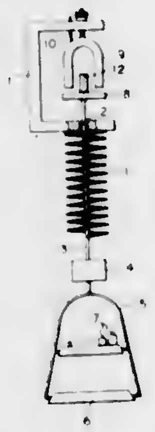
Kanesuke Iwasaki, Ichikawa, Chiba, Japan, assignor to Sankyo Company, Ltd., Tokyo, Japan, a corporation of Japan
Filed Feb. 12, 1964, Ser. No. 344,270
Claims priority, application Japan, Feb. 15, 1963, 38/6,153
8 Claims. (Cl. 177—190)



1. A balance comprising a pair of cylindrical permanent magnets individually fixed at a right angle to the central axis of the beam passing through the fulcrum and on to either side of a beam, the radius of movement of said magnets being equal to the locus of movement of the center of gravity due to the slant of the beam centering around the fulcrum of the beam of the balance so that the center of gravity locates below the fulcrum, and another pair of magnets individually fixed at a suitable distance below, and in the opposing relation to, the corresponding first magnets, so that each of two pairs of the magnets arranged each opposite to other have like poles at their opposing end portions.

3,185,232
SPRING BALANCE

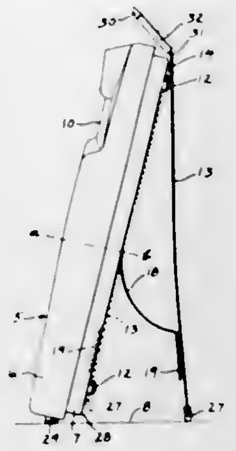
Kanesuke Iwasaki, Ichikawa, Japan, assignor to Sankyo Company, Ltd., Chuo-ku, Tokyo, Japan, a corporation of Japan
Filed Feb. 12, 1964, Ser. No. 344,271
11 Claims. (Cl. 177—225)



1. A spring balance comprising a frame, a first magnetized body fixed in said frame, a second magnetized body vertically below and spaced from said first body, a vertical rod fixed to said second body and depending therefrom, a coil spring member surrounding said rod below said frame, said spring member having one end attached to said frame and the other end attached to said rod, and a weight holder attached to the lower portion of said rod.

3,185,233
PORTABLE STAND-UP TYPE BATHROOM SCALE

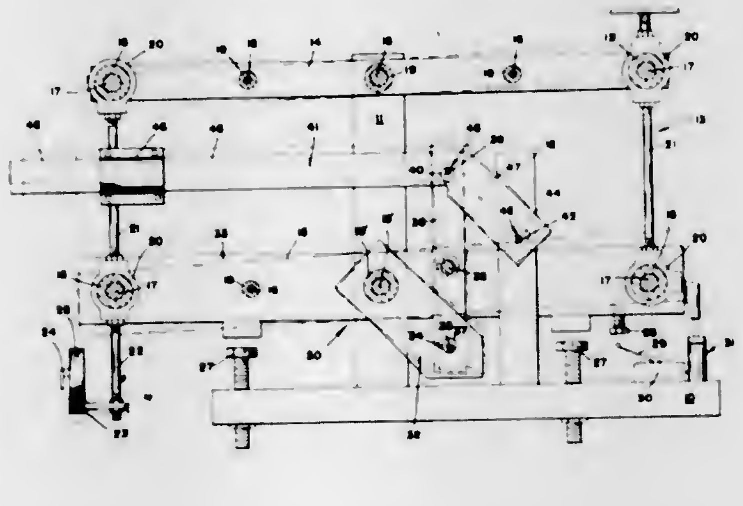
Mike A. Provi, Rockford, Ill., assignor to The Brearley Company, Rockford, Ill., a corporation of Illinois
Filed June 20, 1963, Ser. No. 289,265
10 Claims. (Cl. 177—239)



1. A portable bathroom scale comprising a supporting base of generally rectangular form, a generally rectangular platform connected in assembled relation to the base but supported on and movable downwardly with respect thereto in a weighing operation, when the base and platform are horizontally disposed for use in weighing with the base resting on the floor, said scale being constructed to be adapted for use in weighing only in horizontal position resting on a floor and to permit its being stood on its one end on the floor, and an elongated supporting leg disposed on the longitudinal center-line of the base and pivoted at one end to said base and swingable from an inoperative retracted folded position parallel to the bottom of said base to an operative position at an acute angle to the bottom of said base for support of the scale as a prop while it is standing on end on the floor inclined from a vertical, said base being constructed to rest squarely on the floor without any interference from said supporting leg in the folded position thereof.

3,185,234
COUNTERBALANCING WEIGHING INSTRUMENT

William H. Lortz, Kennewick, Wash., assignor to Baker Machinery Company, Kennewick, Wash., a corporation of Washington
Filed June 11, 1962, Ser. No. 201,452
5 Claims. (Cl. 177—246)

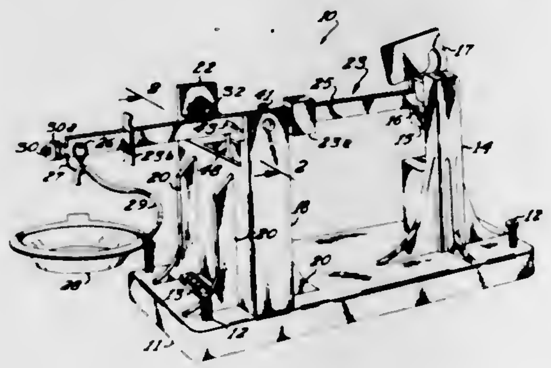


1. A counterbalancing weighing instrument, comprising:
a vertically tiltable first class lever;

a vertically tiltable third class lever;
the power arm of each lever being disposed at an angle with respect to its weight arm;
means interconnecting the said levers for transmitting the moment from the weight arm of said first class lever upwardly to the third class lever;
means for tilting said first class lever in response to the weight of an article to be weighed; and
a counterbalancing weight movable to adjusted positions on the weight arm of said third class lever.

3,185,235
FILAMENT FULCRUM MECHANISM

Glen L. Mittelsteadt, Waseca, Minn., assignor to Herter's Inc., Waseca, Minn., a corporation of Minnesota
Filed Mar. 13, 1963, Ser. No. 264,941
6 Claims. (Cl. 177—246)

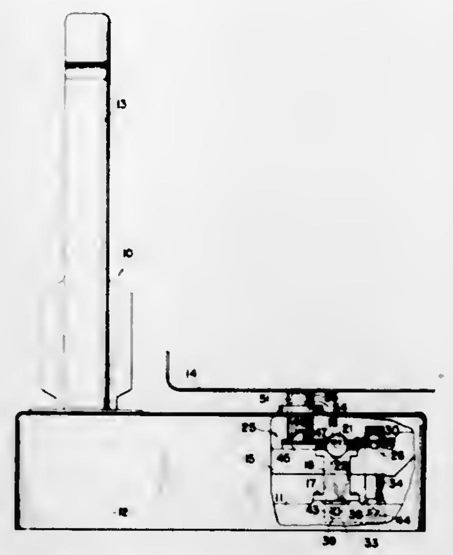


1. In a scale device comprising a base,
a pair of laterally spaced apart beam lever supporting elements rigidly connected with said base and projecting upwardly therefrom,
means defining a beam lever fulcrum including an elongate, tensioned filament extending between and being detachably connected with said beam lever supporting elements,
filament tensioning means for variously adjusting the tension on said filament,
an elongate horizontally oriented balance beam lever having an opening therethrough intermediate its ends, said filament extending loosely through said opening for pivotally supporting said lever intermediate its ends on the filament for vertical pivoting movement thereof about an axis extending transversely of the beam lever,
and cooperating interengaging positioning elements on said beam lever and filament respectively for preventing lateral movement of the beam lever along said filament.

3,185,236
WEIGHING SCALES

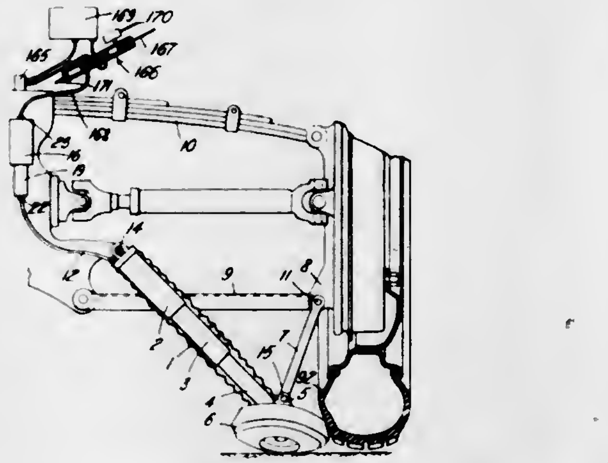
Lawrence S. Williams, Toledo, Ohio, assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed Mar. 11, 1963, Ser. No. 264,235
2 Claims. (Cl. 177—255)

1. A weighing scale comprising, in combination, a pivotally mounted lever, a load platter, a load spider connecting the lever to the platter, check link means for holding the spider in an upright position, the load spider having a hollow leg pivotally connected to the check link means, and spider adjustment means within the leg for varying the length of the leg, the spider adjustment means including a slidable plug, a non-slidable plug and an adjustment screw threaded through the non-slidable plug and into the slidable plug, whereby turning the screw pushes the slidable plug out of the leg or pulls the slidable plug into the leg.



3,185,237
HYDRAULIC RAMS

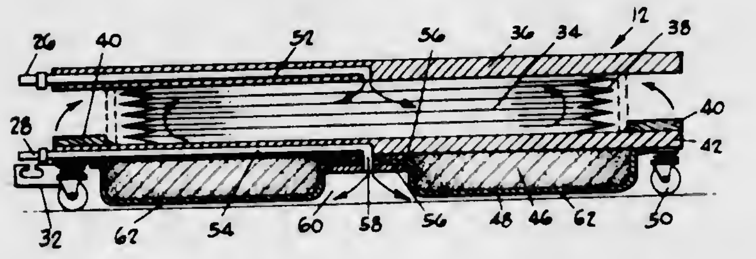
Archibald James Butterworth, 7 Grove Gardens, Frimley, England
Filed Dec. 6, 1961, Ser. No. 157,429
Claims priority, application Great Britain, Dec. 7, 1960, 42,051/60; Dec. 6, 1961, 43,781/61
1 Claim. (Cl. 180—1)



A vehicle parking apparatus comprising two telescopic hydraulic rams disposed on opposite sides of the vehicle adjacent two of the vehicle road wheels, a hydraulic transformer supplying fluid pressure to both of said rams, a ground-engaging roller on a movable part of each of said rams, said hydraulic transformer being arranged between a source of fluid pressure and cylinder means of said rams and comprising a cylinder assembly and a compound piston having a small area part and a large area part reciprocable in said cylinder assembly, means for connecting the cylinder assembly at one end to the source of fluid under pressure so that one side of the small area part may be subjected directly to said fluid pressure, means for connecting the other end of said cylinder assembly to the telescopic rams so that movement of the compound piston toward said other end of the cylinder assembly causes the large area part of the piston to displace fluid from the cylinder assembly into the rams thereby rapidly extending them and bringing the rollers into engagement with the ground and with said wheels and continued extension of the rams lifts the wheels from the ground, and a valve mechanism actuated by relative movement between the compound piston and the cylinder assembly so that upon approach of the compound piston toward the other end of the cylinder assembly the valve mechanism causes the rams to be placed into direct communication with the source of pressure so that further extension of the rams takes place under load thereby lifting the vehicle, said rollers being rotatable by said vehicle wheels in a direction to swing the end of the vehicle sideways.

3,185,238
PNEUMATIC LOADLIFTING AND TRANSLATING MEANS

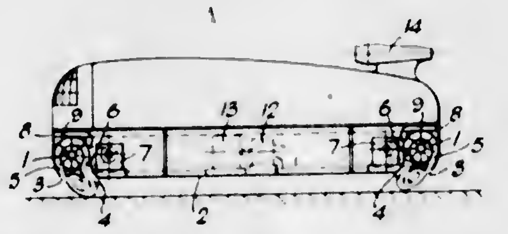
J. Edwin Coates, Santa Monica, Calif., assignor to Douglas Aircraft Company, Inc., Santa Monica, Calif.
Filed Oct. 3, 1960, Ser. No. 59,880
16 Claims. (Cl. 180—7)



10. A portable self contained load lifting and translating means comprising: an upper support adapted to have a load positioned thereon; a lower support; jack means acting between the upper and lower supports for elevating the upper support; air floatation pad means affixed to the underside of the lower support and being adapted to contact a planar floor-like structure in sliding, substantially friction free, contact therewith; a separate, ground supported source of air in communication with the air floatation pad means, said source of air being coupled to and translatable in unison with said support means; handle means extending from the foregoing assembly whereby an operator can exert translating forces to the load through the handle means; and control means adjacent said handle means, said control means regulating the flow of air from said source to said air floatation pad means.

3,185,239
VEHICLES FOR TRAVELLING OVER LAND AND/OR WATER

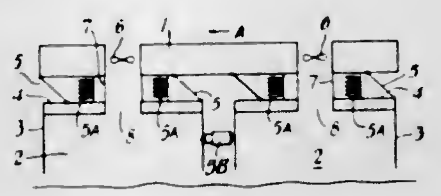
Christopher Sydney Cockerell, Lymington, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed Apr. 3, 1961, Ser. No. 100,420
Claims priority, application Great Britain, Apr. 8, 1960, 12,688/60; Oct. 18, 1960, 35,626/60
20 Claims. (Cl. 180—7)



1. In a vehicle for travelling over a surface of the type adapted to be at least partly supported above that surface by a cushion of pressurised gas, the cushion being contained for at least part of its periphery by a curtain of fluid issuing from a supply port formed in the bottom surface of the vehicle adjacent to the periphery thereof, the improvement which consists in the provision of a plurality of rotary pumps positioned adjacent to the periphery of the vehicle for energising the curtain forming fluid which issues from the supply port, each of said pumps including an axially elongated rotor extending along a substantial portion of the periphery of the cushion contained by said curtain and having its axis of rotation substantially parallel to the adjacent portion of said curtain.

3,185,240
AIR-CUSHION BORNE VEHICLES

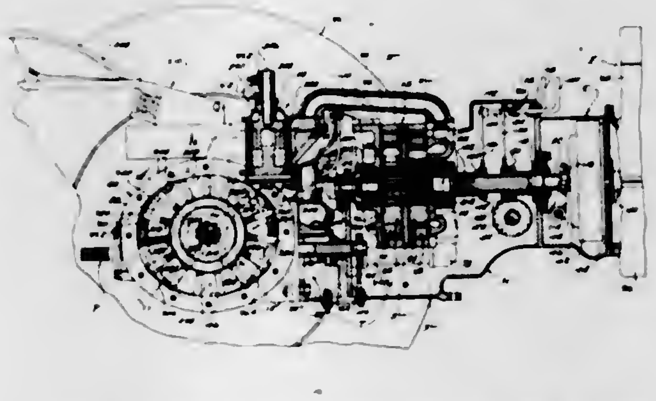
Wilfred James Eggington, Highworth, and Nigel Wickham Lewis, Swindon, England, assignors to Vickers-Armstrongs (Engineers) Limited, London, SW. 1, England, a British company
Filed Jan. 15, 1963, Ser. No. 251,517
Claims priority, application Great Britain, Jan. 25, 1962, 2,937/62
13 Claims. (Cl. 180—7)



1. A vehicle adapted to be at least partially supported on air cushions, the vehicle comprising a body, a plurality of plenum chamber cells for containing the air cushions, each cell having a top part and a flexible skirt depending from the periphery of said top, each cell being open at the bottom, means for connecting the cells to said body for independent movement of the cells relative to each other and to the body, said connecting means comprising at least one linkage and one resilient means both pivotally secured to the vehicle body and to said cells, said resilient means effecting partial restraint of movement of said cells with respect to the vehicle body and flexible duct means associated with the cells, and means for supplying air through said duct to said cells to form the air cushions.

3,185,241
FLUID DRIVE TRACTOR

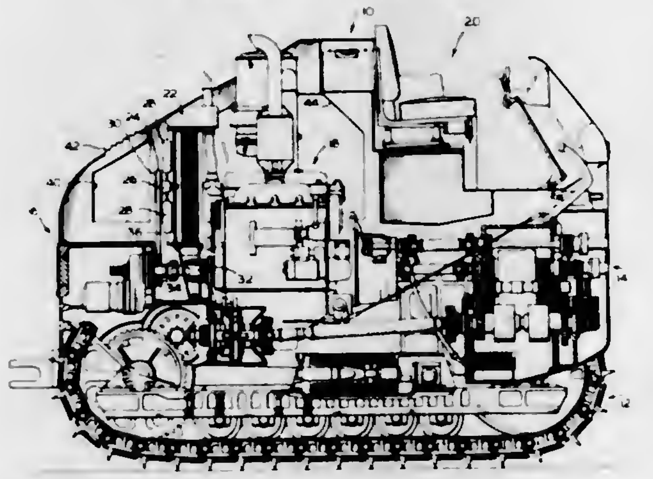
Melvin F. Jackson, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Original application Feb. 14, 1952, Ser. No. 271,493, now Patent No. 2,791,284, dated May 7, 1957. Divided and this application Dec. 6, 1960, Ser. No. 84,471
9 Claims. (Cl. 180—53)



1. In a tractor the combination of an engine, a main clutch, a connection driven by the engine and in driving relation to the main clutch, a belt pulley, mechanism including a shaft connected to said main clutch and to said belt pulley so that the belt pulley is driven from the engine through the main clutch, a transmission including a variable displacement fluid pump connected with said shaft so as to be driven from the engine through the main clutch, a fluid motor, conduits connecting the pump and motor, a traction unit, mechanism connected to said motor and said traction unit, driven by the fluid motor and driving said traction unit, and said variable pump being adjustable at will from zero to maximum displacement for operating said motor at any speed within the range of adjustment of said pump, and means for so adjusting said pump while said clutch is engaged whereby the travel of said tractor may be controlled throughout the speed range afforded by said pump without affecting the operation of said belt pulley.

3,185,242
COOLING SYSTEM FOR EARTH HANDLING VEHICLE

Daniel M. Schwartz and Joseph Rosenblatt, Salt Lake City, Utah, assignors to The Eimco Corporation, Salt Lake City, Utah, a corporation of Delaware
Original application June 15, 1959, Ser. No. 820,385, now Patent No. 3,085,643, dated Apr. 16, 1963. Divided and this application Jan. 25, 1963, Ser. No. 253,828
1 Claim. (Cl. 180—54)

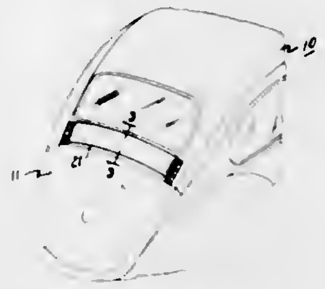


An internal combustion engine propelled earth handling machine including a body portion having a forward end and a rearward end, a liquid cooled internal combustion engine carried by the body portion generally intermediate the forward end and the rearward end of the machine, a transmission for the earth handling machine carried by the body portion and positioned forwardly of the internal combustion engine, a forwardly extending take-off shaft from the engine connecting the engine and the transmission, an operator's station positioned forwardly of the internal combustion engine, a liquid coolant radiator for the internal combustion engine carried by the body portion rearwardly of the internal combustion engine, an air moving fan having a plurality of air impelling blades, said fan being mounted rearwardly of the liquid coolant radiator, a rearwardly extending power take-off shaft from the engine interconnecting the fan and the internal combustion engine for rotating the blades of the fan when the internal combustion engine is operating, the pitch of the blades of the fan and the direction of rotation of the fan being coordinated to move cooling air for the liquid coolant radiator generally in the opposite direction to the direction of forward movement of the machine and first about each of the rearward side portions of the internal combustion engine and away from the vehicle operator, through the liquid coolant radiator to the blades of the fan and then to discharge the air from the rearward end of the machine, said body portion having an air inlet orifice on each side of said machine and rearwardly of said operator's station, a first air outlet orifice in said body portion rearwardly of said fan, second and third air outlet orifices on the sides of said body portion also rearwardly of said fan, said second and third outlet orifices provided each with panels, to thereby enable the operator to control coolant air pattern.

3,185,243
SHIELDS FOR REAR ENGINED AUTOMOBILES

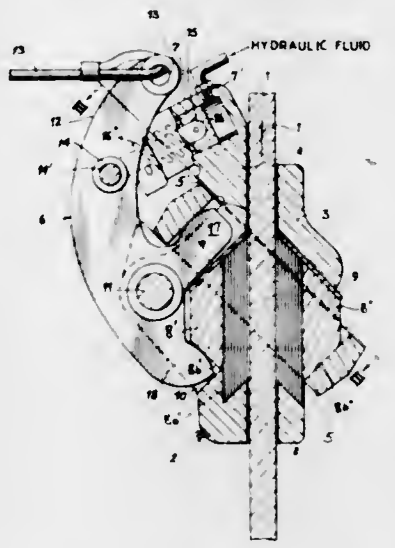
John R. Burback, 5940 Gillan Road, Lincoln, Nebr.
Filed Feb. 4, 1963, Ser. No. 255,975
2 Claims. (Cl. 180—54)

1. A shield for motor vehicles in which the induction of air into the engine is accomplished by a series of transversely extending louvers in the top rear of the vehicle behind the rear window, the said shield consisting of a strip of material also extending transversely of the vehicle and over the louvers, the opposite ends of the shield being secured to the skin of the back of the vehicle on either side of the series of louvers and the upper edge of the strip being secured to the skin above the series of louvers and the strip being slightly bowed to position the remaining unsecured part of the strip in spaced relation to the louvers to cause the flow of air over the vehicle to travel downwardly then upwardly and then downwardly through the louvers into the chamber beneath the skin.



3,185,244
DISK BRAKE

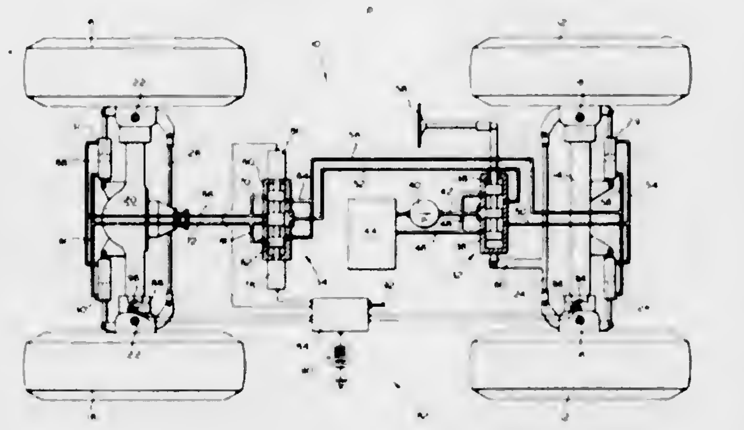
Carl Press, Offenbach (Main), Germany, assignor to Alfred Teves K.G., Frankfurt am Main, Germany, a corporation of Germany
Filed July 9, 1963, Ser. No. 293,653
Claims priority, application Germany, Sept. 28, 1962, T 22,796
5 Claims. (Cl. 188—73)



1. A disk brake comprising a rotatable brake disk; a relatively stationary support extending along opposite sides of said disk; a pair of brake shoes movably mounted on said support for displacement toward said disk on opposite sides thereof but in a common zone in the rotation path of said disk; guide means for each of said brake shoes defining therefor a respective guide path inclined to said disk in the direction of displacement thereof, said paths including an angle of less than 180° between them; an actuating lever pivotally mounted on said support for angular displacement in a plane transverse to said disk about a pivotal axis fixed with respect to the latter, said lever having a first formation rigid with said lever and in engagement with one of said brake shoes for urging it toward said disk upon displacement of said lever; and a yoke shiftable with respect to said support in a path inclined to said disk, said yoke bridging the opposite sides of said disk while engaging the other of said brake shoes, said axis being offset from the path of said yoke but parallel thereto said lever having a second formation rigid with said lever and engaging said yoke for displacing the same in a direction of travel athwart that of said first one of said brake shoes to urge said other of said brake shoes toward said disk, said second

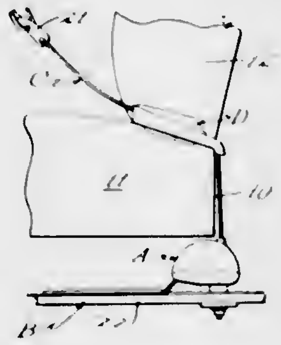
formation being angularly offset about the pivotal axis of said actuating lever from said first formation by an angle less than 180°.

3,185,245
STEERING MODE SELECTION AND WHEEL SYNCHRONIZATION SYSTEM
Deryl R. Hoyt, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 31, 1962, Ser. No. 248,372
10 Claims. (Cl. 180—79.2)



1. For use in a steering system having first and second dirigible wheeel means and a power source, a steering mode selection and wheel synchronization system comprising steering mode selector valve means, first and second means for actuating said selector valve means, steering mode selector switch means connectible to the power source and operable to connect said first actuating means, said second actuating means or neither one of said actuating means to the power source, means for preventing energization of said first or second actuating means when the first wheel means is not disposed in a substantially straight-ahead position, and means for preventing deenergization of said first or second actuating means when the second wheel means is not disposed in a substantially straight-ahead position.

3,185,246
SEAT BELT ANCHORS
Edward C. Maurer, 746 E. 7th St., St. Paul, Minn.
Filed Jan. 21, 1963, Ser. No. 252,829
8 Claims. (Cl. 180—82)



1. A seat belt anchor for use in securing an end of a seat belt to the body of an automotive vehicle having an internal combustion engine controlled by an ignition system, the anchor including

a housing,

means for securing said housing adjacent to the floor of the vehicle,

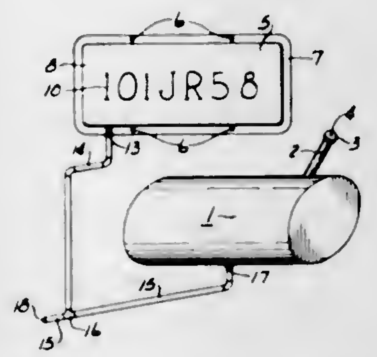
a two part seat belt having an end anchored to said body and the other end secured within said housing,

a switch in said housing associated with said seat belt, and normally open to break a circuit therethrough,

switch actuating means engaging said belt and closing said switch when said be.t is under tension, and

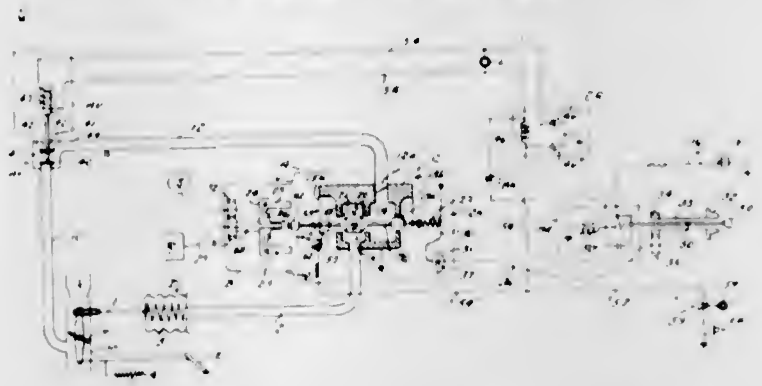
a circuit including a power source, said switch, an ignition switch and said ignition system.

3,185,247
AUTOMOBILE STALLING DEVICE
Frank P. Lackinger, 309 Broadway Ave., McKees Rocks, Pa.
Continuation of abandoned application Ser. No. 124,464, July 17, 1961. This application Mar. 27, 1964, Ser. No. 356,353
3 Claims. (Cl. 180—82)



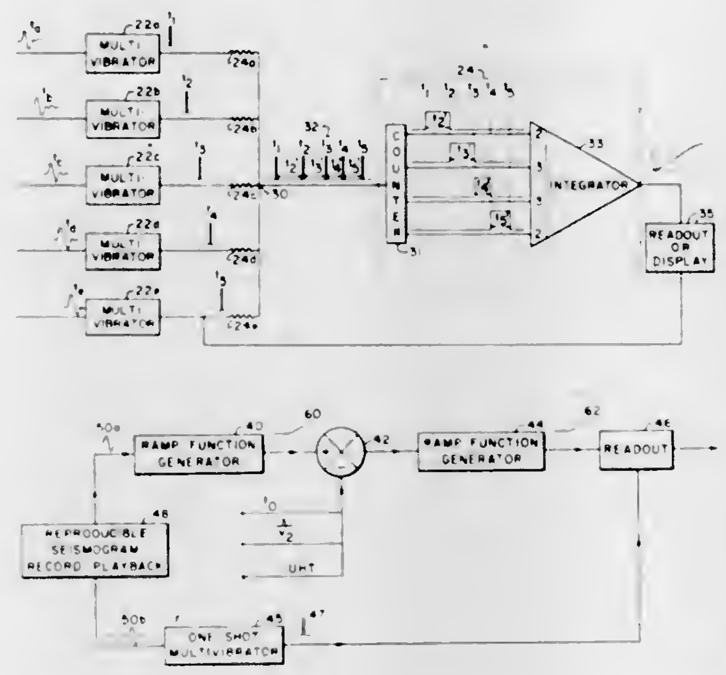
1. A device for stalling a running internal combustion engine of a vehicle consisting of a fuel supply including a fuel suction line to said running engine, a hermetically sealed system including a puncturable chamber secured to an externally exposed part of the vehicle and a line having one end connected to said chamber and the other end connected to said fuel suction line of the running engine to maintain a suction in said hermetically sealed system while the engine continues to run, said puncturable chamber when punctured by an object such as a projectile permitting an influx of air to said system and said fuel suction line to stall the running engine.

3,185,248
VEHICLE SPEED GOVERNORS AND CONTROLS
Donald J. Baxter, South Euclid, Ohio, assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed July 27, 1962, Ser. No. 212,840
16 Claims. (Cl. 180—82.1)



13. In a motor vehicle governing system, the combination comprising a speed setting device; speed responsive mechanism conditioned thereby for automatically controlling the engine throttle to maintain a speed predetermined by the setting of said device; means operably connected with said speed responsive mechanism to initiate and discontinue automatic speed control; and a control circuit for the operably connected means including an element which when energized causes the said means to initiate automatic control, a brake operated switch to deenergize said element upon operation of the brake, a speed responsive switch which closes upon attainment of a predetermined speed, and a manually controllable switch, said speed responsive switch and manually controllable switch being connected in parallel with each other but in series with the said element and brake operated switch.

3,185,249
COMPUTING SEISMIC INFORMATION
John L. Shanks, Duane E. Soland, and Kay N. Burns, Tulsa, Okla., assignors, by mesne assignments, to Esso Production Research Company
Filed Mar. 20, 1959, Ser. No. 800,700
8 Claims. (Cl. 181—.5)



8. In a seismic system having a seismic shock source near the earth's surface and a plurality of equally spaced seismic transducers spaced radially from a seismic shock source and in which a first break representing the time of initiation of the seismic shock is recorded on one channel of a recording medium and a first kick representing the arrival of energy from said seismic shock source at a first seismic transducer is recorded on a second channel; and reproducing means for reproducing independently signals representative of the first kicks representing the arrival of energy at each seismic transducer, an apparatus for determining the thickness of the low velocity layer under a seismic transducer in which the thickness is equal to a constant multiplied by the time the energy is in the low velocity layer and such time is equal to

$$t_n-\left(t_0+\frac{x_n}{V_2}-UHT\right)$$

where t_n is the time of the arrival of energy at a selected transducer and t_0 is representative of the known average travel time in the low velocity layer; x_n/V_2 is travel time of the energy in the sublayer and UHT is known uphole time, the system which comprises:

seismogram record playback means for reproducing independently of said reproducing means the first break recorded on said first channel and reproducing independently the first kick recorded on the second channel;

a plurality of multivibrators, each said multivibrator being of a character to generate a positive pulse upon receiving a signal;

means independently connecting each independent signal of said reproducing means to one of said multivibrators;

first adding means for adding said positive pulses;

a pulse rate circuit means electrically connected to said first adding means and whose output signal is inversely proportional to the rate of the occurrences of said positive pulses;

storage means to store a value representative of the output of said pulse rate circuit means which is representative of x_n/V_2 upon receiving a signal representing a first kick from said reproducing means representing a selected transducer;

a first ramp function generator means electrically connected to said playback means to generate an output signal which has a linearly rising voltage upon receiving a signal representing the first break;

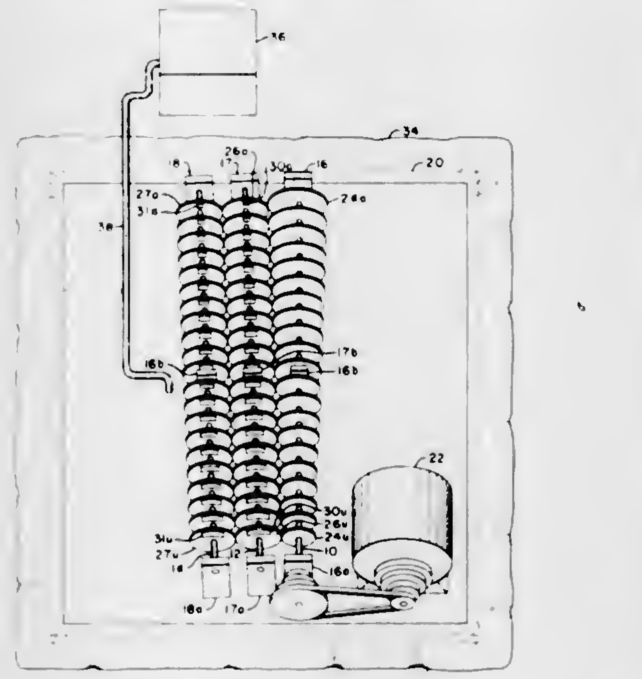
a preselected voltage source representative of t_0-UHT;

circuit means for subtracting the output from said storage means and said preselected voltage source from the output voltage of said first ramp function generator means;

a second ramp function generator means electrically connected to the output of said circuit means and being of a character to initiate the generation of an output signal which has a linearly rising voltage upon the input signal changing from negative to positive;

read-out means electrically connected to the output of said second generator means and electrically connected to the second channel of said seismogram record playback means, said read-out means being of a character to read the instantaneous value of the output signal of said second ramp function generator means upon receiving a signal from said second channel.

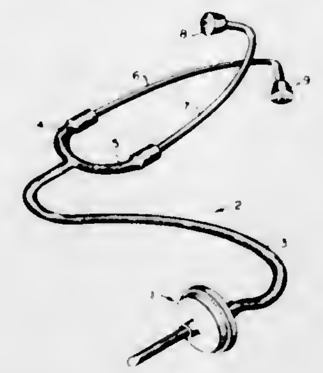
3,185,250
SEISMIC PULSE GENERATOR
Walter H. Glazier, Calgary, Alberta, Canada, assignor, by mesne assignments, to Esso Production Research Company
Filed Nov. 25, 1959, Ser. No. 855,322
18 Claims. (Cl. 181—.5)



18. A system for producing a composite seismic waveform having *n* harmonic components, each component having a known phase, frequency and amplitude which comprises in combination: *n* pairs of rotatable eccentric weights representing each harmonic component and having axes of rotation in substantially the same horizontal plane, and the axis of rotation of each eccentric weight of each pair being substantially parallel to each other, and arranged such that the plane of the rotation of eccentric weights in each pair being substantially the same; means to counter rotate the eccentric weights of each pair; means to rotate each pair of eccentric weights at the frequency and phase of the harmonic component it represents, which frequency is different from the frequencies of the other pairs of rotatable eccentric weights; a rigid base member; and means to support each said pair of eccentric weights such that the axes of such weights are fixed with respect to said base member.

3,185,251
INDUSTRIAL STETHOSCOPE

Hans A. Dudler, Wellesley Hills, Mass., assignor to Cardiosonics Medical Instruments Corporation, Belmont, Mass., a corporation of Massachusetts
Filed Jan. 21, 1964, Ser. No. 339,284
5 Claims. (Cl. 181—24)



1. In a stethoscope for detecting vibrations above a frequency cut-off in the audio range comprising, a metal casing having a bottom section with continuous closed sidewalls and an integral continuous closed bottom wall, and a cover section having an opening formed therein with said cover secured to said sidewalls and forming an enclosed chamber,

said bottom section and said cover section being rigidly secured together so that they will vibrate together,

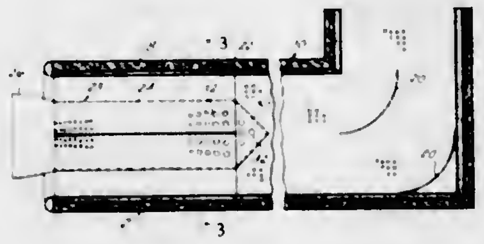
a diaphragm with a continuous outer edge and having stiffness of sufficient magnitude to follow vibrations above said frequency cut-off and positioned within and extending across said chamber with the periphery thereof secured to said sidewalls to divide said chamber into upper and lower sections, with said upper and lower sections completely isolated from each other by said diaphragm and with the lower section completely enclosed,

said diaphragm formed of a flexible self-supporting material,

a mass secured directly to and engaging only said diaphragm with said mass having an inertia of sufficient magnitude to be substantially nonresponsive to vibrations above said frequency cut off, said mass having a substantially circular face extending over said diaphragm near to said diaphragm edge defining a substantially annular portion of said diaphragm, said face being bonded in engaging relationship with said diaphragm throughout an adjacent surface of said diaphragm, and means on said housing for securing a probe to the outer surface of said bottom section.

3,185,252
JET ENGINE NOISE ATTENUATOR

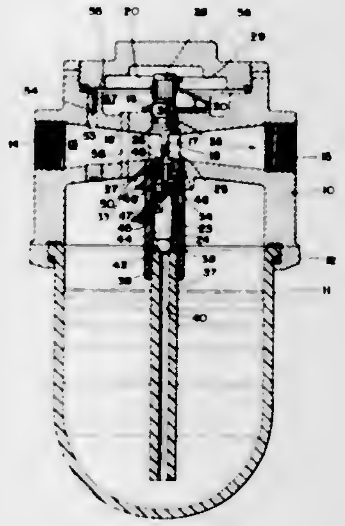
Carl W. Lemmerman, West Hartford, Conn. (% C. W. Lemmerman, Inc., 111 Lafayette St., Hartford, Conn.)
Filed July 29, 1957, Ser. No. 674,976
6 Claims. (Cl. 181—51)



1. A jet engine exhaust noise attenuator comprising an outer housing having an inlet opening at one end thereof and an outlet opening spaced from said inlet opening, an inner cylindrical sheet metal member disposed coaxially in radially spaced relation within said housing with one end thereof disposed adjacent said inlet opening of said housing, a metal gas diffusing member mounted on the other end of said inner member and having a plurality of openings, said inner member being provided with perforations for the diffusion of gases received therein with said perforations being dimensioned to provide a predetermined range of noise frequencies in response to passage of gases therethrough, and an imperforate sheet metal cone having a base diameter substantially less than the diameter of said inner member, means mounting said cone in coaxial alignment within said inner member intermediate the ends thereof with the tip of said cone extending toward but terminating short of said one end of the inner member, said outer housing and said inner cylindrical sheet metal member cooperating to define an annular air inlet passageway communicating with said inlet opening.

3,185,253
AIR LINE LUBRICATOR

Zdenek J. Lansky, Winnetka, Ill., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 25, 1963, Ser. No. 260,411
5 Claims. (Cl. 184—55)



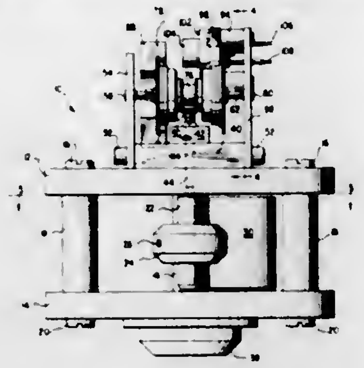
4. In an airline lubricator, a housing having a passage for air therethrough, a reservoir carried by the housing and containing a supply of lubricant, a first duct for directing air under pressure from the inlet side of said passage to the reservoir for pressurizing said lubricant, means providing a region in said passage with lower air pressure than at said inlet portion, a second duct leading from the reservoir to said low pressure region, a valve member in said second duct having opposite ends thereof respectively exposed to pressure of fluid in said low pressure region and said reservoir and responsive to varying differentials in such pressures for opening and closing said second duct against all flow of lubricant therethrough said valve member having a section spaced from the wall of the second duct to form therebetween a restricted passage, said section providing a self-cleaning action when the valve member moves to avoid clogging of said restricted passage by foreign matter in said lubricant.

3,185,254
GYRATORY MOTION TRANSLATOR

John M. Bergey, Rohrerstown, Pa., assignor to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Dec. 3, 1962, Ser. No. 241,960
13 Claims. (Cl. 185—29)

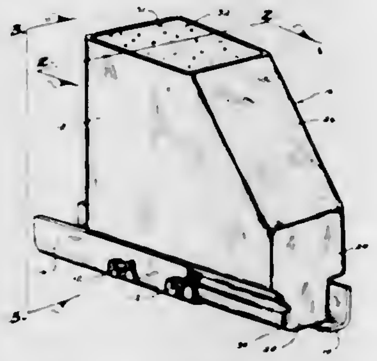
1. A motion translator for transforming random motion into a unidirectional rotary output comprising a rotary shaft, an eccentric gyratory weight carried by

said shaft, an outpunt shaft, means coupling said shafts for transforming the motion of said rotary shaft into unidirectional rotation of said output shaft, and a second eccentric weight carried by said output shaft.



3,185,255
BALLAST ELEMENT

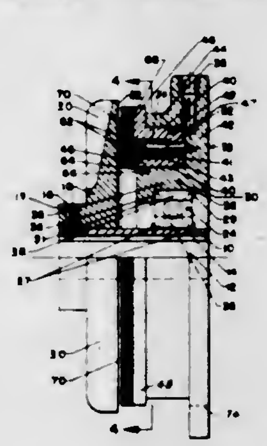
Merrill S. Bird, 1218 44th St., Des Moines, Iowa
Filed July 26, 1960, Ser. No. 45,433
5 Claims. (Cl. 188—1)



1. In combination with a machine having movable components wherein the operation thereof will induce vibration within said machine, a ballast element including a container, said container being comprised entirely of plastic material, means on said machine engaging said plastic container for securing said ballast element to said machine, said container being of continuous unitary construction, said container formed into a predetermined permanent shape, and a hardened concrete substance in said container.

3,185,256
STOP BRAKE

Hugh K. Schilling, St. Paul, Minn., assignor to Horton Manufacturing Co., Inc., Minneapolis, Minn.
Filed Dec. 26, 1961, Ser. No. 162,061
4 Claims. (Cl. 188—71)

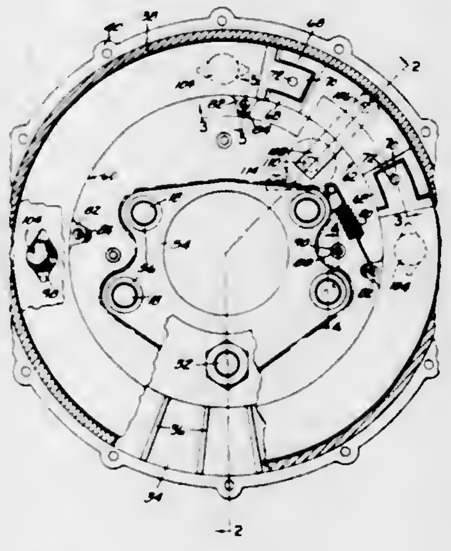


1. In a fluid operated brake having a cylinder body, an annular cylinder in said body, an annular piston in said annular cylinder movable axially along said annular cylinder, a hub coaxial with said annular cylinder and piston and disposed adjacent thereto, means for mounting said cylinder body and hub for relative rotation and friction members between said piston and hub, the combination of

(*a*) a plurality of cylinders extending longitudinally in said annular piston parallel to the axis thereof, and open at one end,
(*b*) a plurality of bolts, one for each cylindrical cylinder and disposed within said cylinders,
(*c*) said bolts having shanks of lesser diameter than the diameters of said cylinders to provide annular spaces therebetween,
(*d*) cylindrical guide means carried by said annular piston concentric with the cylinders and at the ends thereof opposite the open ends and of lesser diameter than said cylinders and slidable along the shanks of said bolts,
(*e*) heads on said bolts serving as pistons and slidable along said cylinders,
(*f*) said bolt heads having annular grooves extending through the outer surfaces thereof,
(*g*) sealing rings in said grooves engaging the surfaces of said cylinders,
(*h*) compression coil springs in said annular spaces acting between said guide means and bolt heads to move said annular piston inwardly into said annular cylinder to disengage said friction members,
(*i*) said guides and pistons restraining relative rotational movement between said annular piston and cylinder body.

3,185,257
SERVO-TYPE SPREADING DISC BRAKE

Jose G. Caero, 1124 W. Montecito Way,
San Diego, Calif.
Filed July 30, 1962, Ser. No. 213,318
10 Claims. (Cl. 188—72)



1. A disk brake comprising
a rotatable member to be braked,
a carrier for said rotatable member,
said rotatable member having spaced opposed friction surfaces,
first and second braking members between and normally clear of said surfaces,
said first braking member being shiftable axially and non-rotatively on said carrier to and from engagement with one friction surface,
said second braking member having a floating connection with said first braking member and shiftable axially and rotatively relative to said first braking member to and from engagement with the other friction surface,
an actuator member carried by said second braking member and shiftable relative thereto in an axial direction,
means interposed between said first and second braking members and responsive to relative rotation of said

members for moving said members axially into engagement with said friction surfaces, and

means for axially shifting said actuator member against a friction surface and thereby rotates said second braking member relative to said first braking member.

ERRATUM

For Class 188—73 see:
Patent No. 3,185,244

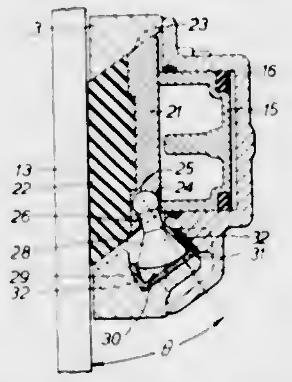
3,185,258

SPOT-TYPE, SERVO DISC BRAKE

John G. Douglas, Dirgarve, Aberfeldy, Scotland, assignor to Dunlop Rubber Company Limited, London, England, a British corporation

Filed Apr. 9, 1962, Ser. No. 186,256

9 Claims. (Cl. 188—73)



1. A disc brake assembly comprising a rotatable brake disc drivably associated with a vehicle wheel, a non-rotatable brake support, a friction element located in said non-rotatable brake support, and a thrust device associated with said friction element, said thrust device being circumferentially fixed and axially movable to apply pressure to said friction element in a direction at right angles to the plane of said disc to urge said friction element towards the disc, said friction element also being capable of independent circumferential movement relative to said thrust device as the result of the drag of the rotating disc, said brake assembly comprising a strut disposed obliquely to the plane of the disc in a plane transverse to the radial direction of the adjacent portion of the disc, said strut being positioned at one end to engage said friction element and at the other end in rolling engagement with a part of said non-rotatable brake support which is inclined obliquely to the plane of the disc in the opposite sense relative to the inclination of the strut, whereby the strut will progressively roll on said part during the wear life of the friction element to maintain at a constant value the angle which the strut makes with the plane of the disc.

3,185,259

SELF ENERGIZING, SPOT DISC BRAKES

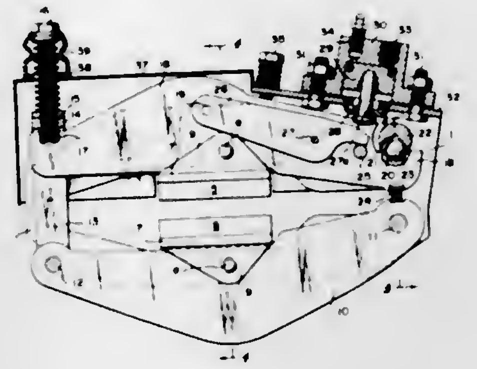
Leslie C. Choulngs, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England

Filed Nov. 6, 1962, Ser. No. 235,788

Claims priority, application Great Britain, Nov. 9, 1961, 40,209/61

10 Claims. (Cl. 188—73)

9. A disc brake comprising a fixed support for attachment to a wheel assembly, a pair of arms mounted on said support for swinging movement in a horizontal plane, normal to the plane of rotation of the brake disc, link means interconnecting one end of said arms, brake pad means carried by each said arm, brake actuating means comprising a fluid actuated cylinder and a brake actuating lever selectively operatively connected to one of said arms to effect a swinging movement of said one arm to bring its brake pad means into contact with a brake disc for the wheel assembly, the reaction force set up resulting in swinging movement of the other arm to bring its brake pad means into contact with the brake disc, and means mounting said one arm for movement in a lengthwise direction substantially perpendicular to its swinging movement for permitting lengthwise displacement of said one arm to apply a servo action to increase the engagement force.



3,185,260

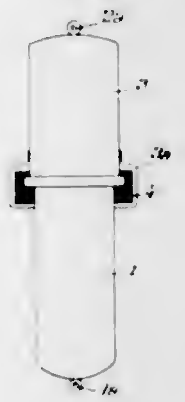
VEHICLE SUSPENSIONS

Gustave Navarro, 1 Rue Dalpozzo, Nice, France

Filed July 24, 1964, Ser. No. 384,855

Claims priority, application France, July 25, 1963, 7,257, Patent 1,364,500

8 Claims. (Cl. 188—86)



1. For use on an automobile vehicle including two elements, respectively, a wheel and a suspended unit, movable vertically with respect to each other, the combination of a shock absorber including a cylinder fixed to one of said elements and a piston slidable in said cylinder and fixed to the other of said elements, an electromagnetic brake including at least two jaws slidable longitudinally on the external surface of said cylinder, means carried by said piston for supporting said jaws in a fixed longitudinal position, but with a possibility of transverse movement, with respect to said piston, and means responsive to the centrifugal force developed by a turn of said vehicle for energizing said electromagnetic brake to apply said jaws against said cylinder.

3,185,261

WHEEL DRIVEN HYDRODYNAMIC RETARDER SYSTEM

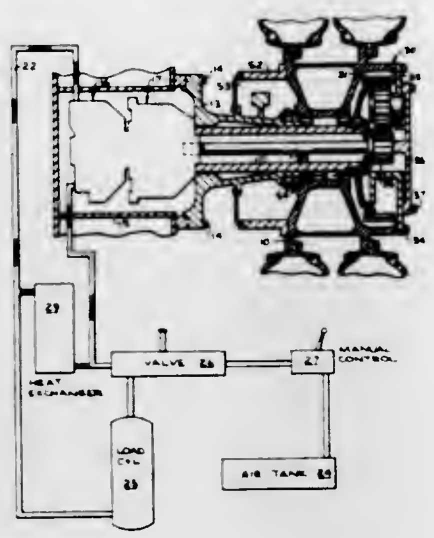
John J. Campbell, Vergil P. Hendrickson, and Alfred W. Sieving, Decatur, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Oct. 25, 1963, Ser. No. 319,035

1 Claim. (Cl. 188—90)

A retarder system for a vehicle having a wheel rotatable about a hollow axle secured to the vehicle comprising a planetary type transmission driven by and disposed within the wheel at its outer side, a shaft extending inwardly through the axle and driven at greater than wheel speed

by said transmission, a second planetary transmission driven by said shaft and disposed inwardly of the axle, a hydrodynamic retarder having a rotor driven by said shaft at greater than shaft speed, said wheel, axle, transmission, and retarder being assembled as a unit, and means removably securing said unit to the vehicle.



3,185,262

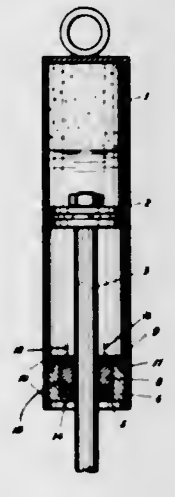
SHOCK ABSORBER STRUCTURE AND THE LIKE

Ludwig Axthammer, Schweinfurt (Main), Germany, assignor to Fichtel & Sachs Aktiengesellschaft, Schweinfurt (Main), Germany

Filed Nov. 2, 1962, Ser. No. 234,921

Claims priority, application Germany, Nov. 29, 1961, F 35,426

4 Claims. (Cl. 188—100)



1. Apparatus comprising a cylinder having opposite ends, one of which is closed, a piston slidably supported in said cylinder to vary the pressure of a pressure medium in the cylinder, a piston rod connected to the piston and extending axially in the cylinder, and means supported at the other of the ends of the cylinder and engaging the piston rod to form a pressure-tight seal between the piston rod and the cylinder with a force dependent upon the pressure of the medium in said cylinder, said means comprising a rigid closure mechanism supported in said cylinder, said closure mechanism having a central bore, an annular packing ring supported in the bore of the closure mechanism and having a central opening for the passage of the piston rod, said packing ring having an upper and a lower surface, an annular body encircling the piston rod and resting on the upper surface of the packing ring while being guidably supported in the bore of the closure mechanism, said annular body having a face exposed within the cylinder for receiving the application of force by the pressure medium, said packing ring being radially and axially retained in position by the annular body and the closure mechanism, said opening in said packing ring having a cylindrical upper portion extending downwardly from the upper surface of the ring and a smooth continuous lower portion which extends from the cylindrical portion to the lower surface and which widens continually to said lower surface to define a substantial interior space with the piston rod, said packing ring having an outer smooth surface which includes a cylindrical portion accommodated in said bore and an upwardly extending portion on said cylindrical portion which narrows upwardly to said upper surface which is in contact with the annular body to define a substantial space between the upwardly extending portion of the ring and the annular body and closure member.

3,185,263

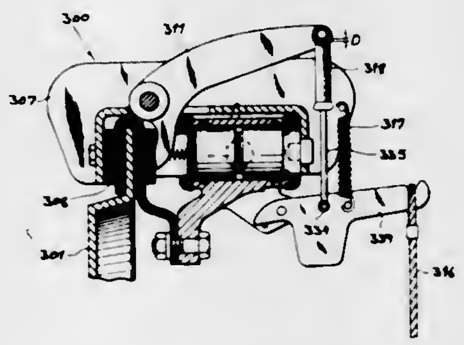
SPOT-TYPE DISK BRAKE

Hans Schanz, Niederhochstadt, and Carl Press, Frankfurt am Main, Germany, assignors to Alfred Teves K.G., Frankfurt am Main, Germany, a corporation of Germany

Filed Oct. 15, 1962, Ser. No. 230,530

Claims priority, application Germany, Oct. 17, 1961, T 20,972

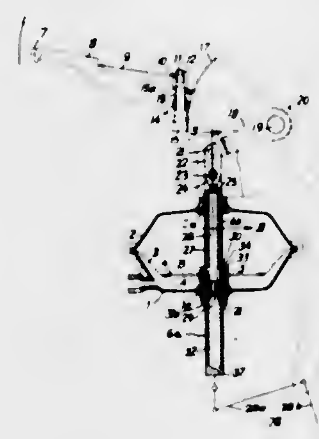
12 Claims. (Cl. 188—106)



1. In a brake system, in combination, a structure including a support, a rotatable disk journaled on said support and coupled with a load, a pair of brake elements disposed adjacent opposite faces of said disk at a peripheral zone thereof, said brake elements being axially slidable toward each other on said support for clamping said disk therebetween, said structure further including a hydraulic cylinder rigidly secured to said support on one side of said disk adjacent one of said brake elements and in substantial axial alignment therewith, a pair of pistons freely movable in said cylinder, first link means operatively connecting said one of said brake elements with the proximal one of said pistons, a yoke floatingly mounted on said structure adjacent said cylinder and reaching around said disk, second link means including said yoke operatively connecting the other of said brake elements with the distal one of said pistons whereby said brake elements are moved toward each other upon separation of said pistons, conduit means opening into said cylinder between said pistons for admitting a hydraulic fluid thereto in a manner urging said pistons apart, thereby forcing said brake elements against said disk, a lever fulcrumed on said yoke in operative engagement with said proximal piston, and manual brake-actuating means coupled with said lever for swinging the latter about its fulcrum in a sense urging said brake elements toward each other, said distal piston being provided with a member projecting axially beyond said cylinder, said yoke having one end supported on said member and having its other end directly secured to said other of said brake elements.

3,185,264
VEHICLE HAND BRAKE COMPRISING A SERVO DEVICE INSERTED IN THE LINKAGE BETWEEN THE BRAKE AND A BRAKE LEVER COOPERATING WITH A LOCKING DEVICE

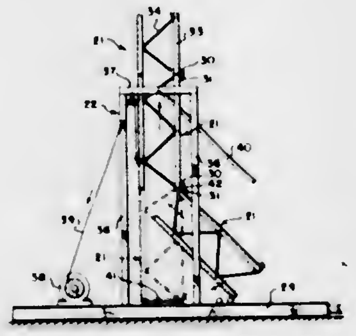
Carl Johan Nordström and John Fritiof Rönnhult, Sodertalje, Sweden, assignors to Aktiebolaget Scania-Vabis, Sodertalje, Sweden, a corporation of Sweden
Filed July 5, 1962, Ser. No. 207,614
Claims priority, application Sweden, July 4, 1961, 6,956/61
1 Claim. (Cl. 188—265)



A vehicle hand brake comprising a braking mechanism for the wheels of the vehicle, a brake lever adapted to be actuated by the operator of the vehicle, and linkage means extending between said brake lever and said braking mechanism, said linkage means including therein a fluid actuated servo device for power amplification, a locking device interposed between said brake lever and a fixed support, said locking device comprising a catch element in the form of a worm secured to a shaft which is pivotally and rotatably mounted on said brake lever and operable by means of a push button mechanism on said lever to be swung into and out of engagement with the teeth of a locking segment secured to said fixed support, releasable locking means being provided between said shaft and said lever to prevent unintentional rotation of said worm relative to said lever and said segment, and means on said worm shaft enabling the same to be rotated manually when said locking means are released.

3,185,265
HOISTING APPARATUS

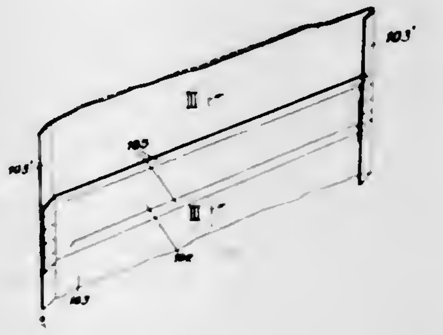
Gerome R. White, 5 W. Sheffield Ave., Englewood, N.J.
Filed Oct. 19, 1960, Ser. No. 63,650
1 Claim. (Cl. 189—12)



A self-erecting tower of variable height comprising a vertically disposed tower pintle member, a hinge means secured to the lower end of one side of said pintle member having a hinge axis horizontally disposed, a unitary tower extension member having at least one corresponding hinge means disposed at one end on one side of said tower extension and removably and pivotally connected to the corresponding hinge means of said pintle member, and elevator means adapted to raise the tower pintle member a distance sufficient to allow the tower extension member hingeably connected to the pintle member to swing by its own weight in an arcuate path from an approximately horizontal position to a substantially vertical position in vertical alignment with the tower pintle member and further adapted to lower said tower pintle member onto and rigidly connect said pintle member to said vertically positioned tower extension member, said unitary tower extension member being adapted by itself to support the tower pintle member.

3,185,266
METHOD FOR CONNECTING AND SEALING SHEET-METAL PARTS

Wilhelm Hofmeister, Munich, Germany, assignor to Bayerische Motoren Werke, Munich, Germany
Filed Oct. 6, 1959, Ser. No. 844,753
7 Claims. (Cl. 189—34)

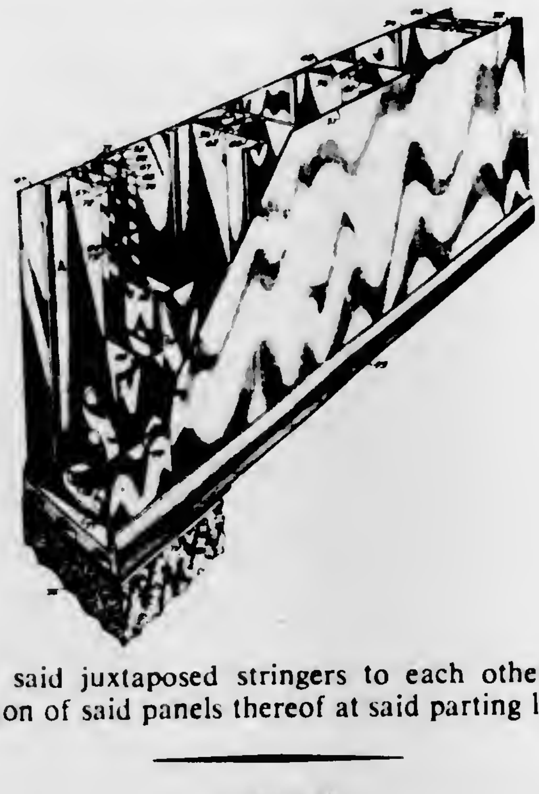


1. A reinforcing body structure for motor vehicles formed by two body sheet metal members of said motor vehicle having a relatively tight, sealing connection therebetween for effectively dampening droning noises, comprising a first sheet metal member forming an outer covering body panel and a second sheet metal member reinforcing said first member and having at least one end portion securely fastened thereat to said first member, said first and second sheet metal members having mutually spaced connecting surfaces of predetermined dimensions arranged in oppositely disposed face-to-face spaced relationship and profile strip having a cross section corresponding essentially to the width and spacing of said opposed connecting surfaces and essentially consisting of a rubber mixture having a foam-like cellular structure in the vulcanized condition, said profile strip being inserted between said spaced connecting surfaces and vulcanized to said spaced connecting surfaces in situ so as to elastically connect said connecting surfaces by said profile strip having said foam-like cellular structure.

3,185,267
INTERLOCKED PANEL STRUCTURE

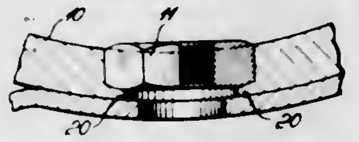
John Pavlecka, 8797 Capital Ave., Oak Park, Mich.
Filed July 26, 1952, Ser. No. 301,010
36 Claims. (Cl. 189—34)

1. In a structure, two panels meeting with each other at a parting line, a number of structural members extending at a distance from said panels along said parting line, said number of structural members having longitudinal reentrant mortises running therein and open toward said panels, juxtaposed stringers extending on said panels at and along said parting line and reaching to said number of structural members therefrom, said stringers having longitudinal reentrant mortises running therein in registry with said structural member mortises, dual tenon splines telescoped into engagement with said structural member and stringer mortises in registry, and laterally engaging means locking said juxtaposed stringers to each other against separation of said panels thereof at said parting line.



3,185,268
STRUCTURE FOR FASTENING ARTICLES TO THIN WALLS AND METHOD FOR MANUFACTURING SUCH STRUCTURE

Joseph Heine, Leonberg, Germany, assignor to Robert Bosch G.m.b H., Stuttgart, Germany
Filed Feb. 14, 1963, Ser. No. 258,504
Claims priority, application Germany, Feb. 23, 1962, B 66,065
5 Claims. (Cl. 189—36)

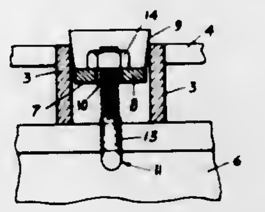


3. A process for manufacturing a fastener assembly which includes a relatively thin wall having one face and another face and to said one face of which an article is to be fastened, comprising the steps of forming in said wall a substantially circular opening and pressing a polygonal nut having a thickness which is smaller than the thickness of said relatively thin wall and having a minimum outer diameter which is substantially equal to the diameter of said circular opening into said opening from the other face of said relatively thin wall with said nut arranged substantially coaxially with said opening, and to a depth which is smaller than the thickness of said relatively thin wall so that in that portion adjacent to the other face of said wall which is not penetrated by said nut inwardly projecting wall portions will be formed by those portions of the nut which extend beyond the diameter of said opening, said inwardly projecting wall portions being adapted to support said nut within said opening and prevent its passing through said opening when an article is fastened to said one face of said thin wall by a screw passing through said opening and engaging said nut embedded in said thin wall.

3,185,269
GRATING RETAINING MEANS

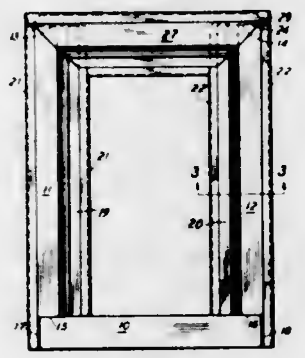
Harold Nagin, Pittsburgh, Pa., assignor to Reliance Steel Products Company, McKeesport, Pa., a corporation of Pennsylvania
Filed July 31, 1961, Ser. No. 128,169
2 Claims. (Cl. 189—84)

1. The combination with a grating having parallel bearer bars and cross bars defining rectangular cells and a flanged structural supporting section on which the grating rests, of a clamping means for securing the grating to the supporting section which may be applied from a position above the grating, said clamping means comprising a U-shaped clip having a base and upwardly-extending arms, the base and lower portions of the arms being narrower than the distance between two bearer bars and the length of the clip being shorter than the length of one of said cells, the arms flaring in width upwardly to a width greater than the distance between the bearer bars, the clip being positioned in one of the grating cells and wedged between two bearer bars with the tops of the arms thereof being flush with the tops of the bearer bars, and a clamping member having a threaded post extending upwardly through the base of the clip with a nut thereon tightened against the base, said clamping member having a lateral extension at the lower end of the post below the base projecting under a portion of the structural supporting section and held against said portion by the bearing of the nut against the base of the clip.



3,185,270
ALUMINUM MOLDING FOR DOOR AND WINDOW FRAMES

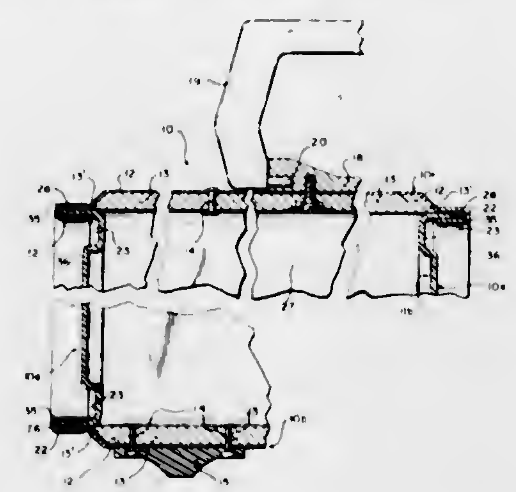
Donald A. South, 4142 Woodmere Drive, Youngstown 9, Ohio
Filed Dec. 7, 1962, Ser. No. 242,979
3 Claims. (Cl. 189—85)



1. A sheet metal molding assembly comprising a longitudinally extending base plate having a body portion and first and second inturned flanges along the longitudinal edges thereof, said first flange extending from one end of the base plate to the other, the ends of said second flange at their juncture with the body portion terminating short of the end of the base plate by an amount equal to the width of the base plate, and a longitudinally extending hollow molding member having two outwardly extending flange portions along the longitudinal edges thereof normally positioned beneath said inturned flanges, one of the flange portions having a length less than the length of said first flange minus twice the width thereof, a side section of the member adjacent the one of the flange portions being of the same length as the said first flange minus twice the width thereof, said side section having a downturned flange at each end thereof, said member having at least one face section, the lateral edges of which are inclined inwardly of the ends of the first flange at 45

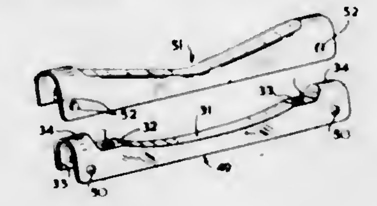
degrees when the base and member are normally positioned with said flange portions beneath said inturned flanges.

3,185,271
LUGGAGE CASE
Henry L. Kotkins, 10 Wall St., Seattle, Wash.
Filed Jan. 28, 1964, Ser. No. 343,440
2 Claims. (Cl. 190—41)



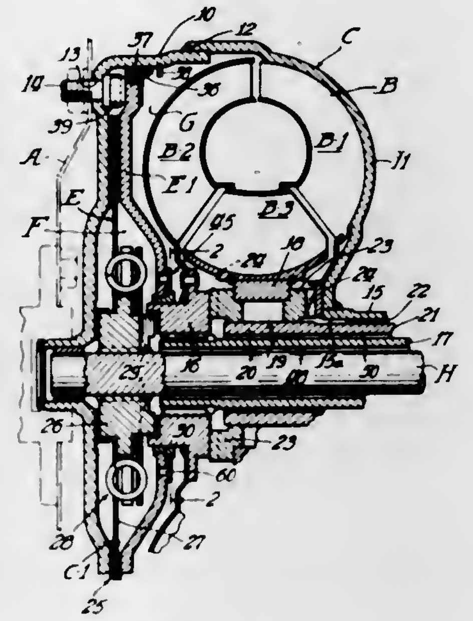
1. A six-sided hand luggage unit comprising a tubular member forming the body of the luggage unit and having a side wall with a flexible access flap formed therein, rigid panels secured within said tubular member to define top and bottom walls adjoining said side wall, relatively rigid one-piece molded plastic opposite end walls contained within said tubular member adjacent the ends thereof, said end walls each including an integral continuous inturned marginal stiffening channel terminating in an out-turned flange extending about the entire perimeter thereof, each of said rigid panels extending between and overlying said flange portions at the top and bottom of said end walls, and means securing said flanges of the end walls to the overlying portions of said tubular member.

3,185,272
HANDLES
William E. Chance, Birmingham, England, assignor to C. W. & Son Limited, Birmingham, England, a British company
Filed Dec. 27, 1962, Ser. No. 247,595
Claims priority, application Great Britain, Jan. 2, 1962, 199/62; Oct. 16, 1962, 39,030/62
3 Claims. (Cl. 190—57)



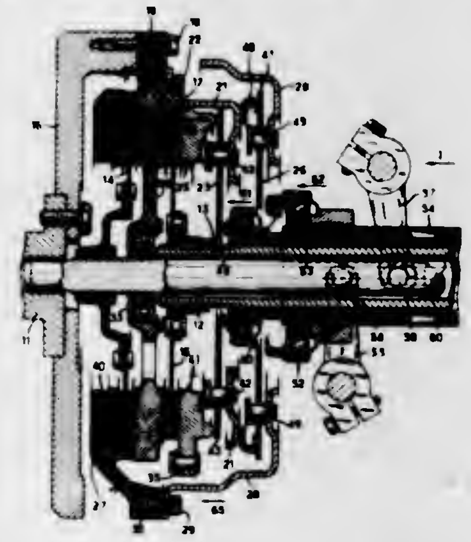
1. A handle assembly for an article of luggage comprising a handle having a carrying loop and a pair of co-axial trunnions extending towards each other from said loop, each trunnion having a peripheral groove; a mounting plate of substantially channel shape with U-section end portions, both end portions having end edges directed inwardly, the two trunnions being received in the said end portions and said end edges being accommodated in the grooves; a cover plate of U-section extending substantially the length of said mounting plate and fitting thereupon; means for securing the mounting plate to a piece of luggage; and means for securing the mounting plate and the cover plate together.

3,185,273
HYDRAULIC COUPLING WITH LOCK-UP CLUTCH
Richard L. Smirl, La Grange Park, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 17, 1963, Ser. No. 252,077
11 Claims. (Cl. 192—3.2)



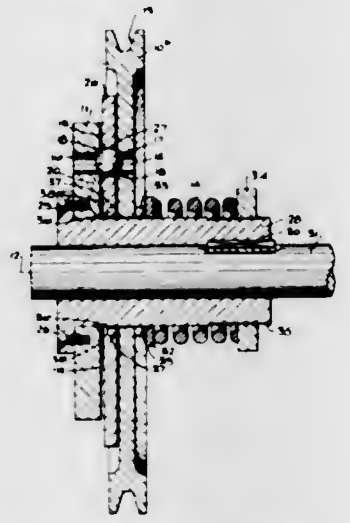
9. A hydraulic circuit for charging a torque convertor and operating a by-pass clutch of a convertor assembly having a housing; an axially movable pressure plate dividing the interior of said housing into a clutch chamber and a convertor chamber comprising; a source of fluid under pressure, a valve for selectively diverting said fluid into said clutch chamber or into said convertor chamber, restricted orifice means in said housing affording communication between said clutch chamber and said convertor chamber, valve means for preventing fluid communication between said convertor chamber and said clutch chamber when said convertor chamber is pressurized.

3,185,274
CLUTCH DEVICE WITH MULTIPLE OUTPUTS
Jean Maurice, Paris, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a corporation of France
Filed June 15, 1962, Ser. No. 202,873
Claims priority, application France, July 1, 1961, 866,719
8 Claims. (Cl. 192—48)



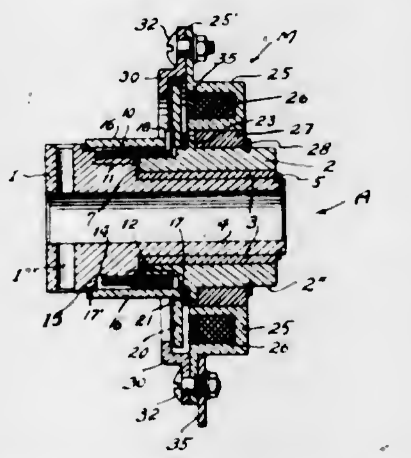
1. A clutch comprising a driving shaft, reaction plate means rigid with said driving shaft and having a first and a second reaction friction face, a first driven shaft, a first friction disc rigid in rotation with said first driven shaft, a first pressure plate rigid in rotation with said reaction plate means and operable to grip said first friction disc between said first pressure plate and said first reaction face, a first elastic diaphragm operable to urge said first pressure plate to clamp said first friction disc between said first pressure plate and said first reaction face, a first cover rigid with said reaction plate means on which said first elastic diaphragm is rockably mounted, first declutching means for pushing said first diaphragm to rock said first diaphragm to release said first friction disc, a second driven shaft concentric with said first driven shaft, a second friction disc rigid in rotation with said second driven shaft, said second friction disc being in the first friction disc vicinity, said first friction disc being located between said second friction disc and said first diaphragm, a second pressure plate rigid in rotation with said reaction plate means and operable to grip said second friction disc between said second pressure plate and said second reaction face, a second cover surrounding said first cover and rigid with said second pressure plate, a second elastic rockably mounted diaphragm operable to urge said second cover to clamp said second friction disc between said second pressure plate and said second reaction face, said second diaphragm being in the first diaphragm vicinity, said first diaphragm being located between said second diaphragm and said first friction disc, and second declutching means for pushing said second diaphragm to rock said second diaphragm to release said second friction disc.

3,185,275
OVERLOAD CLUTCH OR TORQUE LIMITING DEVICE
Olaf John Barclay Orwin, Birmingham, England, assignor to Fisher & Ludlow Limited, Tipton, England, a British company
Filed June 25, 1963, Ser. No. 290,542
Claims priority, application Great Britain, June 30, 1962, 25,180/62
2 Claims. (Cl. 192—56)



1. An overload clutch comprising
- (*a*) a driving clutch member,
- (*b*) a driven clutch member,
- (*c*) means mounting said clutch members in axially spaced relationship for relative rotational movement about a common axis of rotation, one of said members being axially movable in relation to the other member,
- (*d*) loading means urging said axially movable member towards the other clutch member,
- (*e*) a ball guiding cage disposed for free rotational movement in respect of one of said clutch members between said two clutch members and having two opposite faces adjacent respective ones of said members, a plurality of ball receiving bores extending between said faces in an axial direction,
- (*f*) each of said members having a plurality of ball engaging openings spaced circumferentially about said axis of rotation, with the openings in one member registerable with those in the other member and with the bores in said cage, in one rotational position of the members,
- (*g*) a torque transmitting ball disposed in each of said cage bores, each ball having a diameter less than that of the bore but greater than the axial thickness of the cage adjacent said bore so as to be adapted to project axially beyond each of the two opposite faces of the cage into torque transmitting engagement with the ball engaging openings of the clutch members when in register with one another,
- (*h*) one of said clutch members having in a face thereof opposite to said other member a plurality of ball receiving grooves extending in a direction circumferential to the axis of rotation of said members, each groove having a portion of a depth such that its base is axially spaced from the adjacent face of the other clutch member by a distance greater than the diameter of the balls so as to be adapted to receive a ball disengaged from a ball engaging opening in the clutch member with the grooved face,
- (*i*) a ball thrust bearing between the other of said clutch members and the ball guiding cage, said bearing spacing said cage axially out of engagement with said other member,
- (*j*) the loading means being so biased that a predetermined torque applied by the driving member to the balls causes the balls to move the axially movable clutch member apart from the other member against the loading means by a distance sufficient to permit the balls, while still within bores in the ball guiding cage, to roll relative to the clutch members into the grooves and out of engagement with the ball engaging openings of the axially movable clutch member.

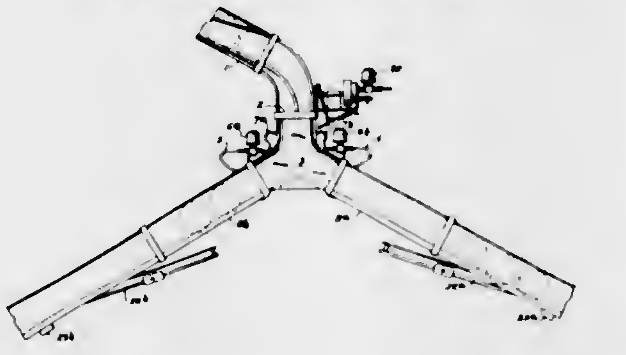
3,185,276
ELECTRO-MAGNETICALLY ACTUATED NORMALLY DISENGAGED SPRING CLUTCHES
Frank M. Sajovec, Jr., Willowick, Ohio, assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Sept. 19, 1962, Ser. No. 224,683
3 Claims. (Cl. 192—84)



1. An electro-magnetically actuated normally disengaged spring clutch mechanism comprising two coaxial clutch drum members mounted for relative rotation in fixed position axially, a helical clutch spring operatingly secured to one of the drum members to rotate therewith and having a series of coils around a clutching surface of the other drum member but normally out of contact therewith, a control member rotatable about the axis of the drum members and shiftable along said axis relative to the drum members, said control member being torque-transmittingly secured to a terminal portion of said series of coils, a friction member axially between the control member and said other drum member and adapted to establish a torque-transmitting connection between that drum member and the control member as a function of

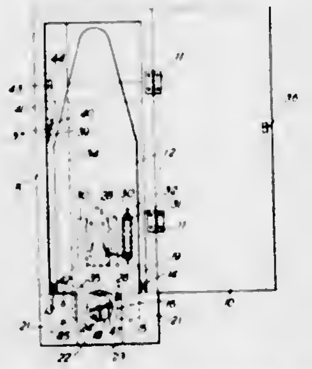
axial shifting of the control member in one direction, a circular radial flange of magnetizable material on the control member, and a non-rotatable eletcro-magnet unit having pole portions disposed axially adjacent and in spaced relation to the flange and operating via the flange to move the control member against the friction member to engage the clutch.

3,185,277
PNEUMATIC DIVIDER AND DISTRIBUTOR
Vincent R. Agnew, 816 El Vecino, Modesto, Calif.
Filed Aug. 4, 1961, Ser. No. 129,456
6 Claims. (Cl. 193—31)



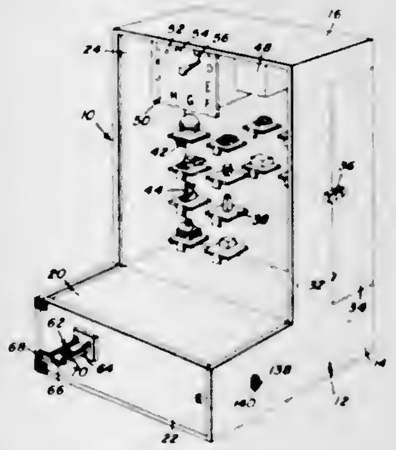
1. A can line distributor for cans having cylindrical surfaces comprising a divider chute, an inlet opening and a plurality of outlet openings; a feeder conveyor communicating with said inlet opening; branch conveyors communicating with each of said outlet openings; a plurality of air nozzles, each of said nozzles being positioned at said divider chute to direct a flat air stream across said inlet opening in the direction of one of said outlet openings and tangent to the advancing edge of said cylindrical surfaces; detector means positioned on each of said branch conveyors, said detector means being responsive to an excessive flow of cans in said branch conveyors; means associated with said nozzles for supply periodic successive pulses of air to said nozzles; means responsive to said detector means for stopping said pulses of air to each of said nozzles whereby pulses directed in the direction of any particular one of said outlet openings are stopped while there is an excessive flow of cans in the corresponding branch conveyor.

3,185,278
ELECTRIC IRON WITH TIMER AND IRONING BOARD AND CABINET THEREFOR
Lawrence E. Miller, Muskegon, Mich., and Excie Deo Miller, Peoria, Ill., assignors to Clarence R. Miller, Peoria, Ill.
Continuation of application Ser. No. 767,042, Oct. 13, 1958. This application Dec. 31, 1962, Ser. No. 250,457
6 Claims. (Cl. 194—1)



1. In an electric ironing unit, the combination with an electric iron for ironing clothes having a manually operable heat control switch on it which also has an off position enabling manually turning the electric iron off independently of the rest of the combination, of a cabinet adapted to house an ironing board and housing said electric iron and having a door the opening of which affords access to the electric iron and ironing board, said cabinet including a fire resistant support therein for the electric iron, spring-pressed means urging the door to open position, a keeper on the door, a catch mounted in the cabinet arranged normally to engage said keeper, a solenoid housed in said cabinet and connected with said catch to release it when the solenoid is energized, coin controlled circuit closing means closing circuits through said electric iron and solenoid timer means automatically set into operation for a predetermined time upon the depositing of a coin for automatically opening said circuit closing means, and a switch controlling the circuit for said electric iron operable by said spring-pressed means, said switch being closed when the spring-pressed means holds the door open and being opened when the door is closed, whereby to break the circuit through the electric iron when the door is closed to avoid danger of the electric iron causing a fire.

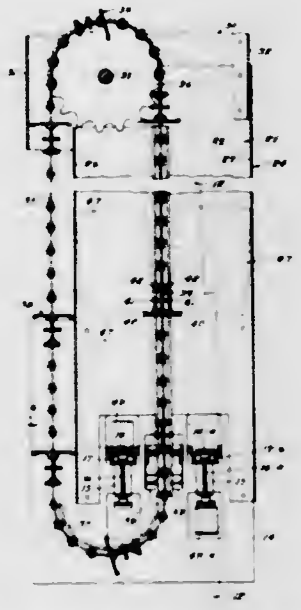
3,185,279
VENDING MACHINE
Willard B. Spears, Box 50923, New Orleans, La.
Filed Sept. 6, 1963, Ser. No. 307,232
6 Claims. (Cl. 194—1)



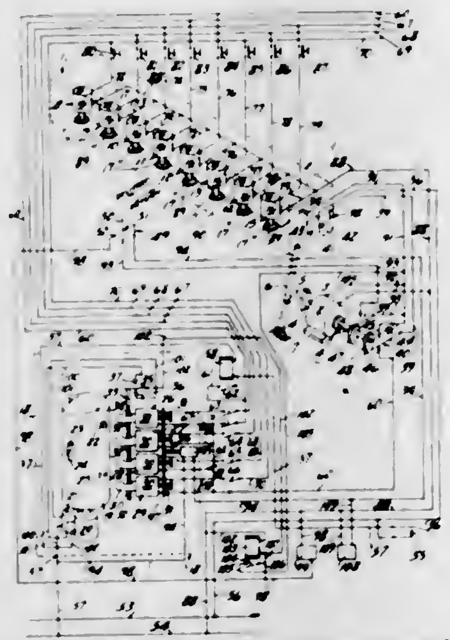
5. An apparatus for boosting sales of articles comprising a cabinet structure including a pointer assembly mounted within the cabinet and including indicia and a movable pointer for association therewith for designating certain indicia indicating a particular item, and coin control mechanism for operating the indicating mechanism, a bonus choice mechanism energized when the coin control mechanism is operated and including a clock mechanism having a minute hand thereon, said minute hand having a flexible switch actuator, a switch in a signal circuit closed by the minute hand, the signal circuit being rendered operative upon operation of the minute hand past a predetermined point for closing the switch.

3,185,280
VENDING MACHINE
Jerome Nathan, Manchester, Henry L. Helmar, Torrington, and Charles E. Reburn, West Hartford, Conn., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 14, 1962, Ser. No. 216,868
17 Claims. (Cl. 194—2)

9. A vending machine including a vending unit comprising a pair of spaced jointly operable parallel conveyors each including a supporting bar having vertical flanges to support articles thereon and a longitudinal groove between said flanges, an endless chain movable in said groove, a pusher on said chain for pushing articles on said flanges to a vending position, an elevator including a parallel pair of endless chains having a flight movable downwardly between said conveyors, shelf bars on said elevator for supporting articles thereon at both sides thereof and depositing said articles simultaneously upon both conveyors, said shelf bars being adjustable on the elevator chains to accommodate articles of different sizes, U-shaped clips having prongs extending through said elevator chains into the ends of the shelf bars for detachably mounting said bars upon the elevator chains in different positions thereon, a pusher on each of said conveyor chains for pushing the articles on the flanges of the respective supporting bar, means operable by the pusher of one of said conveyors when both conveyors are empty of articles for operating said elevator to deposit a supply of articles upon both conveyors, said operating means being operable to stop the movement of the elevator when a shelf bar has deposited articles on the conveyors and is below the plane of the deposited articles, and separate means adjustably associated with said elevator to render it inoperable after a pre-selected shelf bar has deposited articles upon the conveyor.



3,185,281
CONTROL SYSTEM FOR CHANGE-MAKING MECHANISM IN VENDING MACHINES AND THE LIKE
Arthur R. Gross, 301 Chestnut St., St. Paul 2, Minn.
Filed Jan. 29, 1962, Ser. No. 169,433
3 Claims. (Cl. 194—2)



1. A control system for a vending machine for dispensing articles of merchandise of different price classifications, said system comprising,

(*a*) coin-operated mechanism including a control device therefor adapted to be operated by coinage of predetermined value greater than that required for any one of said articles to energize said mechanism,

(*b*) change making mechanism including a motor for delivery of change to the purchaser in coinage of value determined by the difference between the price of the selected article and the denomination of said coinage of predetermined value received by the coin-operated mechanism,

(*c*) a plurality of article selector devices each operatively associated with a different one of a plurality of groups of articles and each operatively engageable with an article to be dispensed from its respective group, to dispense said article,

(*d*) a plurality of selector switches each controlling a different one of said selector devices,

(*e*) article delivery mechanism responsive to delivery of coinage of said predetermined value to said coin operated mechanism and closing of a selected one of said selector switches to energize its respective selector device to engage and dispense the selected article,

(*f*) conductor leads connecting each of said selector switches to a different one of said selector devices,

(*g*) a common conductor for connecting all of said selector devices to one of a pair of cooperating power lines,

(*h*) control means for said motor including, a motor switch, a plurality of control solenoid coils each having an armature and each corresponding to a different one of said price classifications less than said coinage of predetermined value, means operatively connecting the armatures of said control solenoid coils to said motor switch to close said motor switch responsive to energization of any one of said control solenoid coils, and means operatively coupled to said motor and including said arrmatures to cause opening of the motor switch responsive to predetermined change-producing operation of said motor,

(*i*) a common conductor for connecting one end of each of said control solenoid coils to the other one of said pair of power lines,

(*j*) and individual leads connecting the other ends of said solenoid coils each to at least one of said selector switches, the arrangement being such that all of the selector switches controlling the dispensing of different articles of equal price less than said coinage of predetermined value are connected to a given one of said solenoid coils, whereby a single lead between a given one of said control solenoid coils and its respective selector switches is included in a plurality of circuits corresponding to the number of selector switches connected by said single lead to said given one of the control solenoid coils,

(*k*) closing of a selected one of said selector switches operatively associated with said control solenoids providing a circuit comprising said selected selector switch, its respective selector device, and a given one of said control solenoid coils in series connection.

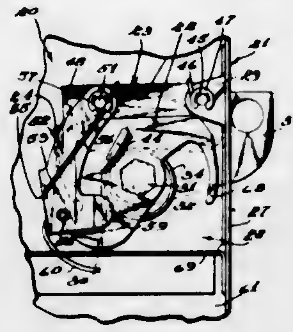
3,185,282
COIN-OPERATED RELEASE MECHANISM
Henry Charles Kovar, Anoka, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Apr. 16, 1963, Ser. No. 273,437
12 Claims. (Cl. 194—61)

3. A coin-operated release mechanism, comprising:

(*a*) a frame;

(*b*) a coin acceptor rotatably mounted on said frame and adapted to be connected to a device to be controlled, said acceptor having a pair of lock-notches; and

(*c*) a first lock-pawl pivotally supported on said frame, and a second lock-pawl pivotally supported on said first lock-pawl at a point remote from its pivotal support, said lock-pawls being individually receivable into said lock-notches to arrest initial rotation of said acceptor, and said pawls being individually cammed by a plurality of coins in said acceptor to clear said pair of lock-notches to enable continued rotation of said acceptor.

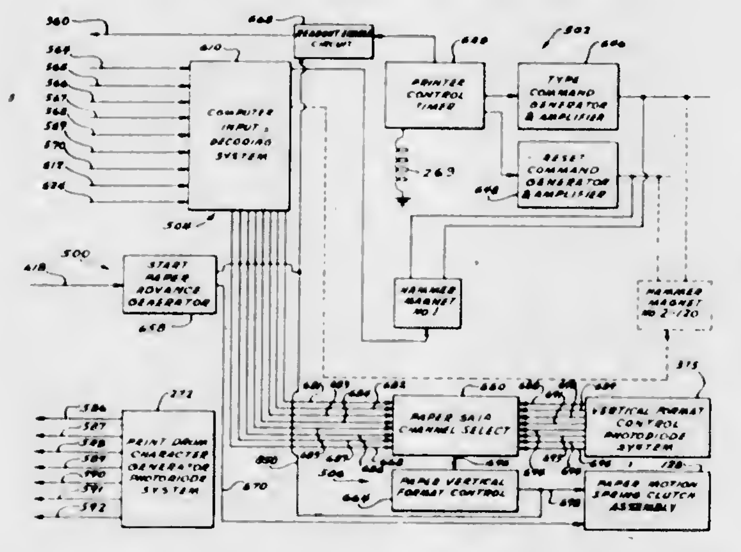


3,185,283
PAPER ADVANCE CONTROL CIRCUIT IN HIGH SPEED PRINTERS

Merlin D. Spitsbergen, Rochester, and Frank G. Pensavecchia, Orchard Lake, Mich., assignors, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 25, 1961, Ser. No. 140,614

11 Claims. (Cl. 197—133)


COMPUTER INPUT & DECODING SYSTEM
READOUT ... CIRCUIT
PRINTER CONTROL TIMER
TYPE COMMAND GENERATOR & AMPLIFIER
RESET COMMAND GENERATOR & AMPLIFIER
START PAPER ADVANCE GENERATOR
HAMMER MAGNET NO 1
HAMMER MAGNET NO 2-120
PRINT DRUM CHARACTER GENERATOR PHOTODIODE SYSTEM
PAPER SAID CHANNEL SELECT
VERTICAL FORMAT CONTROL PHOTODIODE SYSTEM
PAPER VERTICAL FORMAT CONTROL
PAPER MOTION SPRING CLUTCH ASSEMBLY
263

1. In a printer for printing on paper, said printer having paper advance means which include a clutch mechanism and an electrical actuating coil with said clutch mechanism; the improvement comprising an electronic control circuit including a relatively high power circuit connected to the coil of said paper advance means for initially energizing the coil on receiving a paper advance signal, a relatively low power circuit also connected to said coil in parallel with said high power circuit, and the high power circuit initially energized on the control circuit receiving a paper advance signal, and the low power circuit maintaining the coil energized until a stop paper advance signal is received thereby, and a stop paper advance circuit means to provide said stop paper advance signal, said circuit means connected in series with the low power circuit for providing said stop paper advance signal which is operable to deenergize said coil.

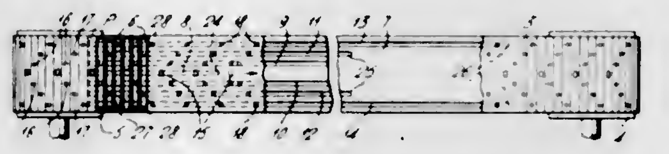
3,185,284
APPARATUS FOR FEEDING CIGARETTES

Desmond Walter Molins, Deptford, London, England, assignor to Molins Machine Company Limited, a British company

Filed Nov. 8, 1962, Ser. No. 236,234

Claims priority, application Great Britain, Nov. 10, 1961, 40,336/61

3 Claims. (Cl. 198—20)



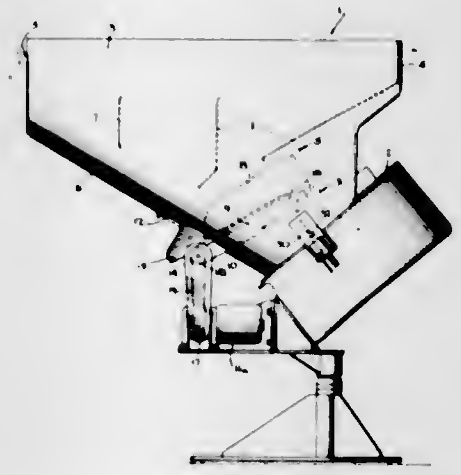
1. In cigarette feeding apparatus, delivery means to feed cigarettes in a direction transverse to their axes, a hopper to receive cigarettes, a continuous overhead suction conveyor provided with flutes and extending substantially across the width of the hopper, each flute having at least one hole, a lifting position at which cigarettes are transferred suctionally from the delivery means to said conveyor, a plurality of falling positions at each of which cigarettes are released from said conveyor to fall into the hopper, and a suction chamber extending over the lower run of said conveyor and provided with a plurality of slots each of which extends from the lifting position to one of the falling positions, the arrangement of slots and holes being such that each hole is communicable with a slot.

3,185,285
MECHANISM FOR FEEDING CLOSURES

Joseph C. Runco and Harry William Hoehn, Lancaster, Ohio, assignors to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Oct. 5, 1962, Ser. No. 228,618

6 Claims. (Cl. 198—52)



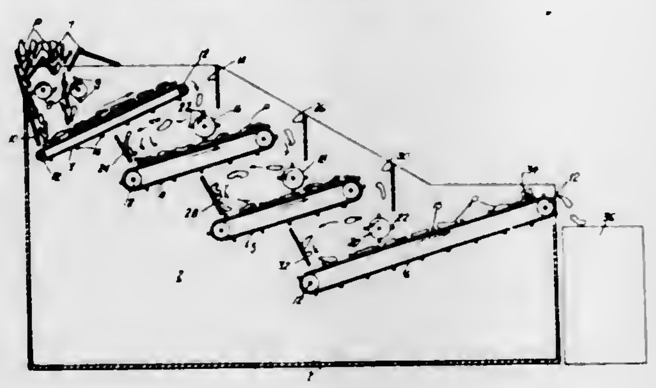
1. A cap feeding mechanism comprising a bin to receive closure caps, a rotatable hopper below said bin, said bin being affixed to and mounted on top of said hopper, said hopper communicating with said bin and adapted to receive closure caps therefrom, and a moving conveyor within said bin at the lower portion thereof and above said hopper and being adapted to transfer closure caps from said bin to said hopper and sensing means associated with said hopper to sense the level of closure caps on the hopper and control the deposition of closure caps on said hopper.

3,185,286
PIECE SEPARATOR AND COUNTER

Harry Koplin, Glencoe, Ill., assignor, by mesne assignments, to Hydraxtor Company, Chicago, Ill., a corporation of Illinois

Filed Mar. 29, 1963, Ser. No. 269,031

11 Claims. (Cl. 198—76)



1. Apparatus for separating a jumble of pieces of the character described and transporting them in spaced relation from each other, comprising

a first conveyor adapted to receive pieces at a starting end, carry said pieces and drop them at a discharge end,

means driving said first conveyor at a given linear speed to carry pieces from said starting to said discharge end,

a series of additional conveyors located successively one below another under said first conveyor,

each conveyor in the series adapted to receive pieces at a starting end, carry said pieces and drop them at a discharge end,

means driving each successive conveyor at a linear speed progressively greater than that of the preceding conveyor to carry pieces from said starting to said discharge end,

a series of kicker elements, one above each of said series of additional conveyors, each located in the path of pieces dropped from the preceding conveyor,

means driving each successive kicker element at a speed greater than the linear speed of the conveyor preceding it,

each of said kickers, as driven, adapted to engage pieces dropped thereagainst from the preceding conveyor and to throw such pieces toward the starting end of the conveyor below it,

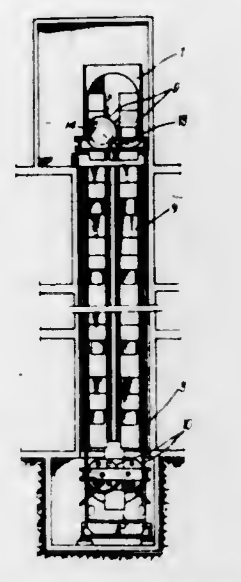
whereby the repeated dropping of pieces from a conveyor to a kicker and throwing of pieces by the kicker to a next conveyor tends to separate the pieces and the progressively greater speed of the successive conveyors spaces the pieces accordingly and said pieces are transported in spaced relation from each other on the last of said series of additional conveyors.

3,185,287
CONVEYER WITH SELF-UNLOADING CARS FOR VARIOUS-SIZE LOADS

Donat Konstantinovich Suckanov, Moscow, U.S.S.R., assignor to Vsesojuzny nauchno issledovatelsky Institut podjemno transportnoho mashinostrojenija

Filed Feb. 13, 1963, Ser. No. 258,677

9 Claims. (Cl. 198—154)



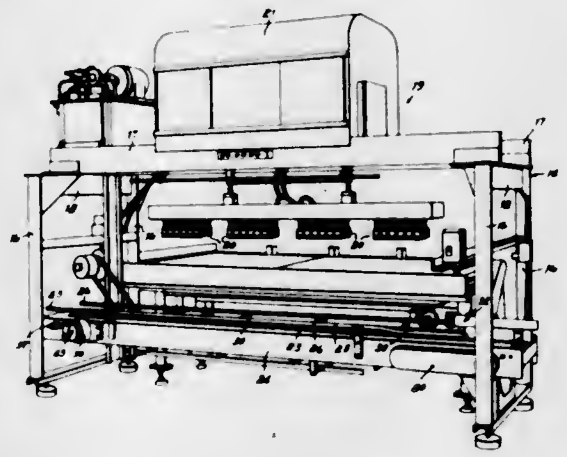
1. A conveyor assembly for handling articles comprising a vertical shaft having unloading stations located at spaced intervals throughout the height of the shaft, a drive unit and a take-up unit mounted in operative relationship to the shaft, two endless chains operably associated with said drive and take-up units whereby upon activation of the drive unit, the chains move upwardly and downwardly in the shaft, a plurality of cars, means hingedly connecting the cars to the chains at spaced intervals therealong, an article-carrying table for each car, an article unloading means for each table, means mounting the table for movement in a vertical direction relatively to that part of the car hingedly connected to the chains for operating said unloading means, and movable stop means located at said unloading stations in the area of downward movement of the chains and cars operative for maintaining the table stationary with the moving chains and car at the unloading station throughout the entire unloading operation of the unloading means of the table.

3,185,288
TRANSFER FEED CONVEYOR

Edward F. Rowekamp, Cincinnati, Ohio, assignor to Lodge & Shipley Corporation, Cincinnati, Ohio, a corporation of Ohio

Filed June 14, 1963, Ser. No. 287,939

6 Claims. (Cl. 198—203)



1. Conveyor apparatus for cases of articles comprising,

an endless conveyor track for supporting and conveying said cases,

an endless stop chain mounted parallel to said conveyor track, and having a plurality of spaced stops engageable by said cases,

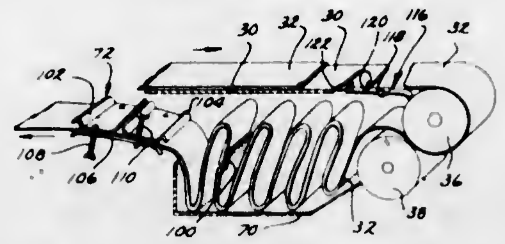
a motor drivably connected to said stop chain,

means including an overrunning clutch operatively connecting said stop chain to said conveyor track to drive said conveyor track at a lineal speed greater than the lineal speed of said stop chain, and permitting over travel of said conveyor track after said stop chain is braked,

and brake means for stopping said stop chain.

3,185,289
BELT CONVEYOR AND SAFETY MECHANISM THEREFOR

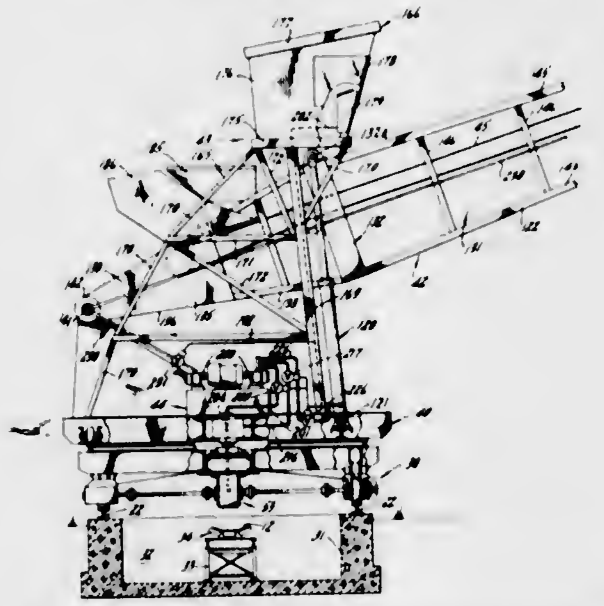
John S. Kurtz, Ephrata, Pa., and Jewel Graves, Holland, Mich., assignors to Big Dutchman, Inc., a corporation of Michigan
Original application July 9, 1962, Ser. No. 208,302, now Patent No. 3,166,175, dated Jan. 19, 1965. Divided and this application July 2, 1964, Ser. No. 384,280
3 Claims. (Cl. 198—232)



1. An egg conveyor belt and safety mechanism for a belt tending to have slack therein comprising· roller means including idler rollers and cooperative belt drive pulling rollers; power motor means for said drive rollers; a pivotal member adjacent one of said drive rollers at a portion thereof uncovered by belt, and biased generally toward the belt-emerging space between said drive rollers; electrical switch means adapted to be thrown by pivoting of said member and being electrically connected to said motor means to deactivate said motor means upon pivoting of said member; and said member being close to said one drive roller to be pivoted by the pressure of excess belt tending to follow said one drive roller around, to thereby throw said switch and deactivate said motor means to prevent belt binding.

3,185,290
STACKER

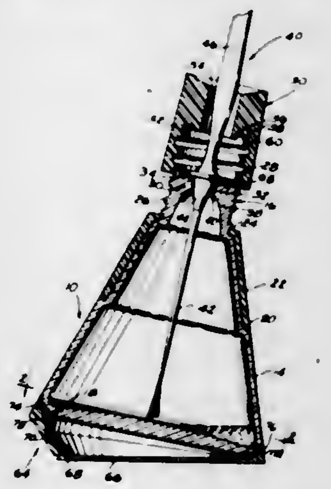
Werner G. Dietrich, 336 Central Ave., Wilmette, Ill.
Filed Dec. 31, 1962, Ser. No. 248,756
5 Claims. (Cl. 198—233)



1. A mobile material stacker having a compact configuration and a low center of gravity, comprising: movable truck means, fluid motor means on said movable truck means for moving said truck means, platform means mounted on said truck means for rotation about a vertical axis, fluid motor means between said platform means and said truck means for rotating said truck means, a boom assembly pivotally mounted on one side of and extending across said platform means for vertical movement relative to said platform means, fluid motor means mounted on the opposite side of said platform means from said one side and operatively connected to said boom assembly to raise and lower said boom assembly, a conveyor belt mounted on said boom assembly for endless movement thereon, fluid motor means mounted on said boom assembly for moving said conveyor belt, upstanding framework means mounted on said platform means, bracing means mounted on said framework means for operative engagement with said boom assembly to laterally stabilize said boom assembly as it is raised and lowered, a first fluid pump mounted on said truck means for providing fluid under pressure to said fluid motor means for moving said conveyor belt, a second fluid pump on said truck means for providing fluid under pressure to the remaining fluid motor means, and a prime mover mounted on said truck means for driving both of said fluid pumps, said prime mover having a substantially lower horsepower rating than the total horsepower required to simultaneously operate each of said fluid motor means at maximum practical operating speed.

3,185,291
CONTAINER WITH AN APPLICATOR AND SUPPORTING MEANS FOR THE CONTAINER

Nathan B. Lerner, Chicago, Ill., assignor to W. Braun Company, Chicago, Ill., a corporation of Illinois
Filed June 27, 1962, Ser. No. 205,745
6 Claims. (Cl. 206—15.3)



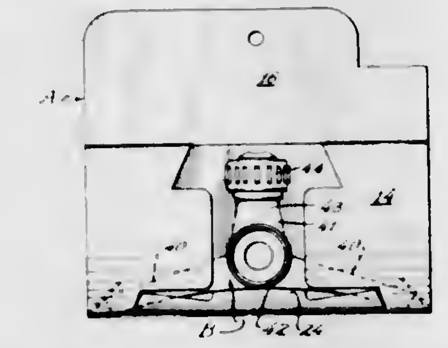
6. In combination, annular supporting base, a container for a liquid positioned on said supporting base, said container having an inwardly inclined side wall which inclines inwardly from the bottom towards the top, said container having an externally threaded neck, a cap having internal threads for engagement with said neck, said cap having a central opening, an applicator having an annular flange resting on said neck with the handle of the applicator extending through said cap opening, said applicator having a brush at the lower end extending substantially to the bottom of said container, said supporting base having means permanently supporting said container at a fixed inclined angle so that the precipitation of the liquid in the container is positioned to one side of the brush so that said brush does not come in contact with the precipitation, said annular base having an annular bottom wall and an upwardly extending annular wall which is inclined to slope inwardly on one side and inclined to slope outwardly on the opposite side and gradually increases in height on the outwardly extending sloping side, with the inwardly sloping side terminating just above the bottom wall and the opposite outwardly sloping side terminating a substantial distance above the bottom wall.

3,185,292
DISPLAY FOLDER

Joseph J. Maro, Morton Grove, Ill., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed June 11, 1963, Ser. No. 287,089
5 Claims. (Cl. 206—45.14)

4. A display for use with a lawn sprinkler having an elongated base and a central upwardly projecting stem, the display including,

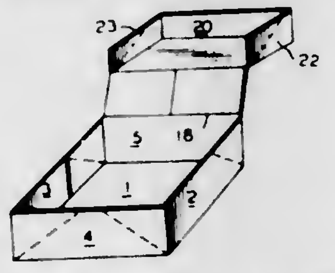
- an elongated bottom panel of a size slightly larger than that of said base,
- a rear panel hinged to an edge of said bottom and extending upwardly therefrom at substantially right angles thereto,
- an inclined display panel hinged to the edge of said bottom panel opposite that to which said rear panel is hinged, and extending diagonally to said rear panel,
- a top display panel having its lower margin in face contact with the forward surface of said rear panel and hinged to the upper edge of said inclined display panel,
- a locking tongue cut from said inclined display panel and forming a downward extension of said top display panel,



- said locking tongue being of generally trapezoidal shape with the narrower side of the trapezoid integral with said top display panel and the wider side thereof at the lower end of the tongue,
- a generally trapezoidal notch in the upper edge of said rear panel with the widest part of the notch at the base thereof, the widest part of the notch being substantially equal to the narrowest part of said locking tongue for interengagement therewith, said locking tongue engaging the rear surface of said rear panel in face contact when engaged in said notch to hold said top display panel erect, and
- a flap defined by cut lines extending from the aperture formed by said locking tongue to the fold line connecting said inclined display panel to said bottom panel producing an enlargement of said aperture,
- said flap being folded beneath said base and said stem projection extending through the enlarged aperture.

3,185,293
TILTED DISPLAY CARTON

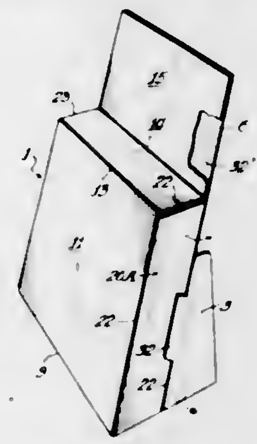
Jack W. Fletcher, Atlanta, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed May 1, 1963, Ser. No. 277,379
2 Claims. (Cl. 206—45.21)



2. A folding box formed from a unitary blank comprising a rectangular bottom panel, side walls foldably joined respectively to each edge of said bottom panel and adjoined at their ends to form a tray portion of the box, a rectangular lid panel foldably joined to the upper edge of one of said side walls, a flange panel foldably joined to said lid panel along the edge thereof remote from the fold line between said lid panel and said one side wall, a transverse fold line formed in said lid panel and generally parallel to the fold line between said lid panel and said one side wall and in spaced relation thereto, side flanges foldably joined to the ends of said flange panel and to the adjacent side edges of said lid panel only between said flange panel and said transverse fold line, a diagonal fold line in each of said side flanges with one end of said line extending from the adjacent corner of said flange panel remote from said lid panel, a pair of printed lap panels foldably joined respectively to said side edges of said lid panel between said transverse fold line and the hinge line between said lid panel and said one side wall, said lap panels being secured in fixed face contacting relation to the inside surface of said lid panel and forming a substantially complete printed cover therefor so that when said lid is folded outwardly and with said side flanges folded along their diagonal fold lines and underneath said bottom panel to form a tilted support for the box, said lap panels are exposed to view and are parallel to the outside of said one side wall, the printing on said lap panels being complementary and being arranged with respect to each lap panel so that a composite representation is formed when the edges of said lap panels remote from their fold lines are folded into close proximity to each other and simultaneously are secured to said one side wall.

3,185,294
EASEL

Eldred G. Lustman, Mount Prospect, Ill., assignor to Helene Curtis Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed May 3, 1963, Ser. No. 277,748
5 Claims. (Cl. 206—45.25)



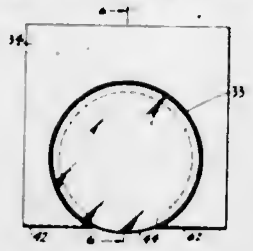
1. An easel structure comprising a sheet of material having an easel tab joined to said sheet and having an extension of said easel tab to provide a brace portion and having a score line at the junction of said easel tab and sheet, but not extending upon said extension, an opening being cut in the sheet at said extension, so that upon folding said easel tab backwardly on the score line, said extension passes through said opening and forms a coplanar forward extension of said easel tab, another edge of the sheet having a spacer panel portion thereon, a front panel portion on the spacer panel, and a flap extending laterally of the front panel portion, the flap being scored for folding to provide a side wall closure which overlaps the cut opening in the sheet and is located to engage said brace portion for blocking return movement of said easel tab.

3,185,295
COMBINATION THREE-DIMENSIONAL ARTICLE AND CLOSED DISPLAY PACKAGE THEREFOR

William B. Crane, Jr., New York, N.Y., assignor, by direct and meme assignments, to Union Bag-Camp Paper Corporation, New York, N.Y., a corporation of Virginia
Original application Dec. 15, 1958, Ser. No. 780,564, now Patent No. 3,064,402, dated Nov. 20, 1962. Divided and this application Oct. 3, 1962, Ser. No. 233,171
5 Claims. (Cl. 206—45.31)

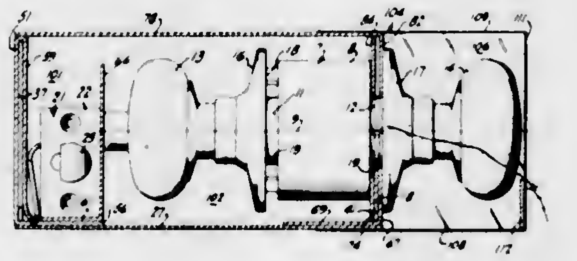
1. An upright display package and mount for a displayed article, said article having a base surface for sup-

porting the same, comprising a sheet of stiffening material formed with an article receiving opening therethrough, a flexible sheet of transparent material overlying at least said opening of said stiffening material, said flexible sheet being formed with an article receiving recess within said opening, said sheets being folded about said article on a common fold line, means securing the side edges of said stiffening sheet together, means securing the ends of said stiffening sheet remote from the fold line together, and said fold line being disposed centrally of said sheet of stiffening material in flush relation to said base surface of said article providing horizontal coplanar and laterally oppositely directed extensions of the same to provide lateral stability to said package when placed upright on a supporting surface.



3,185,296
LOCK BOX

Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company
Filed Sept. 26, 1962, Ser. No. 226,324
4 Claims. (Cl. 206—46)

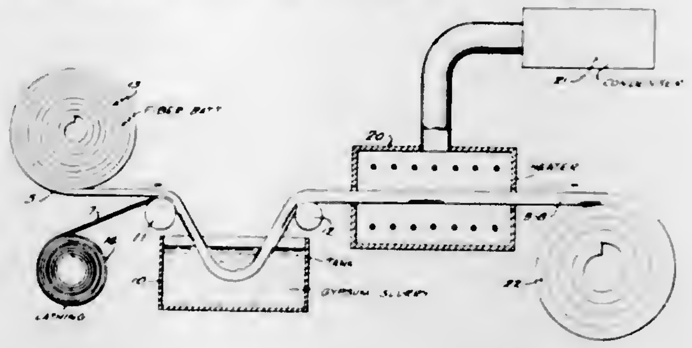


2. A lock box for a lock with a central body having a projection extending from said body along an axis and having a rosette on said projection movable along said axis toward and away from said body, said box comprising a wall adapted to lie along at least one portion of said lock and to extend parallel to said axis, a partition extending from said wall toward said projection between said body and said rosette and occupying substantially all of the space between said body and said rosette, said partition being in a position to be gripped between said body and said rosette when said rosette is moved toward said body, and means engaging said wall and extending around and enclosing at least some of the remaining portion of said lock.

3,185,297
BUILDING WALL MATERIAL

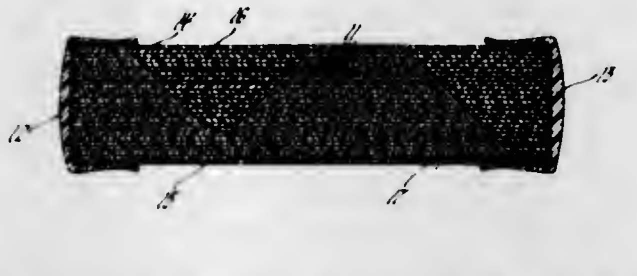
William W. Rutledge, 407 Crosby Circle, Greenville, S.C.
Filed Apr. 21, 1961, Ser. No. 104,684
3 Claims. (Cl. 206—59)

3. In a plaster and plaster base article in roll form for constructing a building wall, a flexible strip of perforated metal lathing, a flexible strip of glass fiber batt substantialy in contact with the metal lathing, and a plaster composition flexible for rolling and unrolling and in a form for penetration through the perforations in the metal lath and into the glass fiber batt and consisting essentially of unset semi-hydrate of gysum and a compound of the group consisting essentially of corn syrup, sodium metasilicate, rubber latex, methyl cellulose and polyvinyl alcohol for bonding the gypsum to and bonding together the metal lath and glass fiber batt, the gypsum being the essential solid remaining upon setting thereof to rigid condition.



3,185,298
PACKAGING OF FILM SHEETS

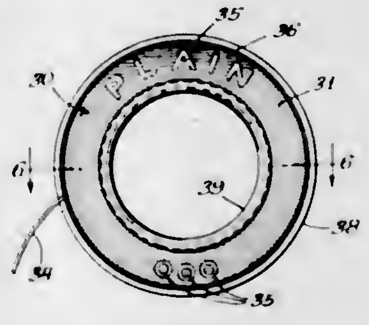
Renaat Jules Verspecht, Londerzeel, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
Filed May 7, 1962, Ser. No. 192,943
7 Claims. (Cl. 206—62)



1. A protective packaging for a stack of film sheets, particularly X-ray film sheets, comprising a paper sheet placed against the top and bottom film sheets of said stack, a cardboard sheet placed against said paper sheet at the top and bottom sides and preformed gripping means of resilient material at opposite ends of said stack to prevent relative movement of said sheets.

3,185,299
RADIOPAQUE SUTURE PACKAGE

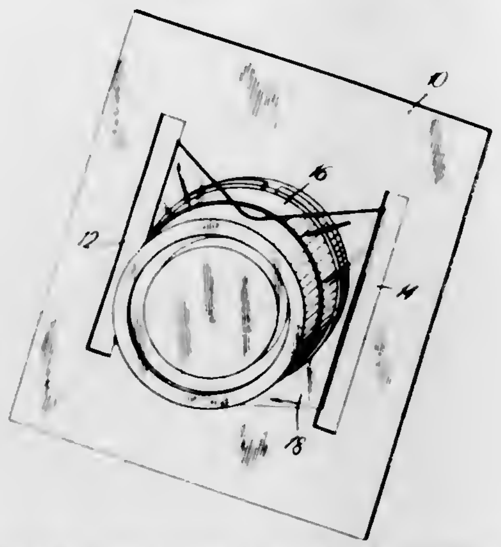
Robert L. Trainer, Fox River Grove, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Apr. 18, 1962, Ser. No. 188,468
10 Claims. (Cl. 206—63.3)



1. A container suitable as a dispenser for a suture in ligating including a structural element less than 60% by weight of polymeric material and more than 40% by weight of a filler having a solubility in alcohol-water solution of less than 1 part in 1000, said filler being a chemical compound rendering said structural element discernible by X-ray photography, said polymeric material being selected from the group consisting of polyalkylenes other than low density polyethylene, blends of polyalkylenes other than low density polyethylene and blends of polyalkylenes including low density polyethylene in amounts ⅔ or less by weight of each of said blends.

3,185,300
PACKAGE

Nicholas B. Potter, New York, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed May 14, 1963, Ser. No. 280,283
16 Claims. (Cl. 206—80)



1. Package comprising a relatively stiff backing material having at least one pair of spaced openings, product to be packaged positioned between the spaced openings, relatively deformable heat shrunk theromplastic film in close conforming contact with said product and extending from said product through each of said openings, said backing material being in mechanical engagement with the thermoplastic film to maintain said product in position between the spaced openings.

3,185,301
PROCESS OF CENTRIFUGALLY SEPARATING MINUTE POROUS PARTICLES

Hillis O. Folkins and Oral L. Beber, Crystal Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
No Drawing. Filed Oct. 26, 1960, Ser. No. 64,984
7 Claims. (Cl. 209—3)

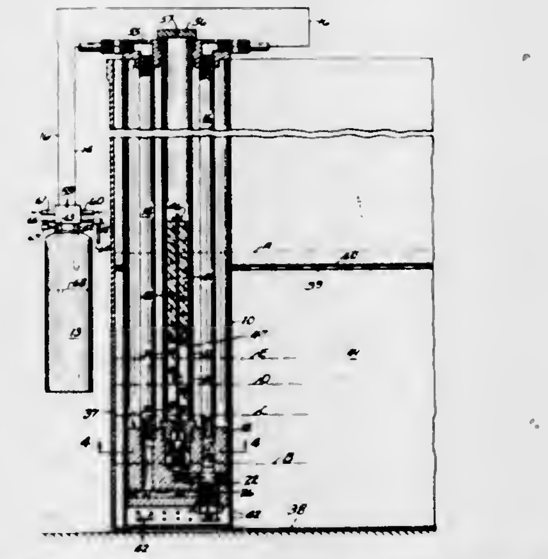
5. In the preparation of materials of the group consisting of silica gel and alumina gel from precursor hydrogels by calcination and centrifugal classification to produce a narrow particle fraction having an average particle size in the range of about 0.5 to 10 microns by entraining a mixture of particles of varying size in a high velocity gas stream and directing said stream in a generally circular course, the improvement comprising first calcining said precursor hydrogels to a water content of about 20% to about 45% by weight, then classifying the particles, while maintaining said gas stream under conditions such as to minimize the evaporation of said liquid during the classification of said particles, and calcining the resulting narrow fraction to the desired water content.

3,185,302
REGENERANT SUPPLY SYSTEM FOR LIQUID TREATMENT APPARATUS

Benjamin H. Kryzer, St. Paul, Minn., assignor to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed May 2, 1962, Ser. No. 191,767
4 Claims. (Cl. 210—126)

1. A regenerant supply system for liquid treatment apparatus of the type having a treatment tank and a regenerant container comprising:

- (*a*) a chambered injector normally submerged in liquid in said container and having inlet and outlet chambers, a nozzle and a suction chamber;
- (*b*) a first conduit means connecting said inlet chamber to a source of water under pressure;
- (*c*) a second conduit means connecting said outlet chamber to said tank;
- (*d*) a valve body normally submerged in liquid in said container and having a valve chamber and first and second ports communicating with said chamber;
- (*e*) a first passage extending upwardly from said valve chamber and connecting said first port to the interior of said container;
- (*f*) a second passage entirely located below the lowest level reached by liquid in said container, and connecting said second port to the suction chamber of said injector;
- (*g*) a first valve seat surrounding said first port;
- (*h*) a first valve closure member movable in said valve chamber to and from closed position on said first seat,
- (*i*) a float operatively connected to said valve closure member for moving it to and from said seat in response to changes in the level of liquid in said container,



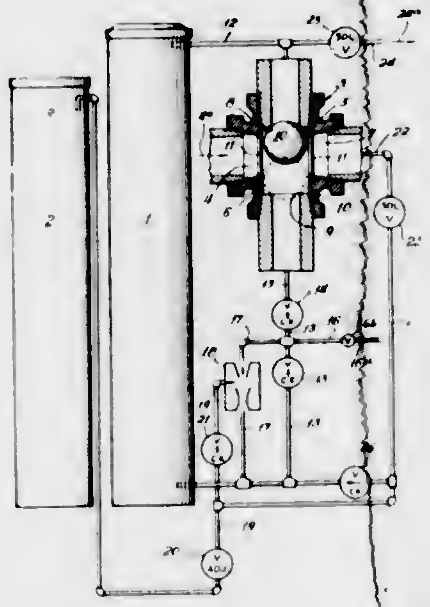
- (*j*) a second valve seat surrounding said second port and a second valve closure member movable in said valve chamber to and from closed position on said second seat, said second seat being disposed substantially horizontally at the lower side of said chamber and said second closure member being a float member having specific gravity less than 1 and being formed to close said second port when the liquid level in said chamber descends to a predetermined low level, and
- (*k*) a third substantially horizontally disposed valve seat surrounding said first passage in downwardly spaced relation to said first seat and upwardly spaced relation to said second seat, said second closure member being formed to close said first passage at said third seat upon the rise of liquid in said valve chamber to a predetermined high level, and means attached to said first closure member and movable therewith, the last mentioned means protruding below said third seat, while said first closure member is moving toward closed position, a distance sufficient to prevent said second closure member from rising to close against said third seat until substantially simultaneously with the closing of said first closure member at said first seat.

3,185,303
HYDRAULIC SYSTEM WITH AUTOMATIC FLOW DIRECTION CONTROL VALVE

Nels A. Johnson, Palatine, Ill., assignor of one-half to George M. Munson, Lombard, Ill.
Continuation of application Ser. No. 173,974, Feb. 19, 1962. This application May 21, 1964, Ser. No. 370,397
12 Claims. (Cl. 210—136)

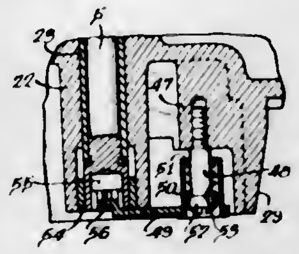
7. In water softener apparatus including a softener tank containing water softening material and a brine tank con-

taining salt and an hydraulic system associated with said tanks, said hydraulic system comprising an inlet control valve having an inlet port on one side and an upper outlet port and a lower outlet port coaxially vertically located respectively at the upper part and the lower part of said valve, said valve having a valve seat arranged in each said outlet port and a buoyant valve plug arranged within said valve for free vertical movement between said seats to cooperate selectively with the seat in each said outlet port to close the same, means connecting said upper outlet port with the top of said softener tank and also to discharge, a discharge control valve interposed between said upper outlet port and discharge, a line having two spaced opposing check valves therein connecting said lower port with the bottom of said softener tank, a soft water outlet connected with the line between said two check valves, the resistance to flow from the upper outlet port through the softener tank to the soft water outlet being greater than the resistance to flow from the lower outlet port directly into said line and to said soft water outlet, an aspirator line including an aspirator connected with the line between said two check valves and between said softener and said check valves, a brine line connecting said brine tank with said aspirator at the throat thereof and including a check valve oriented to permit flow toward said aspirator only, a rinse line connected with a hard water supply and with said brine line and having a rinse control valve connected therein, and means connecting said rinse line downstream from said rinse control valve with the bottom of said softener tank and including a check valve oriented to permit flow only toward said tank, the arrangement being such that said buoyant valve plug is normally seated to close the upper outlet port of said inlet valve and upon withdrawal of water at said soft water outlet the pressure underlying said valve plug is reduced and the plug descends into the low pressure zone within said valve to close the lower outlet port and thereby direct the flow of water entering said control valve through said upper outlet port to the top of said softener tank, whereby said plug is displaced upon each withdrawal of water at said soft water outlet.



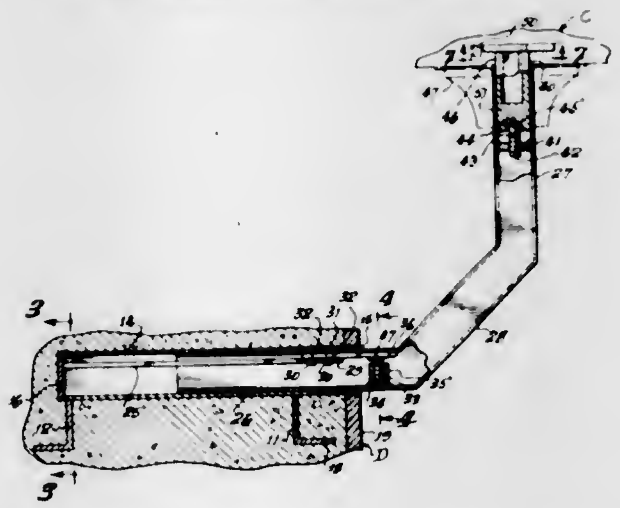
3,185,304
SHAFT LOCK FOR A FOOD PROCESSING DEVICE
Addison Ballard Bradley, Racine, Wis., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed June 14, 1962, Ser. No. 202,440
8 Claims. (Cl. 210—232)

1. In combination, a shaft, a hub for rotatably supporting said shaft, and a lock for locking said shaft against rotation, said shaft lock comprising a lever which is pivotally mounted adjacent said hub for swinging movement toward and away from said hub in a plane perpendicular thereto, and means mounting said lever for movement bodily in a direction parallel to said hub and beyond one end thereof for engagement with an exposed portion of the shaft adjacent thereto.



8. In a juicer comprising a vertical shaft and a perforate juice extracting basket threadably connected to the upper end of said shaft, a support for said juicer comprising an inner hub for said shaft, an outer spaced mounting collar, and an integral web interconnecting the upper ends of said hub and collar, and a shaft lock disposed in the space defined between said hub, collar and web, said shaft lock comprising a depending boss formed integrally with said web, a pivot pin mounted in said boss, said pin extending parallel to said hub, a lever, an outer end of said lever being pivotally and slidably mounted on said pin, a spring on said pin biasing said lever for sliding movement toward the upper end of said shaft, and means on the inner end of said lever and the lower end of said shaft which are interlockably engageable with each other when said lever is moved down against its spring bias beyond the lower end of the hub and pivoted toward the shaft.

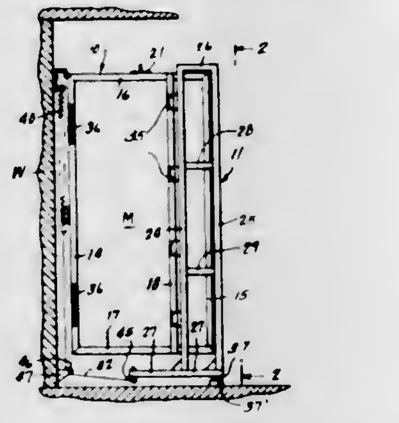
3,185,305
CANTILEVER SEAT
Abraham Silverman, Van Nuys, Calif., assignor to Bentley Products, Inc., Santa Monica, Calif., a corporation of California
Filed May 20, 1963, Ser. No. 281,473
4 Claims. (Cl. 211—13)



1. A cantilever seating construction wherein a seat is positioned relative to a curb having a front vertical surface above the surface of the floor comprising:
- a base assembly adapted to be embedded within the curb, said base assembly including a plurality of horizontally extending tubular members of non-circular cross-section, each of said members having a closed inner end and an open outer end coincident with the vertical front face of said curb whereby a non-circular opening is defined which extends horizontally inwardly from said face of said curb;
- a seat support member having a vertically extending leg and a horizontally extending leg with a connecting portion therebetween;
- said horizontal leg being of non-circular cross-section slidably mateable as a male member with said tubular member as the female member;

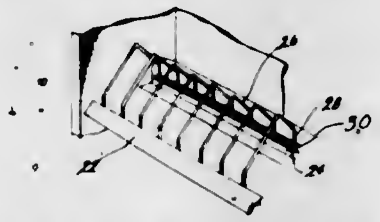
- said horizontal leg being adjustable along its horizontal axis with respect to said tubular member;
- means for retaining and adjusting said horizontal leg position, said means comprising a horizontally extending cantilevered bar affixed to said closed end of said tubular member and extending toward said open end thereof, and fastening means affixed to said horizontal leg adapted to be moved into engagement with said bar; and
- said vertical leg portion being adapted to receive and position a seat, means for vertically adjusting said seat relative to said vertical leg.

3,185,306
MATTRESS DISPLAY RACK
Luke Delaney, 103 E. Main St., Bergenfield, N.J.
Filed Mar. 9, 1964, Ser. No. 350,392
10 Claims. (Cl. 211—28)



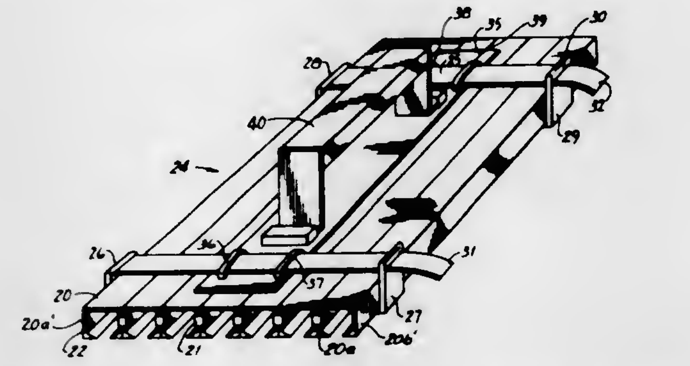
1. A mattress display rack comprising a mattress holding frame, an upright support extending lengthwise with respect to said frame adjacent one side thereof, hinge means foldably connecting said frame to said support to enable said frame to be folded from an upright position to a generally horizontal position and vice versa, and means for pivotally mounting one end of said support on a floor to enable said support to be mounted on end when the rack is not in use.

3,185,307
TAPE STORAGE RACK
Robert H. Higgins, Grand Rapids, Mich., assignor to Steelcase, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Dec. 10, 1962, Ser. No. 243,522
5 Claims. (Cl. 211—40)



1. In a storage rack, the improvement comprising: a horizontal supporting surface; a pair of spaced generally parallel divider holders on said surface, each of said divider holders including a pair of horizontally elongated L-shaped elements each having a horizontal portion extending in the same direction and lying one on the other and affixed to said surface, each having a vertical portion parallel to but spaced from the vertical portion of the other element of the holder, a vertically disposed corrugated member held between said vertical portions; said vertical portions and said corrugated member each having longitudinal end portions bonded together, said corrugated member intermediate its ends being free to move between said vertical portions; and a plurality of dividers each having a pair of generally parallel fingers spaced apart by substantially the distance between said holders, and said fingers being inserted between said corrugated member and one of said flanges and firmly held thereby.

3,185,308
PORTABLE SAMPLE CARPET HOLDER
Fred Howard, New York, N.Y., assignor to Howard Accessories, Inc., New York, N.Y., a corporation of New York
Filed July 9, 1964, Ser. No. 381,299
9 Claims. (Cl. 211—45)



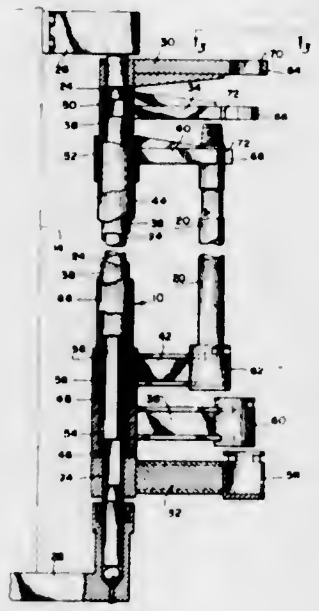
1. In a holder for carpet samples, a member of channel-like configuration comprising two spaced sides, connecting means therebetween, and flanges extending inwardly towards each other from said respective sides, the innermost edges of said flanges being in spaced relation and positioned operatively to engage therebetween one or more selected carpet samples, at least one of said flanges tapering from its supporting wall inwardly to a relatively thin edge, whereby the operative penetration of said last-mentioned flange into the mass of piles in the adjacent engaged carpet will be facilitated.

3,185,309
DISPLAY RACK FOR CARPETING
John R. Radek, Hinsdale, Ill., assignor to Ready Metal Mfg. Co., Chicago, Ill., a corporation of Illinois
Filed July 24, 1962, Ser. No. 212,110
7 Claims. (Cl. 211—46)

1. A device for supporting and displaying sheet material, comprising
- (*a*) a holder for clampingly engaging a marginal portion of a swatch of sheet material,
- (*b*) means provided with a track portion at the top thereof and a channel-like track portion at the bottom thereof for supporting said holder for horizontal sliding movement relative to said track portions,
- (*c*) said holder comprising a pair of hinged plate members,
- (*d*) one of said plate members having bearing portions at the top and bottom thereof for cooperative sliding movement with said track portions of said supporting means,
- (*e*) the other one of said hinged plate members pivotally mounted on said one plate member to constitute a cover,
- (*f*) said hinged plate members having cooperative sheet piercing means and cooperative latching means, whereby a sheet may be secured in depending relation to said holder when said cover is clamped to said one plate member,
- (*g*) and cooperating means being provided on said holder and supporting means normally limiting move-

ment of the holder to a certain distance out of said supporting means and releasable to permit full withdrawal of said holder from the supporting means.

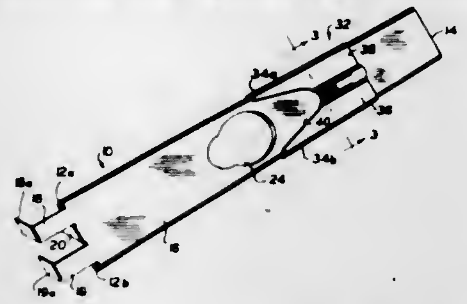
3,185,310
ROCK DRILL PIPE STORAGE AND HANDLING DEVICE
Carl T. Klem, Riegelsville, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 11, 1963, Ser. No. 264,211
5 Claims. (Cl. 211—60)



1. In combination:
(*a*) a drill pipe,
(*b*) a base,
(*c*) a shaft supported by said base,
(*d*) a pair of longitudinally spaced arms mounted on said shaft for supporting said drill pipe,
(*e*) the free end of one of said arms having a receiver for the first end portion of said drill pipe to carry said drill pipe,
(*f*) the free end of the other arm having a bushing to receive the second end portion of said drill pipe, the second end portion of said pipe being provided with a reduced portion,
(*g*) said bushing and said drill pipe having means to cooperate with each other to permit removal of said second end portion of said drill pipe radially from said bushing when said reduced portion of said second end portion of said drill pipe is positioned in said bushing and to prevent removal of said second end portion of said drill pipe radially from said bushing when said reduced portion of said second end portion of said drill pipe is positioned longitudinally beyond said bushing.

3,185,311
PAINT BRUSH HOLDER
Ralph R. Roberts, 105 Berkley Place, Glen Rock, N.J., and Erwin C. Gerlitz, 211 Boulevard, Pompton Plains, N.J.
Filed Nov. 13, 1963, Ser. No. 323,310
3 Claims. (Cl. 211—66)

1. A paint brush holder adapted to rest upon the open end of a container while adjustably holding a paint brush by its handle so as to maintain the paint brush in a suspended position, said holder comprising; (1) a body member having at least one handle passageway extending through said body member the passageway disposed intermediate the edges and ends of the body member, (2) longitudinal guide means attached to said body member, (3) a slide-grip member for each passageway, each slide-grip member having a guide extending from each longitudinal edge thereof with each of the slide-grip guides adapted to engage a longitudinal body member guide and slide thereon, said slide-grip member having its intermediate bridge portion bowed so as to provide an outward bias to each slide-grip guide urging them outwardly into contact with the body guides and providing therewith a releasable locking means for the slide-grip in relation to the body member, and (4) handle engaging means formed in one end of each slide-grip member for engaging and holding the handle of a paint brush between one edge of the handle passageway and the handle engaging means in the grip-member when said grip-member is urged toward the handle passageway of the body member.

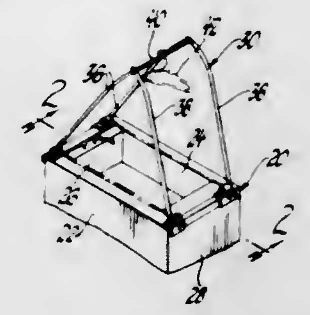


3,185,312
AUTOMOTIVE HEADER PROTECTIVE ASSEMBLY
Joseph E. Dzienisiewicz, 3944 Virginia Ave., Lynwood, Calif.
Filed Dec. 16, 1963, Ser. No. 331,029
2 Claims. (Cl. 211—87)

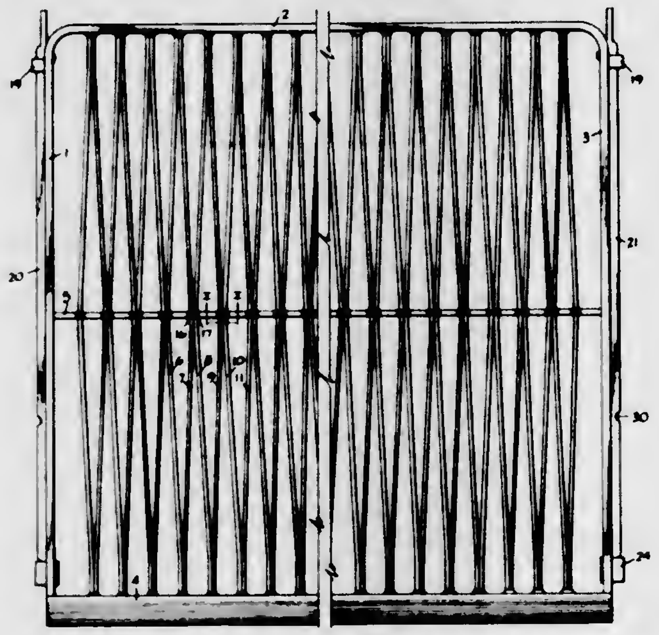
1. A header protective assembly for removably supporting at least one clothes hanger within the interior of an automotive vehicle covered by a header, including:
(*a*) a base having a bore formed therein;
(*b*) a prong extending upwardly and outwardly from said base;
(*c*) a tube, an end portion of which is disposed in said bore and affixed to said base, with the balance of said tube projecting from said base and having at least one pair of diametrically aligned openings formed therein for removably engaging and supporting a hook on one of said hangers;
(*d*) an end piece that closes said end portion of said tube, which end piece has a bore formed therein;
(*e*) a washer against which the outer surfaces of said base and end piece abut;
(*f*) a deformable protective shield that is in contact with said washer and said liner; and
(*g*) a screw extending through said bore in said end piece and said washer, shield and liner to enter a top portion of said vehicle to removably support said assembly therefrom.

3,185,313
CLOTHES HANGER STRUCTURE
Emanuel J. Gregory, 2166 Alter Road, Detroit, Mich.
Filed June 21, 1963, Ser. No. 289,646
3 Claims. (Cl. 211—104)

1. A clothes hanger structure for supporting drip dry clothing over a laundry tub having opposite upper edges comprising, a first pair of laterally spaced apart legs having upper and lower ends, a second pair of laterally spaced apart legs having upper and lower ends, a first pair of mounting members respectively supporting the legs of said first pair of legs and pivotally connected to the lower ends thereof, a second pair of mounting members respectively supporting the legs of said second pair of legs and pivotally connected to the lower ends thereof, each of said mounting members being angle shaped and having a horizontal leg to seat on one of opposite upper edges of a tub and a vertical leg to abut the opposite side of the tub corresponding to the said opposite edge, a cross bar, hinge means pivotally connecting the upper ends of each said pair of legs together and to opposite ends of said cross bar, and clamping means connecting the mounting members of each pair together for adjustably clamping said mounting members to the tub.



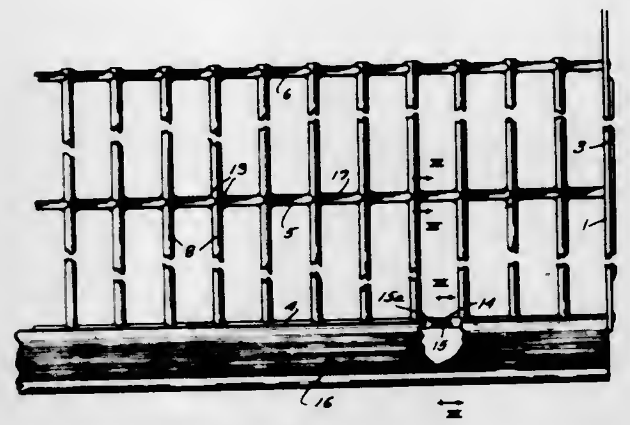
3,185,314
DOUBLE-WIRE SHELF
Lawrence D. Orser, Waterloo, Iowa, assignor to Chamberlain Corporation, Waterloo, Iowa, a corporation of Iowa
Filed Nov. 2, 1962, Ser. No. 235,050
5 Claims. (Cl. 211—153)



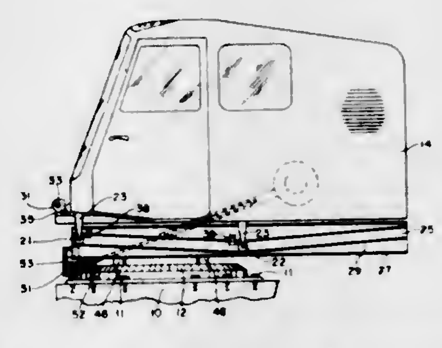
1. In a shelf for refrigerators and similar purposes,
an open rigid frame,
a plurality of initially straight bendable wires extending across and secured to said frame,
each of said wires being bent, and
means holding the wires in their bent condition under stress resulting from the bending.

3,185,315
SHELF STRUCTURE
Alfred E. O. Andreassen, Waterloo, Iowa, assignor to Chamberlain Corporation, Waterloo, Iowa, a corporation of Iowa
Filed Aug. 6, 1963, Ser. No. 300,279
7 Claims. (Cl. 211—153)

5. In a metal shelf,
front and rear cross-bars,
each of said cross-bars having a series of notches therein,
a widened curvate saddle at the base of each notch, wires disposed in said notches on said saddles, and said cross-bars having flattened transversely widened top portions between said notches and which portions extend longitudinally of the cross-bars at the ends thereof to partially overlie the respective wires and in cooperation with said saddles firmly grip the wires circumferentially thereof and longitudinally thereof a distance greater than the normal width of a cross-bar.



3,185,316
LOAD-COMPENSATING LOAD HANDLING MACHINES
Charles F. Bennett, Sr., 157 72nd St., Niagara Falls, N.Y.
Filed Jan. 14, 1963, Ser. No. 251,416
7 Claims. (Cl. 212—49)



1. A self-counterbalancing, load-handling machine which comprises a mobile base and a superstructure mounted thereon; said superstructure comprising a boom supporting carriage, a boom pivotally mounted on said carriage for swinging movement in a vertical plane, and supporting means for said carriage, said supporting means comprising parallel tracks carried by said superstructure, said tracks being parallel with the plane in which said boom swings, each track including portions that are angularly disposed in a vertical plane and the ends of each track being higher than the center portion thereof, and means carried by said carriage in rolling engagement with said tracks, whereby said carriage is movable along said tracks by changes in load on said boom.

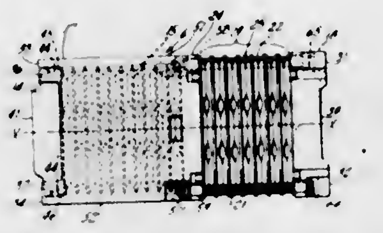
3,185,317
COMPENSATING DRAFT GEAR
Donald Willison, Lyndhurst, Ohio, assignor to National Castings Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 11, 1963, Ser. No. 315,452
9 Claims. (Cl. 213—45)

1. A railway car draft gear comprising:
(A) two cushioning units;
(B) a box-type casing having side walls disposed around a longitudinal axis of the gear in continu-

ous relationship along a transverse cross section of the gear, an end wall disposed intermediately of the gear and joining integrally with the side walls, an open end at one extremity of the gear, one of said units being disposed within the casing against said end wall;

(C) a first follower disposed in said open end in approximate engagement with the adjacent end of said one unit;

(D) detent means on said follower and said side walls adjacent said open end confining said follower therein with freedom to move toward said end wall in compressing said one unit;

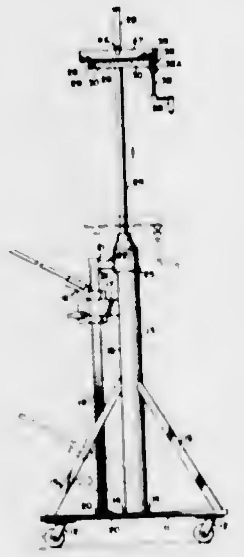


(E) a second follower spaced from said end wall with the other of said units disposed therebetween, said other unit being constructed to a predetermined compressive load capacity;

(F) means connecting the second follower with said casing at a predetermined maximum spacing confining said other unit therebetween; said means being slidable relative to the casing as the second follower moves within said maximum spacing;

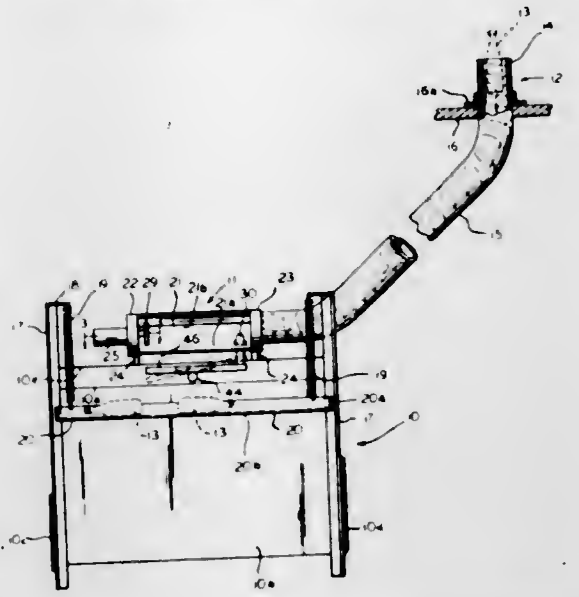
(G) said end wall being of a thickness requiring support thereof against fracture under said load capacity by, and being joined integrally to, said side walls at at least four points substantially uniformly angularly spaced about said longitudinal axis.

3,185,318
ORIENTATION JACK
Rufus James Lewis, Sr., R.F.D. 1, Warsaw, N.C.
Filed July 10, 1963, Ser. No. 294,090
5 Claims. (Cl. 214—1)



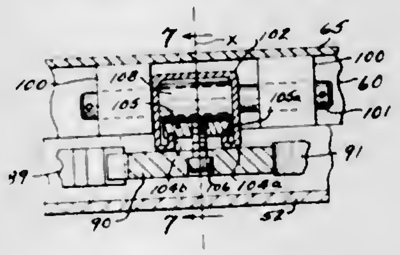
1. The combination comprising a hollow post, portable means supporting the post in a vertical position, said post having a longitudinal open slot on one side, a tray member above the post, a support member extending through the slot from the exterior of the post, means for moving the support member along the slot, means laterally supported by the post for rotatably connecting the tray member to the support member and means for selectively tilting the tray member and holding it in tilted positions relative to the post.

3,185,319
RECEPTACLE FOR BOTTLES
Harold J. Ullmer, 4265 S. Pine Ave., Milwaukee, Wis.
Filed Aug. 15, 1962, Ser. No. 216,935
5 Claims. (Cl. 214—6)



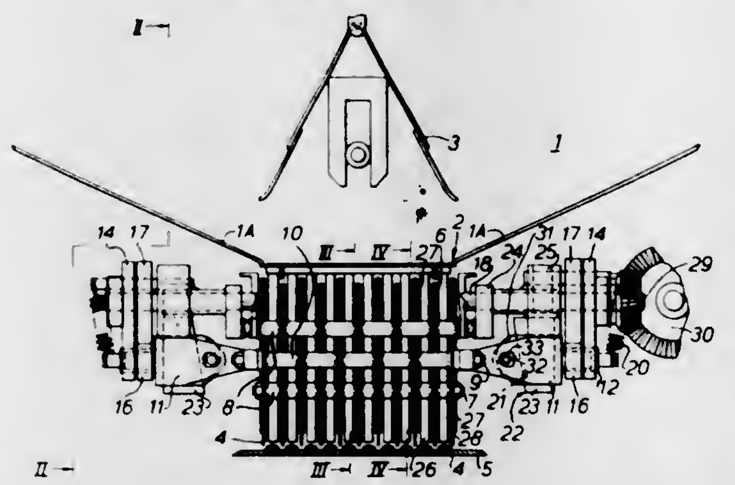
1. A receptacle for bottles which comprises, in combination, a storage bin, a bottle rack vertically movable in said bin, resilient means supporting said rack in said bin, a tiltable distributing platform mounted above said rack, rocker means including a ratchet for tilting said platform, means for delivering bottles to said platform, and reciprocating lever means associated with said delivery means and actuated by the bottles being delivered to said platform, said lever means being coupled with said ratchet for incrementally tilting said platform progressively in one direction and then in the opposite direction as bottles are delivered thereto, to distribute the bottles in said rack.

3,185,320
LOAD EXTRACTOR AND INSERTER
Anthony R. Chasar, Mentor Village, and Alfonso W. Mehrbrodt, Cleveland, Ohio, assignors to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 21, 1962, Ser. No. 246,635
10 Claims. (Cl. 214—16.4)



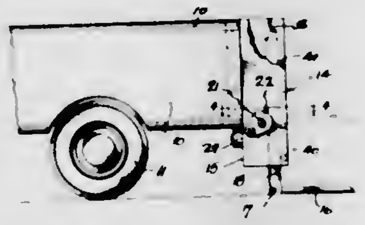
1. In a load extractor and inserter mechanism for a mechanical storage apparatus of the type having means providing a plurality of load receiving guideway means and a load carrier movable to said guideway means to deposit or retrieve a load thereat; drive means for a horizontally movable load extractor frame movable relative to a main frame of the carrier into the guideway means; said drive means comprising a rack carried by the extractor frame; gear means carried by the main frame and engaging said rack; backup means carried by said main frame and maintaining said rack in mesh with said gear means; power means connected to said gear means to rotate said gear means and cause said rack and the extractor frame to move out of the main frame; connector means mounting said rack to said extractor frame; said connector means including pin means carried by said extractor frame and disposed transversely of the path of extractor frame movement; said rack slidably mounted on said pin means and affording movement of said rack relative to the extractor frame in a direction perpendicular to the path of movement of the extractor frame whereby the extractor frame can accommodate itself to misalignment between the main frame and the guideway means.

3,185,321
HOPPERS FOR FEEDING CIGARETTES
William Joseph Kemp, London, England, assignor to Molins Machine Company Limited, London, England, a British company
Filed Aug. 10, 1962, Ser. No. 216,243
Claims priority, application Great Britain, Aug. 23, 1961, 30,372/61
3 Claims. (Cl. 214—17)



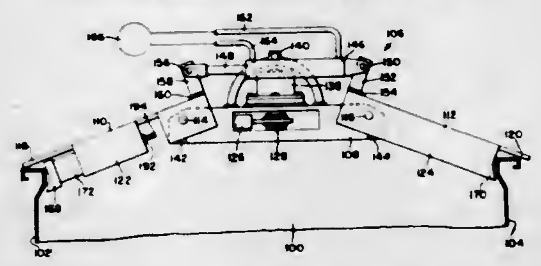
1. A hopper of the kind known as a vane hopper for feeding elongated articles, and consisting of a hopper having an outlet in its base and a set of vanes, disposed in vertical planes and laterally spaced, extending downwards from the outlet to define slots down which said elongated articles can pass from the outlet, said hopper comprising stationary vanes, and movable vanes positioned between stationary vanes, the movable vanes being fixed together to form a movable unit, means for reciprocating said unit vertically and a device for deriving a horizontal reciprocation from the vertical reciprocation and attached to the movable unit whereby the two movements of vertical and horizontal reciprocation are simultaneously imparted to the unit and the vanes of said unit are reciprocated vertically and also in directions normal to their planes.

3,185,322
POWERED TAILGATE LIFT
Harry L. Matthews, 6403 Flemming St., Everett, Wash.
Filed Aug. 8, 1962, Ser. No. 215,690
3 Claims. (Cl. 214—75)



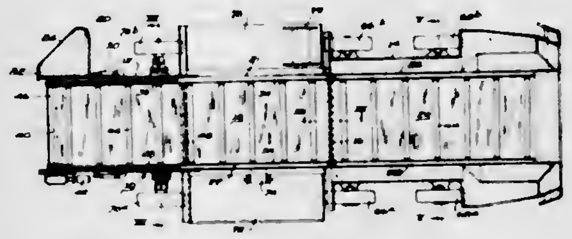
1. In combination, a truck having a cross-axle with ground wheels with a spring mounted body fixed thereon; a powered tail gate and lift mechanism comprising paired housings fixed to the rear end portions of opposite side walls of the body and extended rearwardly therefrom and formed with vertical guideways therethrough, paired rack bars movable endwise in said guideways, and extended downwardly from the housings, a tail gate mounted by and extended between the lower ends of the rack bars, for downward adjustment by said powered means to engage the lower ends of said rack bars and gate against the ground surface for lifting the truck body, and latch hook means attached to said body directly above said cross axle for adjustment into holding connection with said axle for lifting the axle and its mounting wheels from the supporting surface by the extension of the rack bars to the rear cross axle thus to effect lifting of the wheels from the surface with the lifting of the body by the rack bar.

3,185,323
SHAKER APPARATUS
Edwin F. Peterson, % Martin Engineering Co., Neponset, Ill.
Filed Aug. 9, 1961, Ser. No. 130,333
12 Claims. (Cl. 214—83.3)



1. Shaker apparatus for use with a material-handling container having spaced apart wall portions, comprising: an assemblage of variable length adapted to span the container and having opposite end elements for respectively engaging said wall portions, said assemblage including a central member and a pair of outer members pivoted respectively to the central member on parallel axes to afford a toggle in said assemblage, each outer member carrying an end element; means acting between the outer members for changing the angles thereof relative to the central member and thereby to vary the length of said assemblage to cause said end elements to grip said wall portions for rigidly mounting the assemblage on the container; and vibrator mechanism carried by said assemblage and operative to create vibrational forces for transmission through said assemblage to the container.

3,185,324
MATERIAL HAULAGE VEHICLE
Richard L. Breithaupt, Ashland, Ky., and Howard J. Thomas, Huntington, W. Va., assignors to National Mine Service Company, Pittsburgh, Pa., a corporation of West Virginia
Filed May 9, 1961, Ser. No. 108,910
5 Claims. (Cl. 214—83.36)

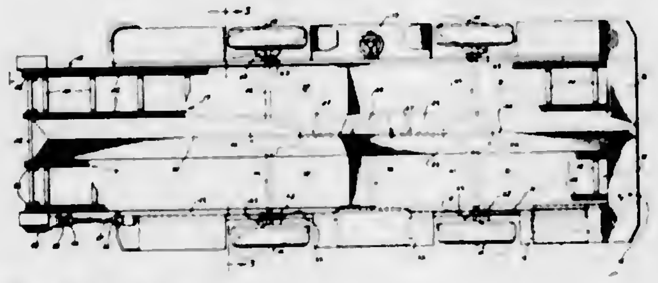


1. A haulage vehicle comprising an elongated body having a pair of tandem body parts which are connected at adjacent ends by pivot means to permit said body parts to freely pivot relative to each other about a pivot axis extending laterally of said body, one of said body parts having sets of tandem traction wheels located intermediate its ends, the set of traction wheels furthest removed from said pivot means being steerable about generally vertical axes while the set of traction wheels closest to said pivot means being non-steerable, wheels steerable about generally vertical axes on the end of the other body part opposite said pivot means, cooperating chambers extending longitudinally of said body parts to provide a trough-shaped compartment extending substantially throughout the length of said elongated body, the steerable wheels on said one body part being closer to said pivot axis than those on the other body part, and means

including linkages extending along opposite sides of said body parts at either side of the trough-shaped compartment and connected to the steerable wheels for forcibly rotating said steerable wheels on the one body part while simultaneously forcibly rotating the steerable wheels on the other body part in opposite directions about their respective vertical axes to effect steering of the vehicle, said means for forcibly rotating the steerable wheels being such that the amount of rotation of the steerable wheels about their vertical axes on the one body part with respect to the opposite rotation of those on the other body part will be in proportion to the distances of the respective steerable wheels from the axis of said non-steerable wheels, whereby the vertical axis of rotation of the vehicle will substantially intercept the horizontal axis of said non-steerable wheels.

3,185,325
SHUTTLE CAR

Kenneth W. Stalker, Western Springs, and Richard A. Young, Chicago, Ill., assignors to Goodman Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 12, 1962, Ser. No. 187,065
3 Claims. (Cl. 214—83.36)



1. In a shuttle car,

a flexible frame having parallel spaced straight upright side walls,

longitudinally spaced spacer beams extending across said side walls adjacent the lower end portions thereof of connecting said side walls together in spaced relation with respect to each other to form a load carrying compartment,

certain of said spacer beams having a downwardly opening central upwardly extending V-shaped portion formed as a part thereof,

divider plates extending along said V-shaped portions and forming a hump,

a pair of individual conveyors extending along said load carrying compartment on opposite sides of said hump,

four drive and steering wheels,

mounting brackets for all four of said wheels mounted directly on the outsides of said side walls and mounting said wheels on said side walls for driving and steering,

the area along said side walls in the region of said wheels and above said wheels being unoccupied to expose said wheels in plan view,

a motor mounted on the outside of one side wall and projecting laterally therefrom,

a drive shaft extending along the outside of one of said walls and driven by said motor for driving said conveyors,

a transverse drive shaft extending inwardly of said side wall and driven by said motor,

a power divider recessed within the recess formed by said downwardly opening V-shaped portions of said spacer beams and driven by said transverse drive shaft,

individual differentials recessed within the recess formed by said downwardly opening V-shaped portion of said spacer beams,

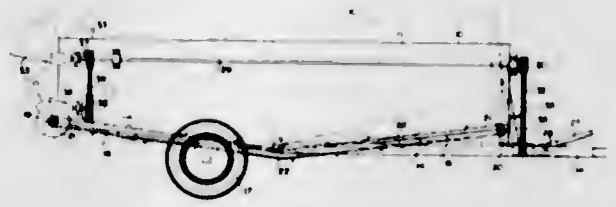
and driven by said power divider for driving said wheels,

said side walls being straight throughout their length and height and made from a thin flexible metal and the flexibility of said frame being due to the inherent nature of the metal from which said frame is made,

the straightness of said side walls and the spacer beams connecting said side walls together at their lower ends and with said side walls forming a torisonally unstable column providing sufficient torsional instability of said frame about said neutral axis to maintain all four wheels on the ground when one or more of said wheels drops into a hole at least 8" deep.

3,185,326
MATERIAL HAULING, MIXING AND SPREADING DEVICE

Norbert A. Vanderloop, R.R. 1, Brillion, Wis.
Filed Jan. 8, 1963, Ser. No. 250,466
6 Claims. (Cl. 214—83.36)



1. A hauling and spreading device, comprising in combination, a box member having two vertical sides and a fluid tight floor,

the forward section of said floor disposed so as to extend at an angle to the rear section of said floor,

an axle secured to the box and positioned to the rear of the point of angle in said floor,

a wheel disposed on each side of said box and journalled on said axle,

said box being tiltable forwardly about the axis of the axle, said box having a normal first position when the box is empty or substantially uniformly loaded along its length to locate both said forward and rear sections at an acute angle with respect to a horizontal plane,

conveying means disposed above the floor for conveying material toward the rear of the box,

and said box being tiltable rearwardly about the axis of the axle to a second position in response to the shifting of the center of gravity of the load to the rear of the axle to thereby position said rear section in a substantially horizontal plane and allow liquids to drain from said box,

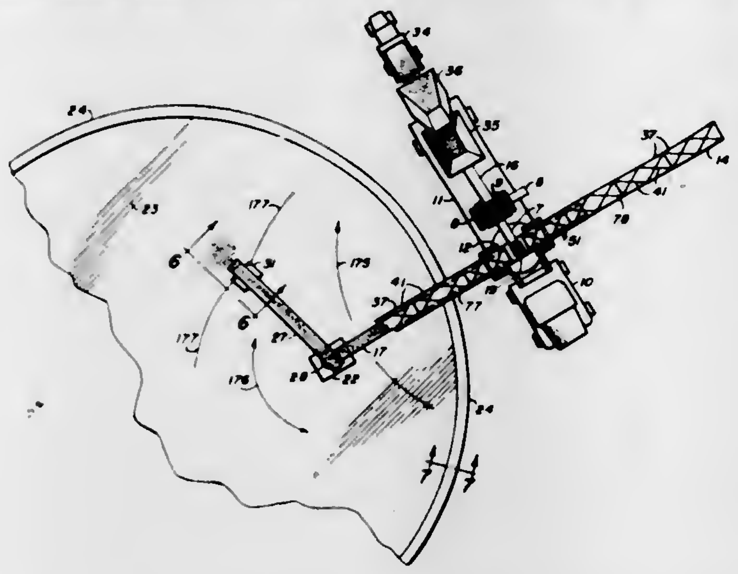
supporting frame means hingedly secured to the box and extending forwardly therefrom and adapted to be secured to a pulling vehicle,

and means responsive to a given degree of tilt of said box in a rearward direction for detachably locking said box in said second position and maintaining said rear section of the floor in a substantially horizontal plane.

3,185,327
METHOD OF DISTRIBUTING FILTER MEDIA INTO A FILTER BASIN

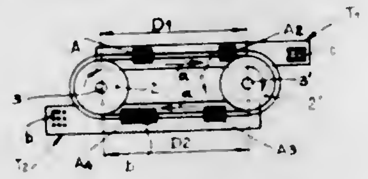
William S. Smith, Jr., and Foy D. Cox, Jacksonville Beach, Fla., assignors to Southern Aggregate Placing & Welding, Inc., Jacksonville Beach, Fla., a corporation of Florida
Filed Oct. 29, 1963, Ser. No. 319,730
6 Claims. (Cl. 214—152)

1. In a process of forming a crushed and presized rock filter bed in a filter basin having a tile bottom, the improvement comprising filling the filter basin with water to about the grade level of rock desired in the filter basin thereby to cover the tile bottom with a protective layer of water having a surface at the grade level, conveying the crushed and presized rock from the side of the basin and from selected locations about the circumference of the basin and over the surface of the water, and distributing the conveyed rock to selected discrete locations throughout the basin to the desired grade level by selectively discharging the conveyed rock onto the surface of the protective layer of water therein.



3,185,328
MACHINE FOR HANDLING OBJECTS

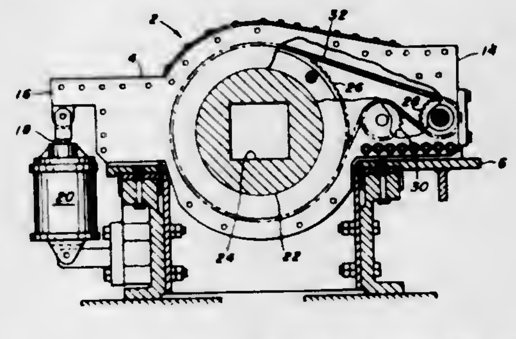
Edgard Jean Marcel Dardaine, Poissy, and René Maillbeaux, Paris, France, assignors to E. P. Remy & Cie., Poissy, France, a corporation of France
Filed June 26, 1962, Ser. No. 205,403
Claims priority, application France, June 24, 1957, 741,619; Jan. 24, 1958, 756,671
3 Claims. (Cl. 214—309)



1. A machine for handling miscellaneous objects by selectively loading said objects into and unloading the same from cases comprising at least one stationary roller conveyor; at least one pair of endless sprocket chains disposed on either side of said roller conveyor and travelling in a determined direction at a constant linear speed; a plurality of spaced transverse bars fitted between said chains and adapted to convey said cases; at least one further coveyor provided for the transport of said objects parallel to said roller conveyor and travelling in the opposite direction at the same constant speed as said sprocket chains; a plurality of movable carriers provided with travelling wheels and driven by a pair of horizontally disposed and vertically spaced endless transfer chains passing around a pair of horizontal driving pulleys and a pair of horizontal driven pulleys, said transfer chains travelling with the same constant speed as said sprocket chains and having at least two rectilinear track sections parallel to and overlying said conveyors; a rail for supporting said travelling wheels, said rail being located below said transfer chains; a plurality of gripping heads, slidably mounted on said carriers and provided with guide rollers, said gripping heads comprising resilient grippers mounted between an upper and a lower plate movable with respect to each other, said grippers being adapted to grip and lift said objects while travelling along one of said rectilinear sections and to deposit and release said objects while travelling along the other of said sections; an L-shaped ramp located between said transfer chains and having at least two straight portions curving downwardly and upwardly so as to present lower sections, said ramp serving as a track for guiding said guide rollers and controlling the sliding motion of said gripping heads in synchronism with the motion of said transfer chains; actuating means for causing said gripping heads to grip or to release said objects in synchronism with the motion of said transfer chains; fixed abutment means adapted to cooperate with said actuating means, and power means for driving said sprocket chains, said further conveyor and said transfer chains at a constant and continuous speed.

3,185,329
BILLET TURNER ACCESSORY FOR ROLLING MILLS

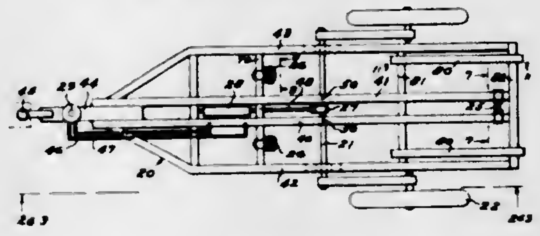
Arthur W. Johnson, 3851 W. 61st St., Chicago 20, Ill.
Filed Feb. 18, 1963, Ser. No. 259,263
1 Claim. (Cl. 214—340)



Apparatus for turning an elongated object having a substantially rectangular cross section about its longitudinal axis which comprises a base frame, an elongated housing pivoted by one end to said base frame, fluid pressure means connected with the end of said housing opposite the pivoted end thereof for pivoting the housing toward and away from said base frame, a rotary member in said housing having a substantially rectangular opening therethrough adapted to receive said object, said opening having a cross sectional area greater than the cross sectional area of said object, and driving means in said housing connected with said rotary member for rotating the same selectively in any arc up to 360 degrees in one continuous rotation, said driving means including a rotatable shaft journaled in said base frame, said housing being pivoted on said shaft, a sprocket mounted on said shaft for rotation therewith, endless propelling means reeved around said rotary member and said sprocket, and power means connected with said shaft for rotating the same to thereby drive said rotary member, said driving means being operable independently of said fluid pressure pivoting means.

3,185,330
VEHICLE TRAILER SPRING SUSPENSION, LOAD SPRING SUSPENSION, AND FRAME RAISING AND LOWERING MEANS

Jewell A. Buckner, Royal Oak, Mich.
Filed May 15, 1962, Ser. No. 194,898
4 Claims. (Cl. 214—506)



1. A spring suspension particularly suitable for a trailed vehicle such as a boat trailer comprising

a frame,

a torque shaft lying transverse to said frame,

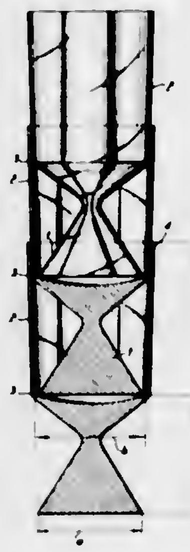
bearings on said frame housing said torque shaft;

said torque shaft having opposite ends; paired hollow caster arms having a first end freely pivotally

mounted on each said torque shaft end; each said caster arm having a second projecting end;
said torque shaft having diametrical slots within each said hollow caster arm;
a spring leaf lying in each said hollow caster arm; each said spring leaf having a first end lying in each said torque shaft diametrical slot; each said leaf spring having a second cantilevered end adjacent said caster arm extending end;
a stub axle fixed through each said caster arm abutting said leaf spring,
a ground wheel on each said stub axle
and means intermediate said torque ends preventing torque shaft rotation;
said spring leaves extending from said torque shaft substantially horizontally rearwardly relative to said torque shaft and said frame;
said wheels supporting said stub axle;
said stub axles supporting said spring leaves cantilevered ends; said spring leaves resiliently supporting said torque shaft; said torque shaft supporting said frame: said caster arms freely pivoting on said torque shaft in conjunction with spring leaf flexing between vertical movements of said torque shaft and stub axles relative to one another; and said caster arms transversely supporting said stub axles on said torque shaft extending ends.

3,185,331
GOBLET

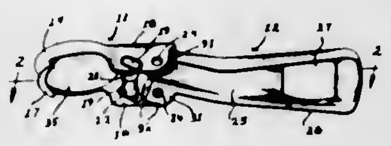
Heinrich Löffelhardt, Stuttgart, Germany, assignor to Vereinigte Farbenglaswerke Aktiengesellschaft, Zwiesel, Bavaria, Germany, a German corporation
Filed July 16, 1963, Ser. No. 295,555
Claims priority, application Germany, July 18, 1962, V 22,798
3 Claims. (Cl. 215—10)



1. A goblet comprising a cup having an upper section which diverges gradually in the upper direction to the brim of the goblet and a lower section forming a recess in the bottom of the cup and diverging relatively rapidly in the upper direction, a stem member extending downwardly from the recess, and a foot providing a standing surface, the lower end of the stem being joined to the foot, said goblet being characterized in that the diameter of the standing surface is smaller than the diameter of the upper periphery of the recess and in that the distance from the standing surface of the foot to the said recess periphery is smaller than the distance from the recess periphery to the brim of the goblet, multiple goblets as aforesaid being nestible, one within the other, with the standing surface of an upper goblet disposed in the recess of the next lower goblet and an upper brim portion of the lower goblet receiving in sliding fit relation a lower portion of the cup upper section of the upper goblet.

3,185,332
BOTTLE CAP

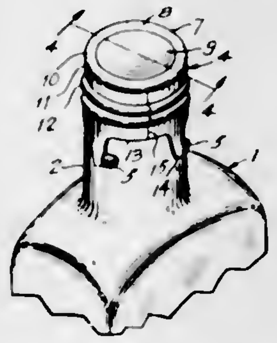
Murray Greenstein, % Codi Products Ltd., 5 Lesmill Road, Don Mills, Toronto, Ontario, Canada
Filed Sept. 14, 1962, Ser. No. 223,778
4 Claims. (Cl. 215—38)



1. A bottle cap comprising a body portion and a handle portion pivotally connected thereto, said body portion having a tongue formed as a thin resilient flange at the forward end thereof and adapted to engage a bottle, means comprising a roller spaced from said tongue adapted to engage said bottle at a diametrically opposite point, said handle portion having means operative to force said first mentioned means into contact with said bottle, and a resilient sealing member adapted to firmly engage the mouth of said bottle.

3,185,333
SAFETY CAP AND CLOSURE

David Harold Sharp, 6 Linnet Crescent, Strathmore, Quebec, Canada
Filed Dec. 19, 1963, Ser. No. 331,793
5 Claims. (Cl. 215—82)



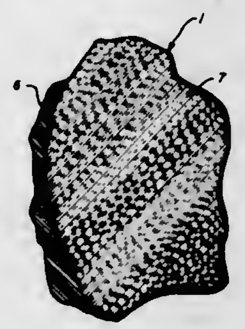
1. In combination, a closure cap and a container removably receiving said closure cap thereon, said closure cap including a top and depending skirt, said skirt including a portion integral therewith comprising at least one flexible strap depending therefrom and generally in intersecting relation to said threaded portion, said container including a neck portion upon which said top and said skirt are removeably received, said neck portion including a thread portion complementary to and engageable with said threaded portion of said cap, said neck portion including an abutment portion disposed below the thread portion thereof and engageable with said abutment portion of said cap for preventing relative rotation between said cap and neck comprising a lateral enlargement having an angular surface merging into the outer surface of the container for camming said flexible strap thereover, said cap including a manually deformable portion operative to separate said abutment portions to permit removal of said cap from said container neck portion.

3,185,334
OPACIFIED POWDERED INSULATION

Francis A. Omilian, Jr., Jersey City, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 11, 1963, Ser. No. 294,416
7 Claims. (Cl. 220—9)

1. In a vessel for the storage of low-temperature fluids, an inner vessel for holding the low-temperature fluid, an insulation space in proximity to said inner vessel, said insulation space having a vacuum environment of a range

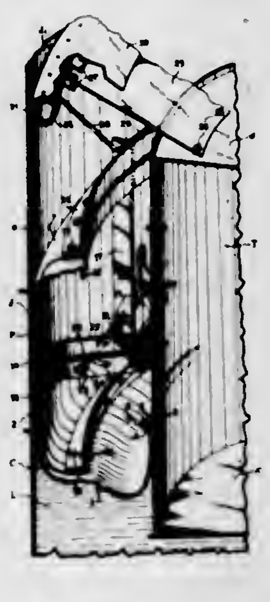
from 10^{-1} torr to 10^{-6} torr therein, an insulation powder composed of individual particles of a material having low thermal conductivity randomly distributed throughout said insulation space, a reflective metal coating covering a significant portion, but not all, of the surface area of a substantial number of the individual particles, whereby the



metal coating serves to opacify the covered part of the particles and said random distribution of the opacified particles serves to reduce heat transfer by radiation, said random distribution approaching the theoretically desired distribution of insulator, reflector, insulator, reflector, etc.

3,185,335
SEALING MEANS FOR A LIQUID-STORING RESERVOIR HAVING A FLOATING ROOF

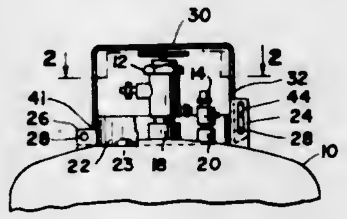
Roger Lecler, Saint-Amand-les-Eaux, France, assignor to Societe Anonyme des Etablissements Levivier, Valenciennes (Nord), France, a French body corporate
Filed Nov. 21, 1962, Ser. No. 239,248
Claims priority, application France, Nov. 24, 1961, 880,049, Patent 1,314,005
8 Claims. (Cl. 220—26)



1. In a liquid reservoir having a tank and a floating roof forming an annular space therebetween and the tank: sealing means comprising a flexible, fluidtight and annular wall which has an inner edge secured to the roof and an outer peripheral portion extending alongside and in contact with the inner face of the tank, slides which are independent of one another and bear against the peripheral portion of the annular wall, springs interposed between the slides and the roof for resiliently biasing the slides against the annular wall so that the wall resiliently bears against the inner face of the tank, the slide comprising a rigid reinforcement having an upper bowed element, a lower bowed element, a sheet metal slide body interconnecting the bowed elements and constituting a shoe, two vertical strips bracing the bowed elements, horizontal rods respectively carried by the strips and vertically resting against the springs so as to support the slides on the roof, and a resilient buffer interposed between the peripheral portion of the wall and the rigid reinforcements.

3,185,336
PROTECTIVE DEVICE FOR VALVED FITTINGS OR THE LIKE

Herbert C. Goss, Glenshaw, Pa., assignor to Goss Gas, Inc., Glenshaw, Pa., a corporation of Pennsylvania
Filed Sept. 13, 1963, Ser. No. 308,849
1 Claim. (Cl. 220—38)



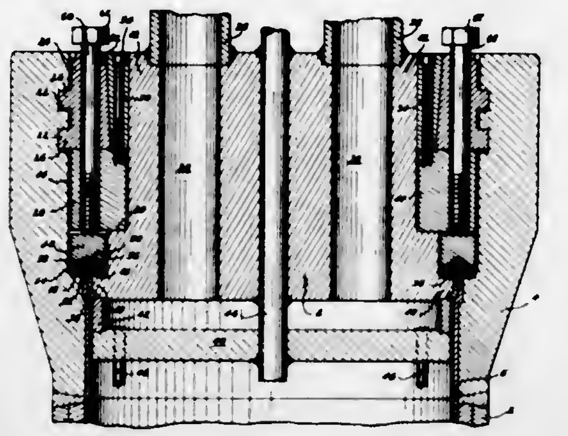
In a container for liquids, having a main body portion within which said liquids are contained, valved fittings projecting from a wall of said main body portion, and protective means for preventing breakage of said valved fittings, the improvement in said protective means comprising: an annular collar secured to said wall of said main body portion and surrounding said valve fittings; a cup-shaped cap slideable over said annular collar, said cup-shaped cap encasing said valved fittings to protect the same; said cup-shaped cap having an inner diameter which is larger than the outer diameter of said annular collar whereby said cup-shaped cap is guided by said annular collar along a straight-line path parallel to the central axis of said annular collar; and a slotted, hinged connection between said cup-shaped cap and said annular collar comprising a lug rigidly secured to the outer surface of said collar and projecting thereabove, said lug having a slot therein extending parallel with the central axis of said annular collar; a pair of spaced, radially projecting ears secured to the outer periphery of said cup-shaped cap and adjacent to the open end thereof; and a bolt device extending through said ears and said slot; the wall of said cap having an axially extending slot positioned between said ears to receive said lug; said slotted, hinged connection permitting reciprocal movement of said cup-shaped cap along said straight-line path and pivotal movement of said cup-shaped cap transversely of said annular collar; said annular collar having an axial length which is a minor portion of the axial length of said cup-shaped cap; the length of said slot in said lug being substantially equal to the axial length of said collar and being axially offset above said collar by an amount sufficient only to permit disengagement of said cup-shaped cap from said collar and thereafter only pivotal movement about an axis defined by said bolt device and disposed above said collar and transversely of the central axis of said collar.

3,185,337
INTERNAL PRESSURE SEAL FOR PRESSURE VESSELS

Charles A. Long, 205 W. Elm St., Titusville, Pa.
Filed Aug. 29, 1963, Ser. No. 305,285
5 Claims. (Cl. 220—46)

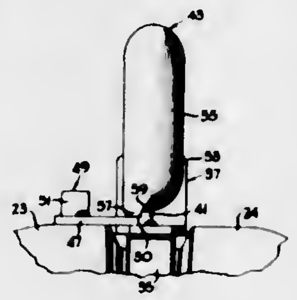
1. In a pressure vessel: a generally cylindrical shell portion having an open end; a closure in said open end and having an inner flange portion substantially closing said open end and an outer portion of less diameter than said open end and defining an outwardly open channel therebetween; a locking ring assembly in said channel interlockingly engaged throughout substantially its entire periphery with said shell and held thereby against axial movement; said closure having an outwardly facing annularly continuous surface bearing directly on the inner end of an annularly continuous portion of said locking ring assembly to lock said closure in said open end; said shell portion and said flange portion having outwardly facing shoulders defining radially coplanar annular surfaces spaced axially inwardly of said locking ring assem-

bly; annular sealing means sealingly engaging both said annular surfaces; a pressure ring outwardly of and bearing on said sealing means; and selectively operable pressure applying means for pressing said pressure ring and



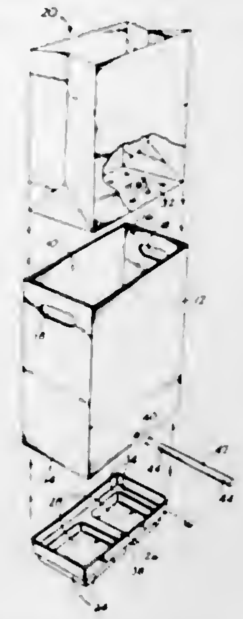
sealing means inwardly toward said annular surfaces to apply sealing pressure thereto; said pressure applying means extending outwardly through said locking ring assembly.

3,185,338
COMBINATION HANDLE AND LATCH FOR PORTABLE CASES
James L. Henning, Aurora, Ill., assignor to Plano Molding Company, Plano, Ill., a corporation of Illinois
Filed July 22, 1963, Ser. No. 296,737
1 Claim. (Cl. 220—55.7)



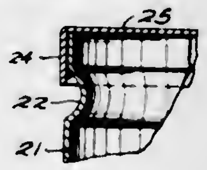
A carrying case comprising a pair of mating sections hingedly interconnected along one edge and adapted to engage one another along non-hinged edges thereof, said sections being movable between an open and a closed position, and a latch comprising a keeper on the outer surface of one of said sections adjacent a non-hinged edge thereof, said keeper having a pair of upstanding ears spaced apart a given distance, each ear defining a surface facing in a direction away from the other section, and a single unitary handle of generally U-shaped configuration including a pair of generally parallel arms spaced from one another a distance approximating said given distance, said handle being mounted on said other section of said case adjacent a non-hinged edge thereof and opposite said keeper for pivotal movement about an axis passing through said arms in spaced relation to the outer ends thereof and positioned above the surface defined by said ears when said case is closed, said handle being swingable in its entirety between a raised position whereby said case may be carried and a folded position, each arm of said handle defining a shoulder located adjacent its end so as to be intermediate said axis of said handle and the outer surface of said case when said handle is in said raised position, said shoulder being positioned so as to face away from said one section and so as to be swung into engagement with said upwardly extending surface of said keeper when said handle is moved to its raised position so as to urge said sections toward a closed position and lock said cover section against accidental opening when said handle is in said raised position.

3,185,339
GARBAGE BAG HOLDER
John M. Fleming, 9720 SW. Murdock, Tigard 23, Oreg.
Filed Aug. 6, 1963, Ser. No. 300,251
7 Claims. (Cl. 220—65)



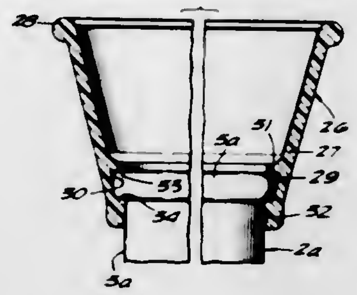
1. A garbage bag holder, comprising a hollow upstanding container wall open at its top and bottom ends and adapted to receive a garbage bag therein, a bottom member having a bag-supporting surface and proportioned to fit within and releasably close the bottom end of the container wall, and locking means supported by the container wall and projecting retractably inward thereof below the bag-supporting surface of the bottom member for releasably securing the latter against downward movement relative to the bottom end of the container wall, the container wall and bottom member being relatively movable upon release of the locking means to permit separation of the container wall upwardly away from the bottom member and from around a garbage bag resting on the bottom member.

3,185,340
SHEET METAL CAN
Burton W. Hazelton, Kirkwood, Mo., assignor to Pet Milk Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 26, 1962, Ser. No. 233,392
1 Claim. (Cl. 220—67)



A can for evaporated milk or the like comprising a tubular body having at least one open end portion, the other end being closed, an inwardly extending annular groove adjacent the open end portion, a closure disc closing and permanently sealing the open end portion, the closure disc having a top portion which is adapted to be punctured by a rocking type of puncturing can opener, the closure disc having a relatively short depending flange thereon circumscribing the open end portion and extending thereabout, the flange having an inner wall surface and a marginal end portion, the flange inner wall surface having a relatively close fit with the outer wall surface of the body and providing a space therebetween, bonding means in the space effecting a permanent hermetic seal between the flange and the open end portion, the bonding means terminating at the upper edge of the groove, the flange marginal end portion extending downwardly over a portion of the groove thus providing anchoring space relative to the groove, the anchoring space being at such a distance from the closure disc and being so dimensioned whereby the anchor prong of the rocking type of can opener will enter into the anchoring space thus providing the fulcrum point of the can opener allowing the rocking of the can opener to puncture the closure disc and to open the can so that the contents of the can may be poured therefrom.

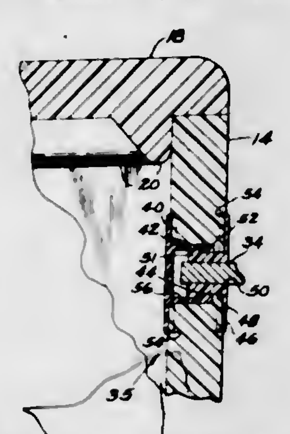
3,185,341
ATTACHMENT FOR DRINKING CANNED BEVERAGES
Richard T. Barbour, 4304 180th St., Torrance, Calif.
Filed May 14, 1962, Ser. No. 197,220
8 Claims. (Cl. 220—90.6)



1. A device for drinking from a can having a bead comprising

an annular member of elastic plastic material having an internal circumferential groove adjacent and spaced inwardly of one end thereof,
  said groove being adapted to fit over the bead of a can,
  and having radial end walls adapted to engage the opposite ends of said bead,
  said annular member being convergent from said groove toward said one end,
  and divergent from said groove toward the opposite end of said annular member.

3,185,342
HANDLE ATTACHMENT MEANS FOR PORTABLE ICE CHEST
Ronald B. Gottsegen and Bernard F. Willow, Chicago, and Ronald G. Winstone, Des Plaines, Ill., assignors to Gotham Industries, Inc., Chicago, Ill., a corporation of New York
Filed July 8, 1963, Ser. No. 293,448
3 Claims. (Cl. 220—91)



3. A portable ice chest comprising:

an open-topped container of molded foam styrene plastic or the like;

a removable cover associated with said container;

a pair of substantially channel-shaped handle members pivotally mounted in opposed relationship on said container, each of said handle members including a pair of leg segments and a connecting web between said leg segments, said web including a medial hand-grip segment, a short mounting arm extending from each of the free ends of each of said leg segments, said leg segments and mounting arms lying in a single plane, said plane skew to the plane formed by said web and hand-grip segment; and

attachment means mounted in apertures on each of said side walls for connecting said handle members to said container whereby said handle members are rotatable about a horizontal axis into a face-to-face position wherein said webs straddle and abut said cover to lock the same in container-closing relationship, said attachment means including:

an outer disc;

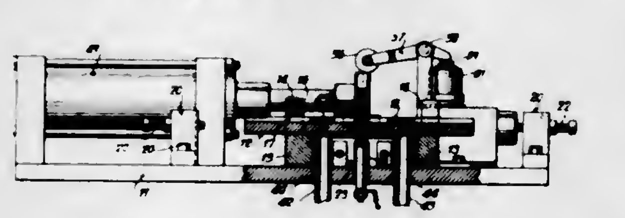
an inner disc spaced opposite to said outer disc with one of said side walls therebetween, each of said discs including relatively sharp inwardly directed flanges;

an annular collar integrally connected at one end to said inner disc and having a free end extending inwardly within said one side wall, said collar being provided with an annular shoulder at said free end to form a reduced diameter opening at the free end thereof, said collar including a cavity having a diameter greater than the diameter of said opening and communicating therewith;

a shaft having one end integrally mounted to said outer disc and an increased diameter annular shoulder portion at the free end thereof greater in magnitude than the diameter of the opening in the free end of said collar, the free end of said shaft extending inwardly within said one wall and entering the cavity of said collar via said reduced diameter opening, said collar expanding to allow said increased diameter shoulder portion to be moved through said reduced diameter opening into said cavity of the collar, said collar resiliently locking said shaft within said cavity as said increased diameter shoulder portion of the shaft is positioned in said cavity between the reduced diameter opening of the collar and the inner side of said inner disc, said flange of said discs being embedded within said one wall when said collar and said shaft are locked together; and

a passageway included in said shaft and communicating with a hole in said outer disc to rigidly and pivotally receive the free end of one of said mounting arms.

3,185,343
INSERT ORIENTING EQUIPMENT
Felix W. Braendel, Teaneck, and Robert W. Bosse, Englewood Cliffs, N.J., assignors to Groov-Pin Corporation, Ridgefield, N.J., a corporation of New York
Filed Oct. 9, 1961, Ser. No. 143,949
8 Claims. (Cl. 221—13)



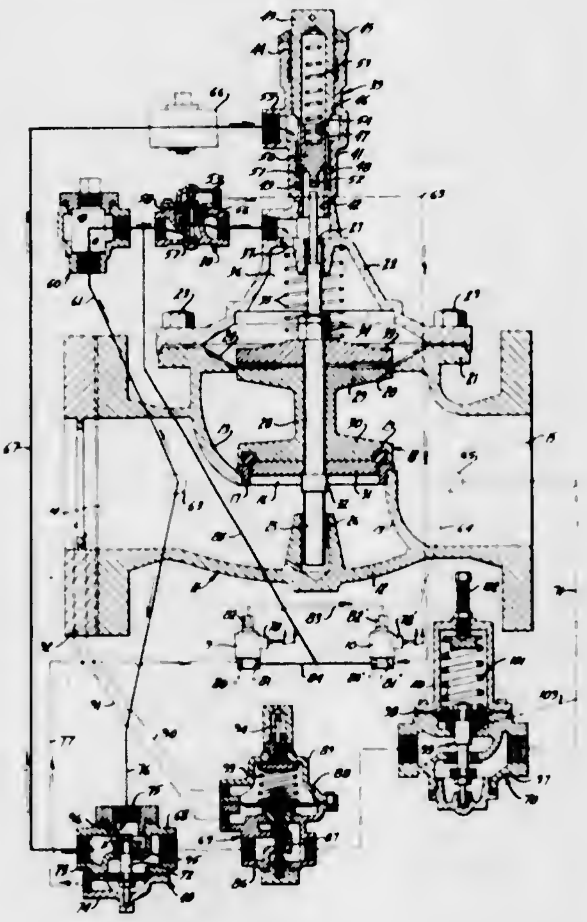
1. Equipment for sorting hollow inserts of the type having a chamfered periphery at one end, depending upon the vertical orientation of such insert, said equipment comprising a reciprocable transfer member having an aperture freely to receive such insert, a contact member, guide means positioned between said transfer member and said contact member and determining the vertical location of said insert and against which the side periphery of the insert at one end thereof abuts when it is positioned in said aperture, to permit engagement of such insert with said contact member only when the insert is oriented with such chamfered periphery at its lower end, said guide means comprising a groove having opposed spaced beveled surfaces, the distance between the upper edges of the beveled surfaces being greater than the distance between the lower edges of the beveled surfaces, said side periphery of the insert abutting against such beveled surfaces, a discharge member to receive such inserts, said discharge

member being laterally spaced from said contact member, means controlled by such engagement with said contact member to effect movement of said transfer member in direction to move said aperture and the insert therein laterally into alignment with said discharge member to be discharged thereinto from said aperture, whereby the inserts in said discharge member will be oriented with their chamfered peripheries at the same relative end, a second discharge member, and means when said insert is oriented in said aperture, with its chamfered portion at its upper end, to effect lateral movement of the transfer member in the opposite direction to move said aperture and the insert therein into alignment with the second discharge member to be discharged thereinto from said aperture.

3,185,344
FLUID CONTROL SYSTEM AND SET STOP CONTROL VALVE THEREFOR

Robert W. Kenney, South Pasadena, Calif., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Feb. 15, 1963, Ser. No. 258,854
20 Claims. (Cl. 222—20)

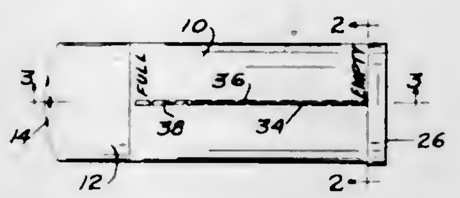


1. A set stop valve system for stopping flow in a line in sequential flow stages of preselected constant flow rates, comprising
  (*a*) a main valve adapted to be mounted within the line,
  (*b*) a final control coupled to the main valve for selectively opening and closing thereof and establishing a selected first flow rate,
  (*c*) a throttling control coupled to the main valve for varying the opening established by the final control to establish a second flow rate and including a presettable means to vary the degree of control and establishing a throttling opening of the main valve, and
  (*d*) quantity flow responsive means for sequentially acting said throttling and final controls to sequentially reduce the flow to said second flow rate and then cease flow.

3,185,345
DISPENSING CONTAINER WITH CONTENTS INDICATOR

James Hunegs, Minneapolis, Minn., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware

Filed Jan. 24, 1963, Ser. No. 253,676
2 Claims. (Cl. 222—45)

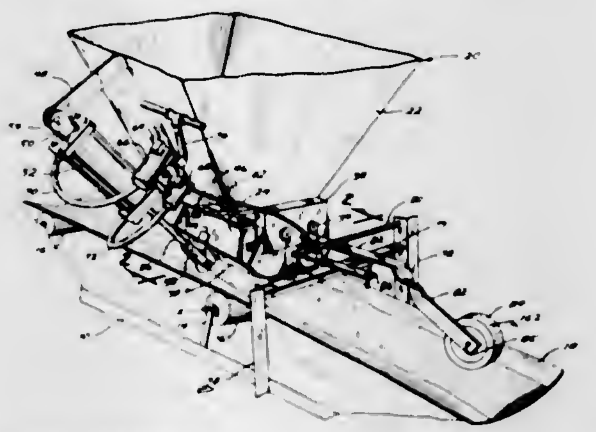


1. In a receptacle comprising a container for holding material to be dispensed,
  having a dispensing outlet adjacent one end,
  a plunger mounted for longitudinal sliding movement within said container,
  a threaded control member rotatably mounted in said container, threadedly engaging said plunger and
  means for rotating said control member to advance said plunger toward said outlet,
  that improvement in an indicator visible externally of said container for showing by its position the total extent of travel of said plunger toward said outlet, said indicator comprising
  an elongated flexible element having one end secured to said plunger,
  a groove in the outside wall of said container,
  said flexible element extending from said plunger outside of said container and
  having an outside externally visible end lying in said groove in the outside wall of said container, and
  means frictionally holding said flexible element lightly in said groove comprising
  a plurality of spaced teeth at the edges of said groove providing viewing openings therebetween through which the position of the end of said flexible element in said groove is visible from outside the container and indicates externally the extent of advance of said plunger in said container.

3,185,346
MATERIAL FLOW SENSING AND CONTROL DEVICE FOR BELT-TYPE CONVEYORS

George A. Loveall, Jr., and Earl E. Davis, Waterloo, Iowa, assignors to Engineered Equipment, Inc., Waterloo, Iowa, a corporation of Iowa

Filed Feb. 6, 1962, Ser. No. 171,500
3 Claims. (Cl. 222—55)

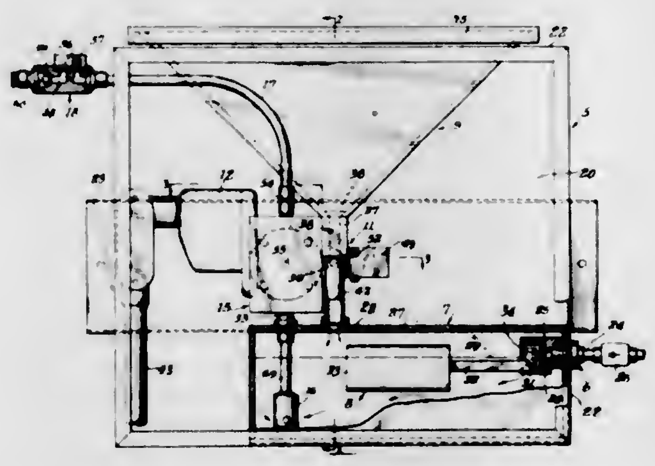


1. In combination,
  a conveyor belt movably mounted on a supporting structure,
  a material supply means,
  movable gate means on said material supply means through which granular material in said material supply means can be deposited on said belt at times,
  an air cylinder means secured to said gate means and adapted to open and close said gate means at times,
  an air valve connected to said cylinder and adapted to introduce compressed air to said cylinder means to cause said gate means to open or close,
  a first solenoid on said air valve to cause said air valve and said cylinder means to open said gate means when said first solenoid is electrically energized,
  a second solenoid on said air valve to cause said air valve and said cylinder means to close said gate means when said second solenoid is electrically energized,
  said air valve adapted to be secured to a source of compressed air,
  a frame over said conveyor belt,
  a material engaging element movably mounted on said frame and extending downwardly onto said belt,
  said material engaging element adapted to be engaged and moved with respect to said frame by material deposited on and moving with said belt,
  first and second switches mounted on said frame in the movable path of said material engaging element and adapted to be sequentially engaged at times by said material engaging element,
  said switches being electrically connected in series with said first solenoid, said second solenoid being electrically connected in series with said first switch and electrically connected in parallel to said second switch and said first solenoid through said first switch,
  said first switch being secured to the positive side of source of electrical energy and said solenoids being connected to the negative side thereof,
  said material engaging element adapted to engage and open said second switch when an accumulation of material on said belt attains a predetermined depth thereby maintaining said gate means in a partially open position,
  and said material engaging element adapted to also simultaneously engage said first and second switches when the depth of said material increases beyond said predetermined depth to first effect the disconnection of said second switch from said first switch and thence to connect said second switch to said second solenoid whereby said gate means will be closed; said material engaging element being a wheel rotatably mounted on a bar which is pivotally secured to said frame.

3,185,347
DRY CHEMICAL FEEDER

Oswald M. King, Los Angeles, Calif., assignor to Blue White Industries, Ltd., Santa Monica, Calif., a corporation of California

Filed Aug. 28, 1963, Ser. No. 305,116
5 Claims. (Cl. 222—67)

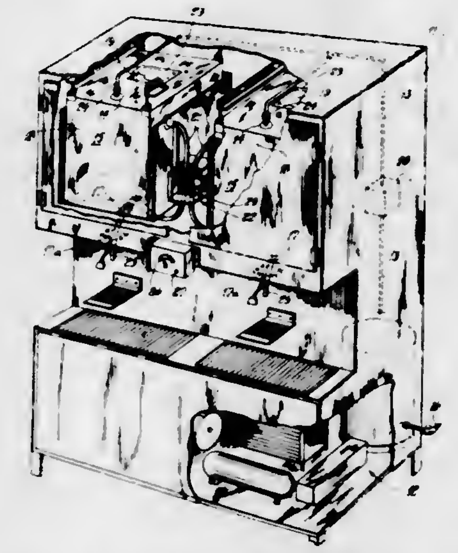


1. A dry chemical feeder comprising:
  (*a*) a mixing chamber provided with a liquid inlet and means for maintaining a maximum liquid level therein,
  (*b*) a hopper for dry, comminuted chemical material,
  (*c*) means to receive material from the hopper by gravitational flow and for displacing the material so received to a gravity discharge offset from said material flow and into the liquid in said mixing chamber,
  (*d*) means to pump the chemically treated liquid from the chamber,
  (*e*) a single operating motor having a drive shaft,
  (*f*) a cam on said shaft to operate the pump at a constant rate,
  (*g*) a reciprocative plunger for displacing the material to the mentioned gravity discharge,
  (*h*) a member on the motor shaft to project the plunger in a material-displacing direction, and
  (*i*) spring means for returning the plunger to retracted position alternately with each plunger projection.

3,185,348
BEVERAGE RECONSTITUTING AND DISPENSING DEVICE

George A. Pollak, Union, and Alexander Spear, Newark, N.J., assignors to the United States of America as represented by the Secretary of the Navy

Filed Apr. 4, 1963, Ser. No. 270,777
4 Claims. (Cl. 222—95)
(Granted under Title 35, U.S. Code (1952), sec. 266)



4. A collapsible, sanitary, single-service, plastic container for a beverage concentrate comprising:
  a body portion of closed end construction housing said concentrate,
  an inlet integrally provided on said body for admittance of fluid to said concentrate in said body portion,
  a tube one end of which is integral with the upper portion of said body and the other end of which is integral with the lower portion of said body,
    said tube for use in recirculating said fluidized concentrate from the lower portion of said container to the upper portion thereof, and
  an outlet integrally provided on the lower portion of said body for the emission of said fluidized concentrate from said container.

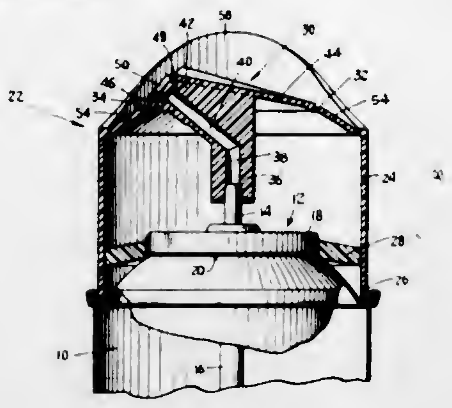
3,185,349
AEROSOL DISPENSER AND CAP CONSTRUCTION THEREFOR

Philip H. Sagarin, Bridgeport, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Connecticut

Filed Dec. 26, 1961, Ser. No. 162,096
11 Claims. (Cl. 222—153)

5. An aerosol, dispensing device comprising, in combination:
  (*a*) a cap construction having a cylindrical inner surface,

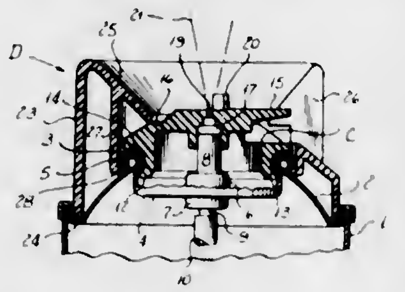
(*b*) a pressurized container having a cylindrical outer surface disposed interiorly of the said cylindrical inner surface,



(*c*) a separate retainer ring disposed between and engaging the said surfaces, the inner periphery of the ring engaging the cylindrical surface of the container and the outer periphery of the ring engaging the cylindrical surface of the cap construction.

(*d*) said ring having a frusto-conical configuration and being disposed with its inner periphery above its outer periphery whereby upward force on the cap construction will tend to flatten the ring and expand the same for more tightly gripping the inner cylindrical surface.

3,185,350
TAB CAP VALVE ACTUATOR FOR AN AEROSOL DISPENSER AND PROTECTIVE HEAD THEREFOR
Robert Henry Abplanalp, Bronxville, and Joseph Charles Pizzurro, Scarsdale, N.Y., assignors to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York
Filed Mar. 8, 1962, Ser. No. 178,380
3 Claims. (Cl. 222—182)



1. Means for dispensing aerosol material from a container having a mounting cup the marginal portion of which has interior and exterior shoulders, and a discharge valve with a tubular valve stem, comprising:

(*a*) a tab cap having an upstanding cap wall provided at its lower end with an external bead to engage the internal shoulder of the mounting cup, and

(*b*) a valve actuating tab having a discharge perforation and an integral hinged connection with the upper end of said upstanding cap wall and extending diametrically across said top wall with a socket on its under side to receive the tubular valve stem,

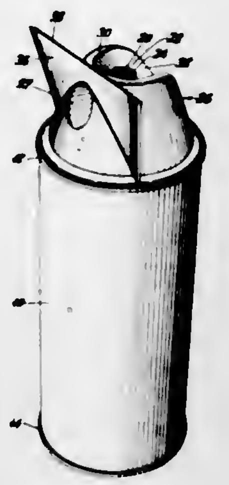
in combination with:

(*c*) a protective hood with a side wall peripherally of and spaced from the tab cap with an internal bead to engage the exterior shoulder of the mounting cup, said side wall having an inverted frusto conical top wall overlying the space between said side wall and the tab cap,

(*d*) said hood also having a recess at one side to permit ready access to said tab, and

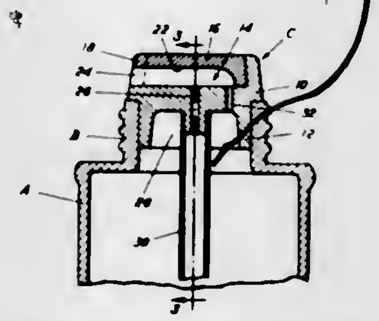
(*e*) said tab cap and hood being relatively rotatable and the hood being provided with a camming surface to engage through such relative rotation with the under side of the tab to preclude valve operating depression of the latter.

3,185,351
AEROSOL CAP CONSTRUCTION
Godfrey H. Klun, Parma, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Mar. 20, 1963, Ser. No. 266,613
16 Claims. (Cl. 222—182)



1. An aerosol device for dispensing a fluid de-icer composition onto a surface to remove frost and ice formations therefrom comprising, in combination, a container having a manually operable valve construction and a valve-actuating button engageable therewith, a bell-shaped cover-cap having a finger-recess portion and an aperture in said finger-recess portion for receiving said button, said button extending beyond said aperture when said valve structure is in both an open and closed position and lies below the crest of the walls formed by said recess, the crest of said recessed portion having a slightly raised and rounded periphery near the top thereof which precludes the inadvertent actuation of said button and a downwardly extending prominent concave portion so that the index finger of the operator is accommodated to direct the flow of said de-icer composition in a direction away from said operator when said button is depressed, a scraping-cleaning blade which flares outwardly to form a wide scraper edge disposed adjacent to said raised portion of said cover-cap and a passageway therein for permitting the fluid contained in said device to be discharged therethrough.

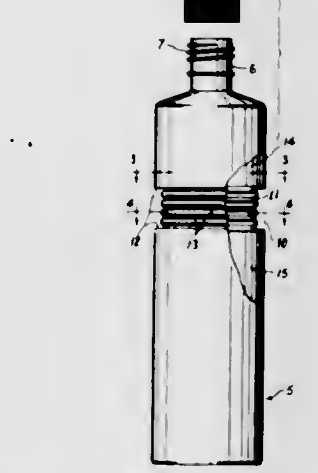
3,185,352
DEVICE FOR NEBULIZING AND DISPENSING FLUENT MATERIALS, PARTICULARLY POWDERS
Vittorio Ghisolfi, Corso Alessandria 87, Tortona, Italy
Filed Nov. 8, 1962, Ser. No. 236,230
Claims priority, application Italy, Nov. 11, 1961, 17,847
3 Claims. (Cl. 222—193)



1. A nebulizing dispenser comprising a container adapted to receive fluent powder material to be dispensed, an outlet for said container, said outlet adapted to receive fluent material nebulizing means including an elongated nebulization chamber, said chamber having a dispensing outlet at one end and an inlet for air under pressure at the other end, an air passage communicating at one end with the air inlet to said nebulization chamber and communicating at the other end with the upper end of the interior of the container remote from the fluent material

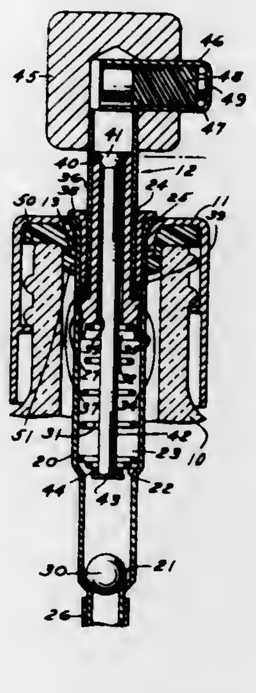
to be dispensed, the longitudinal axis of both said air passage and said air inlet being disposed substantially normal to the longitudinal axis of said chamber, a fluent material inlet to said chamber, said fluent material inlet being disposed substantially normal to the longitudinal axis of said chamber and substantially intermediate the dispensing outlet and the air inlet thereof, a further passage communicating at one end with said fluent material inlet to said chamber and communicating at the other end with the interior of the container adjacent the bottom thereof to provide a passageway for the flow of fluent material from the container to the nebulization chamber, said nebulization chamber having a vaulted spherical wall adjacent said air inlet to direct the air flow axially of said chamber to strike the inflowing fluent material substantially perpendicularly, and said container being resiliently deformable inwardly to simultaneously force air through the air passage into the nebulization chamber and fluent material through said further passage to said nebulization chamber.

3,185,353
CONTAINERS
Gilles Mercier, Quebec, Quebec, Canada, assignor to Dominion Corset Company, Limited, Quebec, Quebec, Canada
Filed Jan. 14, 1963, Ser. No. 251,109
Claims priority, application Canada, Oct. 26, 1962, 861,082
2 Claims. (Cl. 222—206)



1. A container for fluids comprising a hollow body having a longitudinal axis, said body portion having a peripheral recessed portion extending lengthwise for a portion of the length of said body portion, said recessed portion ending in opposing planar shoulders located in spaced apart planes at right angles to the longitudinal axis of the said body portion, said opposing planar shoulders being separated from each other by a distance approximately equal to the width of the human thumb and the diameter of said recessed portion being substantially less than the diameter of the body portion adjacent said recessed portion whereby said recessed portion serves to substantially confine and support the thumb and forefinger of the human hand when said container is grasped, and the peripheral wall of said recessed portion between the said shoulders being provided with a roughened surface and being parallel to the longitudinal axis of said body portion, and a dispensing portion contiguous with said hollow body portion, said dispensing portion having an opening therein for dispensing fluids, the planar shoulder nearest said opening making an angle of 90 degrees with the immediately adjacent section of the body portion, which is between said planar shoulder and said opening whereby fluid dripping down from said opening is substantially isolated from said recessed portion.

3,185,354
PUMP DISPENSING DEVICE FOR LIQUID CONTAINERS
Elmer Lipman, South Lyon, Mich., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,415
3 Claims. (Cl. 222—321)



1. A dispenser-closure device for liquid containers capable of sealing a container for shipping and storage and dispensing liquid from a container in incremental portions for use comprising,

a cap having means for attachment to a container; and an opening to surmount a container opening,

a cylinder in said cap opening having a bottom dip tube, a lower ball valve seat, a spring support shoulder, a piston chamber, and a vacuum break breather aperture spaced from said ball valve seat defining a pump chamber therebetween,

means for sealing off said cylinder relative to said cap and said cap relative to a container,

means for fixing said cylinder to said cap,

a ball valve on said ball seat,

a spring having a lower end adjacent said support shoulder and an upper end,

a piston in said cylinder pump chamber,

a hollow plunger having one end slidably located in said cylinder fixed to said piston and an opposite end extending from said cylinder;

said spring normally pressing against said cylinder shoulder and said piston to urge said piston and said plunger upwardly in said cylinder,

means limiting the upward spring driven movement of said piston in said cylinder to position said piston at a point at least partially above said cylinder breather aperture at the end of said piston's upstroke to seal off atmospheric communication to said aperture;

said plunger being spaced from said cylinder to permit atmospheric communication to said cylinder breather aperture when said piston is below said breather aperture;

said piston having an orifice leading from said cylinder pump chamber to said plunger interior to deliver liquid to use,

a poppet valve seat in said plunger above said cylinder,

a valve stem on said poppet valve depending through said piston orifice and said spring terminating in a foot flange below and normally in contact with said spring lower end limiting upward thrust of said spring between said shoulder and said piston so as to pull said valve stem downwardly to seat said poppet valve on said seat positively sealing off said plunger above said piston,

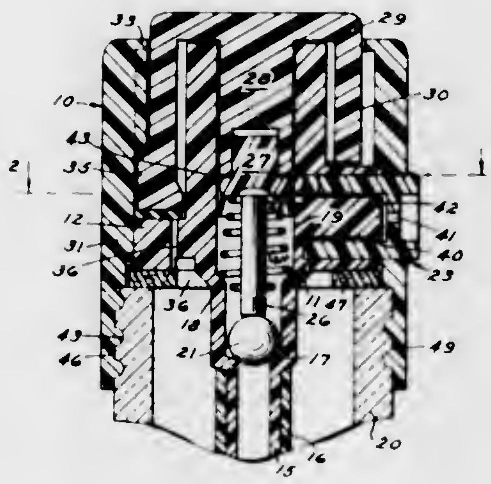
manually depressing said plunger and said piston against said spring first moving said spring lower end against said shoulder and moving said poppet valve seat down shortening the distance between said poppet valve seat and shoulder releasing spring tension on said valve stem to permit said poppet valve to move off said seat;

compression of liquid in said pump chamber sealing said ball check and moving said poppet valve off said poppet valve seat whereupon further downward movement of said plunger and piston drives fluid from said pump chamber through said piston orifice past said poppet valve seat into said plunger;

release of manual depression of said plunger and piston permits said spring to urge said piston and plunger upwardly in a suction stroke with initial gravity, fluid friction, and inertia sealing said poppet valve on said seat whereupon further upward movement of said piston lifts said ball off said seat and draws fluid into said pump chamber through said dip tube from a container;

said piston and plunger being moved upwardly by said spring until said valve stem foot contacts said spring pulling said poppet valve onto said seat mechanically with said spring in idle condition relative to said shoulder and with said piston sealing off said cylinder breather aperture mechanically so that said device positively seals off the interior of a container relative to atmosphere.

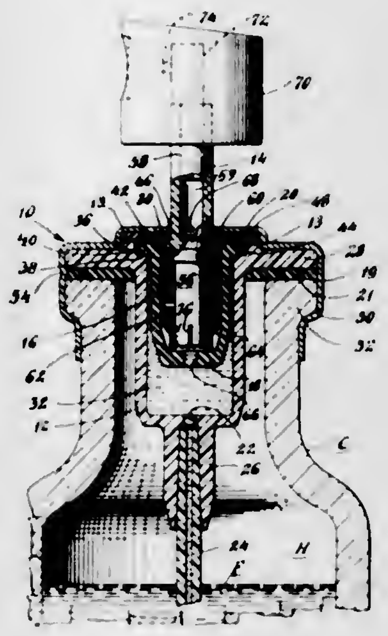
3,185,355
PUMP FOR LIQUID CONTAINERS
Elmer Lipman, South Lyon, Mich., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed June 4, 1963, Ser. No. 285,418
8 Claims. (Cl. 222—341)



5. A dispensing pump and closure construction for mounting on the neck of a liquid container comprising, in combination:

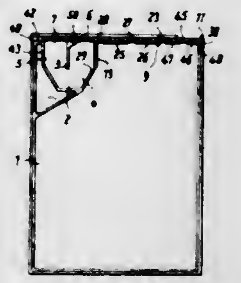
- (*a*) a cylinder
- (*b*) a manually operable plunger movable from and to a storage position, said plunger including a piston reciprocable in the cylinder,
- (*c*) said cylinder having a discharge outlet,
- (*d*) means connected with the cylinder, providing an air inlet channel for directly admitting air to the space above the liquid in the container, and
- (*e*) means controlled by said plunger, for closing said air inlet channel and simultaneously closing said discharge outlet when the plunger is in said storage position, thereby to prevent leakage from the container through said pump and closure construction.

3,185,356
METERING VALVE
Frank Venus, Jr., Wilmington, Mass., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut
Filed Mar. 27, 1962, Ser. No. 182,793
11 Claims. (Cl. 222—394)



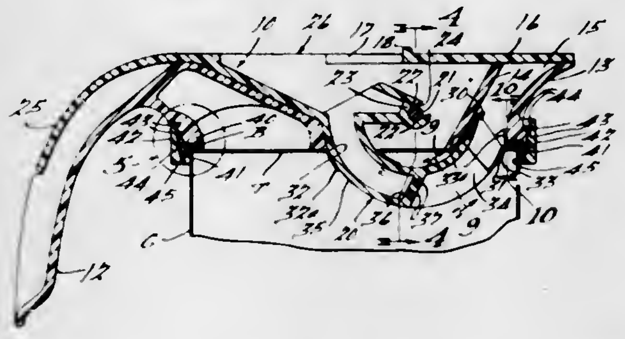
1. A metering valve for self-pressurized aerosol fluid products constituting means for temporarily isolating and discharging a predetermined portion of fluid product from a larger body thereof in a pressurized container, said valve having a housing, means for mounting said housing in the mouth of a container, said housing having an inlet for communication with the interior of the container and having an outlet for the discharge of fluid product from the container, means in combination with said housing for isolating a predetermined portion of aerosol product including a resilient thimble-shaped member disposed concentrically of said housing in telescoping relation thereto, manually actuated means for controlling the release of said predetermined portion of aerosol product and comprising an axially reciprocable core located in said housing outlet and having a discharge port and associated fluid passage, fluid seal means retained by said housing mounting means and surrounding said core at said outlet normally preventing escape of fluid product thereat, means urging said core to non-dispensing position relative to said outlet seal but yieldable upon manual depression of said core to move said discharge port into by-passing position relative to said seal to allow fluid product to escape through said discharge port and core passage to atmosphere, said core having an inner end disposed within said thimble member and normally spaced from the end wall thereof but engageable therewith when said core is depressed, and an inlet port in one of said housing and thimble members which is normally open but which is closed by the aforesaid engagement between said inner core end and said thimble wall prior to arrival of said core discharge port at by-passing position relative to said outlet seal, further inward travel of said core thereafter being permitted by elongation of said thimble member to move said core to said outlet seal by-passing position.

3,185,357
DISPENSING DEVICE FOR GRANULAR OR PULVERULENT MATERIALS
Hans Merkel, 5 and 5A Ruthmanninstrasse, Nurtingen, Wurttemberg, Germany
Filed Oct. 29, 1963, Ser. No. 319,855
Claims priority, application Germany, Nov. 27, 1962, M 54,853; May 28, 1963, M 56,989; Aug. 8, 1963, M 57,765
9 Claims. (Cl. 222—425)



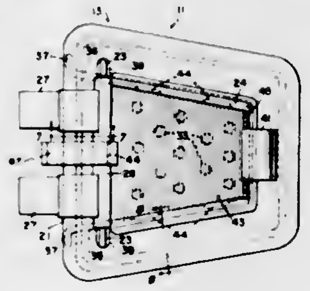
1. A dispensing device for dispensing measured amounts of a free-flowing solid material from a container, comprising, in combination, a container part having opposite side walls, front and rear walls, and an open upper side adapted to form at least a part of a storage chamber, guiding means on said front and rear walls of said container part, a slide cover slidable within and guided by said guiding means for closing and at least partly opening said upper side, a stop member and a closure member on and projecting downwardly from the inner side of said cover, a measuring compartment connected to and within said container part near one side wall thereof underneath said cover, a partition within said container part partly dividing said measuring compartment into a receiving chamber and an adjacent dispensing chamber, said chambers communicating underneath said partition with each other, said dispensing chamber having an upper outlet opening and said receiving chamber having an upper opening leading to said storage compartment, said cover adapted when in one position to close said open side and said outlet opening completely and when drawn out to a dispensing position defined by the engagement of said stop member with the upper edge of the other side of said container part to uncover said outlet opening to allow dispensing therethrough only from said dispensing compartment, said closure member adapted to close said opening of said receiving chamber when said cover is closed to shut off said receiving chamber from said storage compartment and adapted to uncover said last opening when said cover is in said dispensing position, said guiding means being offset from an area adjacent to the position in which said stop member is located when said cover is in said dispensing position, said cover consisting of a resilient material permitting its unguided outer end in the dispensing position to be lifted against its spring action for a distance at least equal to the height of said stop member so as to disengage said ~~stop member~~ from the upper edge of said other side wall so that said cover may then be drawn out beyond said dispensing position, a first projection on the inner side of said slide cover, said stop member forming one end of said first projection, a second projection on the inner side of said cover having one end spaced slightly from the other end of said first projection so as to form an intermediate locating recess into which the upper edge of said otherside wall is adapted to engage when said cover is drawn out beyond said dispensing position to a pouring position in which it completely uncovers said entire measuring compartment so that an unmeasured amount of material may be poured out from said storage chamber, the other end of said second projection being spaced slightly from said closure member so as to form another locating recess into which said upper edge of said other side is adapted to engage when said cover is further drawn out for holding said cover in its outermost position, said intermediate locating recess for holding said slide cover in said pouring position being located in a position in which the closing edge of said cover is located approximately above the inner edge of the opening of said receiving chamber leading to said storage compartment.

3,185,358
HANDLE AND POURING SPOUT WITH ATTACHING MEANS
Arnold H. Marler, 8 Wendell Ave., Weston, Ontario, Canada
Filed June 3, 1963, Ser. No. 284,941
9 Claims. (Cl. 222—475)



1. A device of the class described for a container having an annular bead comprising, a body having a pouring spout and a handle portion, a plurality of resilient locking tongues on said body adapted to be moved into locking engagement with said bead, and a locking ring threadedly mounted on said body for rotatable and axial movement thereon toward said locking tongues and having cam means adapted to engage said locking tongues to move the same into locking engagement with said bead.

3,185,359
DISPENSING DEVICE FOR SALT AND THE LIKE
Robert Z. Buntic, Elmhurst, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware
Filed Jan. 29, 1964, Ser. No. 340,931
6 Claims. (Cl. 222—480)

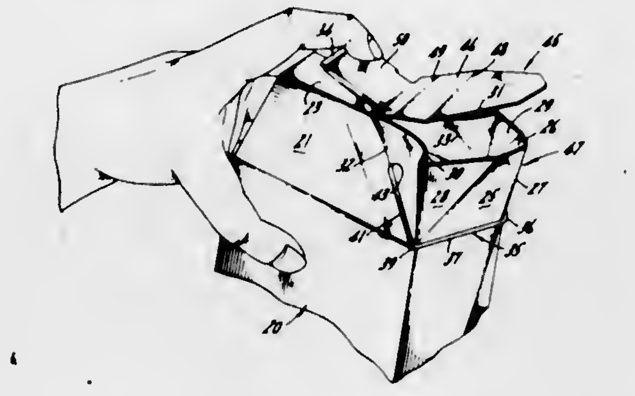


1. A dispensing device mounted in an opening in the top or end wall of a container for salt and other granulated, powdered or finely divided materials comprising, a housing having an opening therein and a peripheral groove receiving the edge of the container defining the opening therein, a substantially U-shaped spout pivotally mounted in said housing including a perforated dispensing plate providing the base of the spout and joining a pair of spaced sides depending into the opening in the container, interengaging means on the outer periphery of said dispensing plate and on the inner periphery of said housing to normally retain the spout in closed position, a cap mounted on said dispensing plate and hingedly connected thereto opposite the pivotal mounting for the spout for closing passage of the contents of the container through the perforations in the dispensing plate, a lifting tab on the cap opposite to said hinge connection, and a second lifting tab integral with said hinge connection for the cap

and secured to the plate for pivoting said spout to open position.

3,185,360
BRACE AND LID FOR RECEPTACLE POURING SPOUT

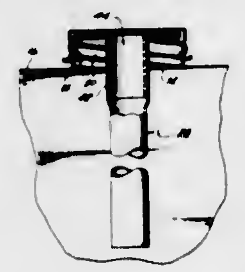
Daniel L. Smith, Fort Myers, Fla., assignor to Home Products, Inc., Fort Myers, Fla., a corporation of Florida
Filed Mar. 7, 1963, Ser. No. 263,480
6 Claims. (Cl. 222—528)



1. The combination with a liquid receptacle equipped with a foldable pouring spout of the type including integral, triangular, lateral ears which, when the spout is closed, lie substantially in the respective sides of the receptacle top and, when the spout is open, diverge forwardly and outwardly from said respective sides and must move rearwardly as said spout is folded toward closed condition, of brace means removably engaged with said receptacle and formed to provide two arms, each arm engaging a rear surface of one of said ears to block such rearward movement thereof.

3,185,361
REVERSIBLE POURING SPOUT

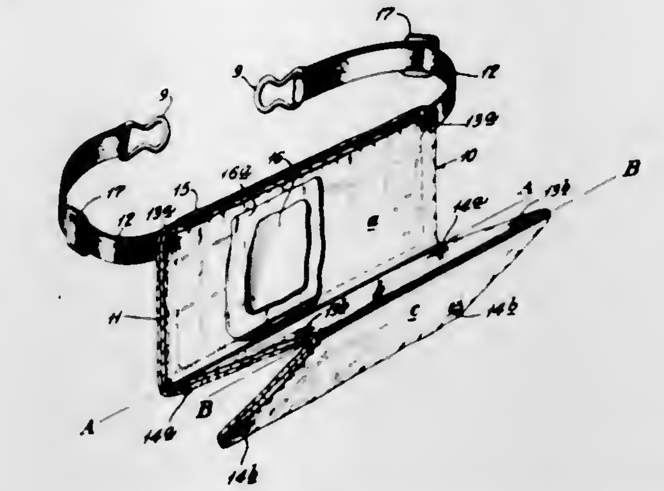
Gerald B. Gersten, 908 Kent Ave., Brooklyn, N.Y.
Filed Mar. 15, 1963, Ser. No. 265,478
2 Claims. (Cl. 222—539)



1. In combination, a container provided with a raised collar which defines an opening therefor, a closure lid for said collar, means defining an aperture in said lid, a disk adapted to be seated between said collar and said lid to close the aperture therein, and a pouring spout having a base portion provided with a tubular extension at one surface of said base portion, said base portion being adapted to be seated within said lid with the other surface thereof in abutment with said disk and with said tubular extension projecting into said container through said collar, and said base portion being adapted also to be seated within said lid with said one surface thereof in abutment with said aperture defining means of said lid and with said tubular extension projecting through said lid aperture outwardly of said container, said base portion being formed of flexible plastic material to provide a seal between said base portion and said raised collar when said tubular extension projects into said container.

3,185,362
COMBINATION SEAT-PACK

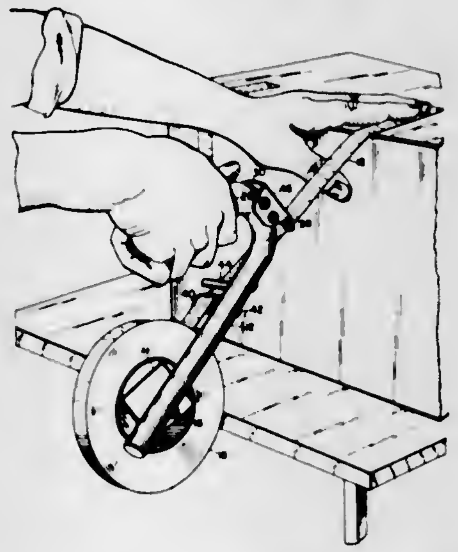
Kenneth H. Wakefield, Belmont, N.H. (P.O. Box 41, Lakeport N.H.)
Filed Jan. 30, 1964, Ser. No. 341,381
3 Claims. (Cl. 224—9)



1. A ski-belt adapted to be worn in waist-engaging relation by a user and comprising a resilient, water-repellant foldable portion, a waist-engaging belt fastened to said foldable portion, a plurality of fastening means selectively positioned along the vertical edges of said foldable portion and adapted for respective engagement to form a folded pack at the small of the back of a wearer and which may be selectively extended by disengaging the aforesaid fastening means thereby to form a seat cushion, and a slidable closure means along the top edge of said portion for gaining access to the interior thereof.

3,185,363
MANUAL STRAPPING TOOL FOR PRESSURE SENSITIVE TAPE

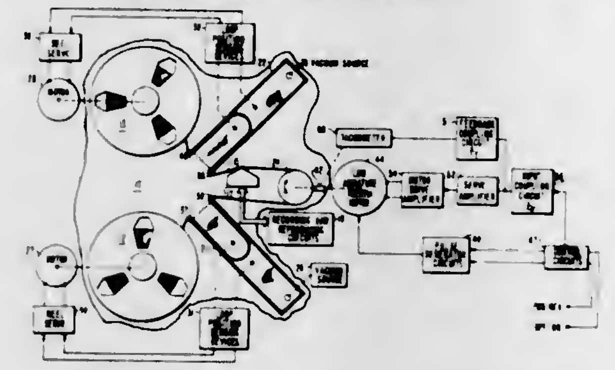
Theodore H. Krueger, Stratford, Conn., assignor to Better Packages, Inc., a corporation of Delaware
Filed Sept. 26, 1961, Ser. No. 140,917
2 Claims. (Cl. 225—66)



1. A manual strapping tool comprising a portable frame having a shaft portion and a hand grip portion extending at an angle from the shaft portion, means for mounting a tape roll on said shaft portion near the end thereof remote from the hand grip portion, at least one adhesion roller rotatably mounted on an intermediate portion of said shaft portion at a point removed from the junction of said hand grip portion therewith over which tape from the tape roll may be led with the adhesive side of the tape engaging said adhesion roller, a deflecting member for engagement with the non-adhesive side of the tape after it leaves said adhesion roller for deflecting the tape laterally of the tool frame, and a tear off tape cutter mounted on said frame adjacent the junction of said shaft portion and said handle portion and between said portions and having a cutting edge projecting beyond said junction in position to sever tape passing from said deflecting member to the article to which the tape is to be applied.

3,185,364
DRIVE SYSTEM FOR TAPE TRANSPORT SYSTEM

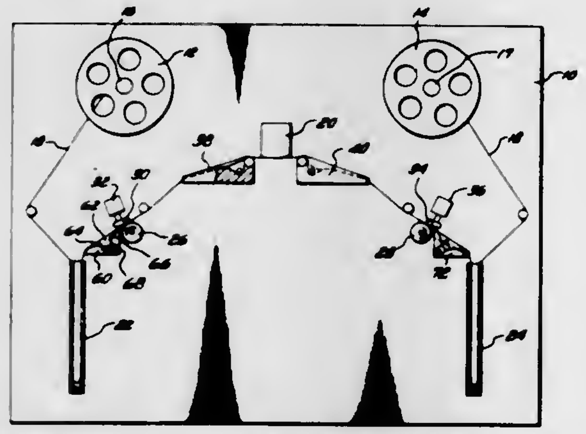
Robert A. Kleist, Woodland Hills, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Mar. 22, 1963, Ser. No. 267,175
29 Claims. (Cl. 226—24)



3. A magnetic tape transport system comprising a magnetic tape, a drive capstan in constant non-sliding engagement with the tape, means symmetrically positioned on both sides of the capstan for maintaining the tape in looped, balanced tension relationship to the capstan, a D.C. drive motor coupled directly to the capstan, servo means responsive to the speed of the motor and including amplifier means coupled to maintain the motor speed substantially at a selected velocity in either direction of movement, and means responsive to applied start and stop signals for selected directions of movement for energizing the motor with selected current waveforms to start and stop the tape in controlled fashion.

3,185,365
MAGNETIC TAPE TRANSPORT

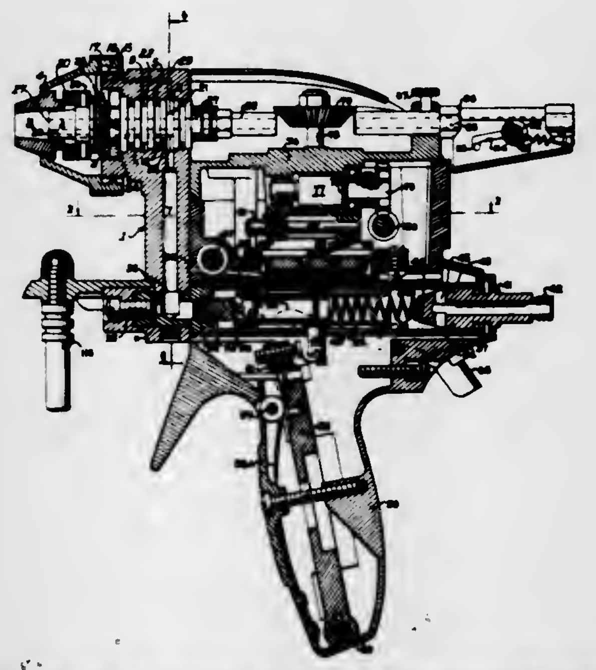
Harry F. Rayfield, Arcadia, and Robert G. Nordman, Pasadena, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 16, 1962, Ser. No. 209,871
8 Claims. (Cl. 226—50)



1. In a magnetic tape transport apparatus for driving magnetic tape in either direction through an operational zone by means of first and second capstans and means for frictionally engaging the tape with one or the other of said capstans, apparatus comprising a pair of guide members located one on each side of the operational zone between the capstans, each guide member having a semi-cylindrical convex surface adjacent one end, a long flat surface extending from the other end toward the convex surface, and a concave region extending between the flat surface and the semi-cylindrical surface, said surfaces and concave region being slightly wider than the tape, the guide members being positioned such that tape passes from one capstan over the flat surface and around a portion of the semi-cylindrical surface of one guide member, through the operational zone, around the semi-cylindrical surface and over the flat surface of the other guide member to the other capstan, and means for removing air from the concave region of each guide member whereby tape passing over the flat surface and semi-cylindrical surface is drawn into the concave region.

3,185,366
FLAME SPRAY CONSTRUCTION

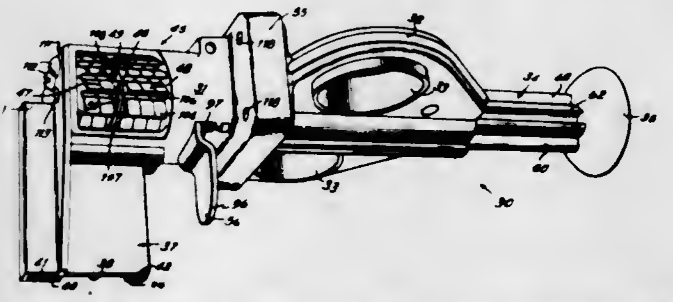
Herbert Charlop, Brooklyn, N.Y., assignor to Metco, Inc., Westbury, Long Island, N.Y., a corporation of New Jersey
Original application Jan. 16, 1962, Ser. No. 166,614. Divided and this application Oct. 30, 1962, Ser. No. 238,823
12 Claims. (Cl. 226—176)



1. In a flame spray gun of the wire type having blast gas conduit means the improvement in the wire feed means which comprises a pair of wire feed rolls positioned to grip a wire therebetween, pneumatic actuating means including a plunger for urging said rolls in wire gripping engagement, means for supplying pressure to actuate said plunger from said blast gas conduit means, trigger-operated valve means controlling the flow of blast gas through said blast gas conduit means, and separate shut-off valve means controlling the flow of blast gas from said blast gas conduit means to said plunger.

3,185,367
FASTENER GUN

Frederic L. Rieger, Dayton, and Paul H. Hamisch, Jr., Xenia, Ohio, assignors to The Monarch Marking System Company, Dayton, Ohio, a corporation of Ohio
Filed Jan. 30, 1963, Ser. No. 254,886
1 Claim. (Cl. 227—95)



A gun for applying fasteners which are joined together, side by side, by a connector, said gun comprising,

a casing having a muzzle at one end,

a plunger slidably mounted in said casing, said plunger having a drive rod at one end thereof which is engageable with a fastener and projectable from the muzzle of said gun,

means supporting a belt of fasteners for movement into said gun between said rod and said muzzle,

a pair of longitudinally spaced toothed indexing wheels rotatably mounted on said casing between said rod and said muzzle, the teeth of said wheels engaging said fasteners with said connectors passing in the space between adjacent wheels,

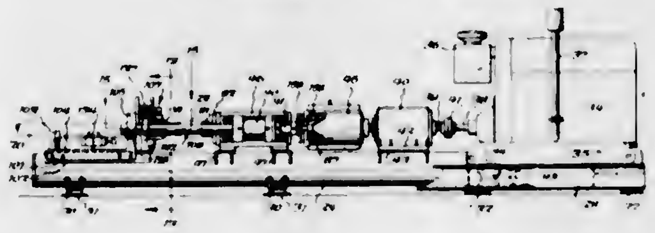
a knife disposed in the space between said wheels contiguous with said wheel nearer the muzzle end of said gun, and

actuator means connected between said plunger and said wheels for rotating said wheels upon return of said plunger from a projected position to advance a fastener into position for engagement by said rod.

3,185,368
FRICTION WELDING

Robert Lee Holloway, Snyder, and Alfred Edward Levendoski, Depew, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Jan. 10, 1961, Ser. No. 81,791
17 Claims. (Cl. 228—2)

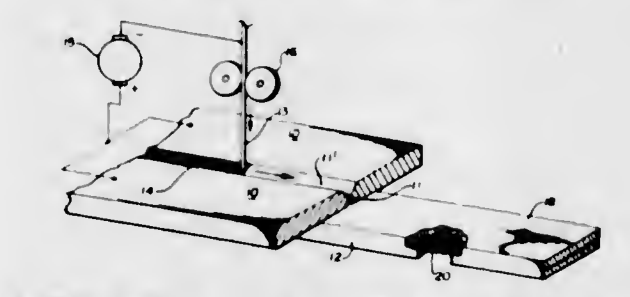


1. A friction welding apparatus for welding workpieces comprising, in combination, a frame, an arbor having means securing a first workpiece at one end of said arbor, arbor mounting means rotatably and slidably securing said arbor to said frame, drive means to rotate said arbor, means to stop the rotation of said arbor, means to advance said arbor in the direction of said first workpiece, workpiece holding means slidably mounted on said frame and adapted to hold a second workpiece beyond the end of said first workpiece, and means to advance with great force said workpiece holding means toward said first workpiece after actuation of said means to stop rotation.

3,185,369
BACKUP FOR WELD JOINTS

Donald M. Patton, Willowick, Ohio, assignor to The Lincoln Electric Company, Cleveland, Ohio, a corporation of Ohio

Filed Oct. 14, 1959, Ser. No. 846,364
9 Claims. (Cl. 228—50)

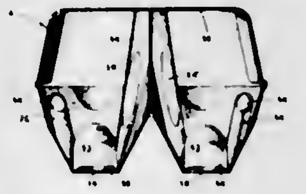


1. A weld backup strip for steel and its alloys consisting essentially of at least one of the following ingredients selected from the class consisting of the fluorides of lithium, calcium, barium, strontium, lanthanum, rare earths, magnesium, sodium, zirconium, chromium, iron, cobalt, nickel, cadmium, and manganese; and the chlorides of copper, lanthanum, the rare earths, strontium, calcium and barium, said ingredients being completely interfused and in the form of a solid homogeneous mass having a surface area to volume ratio less than 24 and being present in such relative proportions that the melting temperature is less than 1535° C. and means for holding said strip as a unit during use.

3,185,370
MOLDED PULP EGG CARTON

Richard F. Reifers, New Canaan, Conn., and Henry A. Lord, Palmer, Mass., assignors to Diamond International Corporation, a corporation of Delaware

Original application Oct. 5, 1959, Ser. No. 844,438. Divided and this application Oct. 18, 1962, Ser. No. 231,436
4 Claims. (Cl. 229—2.5)

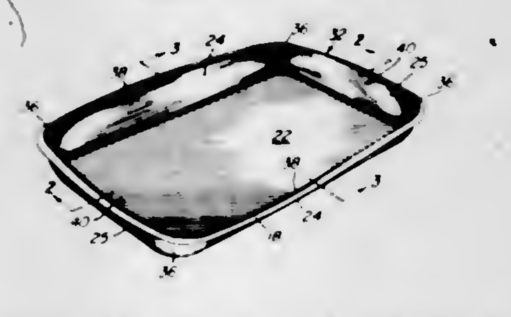


1. In a one-piece molded container comprising a cellular bottom tray including an upper peripheral margin and a plurality of individual cell groups about a hollow, vertically extending post, said post terminating above the upper peripheral margin of said bottom tray, at least one of said cells comprising a plurality of vertically diverging walls spaced about a base, the hollow post having a side wall portion forming one of said diverging wall portions, and a dished cover hingedly connected to and including a lower peripheral margin engageable on the upper peripheral margin of said bottom tray, said vertically extending post including an upper terminal end portion engageable with an inner surface portion of said dished cover for absorbing vertical compressive forces transmitted to said cover when said container is closed; the improvement comprising a vertically disposed cushioning-area portion disposed intermediately of said post side wall portion between the upper terminal end thereof and said base and disposed in intersecting relationship with respect to a plane passing through the upper peripheral margin of said bottom tray, said cushioning-area portion being transversely thinner and of a different consistency than adjacent flanking portions of said post side wall portion and having independent flexibility with respect to said adjacent portions of said post, said adjacent portions of said post comprising a concentration of material from the top thereof flanking said cushioning-area portion down to said base for providing increased columnar strength to said post and providing a stable base for the independent flexibility of said cushioning-area portion.

3,185,371
MOLDED PULP ARTICLE

Richard F. Reifers, New Canaan, Conn., assignor to Diamond International Corporation, a corporation of Delaware

Filed May 24, 1963, Ser. No. 283,061
12 Claims. (Cl. 229—2.5)

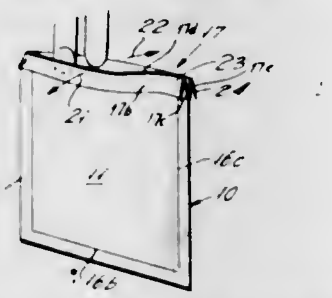


1. A molded container for food products or the like comprising a shallow tray having a bottom wall, upstanding side and end walls integral with said bottom wall and having a peripheral margin, said side and end walls being disposed in substantially rectangular relation and terminating in arcuate corners, an internal angle between said side wall and said bottom wall at a central portion of said arcuate corners being less than a comparable angle between said side and end wall and said bottom wall at medial portions of said side and end walls.

3,185,372
FOIL FOOD CONTAINER

Don John Ferraro, Lake Shore Drive, Mahopac, N.Y.

Filed Oct. 18, 1963, Ser. No. 317,345
5 Claims. (Cl. 229—3.5)

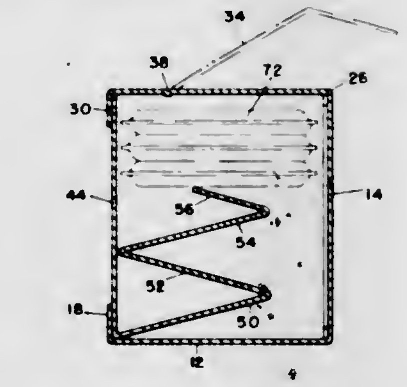


1. Package means for containing foodstuffs and adaptable for use in a conventional toaster comprising first and second sheets of foil of dimensions suitable for insertion into a toaster; said foil sheets being positioned against one another and having a marginal portion sealed to one another along three sides to form an opening for receiving food therein; a region along the fourth side of said package being sealed except for the marginal portion thereof to form first and second elongated tabs; first and second saddle means secured to said first and second tabs facilitating the opening of said package means along the fourth side; said saddle means each being formed of a flat sheet of non-conductive material to permit handling of said package to and from said toaster while isolating the user from the live elements of the toaster; said flat sheet being folded substantially in half to form a V-configuration; the halves of said sheets making contact with opposite sides of said tab.

3,185,373
DISPENSING CONTAINER

Herman Margulies, Short Hills, N.J., assignor of twenty percent to James H. Quest, Brooklyn, and twenty percent to John Zeigler, New York, N.Y.

Filed Oct. 17, 1961, Ser. No. 145,722
5 Claims. (Cl. 229—17)

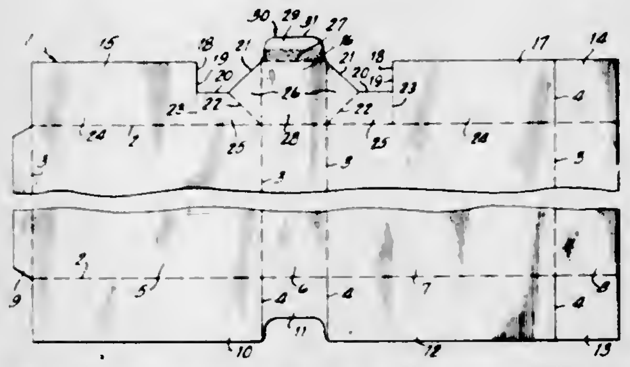


1. A container comprising a bottom wall, a top wall, a front wall, side walls, and a back wall, said walls being formed from a one-piece blank with fold lines being provided intermediate adjacent walls, a flap having one end integral with said top wall, the remainder of said flap being integrally connected to said top wall and said front wall by means of a perforation line, a fold line between said one end of said flap and said top wall whereby said flap may be pivoted to a disposition so as to expose a dispensing aperture formed in said front wall, a spring means disposed between said bottom and top walls whereby articles adapted to be disposed therebetween will be biased toward said top wall to be dispensed through said aperture, a partition wall extending between said front and back walls, said partition wall cooperating with said walls so as to define two chambers, and a spring means in each chamber.

3,185,374
CARTON AND BLANK THEREFOR

Joseph W. Feeney, Pikesville, Md., assignor to International Paper Company, New York, N.Y., a corporation of New York

Filed May 23, 1962, Ser. No. 197,065
1 Claim. (Cl. 229—17)



In the utilization of a filled carton comprising body, bottom and top parts, said top parts including first, second and third top closure extensions, said carton having horizontal and vertical fold lines generally defining said body, bottom and top parts and hingedly connecting them to each other, each of said first and third extensions being cut away to provide vertical, horizontal and diagonal edges and having a vertical line of weakness broken to define other vertical edges extending from intersections of said vertical and horizontal edges to points along one of said horizontal fold lines and a diagonal fold line extending from intersections of said horizontal and diagonal edges to intersections of said horizontal and vertical fold lines, said second extension having a horizontal fold line extending thereacross and defining a top closure section and a locking flap, said top parts being folded substantially perpendicular to said body parts, with said parts of said third extension in overlapping relation with said parts of said first extension and with said locking flap of said second extension in overlapping relation and abutting contact with outer parts of said third extension, the reclosing of the carton by the steps of folding the other parts of said third and first extensions along said diagonal fold lines to provide a bellows fold, folding said second extension perpendicular to one of said side walls and tucking said locking flap into the space defined by said vertical edges and said other vertical edges and perpendicular to said vertical edges and said other vertical edges.

3,185,375
CONTAINER WITH A GABLE TOP CLOSURE

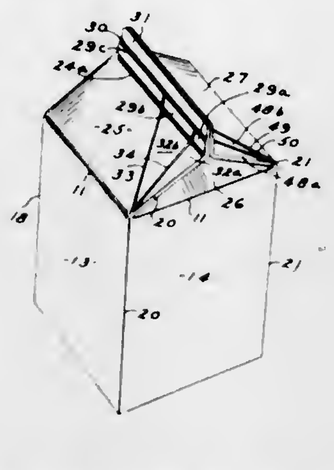
Earl A. Thomas, Detroit, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan

Filed Sept. 28, 1962, Ser. No. 226,837
3 Claims. (Cl. 229—17)

1. A container of paperboard or the like coated overall with thermoplastic material that becomes an adhesive when subjected to heat, said container comprising, in combination

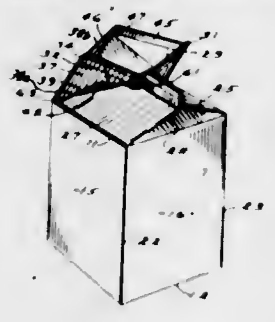
(*a*) a tubular body having a bottom closure thereon,
(*b*) a gable top closure overlying said body and including a plurality of inner and outer rib panels surmounting a pair of opposed inclined roof panels and a pair of triangular end panels joined to the roof panels by a pair of triangular fold-in panels,

(*c*) an upstanding sealing flap integral and coextensive with each of said outer panels,
(*d*) said inner and outer panels being heat-sealed together to form a closure rib overlying said roof and end panels,
(*e*) said sealing flaps being heat-sealed together to form an upstanding sealing rib surmounting said closure rib,



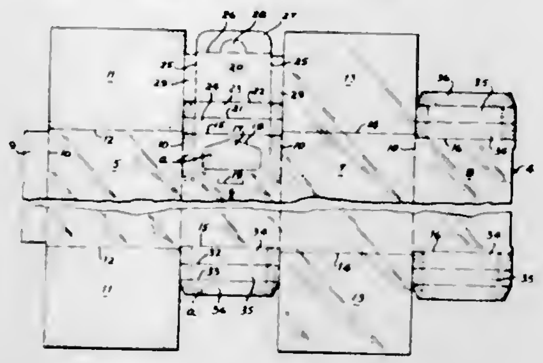
(*f*) a first set of score lines on said roof panels to form part of a pouring spout,
(*g*) a second set of score lines on said roof panels to form part of an opening gripping area, and
(*h*) a third set of score lines on one pair of said fold-in panels adjacent roof panels having said second set of score lines to form part of said opening gripping areas.

3,185,376
GABLE TOP CONTAINER CLOSURE
Duncan James Crawford, Franklin, and Melvin W. Miller, Detroit, Mich., assignors to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 15, 1963, Ser. No. 273,008
8 Claims. (Cl. 229—17)



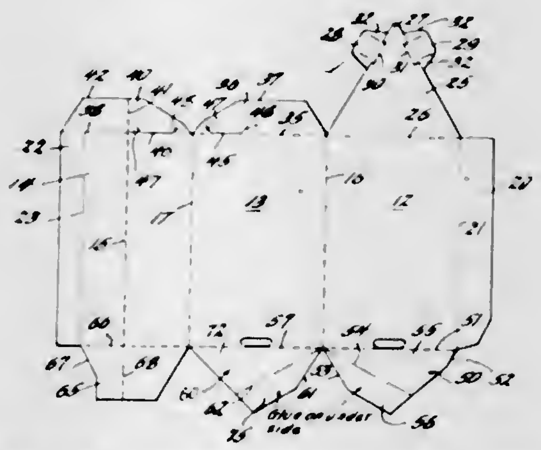
1. A container top closure, having:
(*a*) a body portion,
(*b*) said top closure having first and second fold-in end panels and first and second roof panels,
(*c*) said first fold-in end panel connected to said first and second roof panels by a first set of fold-back panels,
(*d*) said second fold-in end panel connected to said first and second roof panels by a second set of fold-back panels,
(*e*) said fold-in end panels extending over a portion of the top end of said container,
(*f*) said roof panels extending across the top end of said body portion adjacent and above the fold-in end panels and with said fold-back panels between them,
(*g*) closing means sealed together and extending from the top of said fold-in end and roof panels forming a liquid-tight top closure,
(*h*) popping means on the said roof panels to cause the opening of said container, and
(*i*) said popping means having a score line on each of said first and second roof panels starting on one-half of their respective roof panels and terminating on the other half.

3,185,377
CONTAINER AND BLANK THEREFOR
George Arlington Moore, New York, N.Y.
(910 Lake Shore Drive, Chicago, Ill.)
Filed Apr. 4, 1963, Ser. No. 270,687
14 Claims. (Cl. 229—17)



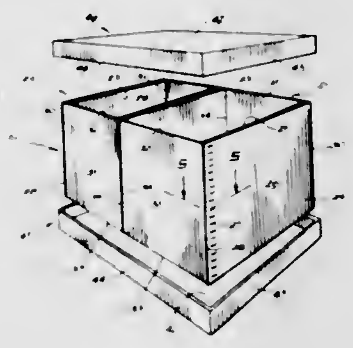
1. A carton blank of foldable material comprising hinged panels adapted to form the front, rear, and side walls of said carton, when said carton is in folded condition one of said side wall panels being slit to define a removable section adjacent to its end edge, said section when removed forming a dispensing aperture, panels hinged to the end edges of the front and rear wall panels and adapted to overlie each other to form an end wall of said carton, ledge-forming panels secured by connecting hinges to the end edges of the side wall panels respectively and adapted to form ledges underlying the end wall of the carton, each ledge-forming panel comprising adjacent twin portions hinged together along a line parallel to the connecting hinge, a cover panel for said removable section hingedly connected to and integral with the outer edge of the outer twin portion of the ledge-forming panel nearest said removable section, a flange hingedly connected to the outer edge of the outer twin portion of each of the remaining ledge-forming panels, said ledge-forming panels being adapted to be turned back upon themselves to form two-ply slack loop cushion-like resistant seating ledges and to bring said cover panel and flanges into overlying relationship upon the outer surfaces of their respective side wall panels, and adhesive means adapted to secure said cover panel and flanges to said side wall panels.

3,185,378
COLLAPSIBLE CARTONS
Charles W. Rosenburg, Jr., Buffalo, N.Y., assignor to F. N. Burt Company, Inc., Buffalo, N.Y., a corporation of Delaware
Filed June 14, 1963, Ser. No. 287,992
1 Claim. (Cl. 229—22)



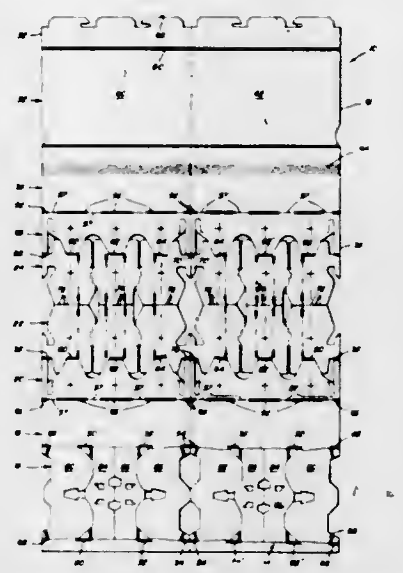
In a collapsible triangular prismatic carton which includes three rectangular side-wall panels having their adjacent lateral margins secured together to form a tubular structure of triangular cross-section; a bottom closure construction comprising a bottom flap hingedly connected with the lower edge of each of the three panels, the bottom flap which is uppermost in the completed carton being free of attachment to the other bottom flaps, the other two bottom flaps being connected with each other by the adhesion of distal portions of the areas of their external surfaces, the first of said two last named flaps being creased along a diagonal line adjacent the adhering areas to provide a hinge between proximal and distal areas thereof, said distal area of said first flap being folded completely over and in contact with its proximate area when said carton is in erected condition, and the adjacent overlying distal portion of the other of the said two flaps being secured to the upwardly facing portion of the folded-over distal area of the first flap, said second flap being of relatively rigid uncreased structure, the doubled secured two flap portions thus providing a substantial stop means for preventing downward movement of the bottom structure beyond the horizontal plane of the bottom of the carton, the collapsing of the carton by the moving of the panels together serving to straighten out and unfold the said first flap while the two connected flaps move to parallel fully face-to-face contact with each other on their external sides and each into full back-to-back contact with their respective attached wall panels.

3,185,379
BULK CONTAINER
Frank A. Kohlhaas, Minneapolis, Minn., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed May 21, 1963, Ser. No. 281,882
4 Claims. (Cl. 229—23)



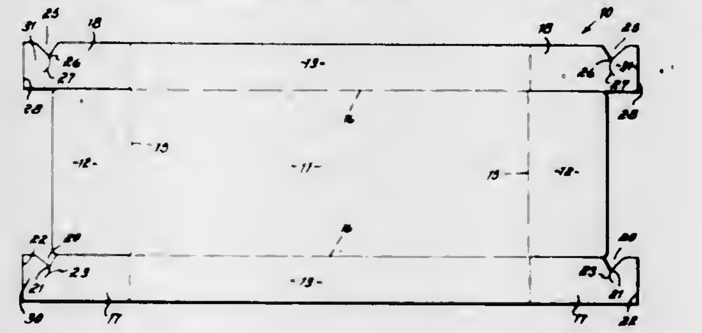
1. A large heavy duty paperboard container for bulk pack commodities having a flow characteristic and exerting outward pressure tending to distend the container walls, the container being of a size and weight with the commodity to require mechanical handling means and having single panel thickness, major longitudinal walls and double panel thickness smaller transverse walls which are more than one-half the longitudinal wall dimension of the container, the container comprising paired tubular sleeves in side by side relation and telescoping end closure means unitizing the sleeves, the sleeves each being of rectangular tubularly arranged panel formation with the panels thereof foldably connected by vertical corner scores and including a pair of said panels in secured together coextensive overlapping relation, said paired overlapping panels of each sleeve forming respectively container transverse end walls, a medial transverse wall of the container comprised of confronting coextensive panels of the paired sleeves, the major longitudinal side walls of the container being comprised of the remaining single thickness panels of the sleeves in respective paired aligned relationship, said single thickness panels each being of less width than the double thickness reinforced container transverse and medial walls and being restrained against outward distension by the fold connections to the transverse end and medial walls.

3,185,380
CONTOURED BOARD EGG CARTON
Richard F. Reifers, New Canaan, and William J. Hrozenchik, Stamford, Conn., assignors to Diamond International Corporation, a corporation of Delaware
Filed Sept. 13, 1961, Ser. No. 138,244
19 Claims. (Cl. 229—28)



1. In a rectangular blank for a one-piece carton, including in order, a lock panel, cover panel, a back panel, a bottom panel, a pair of longitudinal partition panels, a second bottom panel, a front panel, a transverse partition panel, and a glue flap panel, hinge forming means connecting said panels, said longitudinal partition panels including support leg forming portions extending into said bottom panel, fold lines extending into said support-feet forming portions for providing a contour to said support legs in an erected carton, abutment nose portions substantially in alignment with said fold lines and overlying each other, said transverse partition panel including full end cell transverse partition panels and intermediate adjacent half cell partition panels, said half cell intermediate partition panels including a pair of intermediate aperture portions engageable with the abutment portions on the longitudinal partition panels in an erected carton whereby the half cell transverse partition panels are biased out of their general plane in an erected carton.

3,185,381
LOCKING TABS FOR CARDBOARD CONTAINERS
Frank E. Fobiano and Joseph S. Haven, Cincinnati, Ohio, assignors to Premier Carton Company, Cincinnati, Ohio, a corporation of Ohio
Filed June 13, 1963, Ser. No. 287,658
2 Claims. (Cl. 229—35)



1. A cardboard boat container comprising,
a rectangular bottom panel,
end panels hinged to the end edges of said bottom panel,
side panels hinged to the side edges of said bottom panel,
a lock tab hinged at each end of each side panel to provide a pair of cooperating lock tabs at each end of said boat,

a first of said tabs at each end of said boat having in its upper edge a V notch and a crescent slit extending from the apex of the V toward the lower edge and the free end of said tab,

a second of said tabs at each end of said boat having in its lower edge a V notch and a crescent slit extending from the apex of the V toward the upper edge and the free end of said tab, and

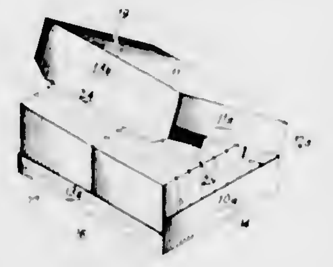
said first and second tabs overlying said end panel and having their slits interengaged with the end portion of each tab lying between said end panel and the adjacent tab to lock the tabs together.

3,185,382
EASY OPENING CONTAINER

Frank C. Nunn, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Aug. 29, 1963, Ser. No. 305,332

7 Claims. (Cl. 229—51)



1. An easy opening tray-forming container having in combination:

(A) two pairs of marginally connected and alternating end walls and side walls, and bottom and top closures;

(B) each of said closures comprising substantially rectangular and full width end flaps hinged to and extending from the said end walls, respectively, inwardly folded toward one another so as to lie in the same plane, and equally sized rectangular side flaps hinged to and extending from the side walls, respectively, inwardly folded in overlapping relationship with said end flaps and adhesively united therewith, each of said flaps having a dimension from hinge line to distal end which approximates one-half of the width of the said end walls, said side flaps in the inwardly folded condition being coplanar and the distal ends thereof contiguous;

(C) the ends of the blank forming said container lying within the confines of one of said end walls and thereby dividing said one end wall into two portions, each of which has a pair of oppositely disposed end flaps connected therewith, the combined widths of said end wall portions being approximately equal to that of the other said end wall, the end wall portion at one end of the blank having a full length flap extending therefrom which overlies and is removably secured to the other end of the blank, the balance of the end edges of said blank being butted against one another;

(D) the line of the abutting edges of said ends of the blank being located in a position removed from the center line of the said one end wall so that one end wall portion is wider than the other;

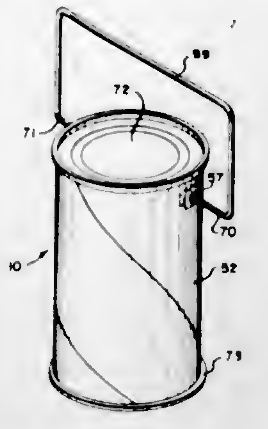
(E) the end flaps extending from the other of said end walls being slotted along lines perpendicular to the flap hinge lines, each of said slots extending from the outer flap edge to a point short of the respective flap hinge line, said slots both lying in substantially the same plane as the abutting end edges of said blank located in the oppositely disposed end flaps when the container is in use.

3,185,383
BAILING MEANS FOR MULTIWALL CONTAINER

James N. Krause, Jeffersontown, and William L. Ahlemeyer, Louisville, Ky., assignors to The Anaconda Aluminum Company, a corporation of Montana

Filed July 31, 1962, Ser. No. 213,773

8 Claims. (Cl. 229—52)



1. A container comprising a substantially rigid body which is adapted to receive a carrying bail and having an end closure cap on at least one end thereof, said body comprising:

(*a*) a liner ply wound to define the inner surface of the container,

(*b*) at least one ply of body stock wound about said liner ply and adhesively secured thereto,

(*c*) a label ply wound about said body ply and adhesively secured thereto to define the outer surface of said container body, and

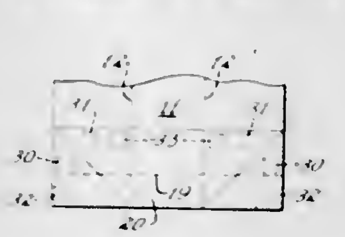
(*d*) bail receiving means mounted within the container wall between said body stock and said label ply and extending outwardly and opening adjacent the container wall at substantially diametrically opposed positions.

3,185,384
BAGS

Robert O. Ragan, Oak Park, and Robert F. Trant, Chicago, Ill., assignors, by mesne assignments, to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota

Filed Feb. 28, 1962, Ser. No. 176,283

10 Claims. (Cl. 229—58)



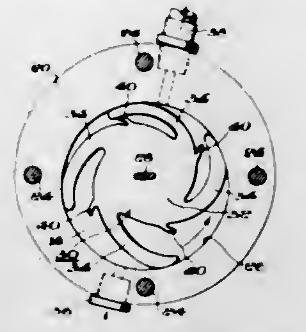
1. A bag including a pleated tubular body having a front wall, a rear wall, and pleated side walls connecting the front and rear walls each including a pair of gusset panels, a transverse seam connecting an end of said pleated walls in face contact with an end of said front and rear walls to form a bottom closure folded against, and secured to, one of the front and rear walls, the lower portions of said gusset panels being foldable to form two superposed triangular flaps having their exterior surface in face contact when said bag is squared up, areas of pressure sensitive adhesive on said exterior surface of each of said triangular flaps of at least one pleated side wall, said adhesive areas being of the type capable of adhering only to a similar adhesive coated area, the adhesive areas of one gusset panel being offset from the adhesive areas of the adjoining gusset panel when the bag is flat and the exterior surfaces of said gusset panels are in face contact, the adhesive area of one triangular flap of each said gusset panel having adhesive coated areas being in contact with the adhesive areas of the other triangular flap of the same gusset panel when said triangular flaps are folded into superposed face contact.

3,185,385
ROTARY AIR PUMP

Floyd J. Moltchan, R.D. 1, P.O. Box 415, Canfield, Ohio

Filed Apr. 16, 1962, Ser. No. 187,553

5 Claims. (Cl. 230—137)



1. Rotary pump means comprising a body having a cylindrical cavity therein, a rotatable member eccentrically mounted within said cavity, means for rotating said member in one direction, radially-outwardly extending resilient vanes circumferentially spaced around the member with one each vane being bent in the direction of rotation of the member whereby an outer surface of each vane will slide on the periphery of said cylindrical cavity as the member is rotated, an inlet port in the side of the cylindrical cavity furthest removed from the eccentric axis of the rotatable member, an outlet port in the side of the cylindrical cavity nearest the eccentric axis of the rotatable member, and resilient finger-like cleats extending radially outwardly from said member and bent in the direction of rotation of said member, said cleats being between the vanes and each adapted to force the forward end of an associated one of said vanes radially outwardly as it approaches said outlet port.

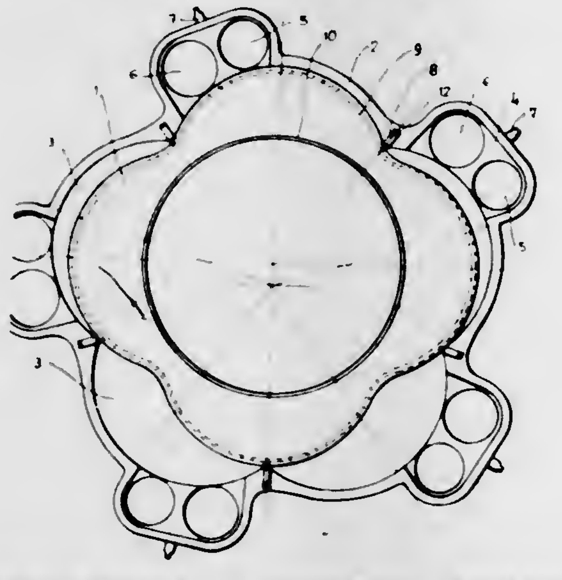
3,185,386
PACKING DEVICES COMPRISING FIXED AND MOVABLE ELEMENTS FOR ROTARY ENGINES

Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France

Filed Aug. 24, 1961, Ser. No. 133,632

Claims priority, application France, Sept. 20, 1960, 839,013, Patent 1,277,311

3 Claims. (Cl. 230—145)



1. Packing device for a rotary engine of the lobar type comprising an eccentric rotor of substantially epicyclic contour having 2N lobes and a stator providing a chamber therein having $2n+1$ lobes and having end covers for said chamber, wherein combustion chambers are disposed around the outer periphery of the rotor in said stator, the rotor being mounted for rolling intermeshing relation of the lobes thereof with the stator lobes, said rotor lobes and stator lobes thereby forming expansible and contractible fluid working chambers therebetween, said packing device comprising fixed radial sealing strips disposed in the stator along the line of junction between adjacent working chambers, movable sealing strips carried by said rotor and consisting on the one hand of lateral sealing strips of substantially epicyclic contour located at a relatively short distance from the epicyclic surface of said rotor, and on the other hand of circular sealing strips disposed inside said epicyclic sealing strips also on the lateral faces of the rotor, and complementary sealing strips in each stator cover endwise of said radial sealing strips, resiliently engaging both said radial sealing strips and the epicyclic sealing strips in order to provide the necessary lateral fluid-tightness.

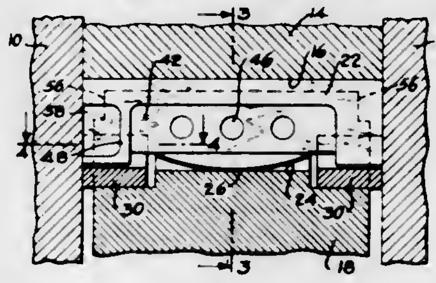
3,185,387
APEX SEALING MEANS

Hanns-Dieter Paschke, Neckarsulm, Wurttemberg, Germany, assignor to NSU Motorenwerke Aktiengesellschaft, Neckarsulm, Germany, and Wankel G.m.b.H., Lindau, Germany

Filed Mar. 14, 1963, Ser. No. 265,252

Claims priority, application Germany, Mar. 31, 1962, N 21,408

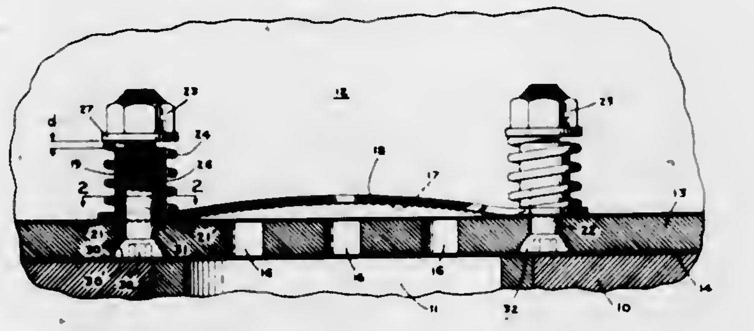
2 Claims. (Cl. 230—145)



1. A rotary mechanism comprising an outer body having spaced end walls and a peripheral wall forming a cavity therebetween; an inner body having axially-spaced end faces and disposed within said outer body cavity between the end walls thereof for rotation relative to said outer body with each of said end faces adjacent to an end wall; said inner body having a plurality of circumferentially-spaced apex portions having sealing cooperation with the inner surface of the peripheral wall of said cavity to form between the inner and outer bodies a plurality of working chambers wherein varying fluid pressures cyclically occur; and a plurality of seal strips, one for each of said apex portions and each received in a groove in an apex portion extending from one end face to the other of the inner body; each said seal strip having a width in the circumferential direction which is slightly less than the width of its associated groove whereby the fluid in that one of the two adjacent working chambers having the higher pressure urges said seal strip against the opposite side of its groove and enters the groove and acts on the radially inner edge of the seal strip to urge it radially outward into sealing engagement with the inner surface of the outer body peripheral wall; each said seal strip having at least one recess in each of its side faces disposed within a region of said side face which is disposed entirely within its apex portion groove, said recess extending over a substantial area of said side face, the recesses on opposite sides of said seal strip being of substantially equal area, said seal strip having at least one passage therethrough interconnecting said recesses; each of said seal strips having an additional recess in each of its side faces adjacent at least one end of said strip, each said additional recess being disposed inwardly of the outer edge of the associated groove for said seal strip and extending to said adjacent end of said seal strip.

3,185,388
REFRIGERATION COMPRESSOR VALVE SERVICE

Alfred W. Siman, Elizabeth, and Rudolph Stegmann, Jr., Dumont, N.J., assignors to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Oct. 2, 1963, Ser. No. 313,338
11 Claims. (Cl. 230—228)

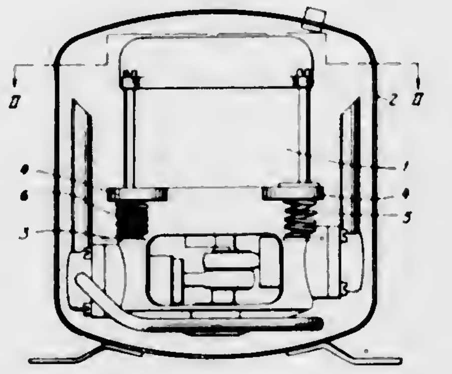


1. In a compressor having a head, a cylinder in the head, and a manifold connected to the head to receive fluid discharged from the cylinder;

(*a*) a valve plate carried on the head and having means forming a passage therein communicating the cylinder with the manifold,
(*b*) guide means supportably extending from the valve plate,
(*c*) a closure assembly sildably mounted on said guide means and being biased toward the valve plate to provide a closure to the means forming said passage therein for controlling flow of fluid from the cylinder,
(*d*) at least a portion of said guide means being nonrigidly positioned in the valve plate to permit deflection of the guide means under the influence of pressure exerted by the closure assembly.

3,185,389
RESILIENT MOUNTING MEANS FOR A MACHINE OR THE LIKE

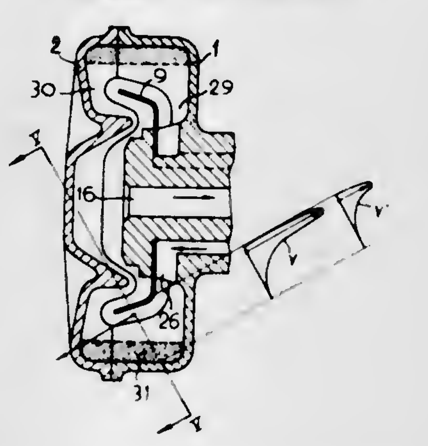
Torsten Loberg, Norrkoping, Sweden, assignor to Stal Refrigeration Aktiebolag, Norrkoping, Sweden, a corporation of Sweden
Filed Dec. 19, 1962, Ser. No. 245,878
Claims priority, application Sweden, Jan. 2, 1962, 4/62
6 Claims. (Cl. 230—235)



1. A means for resiliently mounting a machine, such as a compressor or the like comprising, a compressor having a plurality of projecting brackets, a housing enclosing the compressor and having brackets disposed under those on the compressor, similar springs interposed between the compressor brackets and the housing brackets, some of said springs being compression springs and the other springs being tension springs, each spring having flat end turns, one of said end turns on each spring being engaged by a screw in each of the housing brackets, the second end turn on the tension springs engaging on the top of the compressor brackets, said compressor brackets each having an opening smaller in diameter than the end turn which engages against the top of the bracket.

3,185,390
CENTRIFUGAL OIL CLEANER FOR INTERNAL COMBUSTION ENGINES

Dante Giacosa, Turin, Italy, assignor to Fiat Societa per Azioni, Turin, Italy
Filed Oct. 31, 1960, Ser. No. 66,114
Claims priority, application Italy, Oct. 31, 1956, 28,698/56, Patent 561,848
1 Claim. (Cl. 233—32)



In a centrifugal cleaner for filtering lubricating oil of internal combustion engines and the like means defining a rotatable bowl having an inlet passageway for contaminated oil and an axial discharge passageway for purified oil, baffle means in the bowl for guiding the incoming oil radially away from the axis of rotation of the cleaner bowl and then radially toward the axis rotation of the bowl, said baffle means being disposed dividing the bowl internally into a first chamber comprising a centrifugal oil flow chamber and a second chamber comprising a centripetal oil flow chamber, radially extending ribs in said first and second chambers subdividing the chambers into circular segments wherein the oil flowing through the cleaner has an angular speed, substantially coinciding with the angular speed of the bowl, said ribs being disposed axially and radially spaced from said baffle means a distance effective to define adjacent said baffle means an annular zone in which the major portion of oil flowing through the cleaner performs a circumferential movement with respect to the bowl without disturbing quiescent oil adjacent the inner periphery of said bowl, and said ribs having a height in which a ratio of said height relative to the space between the ribs and baffle is in the order of 0.15 to 0.40 at each cross-section of the first and second chambers.

3,185,391
DEVICE FOR CALCULATING THE READABILITY OF WRITTEN MATERIAL

George A. Gillis, Rte. 1, Box 179, Silverton, Oreg.
Filed Dec. 11, 1962, Ser. No. 243,771
5 Claims. (Cl. 235—61)

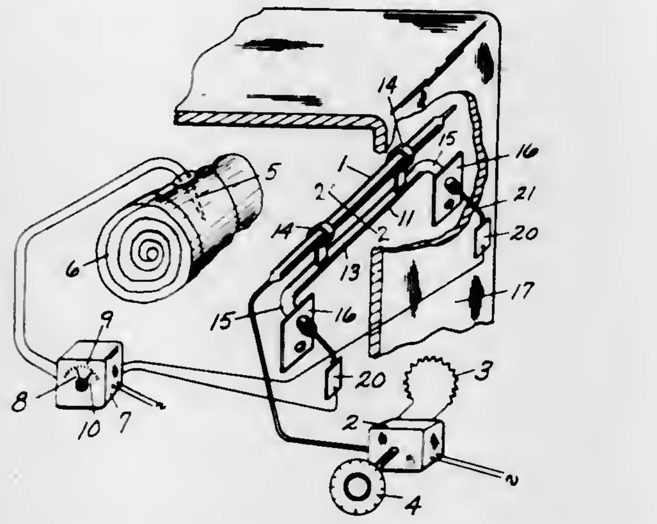
5. A device for calculating the readability of written material, comprising

(*a*) a base member having thereon a plurality of elongated, parallel, spaced scales,
(*b*) the first scale being arranged centrally on the base member and graduated to indicate the predicted readability grade level of a sample of written material,
(*c*) the second and third scales being disposed laterally outward on opposite sides of the first scale and graduated logarithmically to indicate the number of words in the sample,
(*d*) the fourth scale being disposed laterally outward from the second scale and graduated logarithmically to indicate the number of strange words in the sample,
(*e*) the fifth scale being disposed laterally outward from the fourth scale and graduated uniformly to indicate the strange word difficulty factor,
(*f*) the sixth scale being disposed laterally outward from the third scale and graduated logarithmically to indicate the number of sentences in the sample,
(*g*) the seventh scale being disposed laterally outward from the sixth scale and graduated uniformly to indicate the sentence length difficulty factor,
(*h*) the eighth scale being disposed adjacent and parallel to the fifth scale and graduated logarithmically, the fifth and eighth scales being interconnected by conversion lines,
(*i*) the ninth scale being disposed adjacent and parallel to the seventh scale and graduated logarithmically, the seventh and ninth scales being interconnected by conversion lines,
(*j*) first index means mounted movably on the base member and disposed for registry with the second scale,
(*k*) second index means mounted movably on the base member and disposed for registry selectively with the fifth and eighth scales,
(*l*) first straight edge means interconnecting the first and second index means and registering with the fourth scale, the first straight edge means being operable upon registry with selected values on the second and fourth scales to identify the corresponding strange word difficulty factor on the fifth scale,
(*m*) third index means mounted movably on the base member and disposed for registry with the third scale,
(*n*) fourth index means mounted movably on the base member and disposed for registry selectively with the seventh and ninth scales,
(*o*) second straight edge means interconnecting the third and fourth index means and registering with the sixth scale, the second straight edge means being operable upon registry with selected values on the third and sixth scales to identify the corresponding sentence length difficulty factor on the seventh scale, and
(*p*) third straight edge means interconnecting the second and fourth index means and registering with the first scale, the third straight edge means being operable upon registry with selected values on the fifth and seventh scales to identify the corresponding predicted readability grade level on the first scale, the first scale being graduated to indicate converted values of the sums of selected values on the fifth and seventh scales.

3,185,392
OVEN TEMPERATURE CONTROL

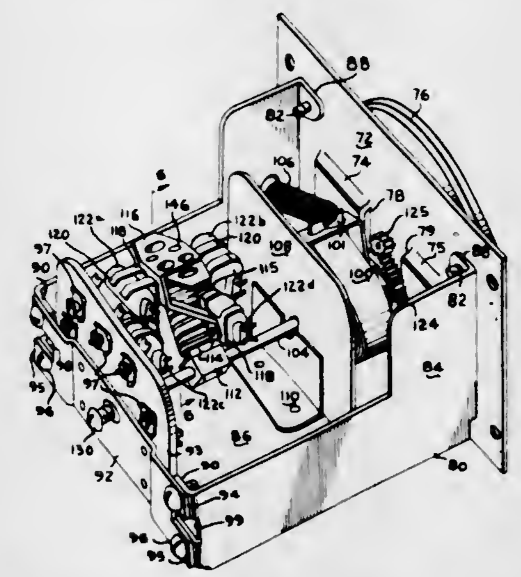
John J. Finn, Erie, Pa., assignor of one-half to Glenn Electric Heater Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Apr. 29, 1963, Ser. No. 276,230
1 Claim. (Cl. 236—15)

In combination with an oven, an oven control for roasts comprising a horizontal main thermostatic bulb spaced from a wall of the oven for controlling the oven temperature, a roast temperature element adapted to be embedded in the roast to respond to the internal roast temperature, a roast temperature control connected to said roast temperature element and actuated by the roast temperature as measured by said element reaching a predetermined temperature, an auxiliary sheathed heating element having ends extending through and fixed to said wall of the oven and having an intermediate horizontal section outstanding from said wall and directly below said main bulb, and supports for the main bulb carried by said intermediate section having loops slidably receiving the main bulb, said auxiliary element being energized by said actuation of the roast temperature control to heat the main bulb above the oven temperature whereby the main bulb is satisfied while the oven temperature is less than the main oven control setting.



3,185,393
INTEGRAL THERMOSTAT FOR INDOOR COMFORT EQUIPMENT

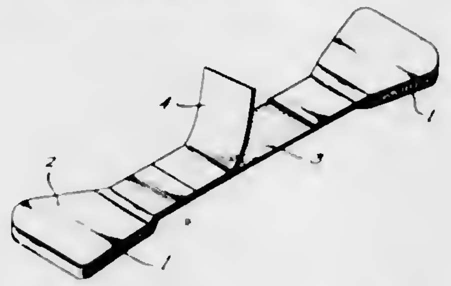
John W. Norris, Marshalltown, and Wayne F. Sieverding, Union Grove Lake, Iowa, assignors to Lennox Industries Inc., a corporation of Iowa
Filed Aug. 20, 1962, Ser. No. 218,494
10 Claims. (Cl. 236—38)



1. An air treating unit adapted to be positioned in an area to be treated comprising a casing having a recirculated air inlet, a recirculated air outlet, and a ventilation air inlet, means for moving air through said casing, damper means adjacent the ventilation air inlet for regulating the quantity of ventilation air entering said casing, said damper means including a damper motor, and thermostatic control means for controlling the damper motor, said thermostatic control means comprising a housing in said casing having an inlet for receiving recirculated air and an outlet, shaft means rotatably mounted in said housing, first thermal responsive means responsive to the temperature of the recirculated air passing through said housing for rotatably positioning said shaft means, a chamber defined in said housing and being insulated from said recirculated

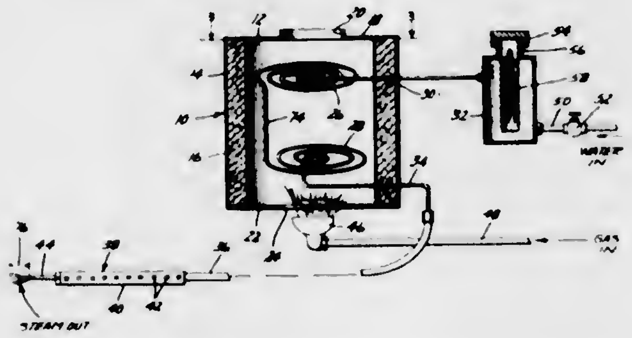
air, second thermal responsive means carried on said shaft means within said chamber, switch means on said second thermal responsive means operable in response to the movement of the shaft means to actuate the positioning motor.

3,185,394
ATTACHMENT FOR GARMENTS
John Farrell, 5320 Beverly Hill Lane, Houston, Tex.
Filed May 24, 1963, Ser. No. 283,106
2 Claims. (Cl. 239—36)



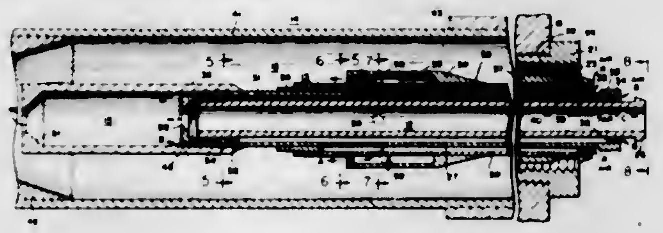
1. In an attachment for garments, a strip of adhesive tape having a pair of enlarged portions adjacent each end, absorbent pads inclosed by said enlarged portions, the sidewalls of said inclosures being open, and one side face of said tape between said pads having an adhesive exposable to the material of a garment when said pads are moved into juxta-position.

3,185,395
STEAM-CLEANING APPARATUS
William R. Van Deburg, Jackson, Wyo.
Filed Apr. 4, 1963, Ser. No. 270,730
4 Claims. (Cl. 239—131)



4. Steam-cleaning apparatus comprising a cylindrical firebox which includes a tubular shaped heat-resistant steel liner open at both ends, a tubular shaped steel jacket coaxially surrounding said liner and being radially spaced therefrom, said jacket being open at both ends, thermal insulation filling the space between said jacket and liner, said liner and jacket being of the same length, a cover secured to and closing one end of both the jacket and liner, said cover having a vent opening therein, a bottom secured to and closing the other end of both the jacket and liner, said bottom having a flame opening therein; at least two planar spiral water coils fixedly mounted inside said firebox, said two coils being arranged concentrically in said firebox in radially spaced relation therewith, said two coils further being parallel and spaced apart axially, said two coils being connected in series, the first of said coils having an inlet connection, the second of said coils having an outlet connection; a gas burner mounted on said firebox in registry with said flame opening and adjacent to said second coil whereby the flame from said burner is positioned in heat exchanging relation therewith; a soap tank mounted on the exterior of said firebox and having a first conduit connection which is coupled to said inlet connection, said tank also having a second conduit connection, a control valve connected in series with said conduit connection, means mounted inside said tank for receiving a quantity of granulated soap, a cover removably mounted on said tank in registry with said means; a hose connected to said outlet connection, and a steam nozzle coupled to said hose, said nozzle including an elongated handle.

3,185,396
BUILDING SURFACE APPLICATOR
Andrew F. Black, Niles, Ill., assignor to Air-Pressure Damp-Proofing Services, Inc., Niles, Ill., a corporation of Illinois
Filed Oct. 26, 1962, Ser. No. 233,267
3 Claims. (Cl. 239—336)



1. An applicator, for discharging from its forward end a mixed flow of viscous and solid substances to impinge on a surface a reinforced lamina, comprising,

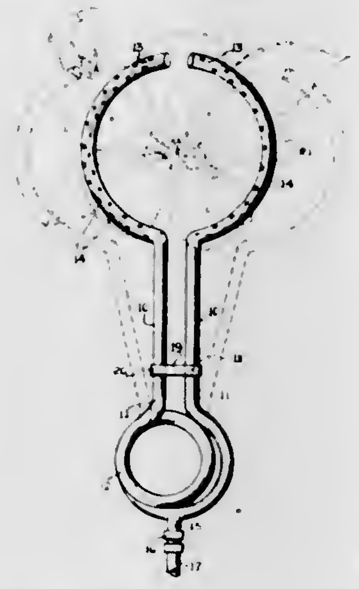
(*a*) an outer tube
  connectable at its breech end to a supply source of a solid substance, and
  having a nozzle discharge end,
(*b*) an inner tube
  connectable at its breech end to a supply source of a viscous substance, and
  having a nozzle discharge end located inwardly of the nozzle discharge end of the outer tube to form a mixing chamber within the outer tube nozzle.
(*c*) a first intermediate tube
  embracing the inner tube,
  connectable at its breech end to a supply source of air pressure,
  having a nozzle discharge end disposed adjacently inward of the nozzle end of the inner tube to effect an ejector action on the inner tube to facilitate the discharge of the
    viscous substance from the inner tube nozzle end into the outer tube mixing chamber, and
(*d*) a second intermediate tube
  embraced within the outer tube, and
  having a nozzle discharge end disposed adjacently inward of the nozzle end of the inner tube
    to effect an ejector action on the outer tube to facilitate the flow of the solid substance through the outer tube and for mixture with the viscous substance discharged from the inner tube within the aforesaid mixing chamber and discharge the two substances as an integrated mixture from the nozzle of the outer tube.

3,185,397
LEAF SPRAYERS
Permil N. Nelson, Galesburg, Ill., assignor to Lynn H. Ewing, doing business as Blackhawk Company, Rock Island, Ill.
Filed Apr. 22, 1963, Ser. No. 274,724
1 Claim. (Cl. 239—556)

A leaf sprayer for washing the under surface of a leaf of a plant to remove insects therefrom comprising

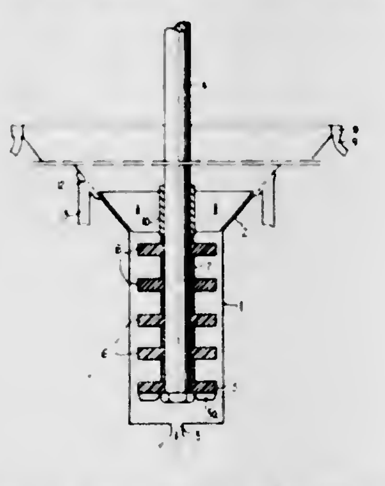
(*a*) an elongated conduit pipe bent substantially U-shaped to provide a bight portion and opposite elongated arms extending in the same general direction with respect to each other from said bight portion and having their end portions curved in opposed directions to provide opposite semi-circular perforated end portions,

(*b*) a conduit coil formed in one of said arms adjacent said bight portion for yieldably holding said curved end portions in spaced relation with respect to each other while permitting said arms to be manually pressed toward each other to dispose the curved end portions of the arms in position to encircle the stem of the plant beneath a leaf to be sprayed,



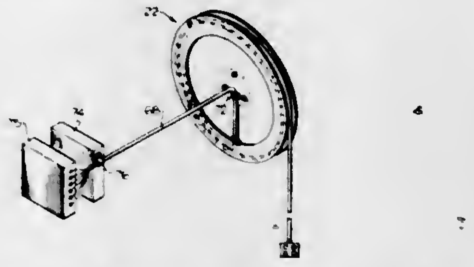
(*c*) and a nipple at said bight portion for connection to a liquid supply line.

3,185,398
SAND MILLING PROCESS AND APPARATUS
William Hughes, Norton-on-Tees, and Arthur Dolby Brown, Grimsby, England, assignors to British Titan Products Company Limited, Billingham, County Durham, England, a corporation of Great Britain
Filed July 30, 1962, Ser. No. 213,535
Claims priority, application Great Britain, Aug. 3, 1961, 28,311/61
20 Claims. (Cl. 241—20)



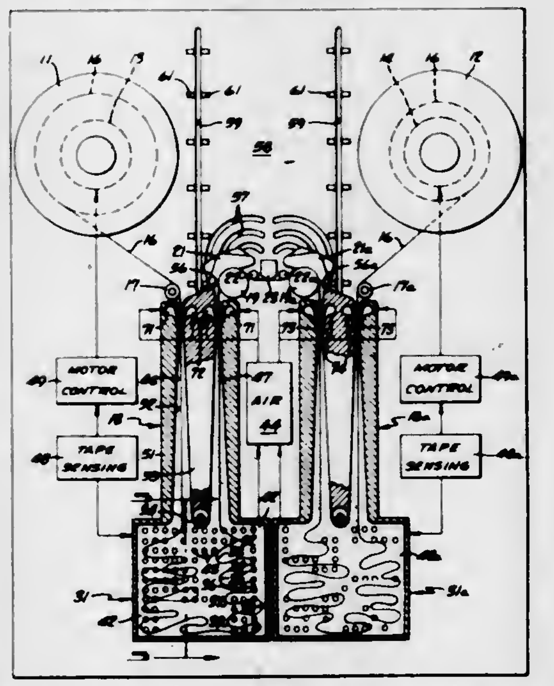
1. A process for the grinding of solids in liquid, comprising supplying solid particles to be ground and a liquid to a grinding zone containing agitated particulate grinding medium; passing the resulting slurry of solid particles to be ground and particulate grinding medium with substantially unimpeded flow upward through a separating zone; reducing the vertical velocity of said slurry prior to the outflow of solid-liquid slurry from said separating zone to a value substantially less than the velocity of said slurry in said grinding zone and substantially less than the suspending velocity of said grinding medium but above the suspending velocity of the ground solid particles, whereby entrained particles of grinding medium setle out of said slurry in preference to the ground solid particles; and thereafter removing from the upper portion of said separating zone said liquid and the ground solid particles free from at least most of the grinding medium.

3,185,399
WINDUP REEL FOR FLEXIBLE CONDUIT
Fernando A. Pellicciotti, Inglewood, Calif., assignor to Socony Mobil Oil Company, Inc., a corporation of New York
Filed Feb. 26, 1963, Ser. No. 261,131
8 Claims. (Cl. 242—54)



1. In combination, a windup reel having an outer annular winding surface and a radially extending wall supporting said annular winding surface, a flexible conduit wound upon said annular winding surface, means fixing a first point on said flexible conduit to said radially extending wall, means fixing a second point on said conduit, said windup reel and said first point being rotatable on the axis of said annular surface with respect to said second point, said second point being arranged with respect to said first point and said windup reel being constructed so that when said windup reel rotates on the axis of said annular winding surface said conduit twists between said first and second points, one end of said conduit extending from said annular winding surface to said first point and then extending from said first point directly away from said windup reel to said second point, the other end of said conduit extending tangentially away from said annular winding surface so that when said windup reel rotates on the axis of said annular winding surface said other end of said conduit winds and unwinds on said annular winding surface.

3,185,400
TAPE SLACK DEVICE
Alexander R. Maxey, Redwood City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Dec. 28, 1961, Ser. No. 162,883
9 Claims. (Cl. 242—55.12)



1. A device for maintaining a slack segment in a length of tensioned tape, comprising:

  means for tensioning the shanks of said segment toward one another so as to maintain tension in said tape outside said segment;
  means for forming at least one bend in said segment; and

means including differential pressure means for limiting the amount of air impinging on each of the bends of said segment,

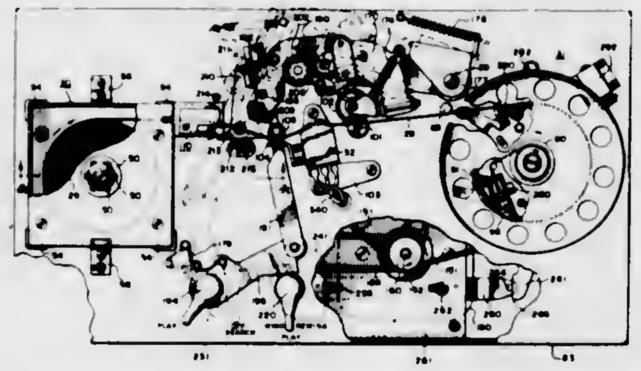
whereby said segment may be shortened with minimum resistance from said air.

3,185,401
TAPE RECORDER

Maurice E. Hardy, Evanston, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Original application July 10, 1961, Ser. No. 122,934. Divided and this application May 25, 1964, Ser. No. 369,784

6 Claims. (Cl. 242—55.13)



1. In a winding and reeling apparatus employing a transport mechanism for moving an elongated flexible tape between a storage reel and a take-up reel, a take-up real comprising:

an outer hub of a first predetermined diameter having a port on the surface of said hub;

an inner hub of a second predetermined diameter smaller than said first diameter supported concentrically with and for rotation relative to said outer hub for receiving said tape through said port of said outer hub;

locking means for normally preventing rotation of said outer hub but releasable to allow rotation thereof;

and an actuating member coupled to said locking means and responsive to the winding of a predetermined amount of tape wound on said inner hub to release said locking means.

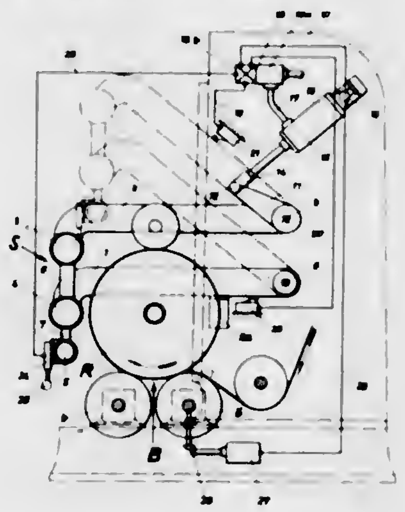
3,185,402
SAFETY MEANS FOR PAPER WINDING MACHINE

Bernhard Lenz, Dusseldorf, Germany, assignor to Jagenberg-Werke AG., Dusseldorf, Germany

Filed Sept. 30, 1963, Ser. No. 312,695

Claims priority, application Germany, Apr. 19, 1961, J 19,823

6 Claims. (Cl. 242—66)



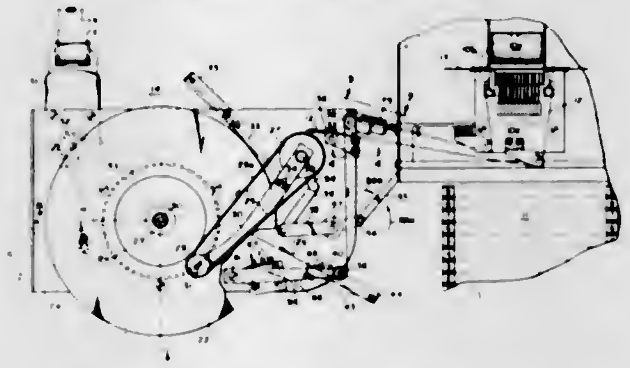
1. In a paper winding machine, an axleless shell on which a paper web is adapted to be wound, a pair of rollers for supporting said shell, safety means operably associated with said shell for preventing the unintentional dislodgement of said shell from said pair of rollers during high speed winding due to imbalance of said shell, said safety means including at least two vertically spaced tubes extending horizontally of the machine and being of such length as to correspond to the width of the web being wound on said shell, pairs of levers, each pair of levers being connected at one of their ends to a tube, means pivotally mounting the other ends of said pairs of levers to said machine for upward and downward movement, drive means for moving said levers and tubes upward and downward, means connecting one of said pairs of levers to said drive means, switch means determining the upper and lower limits of said pairs of levers, means operably connecting the respective switch means with said drive means for interrupting said drive means when one of said pairs of levers engages one of said switch means, feeler means carried by the lowermost of said tubes, additional switch means actuated by said feeler means when said feeler means contacts an obstacle in the path of movement of said safety means, and means operably coupling said additional switch means to the drive means for interrupting said drive means.

3,185,403
TAPE DRIVE

Harley F. Bean, Dallas, Tex., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 16, 1962, Ser. No. 174,373

5 Claims. (Cl. 242—67.3)



1. A system for transporting delicate magnetic ink tape stepwise from a supply roll to a document printing means, which comprises:

(*a*) a supply roll holder adapted to receive said supply roll,

(*b*) a take-up reel mounted on a shaft passing through said holder,

(*c*) normally de-energized drive means for said take-up reel,

(*d*) a drive pulley mounted on a second shaft to face the supply roll on said holder,

(*e*) means supporting an idler pulley for movement along an arc intersecting the supply roll on said holder at a distance from said drive pulley,

(*f*) an insulating belt encircling the pulleys,

(*g*) resilient means for urging said idler pulley toward said holder for contact by said belt with said roll,

(*h*) guide means for directing said tape along the face of said belt and thence through said printing means to said take-up reel,

(*i*) means synchronized with said printing means for intermittently actuating said drive pulley to advance said tape in steps,

(*j*) resiliently biased follower means engaging said tape between said printing means and said take-up reel for maintaining said tape under tension, and

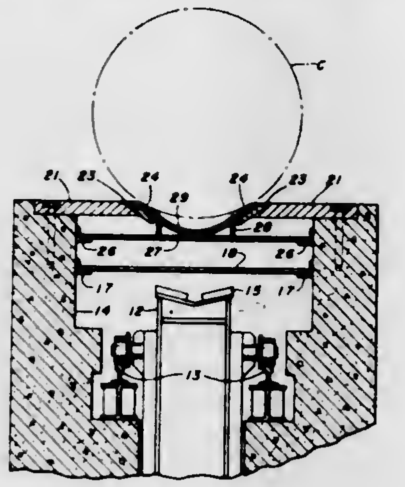
(*k*) means responsive to movement of said follower means for selectively energizing and de-energizing said drive means.

3,185,404
BAND-GUIDING MECHANISM

Joseph R. Ambruster, Middletown Township, Bucks County, Pa., assignor to United States Steel Corporation, a corporation of New Jersey

Filed Apr. 23, 1963, Ser. No. 275,110

5 Claims. (Cl. 242—79)



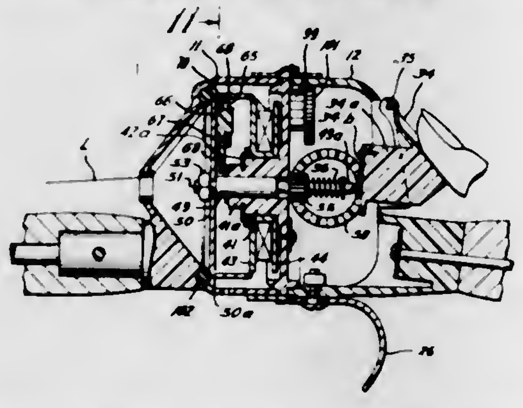
2. In a strip processing line which includes a tension reel rotatable on a horizontal axis, a floor adjacent said reel having a pit, and a coil car supported in said pit for horizontal movement in a direction parallel with the axis of said reel and being adapted to take coils from said reel and move them both horizontally and vertically, the combination therewith of a guide mechanism comprising a pair of spaced apart guides supported on opposite sides of said pit spaced from said reel and being adapted to receive coils from said car and support the coils between them, and a cooperating slide movable between a position clear of said guides and a position underlying said guides, said guides and slide providing aligned transverse grooves immediately under the surface of a coil supported on said guides when said slide is in its second-named position.

3,185,405
SPINNING REEL HAVING A COMBINED FEATHERING AND LINE PICK-UP MEANS

R. Dell Hull, 1131 E. Easton St., Tulsa 1, Okla.

Application May 22, 1961, Ser. No. 111,527, now Patent No. 3,123,319, dated Mar. 3, 1964, which is a division of application Ser. No. 35,353, June 10, 1960, now Patent No. 3,020,665, dated Feb. 13, 1962. Divided and this application May 14, 1963, Ser. No. 280,310

3 Claims. (Cl. 242—84.2)



3. In a spinning reel of the type having a rotatable pick-up head, a stationary cover surrounding said pick-up head and having a portion spaced axially forwardly of said head a predetermined distance, a hub means mounting the pick-up head for axial movement with respect to said cover for effecting braking action upon full forward axial movement, and a line pick-up means carried by said pick-up head and held in line engaging position by a portion of said hub when said pick-up head is in a predetermined rearward position, and in retracted position when said pick-up head is in predetermined full forward position, the improvement in said pick-up means characterized by said means comprising,

(*a*) a slide block mounted by said pick-up head for generally radical movement,

(*b*) a pick-up element extending radially from said slide block and projectable beyond the periphery of said pick-up head into line engaging position,

(*c*) said slide block having an inner control portion positioned for cooperative action with portions of said hub whereby to support said slide block in a radially outward position when said pick-up head is in a rearward position,

(*d*) spring means urging said slide block radially inward, and

(*e*) guide means on said pick-up head generally embracing said control portion and cooperating with said slide block to limit the movements of said pick-up element to a generally radial direction with respect to said pick-up head while accommodating relative axial movement of the inner control portion of said slide block with respect to said pick-up head substantially effectively equal to said predetermined distance between said pick-up head and cover,

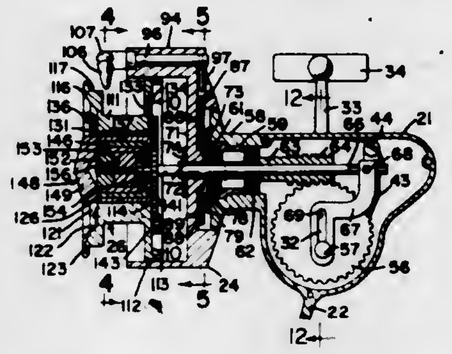
(*f*) whereby said inner control portion remains in contact with said hub portion during substantially the full forward movement of said pick-up head.

3,185,406
REEL BRAKE

Weston H. Ament, 2114 Greenwys Drive, Redwood City, Calif.

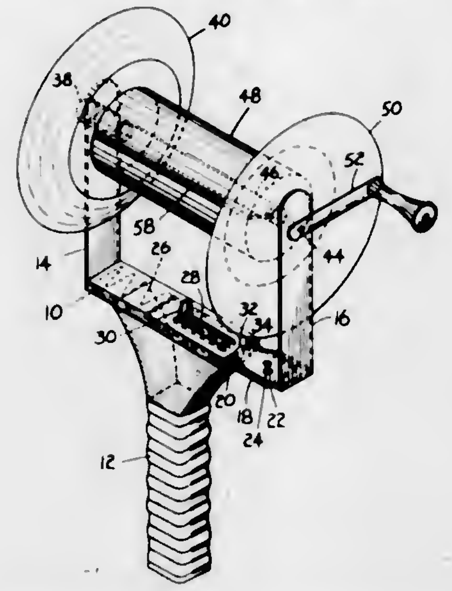
Original application Feb. 28, 1961, Ser. No. 92,244, now Patent No. 3,107,876, dated Oct. 22, 1963. Divided and this application Dec. 26, 1962, Ser. No. 247,392

2 Claims. (Cl. 242—84.5)



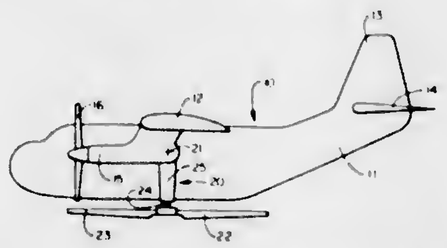
1. In a fishing reel having a housing, a rod, non-rotatively mounted in said housing and threaded on its outer end, and a line spool formed with a central aperture rotatable relative to said rod and said housing, the improvement which comprises an adjustable brake for said spool; said improvement comprising an abutment on said rod; a spool collar formed with a first sleeve axially slidable fitting within said central aperture and end wall rotatable with and slidable relative to said spool and bearing against said abutment, a pressure collar non-rotative relative to said rod formed with a second sleeve rotatable within said first sleeve and a bottom wall bearing against said end wall; a hollow rod threaded on said outer end of said nut and having a tension washer in the inside of said nut and an annular base interposed between said tension washer and said bottom wall, said nut having a flange closing off the ends of said first and second sleeves; said nut extending externally of said spool, said nut, spool collar, pressure collar, tension washer and base being removable from said rod as a unit, whereby upon tightening said nut relative to said rod, said tension washer is compressed against said base and said base against said bottom wall to increase frictional forces retarding rotation of said spool relative to said rod and housing, means for restraining axial movement of said spool relative to said spool collar.

3,185,407
TAPE WINDING DEVICE
Meier Lichtenstein, 760 Market St., San Francisco, Calif.
Filed Dec. 6, 1963, Ser. No. 328,756
7 Claims. (Cl. 242—96)



1. A tape winding device comprising a body portion, first and second parallel arms projecting from said body portion in spaced relation and at substantially right angles to said body portion, a drum rotatably supported on said first arm for winding tape thereon, said drum having a rotatable, detachable supporting connection with said second arm, said first arm being pivotally supported on said body portion for pivoting the drum laterally away from said second arm upon detaching said drum from said second arm to expose said end of the drum whereby tape on the drum may be moved off the exposed end.

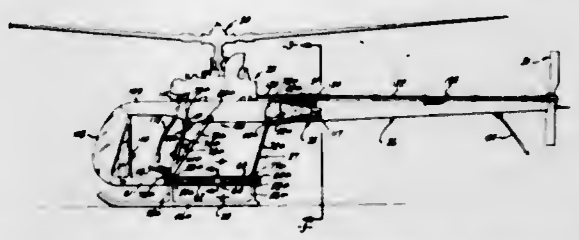
3,185,408
AIRCRAFT PROPULSION SYSTEM
Harry C. Higgins, Wichita, Kans., assignor to The Boeing Company, Wichita, Kans., a corporation of Delaware
Filed July 17, 1963, Ser. No. 295,722
6 Claims. (Cl. 244—7)



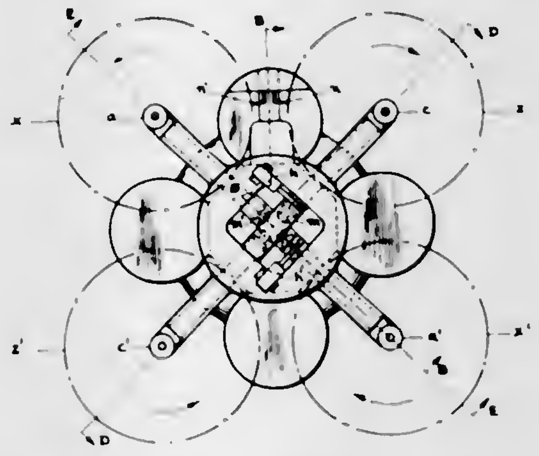
2. In an airplane having wing means with primary propulsion means carried thereby, secondary propulsion means having rotor means pivotally connected to said primary propulsion means for being pivoted through ninety degrees to and from a vertical flight mode and an horizontal flight mode, means for controlling the angular position of said secondary propulsion means, blade pitch control means for controlling the blade pitch of said rotor means, means for folding the blades of said rotor means and thereby retracting the same for presenting minimum drag in the horizontal flight mode, and means for controlling the folding and retraction of said blades of said rotor means.

3,185,409
FOLDABLE ROTARY WING AIRCRAFT
Edward H. Jacobsen, Menlo Park, Calif., assignor, by mesne assignments, to Hiller Aircraft Company, Inc., Menlo Park, Calif., a corporation of Delaware
Filed Dec. 10, 1962, Ser. No. 243,507
34 Claims. (Cl. 244—17.11)

1. In combination with an aircraft having a landing gear and a longitudinally extending tail boom, fulcrum structure integrally provided by said aircraft and defining a structural component thereof and about which the aircraft is rockable into an elevated position in which said landing gear is then relieved of its aircraft-supporting function, the longitudinal distance between said fulcrum structure and the center of gravity of said aircraft being substantially less than the longitudinal distance between said fulcrum structure and the outer end portion of said tail boom so that a force applied to such outer end portion of said tail boom to effect rocking of the aircraft about said fulcrum structure may be of small magnitude relative to the opposing weight of said aircraft.

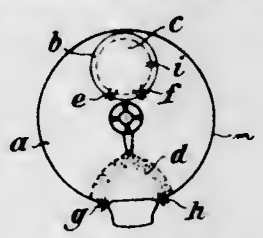


3,185,410
VERTICAL LIFT AIRCRAFT
Raymond C. Smart, Penfield, N.Y.
(1110 Cold Springs Road, Liverpool, N.Y.)
Filed Oct. 21, 1963, Ser. No. 318,482
1 Claim. (Cl. 244—17.23)



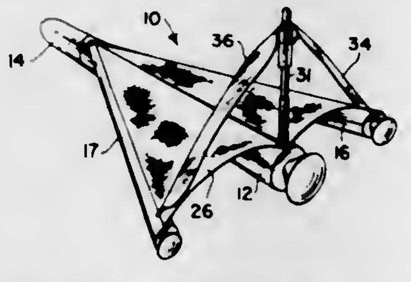
A rotary wing aircraft comprising; a body portion including a circular fuselage; a drive motor centrally mounted in said fuselage including a drive shaft having vertically upwardly and vertically downwardly oriented portions extending outwardly from the ends of said motor; two composite housing units positioned cross-wise and mounted for independent rotation in the top of said fuselage; each said housing unit including two horizontally aligned shaft housings, each said shaft housing extending outwardly from the center of said fuselage, a yoke rigidly connected to said two shaft housings at the inner portions thereof, a vertically oriented lift-producing rotor having fixed pitch rotor blades rotatably mounted at the outer portion of each of said two shaft housings, actuating means operatively connected to said yoke for simultaneously rotating said yoke, said two shaft housings and said lift-producing rotors as a composite housing unit about the longitudinal axes of said horizontally aligned shaft housings; said rotors being operatively connected to said upwardly extending portion of said drive shaft; control means operatively connected to each of said actuating means for effecting rotation of said housing units to thereby control the direction of resultant lift produced by said lift-producing rotors; a rudder rotatably mounted on the lower portion of said fuselage; clutch means connecting said rudder to said downwardly extending portion of said drive shaft, whereby said rudder may be operatively connected to said motor for rotation as a torque producing spin vane to thereby provide a means of yaw control during hovering flight operation of said aircraft; and disengageable steering means connected to said rudder for controlling said rudder as a conventional aerodynamic control surface when said rudder is not operatively connected to said motor for rotation as a torque producing spin vane.

3,185,411
MULTIPLE CELLED AIRSHIP
Gerhard Gembe, Konigsteinerstr. 200, Frankfurt am Main Hochst, Germany
Filed Mar. 22, 1962, Ser. No. 182,719
Claims priority, application Germany, Mar. 22, 1961, K 43,266
6 Claims. (Cl. 244—30)



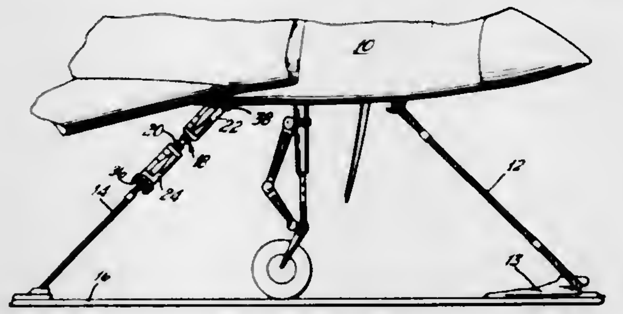
1. A dirigible airship comprising a rigid elongated hull, having a longitudinal axis and a cross-section perpendicular to the longitudinal axis which is defined by two equal half circles having between them a rectangle, the height of which is equal to the diameter of the half circles, the ratio of length to mainbreadth of the hull being substantially between 5:1 and 4:1, said hull having an approximately uniform cross section for a substantial portion of its entire longitudinal extent, a hollow framework rigidly connected with said hull and constituting a structural support therefor, said framework being arranged centrally in the center of resistance of the hull and extending in a longitudinal direction, said framework defining a longitudinal central duct, means in said duct for conveying air through the duct to drive the airship, a first gas cell adapted for receiving helium gas, a second gas cell adapted for receiving helium gas under low excess pressure, said second gas cell being in and surrounded by said first gas cell, means for pumping helium gas from the first gas cell into the second gas cell, a closable valve to allow gas to flow from the second gas cell into the first gas cell, an air cell spaced from said second cell and having at least partially deformable wall portions, said wall portions extending between the first gas cell and the air cell such that the second gas cell is separated from the air cell by the first gas cell, means for pumping air from the ambient atmosphere into the air cell, and a closable valve to allow air to flow from the air cell to the ambient atmosphere.

3,185,412
FLEXIBLE WING VEHICLE CONFIGURATIONS
Francis M. Rogallo, 17 Milford Road, Newport News, Va.
Filed Apr. 29, 1963, Ser. No. 276,664
22 Claims. (Cl. 244—49)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A vehicle capable of being launched from a planetary surface into an extraplanetary spatial vacuum and to reenter an atmosphere comprising: vehicle body means; booster means forming a part of said body means for placing said vehicle into an extraplanetary spatial vacuum; means forming said booster means being separable to form wing support structure; and flexible material means connected between said last mentioned means to provide a wing surface for returning said vehicle into an atmosphere and landing on a planetary surface.

3,185,413
INTEGRAL TENSION BAR RETAINER
Dale W. Walker, Springfield, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 25, 1963, Ser. No. 267,867
1 Claim. (Cl. 244—63)
(Granted under Title 35, U.S. Code (1952), sec. 266)



A breakaway device for securing a first member to a second member until a predetermined tensile force is applied to separate said members, said device comprising:

(*a*) a first terminal which has an aperture that extends inwardly from one end and which is secured at its other end to the first member;

(*b*) a second terminal which has an aperture that extends inwardly from one end and which is secured at its other end to the second member, the aperture in each said terminal having a reduced outer diameter and an enlarged inner diameter, each said terminal having a T-shaped slot through a wall that defines the apertured end of the terminal, the upright leg of each T-shaped slot having a width substantially equal to the reduced diameter of the aperture in each terminal and extending from the said one end of its associated terminal beyond the point at which the diameter of the aperture becomes enlarged, the cross arm of the T-shaped slot having a length substantially equal to the enlarged diameter of the aperture in each terminal;

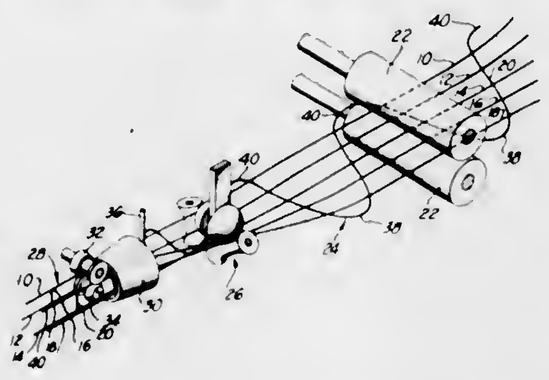
(*c*) a shear pin having enlarged flanged extremities, the diameter of the intermediate body portion of the shear pin being substantially equal to the reduced diameter of the aperture in each terminal, the diameter of the flanged extremities of the shear pin being substantially equal to the enlarged diameter of the aperture in each terminal, said shear pin also having an annular groove in its intermediate body portion which determines the tensile force required to shear the pin;

(*d*) a retainer rotatably mounted in each terminal on an axis transverse to the axis of the aperture therein, each said retainer being disposed within its associated terminal so that in one rotational position when one end of the shear pin is inserted in the aperture of the terminal, the retainer engages the end of the shear pin and locks it in the terminal and in a second rotational position, the retainer permits insertion and removal of the shear pin from the terminal;

(*e*) lever means which is connected to each retainer and is operable externally of its associated terminal, said lever means being adapted to be disposed in parallel alignment with the axis of the aperture in the terminal when the shear pin is locked in the terminal and transverse to the axis of the aperture when the shear pin can be inserted or removed from the terminal; and (*f*) marking means on the exterior surface of each terminal which is concealed from view only when the retainer on its associated terminal occupies its locked rotational position.

3,185,414
TUBULAR MULTIWIRE REINFORCING MEMBER AND METHOD OF MAKING

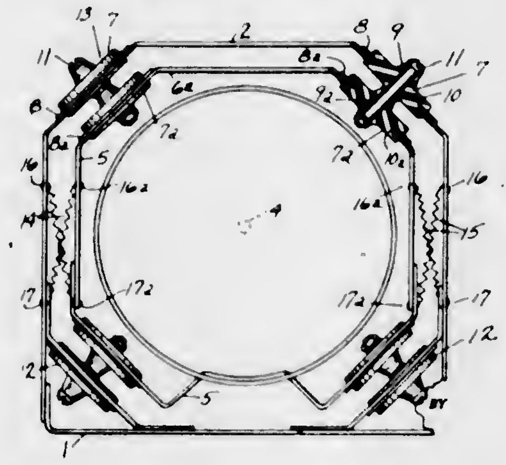
Henry T. Holsman, 1045 Alston Road, Santa Barbara, Calif.
Filed Feb. 10, 1961, Ser. No. 88,496
2 Claims. (Cl. 245—2)



1. A tubular multiwire reinforcing member comprising a strip formed of a plurality of substantially straight, parallel wires extending longitudinally of said strip and at least one generally sinusoidal wire extending longitudinally of said strip and overlapping and welded to said substantially straight wires, alternate crests of said generally sinusoidal wire forming one edge of said strip, said strip being rolled into a cylindrical tube having open ends with said alternate crests of said generally sinusoidal wire overlapping and welded to the other edge of said strip.

3,185,415
BASE FOR RESILIENT LOAD SUSPENSION

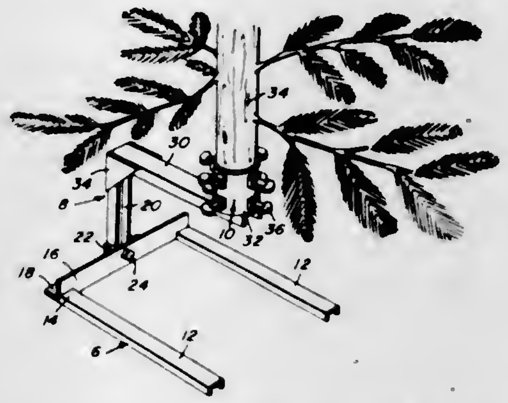
Richard P. Thorn, Erie, Pa., assignor to Lord Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Jan. 30, 1962, Ser. No. 169,899
2 Claims. (Cl. 248—21)



1. A universal base for mounting on any one of three mutually perpendicular axes passing through a point comprising, a sub-frame for attachment to a supporting structure, an equipment carrying frame, resilient means for supporting the equipment carrying frame on the subframe with substantially equal resilience in all directions, the sub-frame and the equipment carrying frame having two pairs of holes disposed respectively on one and on the other side of each of said axes, the holes of each pair being spaced axially with respect to its axis with one hole of each pair in the equipment frame and the other hole of each pair in the sub-frame, and coil springs having stiffness substantially less than the stiffness of the resilient means and having ends adapted to be hooked into selected pairs of holes in load carrying relation between the equipment frame and the sub-frame for sustaining the gravity load of the equipment frame and equipment carried thereby as the frames are oriented along a chosen axis.

3,185,416
CHRISTMAS TREE STAND

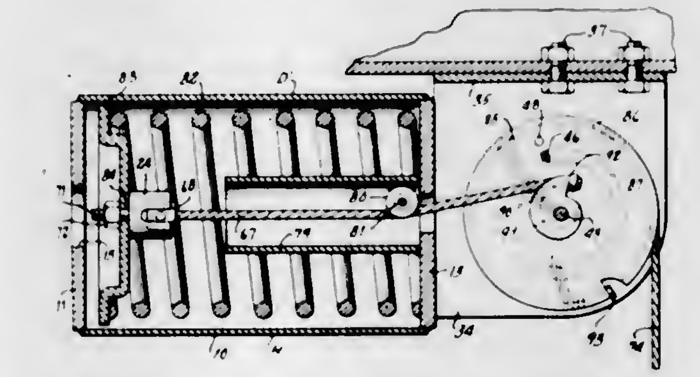
Alex J. Osinski, 446 Gifford St., Syracuse, N.Y.
Filed Dec. 26, 1963, Ser. No. 333,419
4 Claims. (Cl. 248—44)



1. A portable knockdown stand adapted to support the trunk of a Christmas tree in a position elevated vertically above the plane of a floor or equivalent stationary foundation comprising, in combination, a portable horizontally elongated self-standing base unit substantially U-shaped in plan and embodying a bight portion connecting a pair of spaced parallel duplicate elongated arms, said bight portion and bottom portions of said arms being in a common plane and adapted to rest flatwise on the aforementioned floor when in use, a socket member provided with fastening means, the socket portion thereof being adapted to receive and support a cooperating lower end portion of the tree's trunk, and means integrally joining said socket member to a median portion of the bight portion of said base, said means comprising an L-shaped bracket having a relatively short vertical limb, and a longer horizontal limb, said vertical limb functioning to support said horizontal limb in elevated parallelism above and midway between the aforementioned arms, said horizontal limb being of a length significantly less than the length of the aforementioned arms.

3,185,417
SPRING SUPPORT DEVICE

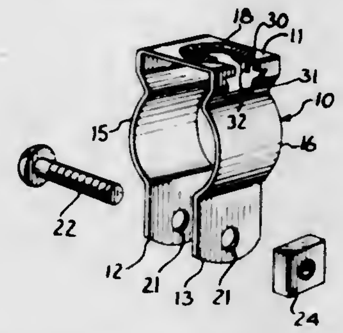
Leonard S. Suozzo, Hackensack, N.J. (50 Church St., New York 7, N.Y.)
Filed Mar. 29, 1962, Ser. No. 183,638
6 Claims. (Cl. 248—54)



1. A device of the character described comprising support means including a housing having an end wall, a guide tube affixed to the end wall and projecting into the housing, a backing member within the housing, said backing member being spaced from and movable relative to the end wall, spring means within the housing, said spring means being positioned between and bearing against the end wall and the backing member, said spring means comprising at least one disc spring having a central opening through which the guide tube extends, said disc spring being slidable along the guide tube, a shaft carried by the support means and disposed to the side of the end wall remote from the spring means, a rotary member mounted for rotation about the axis of the shaft and having a peripheral portion which is a substantial part of an arc of a circle, a unit secured to and rotatable with the rotary member, said unit being slidable along a path that is substantially parallel to a radius of the rotary member and having a curved peripheral portion, a first flexible connector secured at one end to the backing member and at its other end to the unit, said flexible connector engaging said curved peripheral portion of the unit, and a second flexible connector secured at one end to the rotary member and adapted to be secured at its other end to a load, said second flexible connector engaging said portion of the rotary member.

3,185,418
HANGER FOR PIPE AND CONDUIT

Arthur I. Appleton, Northbrook, Ill. (1713 Wellington Ave., Chicago 13, Ill.)
Filed Nov. 24, 1961, Ser. No. 154,698
1 Claim. (Cl. 248—72)

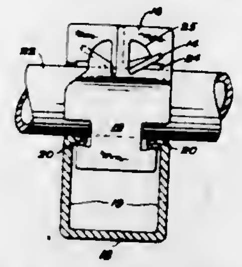


A hanger for sections of pipe, conduit, tubing and the like, adapted for attachment to a rigid support by a headed mounting screw threaded in said support, said hanger comprising, in combination, a generally U-shaped strap adapted for engagement with the section to be supported, said strap having a web portion joining a pair of legs adapted to grippingly support said section, means defining an aperture through said web for receiving said mounting screw, a rim surrounding said aperture for engagement by the head of said mounting screw when the same is tightened against said web, means defining a slot of inverted general T-shape in one of said legs with a laterally enlarged portion adapted to pas the head of said mounting screw, said slot extending into said web and opening into said screw aperture for passing the shank of said headed mounting screw, and a pair of spaced abutment lugs integral with said web and depending therefrom one on each side of said slot intermediate said legs, said lugs being sufficiently short to permit the head of the mounting screw to pass through the laterally enlarged portion of said slot on installation of said hanger, said lugs being of sufficient length to engage the head of said mounting screw when the latter has been positioned in said aperture whereby accidental disengagement of said hanger from said mounting screw before said screw is tightened into the rigid support is prevented.

3,185,419
PIPE HANGER

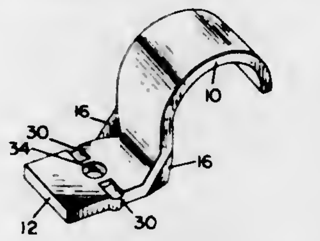
Orlan C. Kindorf, 500 Mountain Ave., Piedmont, Calif.
Filed Feb. 25, 1963, Ser. No. 260,764
4 Claims. (Cl. 248—73)

3. A pipe hanger comprising two elements each having a hook and an eye adjacent one end, means to secure the elements adjacent their opposite ends to a beam across which a pipe to be supported is disposed for movement into contact with opposite sides of the pipe, the hook of each element being disposed to pass through the eye of the other element upon such movement and to engage the other element adjacent the edge of the eye upon twisting of the hook, said eye being formed with an elongate portion to admit the hook in one position and a shorter portion with a curved edge to permit twisting of the hook throughout its length and engagement thereof adjacent said curved edge.



3,185,420
CLAMPS OR STRAPS FOR CONDUITS AND THE LIKE

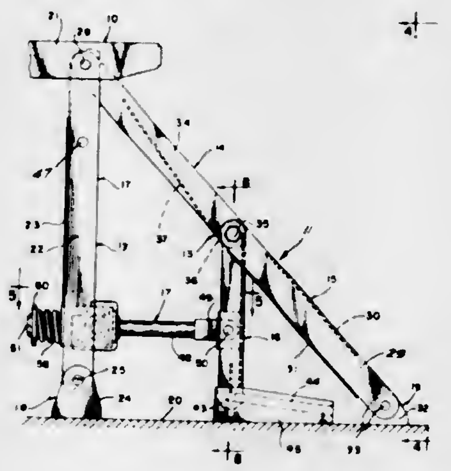
William H. Stewart, % King Mfg. Co., Jaffrey, N.H.
Filed June 20, 1963, Ser. No. 289,314
15 Claims. (Cl. 248—74)



1. A fastening strap comprising a hook member and an integral base member wherein the hook member is adapted to hold an object to a support and the base member is adapted to be secured in position, the hook member having a portion thereof adjacent the base member which is at an angle with relation thereto, and means forming strengthening elements adjacent the ends of the juncture of the said hook portion and the base member, said elements being in the form of struts located at the edges of the strap.

3,185,421
FOLDABLE STANCHION

Ray L. Ferris, Thornton, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 18, 1963, Ser. No. 331,569
9 Claims. (Cl. 248—119)

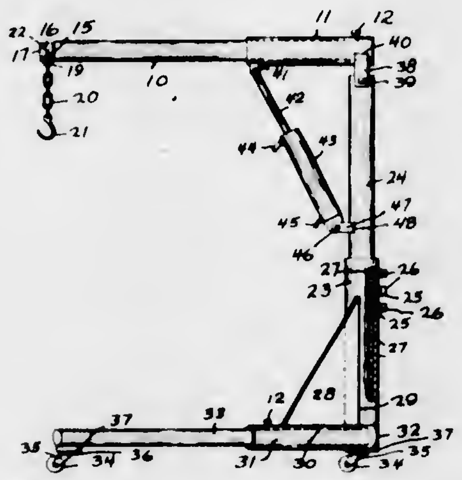


1. A stanchion for supporting and hitching a trailer on a railway car having a base, said stanchion comprising first and second strut means positioned in triangular rela-

tion when in an erected operative position, a fifth wheel plate, said strut means pivotally supporting said fifth wheel plate, first pivot means connecting said first strut means to said base, said second strut including upper and lower strut members having adjacent ends, second pivot means connecting said adjacent ends whereby said strut members may be pivoted from a substantially linear operative position to a folded position, said upper strut member being pivotally connected relative to said first strut for movement therewith, third pivot means connecting said lower strut member to said base in longitudinal spaced relation relative to said first pivot means, and releasable latch means connected to said second strut to urge and maintain said strut members in said substantially linear operative position, said releasable latch means including longitudinally movable means responsive to a longitudinally applied force independent of said stanchion to cause said upper and lower strut members to be released from said operative position and pivot about said second and third pivot means so that said first strut means is moved about said first pivot means and said stanchion is collapsed.

3,185,422
COLLAPSIBLE AND ADJUSTABLE MACHINE FRAMEWORK CONSTRUCTION

Clemens E. Spindler, 315 W. 25th St., Sioux City, Iowa
Filed Dec. 26, 1962, Ser. No. 247,071
1 Claim. (Cl. 248—124)

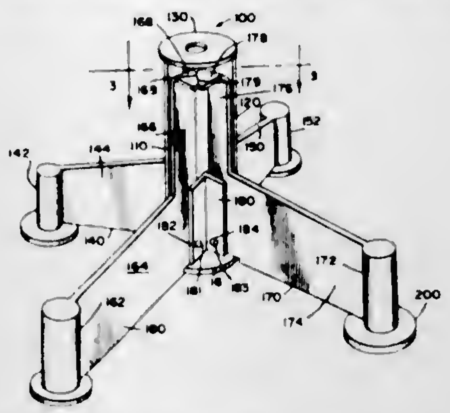


A collapsible and adjustable machine framework construction comprising a vertically positioned tube, a further tube received within said tube, said vertically positioned tube including a plurality of set screws threadably engaged therewith, said further tube having a plurality of openings for receiving said set screws, a horizontally positioned boom pivoted to said vertically positioned tube at its upper end, a further boom received in said boom, divergent horizontally positioned legs attached to said vertically positioned tube at the lower end thereof, said legs being collapsible, a securing member attached at the end of said further boom, said securing member including a bottom wall and side walls, said bottom wall having an open slot for receiving chain links therethrough, and whereby said chain links can be positioned to secure weights suspended from an assemblage of said chain links.

3,185,423
SELF-ADJUSTING STANDARD

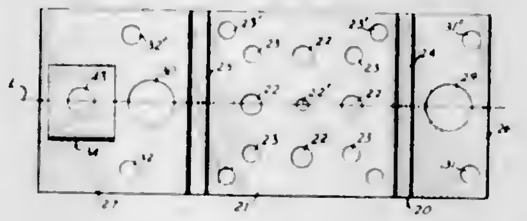
Lee B. Jones III, 4844 Algonquin Ave., Jacksonville, Fla.
Filed May 20, 1963, Ser. No. 281,587
4 Claims. (Cl. 248—188.3)

1. A self-stabilizing pedestal type base for furniture comprising: a pedestal radiating at its lower extremity four legs, two of which are fixed, the remaining two being pivoted adjacent the pedestal for movement in a vertical plane, the movable legs further comprising fixed cams of which each cam slidably engages the corresponding cam of the other movable leg, whereby the forced vertical movement of at least one leg acts through said cams to force vertical movement of at least one movable leg.



3,185,424
TRANSFORMER MOUNTING BASE ASSEMBLY

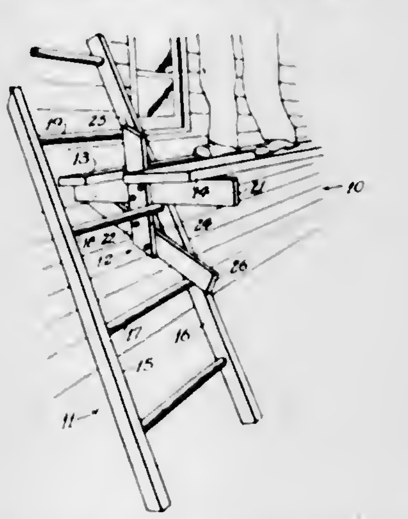
Clifford E. Sloop, 2230 10th St., Columbus, Ga.
Filed Dec. 20, 1960, Ser. No. 77,133
9 Claims. (Cl. 248—205)



1. In a transformer mounting base of the type having an elongated element with a longitudinal center line and defining a flat central platform, a pair of diverging flanges extending from said central platform, and a pair of plates extending from said flanges in opposite directions in a plane parallel to the plane of said platform, the combination therewith of a bolt receiving member at the outer edge portion of one of said plates, said bolt receiving member having an opening therethrough having an axis essentially perpendicular to the longitudinal center line of said platform and parallel to the aforesaid planes.

3,185,425
LADDER SCAFFOLD BRACKET

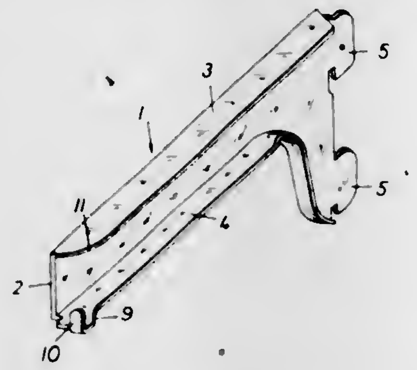
George E. Lane, 628 Washington St., Oconto, Wis.
Filed Dec. 12, 1962, Ser. No. 244,135
1 Claim. (Cl. 248—238)



The combination of a ladder having rungs, with a bracket having an elongated horizontal member supported, substantially centrally thereof, on and tranversely of one of such rungs and having a forward portion and rearward portion, relative to said one rung, for supporting scaffold planks thereon; an elongated diagonal member disposed below and angularly related to said horizontal member, the forward end portion of said diagonal member being disposed adjacent the forward end portion of said horizontal member, and the divergent rearward end portion of said diagonal member terminating at and being engaged with the upper face of an adjacent lower rung relative to said one rung; means rigidly connecting the adjacent forward end portions of said horizontal and diagonal members; an elongated substantially vertical member disposed adjacent and substantially centrally of said horizontal member and terminating upwardly at and being engaged with the outside face of an adjacent upper rung relative to said one rung; and means rigidly connecting said vertical member to said horizontal member.

3,185,426
DISMOUNTABLE SHELF SUPPORTING UNIT AND BRACKET THEREFOR

Alf Johan Bjerke, Rygge, near Moss, Norway
Filed Apr. 13, 1962, Ser. No. 187,241
Claims priority, application Norway, May 3, 1961, 140,041
8 Claims. (Cl. 248—250)



1. A bracket for use in a dismountable shelf supporting unit, the bracket comprising, in combination:

(*a*) an elongated web portion lying in a vertically extending plane in the normal operative position of said bracket;

(*b*) an upper elongated flange portion and a lower elongated flange portion, said portions jointly constituting an elongated channel member open in a horizontal lateral direction when in said operative position for receiving an edge portion of a shelf, said channel member having longitudinal front and rear ends;

(*c*) hook means on the rear end of said channel member for mounting said channel member on a support in said normal position thereof;

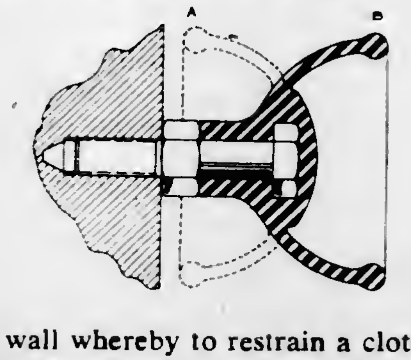
(*d*) an extension projecting from the front end of said lower flange portion; and

(*e*) pivot pin means upwardly extending from a portion of said extension spaced from said lower flange portion in said normal position of said bracket for pivotally engaging a corresponding recess on the underside of a shelf.

3,185,427
TWO-POSITION SUPPORTING PEGS MADE OF FLEXIBLE MATERIAL, MORE PARTICULARLY FOR USE IN MOTOR VEHICLES

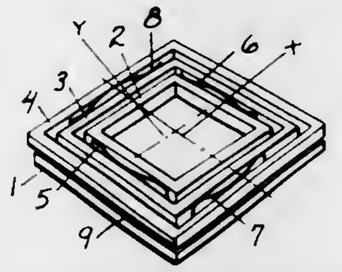
Lucien Peras, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed Mar. 16, 1964, Ser. No. 352,073
Claims priority, application France, Mar. 22, 1963, 929,002, Patent 1,359,918
1 Claim. (Cl. 248—309)

A two-position supporting peg made of flexible material, more particularly for use in motor vehicles, comprising a central stem portion into which is buried a metal stud terminating in a screw portion for affixing the peg to a wall, and a substantially hemispherical cap which joins onto a shoulder portion integral with said central stud and which is adapted to be turned either inwardly toward the wall whereby to restrain a clothes-hanger supported on its central stem, or outwardly whereby to constitute a coat-peg.



3,185,428
MOUNTING SYSTEM

Bernard A. Farabaugh, Jr., and James T. Gwinn, Jr., Erie, Pa., assignors to Lord Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Nov. 12, 1963, Ser. No. 322,876
7 Claims. (Cl. 248—358)



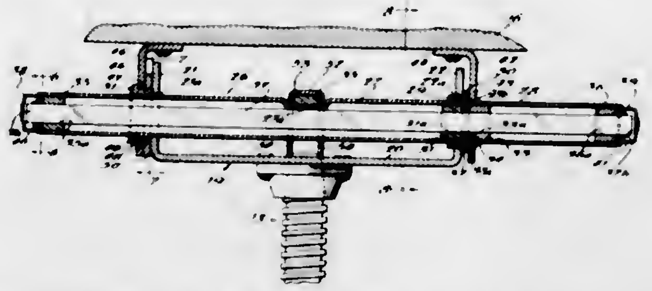
1. A mounting system comprising a first frame for carrying a supported body, a second frame spaced from the first frame, first leaf springs between the first and second frames, the thickness direction of the springs extending along a first axis and the length and width directions extending along second and third axes perpendicular to each other and to the first axis, connections between the first springs and the first and second frames preventing rotation of the first springs relative to the first and second frames about said first, second and third axes, a third frame spaced from the second frame, second leaf springs between the second and third frames, the thickness direction of the second springs extending along said second axis and the length and width directions extending along said first and third axes, connections between the second springs and the second and third frames preventing rotation of the second springs relative to the second and third frames about said first, second and third axes, a base spaced from the third frame, third leaf springs between the third frame and base, the thickness direction of the third springs extending along said third axis and the length and width directions extending along the first and second axes, and connections between the third springs and the base preventing rotation of the third springs relative to the third frame and base about the first, second and third axes.

3,185,429
TILTING CHAIR MECHANISM

James R. Meinhardt, Park Ridge, Ill., assignor to The Seng Company, a corporation of Illinois
Filed May 15, 1963, Ser. No. 280,654
12 Claims. (Cl. 248—373)

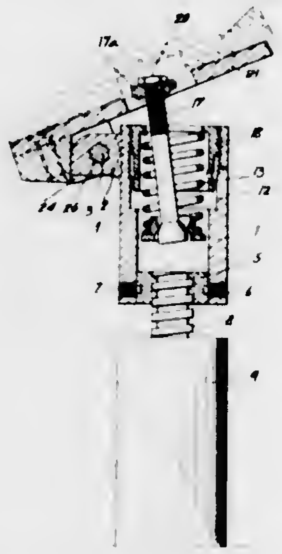
1. A tilting chair mechanism comprising, in combination: a base having a transverse web with a pair of parallel longitudinal upright walls, there being aligned openings in said walls; elongated torsion bar supporting means rotatably mounted in said openings, said supporting means having first and second relatively rotatable parts which

are axially aligned and longitudinally slidably mounted in the openings; releasable means retaining the first part of said supporting means against longitudinal sliding movement; fixed plugs at opposite ends of said supporting means, said plugs having aligned non-circular openings; a torsion bar slidably and nonrotatably supported in said plug openings for endwise removal from the supporting means, said bar having its end portions projecting from the ends of the supporting means; removable retaining means engaging said end portions of the bar to retain it in the supporting means, said removable retaining means and torsion bar cooperating to retain the second path of the supporting means against longitudinal sliding movement; means securing a tilting frame member to the second part of the supporting means; and means securing the base to said first part of said supporting means, one of said two last named means being adjustable to adjustably prestress the torsion bar.



3,185,430
HEIGHT ADJUSTABLE TILTING DEVICE FOR REVOLVING CHAIRS

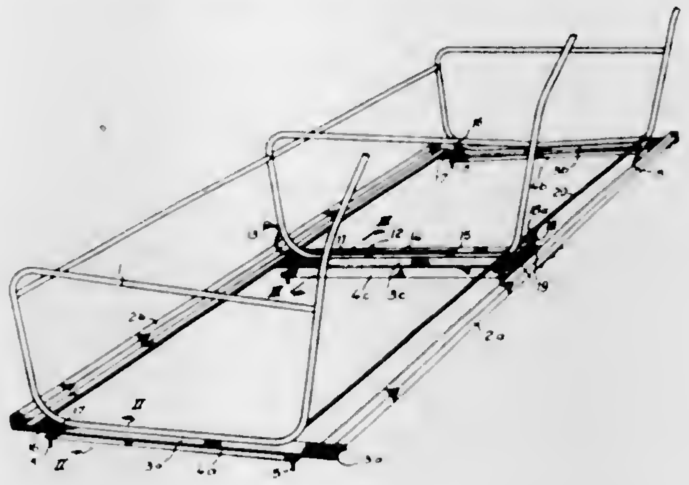
Charles Henri Marius Bernard, 87 Ave. de Wagram, Paris 17, France
Filed Aug. 14, 1962, Ser. No. 216,855
2 Claims. (Cl. 248—381)



1. A revolving device, adjustable for height and for tilting according to the weight of the user, for chairs, particularly for office chairs, having a base and a plate, having a conical hole in the center thereof, comprising: a horizontal shaft on said plate, a vertical shaft, a first threaded rod rigidly pxed on said vertical shaft, a cap having a threaded bore, said cap being rotatably arranged on said base, said threaded rod fitted into said bore in said cap, a spring located in said vertical shaft, said spring resting on an abutment in said vertical shaft, a second rod located inside said spring, said rod having a semi-spherical end, a first spring washer having a semi-spherical cavity into which said semi-spherical end of said second rod is fitted, a spherical washer adjustably screwed on the upper end of said second rod, said spherical washer being seated in said conical hole of said plate and a ball-bearing on said base, said ball-bearing supporting said cap.

3,185,431
ADJUSTABLE SEAT FOR AUTOMOBILES

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French company
Filed Dec. 11, 1962, Ser. No. 243,895
Claims priority, application France, Dec. 12, 1961, 881,642, Patent 1,315,836
4 Claims. (Cl. 248—429)



1. A seat for an automobile which is adjustable in the fore and aft direction, comprising a seat supporting skeleton, a frame having said skeleton removably secured thereon, and supporting members for permanent attachment to the floor of an automobile and supporting said frame in slidably adjustable fashion, said supporting members extending parallel to said direction of adjustment of the seat and including a single lateral guiding member and at least one sliding member, and said frame including a first member at least partly embraced, and laterally guided by said single guiding member and movable along the latter and a second member slidable on said sliding member and having substantial lateral play with respect to the latter.

3,185,432
LOW-TEMPERATURE, LOW-PRESSURE MOLD

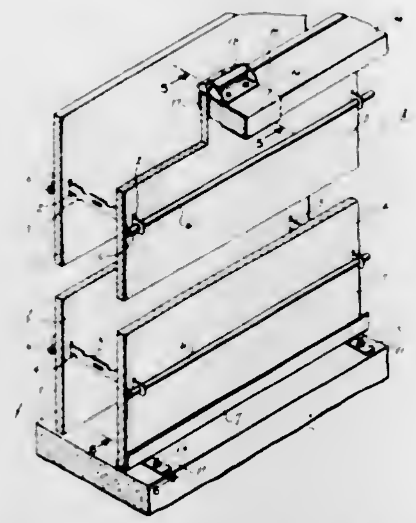
Nathaniel E. Hager, Jr., Manheim Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Jan. 23, 1962, Ser. No. 168,193
7 Claims. (Cl. 249—78)

1. A low-temperature, low-pressure enclosing mold suitable for shaping and aiding the expansion of cellular plastics, said mold supplying heat to the material being molded by means of two opposing mold walls having large surface areas, at least five times the area of the remainder of the walls in the mold, each of said two large mold walls comprising

(1) a rigid, thermally homogeneous low-thermal-conductivity backing sheet,
(2) a thin metal facing sheet having a thickness in the range of 0.01–0.1 inch, and
(3) a thin, low output, low heat capacity metal foil electrical heater adapted to supply heat uniformly to the mold interior at a temperature of less than about 150° F. positioned between said backing sheet and said facing sheet and electrically insulated therefrom.

3,185,433
WALL FORM, WALER, AND A WALER BRACKET

Walter E. Mueller, 1347 Coburg Lands Drive, St. Louis County, Mo.
Filed Nov. 29, 1963, Ser. No. 326,704
2 Claims. (Cl. 249—210)

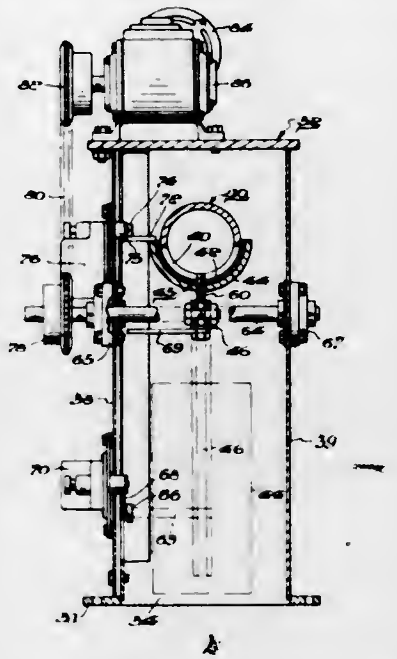


1. For use with a wall form panel and a waler for supporting disposition against one face of said panel, the improvement comprising a bracket having first and second channel members, said first channel member presented for reception of said wall form panel, said second channel member presented for reception of said waler, each of said first and second channel members having a web, a short side flange and a long side flange, said flanges of each channel member being mutually parallel and normal to the intervening web, a hinge connecting said first and second channel members, said hinge having first and second hinge plates, said first hinge plate being engaged to the outer face of the web of said first channel member, said second hinge plate being engaged to the outer face of the long side flange of said second channel member, whereby said channel members may be presented in usage with the side flanges of said first channel member being in perpendicular relationship to the side flanges of said second channel member and with the second channel member opening toward the short side flange of said first channel member, and spring means biasing said first and second hinge plates toward each other into planar parallel relationship.

3,185,434
CONVEYING SYSTEM AND VALVE CONSTRUCTION THEREFOR

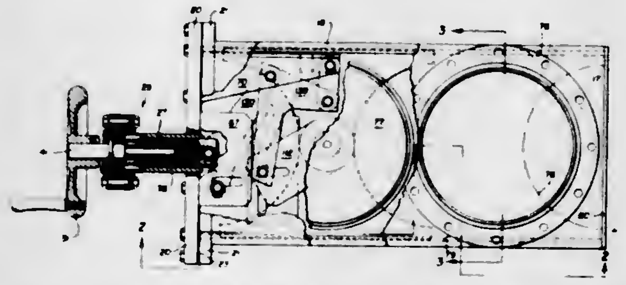
Michael J. Bozich, 1059 Bay Ridge Ave., Pittsburgh, Pa.
Filed Feb. 28, 1962, Ser. No. 176,234
3 Claims. (Cl. 251—134)

3. A valve for a pneumatic conveying system comprising an enclosure having an open bottom, a conduit extending through the upper portion of said enclosure and adapted to pneumatically convey finely divided material therethrough, an opening in the bottom of said conduit within said enclosure, cover means for said conduit comprising a member having a contour shaped to conform to the contour of said conduit whereby the member is adapted to fit over and cover said opening in sealing engagement with the conduit, an axle extending between side walls of said enclosure and rotatable about a generally horizontal axis beneath the conduit, an arm having one end connected to said axle and another end connected to said member, means for turning said axle to rotate said arm and the member carried thereby within said enclosure from a first position where the arm is generally horizontal with the member covering said opening to a second position where the arm hangs down in the enclosure from the axle in a generally vertical position to permit the finely divided material to fall through said opening and into the enclosure, first switch means actuable when said member is at said first position to deenergize said means for turning said axle, second switch means actuable when said member is at said second position to deenergize said means for turning said axle, and circuit means interconnecting said first and second switch means and said means for turning said axle and including third switch means for energizing said means for turning said axle to move said member from said first position to said second position and vice versa.



3,185,435
VALVE CONSTRUCTION

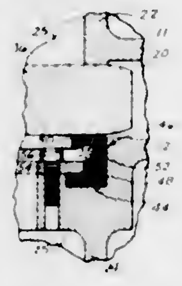
Hugo Hauser, Palo Alto, Calif., assignor to Ultek Corp., Palo Alto, Calif., a corporation of California
Filed Feb. 15, 1962, Ser. No. 173,495
4 Claims. (Cl. 251—158)



1. In a valve of the gate type, a valve body having aligned flow passages, a stationary valve seat carried by the body and forming a planar valve working surface surrounding one of the passages, a gate assembly unit disposed within the valve body, said unit including a carriage movable transversely of the flow passages in opposite directions between limiting positions corresponding to fully open and closed positions of the valve, a valve closure plate, interconnecting means forming a connection between the closure plate and the carriage, the closure plate having one planar face thereof adapted to contact and form a fluid tight seal with respect to the valve working surface of the seat, a movable operating plunger extending into the body, and means forming a mechanical connection between said operating plunger and said gate assembly unit, said last named means serving to move the assembly unit between open and closed valve positions responsive to movements of the operating plunger, said interconnecting means being responsive to said last named means and arranged to move said plate between a projected and a retracted position with respect to the plane of said carriage while the carriage is in one of said limiting positions, means operable in said retracted position to lock said plate in a predetermined planar orientation with respect to said carriage, and means operable to free said plate from said orientation in said projected posi-

tion to permit coplanar alignment of said plate with said seat, said interconnecting means including a thrust surface formed on the back of said closure plate, a guide pin fixed centrally of and extending away from said thrust surface, a stud supported by and disposed to extend away from said carriage, said stud having a socket formed and disposed to receive and lock said pin with respect to said carriage, spring means urging said pin into said socket to hold said closure plate in a predetermined retracted orientation with respect to said carriage, said interconnecting means acting upon said thrust surface to overcome the spring means to project said plate with respect to said stud and form a fluid tight seal with said seat.

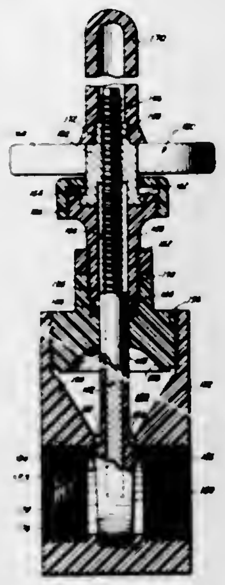
3,185,436
DIGESTER CAPPING VALVE
Wallace G. Rovang, 1825 NE. Marine Drive, and Albert F. Laurie, 7429 N. Chase Ave., both of Portland, Oreg.
Filed Nov. 13, 1961, Ser. No. 151,729
3 Claims. (Cl. 251—172)



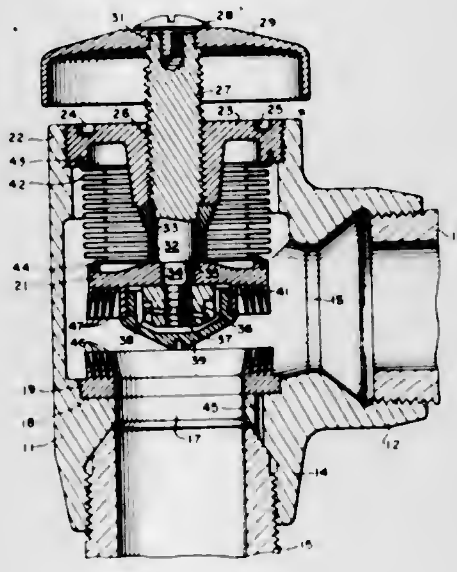
1. A cap valve for pressure vessels comprising:
(*a*) a body having a passageway longitudinally therethrough and a gateway transversely therethrough intersecting the passageway;
(*b*) a gate working in the gateway;
(*c*) means for fastening the body to a pressure vessel with the passageway communicating with the interior of the vessel;
(*d*) a seat arranged peripherally about the interior of the passageway adjacent the gateway on the upstream side thereof;
(*e*) and a resilient sealing member comprising a base segment and a gate-contacting segment separated by a pocket communicating with the passageway on the upstream side of the gateway;
(*f*) the base segment of the sealing member being dimensioned for reception in the seat; and
(*g*) the pressure from the interior of the vessel being communicated to the pocket, thereby holding the resilient gate-contacting segment of the sealing member securely in sealing engagement with the gate.

3,185,437
NON-CORROSIVE VALVE
Ivan M. Rice, Great Bend, Kans., assignor to Rice Engineering & Operating, Inc., Great Bend, Kans., a corporation of Kansas
Filed Nov. 30, 1962, Ser. No. 241,400
1 Claim. (Cl. 251—327)

A gate valve comprising a body constructed of a non-corrosive plastic material and having opposed inlet and outlet ports, a cover member constructed of a non-corrosive material provided for the body, a reciprocal valve stem journalled in the cover and extending into the body, a valve seat provided conterminous with each of the inlet and outlet bores, the plane of said valve seats being inclined with respect to the vertical, a substantially wedged shaped closure member bonded to the outer extremity of the valve stem disposed within the body and movable with the valve stem to provide alternate open and closed positions for the valve, threaded means cooperating with the valve stem for reciprocation thereof for moving the closure member alternately into and out of engagement with the valve seating portions, said closure member being constructed of a resilient non-corrosive plastic material to provide a self-sealing against the valve seating portions in the closed position of the closure member, and a non-corrosive coating of hard faced plastic material bonded to the outer periphery of the valve stem between the threaded means and the closure member and integral with the closure member.

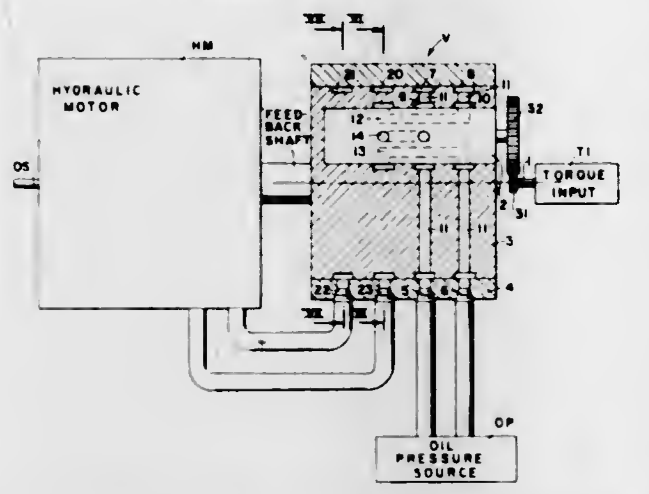


3,185,438
CONE LABYRINTH VALVE
Johannes R. Smirra, 13054 Morningside Way, Los Angeles, Calif.
Filed Aug. 17, 1962, Ser. No. 217,704
5 Claims. (Cl. 251—334)



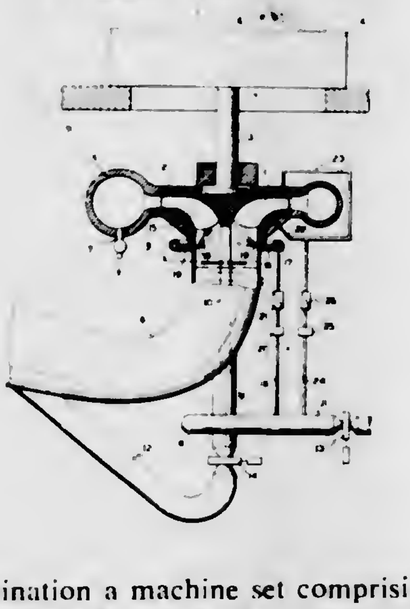
1. A valve seat and a valve disk for use in a flow control valve;
said valve seat and said valve disk being provided with complementary, inter-spaced, concentric annular rings;
said annular rings being thin and resilient, the rings on the disc and seat being so constructed and arranged that when the disc and seat are moved together the ends of at least some of the rings on the disc contact the sides of complementary rings on the seat and the ends of at least some of the rings on the seat contact the sides of complementary rings on the disc to provide a self adjusting contact of their outer edges with the sides of the complementary rings.

3,185,439
HYDRAULIC MOTOR CONTROL SYSTEM
Seiuemon Inaba, Kawasaki, Kohei Ito, Fujisawa-shi, and Ryoko Shirafuji, Tokyo, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed July 31, 1963, Ser. No. 299,118
Claims priority, application Japan, Aug. 1, 1962, 37/32,910
5 Claims. (Cl. 253—1)



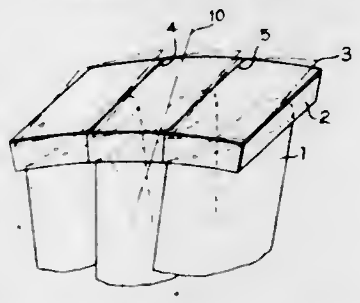
1. A hydraulic motor control system comprising hydraulic valve means for controlling the flow of fluid to the hydraulic motor to be controlled, said valve means having a rotatable sleeve member and a stem member rotatably mounted within the sleeve member about an axis parallel to but eccentric with the axis of said sleeve member, the respective position of said members controlling the flow of fluid through said valve means, said sleeve member having coupling means so as to be rotated by the controlled motor, an input shaft adapted to be connected to an input motor and being concentric with the axis of said sleeve member, force step-up means connecting said input shaft to rotate said stem member, and fluid lines on said valve means adapted to be connected to a source of pressurized fluid.

3,185,440
LIMITING THE SPEED OF THE STARTING TURBINE OF A PUMP-TURBINE OR ACCUMULATOR PUMP
Heinrich Hullmann and Kurt Baumann, Ravensburg, Germany, assignors to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed Dec. 13, 1963, Ser. No. 330,415
Claims priority, application Switzerland, Jan. 18, 1963, 616/63
14 Claims. (Cl. 253—59)



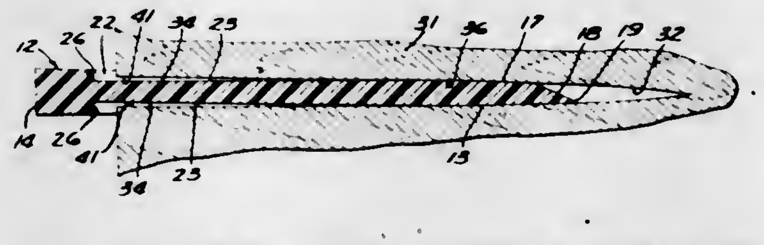
1. In combination a machine set comprising a hydraulic machine having a housing and a runner in said housing, and a starting turbine drivingly connected with said runner of the hydraulic machine, said starting turbine having a supply connection for driving water including a shut-off valve, and a speed limiting device comprising at least one pipe issuing from a point of said supply connection situated after said shut-off valve and opening into said housing of the hydraulic machine so as to withdraw water from said supply connection and to direct it toward the runner of said hydraulic machine.

3,185,441
SHROUD-BLADING FOR TURBINES OR COMPRESSORS
Hermann Reuter, Heidelberg, Germany, assignor to Brown, Boveri & Cie Aktiengesellschaft, Mannheim, Germany, a joint-stock company of Germany
Filed Aug. 8, 1962, Ser. No. 215,617
Claims priority, application Germany, Aug. 10, 1961, B 63,595
2 Claims. (Cl. 253—77)



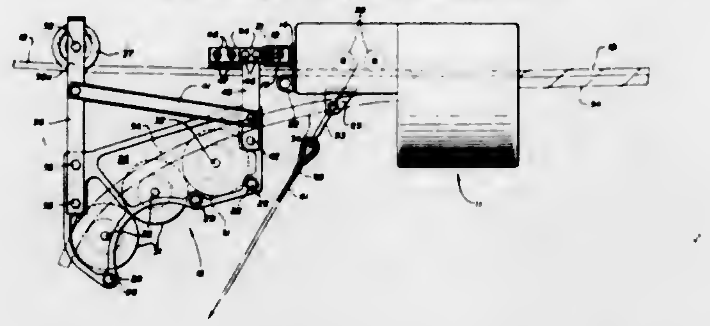
1. A shrouded blading assembly for rotary machines such as turbines and compressors, each blade being composed of a material having an inherent property of recovery from torsional stressing forces imposed within the elastic limit of the material, each said blade including as an integral part thereof a shroud plate constituting its appertaining portion of the complete shroud ring established by the assembly of all blades, said shroud plates having the configuration of a parallelogram and with adjoining side faces thereof lying in contact with each other at an angle which is oblique to the axis of rotation of said machine, said blades being stressed torsionally from an unstressed condition by torsional flexure of the shank portions thereof carrying said shroud plates relative to the fixed root portions of the blades thereby to establish a continuous frictional pressure engagement between the adjoining side faces of said shroud plates brought about by the inherent tendency in the blading to recover its normal unstressed condition.

3,185,442
TIMBER WEDGE
Monroe W. Hemphill, P.O. Box 213, Grass Valley, Calif.
Filed Dec. 3, 1962, Ser. No. 241,722
4 Claims. (Cl. 254—104)



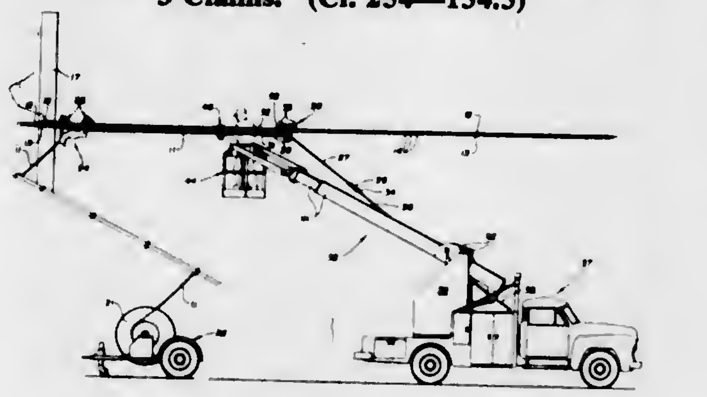
1. A timber falling device comprising an elongated wedge-shaped block of rigid, non-metallic and impact-resistant material, said wedge shaped block including a lower surface and an upper surface inclined thereto, both of said surfaces having formed therein a plurality of spaced, parallel, elongated grooves, said grooves each being defined by a pair of opposed, facing side walls and a bottom wall, said bottom walls of said grooves formed in said lower surface being substantially parallel to the plane of said upper surface, and said bottom walls of said grooves formed in said upper surface being substantially parallel to the plane of said lower surface.

3,185,443
CABLE LASHING APPARATUS
Jay M. Eitel, Los Altos, Calif., assignor to Telsta Corporation, San Carlos, Calif., a corporation of California
Filed Mar. 27, 1964, Ser. No. 355,503
6 Claims. (Cl. 254—134.3)



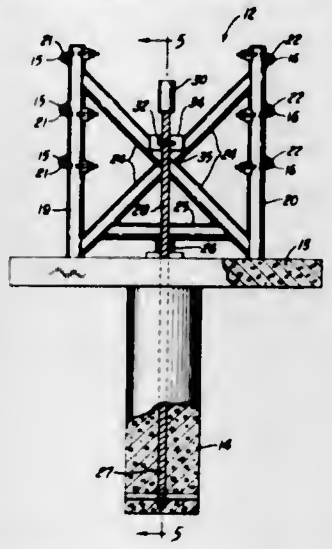
1. In a cable lashing apparatus adapted to lash cable to a messenger or strand, a cable lasher adapted to be mounted upon the strand, cable guiding means adapted to be mounted upon the strand for guiding the cable into the lasher, said cable guiding means having a plurality of rollers forming an arcuate path for guiding the cable, means mounted on the lasher for attaching a pulling line so that the lasher can be towed, means rigidly and releasably securing the cable guiding means to the front of the lasher so that as the lasher is towed the cable guiding means is pushed ahead by the lasher to guide the cable into the lasher as the lasher is advanced, and means provided on said cable guiding means adapted to directly and frictionally engage the messenger only when it is free of the lasher to prevent the cable guiding means from travelling backwards when it is separated from the lasher.

3,185,444
METHOD OF INSTALLING CABLE ON EXISTING MESSENGER
Jay M. Eitel, Los Altos, Calif., assignor to Telsta Corporation, San Carlos, Calif., a corporation of California
Filed May 15, 1964, Ser. No. 367,818
3 Claims. (Cl. 254—134.3)



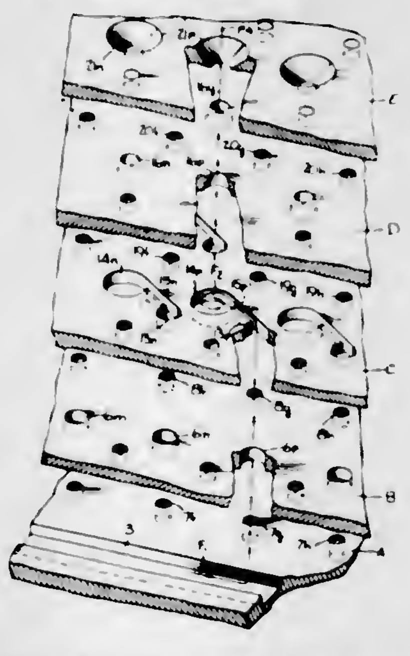
1. In a method for installing a cable on existing messenger, placing a cable guide upon the messenger and affixing it to the messenger so that it cannot move, placing a cable tow dolly having a tow member slidably mounted therein upon the messenger, passing the cable through the cable guide affixed to the messenger and attaching it to one end of the tow member, towing the other end of the tow member to pull the cable through the cable guide and to pull along with it the cable tow dolly, the cable guide and the cable tow dolly serving to position the cable in a position substantially parallel to and spaced below the messenger, placing cable blocks on the messenger at spaced intervals as the cable is being positioned to temporarily support the cable after the cable has passed the locations at which it is to be supported, and continuing the same sequence of steps until a substantial length of cable is positioned, placing a lasher upon the messenger, lashing the cable to the messenger, and removing the cable blocks as the lashing progresses.

3,185,445
DIVIDED LANE HIGHWAY GUARD
Ralph Hugh Broadway, Menomonee Falls, Wis., assignor, by mesne assignments, to Calman S. Pruscha and Edward C. Berg, both of Milwaukee, Wis.
Filed Mar. 19, 1962, Ser. No. 180,644
8 Claims. (Cl. 256—13.1)



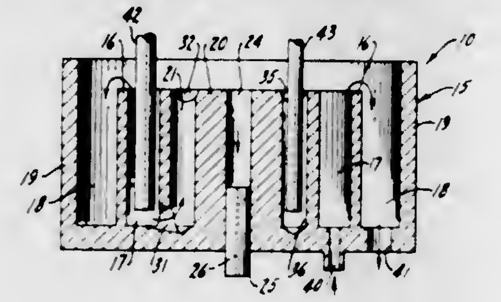
1. A cable-supporting structure for a divided lane highway guard comprising, a fixed base, an upright frame having spaced parallel end posts, diagonal braces joining said posts to maintain the same in spaced parallel relationship, said frame being seated on said base for movement relative thereto, a flexible elongated member having its medial portion firmly anchored below said base with the opposite ends thereof spaced apart and extending upwardly above said base on opposite sides of said frame, each of said member ends having a limit stop firmly secured thereto, and means projecting from opposite sides of said frame medially of the end posts thereof to receive and frictionally clamp the adjacent upwardly extending portions of said flexible member below the limit stop thereon.

3,185,446
LAMINATED STRUCTURES ADAPTED TO GENERATE SOUND-WAVES AND/OR ULTRASONIC VIBRATION, NOTABLY FOR PRODUCING VIBRATORY EFFECTS ALONG SURFACES
Jean Maurice Blanchard, Marseille, France, assignor, by mesne assignments, to Sirius, Luxembourg, Luxembourg, a corporation of Luxembourg
Filed Nov. 7, 1961, Ser. No. 150,708
6 Claims. (Cl. 259—1)



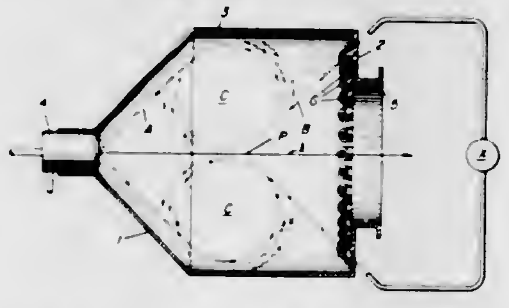
1. In a pressure fluid operated whistle type vibration generator, a plurality of stacked plate means comprising first and second end plate means and intermediate plate means therebetween, said intermediate plate means being formed with openings therethrough, each of said openings comprising intercommunicating inlet and outlet portions and defining separate closed-loop flowpaths, each of said flowpaths intersecting itself at least at one point, a plurality of inlet means in said first end plate means each communicating with one of said inlet portions, a plurality of outlet means in said second end plate means each communicating with one of said outlet portions.

3,185,447
ANALYZER MIXING APPARATUS
Clifford C. Hach, Ames, Iowa, assignor to Hach Chemical Company, Ames, Iowa, a corporation of Iowa
Filed Mar. 25, 1963, Ser. No. 267,712
3 Claims. (Cl. 259—4)



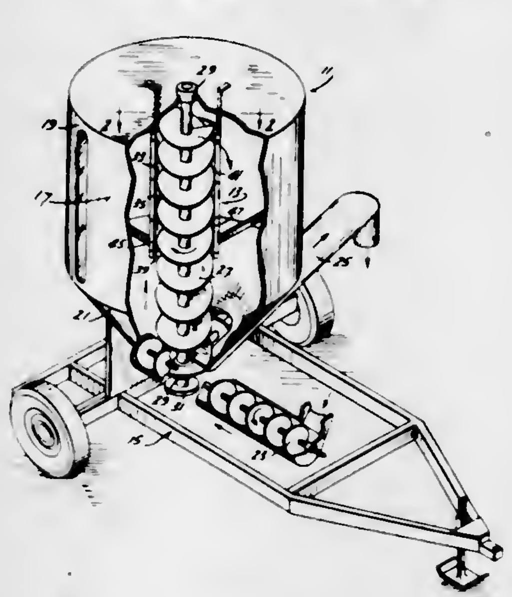
1. A one piece mixing body for analyzer apparatus comprising an integral wall defining a sample reservoir, said body having a first hole defining a discharge passage adjacent said reservoir with an aperture at the bottom of the passage, said body having a second hole defining a vertically extending mixing passage adjacent said reservoir and said discharge passage, and said body having relieved portions defining channels interconnecting the bottom of said reservoir with the bottom of said mixing passage and the top of said mixing passage with the top of said discharge passage.

3,185,448
APPARATUS FOR MIXING FLUIDS
Reginald Percy Fraser, Surrey, and George Thomas Furman, Middlesex, England, assignors to Urquhart's (1926) Limited, Greenford, England, a British company
Filed June 3, 1963, Ser. No. 285,144
Claims priority, application Great Britain, June 25, 1959, 38,669/59
8 Claims. (Cl. 259—4)



1. Apparatus for mixing fluids, consisting essentially of a chamber having a front wall having only a central aperture therein, said chamber having a central exit duct coaxial with said front wall central aperture and further having a peripheral wall with at least the portion of said peripheral wall most remote from said front wall converging to said central exit duct, said chamber having a length to diameter ratio of from 0.5 to 5.0, inlet means in said peripheral wall in a single annular ring around said exit duct, said inlet means being angled inwardly along lines which converge at a point on an axis between said central aperture in the front wall and said central exit duct which is from ¼ to ¾ the distance along said axis from said central aperture to said exit duct, first fluid pressure means mounted in said front wall central aperture for delivering from 40–60% of the mass of the fluids to be mixed into said chamber as a substantially conical divergent stream having a velocity of at least 10 ft./sec. which strikes the peripheral wall at a point which is from ¼ to ¾ the distance along the axis from the said central aperture to the exit duct, whereby when the fluids to be mixed are delivered into said chamber through said first fluid pressure means and through said inlet means, they are delivered in substantially conical patterns with the fluid in one conical pattern traveling in the opposite direction from the fluid in the other conical pattern, and all of the contents of the fluid streams intermingle to form a large torodial vortex within said chamber which lies wholly within the boundary of the divergent stream.

3,185,449
SCREW CONVEYER FOR FEED MIXER
John E. Kasten, 136 Concord Lane, West Bend, Wis.
Filed Oct. 25, 1963, Ser. No. 319,019
15 Claims. (Cl. 259—6)

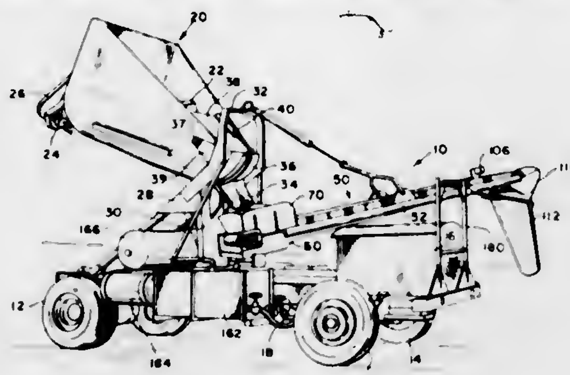


8. A feed mixer including support means, a mixing tank on said support means having a frusto-conical lower portion, a supply conveyer on said support means communicating with said tank adjacent the bottom of said lower tank portion, a discharge conveyer on said support means and extending parallel to a part of the lower tank portion and communicating with the tank through said lower tank portion, a vertical conveyer extending upright in said tank from adjacent the bottom of said lower tank portion, said conveyer including an upright, elongated tubular sleeve, said sleeve including a lengthwise edge projecting inwardly thereof, an auger, and means on said support means rotatably mounting said auger lengthwise within said sleeve for travel of the peripheral margin of said auger in close proximity to said edge.

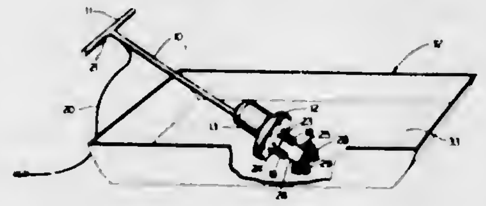
3,185,450
CEMENT TRANSPORTING AND PLACING MACHINE
George P. Duecy, 6300 Glenwood Ave., Everett, Wash.
Filed Oct. 7, 1963, Ser. No. 314,217
11 Claims. (Cl. 259—172)

1. A concrete transporting and placing macine, comprising: (*a*) a mobile mounting structure including a power plant, (*b*) a mixer means mounted at one end of said structure, said mixer means having a discharge opening at its inner end and a gate means for opening and closing said discharge opening, (*c*) a swingable and remotely controlled elongated boom frame structure having an inner end positioned generally below said discharge opening and extending generally outwardly over the other end of said movable mounting structure and including a continuous type conveyor means thereon, said

boom frame being pivotable at its inner end about a vertical axis for swinging said boom frame and conveyor from side to side of said machine and also pivotable about a horizontal axis for raising and lowering the outer end of said boom from and conveyor, (*d*) a boom hopper means located at the outer end of said boom frame beneath the end of said conveyor belt, and (*e*) a remotely controllable discharge chute means movably attached to the lower portion of said boom hopper means for receiving concrete therefrom, said discharge chute being movable in a generally horizontal circular path around said lower portion of said boom hopper means and also being movable in a vertical plane for changing its angle of incline.



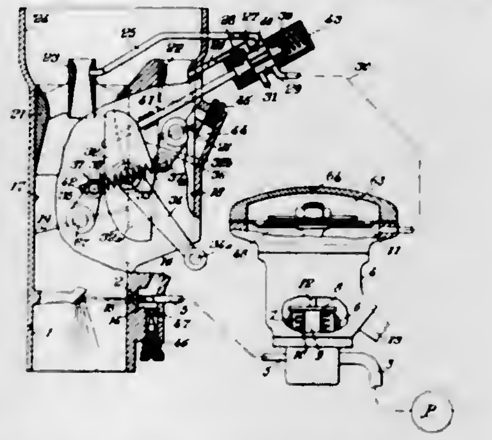
3,185,451
AGGREGATE MIXER CONSTRUCTION
Joseph A. Snyder, 4336 Portage St.,
North Canton 20, Ohio
Filed Mar. 8, 1963, Ser. No. 263,927
6 Claims. (Cl. 259—179)



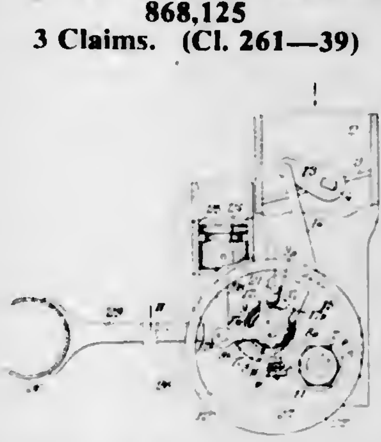
1. Aggregate mixer construction including elongated handle means having a lower end, a pair of transversely spaced conically shaped mixing blades mounted oppositely rotatable operably connected to and extending away from the handle means lower end, the mixing blades extending away from the handle means lower end in progressively decreasing diameter spirally wound conical shape and being transversely positioned free of interfitting, and drive means operably connected to the conical mixing blades for driving said blades in opposite directions of rotation.

3,185,452
CARBURETORS WORKING BY CONTINUOUS INJECTION OF FUEL INTO THE INTAKE PIPE OF AN INTERNAL COMBUSTION ENGINE
André Louis Mennesson, Neuilly-sur-Seine, France, assignor to Societe Industrielle de Brevets et d'Etudes S.I.B.E., Neuilly-sur-Seine, France, a society of France
Filed Jan. 24, 1961, Ser. No. 84,699
Claims priority, application France, Jan. 29, 1960, 817,082; Mar. 4, 1960, 820,459; July 18, 1960, 833,260
7 Claims. (Cl. 261—23)

1. A carburetor which comprises, in combination, an intake pipe provided with a fuel injection orifice, air feed means forming two air passages opening both into said pipe upstream of said orifice, a main one and an auxiliary one, main throttle means in said main passage to control the flow of air therethrough, auxiliary throttle means in said auxiliary passage to control the flow of air therethrough, means for operativley connecting said respective throttle means with each other, a main venturi mounted in said air feed means upstream of said main throttle means, an auxiliary venturi mounted in said auxiliary passage, said auxiliary venturi being of smaller cross-sectional area than said main venturi, a fuel pressure reducing device comprising an inlet conduit, an output conduit, a fuel flow control valve interposed between said inlet and output conduits for varying the fuel pressure in said output conduit and a single diaphragm means operatively connected with said control valve for operating it in accordance with variations of a suction applied to said diaphragm means, means for feeding fuel under pressure to said inlet conduit, means for connecting said output conduit with said fuel injection orifice, conduit means between, on the one hand, the throats of said venturis, respectively, and, on the other hand, said diaphragm means, for transmitting to said diaphragm means respective suctions from said venturis, and means for varying the respective values of said last mentioned suctions in accordance with the position of both of said throttle means.

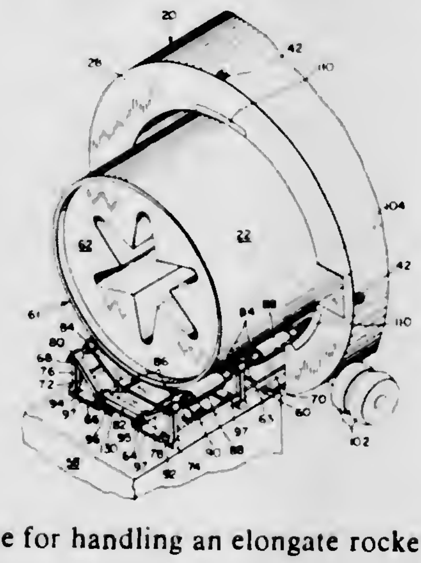


3,185,453
CARBURETORS
André Louis Mennesson, Neuilly-sur-Seine, France, assignor to Societe Industrielle de Brevets et d'Etudes S.I.B.E., Neuilly-sur-Seine, France, a society of France
Filed July 2, 1962, Ser. No. 206,582
Claims priority, application France, July 17, 1961, 868,125
3 Claims. (Cl. 261—39)



1. In a carburetor for an internal combustion engine, the combination of an induction pipe with an air intake, an unbalanced choke valve in said pipe mounted to be urged in the opening direction by the inflow of air through said pipe, a first thermostatic device responsive to engine temperature variations, transmission means mounted between said first thermostatic device and said choke valve for closing said valve for engine temperatures up to a given limit and allowing it to open more and more as the engine temperature is higher and higher above said limit, a throttle valve in said pipe downstream of said choke valve, a cam mounted rotatable in both directions with respect to said pipe, said cam being operatively connected with said throttle valve for determining the idling running position thereof, means for urging said cam constantly to rotate in the direction corresponding to decreasing openings of said throttle valve, a second thermostatic device responsive to engine temperature variations, said transmission means between said first thermostatic device and said choke valve including an abutment adapted to cooperate with said cam for rotating it in a direction opposed to said last mentioned direction when the engine temperature is less and less above said limit temperature, means operatively connected with said second thermostatic device and forming an abutment for said cam to rotate it in the direction corresponding to increasing openings of said throttle valve when the engine temperature is more and more below said limit temperature, pneumatic means operative by the suction created in said pipe downstream of said throttle valve when the engine is started for imparting to said transmission means a displacement opening said choke valve, and an abutment carried by said transmission means and adapted to cooperate with said second thermostatic device when it is in a position corresponding to an engine temperature below said limit temperature for placing said second thermostatic device out of connection with said cam in response to said displacement imparted to said transmission means.

3,185,454
DEVICE FOR HANDLING A ROCKET MOTOR
Neubar Kamalian, 1260 S. Westgate, Apt. 2,
Los Angeles, Calif.
Filed Mar. 26, 1963, Ser. No. 268,161
8 Claims. (Cl. 263—6)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. A device for handling an elongate rocket motor comprising:

(*a*) an elongate container configured to the general shape of said motor and capable of housing said motor therein and supporting the motor in a horizontal position;

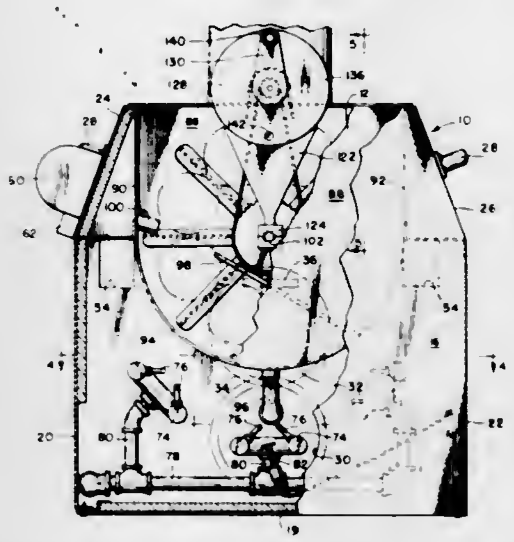
(*b*) moving means accommodated within said container for moving the motor in and out thereof when the container is horizontally disposed; and

(*c*) means in the container for turning the motor about a longitudinal axis,

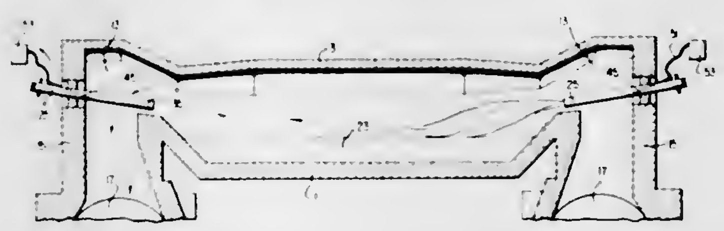
whereby fabrication of said motor can be facilitated.

3,185,455
HEATER FOR PAVEMENT MARKERS
Henry M. Preusser and Eric B. Denton, Seattle, Wash., assignors, by mesne assignments, to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Apr. 16, 1962, Ser. No. 187,612
3 Claims. (Cl. 263—11)

1. A heater for pavement markers, comprising: a box-like heater housing; a liquid receiving tank supported in the upper portion of said heater housing, said tank having a semi-circular bottom wall structure and including a rotating rack mechanism therein for holding said pavement markers; burner means located beneath said tank and within said housing; fuel conduit means located beneath said tank and adapted to receive fuel for said burners from a source external to and independent of said heater housing and to convey said fuel to said burner means; a control system for said burner means and said fuel conduit means; and an exhaust stack attached to said housing, there being means for venting the housing area beneath said tank to said exhaust stack.



3,185,456
FURNACE WITH FLUE GAS SAMPLER
James V. Hynd, Southgate, Mich., assignor to National Steel Corporation, a corporation of Delaware
Filed Aug. 8, 1963, Ser. No. 300,752
10 Claims. (Cl. 263—15)

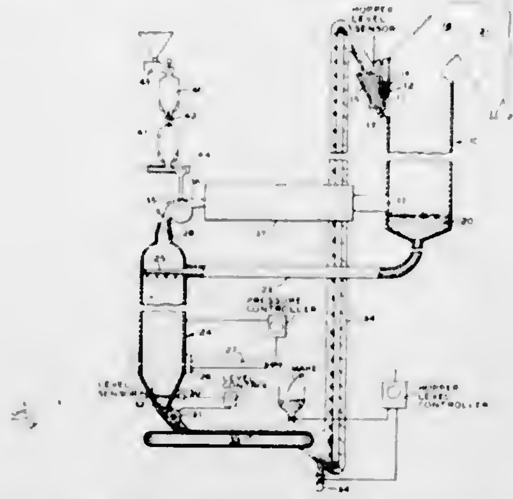


1. In a furnace, means for conveying a fluid from outside the furnace into the furnace, said means being elongated in the direction of fluid movement and having an external water jacket defining a water space about said means to cool said means, means extending through said water space within the jacket and communicating with the furnace atmosphere closely adjacent the jacket for withdrawing samples of furnace atmosphere and for conveying the samples to outside the furnace for analysis; and a flue gas analyzer outside said furnace in communication with the last-named means.

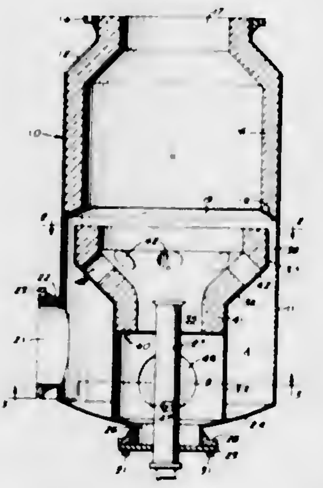
3,185,457
METHOD OF AND APPARATUS FOR HEATING FLUIDS
Richard H. Boll, Alliance, and Edward A. Pirsh, Akron, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 9, 1961, Ser. No. 94,605
5 Claims. (Cl. 263—19)

1. The method of heating a gaseous fluid to a high temperature which comprises the steps of heating a granular solid while substantially in gaseous fluid suspension in a solids heating zone to a liquefied temperature, passing said liquefied solid to a separate gaseous fluid heating zone, introducing said liquefied solid into

said gaseous fluid heating zone to heat said fluid and to solidify said liquefied solids to granular form while in gaseous fluid suspension, and recycling said granular solids to said solids heating zone.

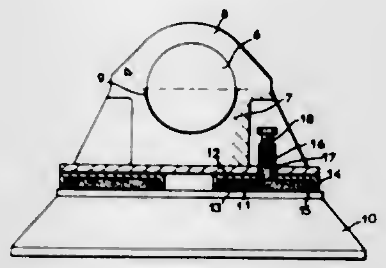


3,185,458
DIRECT FIRED AIR HEATER
Robert D. Reed, Tulsa, Okla., assignor to John Zink Company, Tulsa, Okla., a corporation of Delaware
Filed May 13, 1963, Ser. No. 279,715
3 Claims. (Cl. 263—19)



2. In a direct fired air heater, a generally cylindrical shaped housing, a burner assembly supported within a lower portion of said housing, a partition structure within said housing including a cylindrical shaped barrier surrounding said burner assembly in spaced relationship, said partition structure having an inverted frusto-conical shaped portion flaring outwardly in proceeding upwardly from the burner assembly, said barrier and said frusto-conical shaped portion providing a first annular chamber between the exterior thereof and the interior of said housing, said partition structure defining an annular passage between the exterior thereof and the interior of said housing providing communication from said first annular chamber into the housing above said partition structure, said barrier providing a second annular chamber therewithin around said burner assembly, means carried by the partition structure disposed about the downstream end of the burner assembly providing an opening providing communication from the second annular chamber into said frusto-conical portion of the partition structure, said housing having a radially disposed inlet opening for admitting air under pressure for impacting against the exterior of said barrier whereby its momentum is substantially dissipated to provide a supply of air within the first chamber, said barrier having openings therethrough circumferentially displaced from said inlet opening for movement of some of the air from the first chamber into the second chamber around the burner assembly to support combustion, said frusto-conical portion having circumferentially spaced holes therethrough at locations above said burner assembly with their axes converging towards the axis of said housing providing paths of movement of streams of air from the first annular chamber into the partition structure where combustion of the fuel is substantially complete, said annular passage providing another path for movement of some of the air from the first annular chamber into the housing above the partition structure, and a frusto-conical surface within said housing above said partition structure diverting air escaping from said annular passage towards the axis of the housing.

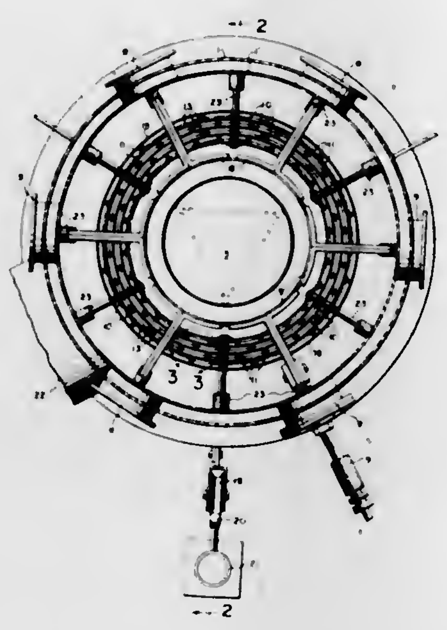
3,185,459
DEVICE FOR SUPPORTING A ROTATING BODY
Jacques Jean Caubet and Henri Jacques Grassin, Saint-Etienne, France, assignors to Compagnie des Ateliers et Forges de la Loire, Societe Anonyme, Paris, France, and Hydromecanique et Frottement S.A.R.L., Saint-Etienne, France, both corporations of France
Filed Sept. 30, 1963, Ser. No. 312,780
Claims priority, application France, Oct. 2, 1962, 910,999; Jan. 17, 1963, 921,708
16 Claims. (Cl. 263—33)



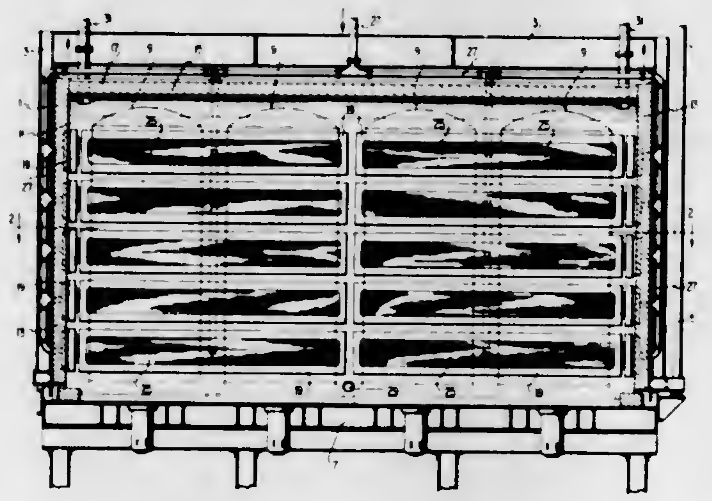
1. A device for supporting a body rotating on a base while permitting self-alignment to be effected without appreciable added resistance, in particular under heavy loads, said device comprising: a base; a sole-plate resting on said base; a rotating body support member, said member having a concave surface and a peripheral rim defining the extent of said concave surface, said support member being oriented so that said concave surface is directed towards said sole plate; cushion means constituted by a body of set grease interposed between said sole plate and said concave surface; a closure ring mounted between said sole plate and said concave surface and within the region enclosed by said rim, said ring being dimensioned so as to conform generally to the configuration of said rim and so as to have a degree of play with respect thereof; and a pair of sealing joints associated with said ring, one of said joints bearing against said sole plate so as to maintain a separation between it and said ring and the other of said joints bearing against the inner peripheral surface of said rim so as to maintain a separation between it and said ring; whereby said support member may be both displaced in any horizontal direction and rotated about both a horizontal and a vertical axis with respect to said base due to the sliding action of said set grease and the play of said ring.

3,185,460
VACUUM FURNACE
Harold E. Mescher, Rivera, and Robert L. Allgeier, Valinda, Calif., assignors to Pacific Scientific Company, San Francisco, Calif., a corporation of California
Filed Aug. 15, 1963, Ser. No. 302,250
4 Claims. (Cl. 263—40)

1. In a cold wall furnace of the character described, a casing, and mutually spaced heat shields of very thin sheet metal within said casing, said heat shields being deformed at intervals to produce projecting continuous ribs for abutting adjacent similarly deformed shields, thereby determining the spacing of said heat shields, the said ribs serving to uniformly space said shields over their entire areas and to stiffen said shields and prevent injurious deflection thereof under the heat of the furnace.

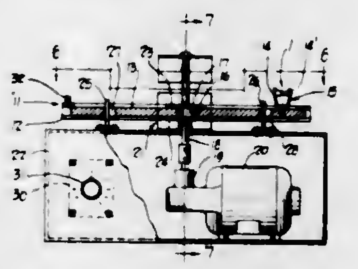


3,185,461
FURNACE CONSTRUCTION
Lucien A. Fugassi, Pittsburgh, Pa., assignor to National Steel Corporation, a corporation of Delaware
Filed Aug. 1, 1963, Ser. No. 299,404
2 Claims. (Cl. 263—41)



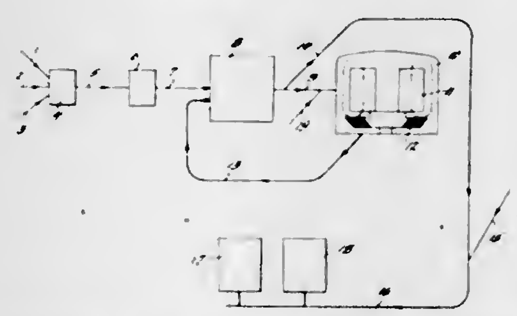
1. An annealing furnace comprising a base; a framework having walls and roof of refractory ceramic material, said framework being supportable by said base; elongated guide means vertical to said base and in sliding relationship with said framework to enable said framework to be raised and lowered; cover means having a vertically elongated side and being within said framework and supportable by said base, said cover means being imperforate whereby material within said cover means is isolated from combustion gases in the furnace; a multiperforate wall portion contiguous and substantially coextensive in area with said side of said cover means; means for catalytically burning gases, said means being metallic wire screening, said screening being contiguous to and substantially coextensive in area with said cover means and said multiperforate wall portion, said screening being disposed between said cover means and said wall portion; and means for feeding a gaseous fuel through the multiperforate wall portion onto the metallic wire screening.

3,185,462
APPARATUS FOR MIXING DENTAL AMALGAM AND SEPARATING EXCESS MERCURY THEREFROM
Louis L. Shore, 2619 Warrensville Center Road, Cleveland Heights 8, Ohio
Filed Apr. 22, 1960, Ser. No. 23,978
7 Claims. (Cl. 266—1)



1. Dental apparatus comprising, in combination, a container for dental amalgam, a carrier therefor, means for detachably securing said container to said carrier, said container having a screen therein capable of permitting passage of mercury but not silver and mercury amalgam therethrough, means for selectively imparting oscillatory motion to said carrier at one time and rotary motion to said carrier at another time, and means for automatically timing the periods of said oscillatory and rotary motions for respective pre-determined time intervals.

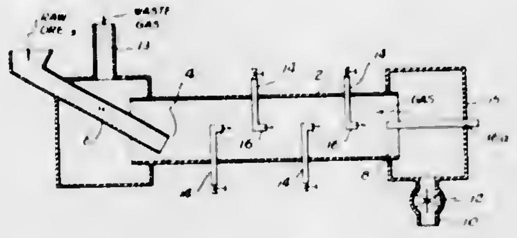
3,185,463
APPARATUS FOR CONDITIONING AIR AND GASES FOR ANNEALING STEEL PLATES AND THE LIKE
Jean Daubersy, Seraing, Belgium, assignor to S.A. Metallurgique d'Esperance-Longdoz, Liege, Belgium
Filed July 13, 1961, Ser. No. 123,835
Claims priority, application Belgium, July 18, 1960, 593,133
2 Claims. (Cl. 266—5)

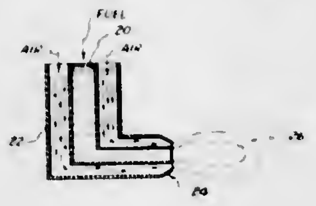


1. Apparatus for conditioning atmospheres necessary for the working of metal plate annealing furnaces, comprising at least one annealing furnace for metal plates in expanded coils, a purification station containing means for reducing the concentration of the carbon oxides and combined nitrogen concentration of the gases which it receives, means as towers for conversion of CO by water vapor, towers for absorption of CO_2 by washing with soda or methanolamine, absorption towers having active carbon, a source of pure hydrogen, a source of pure nitrogen, at least one bright annealing furnace, a source of water or water vapor, pipe systems connecting said elements with one another in such a way that a recycling circuit connects on the one hand the outlet of the purification station with the entrance of the expanded coil furnace and, on the other hand, the outlet of the said furnace to the entrance of the purification station and comprises a means of circulation, a pipe connecting the source of hydrogen to the recycling circuit, a withdrawal pipe connecting the recycling circuit to the bright annealing furnace, a pipe connecting the source of nitrogen to the withdrawal pipe, and a pipe connecting the source of water or water vapor to the entrance of the furnace or furnaces for the expanded coils.

3,185,464
IRON ORE REDUCING ROTARY FURNACE WITH MANTLE BURNER NOZZLES OF CONCENTRIC TUBES

Kurt Meyer and Günter Heitmann, Frankfurt am Main, and Wolfgang Janke, Oberursel, Taunus, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed May 29, 1963, Ser. No. 284,134
Claims priority, application Germany, June 19, 1962, M 53,257
1 Claim. (Cl. 266—24)

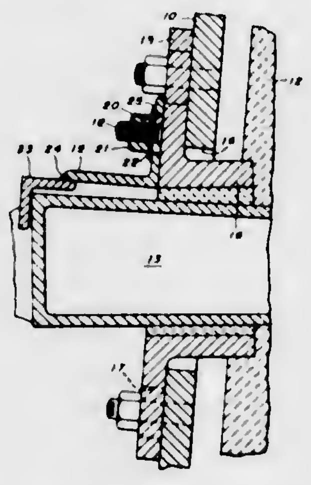




In a rotary furnace for reducing iron ore and having a plurality of mantle burners positioned within the furnace along the longitudinal length of the furnace with the burner nozzles substantially concentric with the longitudinal axis of the furnace and directed against the flow of gases through the furnace, the improvement in which each nozzle of the mantle burners is composed of an inner fuel tube concentric with and spaced from an outer air tube, said tubes being substantially coextensive so that the fuel emitted from the nozzle is enveloped by the air emitted from the nozzle and so that the fuel and air thus obtained are mixed and burned in the furnace after leaving the nozzle for maintaining a substantially uniform temperature throughout the iron ore reduction zone in the furnace by means of both burning carbon monoxide gas generated from solid carbon added to the iron oxide ore and burning gas coming from the mantle burner nozzles.

3,185,465
LOCKING DEVICE FOR BLAST FURNACE COOLING PLATES

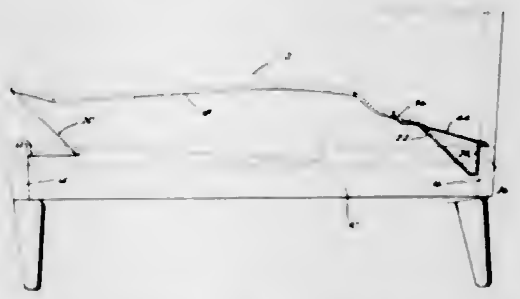
Edward T. Patton, Bristol Township, Bucks County, Pa. (10 Middle Road, Levittown, Pa.)
Filed Oct. 28, 1963, Ser. No. 319,448
3 Claims. (Cl. 266—32)



1. In a furnace wall which includes an outer steel shell, a refractory lining, and cooling plates embedded in said lining, said shell having openings through which the outer ends of said plates project varying distances, the combination therewith of devices locking said plates to said shell, each of said devices comprising a first clip angle having horizontal and vertical legs, means removably fixing said vertical leg to said shell adjacent one of said openings, and a second clip angle having horizontal and vertical legs, the vertical leg of said second angle abutting the outer end of said plate, the horizontal leg of said second angle being welded to the horizontal leg of said first angle at a location which varies with the distance the plate projects from the shell, said angles being removable as a unit to enable the plate to be removed and replaced.

3,185,466
REINFORCING MEMBER FOR SPRING ELEMENT

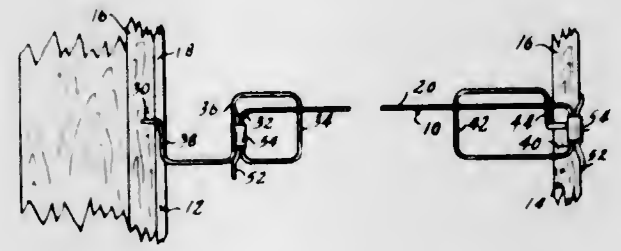
John S. Meyers, Allen Park, Mich., assignor, by mesne assignments, to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed June 12, 1963, Ser. No. 287,413
3 Claims. (Cl. 267—105)



1. In a seat cushion, the combination with spaced opposed frame members having a linear spring element having spacer and torsion bar portions with terminal portions located on and in bridging relation with said members, of a strut brace in the form of a spring wire part having an end portion interlocked with a terminal portion of said element at a point inwardly of the point of engagement of said element on one of said members, said brace having a straight portion extending from said end portion and angularly disposed to said element and abutting said last member below its point of engagement with said element, said brace forming a triangular-shaped cantilever support with the terminal portion of said element to shift the main support of said element from said last member to the point of interlocking of said end portion with said element.

3,185,467
SPRING STRUCTURE

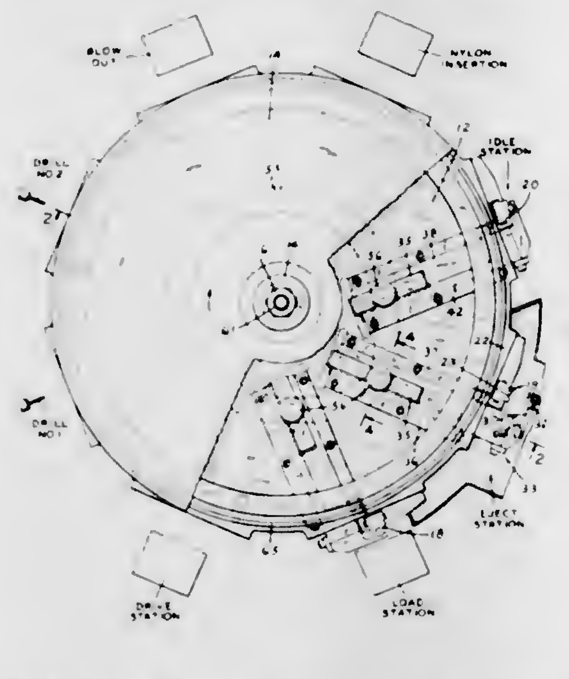
John M. Caughey, Adrian, Mich., assignor, by mesne assignments, to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Original application June 20, 1960, Ser. No. 37,478. Divided and this application Aug. 30, 1963, Ser. No. 305,628
1 Claim. (Cl. 267—107)



In combination, furniture having a pair of spaced frame members to receive and support stringer-type wire spring elements, said frame members having relatively flat upper and inner face surfaces, holes defined in said frame members and opening through said upper surfaces, said holes of each frame portion lying in a plane substantially parallel to the inner face surface of the associated frame member and spaced therefrom, stringer-type wire spring elements each comprising a linear portion, fishmouth portions located at opposite ends of said linear portion to support said linear portion in spaced relation to the frame members, said fishmouth portions being defined by spaced torsion bar portions transversely disposed to said linear portions and portions disposed substantially parallel to the length of said linear portion and extending between said torsion bar portions, said fishmouth portions having frame member engaging portions in the form of frame anchor portions, said anchor portions each taking the form of an inverted U having inner and outer leg portions, said outer leg portions each adapted to be received in a frame member hole, the spacing between the leg portions of a common anchor portion being so related to the spacing between the holes of a frame member and the inner frace surface thereof that said inner leg portion resiliently engages said frame inner face surface upon the associated outer leg portion being received within a frame member hole, said leg portions being disposed in a plane parallel to the longitudinal axis of said linear portion, a torsion bar portion affixed to each of said inner leg portions and transversely disposed thereto wherein said last-mentioned torsion bar portions resiliently engage said frame member upon said outer leg portions being received within a frame member hole, said leg portions being connected by arcuate portions disposed in the plane of said leg portions, said arcuate portions being out of contact with said upper surfaces.

3,185,468
MACHINE FOR INSERTING LOCKING INSERTS IN SCREWS

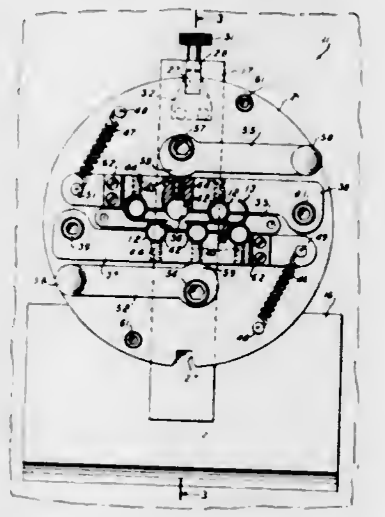
John W. Brightman, Ridgewood, N.J., assignor to The Nylok Corporation, Paramus, N.J., a corporation of Delaware
Filed Jan. 18, 1963, Ser. No. 252,373
7 Claims. (Cl. 269—61)



1. Apparatus for making self-locking screws and the like comprising a rotary indexing head, a plurality of jaw members fixed to and extending substantially radially outwardly from said head and having an outwardly facing substantially vertical groove therein, a slide member in said head adjacent to each of said jaw members, a laterally extending jaw member on each slide member having an inwardly facing groove therein opposing the groove in an adjacent fixed jaw member, fixed cam means overlying said indexing head, a cam follower on each slide member engaging said cam means for moving said slide inwardly and outwardly relative to said head, means for adjusting the spacing between the laterally extending jaw member and the cam follower on each slide member, and means for rotating said head relative to said cam means.

3,185,469
FIXTURE FOR CLAMPING ARTICLES TO A STRIP FOR SUBSEQUENT BONDING

Robert L. Barrett, Baltimore, Md., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 21, 1962, Ser. No. 196,244
2 Claims. (Cl. 269—74)

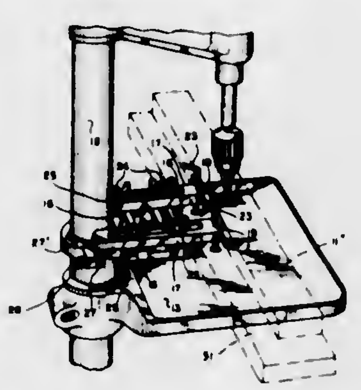


1. A clamping fixture for clamping a strip sandwiched between two rows of cylindrical articles for subsequent bonding of the articles to the strip, which comprises:
  a support,
  a disc mounted for rotation on the support,
  a pair of arms having transverse spaced arcuate cutaways along one edge thereof pivotally mounted on one face of the disc,
  a bar fixedly mounted on the disc between the arms having transverse spaced arcuate cutaways along both edges thereof, the arcuate cutaways of the bar positioned opposite the arcuate cutaways of the pivotal arms to receive the cylindrical articles therein, the arcuate cutaways along both edges of the bar being aligned with respective spaces between cutaways of the opposite edge, the arcuate cutaways of opposite edges of the fixed bar spaced so that the two rows of cylindrical articles which are subsequently positioned therein provide a substantial space therebetween for the positioning of the strip between the rows of cylindrical articles,
  means for normally urging the arms away from the fixed bar,
  a pair of eccentrics mounted on the disc,
  means for moving the eccentrics into engagement with the pivotal arms and urging the pivotal arms towards the fixed bar so that the rows of cylindrical articles which are positioned in the cutaways of the fixed bar and the pivotal arms are clamped with the strip, and
  means for successively arresting rotary movement of the disc at predetermined positions to facilitate the bonding of each row of the articles to the strip.

3,185,470
UNIVERSAL WORK CLAMPING FIXTURES FOR MACHINE TOOLS

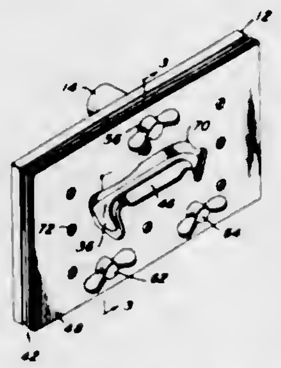
Berthold R. Zitner, 3336 N. 50th St., Milwaukee 15, Wis.
Filed July 30, 1963, Ser. No. 298,782
1 Claim. (Cl. 269—91)

The combination with a machine tool including a vertical post and a work supporting table projecting laterally from the post, of a work clamping fixture comprising a plate vertically and rotatably adjustably mounted on said machine tool post and overlying the table at right angles to the axis of the post and having a pair of spaced-apart parallel slots therein transverse to the direction of projection of the plate relative to the post, a pair of longitudinally slotted bars spacedly adjustably mounted on the plate in positions wherein the slots of the bars are at angles to the slots of the plate with the outer ends of the bars projecting beyond the front margin of the plate, adjustable securing members for each bar extending through its bar slot and both parallel slots of the plate to rigidly mount the bars on the plate in position of adjustment, the outer ends of the bars being formed with gauging and clamping flanges and work engaging toes provided with means for the removable attachment of auxiliary upright gauges at right angles to the axis of the bars, and additional adjustable clamping means carried by the outer ends of the bars at right angles thereto to engage table supported elements.



3,185,471
EXPOSURE APPARATUS

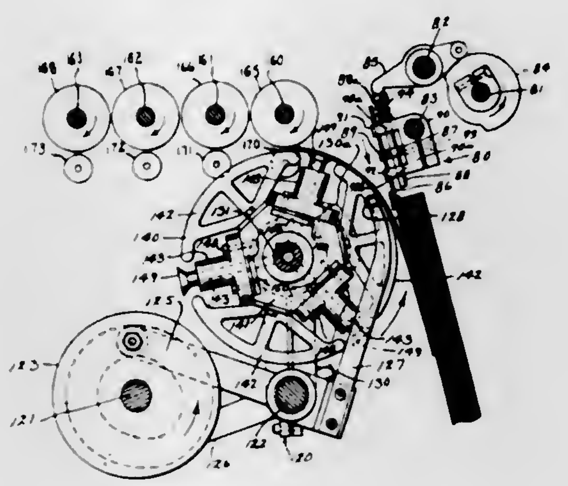
Miguel Coll-Palagos, Bronxville, N.Y., assignor to Aluminum Development Corporation, New York, N.Y., a corporation of New York
Filed May 31, 1962, Ser. No. 199,133
8 Claims. (Cl. 269—221)



8. Apparatus for supporting a workpiece during a surface finishing operation comprising a base, means for mounting a workpiece on said base, a template structure superimposed over said base, means removably securing said structure to said base with three point registration, said structure including a first plate made from a flexible material and having an aperture adapted to be in registry with a portion of the workpiece while it is supported by said mounting means, said workpiece being between said base and said first plate when supported by said mounting means, and a second plate overlying said first plate, said second plate having an aperture in registry with said first plate aperture, the shape of said second plate aperture corresponding generally to the shape of said first plate aperture, the second plate aperture having dimensions greater than the dimensions of said first plate aperture, and means removably securing said first and second plates together.

3,185,472
SHEET FEEDING MECHANISM

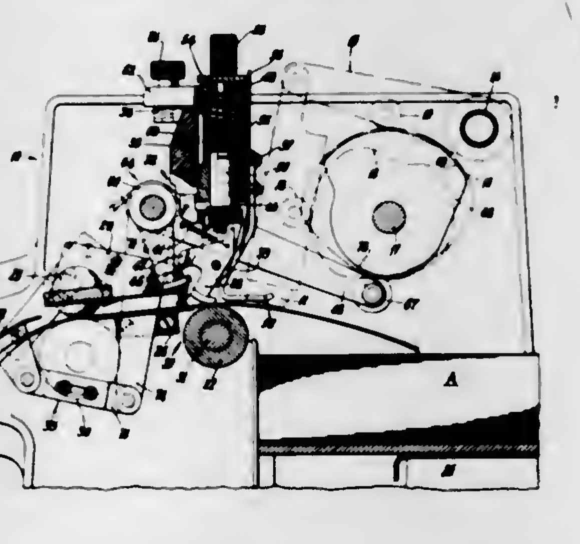
Eugene W. Rubow, deceased, late of Wausau, Wis., by La Verne R. Rubow, special administratrix, Wausau, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed May 17, 1962, Ser. No. 196,574
18 Claims. (Cl. 271—11)



1. An automatic feeding device for feeding carton blanks stacked one behind the other on a supporting surface to a carton forming system, said device comprising a vacuum wheel having vacuum cups fixedly mounted on the perimeter thereof, said wheel being mounted to rotate and also move toward and away from the stack of carton blanks so as to move said cups successively into contact with the then leading carton blank to withdraw the blanks one at a time from the stack, means for controlling the application of a suction to said cups; means mounted to arrest and hold the stack at timed intervals; means for separating the upper portion of the leading blank from the remainder of the stack; and means for rotating said vacuum wheel so as to withdraw the leading blank from the remainder of said stack and transfer said leading blank to the carton forming system.

3,185,473
DOUBLE SHEET DETECTOR FOR PRINTING PRESS

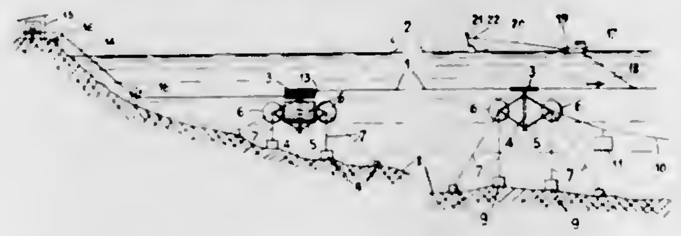
Leonard Miaskoff, Flushing, and Frederick L. Warner, Brooklyn, N.Y., assignors, by mesne assignments, to Fairchild Camera and Instrument Corporation, a corporation of Delaware
Filed June 25, 1962, Ser. No. 205,001
3 Claims. (Cl. 271—56)



1. In a sheet feeding machine having a drive shaft for timing and controlling the feed of sheets, a double sheet deflector apparatus comprising, a sheet deflector plate, bell crank means for moving said plate between a sheet supporting and a sheet deflecting position, a cam that is continuously rotated to move said bell crank means and said deflector plate to a sheet supporting position, spring means for urging said bell crank means and said deflector plate to a sheet deflecting position, a pivotally mounted detector foot having means for blocking the spring urged movement of said bell crank means and said deflector plate, and a spring for maintaining said detector foot in a blocking position when a single sheet is fed but which permits said foot to be pivoted out of blocking position when a double sheet is fed whereby said spring means moves said bell crank means and said deflector plate to a sheet deflecting position.

3,185,474
WATER SPORT TOWING DEVICE

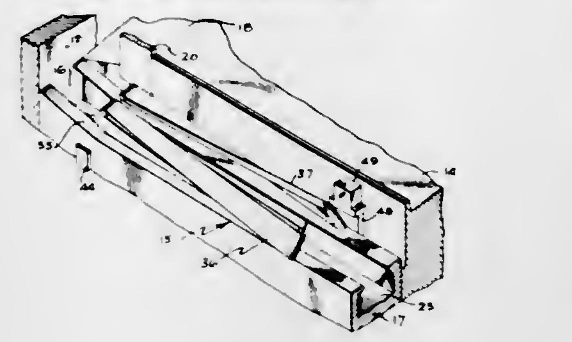
Alphons Saiko, Brunngasse 6, Bern, Switzerland
Filed July 28, 1961, Ser. No. 127,717
Claims priority, application Switzerland, July 29, 1960, 8,678/60
3 Claims. (Cl. 272—32)



1. A towing arrangement for water sport comprising, in combination, an endless towing cable; a plurality of guide means for guiding said endless towing cable in a towing plane substantially parallel to and spaced below the surface of a body of water, said plurality of guide means arranged in said towing plane at the corners of a polygonal towing track and adapted to guide said endless towing cable movable in longitudinal direction along said polygonal towing track in said towing plane parallel to and spaced below the surface of said body of water; a plurality of support means each secured to and supporting one of said guide means, each of said support means located below the respective guide means to which it is secured; a plurality of float means each secured to one of said support means permanently tending to lift the same in said body of water, each of said float means located also below the respective guide means; a plurality of flexible anchoring means each secured at one end thereof to the ground at the bottom of the body of water and at the other end thereof to one of said float means an support means, each of said flexible anchoring means being of such length as to locate said guide means in said towing plane spaced below the surface of said body of water and to locate said support means and said float means spaced below said towing plane and spaced further from said surface of said body of water than said guide means, so that said guide means are located above said support means, driving means for moving said endless flexible towing cable guided by said guide means along said polygonal track in said towing plane spaced below the surface of said body of water; a towing float on the surface of said body of water; and elongated pulling means attached at one end to said towing float and at the other end to said towing cable and having a length greater than the distance between said towing plane and said surface of said body of water, whereby said elongated pulling means will project during pulling of an object located on the surface of the water in an inclined direction to the surface of the water and will move during pulling thereof in the space between said towing plane and said surface of said body of water which space is free and unobstructed due to location of all said support means, all said float means, and all said anchoring means below said towing plane.

3,185,475
BALL DELIVERY APPARATUS

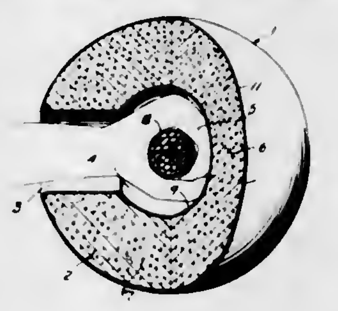
Wendell S. Miller, 1341 Comstock Ave., Los Angeles, Calif.
Filed Mar. 27, 1962, Ser. No. 182,903
8 Claims. (Cl. 273—49)



1. Ball delivery apparatus comprising a track structure for supporting a ball as it rolls along a predetermined path toward a delivery location, and power operated drive means positioned to engage said ball and roll it along said path and said track structure, said drive means being positioned and constructed to engage the ball at a localized area which progressively advances downwardly relative to the ball and its rolling axis as the ball advances in the direction of said path to thereby accelerate the ball, and means mounting said drive means at a location to engage the ball at said downwardly advancing area.

3,185,476
SPHERICAL BALL INCLUDING AN INTERNAL RESILIENT HAND GRIP

Walter W. Fechner, 730 Vattier St., Manhattan, Kans.
Filed Aug. 30, 1962, Ser. No. 220,359
5 Claims. (Cl. 273—58)



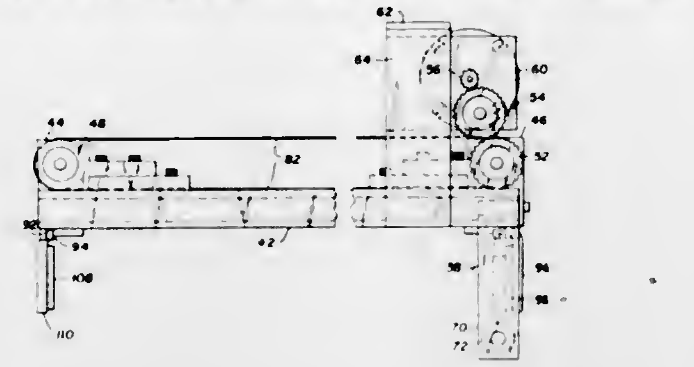
1. A play ball including
a spherical body of resilient cellular material having a passageway opening from the spherical surface of said body and connected with a substantially central internal cavity for passing the hand into the cavity whereby said passageway is completely contained within the spherical body, and
a resilient bar extending diametrically across the cavity to be gripped by the hand.

3,185,477
BAND DRIVE FOR STANDING PIN DETECTOR

Ernest C. Webb, Bay Village, Ohio, assignor, by mesne assignments, to The Cleveland Trust Co., Cleveland, Ohio, trustee
Filed May 31, 1962, Ser. No. 199,063
9 Claims. (Cl. 273—54)

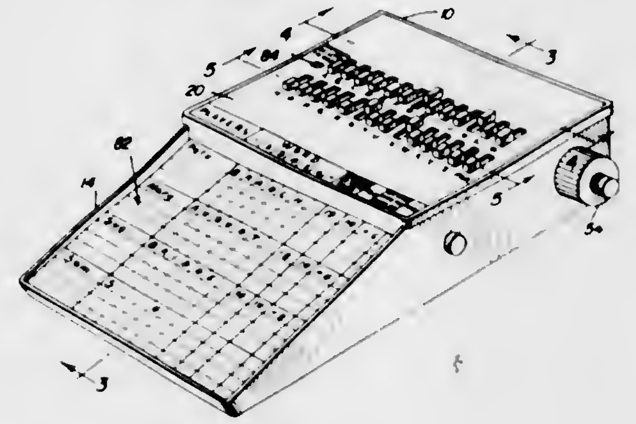
1. Apparatus for reciprocably sweeping an elongated pin detecting member across the ends of bowling pins positioned on a bowling alley pin deck comprising a guideway extending across said alley at one edge of the pin deck, a carriage mounted on said guideway for reciprocal movement between the ends of said guideway, rolls at the opposite ends of said guideway, a band of high tensile strength material extending around said rolls

and secured at one point to the carriage, means for moving said band whereby the carriage will be caused to traverse the guideway while the band moves around said rolls, and means for horizontally supporting said elongated member on the carriage and above the ends of said bowling pins.



3,185,478
WORD GAME

William R. McTaggart, 702 Church St., Flint, Mich.
Filed Dec. 7, 1960, Ser. No. 74,349
5 Claims. (Cl. 273—135)

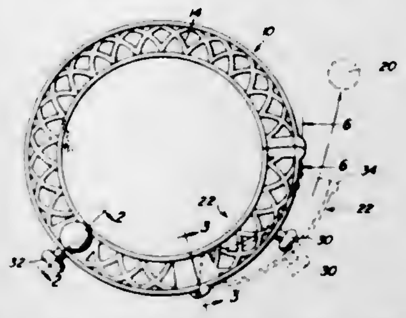


1. A word game device comprising a housing, a plurality of apertures through a wall of the housing, the number of apertures corresponding to the number of letters in a specific alphabet, each aperture representing a specific one of the alphabet letters, closure means provided in conjunction with each aperture movably mounted for selectively opening and closing the apertures, means in the housing, said last mentioned means having a plurality of spaced sets of numerals thereon, said sets each representing a different word and being selectively alignable for exposure of the numerals therein through the apertures, the numerals in each set each indicating the position of a predetermined letter in the corresponding word, each of these numerals being orientated for exposure through the open aperture representing the corresponding predetermined letter, the number of numerals in each set being between the number of letters in the shortest word and the number of letters in the longest word of said alphabet, said means in the housing consisting of an elongated flexible tape, and two spaced parallel rotatably mounted reels, said tape being wound on said reels and movable therebetween, said reels consisting of a winding reel and a supply reel, both having one end thereof rotatable on spindles carried in the ends of a flexible leaf spring which is riveted at its central portion to the housing, said leaf spring being adapted, when flexed, to remove said spindles from the ends of said reels, said tape being positioned for clockwise winding upon the winding reel and counterclockwise unwinding from the supply reel thereby permitting both sides of the tape to be conveniently used, sets of numerals appearing on both sides of the tape.

7

3,185,479
RING-TYPE BALL THROWING AND CATCHING TOY

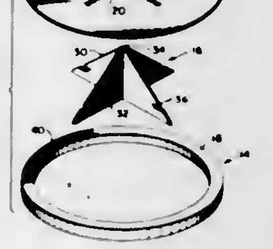
Charlotte C. Ortega, Nestor, Calif.
(221 National Ave., San Ysidro, Calif.)
Filed Dec. 18, 1962, Ser. No. 245,453
2 Claims. (Cl. 273—96)



1. A ball throwing and catching toy comprising a ring having a continuous track of arcuate cross-sectional configuration opening upwardly throughout its extent upon which a ball may be caught and rolled therein, handle means on the ring for enabling the ring to be grasped for imparting an undulating motion in a generally horizontal plane to the ring for moving the ball around the track, and means for deviating the ball from its path of movement and discharging it from the track, said last named means comprising a peripheral portion of the ring and track having one end thereof pivotally connected to the remaining portion at the outer peripheral edge, the other end of said pivotal portion having releasable locking means thereon for selectively locking the pivotal portion in circumferential alignment with the remaining portion of the ring and track when in non-discharging position and enabling the pivotal portion to swing outwardly into generally tangential relation to the track at the point of pivotal connection therewith when in discharging position.

3,185,480
FLYING TARGET WITH PYRAMIDAL ELEMENT FORMED FROM SHEET MATERIAL

Robert D. Weyman, Cincinnati, and Glenn E. Struble, Hamilton, Ohio, assignors to Diamond International Corporation, a corporation of Delaware
Filed Oct. 1, 1962, Ser. No. 227,222
13 Claims. (Cl. 273—105.4)



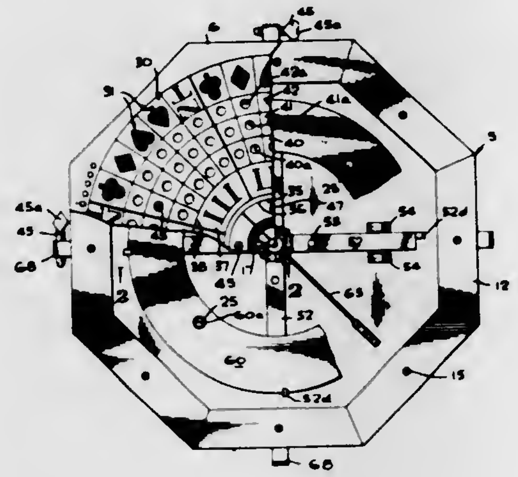
1. A flying target comprising a planar base element, a circular flange extending perpendicularly from the peripheral edge of said planar base, a mounting portion in the center of said base element defining diametrically extending crossed slots having a center hole diameter of approximately the same dimension as the width of each of said crossed slots, and a multi-planar surface target element projecting from said base in a direction opposite said peripheral flange and through said crossed slots.

3,185,481
BRIDGE BIDDING DEVICE

Frederick B. Watkins, 5311 Norwich Ave., Van Nuys, Calif.
Filed Sept. 7, 1962, Ser. No. 222,164
7 Claims. (Cl. 273—148)

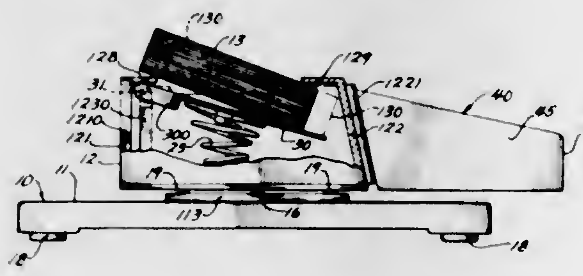
7. In a device for use by bridge players to record and visually indicate successive bid and pass declarations,

a hollow body having a top wall carrying bid and pass zone indicia and having perforations therethrough for selectively receiving bid and pass indicating pegs, and indicator pegs for selective engagement in said perforations; means within said body for automatically ejecting a pass indicating peg positioned in either of said perforations in said pass zone in response to engaging a bid indicating peg in either of said perforations in either of said bid zones, said means comprising: radially arranged levers of rectangular cross section in said body each fulcrumed between its ends against the bottom wall of said body, a continuous frame-like center member of angular plan section and round cross section positioned in said body at the inner end portions of said levers, said respective levers having backwardly bent inner end portions pivotally and slideably engaging the respective angular portions of said center member, means operative in response to upward movement of the inner end portions of said respective levers to engage and eject a pass indicating peg positioned in either of said perforations in said pass zone, and means operative in response to insertion of an indicator peg in a perforation in either of said bid zones to depress the outer end portions of said levers whereby to cause the inner end portions of said levers to swing towards said top wall.



3,185,482
PLAYING CARD HOLDER AND DISPENSER

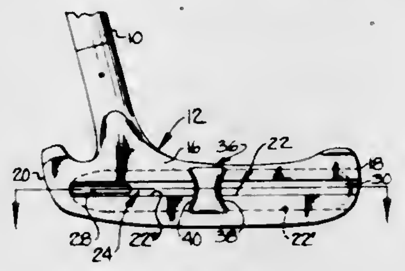
James T. Russell, 19460 Cranbrook Drive, Detroit 21, Mich.
Filed Dec. 28, 1962, Ser. No. 248,125
5 Claims. (Cl. 273—148)



1. A playing card holder and dispenser comprising
a card container including a bottom, sides and ends to accommodate playing cards in stacked relationship therein,
top rails disposed along the top of each side of said container of a width to overlie a portion of each side of cards stacked therein,
a pressure plate supporting said stack of cards including spring means in said container disposed longitudinally central of said pressure plate urging the said pressure plate upwardly with the uppermost card in said stack positioned against the bottom of said top rails,
the top of the end walls of said card container being disposed a distance below said top rails slightly greater than the thickness of one card but not as great as the thickness of two cards whereby to admit of manually withdrawing one card only from either end of said card container,
a pair of vertical guide slots, one slot in each end of said card container located under the rear top rail,
and fixed trunnions extending from opposite ends of said pressure plate at one side thereof slidable and turnable in said guide slots maintaining the said pressure plate in its proper location under a stack of cards placed in said card container and simultaneously permitting said pressure plate to be deflected at the other side thereof during placement of said cards in said container.

3,185,483
GOLFER'S TURF-REPAIRING IMPLEMENT AND CARRIER THEREFOR

Leonard H. Klynman, 117 E. Bayshore Blvd., Jacksonville, N.C.
Filed June 6, 1963, Ser. No. 286,082
6 Claims. (Cl. 273—162)



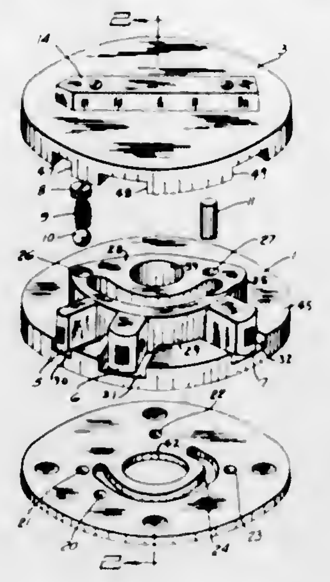
4. In combination, a turf-repairing implement adapted to be utilized by a golfer in removing ball-scars and the like from putting greens, and a carrier therefor, said carrier comprising a putter including a putter head having rear and side faces, said rear face of said putter head having a slot extending generally longitudinally thereof and opening at one end through one of said side faces of said putter head, and said turf-repairing implement comprising an elongate substantially rigid member having a sharpened leading end portion, said elongate member being adapted to be removably housed within said slot and inserted therein and removed therefrom through said one end of said slot, and abutment means carried by and extending transversely from said elongate member, said abutment means projecting through said slot rearwardly of said rear face of said putter head when said elongate member is housed within said slot, and said abutment means being engageable by a portion of a hand of the golfer to facilitate insertion and removal of said elongate member into and from said slot and to facilitate use of said implement in removing ball-scars.

3,185,484
INDEX ROTOR WITH PLURAL HEADS FOR MAGNETIC TAPE RECORDERS

Lawrence T. Burdeno, Dearborn Township, Wayne County, Mich., assignor by court order to Ramona B. Moore
Filed July 20, 1962, Ser. No. 211,186
2 Claims. (Cl. 274—4)

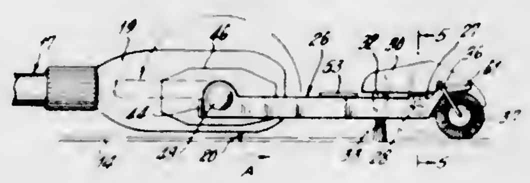
1. In a tape recording apparatus provided with a movable tape, an index rotor comprising: a base plate; a body swingably mounted on said plate adjacent said tape; a plurality of recorder heads on said body, including an erase head, a record head and a play-back head; means for selectively swinging said body to various indexed positions

for moving at least one of said heads into operative engagement with the tape, and out of engagement therewith; and, detent means for releasably retaining said body in said indexed positions.



3,185,485
TONE ARM MOUNTED DUST REMOVER FOR PHONOGRAPH RECORD

Robert D. Brubaker, Cleveland, Ohio, assignor, by mesne assignments, to Gerald J. Levy, Jackson Heights, N.Y.
Filed Sept. 26, 1962, Ser. No. 226,346
15 Claims. (Cl. 274—47)



1. A device of the class described for cleaning a phonograph record, said device comprising a body member, a brush mounted to said member, a pad of fibrous material mounted to said member and operatively positioned to ride along the surface of a record, said brush having relatively stiff fibers operatively positioned so that the tips thereof ride in the sound groove of a record while the pad is on the record surface, a support arm, said body mounted to said arm near one end thereof, and first means at the other end of said arm for mounting said device to a phonograph tone arm on a generally horizontal axis with the body member positioned forward of the tone arm free end, said first means and said support arm engageable with one another to limit movement of said support arm about said generally horizontal axis.

3,185,486
GRANULAR MATERIAL SPREADING MACHINE

Oliver A. Haley, 720 14th St. Place, Nevada, Iowa
Filed Aug. 27, 1962, Ser. No. 219,477
3 Claims. (Cl. 275—4)

1. A granular material spreading machine, comprising in combination,

a wheeled frame adapted to be pulled by a prime mover,

a granular material storage bin mounted on said frame and having an elongated longitudinally extended opening formed therein for discharging the material downwardly from the bin,

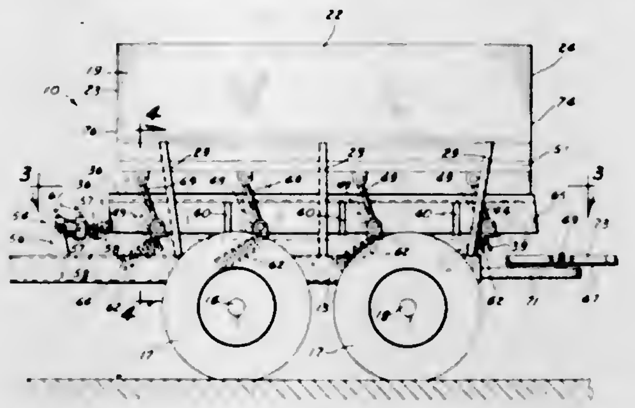
a U-shaped pan having open ends and side walls disposed on either side of said bin and having a bottom wall disposed below and extended the length of said opening,

a plurality of connecting rods pivotally connected to said bin at their upper ends and swingably suspended therefrom, the lower ends of the connecting rods pivotally connected to said pan,

resilient means secured to said pan and adapted to bias said pan toward a raised position disposed toward one end of said machine,

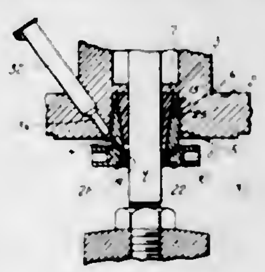
and reciprocable means pivotally connected to said pan and operable at times to move said pan in a downward direction thereby compressing said resilient means and to move said pan in an upward direction; said downward movement of said pan being retarded by said resilient means, said upward movement of said pan being accelerated by the expansion of said resilient means to discharge said material from said pan,

said material being discharged from said pan into a material spreading means on said fame.



3,185,487
HIGH PRESSURE PUMP ROD PACKING ASSEMBLY

Walter M. Haessler, Chatham, N.J., assignor, by mesne assignments, to Fire Equipment Manufacturing Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 7, 1963, Ser. No. 263,461
7 Claims. (Cl. 277—20)



1. A high pressure pump rod packing assembly comprising means forming a packing recess, a pump rod extending through the recess, a retaining nut threadedly engaged in the recess and having a tapered inner surface, a Teflon packing compressed between the retaining nut and the pump rod, silicone lubricating oil storage means, and a silicone lubricating fluid saturated fiber washer in fluid communication with the lubricating oil storage means positioned about the pump rod outwardly of the Teflon packing.

3,185,488
FACE SEAL

Dan A. Christensen, Woodside, and John H. Bradfute, Santa Clara, Calif., assignors to Federal-Mogul-Bower Bearings, Inc., Detroit, Mich., a corporation of Michigan
Filed Nov. 6, 1961, Ser. No. 150,276
1 Claim. (Cl. 277—42)

In a face seal, the combination of:

an inner rigid ring having generally cylindrical inner and outer peripheries,

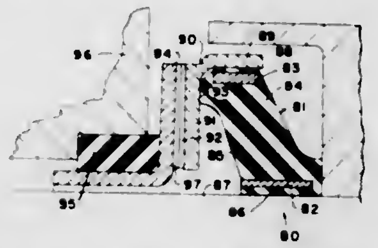
an outer rigid ring having cylindrical inner and outer peripheries coaxial with said inner ring and displaced axially therefrom,

an elastomeric diaphragm,

means adhesively bonding said diaphragm to both said rings along a substantial axial length so as to have rigidly supported inner and outer peripheries,

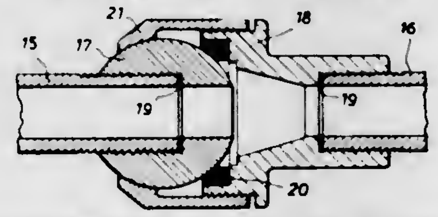
said diaphragm providing a frusto-conical web joining said rings for spring-like action resulting when said rings are urged in opposite axial directions, the elastomer in said web then being stressed in shear, and

an annular metal member having an L-shaped cross-section with a cylindrical portion around one said rigid ring and a radial flange against one side of which said web pushes and having a sealing radial end face on the other side of said radial flange backed up by said diaphragm, said rings being embedded in the elastomer of said diaphragms so that there is elastomer on both their inner and outer cylindrical peripheries, one said ring thereby having a lining for engagement with a rotating member, and the other said ring having a lining in engagement with one cylindrical surface of said annular member.



3,185,489
ANNULAR SEALING ELEMENTS

Hubert Klinger-Lohr, Modling, Austria, assignor to Istag A.G. Suhr/AG, Suhr, Aargau, Switzerland
Filed June 5, 1963, Ser. No. 285,631
12 Claims. (Cl. 277—100)

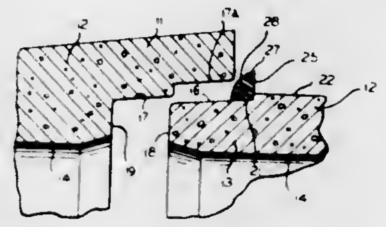


1. An annular sealing element for forming a seal between the surface portions of two opposed members wherein one of the members is fixed relative to the annular sealing element and the other has a spherical surface portion rotatable about its center relative to the annular sealing element, the annular sealing element including a major axis and comprising an annular wrapper packing of layers of a strip of resiliently bonded non-combustible fibres wound concentrically about said major axis for forming a ring including inner and outer circumferential peripheries and first and second end faces, an inner sheath ring fitted within said annular wrapper packing for abutting said inner circumferential periphery and an outer sheath ring fitted about said annular wrapper packing for abutting said outer circumferential periphery, the diameters of said inner and outer sheath rings being such that said annular wrapper packing is subjected to radial compression and the height of said inner and outer sheath rings being such that only the first and second end faces of said annular wrapper packing can contact the surface portions of the two opposed members.

3,185,490
REINFORCED GASKET FOR BELL AND SPIGOT CONCRETE CONDUIT

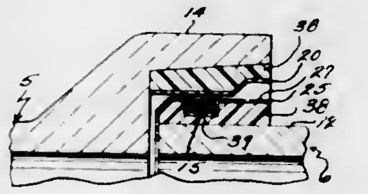
Archie R. Gagne, Naperville, Ill., assignor to Gagne Enterprises, Inc., Naperville, Ill., a corporation of Illinois
Filed May 4, 1962, Ser. No. 192,480
2 Claims. (Cl. 277—170)

1. In an improved seal for a bell and spigot joint between contiguous sections of concrete conduit of the type wherein a shoulder is formed on said spigot spaced from the end thereof, and a shoulder is provided on said bell spaced from the shoulder on said spigot when said sections are brought "home," the improvement wherein said seal comprises a molded endless reinforced elastomeric ring adapted to be stretched on said spigot, said ring having an endless elastically yieldable reinforcing member completely embedded therein and molded integra ly therewith, said ring having a generally trapezoidal cross section with its base in contact with the surface of said spigot, short and long sides on said ring extending substantially at right angles from the base thereof and coterminous with a closing side inclined with respect to said base, said elastically yieldable reinforcing member being greatly stressed in tension when said ring is moved onto the tapered surface of said spigot to hold the base of said ring tightly against the tapered surface of said spigot, with the long side of said ring in engagement with the shoulder of said spigot, said short side of said ring being in engagement with the shoulder on said bell when said sections are brought "home," the closing side of said ring moving into contact with the inner surface of said bell during the homing movement of said sections to present a thin sealing edge in contact with the inner surface of said bell.



3,185,491
SEAL FOR PIPE JOINTS

Richard H. Anderson, Dover, Ohio, assignor to The Robinson Clay Product Company, Akron, Ohio, a corporation of Maine
Filed Aug. 1, 1962, Ser. No. 213,939
14 Claims. (Cl. 277—237)



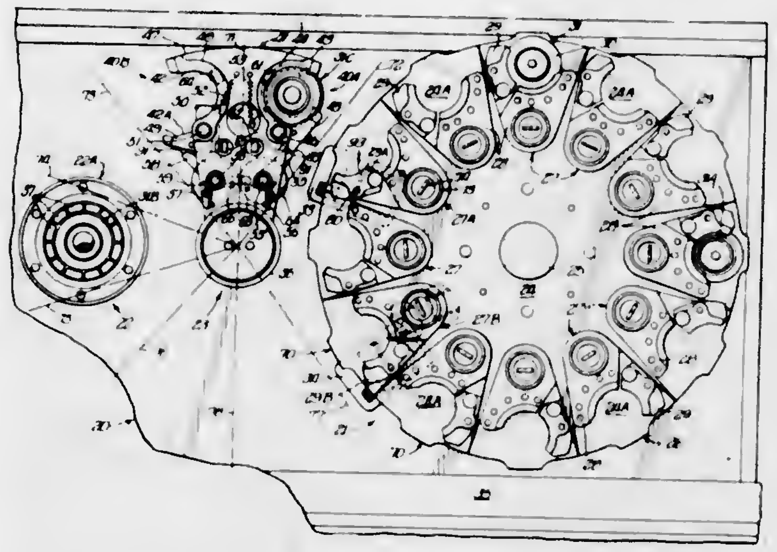
1. A seal for use between connected telescoping ends of generally cylindrical pipe sections comprising a preformed truly annular collar of thin and relatively stiff hard plastic material having a relatively high tensile strength, impact resistance and hardness, means for securing said collar in fluid-tight relationship to one of said pipe end sections generally concentric therewith, the means comprising a water resistant back-up material for said hard collar, the back-up material being softer and having less tensile strength than said collar, said collar having an annular groove opening toward the other of said telescoping pipe end sections, and a resilient annular sealing ring seated in said groove and sealingly engaging said other pipe end section.

3,185,492
TOOL HOLDING MEANS

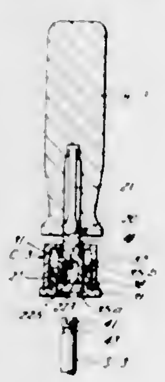
Harry R. Dziedzic, Chicago, Ill., assignor to Scully-Jones and Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 5, 1961, Ser. No. 135,810
15 Claims. (Cl. 279—44)

1. Tool holding means for a tool having a surface portion tapered toward its axis, said tool holding means com-

prising a supporting base member, a fixed tool retaining member secured to said supporting base and adapted to engage the surface portion of the tool, movable tool retaining member movably supported on said base for pivotal movement toward open and closed positions and adapted to engage the surface portion of the tool, said movable and fixed tool retaining members having tapered surface portions adapted to mate with the tapered surface of the tool and urge said tool into engagement with said supporting base member, and latching means acting between said supporting base member and said movable tool retaining member to hold the latter in closed position, said latching means comprising a spring loaded plunger carried by one of said latter two members and a recess in the other of said latter two members.

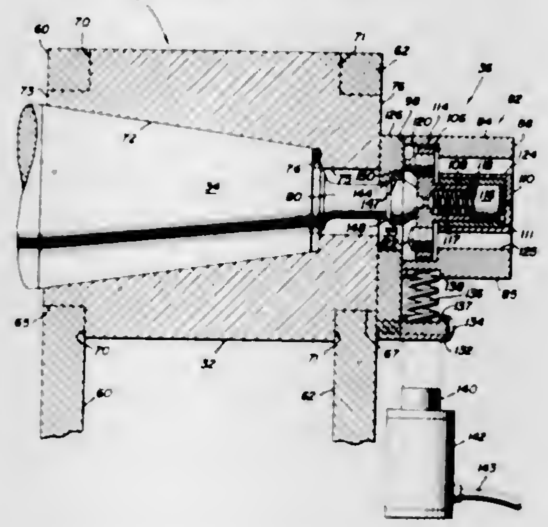


3,185,493
QUICK-CHANGE CHUCK
Earl L. Chadwick, P.O. Box 4100, Portland 8, Oreg.
Filed Mar. 14, 1962, Ser. No. 179,597
9 Claims. (Cl. 279—82)



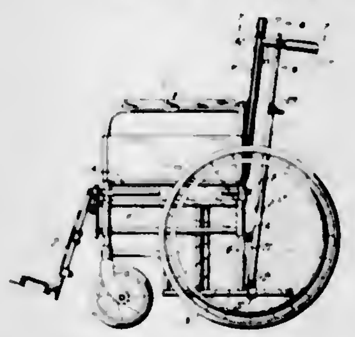
1. A new and improved chuck for tools, comprising
(*a*) a tool shank-receiving means for receiving a shank of a tool or the like,
(*b*) said shank-receiving means having means therewith for preventing relative rotation between said means and the tool shank received thereby,
(*c*) lock means for locking the tool shank to said shank-receiving means for preventing relative longitudinal movement therebetween,
(*d*) release means for releasing said lock means for longitudinally moving the tool shank relative to said tool shank-receiving means to thereby release the tool from the chuck,
(*e*) a handle means connected to the upper end of said tool shank-receiving means,
(*f*) a cylinder having a releasable connection with said release means and positioned in contact with said handle means, and
(*g*) means associated with said release means and said cylinder for releasing said release means in a direction away from said handle means while said handle means remains connected to said tool shank-receiving means.

3,185,494
LATCH MECHANISM
Harry R. Dziedzic, Glenview, and Edward M. Alisauskis, Berwyn, Ill., assignors to Scully-Anthony Corporation, La Grange, Ill., a corporation of Illinois
Filed May 25, 1962, Ser. No. 197,745
12 Claims. (Cl. 279—89)



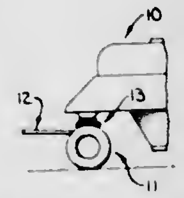
1. For use in conjunction with an article storage member for holding articles of a type having a rearwardly projecting portion thereon adapted to be engaged by latching means, the improvement comprising, in combination, a socket adapted to receive an article to be held, said socket having an opening to permit a projecting portion on said article to extend rearwardly therethrough, latching means positioned at the rear of said socket for cooperation with said projecting portion, said latching means including a clamp member movable to a closed position to engage said projecting portion and hold an article in said socket and movable to an open position to release said article, spring means for biasing said clamp member toward its closed position, and a trip member adapted when in a first position to hold said clamp member open and having a portion in alignment with said socket opening thereby being adapted to be engaged by the projecting portion on an article inserted in said socket so as to move the trip member to a second position to release said clamp member and permit the latter to be moved to closed position by said spring means.

3,185,495
WHEEL CHAIR WITH RECLINING BACKREST AND MOVABLE AXLE ASSOCIATED THEREWITH
William J. Pivacek, Elyria, Ohio, assignor to Mobilaid, Incorporated, Elyria, Ohio, a corporation of Ohio
Filed Dec. 18, 1963, Ser. No. 331,503
13 Claims. (Cl. 280—34)



1. A wheel chair comprising a frame, a seat, a reclinable backrest pivotally connected to the frame adjacent the rearward end of the seat for swinging motion about a transverse axis extending across the back of the chair, a pair of wheels having movable axles parallel with said axis and disposed subjacent said backrest, and a pair of struts having their upper ends proximate said backrest and having their lower ends pivotally connected to said frame for swinging movement about aligned axes below and parallel with said transverse axis, each of said struts carrying one of said wheel axles between said upper and lower ends thereof, and means for swinging said struts, backrest and axles together.

3,185,496
FIFTH WHEEL ASSEMBLY
Henry C. Harbers, Pasadena, Calif., assignor to Western Unit Corporation, a corporation of California
Filed Feb. 4, 1963, Ser. No. 256,015
12 Claims. (Cl. 280—125)

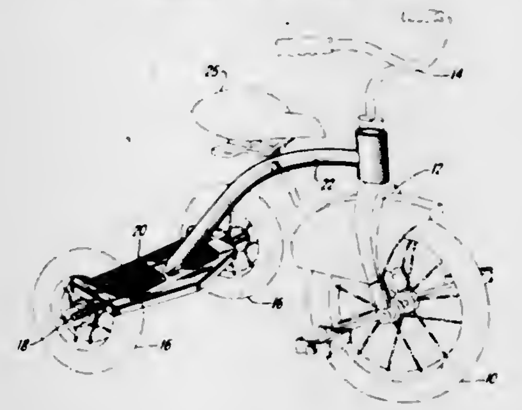


1. A fifth wheel assembly for use beneath the forward end of a trailer or like vehicle and formed primarily of structural steel components welded together, said assembly having a rigid main frame including a pair of horizontally disposed parallel structural steel members adapted to extend transversely of the vehicle and to be spaced one forwardly and one rearwardly of the axis of said fifth wheel assembly, a plurality of rigid strut tubes and including means for securing the outer ends of each to the outer ends of said pair of parallel members, said strut tubes converging inwardly and upwardly toward the central area of said frame, first and second large diameter concentric rigid tubes disposed vertically between the upper ends of said upwardly converging strut tubes and each having radially disposed thrust bearing rings attached to the exterior of one and projecting inwardly from the interior of the other of said concentric tubes, the first one of said rigid tubes being welded to the upper ends of said strut tubes, and resilient buffer means sandwiched between said concentric rigid tubes in an area below and in close proximity to said thrust bearing rings and effective to restrict movement of said tubes relative to one another, and adjustable means for placing said resilient buffer means under compression to an extent found desirable to compensate for wear of the adjacent parts of said assembly.

3,185,497
AUTOMOBILE BACK-REST
Charles Lagacé, St. Quentin, New Brunswick, Canada
Filed Sept. 23, 1963, Ser. No. 310,774
4 Claims. (Cl. 280—150)

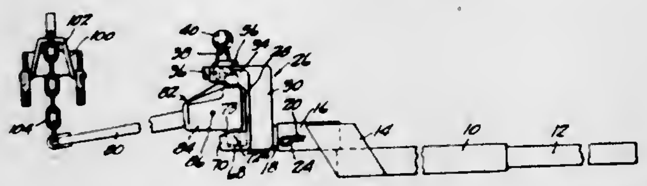
1. A cushion assembly for the front seat of a motor vehicle, said assembly adapted to be positioned on the back of said seat and comprising three separate cushion elements, each of elongated shape, one element adapted to be positioned substantially horizontally at the top of said back to form a head-rest and the other two elements adapted to be positioned vertically in spaced-apart position underneath said head-rest to form inner and outer legs engageable with the sides of the user's back, inner and outer straps surrounding said seat back in spaced-apart position, said head-rest extending across and adjustably secured to said spaced straps at the ends thereof, connection means connecting the central portion of said head-rest to the roof of said motor vehicle, said inner leg attached to said inner strap and said outer leg attached to the door of the motor vehicle in a position to take its operative position upon closing of said door, said connection means for connecting said head-rest to the roof of the motor vehicle comprising an adjustable strap attached at one end to the center part of said head-rest and having a hook at its free end, a bar provided with a plurality of spaced holes secured to the roof of said motor vehicle longitudinally thereof and above said seat back, and a rider encircling said bar and having a stud engageable with anyone of said bar holes, said hook removably attached to said rider.

3,185,498
TRICYCLE FRAME
Carter Edwin Quisenberry, Olney, Ill., assignor to American Machine and Foundry Company, a corporation of New Jersey
Filed June 7, 1963, Ser. No. 286,249
7 Claims. (Cl. 280—291)



1. In a tricycle frame, a rear axle, a backbone coupled at one end to the mid-point of said axle, a step platform fixed to said axle and provided with an aperture to receive the backbone therethrough, said end of the backbone being bifurcated and straddling the axle, means releasably clamping the bifurcated backbone to said axle, a U-shaped yoke straddling the length of said axle, the end portions of said yoke being connected to the axle, and means releasably clamping the mid-point of said yoke to said backbone.

3,185,499
LOAD TRANSFER HITCH FOR VEHICLES
Terrell J. Reese, 4013 Cassopolis St., Elkhart, Ind.
Filed Apr. 16, 1963, Ser. No. 273,478
7 Claims. (Cl. 280—406)



1. In a trailer hitch of the type having a rigid hitchball bracket having a pair of sockets and a pair of longitudinally grooved parts provided with shoulders and each spaced vertically from one of said sockets,

a pair of cantilever spring bars each having a pair of vertically aligned pivot pins seating in substantially vertically aligned pocket and grooved parts, and

means for suspending the free end of each spring bar in flexed condition with one pin bearing against said shoulder, the improvement comprising

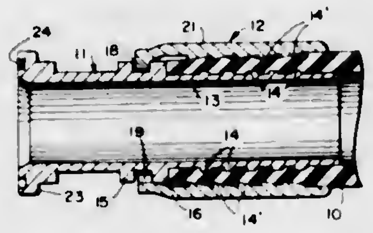
a pivoted latch carried by each of said longitudinally grooved parts and normally positioned spaced from said pin and shoulder to retain a spring pivot pin therein,

said latch being pivotal toward said shoulder to accommodate movement of said pin therepast in said grooved part to and from operative pivot position, and a handle on said latch engaging said bracket to prevent pivoting of said latch from normal position away from said shoulder.

3,185,500
PRESSED-ON TUBE COUPLING HAVING DISASSEMBLY MEANS

Roger R. Luther, Zion, Ill., assignor to Anchor Coupling Company, Inc., Libertyville, Ill., a corporation of Illinois

Filed Nov. 5, 1962, Ser. No. 235,240
4 Claims. (Cl. 285—4)



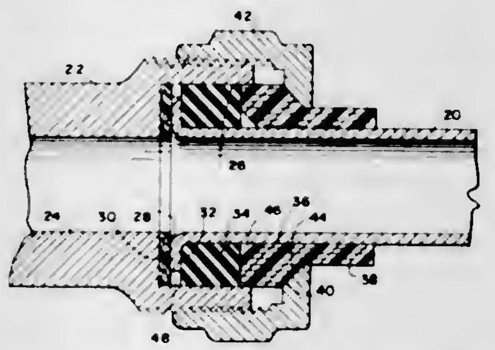
1. A coupling comprising a hollow coupling insert mounted inside an end of a tube, said insert having beyond the end of said tube an annular peripheral groove in its outer wall, the surfaces adjacent said groove having a substantially equal outer diameter, a hollow, annular coupling sleeve about said end of said tube, the wall of said sleeve being deformed permanently about said end of said tube and tightly clamping said end of said tube between said insert and said sleeve, an integral, annular, inwardly extending lip on said sleeve, said lip having an inner edge, said lip being deformed into said groove in permanent seating relationship therewith, said lip having an axial thickness substantially equal to the axial width of said groove, and said inner edge of said lip having at least two angularly-spaced notches, the radii from the longitudinal axis of said coupling to said inner edge at the respective, deepest points of said notches being at least as large as the radius of the outer edges of said groove whereby said sleeve can be split longitudinally by sawing along lines respectively intersecting said notches without sawing into said insert when said coupling is to be dismantled.

3,185,501
ELECTRICAL INSULATING PIPE COUPLING

Walter J. Bowan and Carl E. Floren, Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois

Filed Apr. 12, 1961, Ser. No. 102,434
5 Claims. (Cl. 285—52)

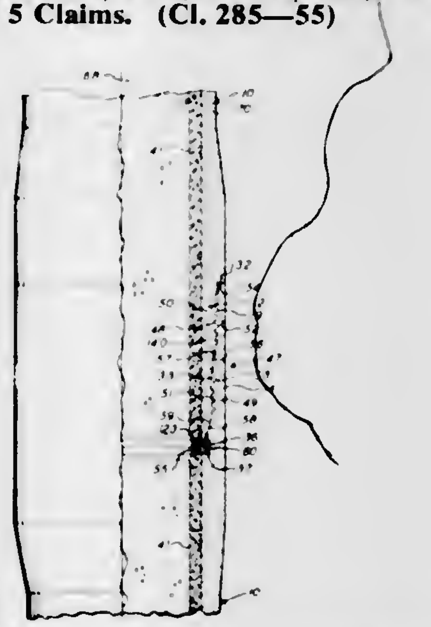
1. In a pipe joint, the combination comprising: a hollow metal body having a terminal portion provided with an annular packing recess terminating at its inner end in an annular shoulder surrounding a concentric flow passage, the sidewall of said recess being substantially cylindrical; a relatively-thin substantially-rigid washer of electrical insulating material adapted to be disposed in said recess in engagement with said shoulder to form an abutment for a circumferential flange, of smaller diameter than said recess, on the terminal end of a metal pipe adapted to extend into said recess for coupling to said body; a resilient deformable annular gasket member of electrical insulating material adapted to be disposed in said recess, said gasket member having an inner annular end surface adapted to engage the outer face of the pipe flange, an outer annular end surface, an interior substantially cylindrical surface adapted to snugly embrace the pipe, and an exterior substantially cylindrical surface adapted to engage said recess sidewall; a substantially rigid annular follower member of electrical insulating material having a substantially cylindrical exterior surface of slightly smaller diameter than said recess, a substantially cylindrical interior surface adapted to closely fit the pipe, an inner annular end surface, and an exteriorly reduced outer substantially cylindrical extension forming an outwardly-facing frusto-conical annular shoulder, said follower member being adapted to extend into said recess into compressing engagement with said gasket member, the inner edge of at least one of the opposed annular end surfaces of said members having a concentric annular recess therein having a major radial dimension at least of the order of the radial thickness of said extension so as to provide at least one annular area between said opposed surfaces where the latter will be out of contact with each other before said gasket member is compressed by said follower and a contact area between the remaining portions of said opposed surfaces which is substantially co-extensive with the axial projection of said frusto-conical shoulder; and urging means engaged with said body, said urging means having a frusto-conical surface engaging said frusto-conical shoulder for urging said follower member against said gasket member whereby axial shearing forces on said follower member are reduced.



3,185,502
LINED AND SEALED TUBING JOINT

Melvin D. MacArthur, Glendale, Calif., assignor to Hydril Company, Los Angeles, Calif., a corporation of Ohio

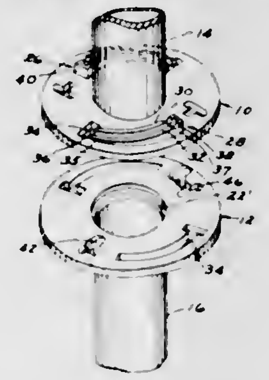
Filed Dec. 26, 1961, Ser. No. 161,970
5 Claims. (Cl. 285—55)



1. An oil well pipe string joint comprising coaxial pin and box members respectively including external and internal threads, said pin member being screwed longitudinally forwardly into the box member to interengage said threads for holding the pipes against separation, said pin member having at its forward terminal a forwardly facing annular shoulder, said box member having an annular shoulder facing rearwardly toward said pin shoulder but spaced forwardly thereof, corrosion resistant abrasive material coating said pin and box member bores proximate said shoulders, and means including a pair of annularly continuous rings of corrosion resistant material compressed between said shoulders, one ring contacting the pin shoulder and the other ring contacting the box shoulder, said rings being relatively rotatable in response to screwing and unscrewing of the pin member in the box member, the box member forming an annular recess opening inwardly to be bounded by said pin and box member shoulders, both rings being retained in said recess against dislodgment therefrom upon unscrewing of the pin member and the abrasive coating thereon to separate from said one ring, and said means and coating material forming a corrosion resistant barrier preventing corrosive fluid access to said threads.

3,185,503
UNIVERSAL HOSE COUPLER

Kenneth J. Angle, Mount Clemens, Mich.
(3482 Chestnut Drive, Doraville, Ga.)
Filed Oct. 25, 1962, Ser. No. 233,053
1 Claim. (Cl. 285—74)

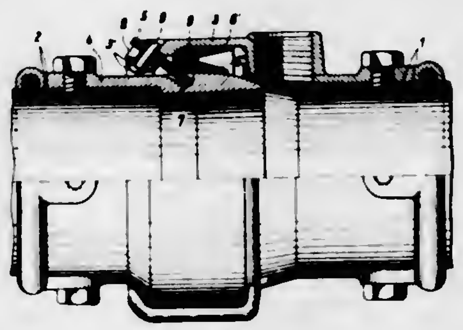


A conduit coupling comprising a pair of substantially identical generally flat relatively thin coupling disks which are arranged on opposite ends of a pair of conduit sections, each of said disks having the same uniform thickness, said disks each being symmetrically constructed and having inner and outer surfaces which are parallel, with said inner surfaces facing one another, two pairs of circumferentially extending closely spaced integral cam tracks struck out of each of said disks and turned outwardly from the outer surface thereof and arranged substantially perpendicular thereto, each track being of uniform thickness, the tracks of each pair being spaced radially and substantially uniformly apart to define an elongated circumferentially extending opening which extends entirely through both surfaces of the disk, said two pairs of tracks on each disk each having a circumferential extent of approximately 90°, each pair of cam tracks progressively increasing in depth from one end to the other end thereof, transversely extending wall means connecting each pair of cam tracks adjacent said other end thereof, said one end of each pair of cam tracks terminating adjacent a radially extending elongated slot which intersects the elongated opening between the last-mentioned tracks, said slot extending through both surfaces of the disk, radially extending relatively shallow groove means formed in the top surface of each pair of cam tracks adjacent said wall means, and two radially extending tabs each of substantially T-shaped configuration and uniform thickness struck out of each of said disks for cooperation with the two pairs of cam tracks in the other disk and leaving corresponding T-shaped openings in the disk to which the tabs are connected, said tabs each including an arm connected on the inner end thereof to the disk and arranged substantially perpendicular thereto and a radially extending head provided on the outer end of said arm forming on the ends thereof a pair of cam portions, said head being arranged substantially parallel to the disk to which the tab is connected and having a length greater than the width of the corresponding elongated opening provided in the other disk and slightly less than the length of the corresponding slot in the other disk, each of the tabs on each disk being circumferentially spaced from the other end of the adjacent cam tracks on the same disk and insertable through the corresponding slot provided in the other disk and moved circumferentially upon relative rotation of said disks through the corresponding elongated opening to a latched position, with the cam portions thereon in contact with the top surface of the corresponding cam tracks of the other disk until said cam portions are seated in latching position in the corresponding groove means, oppositely facing annular recesses in the inner surfaces of said disks defining an annular chamber for the reception of a washer, said washer being placed under compression upon the coupling of said disks to prevent leakage of fluid between the inner surfaces of said disks.

3,185,504
COUPLING ARRANGEMENT

Heinrich Perrot, Calw-Althengstett, and Emil Schucker, Calw, Germany, assignors to Perrot-Regnerbau G.m.b.H. & Co., Calw, Wurttemberg, Germany

Filed July 9, 1962, Ser. No. 208,481
Claims priority, application Germany, July 19, 1961, P 27,553
4 Claims. (Cl. 285—105)



1. A coupling between two conduits comprising, in combination:

(*a*) a female socket member connectible to one of the two conduits;

(*b*) a sealing ring arranged interiorly of said socket member adjacent one end thereof;

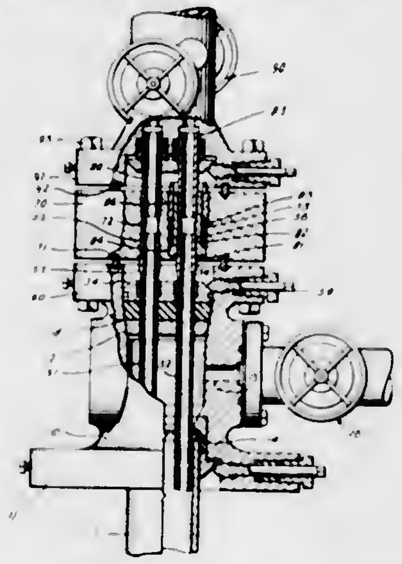
(*c*) at least two independent locking elements mounted in said socket member and distributed equal angular distances about the inner periphery of said socket member and means mounting each of said locking elements to said socket member for limited pivotal movement with respect thereto, each locking element having a substantially radially inwardly extending portion engaged by said sealing ring; and

(*d*) a male member connectible to the other of the two conduits and insertable into said socket member, said male member having, adjacent one end thereof, an annular groove which lies in a plane forming a right angle with the axis of the coupling, said groove being divided into sectors separated from each other by bridge portions, there being for each locking element a complementarily disposed groove sector into which sector each respective locking element is, when said coupling is in coupled condition, pressed initially by the inherent resiliency of said sealing ring;

(*e*) the outer diameter of said male member being smaller than the inside diameter of the outermost end of said socket member thereby to form an annular gap between said socket member and said male member to permit axial misalignment therebetween and to impart flexibility to said coupling.

3,185,505
DUAL SUSPENSION AND SEAL

C P Lanmon II, Galveston County, Tex., assignor, by mesne assignments, to McEvoy Company, Houston, Tex., a corporation of Texas
Original application Apr. 4, 1955, Ser. No. 498,791. Divided and this application Mar. 24, 1961, Ser. No. 126,729
4 Claims. (Cl. 285—137)

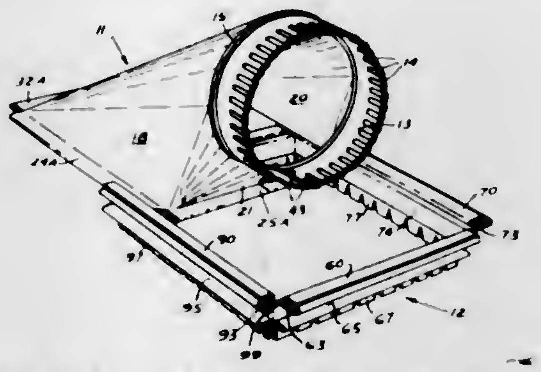


1. Well completion apparatus, comprising a well head having a vertical opening therethrough, a seat around the sides of said opening for supporting an intermediate hanger, an intermediate hanger disposed in said vertical opening and supported on said seat, said intermediate hanger having a pair of vertical side-by-side tubing passages therethrough and having a vertical split thereacross through said tubing passages whereby said intermediate hanger may be placed about a pair of tubing strings having outwardly upset upper ends with said tubing strings in said tubing passages from laterally of said tubing strings disposed parallelly side-by-side in a well whereby said tubing strings may be lowered to rest said upset upper ends of the tubing strings on said intermediate hanger, a hanger body having vertical bores therein adapted to axially align with said tubing passages supported upon said well head and one of said vertical bores being adapted for direct connection with one of said tubing strings and the other of said vertical bores being adapted for indirect connection to the other of said tubing strings, whereby one of said tubing strings may be lifted to elevate its upset upper end from its position of rest on said intermediate hanger and to directly connect said hanger body thereto after which the other tubing string may be lifted through its related bore to elevate its upset upper end from its position of rest on said intermediate hanger and to be thereafter indirectly connected to said hanger body.

3,185,506
SHEET METAL DUCT

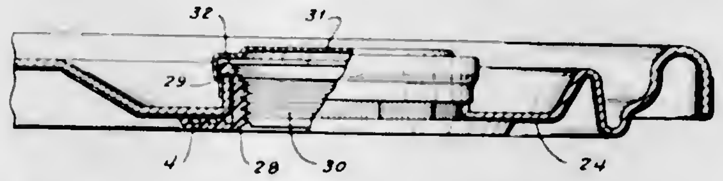
Joseph Szlashta, 220 Power Road, Pawtucket, R.I.
Filed Aug. 16, 1963, Ser. No. 302,658
4 Claims. (Cl. 285—183)

1. A sheet metal duct consisting of a hood slidably mounted in a stack adapter, said hood consisting of a body of pre-cut flat sheet of material folded to provide a bead and a heel having a rear edge, adjacent cheeks having neck portions, and side portions and said neck portions having front portions, said adjacent cheeks being parallel to each other and at approximately ninety degrees to said heel, said neck portions being approximately ninety degrees to said adjacent cheeks, a collar provided with an escalloped edge, means fastening said collar and said neck portions together, said rear edge being folded upon itself to form a guard strip, said side portions being folded upon themselves to form opposite and parallel side rails, and said front portions being folded upon themselves to form a front rail, said stack adapter consisting of a pre-cut flat sheet of material folded to provide a rectangular shaped member having saw shaped teeth along a bottom edge, a front pocket and two parallel side pockets, said opposite and parallel side rails being slidably mounted in said two parallel side pockets, said front rail engaging and disengaging said front pocket and said guard rail overlying a portion of said rectangular shaped member.



3,185,507
CLOSURE FLANGE

Jeremiah Laurizio, New Providence, N.J., assignor to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 27, 1962, Ser. No. 190,598
6 Claims. (Cl. 285—203)

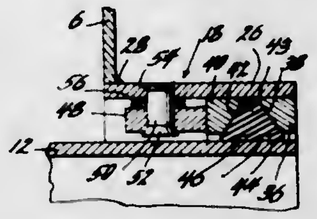


1. In container construction, a container wall opening adapted to receive a yieldable resilient, one-piece, nonmetallic bushing formed with a substantially cylindrical upstanding neck, said neck having a polygonal exterior surface configuration and a cylindrical internally threaded opening therethrough for the reception of a closure plug, an annular flange having upper and lower surface portions extending laterally away from said neck at an outward and upward incline from the lower end thereof, a plurality of spaced annular sealing fingers extending upwardly from said flange upper surface portion, and a retaining lip extending laterally outwardly around the other end of said neck.

3,185,508
WEDGE SEAL COUPLING

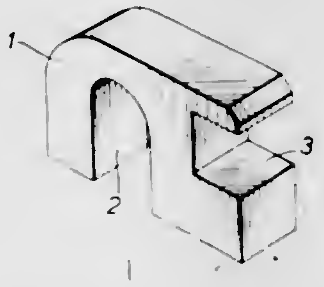
Emil A. Bender, P.O. Box 52, Bakersfield, Calif.
Filed Aug. 24, 1961, Ser. No. 133,722
2 Claims. (Cl. 285—341)

1. A pipe coupling comprising a tubular sleeve, a tubular insert received concentrically within said sleeve with substantial clearance between said insert and said sleeve, a first ring inwardly secured within said sleeve and radially spaced from said insert, a second ring slidably received in said sleeve, said rings having opposed, slant faces which diverge progressively along lines extending radially inwardly of said sleeve, a solid resilient ring of rubbery material located between said rings and having slant faces complementary to the slant faces of said first and second rings, whereby to be deformed radially inwardly upon approach of said second ring to said first ring, at least two radially inwardly extending pins secured to said sleeve and disposed symmetrically thereabout, a cam eccentrically pivoted on each pin, and having a plurality of self-locking faces adapted to contact said second ring, said cams lying wholly within said sleeve, between said sleeve and insert, one of said faces in contact with said ring when said resilient ring is either deformed or undeformed, said cams being located on one end, said sleeve to permit ready access of operating means for said cams for selective engagement of said self-locking faces with said second ring.



3,185,509
CLAMPS

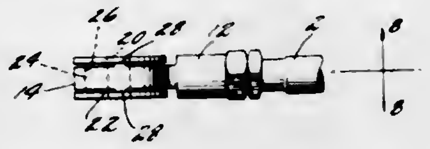
Ronald Andrew George Welsher, Abingdon, Leslie William Carter, Harwell, and David James Salt, Wantage, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed July 23, 1962, Ser. No. 211,817
Claims priority, application Great Britain, Aug. 1, 1961, 27,963/61
3 Claims. (Cl. 287—54)



1. Clamp means for holding two rods at right angles, said clamp means comprising first and second clamp members, each clamp member comprising a block, said block having two side faces in substantially parallel alignment and at least one edge face perpendicular to said side faces extending around said block, means defining a U-channel extending transversely through the block perpendicular to said side faces thereof and defining a first opening in the edge face, means for gripping a rod within the U-channel, means defining a rectangular channel extending transversely through said block perpendicular to said side faces and defining a second opening in the edge face separate from said first opening, said rectangular channel being defined by a bottom wall and side walls perpendicular to said bottom wall, said bottom wall being spaced from said U-channel by a distance at least as great as the distance from said bottom wall to said second opening, and the spacing between the side walls being equal to the width of the bottom wall between the side faces of the block, whereby said first and second clamp members may be disposed with their respective side faces perpendicular by the intercoupling of respective rectangular channels, the block being of a sufficiently resilient material to allow a frictional interengaging of the two clamp members, thereby securing rods within the U-channels perpendicular one to the other.

3,185,510
LINKAGE INTERCONNECTION

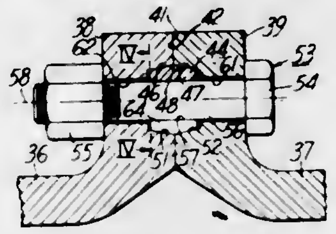
Ralph A. Huckins, Coventry, and Horace A. May, Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 27, 1963, Ser. No. 261,372
1 Claim. (Cl. 287—100)



A pivotal connection between two rods located approximately at right angles to each other, including a substantially annular flat disc element on the end of one rod, a bufurcated element including a pair of flat discs on the end of the other rod, said pair of discs being spaced apart to receive between them said first flat disc element, the spacing of said pair of discs being greater than the thickness of said disc element to provide clearance therebetween, a part-spherical bearing positioned in said first flat disc element, the latter having a part-spherical internal surface engaging with said bearing, a pin extending through said discs and through said bearing element to hold said bearing in position between said pair of discs, said bearing providing for pivotal movement of said flat disc element about the axis of said bearing, and a pair of projections located on each side of said flat disc element and projecting into contact with said pair of flat discs, each of said projections extending radially outwardly with respect to said pin, and said projections of each pair being diametrically opposite each other with respect to said pin in a plane including the axis of said bifurcated element to limit relative movement between said rods in a selected direction.

3,185,511
C-FRAME FOR TRACTOR MOUNTED TOOL

Joseph J. Wochner and Harry H. Washbond, Springfield, Ill., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 14, 1961, Ser. No. 159,401
2 Claims. (Cl. 287—129)



1. In a C-frame for a tractor mounted tool, the combination comprising:

first and second parts of said C-frame terminating in outwardly and radially extending flanges presenting confronting flat faces, respectively,

inwardly converging tapered surfaces on said flanges, respectively, forming a plurality of pairs of registering recesses in said flanges,

a double tapered resilient bushing of hard material in each pair of registering recesses having
  conically formed surfaces of the same taper as said tapered surfaces tapering in opposite axial directions away from a central portion thereof to decreasing diameters,
  a central opening in coaxial relation to said conically formed surfaces, and
  circumferentially spaced and longitudinally extending end surfaces on said bushing in confronting relation to one another and defining a longi-

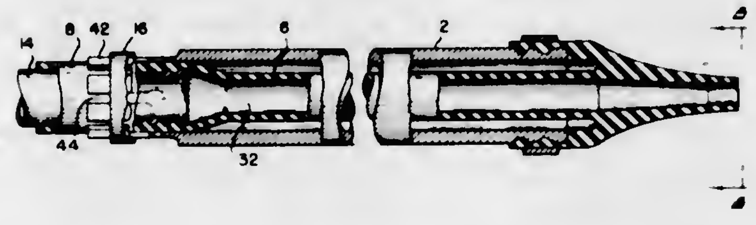
tudinal gap permitting radial constriction of said bushing and

fastening means including a fastening member with a cylindrical portion extending through said opening, said fastening means urging said flanges toward one another thereby holding said conically formed surfaces of said bushing in full engagement with said tapered surfaces of said flanges and said bushing in gripping engagement with said cylindrical portion of said fastening member,

said bushing and fastening member preventing relative rotary movement and relative radial movement between said first and second parts.

3,185,512
SAND DELIVERY NOZZLE ASSEMBLY

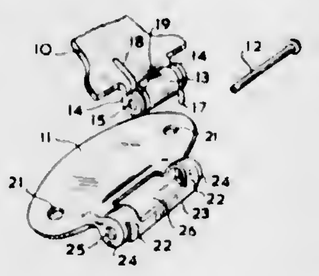
Harry A. Kilgore, Elmhurst, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,542
11 Claims. (Cl. 291—46)



1. A sand delivery nozzle assembly comprising a rigid guide member, a nozzle member having a resilient sleeve member connected thereto, said sleeve member extending through said guide member in spaced relation to form an annular chamber therebetween, first fastening means sealingly securing the end of said sleeve remote from said nozzle member to said guide member and a supply conduit, and second fastening means sealingly securing said nozzle to said guide member so that said resilient sleeve member may be expanded to dislodge flow obstructing particles from within said sleeve.

3,185,513
LUGGAGE FITTINGS

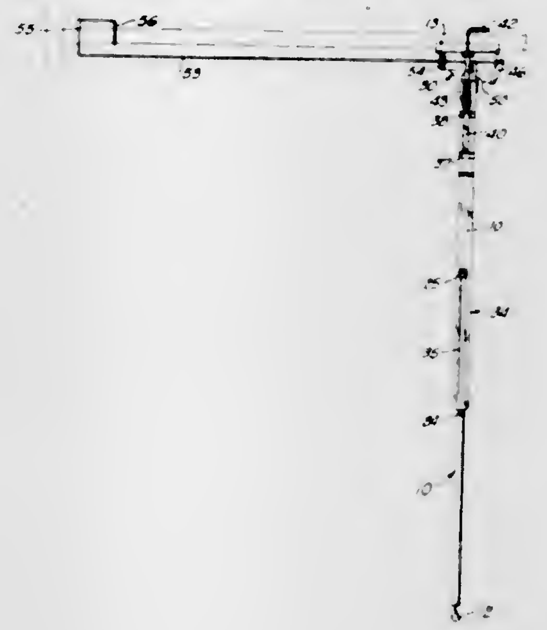
William E. Chance, Hockley, Birmingham, England, assignor to C. W. Cheney & Son Limited, Hockley, Birmingham, England, a British company
Filed Oct. 10, 1962, Ser. No. 229,705
Claims priority, application Great Britain, Aug. 25, 1962, 32,735/62
3 Claims. (Cl. 292—281)



1. A hasp fitting comprising an attachment plate, a loop plate, a spring and a pivot pin; said attachment plate having a pair of ears united by a bar, the ears, plate and bar defining a window, said ears having co-axial apertures; said loop plate comprising a lug having a portion bent into a cylindrical knuckle which houses the spring and having integral tongues disposed parallel to one another and spaced from respective axial ends of the knuckle; said spring being a helical torsion spring having tangentially extending tails each of which extends through a space between the knuckle and tongues; said loop plate being disposed with its knuckle and said tongues extending through said window and with one of the tails abutting the loop plate and the other abutting the bar, said pin extending through the knuckle tongues and spring and through said co-axial apertures in the attachment plate ears.

3,185,514
AUTOMATIC FLUORESCENT TUBE CHANGER

Charles E. Foster, 308 E. Washington Blvd., Los Angeles, Calif.
Filed Feb. 4, 1964, Ser. No. 342,562
7 Claims. (Cl. 294—20)



1. An automatic changer for fluorescent light tubes comprising:

an elongated tube,

a bulb head disposed adjacent to the top of said tube and extending transversely thereto, said bulb head being in communication with said tube,

a rod slidably mounted within said tube,

a vacuum producing plunger carried by said rod,

a control member mounted adjacent the top of said tube,

a slide plate extending parallel to said tube, said slide plate and tube each having an elongated longitudinal slot, said slots being aligned,

a knob carried by said rod and slidably mounted within each of said slots, three spaced outwardly directed flanges carried by said slide plate, a vertically directed flat holding bar extending upwardly from the bottom flange through circuit openings in the two flanges thereabove,

a coil spring surrounding said holding bar between the upper flange and a pin carried by said bar disposed adjacent to the center flange,

a substantially ninety degree twisted portion formed in said holding bar above the upper flange,

a right angular gripping portion formed at the upper end of said holding bar above said twisted portion,

a **Z**-shaped cam member on said control member adapted to engage said twisted portion to rotate said holding bar and gripping portion,

an **L**-shaped arm pivotally mounted at its midportion on said control member,

an elongated removal rod attached at one end thereof to one end of said **L**-shaped arm, said removal rod extending substantially transversely to said tube,

spring means normally urging said removal rod toward retracted position,

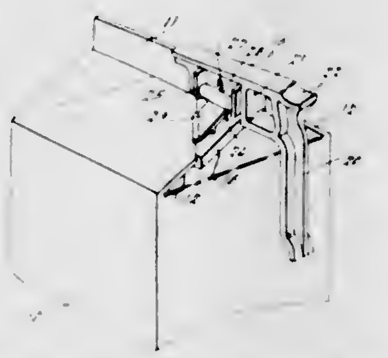
a pin carried by the other end of said **L**-shaped arm,

a short longitudinal slot formed in the upper end of said slide plate, said pin being slidably mounted in said short longitudinal slot,

said rod adapted upon downward movement thereof to sequentially move said plunger downwardly to form a vacuum within said bulb head to grip the fluorescent light tube, then move said slide plate and holding bar downwardly to rotate said gripping portion substantially ninety degrees across the top of the fluorescent light tube, and then move said slide plate further downwardly to pivot said **L**-shaped arm and move said removal rod laterally with respect to said bulb head to move said fluorescent light tube laterally for removal or installation.

3,185,515
HANDLES

Arnold H. Marler, 8 Wendell Ave., Weston, Ontario, Canada
Filed Jan. 8, 1963, Ser. No. 250,117
3 Claims. (Cl. 294—27)



1. A handle device for milk cartons and the like of different sizes having a top fold and triangular end folds, said handle device comprising, a body portion formed with an elongated upper channel embracing said top fold throughout, a substantial portion thereof, a pair of oppositely extending, angularly arranged channel-shaped portions embracing said triangular end folds, a handle portion depending from one end of said body portion, and a clamping device rotatably mounted on one side of said upper channel of the body portion, said clamping device comprising a locking cam extending through an aperture in said upper channel, and a finger piece connected to said clamping device for rotating the same to move said locking cam into engagement with said top fold to secure said handle device to said carton.

3,185,516
DROP BOTTOM SHIPPING CONTAINER

Carl E. Johansson, Cleveland, Ohio, assignor to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 6, 1963, Ser. No. 256,654
11 Claims. (Cl. 294—69)

1. A container for transporting bulk materials, said container having side and end walls defining a central cavity,

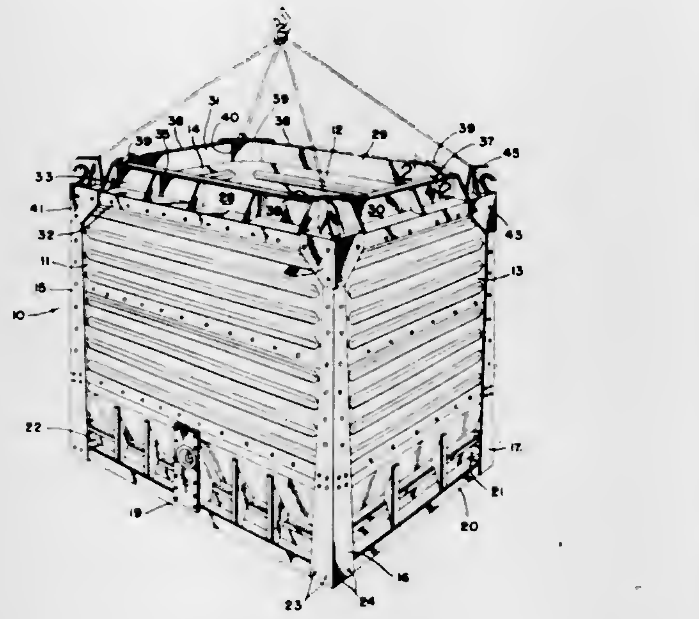
releasable closure means for closing the lower portion of said central cavity,

and vertically extending angle members disposed at the corners of said container and connecting the adjacent and vertical margins of said side and end walls, the legs of each of said vertical angle members being of a longitudinally tapering dimension, with the upper leg dimension being less than the lower leg dimension,

horizontally disposed angle members interconnecting said vertically extending angle members at the bottom thereof, gusset means secured to adjacent ends of said horizontal angle members,

a plurality of **Z**-shaped members, each having a vertically disposed lower leg and a vertically disposed upper leg, each of said vertically disposed lower legs of each of said **Z**-shaped members being secured to the upper marginal portion of one of said side or end walls and extending substantially the full width thereof, each of said vertically disposed upper legs of each of said **Z**-shaped members being of a length less than the extent of its respective side or end wall and disposed centrally thereof,

recess forming means secured to adjacent ends of said vertically disposed upper legs,

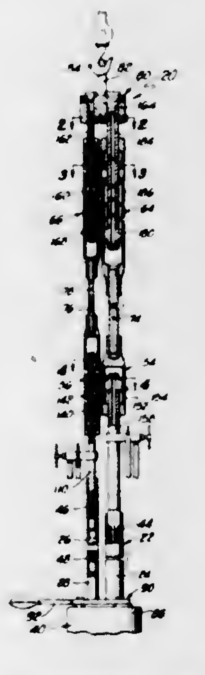


corner gusset means disposed in each of said recesses and interconnecting said **Z**-shaped members and said vertically extending angle members,

hook means disposed in each of said recesses and secured to said corner gusset means, said hook means being of a height less than the height of said vertically disposed upper legs and being disposed entirely within the outer dimensions of said container.

3,185,517
APPARATUS FOR SIMULTANEOUSLY RUNNING MULTIPLE TUBING STRINGS

Clarence J. Coberly, San Marino, Calif., assignor to Kobe, Inc., Huntington Park, Calif., a corporation of California
Filed May 16, 1961, Ser. No. 110,555
6 Claims. (Cl. 294—87)



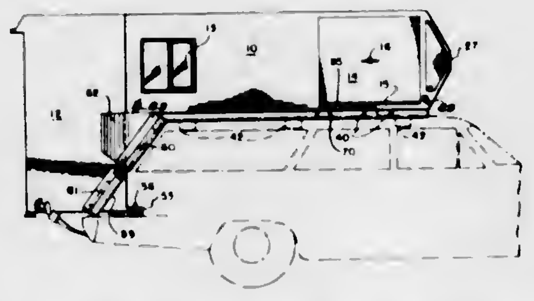
1. In an apparatus for running into or out of a well a tubing system including tubing strings which are in side-by-side relation, which are interconnected at their lower

ends, and each of which carries a part of the weight of the tubing system, the combination of:

- (*a*) tubing gripping uniits including tubing grips respectively engageable with the tubing strings adjacent the upper ends thereof;
- (*b*) weight distributing means for applying upward forces to said tubing gripping units in a predetermined relation so as to distribute the weight of the tubing system between the tubing strings in a predetermined relation;
- (*c*) said weight distributing means including hydraulic weight distributing units comprising hydraulically interconnected cylinders provided with pistons having effective areas with a predetermined relation therebetween;
- (*d*) said weight distributing units being disposed above and at least substantially in axial alignment wtih said tubing gripping units, respectively;
- (*e*) means for supporting said weight distributing units; and
- (*f*) connecting means interconnecting said tubing gripping units and said weight distributing units, respectively.

3,185,518
AUTOMOTIVE CAMPING DEVICE FOR USE WITH STATION WAGONS

Paul R. Zentner, 107 NE. 43rd St., Seattle 5, Wash.
Filed Dec. 3, 1962, Ser. No. 241,753
9 Claims. (Cl. 296—23)



1. A camping device for use with station wagon type of automobiles, comprising: a relatively shallow forward portion to overlay the roof of a station wagon; a rear vertical storage and kitchen portion having a common roof line with said forward portion and extending downwardly substantially to the opened tail gate of a station wagon; said forward and rear portions each having access doors and windows; a rectangular, rigid, lower frame providing a base for supporting and positioning said forward portion of said camping device; a plurality of pads to engage an automobile body and brackets conforming to said body and adjustably connected to said lower frame; said rear portion of said camping device having a central passageway and partitioned storage units on each side of said passageway; a rear door for said rear portion; means for supporting said rear portion from the structural members of said station wagon; means for sealing the juncture of the rear of the station wagon body and the side walls of said rear portion and extensible jack means for lifting said camping device off a station wagon, leveling said device and supporting it during use.

3,185,519
PLATFORM TRAILER

Donald M. Turnbull, William A. Bertolini, and George W. Carr, Cincinnati, Ohio, assignors to Trailmobile Inc., Cincinnati, Ohio, a corporation of Delaware
Filed Jan. 8, 1963, Ser. No. 250,178
6 Claims. (Cl. 296—28)

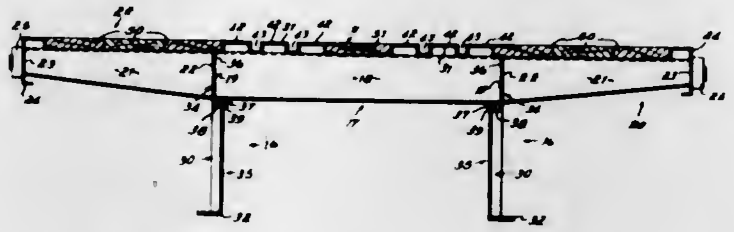
4. In a trailer frame having two spaced parallel main rails interconnected by a plurality of spaced parallel cross rails, the main rail comprising,

an upper web section joined to said cross rails, said upper web section being planar between its upper and lower edges,

a vertically corrugated lower web section fixed to said upper web section and having longitudinally extending edge portions and transversely extending edge portions, and,

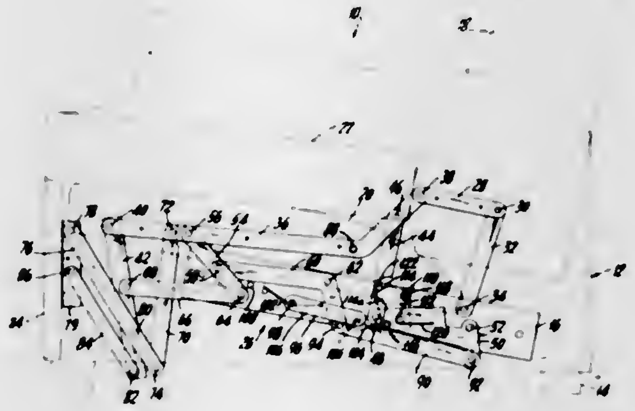
a lower flange,

said lower web section being welded to said lower flange and said upper web section.



3,185,520
MULTI-POSITION RECLINING CHAIR

Ernest S. Rosmarin, Roslyn, Long Island, N.Y., assignor, by mesne assignments, to Super Sagless Spring Corp., Amsterdam, N.Y., a corporation of New York
Filed Jan. 10, 1963, Ser. No. 250,986
20 Claims. (Cl. 297—85)



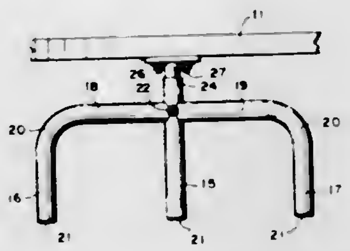
1. A reclining chair, comprising support means, a separate and movable back-rest and a separate and movable seat, operating means pivotally connected to said support means and interconnecting said back-rest and said seat, for moving the latter from a first position to a second position in response to movement of said back-rest from a corresponding first position to a corresponding second position, actuating means operatively connected to said operating means for moving said seat from said second position to a third position in response to movement of said back-rest from said corresponding second position to a corresponding third position, and means for preventing operation of said actuating means during movement of said seat and back-rest from their respective first positions to their respective second positions, and to release said actuating means for operation in said second positions of said seat and back-rest to then permit said back and said seat to move from the second position to said third position and to prevent movement of said back and seat from the first to the third position without passing through said second position.

3,185,521
SAFETY GUARD FOR CHILD'S HIGH CHAIR

Russ K. Waldo, 7926 12th Ave. SW., Seattle, Wash.
Filed Mar. 9, 1964, Ser. No. 350,219
6 Claims. (Cl. 297—153)

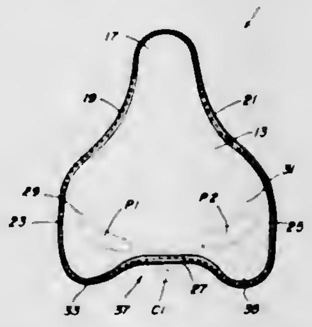
1. A safety guard attachment for the tray of a child's high chair, comprising a 3-pronged stanchion producing

two open-bottom stalls each defined between an upright inner prong which is common to both stalls and a respective upright outer prong which is spaced laterally from the inner prong a distance somewhat greater than the width of a child's thigh, headers being provided at the top of the stalls rigidly connecting the three prongs, and a mounting means adapted to be attached to the tray so as to suspend the stanchion from the underside of the tray to occupy a position centered with respect to the width of the tray in a transverse vertical plane adjacent the inner margin of the tray.



3,185,522
SADDLE CONSTRUCTION

Roland A. Faulhaber, Memphis, Tenn., assignor to Troxel Manufacturing Company, Moscow, Tenn., a corporation of Ohio
Filed July 30, 1963, Ser. No. 298,674
1 Claim. (Cl. 297—214)

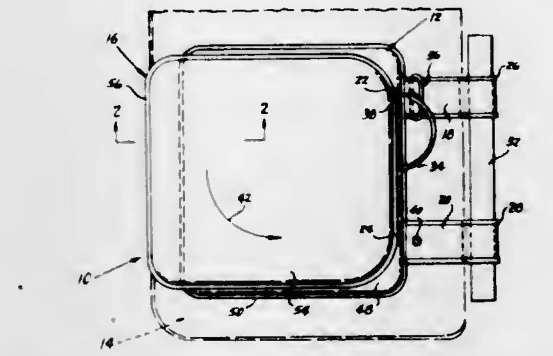


A saddle for cycles and the like comprising a body portion including a rigid base, supporting means attached to said body portion for supporting said body portion from a cycle with said body portion having a substantially flat and substantially horizontal top surface extending in substantially the same plane across the width thereof, said body portion being provided with a pronounced recess having a substantial depth and being at least one-third the overall width of said body portion and being at least twice as wide as deep and extending from the top to the bottom of said body portion in the rearward edge thereof for allowing room for the coccyx to move vertically and horizontally without hitting said body portion.

3,185,523
AUXILIARY STRUCTURE FOR AN AUTOMOBILE SEAT

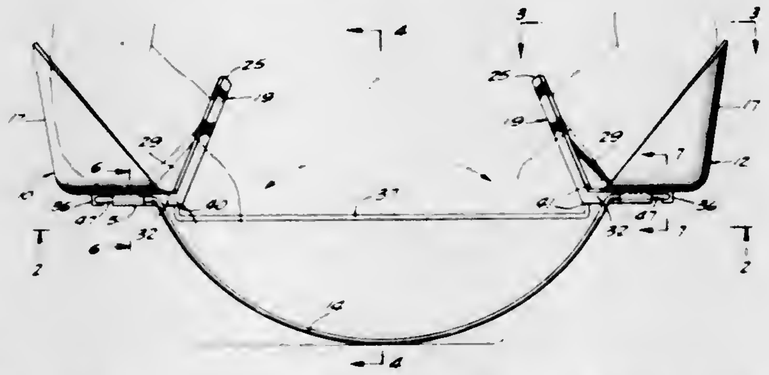
Harry L. Morrill, Jr., P.O. Box 6467, Trails End Road, Marietta, Ga.
Filed Apr. 30, 1964, Ser. No. 363,762
5 Claims. (Cl. 297—226)

1. An auxiliary structure for an automobile seat having a seat portion and a back rest portion, said auxiliary structure comprising a bottom pad member resting on the seat portion of the car seat and a top pad member resting on said bottom pad member, anchor tabs extending in spaced relation from one edge of said bottom pad member, an aperture in each of said anchor tabs, securing means removably fixing said anchor tabs to the car seat, and connecting means by which said top pad member is connected to said bottom pad member for limited relative movement thereof with respect to said bottom pad member; said connecting means comprising a flexible strap having one end thereof secured substantially centrally to one edge of said top pad member and the other end thereof inserted down through the said aperture in a selected one of said anchor tabs and thence to one side of said selected one of said anchor tabs and up over the top thereof and then back under said selected tab and detachably tied to said strap at the point of emergence thereof from the said aperture in the said selected one of said tabs thereby defining a loop at the free end of said strap through which said selected anchor tab extends.



3,185,524
TEETER-TOTTER FOR DOLLS

John W. Ryan, 688 Nimes Road, Bel Air, Calif.
Filed Feb. 8, 1963, Ser. No. 257,325
4 Claims. (Cl. 297—247)



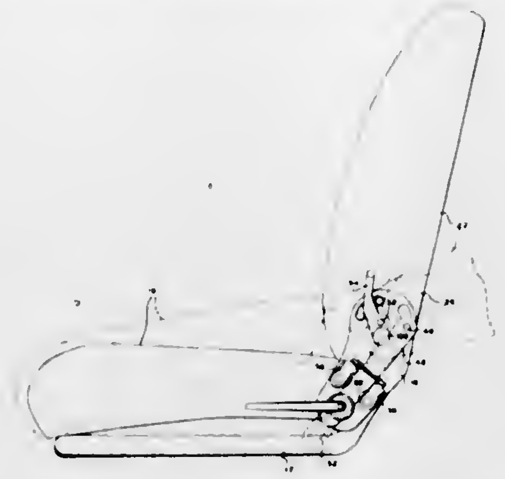
1. A toy comprising a pair of seats, said seats being spaced from each other and facing each other, rocker means having the said seats mounted thereon, said rocker means comprising rocker members having portions having compound curvature bowed downwardly from the seats and also bowed laterally, each of said seats comprising an integral unit having a back part, a seat part and a forwardly and upwardly extending keeper part, said keeper part having a narrowed web part adjacent to the seat part and laterally extending wing parts whereby each seat is adapted to have a doll placed therein and held thereby with the doll's legs straddling the narrowed part of the keeper part, a peripheral rib formed on said keeper part, said rib extending beneath said seat on both sides thereof, said seat resting on said rib, said rocker members having end parts secured to said rib beneath said seats on both sides theerof, and inwardly bent end parts, and a connecting member beneath said seat for said inwardly bent end parts.

3,185,525
SEAT HINGING MECHANISM

Ralph F. Welsh, Blissfield, Mich., assignor, by mesne assignments, to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed June 1, 1962, Ser. No. 199,396
8 Claims. (Cl. 297—367)

1. Seat adjusting apparatus for a seat, having a seat portion and a back portion, pivot means pivotally connecting said back portion to said seat portion, an elongated lock member mounted on said seat portion for

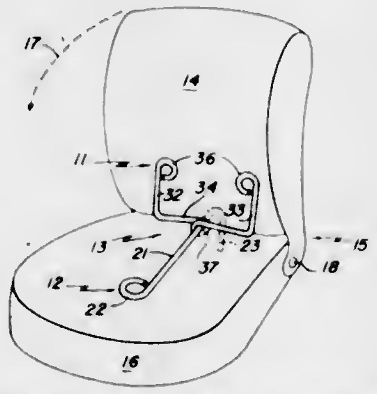
longitudinal axial displacement thereto, a pivot member mounted on said back portion adapted to rotate about the axis of said pivot means upon relative pivoting of said seat portion, said lock member being eccentrically connected to said pivot member with respect to said pivot



means so that pivoting of said back portion axially translates said lock member, and means mounted on said seat portion selectively operably associating with said lock member for restraining said lock member against axial longitudinal movement relative to said seat portion.

3,185,526
SEAT BRACE

John T. Hook, Carmel Valley, Calif.
(10780 Barnett Valley Road, Sebastopol, Calif.)
Filed Apr. 10, 1963, Ser. No. 271,925
5 Claims. (Cl. 297—379)

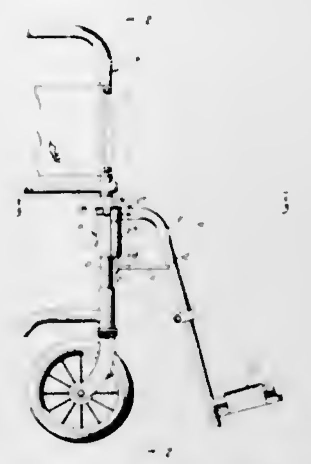


1. A seat brace, comprising: a platform piece and a back piece; the platform piece being in the form of a rod having an elongated shank, a handle portion in the form of a loop at one end thereof coplanar of and to one side of said shank, and a hook portion formed by a bend in said rod adjacent the other end thereof with the hook portion coplanar of said shank and normal to the plane of said handle portion; and said back piece being in the form of a substantially planar U-shaped rod having spaced apart legs joined by a bight, and a catch and guide integral with said back piece medially of the bight thereof; said catch and guide conforming to said shank to guide said back piece along said shank and to prevent movement therealong.

3,185,527
SWINGING FOOT REST

William J. Pivacek, Elyria, Ohio, assignor to Mobilaid, Incorporated, Elyria, Ohio, a corporation of Ohio
Filed Nov. 14, 1963, Ser. No. 323,703
13 Claims. (Cl. 297—429)

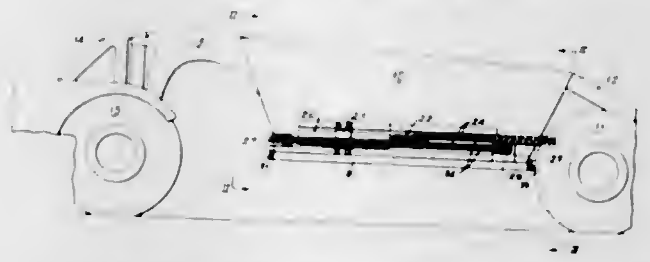
1. A pivotal and detachable connection for a detachable and swinging element for a chair comprising two members detachably and hingedly connected for pivotal motion about a common vertical axis, one of said members having open ends and a cylindrical interior aligned on said axis and having a longitudinal slot of smaller width than the diameter of said interior, the other member having a part whose thickness is no thicker than the width of said slot and whose width is about as wide as, but no wider than,



said diameter, said part being rotatably disposed in said interior and being irremovable through said slot when its thickness is not aligned therewith, and means for slideably supporting one of said members relative to the other for rotation about said axis.

3,185,528
ADJUSTABLE CABLE HOPPER DOOR ACTUATING MECHANISM

Robert A. Peterson, San Leandro, Calif., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 22, 1960, Ser. No. 37,993
2 Claims. (Cl. 298—35)



1. In a bottom dump wagon having a pair of hinged doors adapted to swing downwardly from opposite sides of a wagon body and having centrally and longitudinally disposed meeting edges when closed and forwardly and rearwardly disposed opposite ends, a separate cable for closing each door, extensible power means for exerting a pull on said cables, a pair of guide members carried by said extensible power means, each of said cables having its ends anchored to said opposite ends of one of said doors and its central portion passing over one of said pair of guide members, and threaded means to adjust one of the guide members relative to the other to equalize the effective lengths of the cables, said guide members comprising a pair of plates each having an arcuate edge over which a cable may pass.

3,185,529
APPARATUS FOR HYDRAULICALLY CONVEYING DISCRETE SOLIDS

Derec Fay Vaughan Davies, Edgecliff, New South Wales, and Robert Hawkins Buchanan and Djoeriaman Oedjoe, Kensington, New South Wales, Australia, assignors to Unisearch Limited, Kensington, New South Wales, Australia, a corporation of New South Wales
Filed Feb. 20, 1962, Ser. No. 174,466
Claims priority, application Australia, Feb. 24, 1961, 1,869/61
4 Claims. (Cl. 302—14)

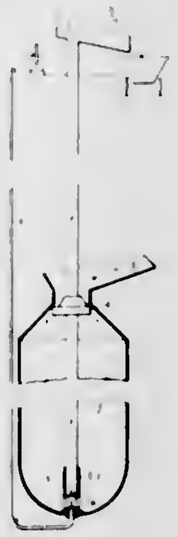
1. Apparatus for hydraulically entraining and conveying discrete solid material comprising;

(1) a vertical axis cylindrical entrainment chamber converging at each end, and being imperforate except for a coaxial bottom opening and a coaxial top opening,

(2) an upwardly directed material conveyor pipe coaxially stationed within the chamber and passing vertically beyond the top of said chamber and provided with a constant diameter slidable sleeve valve at its lower inlet end, said sleeve being of an inside diameter greater than the diameter of said bottom opening, and including means to selectively move said sleeve from a lowered position sealing off the lower opening from the chamber to a higher position to regulate the volume of discrete solid material capable of flowing into said inlet end of said conveyor pipe,

(3) the chamber top opening above the convergence formed with a cylindrical neck and a downwardly converging solid material collector thereabove,

(4) a second slidable sleeve valve mounted on said conveyor pipe adjacent said top opening and cylindrical neck and including an upper portion of less



diameter than said neck and an integral lower portion of greater diameter than said neck and including means to selectively move said valve from an upper closed position contacting said chamber interior to a lower open position providing an annular clearance with the adjacent chamber interior,

(5) a liquid supply pipe connected to the chamber at its bottom opening and having an axial delivery end upwardly directed towards the conveyor pipe inlet,

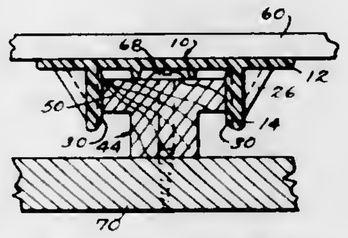
(6) and high pressure pump means directly connected to said liquid supply pipe,

(7) whereby discrete solids and liquid may be admitted from above into the chamber to fill the same, the second valve may be closed, the first valve may be elevated from its seated position, the pump may supply liquid into the base of the chamber through the liquid supply pipe; the tank becomes pressurized, a high velocity liquid flow is established between the liquid supply pipe and the conveyor pipe line, and discrete material and liquid are entrained upwardly within said conveyor pipe to elevations considerably above the top of said chamber.

3,185,530
COMPREHENSIVE DRAWER GUIDING SYSTEM

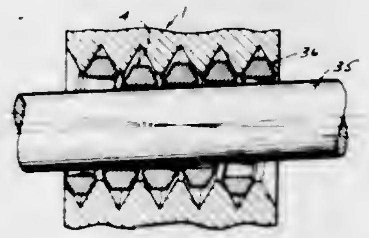
Raymond H. Reiss, Sr., Deal, and Paul R. T. Hahn, Westfield, N.J., assignors to Ronthor Reiss Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 7, 1962, Ser. No. 222,236
10 Claims. (Cl. 308—3.6)

1. A comprehensive drawer guiding system comprising a self lubricating molded plastic drawer guide member and a track member, said drawer guide member being longitudinally slidable with respect to said track member, means molded on said guide member cooperating with means protruding from said track member preventing the accidental longitudinal withdrawal of said guide member from said track member, the two last-mentioned means coacting when the guide member is nearly longitudinally withdrawn from the track member to slightly increase the longitudinal force necessary to further longitudinally withdraw the guide member in a longitudinal direction; said guide member being further withdrawable upon the application of slightly increased longitudinal force to intentionally longitudinally withdraw the guide member from the track member, means molded on said guide member cooperating with means formed on said track member substantially preventing vertical tipping and lifting up of said guide member with respect to said track member and means molded on said guide member centering said guide member with respect to said track member as said guide member is advanced from a position of less co-extension with said track member to a position of greater co-extension with said track member.



3,185,531
SHAFT BEARING

Henry J. Modrey, 158 Eagle Drive, Stamford, Conn.
Filed Apr. 8, 1963, Ser. No. 271,136
9 Claims. (Cl. 308—4)



9. A bearing insertable into a threaded mounting hole, said bearing comprising a coil spring having several intermediate windings of uniform diameter and at least one end winding of greater diameter, said coil windings externally defining screw threads engageable with the threads in the mounting hole and internally defining lands, the lands defined by said intermediate windings being axially aligned to form in conjunction a spirally slotted cylindrical bearing surface; and a support member having a threaded mounting hole, the external threads defined by the intermediate coil windings fitting the threads in the mounting hole with play and the external thread of the enlarged end winding fitting the respective thread in the mounting hole with a substantially close fit, whereby a shaft inserted in said bearing is capable of bearing engagement with said bearing surface in a position of slant in reference to the center axis of the mounting hole.

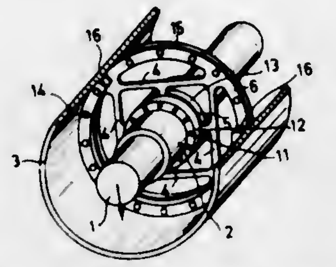
3,185,532
BEARING BUSH SUSPENSION

Erwin Loch, Zurich, Switzerland, assignor to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed Dec. 20, 1962, Ser. No. 246,077
Claims priority, application Switzerland, Jan. 17, 1962, 562/62
5 Claims. (Cl. 308—15)

1. A radial bearing comprising

(*a*) a bearing bush;

(*b*) a fixed supporting member surrounding said bush and radially spaced therefrom;

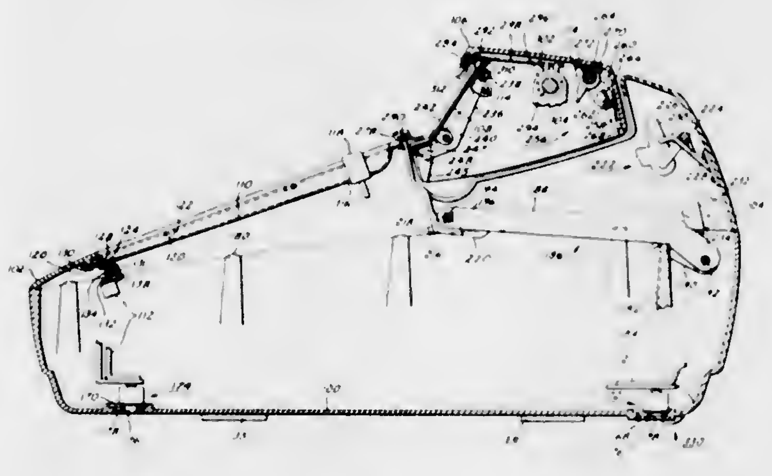


(*c*) at least three flat, rectilinear, flexible, metal strips lying with their major transverse dimension in a plane perpendicular to the axis of the bush and equally spaced therefrom;

(*d*) each strip fixedly connected at its opposite ends to said member and at a point intermediate its ends with the bush, the intermediate points being distributed around the periphery of the bush.

3,185,533
COVER ASSEMBLY

Charles A. Lindberg, Lafayette, Calif., assignor to SCM Corporation, a corporation of New York
Filed Oct. 1, 1962, Ser. No. 227,142
15 Claims. (Cl. 312—208)

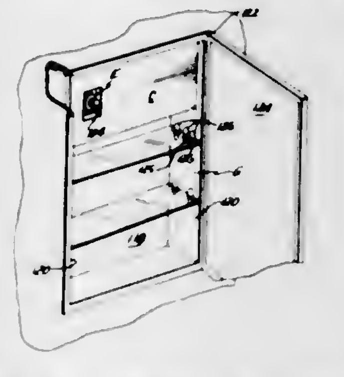


1. In a cover assembly, the combination of:
(*a*) a first cover,
(*b*) a second cover,
(*c*) means interconnecting a first portion of said first cover to a first portion of said second cover,
(*d*) a first toggle link, one end of which is connected to a second portion of said first cover,
(*e*) a second toggle link, one end of which is connected to a second portion of said second cover, and
(*f*) means connecting the opposite respective ends of of said first toggle link to said second toggle link whereby operation of the toggle links transmits a force to hold the covers together.

3,185,534
SAFETY CONTAINER FOR TOXIC MATERIALS

John Peters, Jr., 20231 Mobile St., Canoga Park, Calif.
Filed June 7, 1963, Ser. No. 286,233
5 Claims. (Cl. 312—209)

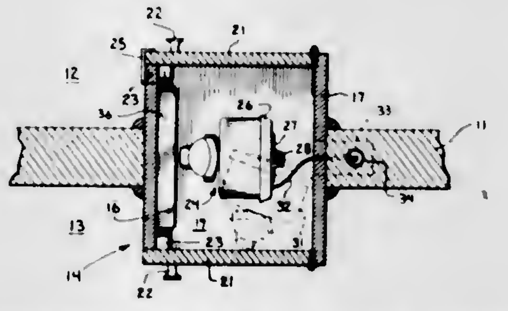
1. A safety container for toxic materials which is positionable at a fixed location in a medicine cabinet that has two parallel side members, said container including:
(*a*) a rectangular housing fabricated from a rigid sheet material to provide a back, top, and bottom, and two side walls, with said side walls being so spaced that the distance between the exterior surfaces thereof is slightly less than the transverse spacing between said members, and the width of said top, bottom and side walls being less than the width of said side members to permit said housing to be completely disposed inside said cabinet;
(*b*) a door of such size as to cover an opening in said housing defined by the forward edges of said top, bottom, and side walls;
(*c*) hinge means movably supporting said door from said housing for closing said opening when said door is in a first position parallel to said forward edges of said top, bottom and side walls;
(*d*) lock means for removably locking said door in said first position;
(*e*) two transversely spaced elongate housing supporting members having parallel side edges;



(*f*) first means for movably supporting said housing supporting members on said housing for longitudinal movement relative thereto, which first means is an inverted channel-shaped guide that includes a web which is parallel to said top, disposed a distance above said top slightly higher than the thickness of said housing supporting members, and two flanges that extend downwardly from the longitudinal edges of said web and affixed to the upper rear portion of said back and the forward portion of said top, which top and guide cooperatively define a longitudinally extending confined space in which said housing supporting members are slidably mounted; and
(*g*) second means for manually moving said supporting members away from one another to dispose the outer ends thereof in frictional contact with said side members to the extent that said housing is held at a desired fixed position in said cabinet, with said second means being so located on said housing that said second means can be manually operated only when said door has been moved to a second position to permit access to the interior of said housing.

3,185,535
TELEPHONE INSTALLATION

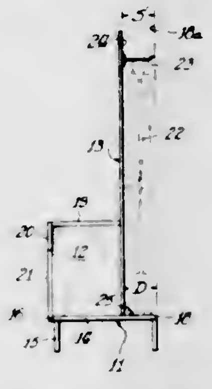
Marion A. Williams, 5004 Radnor Road, Indianapolis, Ind.
Filed Feb. 5, 1962, Ser. No. 170,900
1 Claim. (Cl. 312—223)



In a building structure, the combination comprising:
a vertical wall with an opening therein;
a cabinet in said opening, said cabinet having opposed wall and floor and ceiling members located to completely fill said opening;
a door in said cabinet at each side of said wall to provide access from both sides of said wall to the interior of said cabinet;
a vertically standing rod pivotally mounted in the ceiling and floor members of the interior of said cabinet;
and a telephone set in said cabinet and mounted to said rod whereby it is accessible from both sides of said wall and swingable to generally face both of said doors alternately;
and a cord for said telephone set leading from said telephone set through one of said cabinet members into said wall whereby said cabinet doors may be closed without interference of said cord.

3,185,536
DRESSER

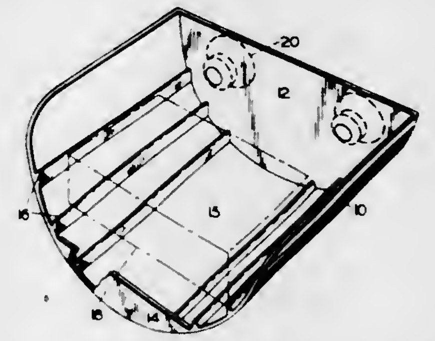
William H. Armstrong, Birmingham, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 24, 1962, Ser. No. 219,245
1 Claim. (Cl. 312—281)



A dresser for storing clothing and related articles comprising a single continuous horizontal base having an exposed rear edge adapted to be positioned adjacent and parallel to the wall of a room, a storage cabinet mounted on said base and having a vertical rear wall positioned inwardly from said rear edge of said base for providing a space on said base behind said cabinet adapted to supportedly receive articles to be stored, a single panel extending directly vertically upwardly from said base and substantially beyond said cabinet to a height at least twice the height of said cabinet adjacent said cabinet rear wall for providing an opening space between the room wall and said panel completely open on all sides other than panel and base sides to receive articles to be stored, and a hook extending rearwardly from the rear of said panel for supporting other articles to be stored in the space behind said panel.

3,185,537
SOAP HOLDER

Thomas B. Wright, Box 91, Delake, Oreg.
Filed Oct. 10, 1963, Ser. No. 315,250
1 Claim. (Cl. 312—351)



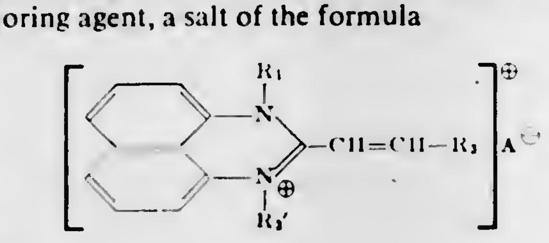
A soap holder comprising a body portion having a horizontal bottom wall, upwardly and outwardly curved side walls leading from said bottom wall, a back wall on said body portion integrated with said bottom and side walls and disposed upwardly at substantially right angles thereto, a front wall on said body portion also integrated with said bottom and side walls and disposed upwardly at substantially right angles thereto, said front wall extending upwardly through only a portion of the height of the body portion, and a plurality of longitudinally disposed, laterally spaced elongated ribs on said side walls extending between said front and backs walls for supporting a bar of soap crosswise in the holder above the bottom wall thereof, the front and back walls of said holder and the lowermost two of said ribs forming a soap dripping chamber with said bottom wall.

CHEMICAL

3,185,538
PROCESS FOR COLORING POLYACRYLONITRILE FIBERS WITH METHINE DYE SALTS

Jacques Voltz, Basel, and Werner Bossard, Riehen, near Basel, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland
No Drawing. Filed Apr. 1, 1963, Ser. No. 269,710
Claims priority, application Switzerland, Apr. 10, 1962, 4,336/62
10 Claims. (Cl. 8—55)

1. In a process for the production of polyacrylonitrile fiber material colored fast to light, the improvement comprising coloring said material in a dyebath containing, as the coloring agent, a salt of the formula



(I)

wherein

R_1 is a lower alkyl radical

R_2' is a member selected from the group consisting of lower alkyl, hydroxy-lower alkyl and benzyl,

R_3 represents a benzene radical which contains a nucelophilic di-substituted amino group in p-position to the —CH=CH— bridge and, as only further ~~substitu~~ents, from 0 to 2 members selected from the group consisting of hydroxy, chloro, bromo, lower alkyl and lower alkoxy, and

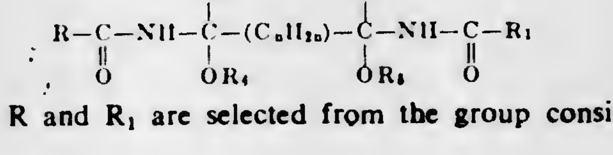
A represents the equivalent of an anion of a strong acid,

while maintaining the bath at a pH of about 2 to 9, and at a temperature above room temperature up to the boiling temperature of the bath.

3,185,539
PROCESS OF TREATING CELLULOSE TEXTILES WITH CERTAIN ALKYLENEBIS(N-CARBOXAMIDES) AND PRODUCTS PRODUCED THEREFROM

Richard K. Madison, Murray Hill, and William J. Van Loo, Jr., Middlesex, N.J., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Feb. 3, 1961, Ser. No. 86,865
7 Claims. (Cl. 8—116.3)

1. A process comprising treating cellulose textile material which comprises applying thereto from 1 to 25%, based on the dry weight of said material, of a compound of the formula:



$$R-\underset{\underset{O}{\|}}{C}-NH-\overset{\overset{R_3}{|}}{\underset{\underset{OR_4}{|}}{C}}-(C_nH_{2n})-\overset{\overset{R_3}{|}}{\underset{\underset{OR_4}{|}}{C}}-NH-\underset{\underset{O}{\|}}{C}-R_1$$

where R and R_1 are selected from the group consisting of alkyl and alkenyl having from 1 to about 20 carbon atoms, R_2 and R_3 are selected from the group consisting of hydrogen, alkyl having from 1 to 20 carbon atoms inclusive and phenyl, R_4 and R_5 are selected from the group consisting of hydrogen and lower alkyl, and n is an integer of from 0 to 8 inclusive, and thereafter curing said compound to a water-insoluble state by the action of heat and an acidic catalyst.

3,185,540
METHOD OF REMOVING CARBON MONOXIDE FROM GAS MIXTURES

Donald W. Breck, Tonawanda, N.Y., Charles R. Castor, Homewood, Ill., and Robert M. Milton, Buffalo, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Dec. 18, 1961, Ser. No. 160,316
7 Claims. (Cl. 23—2)

1. A process for removing carbon monoxide from a carbon monoxide containing gas mixture which comprises contacting said carbon monoxide containing gas mixture with a zeolitic molecular sieve containing in the inner adsorption region at least one finely dispersed elemental metal selected from the group consisting of iron, nickel and cobalt at a temperature below about 100° C. but sufficient to form a carbonyl of the selected metal and thereby removing said carbon monoxide from said carbon monoxide containing gas mixture; thereafter decomposing the metal carbonyl and evolving the resulting carbon monoxide while retaining said selected metal within the inner adsorption region.

3,185,541
MANUFACTURE OF FLUORINE COMPOUNDS

Louis G. Anello, Lake Parsippany, and Cyril Woolf, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 23, 1960, Ser. No. 77,805
13 Claims. (Cl. 23—14)

2. The process which comprises subjecting NOCl, under anhydrous conditions and at temperature substantially in the range of minus 25° C. to not more than about 250° C., to the action of HF to form reaction products containing a nitrosyl fluoride-hydrogen fluoride complex boiling substantially in the range of 63–100° C. at atmospheric pressure, and recovering such complex from said reaction products.

8. The process which comprises subjecting NOCl, under anhydrous conditions and at temperature substantially in the range of minus 25° C. to not more than about 250° C., to the action of HF to form reaction products containing a nitrosyl fluoride-hydrogen fluoride complex boiling substantially in the range of 63–100° C. at atmospheric pressure, recovering such complex from said reaction products, dehydrofluorinating said complex by subjecting the same, at temperature substantially in the range of 20–200° C., to the action of alkali metal fluoride to react and combine with substantially all of the HF component of said complex and thereby liberate NOF in vapor form, and recovering said NOF.

12. A nitrosyl fluoride-hydrogen fluoride complex composition consisting of NOF and HF, said composition at standard conditions being a substantially clear, water-white liquid, having a boiling point of about 95° C. at atmospheric pressure and consisting of nitrogen, oxygen, fluorine and hydrogen in proportions equivalent to NOF·3HF based on total fluorine, NOF, HF and nitrogen chemical analyses.

13. A nitrosyl fluoride-hydrogen fluoride complex composition consisting of NOF and HF, said composition at standard conditions being a substantially clear, water-white liquid, having a boiling point of about 68° C. at atmospheric pressure, and consisting of nitrogen, oxygen, fluorine and hydrogen in proportions equivalent to NOF·6HF, based on total fluorine, NOF, HF and nitrogen chemical analyses.

3,185,542
PRODUCTION OF THE FLUORINATED COMPOUNDS, NO_2F AND THE HF ADDUCT THEREOF

Anthony W. Yodis, Whippany, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 23, 1960, Ser. No. 77,806
10 Claims. (Cl. 23—14)

1. The process for making nitryl fluoride-hydrogen fluoride complex material which comprises introducing into a reaction zone as sole reactants NO_2Cl and HF, said HF being a reactively effective amount but not substantially in excess of 10 molecular proportions per mol of NO_2Cl, reacting said NO_2Cl and HF in said zone, to form a complex of NO_2F and HF, under substantially anhydrous conditions and by maintaining in said zone temperature substantially in the range of minus 25° C. to below temperature of appreciable decomposition of NO_2Cl, and recovering from the resulting reaction mass nitryl fluoride-hydrogen fluoride complex material which under normal conditions is a substantially water-white distillable liquid boiling at about 62° C. at atmospheric pressure.

3,185,543
MANUFACTURE OF METAL FLUORIDES

Horace Q. Trout, Brooklyn, N.Y., and Anthony W. Yodis, Whippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 30, 1963, Ser. No. 255,096
8 Claims. (Cl. 23—88)

1. The process for making metal fluoride which comprises introducing into a reaction zone metallic metal the fluoride of which boils below about 50° C. at atmospheric pressure and freezes above the freezing point of anhydrous hydrogen fluoride, subjecting said metal in said zone to the action of NOF.3HF complex at reactive fluorinating temperature to effect formation of vaporous fluoride of said metal, and discharging vaporous metal fluoride from said reaction zone.

3,185,544
PREPARATION OF CRYSTALLINE ZEOLITES OF UNIFORM AND CONTROLLED PARTICLE SIZE

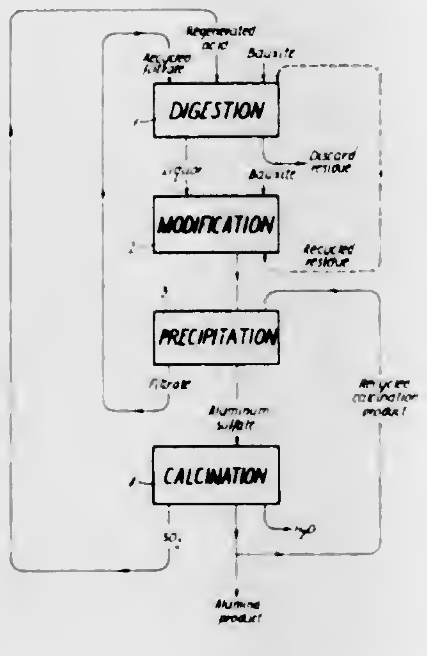
Philip K. Maher, Baltimore, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed July 2, 1962, Ser. No. 207,033
4 Claims. (Cl. 23—112)

1. A process for preparing crystalline selective absorbtive zeolites from clay composed of distinct particles of definite size within the range of about 0.1 to 5 microns which comprises segregating particles of clay of a desired size within said range, calcining the segregated clay particles by heating to drive off the water of constitution, reacting the segregated particles with an appropriate quantity of sodium hydroxide and hydrous silica to prepare the desired zeolite and recovering the product zeolite.

3,185,545
PRODUCTION OF ALUMINA

Thomas Robert Scott, Blackburn, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, Victoria, Australia, a body corporate
Filed Nov. 8, 1962, Ser. No. 236,359
Claims priority, application Australia, Aug. 21, 1958, 40,706/58, Patent 237,278; July 5, 1961, 6,642/61
6 Claims. (Cl. 23—141)

1. In an acid process for the production of alumina from an acid digestion liquor produced by dissolving an aluminum-bearing ore in sulfuric acid, the steps of digesting an aluminum-bearing ore in the acid digestion liquor at a temperature between about 100° C. and about 140° C. to reduce the ratio by weight of $SO_3:Al_2O_3$ in the digestion liquor to a value within the range of 1.3 to 2.35, filtering the liquor to remove solid residue, treating the thusly modified digestion liquor with a reducing agent to reduce any ferric iron present in solution to the ferrous state, adding reactive alumina to the thusly modified digestion liquor, hydrolyzing the modified digestion liquor at a temperature between 180° C. and 300° C. in a non-oxidizing atmosphere to precipitate basic aluminum sulfate, and calcining the precipitated basic aluminum sulfate to produce alumina.



3,185,546
PREPARATION OF ANHYDROUS LITHIUM PEROXIDE

Ricardo O. Bach and William W. Boardman, Jr., Gastonia, N.C., assignors to Lithium Corporation of America, Inc., New York, N.Y., a corporation of Minnesota
No Drawing. Filed Oct. 19, 1962, Ser. No. 231,865
15 Claims. (Cl. 23—184)

1. A method of producing substantially anhydrous lithium peroxide comprising forming a reaction mixture consisting essentially of a water solution of hydrogen peroxide and a solid lithinum hydroxide, the concentration of the hydrogen peroxide and the lithium hydroxide in the mixture being such as to give a weight ratio of water present in the mixture to lithium peroxide formed by the reaction of the hydrogen peroxide with the lithium hydroxide of from about 2:1 to about 5:1, permitting the hydrogen peroxide and the lithium hydroxide to react at the ambient temperature of the mixture, and drying the lithium peroxide.

3,185,547
PREPARATION OF DIBORANE

Mack W. Hunt, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed Sept. 12, 1960, Ser. No. 55,130
6 Claims. (Cl. 23—204)

1. A process for the preparation of diborane which comprises reacting a dialkoxyaluminum hydride with a boron halide in the absence of air and subsequently recovering diborane from the resulting reaction product.

3,185,548
PROCESS OF MAKING RADON FLUORIDE AND OF SEPARATING RARE GASES FROM EACH OTHER

Paul R. Fields and Moshe H. Zirin, Chicago, and Lawrence Stein, Downers Grove, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Oct. 5, 1962, Ser. No. 228,777
4 Claims. (Cl. 23—205)

1. A process of preparing radon fluoride, consisting of admixing fluorine gas of a pressure between 300 and 800 mm. Hg to radon, heating the gas mixture obtained to from 400 to 500° C. whereby radon fluoride is formed, and separating the radon fluoride from unreacted fluorine gas.

3. A process of separating noble gases from each other, consisting of heating a mixture of argon, krypton, helium, xenon and radon with fluorine of between 300 and 800 mm. Hg to between 400 and 500° C., whereby solid xenon fluoride and radon fluoride are formed, while krypton and argon remain unreacted and in gaseous form; cooling the mixture; pumping said unreacted gases including fluorine off from the fluorides; and fractionally volatilizing xenon fluoride by heating to about 50° C. under vacuum, whereby solid radon fluoride remains as a residue.

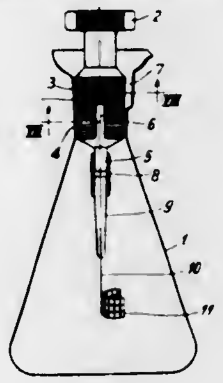
3,185,549
COLORIMETRIC DETERMINATION OF CHLORIDES IN SERUM

Robert H. Hamilton, Philadelphia, Pa., assignor to Hartman-Leddon Company, Inc., Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Aug. 27, 1962, Ser. No. 219,732
12 Claims. (Cl. 23—230)

1. In the colorimetric determination of chloride in serum, the steps of reacting chloride in serum with mercuric thiocyanate in a perchloric acid solution containing ferric ions, and simultaneously solubilizing the proteins of said serum in said solution with urea to prevent impairment of colorimetric determinations by reason of protein precipitates without at the same time reducing color intensity.

3,185,550
APPARATUS FOR PERFORMING ANALYSES

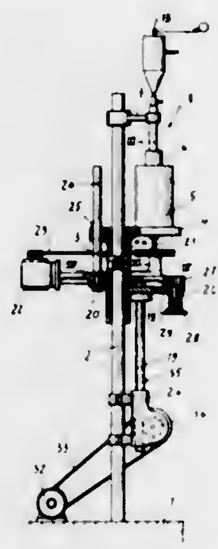
Alfred Haack, Vienna, Austria, assignor to Arthur H. Thomas Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1961, Ser. No. 135,570
Claims priority, application Austria, Sept. 2, 1960, A 6,735/60
3 Claims. (Cl. 23—253)



1. Apparatus for performing analyses including a flask, said flask having an elongated neck portion, a ground glass stopper adapted to frictionally seat in said neck, a carrier, discrete coupling means selectively detachably coupling said carrier to said ground glass stopper whereby said carrier is dependently extended from said ground glass stopper into the interior of said flask, and a support on said carrier remote from said stopper, said support being adapted to effect the support of a sample to be analyzed.

3,185,551
PROCESS FOR MANUFACTURING A TUBULAR BODY MADE OF SYNTHETIC MATERIAL, AND INSTALLATION FOR CARRYING OUT THIS PROCESS

Vahan Djevahirdjian, Monthey, Switzerland, assignor to Industrie de Pierres Scientifiques Hrand Djevahirdjian S.A., Monthey, Switzerland, a firm of Switzerland
Filed June 1, 1960, Ser. No. 33,299
Claims priority, application Switzerland, June 5, 1959, 74,081
6 Claims. (Cl. 23—273)



1. In an installation for manufacturing a tubular body by melting a synthetic powdery material and accumulating the said material on a rotatable support extending into an inner chamber of a stove which includes a first blow-pipe, the improvement comprising a second blow-pipe opening into the interior chamber of said stove, means cooperating with the first of said blow-pipes for dispensing the synthetic powdery material upon the rotatable support, said first blow-pipe having an axis substantially parallel to the axis of rotation of the rotatable support but eccentric with respect thereto, and second of said two blow-pipes having an axis which is oblique with respect to the axis of the first blow-pipe and is directed toward the rotatable support surface where the melted material forms a deposit on said support at the same place where the first blow-pipe is acting whereby the deposited melted material is blown radially outwardly with respect to the axis of rotation of the rotatable support to prevent the said melted material from moving toward the said axis of the rotatable support.

3,185,552
MANUFACTURE OF MATCH SPLINTS

Roger N. Berry, Stamford, Conn., assignor to Diamond International Corporation, a corporation of Delaware
Filed Feb. 20, 1962, Ser. No. 174,497
12 Claims. (Cl. 44—42)

1. A method of making stiffening resin impregnated paper match splints, comprising the steps of uniformly incorporating a predetermined percentage of a stiffening resin into a beater furnish of dilute liquid pulp slurry, said resin being selected from the group consisting of thermoplastic resins having a melting point in the range of 225–350° F. and thermosetting resins which are curable by heating to the range of 225–350° F., said percentage of resin being sufficient eventually to produce from such slurry splints containing about 5% to about 35% by weight of impregnating resin, forming a continuous web of resin impregnated paperboard from such slurry, drying the web by heating it at a temperature below 225° F. until a pliable dried web is formed, cutting the dried web to form a plurality of resin impregnated paper match splints therefrom, and then heating the splints at a temperature in the range of 225–350° F. until the resin cures thereby stiffening the resin impregnated paper match splints.

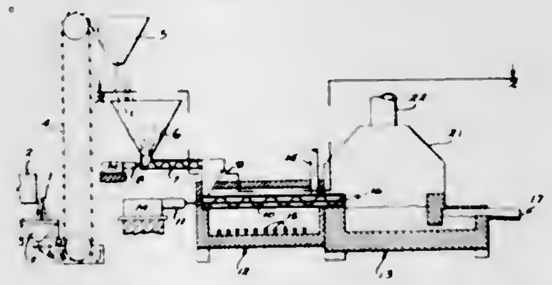
3,185,553
ACETYLENIC LEAD COMPOUNDS AND GASOLINE COMPOSITIONS THEREOF

Peter Ballinger, San Rafael, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Sept. 7, 1961, Ser. No. 136,457
1 Claim. (Cl. 44—69)

A hydrocarbon fuel of the gasoline boiling range adapted for use as a fuel for spark ignition internal combustion engines having a clear Research octane number of at least about 85 and containing at least 20% by volume of aromatic hydrocarbons, not more than 30% by volume of olefinic hydrocarbons and not more than 60% by volume of paraffinic and naphthenic hydrocarbons, said hydrocarbon fuel having incorporated therein from about 1 ml. to about 7 ml. of butynyl trimethyl lead per gallon of said fuel.

3,185,554
METHOD FOR RAW MATERIAL PRE-HEATING FOR GLASS MELTING

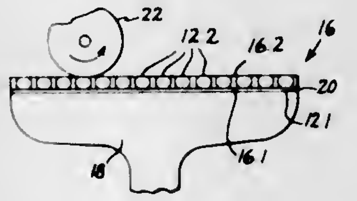
Benjamin J. Sweo, Lakewood, and James H. Ginther, Berea, Ohio, assignors to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio
Filed July 19, 1960, Ser. No. 43,762
9 Claims. (Cl. 65—17)



1. In a method of continuously smelting a raw batch of porcelain enamel-forming materials at a temperature of about 1800° to 2600° F. in a porcelain enamel frit smelter having a charging zone, a melting zone and a discharging zone all communicating with each other and integrally connected together, and continuously discharging the melted batch, the improvement therein of preheating the raw batch in a pre-heating chamber integrally connected to the charging zone before introducing the batch into the charging zone, and controlling the temperature of the pre-heated raw batch from about 600° F. to 1200° F. for a time sufficient to drive off the volatiles.

3,185,555
ELECTRONIC DEVICES AND METHOD OF MAKING SAME

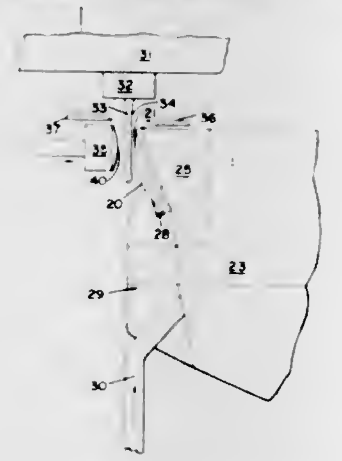
George A. Granitsas, Marlboro, Mass., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts
Filed May 18, 1960, Ser. No. 29,909
3 Claims. (Cl. 65—18)



1. The method of making an electronic device of the character described which comprises as steps: providing a multiplicity of similarly-sized balls of electrically-conductive material having a predetermined coefficient of thermal expansion; disposing the balls on a substantially flat-bottomed pan; vibrating the pan for spreading the balls in a single, loosely-packed layer on said pan bottom; covering the layer of balls with powdered glass insulating material having a coefficient of thermal expansion corresponding to that of said balls; heating the glass material for fusing said material to coat the balls and to fill interstices of the layer of balls; permitting the fused glass material to cool for bonding the coated balls together in uniformly spaced relation within the layer to form a sheet; and abrading opposite sides of the sheet for determining sheet thickness and for providing corresponding flattened, exposed surfaces on each ball at respective opposite sides of the ball center in the plane of each of said sides so that each of said exposed surfaces is of smaller diameter than the diameter of said ball, thereby to securely hold each ball within said glass materials and to provide scanning surfaces on the opposite ends of each ball.

3,185,556
METHOD OF FORMING FUSED BIFOCAL LENS BLANKS

Charles F. Cala, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Apr. 24, 1961, Ser. No. 105,095
1 Claim. (Cl. 65—39)

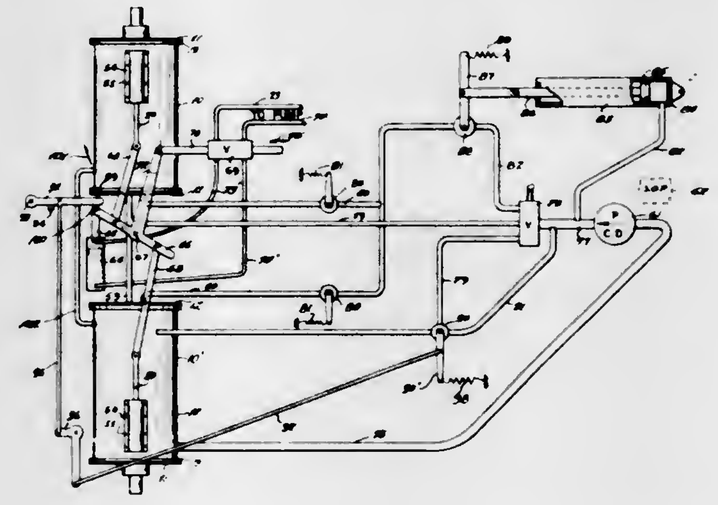


The method of making multifocal lens blanks by depositing molten segment glass upon a countersink surface of a preheated countersink blank comprising the steps including mounting the preheated countersink blank with the countersink surface disposed in a generally vertical direction facing substantially horizontally, establishing a downwardly flowing substantially flat vertical ribbon of molten segment glass substantially parallel to the countersink surface, moving a convex plunger of somewhat greater curvature than that of the countersink surface against the ribbon of molten segment glass with the leading area of the plunger being opposite the approximate center of the countersink surface so as to cause the ribbon to first contact the approximate center of the countersink surface and thereafter progressively contact the remainder of the countersink surface proceeding radially outwardly from such center whereby to eliminate the entrapment of air between the molten glass and the countersink surface, and thereafter severing the ribbon of molten segment glass at a point above the portion thereof in contact with the countersink surface.

3,185,557
HYDRAULIC MOTOR AND CONTROL SYSTEM THEREFOR

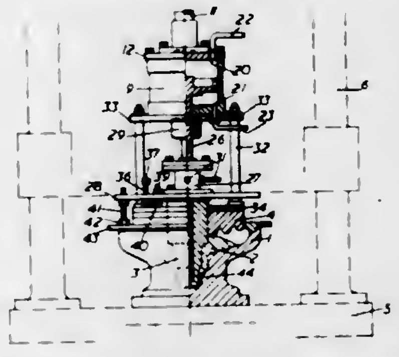
Ernest Gerber, Box 223, Coronation, Alberta, Canada
Filed June 22, 1962, Ser. No. 204,542
10 Claims. (Cl. 60—53)

1. An hydraulic motor operated by an hydraulic pump driven by a source of power; said motor comprising in combination an enclosing casing, ends on said casing, a piston and cylinder assembly journalled for rotation within the ends of said casing, a drive shaft secured concentrically to one end of said piston and cylinder assembly and extending through one end of said casing, said piston and cylinder assembly comprising a substantially cylindrical cylinder block, a plurality of cylinders formed through said block and concentrically situated therein, a cylinder head on one end of said block, a plurality of pistons reciprocal in said cylinders, an adjustably inclined thrust plate in said casing adjacent the other end of said cylinder block, friction reducing means on the ends of said pistons adjacent said other end of said cylinder block, said friction reducing means contacting said thrust plate, distributor means in the other end of said casing connected to said hydraulic pump, means connecting said distributor means to said cylinders, and means to control the position of said inclined thrust plate within limits, said means including said thrust plate being pivotally connected by the lower edge thereof to said casing, a control rod pivotally secured to the upper end of said thrust plate and extending exteriorally of said casing, a control piston and cylinder assembly exteriorally of said casing, a power assisting valve assembly adjacent said control piston and cylinder assembly, conduits connecting between said hydraulic pump and said control piston and cylinder assembly, and said power assisting valve assembly, and linkage operatively connecting said power assisting valve assembly, said control piston and cylinder assembly and said control rod.



3,185,558
MOULDING HOLLOW GLASS ARTICLES

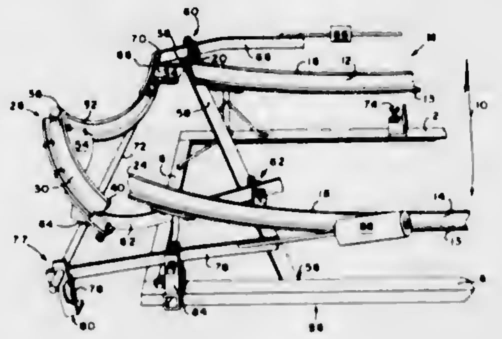
John Edward Wilcock, St. Helens, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Filed Nov. 10, 1959, Ser. No. 852,120
Claims priority, application Great Britain, Nov. 17, 1958, 36,965/58
2 Claims. (Cl. 65—76)



1. A method of pressure moulding a hollow glass article comprising two contiguous inner and outer parts one of which is thinner than the other, consisting in charging a mould with a requisite quantity of molten glass, apply-

ing downward moulding pressure to the glass to mould the inner part, then applying downward moulding pressure to mould the outer part, withdrawing the moulding pressure which has formed the thinner part as soon as that part has stiffened sufficiently to hold its shape, while simultaneously relieving the moulding pressure on the thicker part so that no harmful stresses are induced in the stiffened thinner part by fluid pressure exerted by the thicker part, subsequently withdrawing pressure from the thicker part when the thicker part has stiffened sufficiently to hold its shape, and then separating the moulded article from the mould.

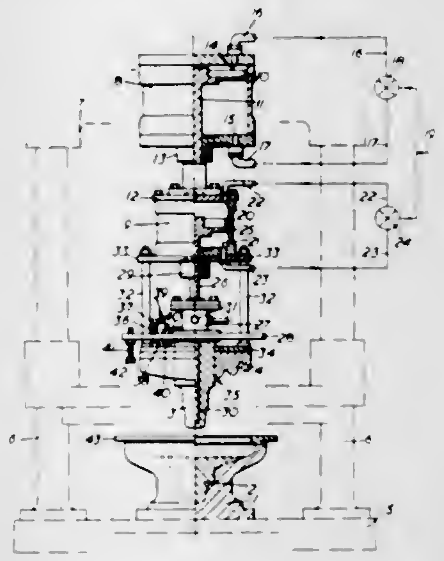
3,185,559
BENDING MOLD
James H. Elliott, Lawrence H. Stauffer, and John G. Garbin, Greensburg, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 29, 1961, Ser. No. 134,671
11 Claims. (Cl. 65—291)



2. In apparatus for bending glass comprising a sectionalized bending mold having an end mold member which is pivotally attached to the other mold member for pivotal movement about an axis extending obliquely of said mold, said mold members having upper surfaces formed thereon conforming to different portions of an outline shaping surface, and which mold comprises means attached to said end mold member to urge the latter from a spread position to a closed position wherein said mold members are adjacent one another and their upper surfaces form substantially continuations of one another, the improvement comprising pivot means mounted on said apparatus longitudinally outward of said axis extending obliquely, said urging means being operatively connected to said pivot means for pivotal movement thereabout, and coupling means for permitting relative movement between said urging means and said end mold section, said coupling means interconnecting said urging means and said end mold section.

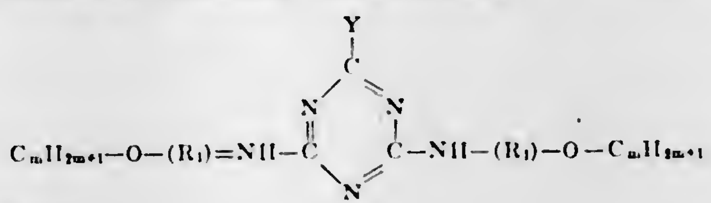
3,185,560
PLURAL PISTON PRESS FORMING APPARATUS
John Edward Wilcock, St. Helens, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Original application Nov. 10, 1959, Ser. No. 852,120. Divided and this application Aug. 5, 1964, Ser. No. 387,621
Claims priority, application Great Britain, Nov. 17, 1958, 36,965/58
2 Claims. (Cl. 65—314)

1. Apparatus for moulding a hollow glass article comprising contiguous inner and outer parts one of which is thinner than the other, including a hollow mould portion arranged to receive a requisite quantity of molten glass, a fixed frame extending above said mould portion, a first pressure member and a complementary pressure member relatively slidable with respect to each other and co-operating with the hollow mould portion respectively to form therewith a mould cavity for the thinner part of the article and a contiguous mould cavity for the remainder of the article, a main cylinder fixed to the frame, a main double-acting piston slidably mounted in said main cylinder, an auxiliary cylinder connected to the main piston and to the complementary pressure member, an auxiliary double-acting piston slidably mounted in said auxiliary cylinder and connected to the first pressure member, a supply of fluid under pressure, first fluid control means connecting the fluid supply to the main cylinder, said first fluid control means being operable to cause the main piston to lower and raise the auxiliary cylinder and thereby lower and raise the two pressure members in unison to close and open the mould respectively, and being operable to relieve the downward moulding pressure exerted by the complementary pressure member after the mould has been closed, and second fluid control means connecting the fluid supply to the auxiliary cylinder and operable to cause the auxiliary piston to raise the first pressure member relative to the complementary pressure member after the mould has been closed long enough for the thinner part of the article to stiffen sufficiently to hold its shape, said second fluid control means being also operable to lower the first pressure member relative to the complementary pressure member after the mould has been opened and before the two pressure members are again lowered for another mould closing operation.



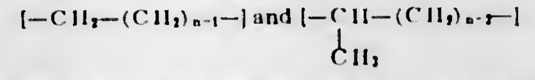
3,185,561
HERBICIDAL COMPOSITION AND METHOD
Donald S. Acker, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 9, 1962, Ser. No. 185,849
3 Claims. (Cl. 71—2.5)

1. A herbicidal composition containing 0.5 to 10% by weight of a surface-active agent, 25 to 80% by weight of a pulverized solid diluent and 20 to 75% by weight of a compound represented by the formula:



wherein

R_1 is selected from the group consisting of



$$[-CH_2-(CH_2)_{n-1}-]\text{ and }[-\underset{\displaystyle CH_3}{\underset{|}{CH}}-(CH_2)_{n-2}-]$$

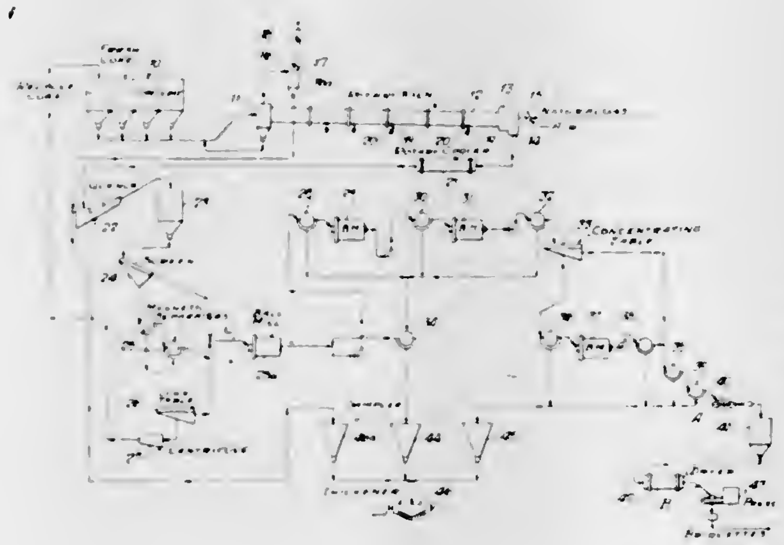
n is a whole positive integer from 3 through 8;
m is a whole positive integer from 1 through 8; and

Y is a member of the group consisting of OR and SR where R is an alkyl group of less than 3 carbon atoms.

3,185,562
EMULSIFIABLE PESTICIDAL COMPOSITION
George W. Scoles, Hemlock, and James A. Kelly, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 12, 1962, Ser. No. 186,833
5 Claims. (Cl. 71—2.6)

1. A pesticidal composition which comprises a pesticidal amount of an oil-soluble pesticidal toxicant in solution with an oil-soluble, liquid sodium petroleum sulfonate and a polyoxyalkylene monoalkyl ether wherein (1) the alkyl contains from 13 to 18 carbon atoms in straight chain relationship, (2) the oxyalkylene moieties in the polyoxyalkylene portions of the ether are selected from the group of series consisting of the ethylene and propylene series, (3) from 40 percent to 100 percent by weight of said portion is composed of oxyethylene moieties, (4) any oxypropylene moieties in said polyoxyalkylene portion are connected in proximal relation to the alkyl ether linkage, and (5) said oxyalkylene portion constitutes from about 60 to 75 percent by weight of the ether, said petroleum sulfonate and polyoxyalkylene monoalkyl ether being employed in the proportions of 1 part by weight of sulfonate to from 1 to 4 parts by weight of polyoxyalkylene ether and said sulfonate and ether together constituting at least 4 percent by weight of the total composition.

3,185,563
METHOD AND MEANS FOR PREVENTION OF REOXIDATION OF IRON CONCENTRATES AND THE LIKE
Curtis A. Jones, Fairfield, and John W. Potts, Birmingham, Ala., assignors to R-N Corporation, New York, N.Y., a corporation of Delaware
Filed May 17, 1961, Ser. No. 110,813
9 Claims. (Cl. 75—1)

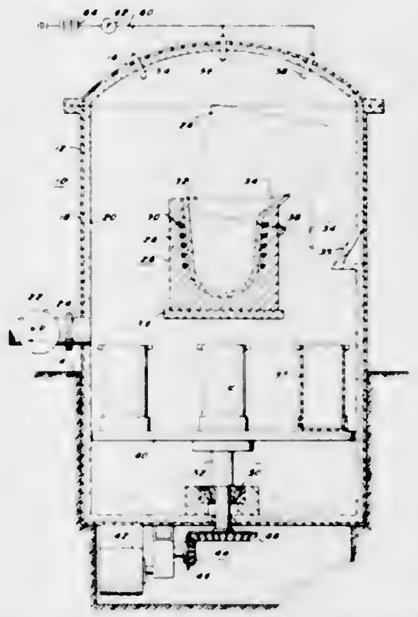


1. In a process for recovering and concentrating the metallic iron values from the product formed by the low temperature reduction of iron ore without fusion, the steps which comprise: comminuting said product and concentrating the metallic iron values therefrom by subjecting the comminuted product to magnetic separation and treating said product at a selected stage of said concentration, with about 0.25 to 5% by weight of the iron content, of at least one oxidation inhibiting agent selected from the group consisting of salts and bases of the alkali and alkaline earth metals which are alkaline in aqueous solution.

3,185,564
METHOD OF AGGLOMERATING IRON ORE FINES
Richmond E. Perry, 432 16th Court NW., Birmingham, Ala.
No Drawing. Filed Apr. 24, 1964, Ser. No. 362,529
31 Claims. (Cl. 75—3)
(Granted under Title 35, U.S. Code (1952), sec. 266)

1. A process for agglomerating a finely divided iron ore which comprises admixing therewith (1) an aqueous dispersion of a lignin material from the group consisting of a substantially neutral and an alkaline lignin material, the proportions of the lignin material being from about 2 percent to about 5 percent based on the weight of the ore, (2) an inorganic iron salt in an amount of from about 0.2 percent to about 1.0 percent based on the weight of the ore, (3) an alkali metal base in an amount of from about 0.2 percent to about 1.0 percent based on the weight of the ore, mixing the ingredients to form a uniform mass, compacting the mass into suitable shapes and drying said shapes.

3,185,565
METHOD AND APPARATUS FOR SAFE OPERATION OF VACUUM CHAMBERS
Kendrick C. Taylor, Oreland, Pa., assignor, by mesne assignments, to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 16, 1962, Ser. No. 238,222
7 Claims. (Cl. 75—93)



7. A method comprising the steps of generating a bath of molten metal, evolving light combustible gases from the molten metal, causing said gas to rise above said bath, and periodically igniting above said bath at predetermined intervals said light combustible gases evolving from said molten bath.

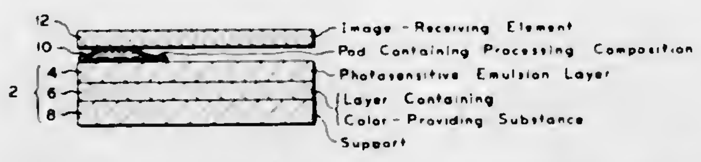
3,185,566
METHODS OF OBTAINING BY HEATING SINTERED METALLIC PIECES
Philippe Galmiche, Paris, France, assignor to Office National d'Etudes et de Recherches Aeronautiques, Chatillon-sous-Bagneux, France, a corporation of France
No Drawing. Filed Apr. 19, 1960, Ser. No. 23,138
Claims priority, application France, July 11, 1952, 631,962, Patent 1,060,225
15 Claims. (Cl. 75—212)

1. In a method of sintering a primary metal powder selected from the group consisting of iron, steel, cobalt, nickel, molybdenum, tungsten, aluminum and copper, the improvement comprising effecting at least a portion of said sintering in the presence of hydrofluoric acid vapors, hydrogen and chromium fluoride vapors, under conditions to produce chromium diffusion into the grain surface of said powder.

3,185,567
PHOTOGRAPHIC COLOR PROCESS AND PRODUCT

Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed July 6, 1959, Ser. No. 825,359
30 Claims. (Cl. 96—3)


12
10
4
6
8
2
Image-Receiving Element
Pod Containing Processing Composition
Photosensitive Emulsion Layer
Layer Containing
Color-Providing Substance
Support

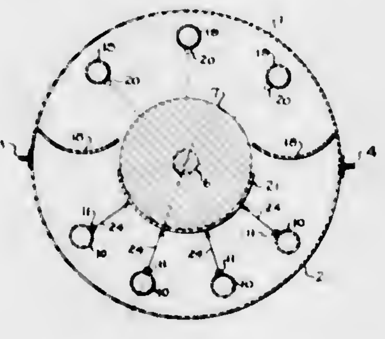
19. In a process of forming a photographic image in color, the steps which comprise exposing a photosensitive element, said element including a photosensitive silver halide emulsion and a nondiffusible reducible organic color-providing substance which is less reducible than exposed silver halide and more reducible than unexposed silver halide, developing a latent image contained in said exposed photosensitive element with a silver halide developing agent to provide in unexposed areas of said emulsion an imagewise distribution of unexhausted silver halide developing agent, reducing said nondiffusible reducible organic color-providing substance present in unexposed areas of said photosensitive element with said unexhausted silver halide developing agent, and transferring, by imbibition, at least a portion of the thus reduced organic color-providing substance to a superposed image-receiving material, substantially to the exclusion of unreduced reducible organic color-providing substance, to impart thereto a positive color image of the developed image.

24. A process as defined in claim 19 wherein said photosensitive element includes at least two silver halide emulsions each sensitized to different portions of the visible spectrum, each of said emulsions has associated therewith a reducible organic color-providing substance adapted to provide, upon reduction, a diffusible color-providing substance which provides an image dye having a color substantially complementary to the portion of the visible spectrum to which the respective associated silver halide emulsion is sensitized, and said positive color image is composed of at least two colors.

3,185,568
ETCHING PROCESS USING PHOTOSENSITIVE MATERIALS AS RESISTS

Robert H. Downie, Neenah, Wis., and Robert J. La Fond, Watertown, N.Y., assignors, by mesne assignments, to American Can Company, New York, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 576,366, Apr. 5, 1956. This application Aug. 24, 1960, Ser. No. 51,719
14 Claims. (Cl. 96—37)



1. A method for providing a curved metallic printing surface, comprising preforming a metallic surface to the desired printing surface curvature, coating the surface with a photosensitive resist, exposing the coated surface to the image to be printed, developing the coating, directing an etchant spray under positive pressure against the surface substantially radially thereof while variably rotating the surface about its center of curvature to acid-etch the resist-free portion of the surface, and thereafter dissolving the remaining resist.

3,185,569
PHOTOGRAPHIC SILVER HALIDE MATERIAL CONTAINING LACTOSE

Hans Weber, Neu-Isenburg, Germany, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,040
Claims priority, application Germany, Aug. 29, 1962, A 41,045, Patent 1,153,990
8 Claims. (Cl. 96—94)

1. A photographic gelatin-silver halide emulsion containing at least 20%, by weight, of lactose, by weight of silver halide.

3,185,570
STABILIZED LIGHT-SENSITIVE EMULSIONS

John A. Welsh, Binghamton, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 18, 1962, Ser. No. 245,377
4 Claims. (Cl. 96—109)

1. A light-sensitive silver halide emulsion containing as a stabilizer, in an antifogging and stabilizing amount, 4-hydroxypyrazole(3,4d)pyrimidine.

3,185,571
PROCESS OF PRESERVING PHOTOGRAPHIC GELATINOUS COMPOSITIONS FROM DECOMPOSITION

Robrecht Julius Thiers, Brasschaat-Antwerp, and Daniël Alois Claeys, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Production N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed May 12, 1961, Ser. No. 109,499
6 Claims. (Cl. 96—110)

1. A photographic gelatino silver halide emulsion layer containing 0.1 percent to 1.0 percent, based on the weight of the dry gelatin, of at least one chloride selected form the group consisting of cerium, lanthanum, neodymium, samarium, and yttrium.

3,185,572
COMPOSITION FOR USE AS ADDITIVE TO ANIMAL DRINKING WATER AND FEED

Werner Josef Motzel, Gaualgesheim (Rhine), Germany

No Drawing. Filed Jan. 11, 1962, Ser. No. 165,672
Claims priority, application Germany, Jan. 13, 1961, M 47,681
3 Claims. (Cl. 99—2)

1. A composition for use as an additive to animal drinking water and feed consisting essentially of

30 to 70 percent by weight of urea
15 to 25 percent by weight of phosphoric acid of 75 percent strength and
15 to 40 percent by weight of glycerine.

3,185,573
ANIMAL FEED COMPOSITION AND METHOD OF USING SAME

Max J. Harvey, Trenton, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 29, 1962, Ser. No. 233,950
14 Claims. (Cl. 99—2)

1. An animal feed composition effective in accelerating the growth rate of animals which comprises a nutritionally-balanced animal feed containing from about 10 to about 300 grams per ton of feed of a tetracycline antibiotic selected from the group consisting of tetracycline, chlortetracycline, oxytetracycline, and demethylchlortetracycline, from about 10 to about 300 grams per ton of feed of a sulfa drug selected from the group consisting of sulfamethazine and sulfaethoxypyridazine and from about 5 to about 150 grams per ton of feed of penicillin.

3,185,574
HIGH PROTEIN BAKED PIECE AND METHOD OF PRODUCING THE SAME

John Lester Gabby and Gerald K. Ashby, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

Filed Mar. 21, 1961, Ser. No. 97,275
6 Claims. (Cl. 99—86)

4. The process for the manufacture of an edible wafer-like baked piece comprised on a weight basis of from 15 to 40% protein, including 3.7 to 20 parts wheat gluten and at least 64 parts edible protein additive of low water solubility per 100 parts by weight thereof, from 5 to 20% edible fatty glyceride, and from 35 to 65% digestible carbohydrate which comprises forming a batter of predetermined weight of water and said fatty glyceride and said digestible carbohydrate ingredients; thereafter and just prior to baking mixing said edible protein additive of low water solubility with said batter to form a dough; and forming resulting dough into pieces of predetermined size and shape substantially resembling a dessert cookie, and baking said piece; said predetermined weight of water employed in forming said batter being sufficient to provide a moldable dough after mixing with said edible protein additive of low water solubility.

3,185,575
UNIVERSAL SHORTENING COMPOSITION

Alan S. Geisler, Fairfax, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 8, 1961, Ser. No. 129,994
15 Claims. (Cl. 99—123)

1. A universal shortening composition suitable for both baking and frying consisting essentially of a fat base and from about 0.5% to about 8.0% of an emulsifier consisting essentially of a polyoxyethylene isosorbide fatty acid ester which has an HLB value in the range of about 8 to about 18.

3,185,576
PROCESS OF PREPARING STABILIZED JELLY FILLING

Harold M. Ross, 27 Glennwood Road,
South Orange, N.J.

No Drawing. Filed Aug. 30, 1961, Ser. No. 134,842
1 Claim. (Cl. 99—129)

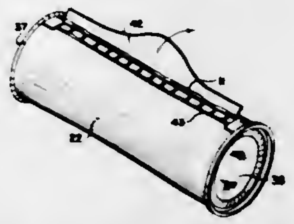
The method of preparing a stabilized jelly filling comprising:

(*a*) dissolving sucrose in water in proportions of approximately 495 pounds of sucrose to 165 pounds of water,
(*b*) dissolving aproximately 7½ pounds of low methoxyl pectin in the sugar solution,
(*c*) adding approximately 116 pounds of water to the resultant product,
(*d*) dissolving therein approximately 39 ounces of high viscosity solid sodium alginate and 39 ounces of low viscosity sodium alginate,
(*e*) heating the product to approximately 170° F. for approximately 30 minutes,
(*f*) adding thereto an aqueous solution of approximately 39 ounces of powdered calcium gluconate in one-half gallon of water,
(*g*) thoroughly mixing the product until a homogeneous mass is attained, and
(*h*) mixing citric acid into the homogeneous mass to adjust the pH to approximately 3.5.

3,185,577
PACKAGE AND METHOD OF FORMING CONTAINER UTILIZED THEREIN

James N. Krause, Jefferson County, Ky., assignor to Anaconda Aluminum Company, a corporation of Montana

Filed June 22, 1962, Ser. No. 204,373
8 Claims. (Cl. 99—171)



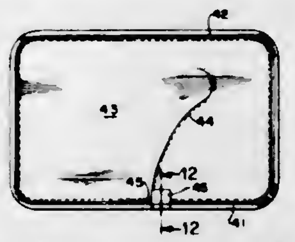
3. A container comprising a tubular substantially rigid body with end closure caps secured to each end of said body and contents contained in said container, said body comprising:

(*a*) a iner ply wound to define the inner surface of the container,
(*b*) a liner ply seam defined by one marginal portion of said liner ply being overlapped and adhesively secured to the marginal portion of an adjacent convolution of said liner ply,
(*c*) a label ply of material having greater internal tear resistance than said liner ply, said label ply wound about said liner ply with a single convolution and adhesively sealed thereto to define the outer surface of said container body, and
(*d*) a longitudinal label ply seam defined by overlapped and adhesively secured to opposite marginal portions of said web such that a marginal tab portion is defined by said overlapping marginal portion, and
(*e*) score means in said label ply adjacent said marginal tab portion for effecting ease of unwinding said label ply by lifting said tab portion whereby said liner ply will tear open along a longitudinal portion adjacent the side edge of said overlapped label ply.

3,185,578
EASILY OPENABLE PACKAGE AND CLOSURES THEREFOR

Edward W. Scharre, Louisville, Ky., assignor to Anaconda Aluminum Company, a corporation of Montana

Filed Aug. 17, 1962, Ser. No. 218,483
15 Claims. (Cl. 99—171)



1. An easily openable container closure comprising:

(*a*) a paper-board closure member,
(*b*) a first pair of cooperating score lines cut into said member and extending in the plane of said member substantially around its peripheral marginal portion, and
(*c*) a second pair of cooperating score lines cut into said member and extending in the plane of said member generally spaced from the peripheral marginal portion thereof but substantially intersecting said first pair of score lines at one point thereof and associated with said first pair of cooperating score lines to permit removal of at least a portion of said member, said pairs of cooperating score lines being cut into but not through said member from opposite sides thereof with each score line on one side generally

registering with but slightly offset from a corresponding score line on the other side whereby said member is separable along a portion thereof between the cooperating score lines, and

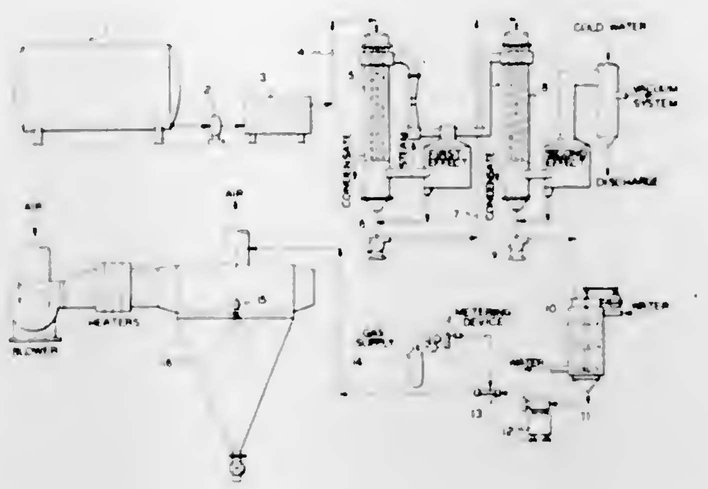
(*d*) tab means at the intersecting point and defined along a portion of the cover wherein the score lines of the respective first and second pairs of score lines which are cut into the inner side of the cover lie between score lines of the respective first and second pairs of cooperating score lines cut into the outer side of the cover, and said tab defined by a first cut extending from an edge of the closure to said first pair of cooperating score lines and a second cut peripherally spaced from the first cut and extending from the edge of the closure to said second score line at said intersecting point to define a tab extending inwardly from the edge of the closure to said second score line at said intersecting point to define a tab extending inwardly from the edge of the container and terminating at the peripheral extent of the first score lines, whereby said closure is free from any openings extending completely therethrough along that portion of the closure inward of the first pair of score lines and tearing of the closure is initiated by lifting said tab means so that the cover separates along said portion thereof between said pairs of cooperating score lines.

3,185,579
PACKAGING OF FRESHLY BAKED BREAD
Rudolf Dehne, Dr. Heinrich-Jasperstrasse 31,
Bad Harzburg-Bundheim, Germany
No Drawing. Filed Nov. 5, 1962, Ser. No. 235,914
Claims priority, application Germany, Jan. 5, 1955,
D 19,438
17 Claims. (Cl. 99—172)

1. Process for packaging freshly baked bread which comprises aging the baked bread mass by allowing the mass to stand for a period of at least about 6 hours immediately after baking to cool and structurally stabilize the hot soft mass, moistening just the surface of the mass to soften slightly the outermost crispy surface portion thereof without softening the interior portion of such mass, hermetically sealing the mass in a flexible, heat-sealable polyolefin foil having a thickness of at least about 0.03 mm. and below about 0.15 mm. under a vacuum of at least about 0.8 atmosphere absolute, sterilizing the mass hermetically sealed in the foil at a temperature between about 70 and 120° C. for a period of about 1 to 3 hours, and immediately thereafter cooling the sterilized hermetically sealed mass rapidly to at least about 10° C.

3,185,580
PROCESS FOR MAKING PUFF SPRAY DRIED NONFAT DRY MILK AND RELATED PRODUCTS
Francis P. Hanrahan, Silver Spring, Md., Raymond W. Bell, Washington, D.C., and Byron H. Webb, Harpers Ferry, W. Va., assignors to the United States of America as represented by the Secretary of Agriculture
Filed July 9, 1962, Ser. No. 208,650
6 Claims. (Cl. 99—203)
(Granted under Title 35 U.S. Code (1952), sec. 266)

1. A process for making nonfat dry milk comprising sequentially heating skim milk to a temperature and for a time at least sufficient to pasteurize, concentrating the pasteurized liquid up to about 60 percent total solids, tempering, seeding and stirring the concentrate under conditions favorable to lactose crystallization while maintaining the flowability thereof, then forcing the concentrate under a first pressure into a mixing zone, injecting an innocuous, relatively insoluble compressed gas at a pressure in excess of said first pressure into the concentrate in the mixing zone to produce in said mixing zone a gas-concentrate mixture in which the gas is uniformly dispersed, and spray drying immediately following the injection of said innocuous, relatively insoluble, compressed gas thereby producing a physically stable, and readily soluble nonfat dry milk.



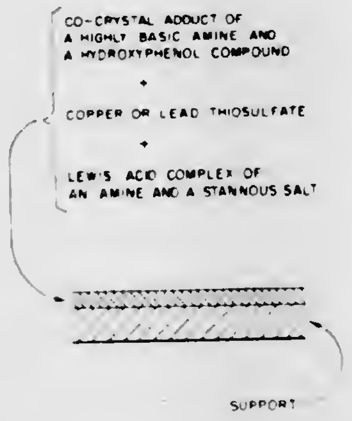
3,185,581
PROCESS FOR PRODUCING A FRIABLE, READILY RECONSTITUTABLE DEHYDRATED FOOD PRODUCT
Cornelis Kortschot, Lakeland, Fla., assignor to Plant Industries, Inc., Plant City, Fla., a corporation of Florida
No Drawing. Filed Aug. 14, 1962, Ser. No. 216,722
3 Claims. (Cl. 99—206)

1. A method for preparing a friable, readily reconstitutable dehydrated product from an edible juice comprising: expanding and drying the juice to an average moisture content of about 2.5 percent by weight; depressing the temperature of the intermediate product thus formed to at least as low as 0° F.; adding a moisture containing essence solution in an amount sufficient to increase the moisture content of said product about 1.0 percent by weight; packaging said product in contact with a material having as an important characteristic the capacity to absorb a substantial quantity of moisture; maintaining said package product at a temperature in the range between 0° F. and less than room temperature until such time that so large a percentage of the moisture in said product has been absorbed by said material that the product will remain friable if warmed to room temperature; and then raising the temperature of the product to room temperature for storage.

3,185,582
PROCESS FOR MAKING AND FINISHING ARTIFICIAL HIDES OR LEATHERS
Antonio Albareda Alegre, 5 Jose Bertrand St.,
Barcelona, Spain
No Drawing. Filed Feb. 28, 1961, Ser. No. 92,170
Claims priority, application Spain, Dec. 17, 1953,
212,761
9 Claims. (Cl. 117—11)

1. A method for producing a substitute leather from a lap of fibers comprising impregnating said lap with a latex selected from the group consisting of natural latex, synthetic latex, and mixtures thereof, heating the resultant latex-impregnated lap at a temperature in the range of from about 60° to about 80° C. for a time period requisite to coagulate said latex and bind the fibers of said lap together and to produce a bonded lap containing water in an amount appreciably above 50% by weight of said latex-impregnated lap, thereafter squeezing said water-containing bonded lap to reduce the water content thereof to a level in the range of from about 20 to about 50% by weight based on the dry weight of the lap, and then drying the resulting bonded lap of reduced water content at a temperature of about 120° C. to provide a porous, bonded lap having free spaces therewithin corresponding essentially to those spaces occupied by said water present in said bonded lap of reduced water content preliminary to said drying step.

3,185,583
HEAT RESPONSIVE MARKING SHEETS
Michael F. Baumann, Hudson, and William R. Lawton, Nashua, N.H., assignors to Nashua Corporation, Nashua, N.H., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,711
5 Claims. (Cl. 117—36.8)


CO-CRYSTAL ADDUCT OF A HIGHLY BASIC AMINE AND A HYDROXYPHENOL COMPOUND
+
COPPER OR LEAD THIOSULFATE
+
LEWIS ACID COMPLEX OF AN AMINE AND A STANNOUS SALT
SUPPORT

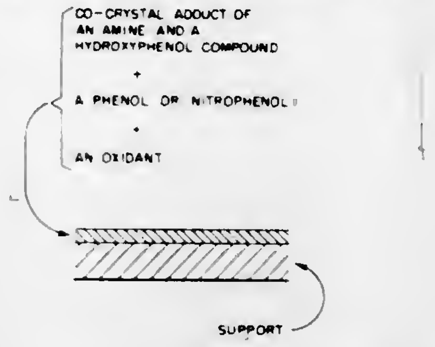
1. A heat-responsive copy sheet adapted to change visibly to a contrasting color wherever subjected to localized heating to a temperature of between 50° and 150° C. comprising, in combination,

- (*a*) a supporting sheet carrying on a surface thereof a coating comprising a uniformly distributed intimate association of finely divided particles of
- (*b*) a thiosulfate of a metal selected from the class consisting of copper and lead,
- (*c*) a solid, normally stable, co-crystal adduct comprising the reaction product of a highly basic amine and an hydroxyphenol compound selected from the class consisting of bisphenols and hydroxyphenol substituted chromans, and which is heat dissociable in the temperature range of 50° C.–150° C., and
- (*d*) a Lewis acid type complex comprising the reaction product of a tin salt selected from the group consisting of stannous chloride and stannous sulfate and an amine.

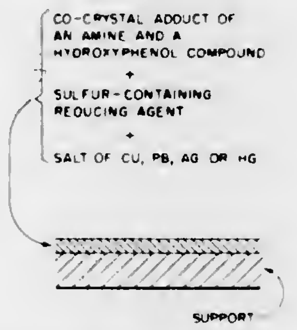
3,185,584
HEAT RESPONSIVE MARKING SHEETS
Michael F. Baumann, Hudson, and William R. Lawton, Nashua, N.H., assignors to Nashua Corporation, Nashua, N.H., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,712
4 Claims. (Cl. 117—36.8)

1. A heat-responsive copy sheet adapted to change visibly to a contrasting color wherever subjected to localized heating to a temperature between 50° and 150° C. comprising, in combination

- (*a*) a supporting sheet carrying on a surface thereof a coating comprising a uniformly distributed intimate association of finely divided particles of
- (*b*) an oxidizable compound selected from the class consisting of phenols and nitrophenols,
- (*c*) an oxidant selected from the class consisting of the nitroprussides of copper, nickel and sodium, copper oxalate, potassium ferricyanide, ceric sulfate, and ceric ammonium sulfate, and
- (*d*) a solid, normally stable, co-crystal adduct comprising the reaction product of an amine and an hydroxyphenol compound selected from the class consisting of bisphenols and hydroxyphenol substituted chromans, and which is heat dissociable in the temperature range of 50° C. to 150° C.



3,185,585
HEAT RESPONSIVE MARKING SHEETS
Michael F. Baumann, Hudson, and William R. Lawton, Nashua, N.H., assignors to Nashua Corporation, Nashua, N.H., a corporation of Delaware
Filed Nov. 19, 1962, Ser. No. 238,710
4 Claims. (Cl. 117—36.9)


CO-CRYSTAL ADDUCT OF AN AMINE AND A HYDROXYPHENOL COMPOUND
+
SULFUR-CONTAINING REDUCING AGENT
+
SALT OF CU, PB, AG OR HG
SUPPORT

1. A heat-responsive copy sheet adapted to change visibly to a contrasting color wherever it is subjected to localized heating to a temperature of between about 50° and 150° C. comprising in combination

- (1) a supporting sheet carrying a coating comprising
- (2) a solid, normally stable, co-crystal adduct comprising the reaction product of an amine and an hydroxyphenol compounds elected from the class consisting of bisphenols and hydroxyphenol substituted chromans which is heat dissociable in the temperature range of 50° C.–150° C.,
- (3) a strong, sulphur-containing reducing agent, and
- (4) a salt of a metal selected from the group consisting of copper, lead, silver, and mercury.

3,185,586
COATED GLASS SHEETS
Arnold E. Saunders, Saxonburg, and William E. Wagner, Verona, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 28, 1961, Ser. No. 92,169
15 Claims. (Cl. 117—54)

1. A method of providing a transparent glass sheet with a metal oxide coating substantially free from graininess and characterized by a uniform background and free from halos when inspected through a microscope having a magnification of 18, which comprises heating said sheet to a temperature above about 400° F. but below the temperature at which the glass melts, and contacting a hot surface thereof with a composition containing an organic vehicle containing therein a metal 2-ethyl hexanoate selected from the group consisting of compounds capable of being dissolved in said vehicle and compounds capable of forming a colloidal suspension therein to form a film containing metal oxide as an essential ingredient on said surface.

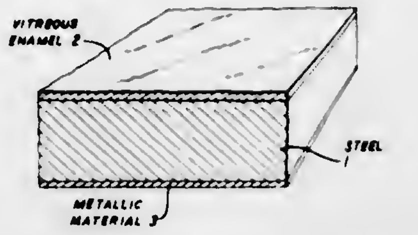
3,185,587

METHOD OF PREVENTING HYDROGEN PENETRATION INTO STEEL

James D. Sullivan, Pewaukee, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

Filed Nov. 14, 1960, Ser. No. 68,925

5 Claims. (Cl. 117—68)



1. A method of applying a vitreous enamel coating to a steel article, comprising applying a vitreous enamel coating composition directly to one portion of the steel article, applying directly to a second and separate portion of the steel article a coating consisting essentially of finely divided particles of a metalling substance selected from the group consisting of nickel, cobalt, chromium, manganese, nickelous oxide, cobaltic oxide, cobaltous oxide, mangânese dioxide, chromic oxide, chromic acid anhydride and mixtures thereof, maintaining said second portion free of said vitreous enamel coating composition, and heating the steel article in an oxidizing atmosphere containing a substantial portion of water vapor to a temperature sufficiently high to fuse the vitreous enamel and whereat substantial quantities of hydrogen are normally developed by reaction of water vapor with steel, said particles of the metallic substance serving to adsorb the water vapor and prevent the water vapor from reacting with the steel and thereby reduce the hydrogen defects in the vitreous enamel coating on said steel.

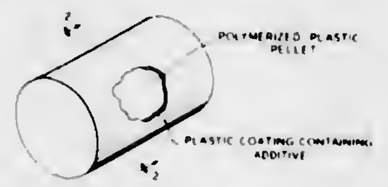
3,185,588

METHOD OF COATING A BLOWING AGENT ONTO THE SURFACE OF POLYSTYRENE PELLETS

Joseph Y. Resnick, Ellenville, N.Y., assignor to International Research & Development Co., Ellenville, N.Y.

Filed Mar. 14, 1960, Ser. No. 18,463

2 Claims. (Cl. 117—100)


POLYMERIZED PLASTIC PELLET
PLASTIC COATING CONTAINING ADDITIVE
2

1. A method of producing extrudable polystyrene foam thermoplastics, comprising the steps of providing polystyrene in pellet form, combining polystyrene with a styrene monomer to produce a partially polymerized coating material, combining said coating material with a chemically decomposable blowing agent additive consisting of sodium bicarbonate combined with citric acid, applying said additive-containing coating material to said polystyrene pellets, and then completing polymerization of said partially polymerized coating material.

3,185,589

METHOD OF COATING FINELY DIVIDED METAL PARTICLES

Eugene P. Damm, Jr., Endwell, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 21, 1961, Ser. No. 161,266

9 Claims. (Cl. 117—100)

1. A method of uniformly coating finely divided metal particles at room temperature consisting essentially of dissolving an acetone-soluble thermoplastic resin in an amount of from about 2% to about 8% by weight in a volatile lower aliphatic oxygenated water-miscible organic solvent selected from the group consisting of ethyl alcohol, propanol, acetone, methyl ethyl ketone, and aceto nitrile to form an organic solvent solution therewith, adding water to said organic solvent solution in amount sufficient to cause turbidity whereby said thermoplastic resin is converted from the solution state into a negatively charged colloid suspended in the solvent-water mixture, mixing the suspended colloid with finely divided metal particles under agitation whereby said metal particles being positively charged become uniformly coated by attraction of the negative charges of the colloidal resin, thereafter adding water in an amount at least two times greater than the amount for initial turbidity and separating and isolating the resin coated metal particles each in individually coated condition suitable for drying at low temperature.

3,185,590

LIGHTWEIGHT SECONDARY BATTERY

Stanley W. Mayer, Canoga Park, and Donald E. McKenzie, Woodland Hills, Calif., assignors to North American Aviation, Inc.

Filed Jan. 6, 1961, Ser. No. 81,034

13 Claims. (Cl. 136—6)

1. A lightweight secondary battery comprising a light metal anode, a cathode consisting essentially of a shaped electron-exchange organic polymer adapted to reversibly function as a donor or receiver of electrons, and a solution of an electrolyte salt in an inert organic solvent.

3,185,591

SILVER ELECTRODE OF SILVER-ZINC STORAGE CELLS AND PROCESS FOR PREPARING THEM

Béla Bártfai, Miklós Bártfai, Jenö Gönczi, László Hajdu, Márton Markovics, Béla Ronai, and József Szücs, all of Budapest, Hungary, assignors to Metrimpex Magyar Muszeripari Kulkereskedelmi Vallalat, Budapest, Hungary

Filed Nov. 1, 1960, Ser. No. 67,873

Claims priority, application Hungary, June 7, 1960, BA 1,458

5 Claims. (Cl. 136—75)

1. A method of making a silver/silver-oxide electrode for an alkaline storage cell, comprising the steps of electrolytically transforming an outer zone of a homogeneous body of solid metallic silver along its surface into silver chloride surrounding a core of solid metallic silver, reducing said silver chloride to produce discrete active particles of metallic silver along said surface integral with the material of said core, and oxidizing said particles to silver oxide, thereby producing a layer of said silver oxide substantially integral with said core.

3,185,592

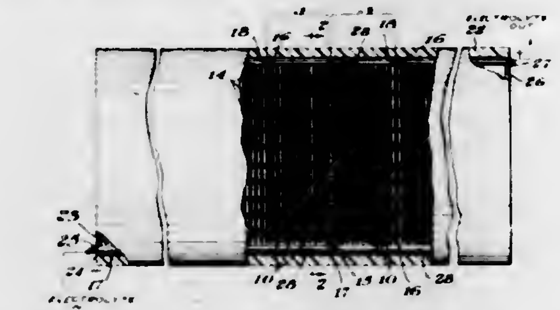
HIGH POWER OUTPUT MAGNESIUM PRIMARY BATTERY

Roy C. Kirk and Richard E. Carr, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Aug. 18, 1961, Ser. No. 132,463

3 Claims. (Cl. 136—100)

1. A high drain primary battery which comprises a plurality of individual modules, each of said modules containing a plurality of duplex electrodes, a magnesium base plate-like anode end member and a low hydrogen overvoltage plate-like cathode as the opposite end member, each of said duplex electrodes consisting of a plate-like magnesium based metal anode having an electron conducting coating on one side thereof and a layer of a low hydrogen overvoltage cathode material on said electron conducting coating, the cathode surfaces of the electrodes facing an anode surface of an adjacent electrode in said module said duplex electrodes defining openings in opposite edges, said module anode end members attached to a common electrical connector and said cathode module end members attached to a second common electrical connector, said electrical connectors passing through the openings defined in said duplex electrodes without touching said duplex electrodes, spaces between the plate-like electrodes providing a passage for electrolyte, the openings defined in said duplex electrodes providing a means for electrolyte flow from module to module, the entire assembly of parallel electrically connected modules being encased in an electrically insulating jacket, said jacket having an entry port for introducing an aqueous electrolyte into said battery and an exit port for removing the electrolyte from said battery, and an aqueous electrolyte, said electrolyte flowing through said battery during battery operation.



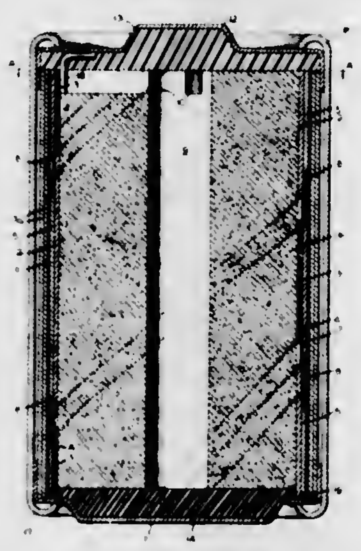
3,185,593

PRIMARY VOLTAIC CELL HAVING SPIRALLY WOUND ELECTRODES AND METHOD OF MAKING SAME

Joseph J. Coleman, Milton E. Wilke, Ernest F. Steinhoff, and Howard A. Brandeland, all of Freeport, Ill., assignors to Servel, Inc., Evansville, Ind., a corporation of Delaware

Filed Mar. 16, 1962, Ser. No. 180,225

12 Claims. (Cl. 136—107)



1. A combination anode cathode current collector and separator for a cylindrical voltaic cell comprising a multi-element ribbon spirally wound to form a tube, said ribbon including a separator comprised of a strip of a sheet-form bibulous material, a cathode current collector comprised of a strip of an electrically conductive carbonaceous material affixed to the surface of said separator forming the inner surface of said tube and positioned at approximately one edge of said separator, and an anode comprised of a strip of an electrically conductive electro-negative metal affixed to the surface of said separator forming the outer surface of said tube and positioned at approximately the other edge of said separator, said collector and said anode each having a width substantially smaller than that of said separator, said ribbon being so wound so that its edges are in abutting relationship and at least one of said electrically conductive strips being spaced inwardly from the proximate edge of said separator strip.

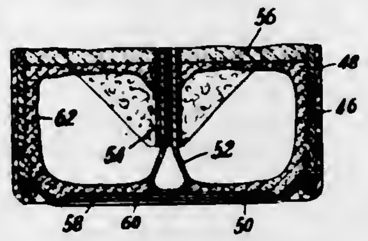
3,185,594

LEAK-RESISTANT DRY CELL

Lewis F. Urry, Cleveland, Ohio, assignor to Union Carbide Corporation, a corporation of New York

Original application May 1, 1961, Ser. No. 106,761, now Patent No. 3,115,428, dated Dec. 24, 1963. Divided and this application Nov. 1, 1963, Ser. No. 320,691

3 Claims. (Cl. 136—107)



1. In a leak-resistant dry cell comprising a jacket, a container-electrode of carbon in juxtaposition to and in adherent contact with said jacket having therein a depolarizer mix and a second electrode of a consumable metal embedded within said depolarizer mix, and a metallic bottom plate locked to said jacket, the combination of a shield for said bottom plate and an electrically conductive strip positioned in contact with said second electrode and making electrical contact with said bottom plate in the locked junction of said bottom plate and said jacket.

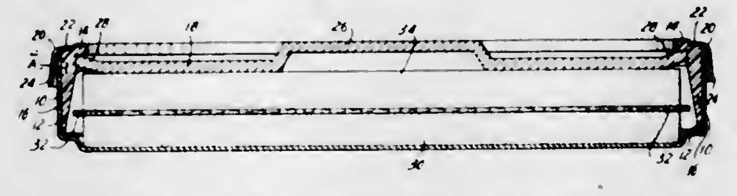
3,185,595

REINFORCED CELL CLOSURE

Raymond L. Schenk, Jr., Minneapolis, Minn., assignor to Union Carbide Corporation, a corporation of New York

Continuation of application Ser. No. 47,408, Aug. 4, 1960. This application Apr. 24, 1963, Ser. No. 275,378

4 Claims. (Cl. 136—133)



1. For sealing a galvanic cell which includes a cylindrical cupped metallic container containing an electrolyte, enclosing means comprising an annular hard plastic gasket which is resistant to cold flow interposed between said container and a resiliently secured metallic cell cover; said gasket having a depending flange extending down inside of said container and a second flange extending external of said container between said container and said cover; said cover being provided with an integral central terminal boss projecting upwardly and the rim of said cover being spaced radially outwardly from said boss and offset upwardly from the horizontal at an angle of between 5° and 10°; and an external metal reinforcement ring encircling said container at its top, having a depending flange in direct contact with the outer periphery thereof and an inwardly facing flange adjacent said second flange on said gasket; said gasket being in a state of radial compression between said container and said cover and exerting a radial force substantially equivalent to but not greater than the yield strength of the metal of which said container and ring are made.

3,185,596

METHOD OF COATING METAL

Louis Schiffman, Elkins Park, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

No Drawing. Filed Sept. 20, 1962, Ser. No. 225,149

11 Claims. (Cl. 148—6.16)

1. The method of applying a coating to the surface of metal from the class consisting of iron, zinc and aluminum which method comprises treating the surface with an

aqueous bath the coating-producing ingredients of which bath consist essentially of

(1) mixtures of chromic acid and its soluble salts and reduced forms thereof

and

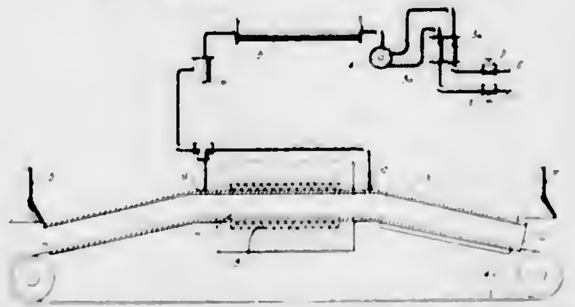
(2) water-soluble and water-dispersible polyacrylic acid compound chosen from the class which consists of the said acid, the alkali metal and ammonium salts thereof and aqueous emulsions of acrylic esters known as polymer latices

the quantity of each of (1) and (2) in the bath being not less than 0.25% by weight, the treatment being continued until the surface is completely wetted by the solution, and then drying the surface.

3,185,597

METAL OXIDIZING PROCESS

Roy F. Altman, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Feb. 15, 1963, Ser. No. 258,680
4 Claims. (Cl. 148—16)



1. A process for treating a chrome-bearing alloy containing surface occluded gases and contaminants prior to the formation of a final surface oxide thereon, said final surface oxide formed to provide an intermediate bond in a glass-to-metal seal, comprising the steps of

flowing a reducing atmosphere over said alloy at a temperature of less than 200° F. for a period ranging from 10 to 25 minutes, said atmosphere consisting essentially of the cracked constituents of a combustible gas including CO and H_2 in an air to gas ratio substantially between 3:1 and 8:1 whereby all adherent gases are flushed from the alloy;

subjecting said alloy to said atmosphere at a temperature in the range of approximately 1600° F. to 200° F. to remove occluded gases and contaminants and cause migration of chrome to said alloy surface; and

cooling said alloy while flowing said atmoshpere thereover at a temperature below 200° F.

3,185,598

SOLDERING FLUX

Joseph F. Quaas, Island Park, N.Y., and Daniel D. Zielik, Fairfield, Conn., assignors to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York
No Drawing. Filed Sept. 5, 1961, Ser. No. 135,733
3 Claims. (Cl. 148—26)

1. A soldering flux consisting essentially of the following composition in the indicated proportional ranges of percentages by weight:

Constituent:	Proportional range
Heavy metal oxidizing agent	1.5 to 7.5
Heavy metal chlorides and bromides	10.0 to 20.0
Cupric chloride	10.0 to 35.0
Ammonium chloride and ammonium hydrogen fluoride	26.5 to 73.0

said heavy metal oxidizing agents being of the type which release their oxygen at temperatures ranging approximately from 300 to 1000° F. with residues compatible with a strong bond between a solder and parent metal.

3,185,599

PROCESS OF PRODUCING WELDING FLUXES

Carl Arnold, Stuttgart, and Heinrich Brandt, Wiehl, Bezirk Cologne, Germany, assignors to Deutsche Flux G.m.b.H., Montabaur, Westerwald, Germany
No Drawing. Continuation of application Ser. No. 427,664, May 4, 1954. This application Feb. 25, 1963, Ser. No. 260,876
Claims priority, application Germany, May 8, 1953, D 15,011
5 Claims. (Cl. 148—26)

1. A method for producing welding flux compositions in granular form for use in shielded arc welding, comprising the steps of

mixing together, in dry state, finely ground divided particles essentially comprising a major portion of particles having welding flux properties,

and directly agglomerating, by the use of a material having binding properties when wetted, the finely ground particles into individual granules of a size of about 2 millimeters maximum and corresponding to the final desired size by controlling the admixture of a liquid, in finely divided form, at a rate of about 0.1–0.8 liter per minute per each 50 kg. of particles while simultaneously therewith continuously agitating the particle mixture,

and thereafter subjecting the thus agglomerated individual granules to a heat treatment at a temperature between the evaporization temperature of the liquid and the melting temperature of that particle of the mixture having the lowest melting temperature.

3,185,600

CRYOGENIC QUENCHING METHOD

Eberhard Dullberg, West Islip, N.Y., assignor to Grumman Aircraft Engineering Corporation, Bethpage, Long Island, N.Y., a corporation of New York
No Drawing. Filed June 13, 1963, Ser. No. 287,525
8 Claims. (Cl. 148—125)

1. The method of treating a sheet metal part made of an alloy having at least one hardening constituent which comprises subjecting the part to a solution heat treatment, and thereafter introducing said part at substantially the temperature of the solution heat treatment directly into a cryogenic quenching medium to reduce the temperature of said part as rapidly as possible below approximately —50° F.

3,185,601

POLYISOBUTENE GAS-PRODUCING COMPOSITIONS CONTAINING ALUMINUM

Barry Hilton Newman, Cheshunt, Graham James Spickernell, Waltham Abbey, and George Harold Sidney Young, Enfield, England, assignors to Minister of Aviation in Her Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
No Drawing. Filed Oct. 25, 1962, Ser. No. 234,004
Claims priority, application Great Britain, Oct. 27, 1961, 38,515/61
6 Claims. (Cl. 149—19)

1. A gas-producing composition consisting essentially of the following ingredients:

Ingredients:	Percent by weight
Aluminum	2 to 24
Polyisobutene	8 to 15
Inorganic oxidising agent selected from the group consisting of ammonium nitrate and ammonium perchlorate,	35 to 90
Coolant selected from the group consisting of ammonium picrate, oxamide and mixtures thereof,	Up to 50
Surface active agent consisting essentially of pentaerythritol dioleate, a compound selected from the group consisting of ethyl oleate and tetrahydrofurfuryl oleate and an inorganic salt of dialkyl sulphosuccinate, in substantially equal amounts and,	1
Burning rate catalyst in which the aluminum is of a form having a specific surface area in the range 1,000 cm.^{2}/cm.^{3} to 90,000 cm.^{2}/cm.^{3}.	Up to 2

6. A gas-producing composition consisting essentially of the following ingredients:

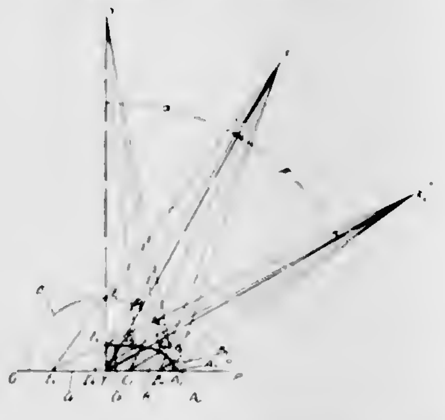
Ingredients:	Percent by weight
Aluminum	14
Polyisobutene	10
Ammonium perchlorate	74
Copper chromate	1
Surface active agent consisting of pentaerythritol dioleate, ethyl oleate and sodium (di-ethyl hexyl) sulphosuccinate in substantially equal amounts,	1

wherein the aluminum is substantially spherical particles having a specific surface area in the range 1,000 to 15,000 cm.^{2}/cm.^{3}.

3,185,602

METHOD OF MANUFACTURING RELIEFS BY PHOTOGRAPHIC MEANS

Isao Morioka, 40 Ookayama, Meguro-ku, Tokyo, Japan
Filed Feb. 6, 1962, Ser. No. 171,381
2 Claims. (Cl. 156—58)



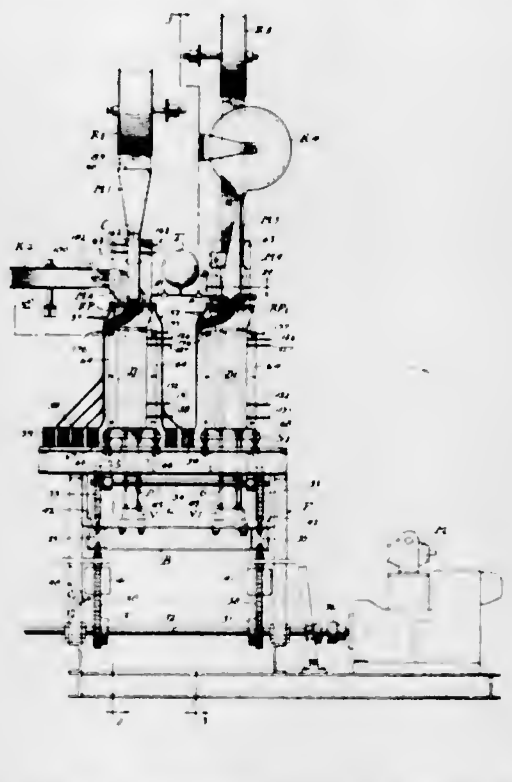
1. A method for manufacturing reliefs by photographic means comprising the steps of photographing an object on a first selected line of sight to produce a first positive picture, photographing the object from a second position along a second selected line of sight to produce a second positive picture, projecting the second picture along the second selected line of sight onto a plane perpendicular to the first line of sight to produce an image thereon, photographing the image from a third position to produce a third picture, positioning a mass of material on said plane, projecting the first and third pictures onto the mass and adding and removing material to produce the relief.

3,185,603

METHOD AND EQUIPMENT FOR MAKING FIBRE REINFORCED PLASTIC SHAPES

Le Roy R. Boggs, Bristol, Tenn., assignor, by mesne assignments, to Universal Moulded Fiber Glass Corporation, Bristol, Va., a corporation of Delaware
Filed July 20, 1960, Ser. No. 44,050
26 Claims. (Cl. 156—200)

12. The method for making an elongated fibre reinforced resin article of preselected cross section having portions lying in different planes, comprising feeding a flat sheet or strip type fibre reinforcement from a source of supply generally longitudinally into and through a confining passage having a cross sectional shape substantially conforming with that of the article being made, impregnating the reinforcing strip in advance of entrance into the confinig passage with a liquid heat hardenable resin, shaping the flat reinforcing strip to extend in relatively angled portions of the cross section of the confining passage, at least a major portion of said shaping being effected in advance of the impregnation, heating the resin to solidify it in the confining passage and pulling on the solidified article beyond the discharge end of the confining passage.



3,185,604

METHOD OF FORMING A SCOURING ARTICLE

John A. Cameron, Fort Lauderdale, Fla., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Apr. 12, 1962, Ser. No. 186,941
3 Claims. (Cl. 156—210)

1. A method of forming a scouring article, comprising providing a backing sheet having disposed thereon a coating of thermoplastic material heat activatable to an adhesive condition, bringing a layer of metal wool filaments corrugated to provide alternate crests and troughs therein into contact with said thermoplastic coating on said sheet, disposing said sheet and said layer between two closely spaced, moving, endless belts of heat resistant material so that one of said belts is in contact with said sheet and the other of said belts is in contact with said layer, while said sheet and said layer are being held between and moved by said belts simultaneously applying heat to a continuous area of said coating through one of said belts to activate said coating and forcing said sheet and said layer together to urge said troughs into a position in which they have penetrated the activated coating and the crests of said layer are filled with said coating, and cooling said coating while maintaining the position of said troughs therewithin to set said coating and produce a unitary scouring article.

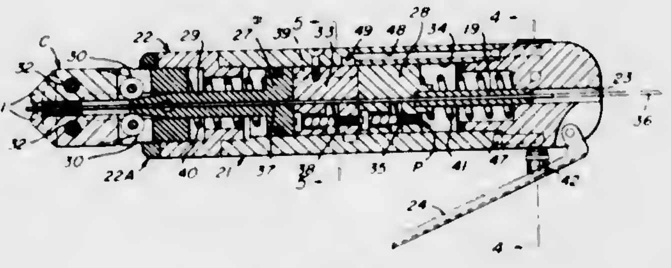
3,185,605
METHODS OF MAKING RESIN REINFORCED ARTICLES

Leonard Alan Osborne and Victor George Rivers, Bristol, England, assignors to Bristol Siddeley Engines Limited, Bristol, England, a company of Great Britain
Filed Aug. 19, 1960, Ser. No. 50,793
Claims priority, application Great Britain, Aug. 21, 1959, 28,713/59
11 Claims. (Cl. 156—289)

2. A method of making a component comprising laminations of flexible reinforcing material which over limited portions of their area are substantially resin-free and are flexible, while over their remaining area they are bonded together into a rigid body by a resin, which comprises placing the laminations together in a stack, interleaving limited portions only of the laminations with thin flexible impermeable sealing sheets of material to which the resin does not adhere, then pressing the interleaved laminations and sealing sheets tightly together and impregnating the area of the laminations other than said interleaved laminated portions with resin while maintaining sufficient pressure on the interleaved laminated portions to leave such portions resin-free, setting the resin and then releasing the pressure and removing the sealing sheets.

3,185,606
PORTABLE PNEUMATIC TOOL

Joseph L. Lagasse, Montreal, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Nov. 27, 1963, Ser. No. 326,433
11 Claims. (Cl. 156—303.1)

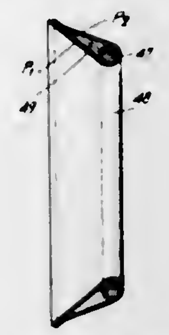


1. A method of placing wire pins formed from continuous stock into a mold comprising the steps of securing and locating one end of said wire stock, positioning and aligning said stock relative to said mold, inserting said wire longitudinally into said mold, and severing said inserted wire from said stock while holding said wire in transverse and longitudinal stability relative to said mold, whereby a desired degree of insertion and a required amount of protrusion of said wire is achieved, while avoiding undesired deformation or damage to said mold and said wire.

3,185,607
METHOD AND APPARATUS FOR FITTING BANDS OF FABRIC OR OTHER MATERIAL AROUND WIRES FOR OUTER COVERS OF PNEUMATIC TIRES

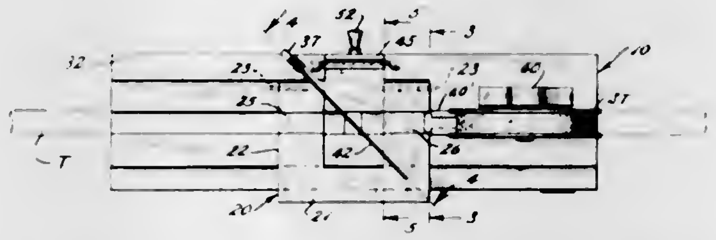
Noël Nebout, Montlucon, Allier, France, assignor to Societe Anonyme des Pneumatiques Dunlop, Paris, France, a company of France
Filed June 12, 1962, Ser. No. 201,908
Claims priority, application France, June 15, 1961, 865,060
5 Claims. (Cl. 156—443)

1. An apparatus for folding bands of fabric or the like material around bead wires for outer covers of pneumatic tires comprising in combination: a cylindrical drum, a pair of inflatable and deformable chambers fitted side by side on the outer periphery of said drum; bell structures, each coaxial to and axially slidable relative to said drum, respectively located on each side of said drum, said bell structures each having an inner diameter slightly greater than the outer diameter of said chambers when not inflated, and being further provided at their edges directed towards said drum with frustoconical flanges coaxial to said drum and the apex angles of which are substantially supplemental, whereby a band of fabric formed as a cylindrical sleeve, placed onto said chambers and girded by a bead wire may be folded around said bead wire by inflating said chambers and deforming the said chambers by shifting said bell structures towards each other and towards said drum.



3,185,608
TAPE SPLICER

John J. Nagy, 913 Douglass Drive, McLean, Va.
Filed June 18, 1962, Ser. No. 203,219
3 Claims. (Cl. 156—506)



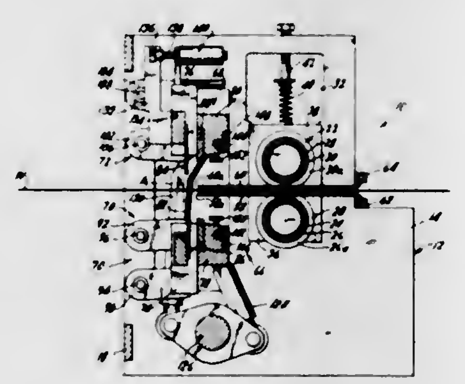
1. A tape splicer comprising a base having a channel for snugly receiving tape and with a surface of said tape exposed, spaced arms mounted transversely of said channel and having portions which extend into the channel and engage the tape therein, said arms being movable from such tape engaging position to a position in which said portions are outside of said channel, said base having a slit which extends across the surfaces defining the channel intermediate the arms when the latter are in the tape engaging position, a thin blade cutting member mounted for movement into and out of said slit, a combined cutter and pressing member movably mounted on said base for movement from a position remote from said channel to a position within said channel intermediate the arms when the latter are in tape-engaging position, and means for supplying splicing tape to a position along said channel and upon the arms when the latter are in tape-engaging position and spaced above the tape in said channel whereby said cutting and pressing member may be moved to engage siad splicing tape and detach a length therefrom intermediate said arms and press said cut length into engagement with tape ends lying in said channel intermediate said arms.

3,185,609
MACHINE FOR CUTTING AND SEALING A WEB OF THERMOPLASTIC MATERIAL

Lester W. Merithew, Phelps, and Herbert O. Corbett, Canandaigua, N.Y., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Feb. 15, 1962, Ser. No. 173,458
12 Claims. (Cl. 156—530)

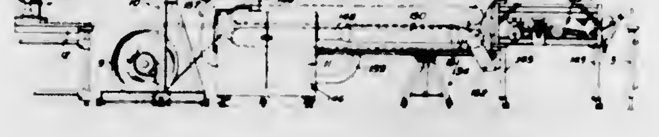
1. A machine for forming bags from tubular thermoplastic stock comprising means for intermittently feeding

said stock along a feed path to a cutting and sealing location, opposed transverse cutting blades located above and below said feed path, said cutting blades being positioned in a vertical plane offset to one side of said cutting and sealing location, means mounting said cutting blades for movement simultaneously toward each other and longitudinally of said feed path into cutting position at said cutting and sealing location for cutting said stock along an edge thereof and then moving said blades longitudinally in the same direction away from said cut edge, opposed transverse sealing blades located above and below said feed path, said sealing blades being positioned in a vertical plane offset from that of said cutting blades, means mounting said sealing blades for movement toward each other and longitudinally of said feed path into sealing position at said cutting and sealing location for sealing said stock along a transverse area contiguous to and coextensive with said cut edge, and means operable in timed relation to said feeding means for moving said cutting blades and said sealing blades in succession for first cutting and then sealing said stock.



3,185,610
APPARATUS FOR LAMINATING A CONTINUOUS HONEYCOMB SANDWICH

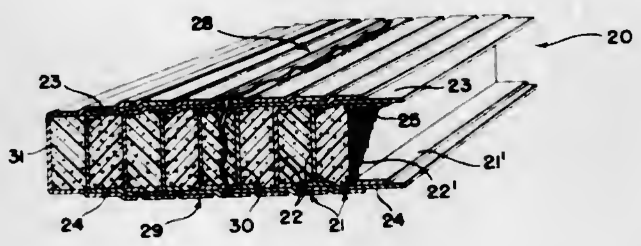
John D. Lincoln and Eugene P. Ceselski, Mount Vernon, Ohio, assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 27, 1959, Ser. No. 816,172
23 Claims. (Cl. 156—549)



8. In an apparatus for laminating a continuous honeycomb sandwich; a mechanism for applying continuous facings to a moving continuous honeycomb core, said mechanism including a pair of endless conveyors having conveyor belts with opposed generally parallel runs and remote runs, said mechanism including an entrance end and an exit end, means for delivering an adhesive coated continuous honeycomb core to said mechanism at said entrance end, means for supporting rolls of facing forming material adjacent said mechanism exit end, guide means positioned relative to said conveyors for first guiding facing forming material along said conveyor belt remote runs and then along said conveyor belt opposed runs, an air chamber facing a remote face of each of said conveyor belt opposed runs, portions of said conveyor belts opposed runs forming walls of said air chambers and being sealed relative thereto, and means for supplying air under pressure to said air chambers to urge said conveyor belts into clamping engagement with a honeycomb sandwich passing therebetween.

3,185,611
COMPOSITE COREBOARD AND PROCESS FOR PRODUCING SAME

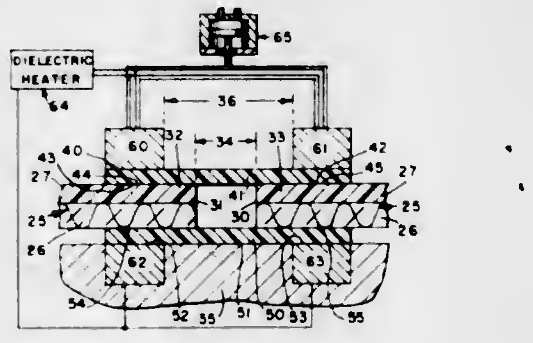
Clarence J. Rodman and Thorne K. Broome, Alliance, Ohio, assignors of one-half to C. J. Rodman, doing business as Alliance Tool Company
Filed Jan. 14, 1963, Ser. No. 251,096
4 Claims. (Cl. 161—36)



1. A composite coreboard comprising, a plurality of skin elements formed from a flexible material, each said skin element having a web portion and flange portions defining a substantially channel-shaped cross section, said skin elements being nested successively together with longitudinal cells therebetween, the corresponding flange portions overlapping at least one half the flange portion of the successively adjacent skin elements, adhesive means bonding together said overlapping flange portions, and a light weight, highly insulative core material fixedly disposed within said cells.

3,185,612
SEAMED ARTICLE AND METHOD FOR MAKING SAME

Philip N. Dunham, Nashua, N.H., assignor to Hampshire Manufacturing Corporation, Nashua, N.H., a corporation of New Hampshire
Filed Oct. 16, 1961, Ser. No. 145,221
9 Claims. (Cl. 161—95)



1. In an article of flexible, imperforate, thermoplastic sheet material of the type having bounding lines brought together to form a seam, the combination of a pair of free, imperforate, marginal strips, each extending along the full length of one of said bounding lines and together defining an elongated zone of predetermined width and an elongated, imperforate tape of flexible, tough, thermoplastic material having a full length, laterally extending, intermediate portion overlying, but unconnected to, said strips in said zone, said tape having a pair of full length laterally extending outer portions, each on an opposite side of said zone, and each heat sealed to the adjacent, imperforate face of said sheet material whereby said seam is a fluid tight, freely flexible, hinge pivot joint but the free marginal edges of said material at said seam are not united to each other.

6. The method of joining sheets of imperforate, thermoplastic material to form a fluid tight, freely flexible seam which comprises supporting the marginal strips thereof to be joined in contiguity with said marginal strips jointly defining an elongated, relatively narrow zone; ap-

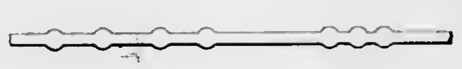
plying a imperforate tape of flexible, thermoplastic material along said zone, with the intermediate portions thereof overlying said strips in said zone and the opposite outer portions thereof overlying the imperforate face of said material just outside said zone and subjecting said opposite, outer portions of said tape to heat and pressure to heat seal the same to said face of said material.

3,185,613
NODULAR SYNTHETIC ORGANIC FILAMENTS

Dustin S. Adams, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 19, 1962, Ser. No. 180,590

6 Claims. (Cl. 161—179)



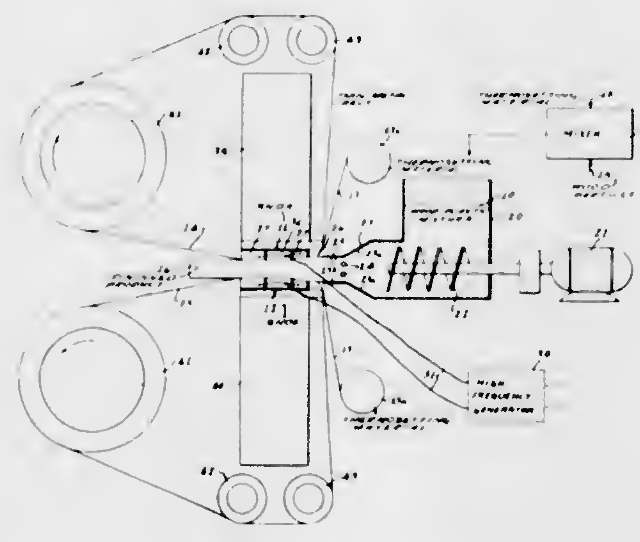
1. A nodular synthetic linear organic polymeric substantially oriented filament having spaced intermittent regions of large and small diameters substantially symmetrically disposed about the axis of the filament, the ratio of the large to small diameters of the basic drawn filament being between about 1.1 and 2.5 to 1; and the spaced regions of large diameter occurring in a random distribution along the filament at a frequency of at least 20 per inch.

3,185,614
METHOD AND APPARATUS FOR MAKING BOARDS FROM WOOD PRODUCTS

Carroll H. van Hartesveldt and Buddy D. Wahl, Toledo, Ohio, assignors, by direct and mesne assignments, to Hoover Ball and Bearing Company

Filed Nov. 21, 1960, Ser. No. 70,572

15 Claims. (Cl. 161—261)



1. A finished board comprising a flat sheet formed of a mixture of discrete particles of wood and a binder of thermosetting resin and having a least one planar outer surface, said sheet including a core of said resin and natural wood particles of substantially uncompressed original structure, said planar outer surface defined by a layer of said resin and the same natural wood particles as said core compressed beyond their elastic limit and being an integral continuation of said core, said layer being coextensive with said core and providing a uniform thickness zone of said resin and casehardened wood of density greater than the density of wood in said core.

3,185,615
METHOD AND MOLD FOR CONTROLLED STOCK FORMATION IN A PULP MOLDING OPERATION

Richard F. Reifers, Stamford, Conn., assignor to Diamond International Corporation, a corporation of Delaware

Original application Mar. 30, 1960, Ser. No. 18,623, now Patent No. 3,128,932, dated Apr. 14, 1964. Divided and this application Oct. 30, 1961, Ser. No. 155,523

10 Claims. (Cl. 162—228)

1. A pulp molding die comprising a wire screen shaped in the configuration of the article to be molded, with certain portions thereof where a thinner effective layer of pulp is desired to be deposited, being blocked out in a plurality of small discrete areas regularly spaced and occurring in a repeated geometric pattern, each blocked area not exceeding ⅜" in major dimension, said blocked areas being blocked by a material embedded into the screen, said material having a thickness essentially equal to the thickness of the screen.

10. The method of molding a fibrous pulp article having at least one significant portion thereof of lesser effective thickness than the significant remainder of the article which comprises: applying suction to a significant portion of the face of a foraminous suction molding die about discrete blocked out areas on said die regularly spaced from each other and occurring in a repeated geometric pattern, each of said discrete areas not exceeding ⅜" in major dimension so that the discrete areas about which the suction is applied do not exceed 75% of the total area of that portion of the die face and suction is applied to at least 25% of the total area of that portion of the die face to form said one significant portion of the article of lesser effective thickness while simultaneously substantially generally applying suction to a remaining significant unblocked portion of said die face to form a significant remaining portion of said article of greater effective thickness.

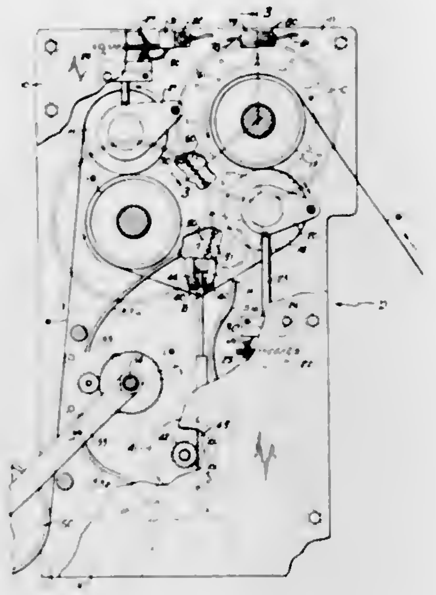
3,185,616
WEB DECURLING APPARATUS

Peter Zernov and Gilbert S. Woythal, Milwaukee, Wis., assignors to Zerand Corporation, Menomonee Falls, Wis., a corporation of Wisconsin

Filed Feb. 4, 1963, Ser. No. 256,019

5 Claims. (Cl. 162—271)

1. Web decurling apparatus comprising, two spaced pairs of feed rolls in nip forming relationship with said web, a decurling member disposed between said pairs of rolls against which the web is fed as it passes from one pair of rolls to the other, drive means for driving said pairs of feed rolls, the pair of feed rolls at the output side of said decurling member feeding the web at a higher speed than that of the other pair of produce a tension in the web as it passes over said decurling member, and common control means for continuously causing said rolls to exert a positive and equal nipping pressure on the web between the rolls of each pair of rolls so as to prevent any slipping of the web therebetween, said drive means including a slip clutch between said pairs of feed rolls.

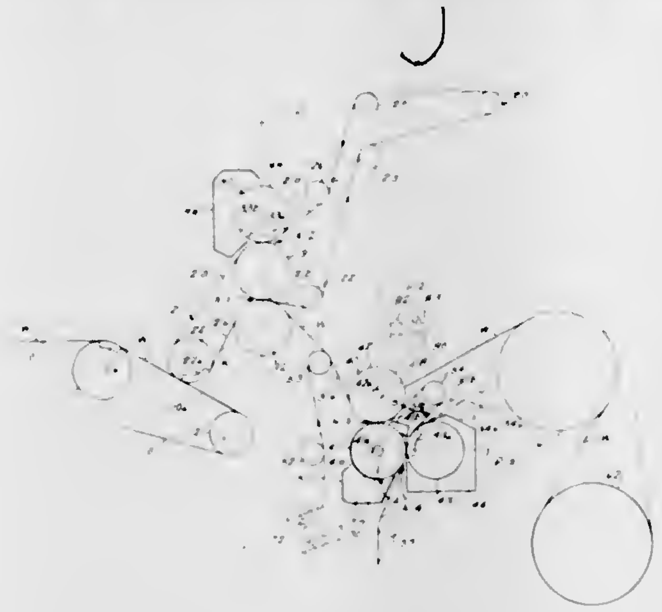


3,185,617
DIVIDED PRESS

Edgar J. Justus, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Jan. 9, 1963, Ser. No. 250,351

3 Claims. (Cl. 162—274)



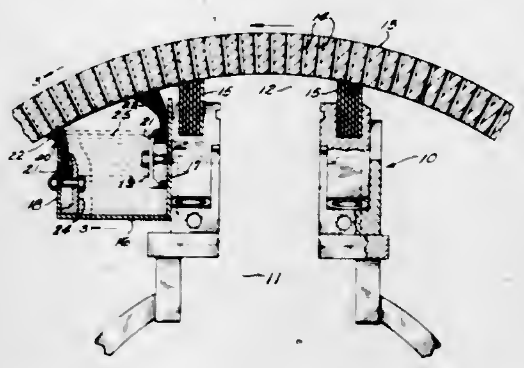
1. In a paper machine, a first roll, a second roll defining a first press nip with the first roll, a third roll defining a second press nip with one side of the first roll, a looped traveling felt wrapping the first roll and carrying a web through the first nip, separating from the web and the first roll surface at the off-running side of the first nip, and then passing through the second nip without the web to dewater the felt thereat; said third roll being a perforate suction roll having an inherent downward deflection; said first and second rolls being imperforate rolls; and means in control of loading pressures at the first and second nips with said means applying controlled loading to said first nip to impart to said first imperforate roll a deflection in substantial alignment with the aforesaid inherent downward deflection of said suction roll for application of substantially uniform pressures on the felt across said second nip.

3,185,618
SILENCERS FOR SUCTION ROLLS

Robert B. Wiggins and Arnold C. Roeser, Green Bay, Wis., assignors to Fort Howard Paper Company, Green Bay, Wis., a corporation of Wisconsin

Filed Jan. 22, 1962, Ser. No. 167,806

10 Claims. (Cl. 162—371)



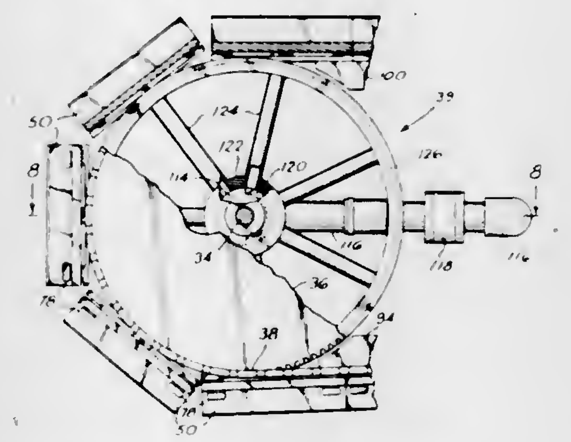
1. A silencer for suction rolls of the type including a rotatable shell having radially extending holes and including a stationary suction box having a suction zone cooperable with the inner periphery of the shell as the latter is rotated comprising brush means extending along the leaving edge of the suction box axially of the roll and having outwardly projecting bristles positioned so that they wipe the inner periphery of the shell against the inner ends of the holes to control the admission of air to the holes after they leave the suction zone to thereby minimize noise, said bristles being of such length that they are kept working by the rotating shell.

3,185,619
APPARATUS FOR MOLDING PULP ARTICLES

Watson S. Eastman and Eugene M. Alsman, Portland, Oreg., assignors to Molded Container Corporation, a corporation of Oregon

Filed May 27, 1963, Ser. No. 283,632

10 Claims. (Cl. 162—392)



1. Pulp molding apparatus comprising:

(*a*) a plurality of vacuum forming dies,
(*b*) endless conveyor means mounting the dies in spaced linear relation,
(*c*) drive roll and vacuum roll means supporting the conveyor means and dividing it into upper and lower stretches,
(*d*) receptacle means adapted to contain pulp slurry and positioned below the lower stretch for traversal by the dies, inverted and in linear travel,
(*e*) evacuating means communicating with the inverted dies as they traverse the receptacle means for forming pulp articles thereon,
(*f*) the vacuum roll means being positioned downstream from the receptacle means for reception of the dies and the wet pulp articles thereon,
(*g*) evacuating means connected to the dies as they traverse the vacuum roll means for dehydrating the articles,

(*h*) oven means positioned above the upper stretch for traversal by the dies, in upright position and linear travel,

(*i*) evacuating means connected to the dies as they traverse the oven means for drying the articles by pulling hot gas through them, and

(*j*) transfer means operative to remove the dried articles from the dies.

6. In pulp molding apparatus

(*a*) a vacuum trough,

(*b*) a plurality of die holders each having a vacuum aperture,

(*c*) conveyor means mounting the die holders with the apertures therein adjacent and aligned with the vacuum trough,

(*d*) a plurality of slide plates having vacuum apertures and adapted to slide across the open face of the vacuum trough,

(*e*) means connecting one plate to each die with the vacuum apertures in each in communicating relation, and

(*f*) resilient means interposed between the plate and the die for pressing the plate against the vacuum trough in sealing engagement.

9. In pulp molding apparatus

(*a*) vacuum roll means supporting conveyor means mounting dies each having a vacuum aperture,

(*b*) the vacuum roll means having an evacuated hollow hub with communicating hollow spokes and peripheral vacuum trough,

(*c*) each die including a plate dimensioned for placement across the vacuum trough in sealing engagement,

(*d*) a vacuum aperture in the plate communicating with the die and trough,

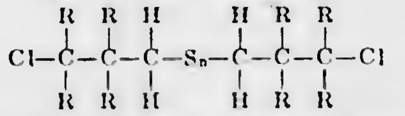
(*e*) means attaching the plate to the die, and

(*f*) resilient means interposed between the plate and the die for pressing the plate against the vacuum trough in sealing engagement.

3,185,620
METHOD OF COMBATTING INSECTS WITH POLYSULFIDES

Lyle D. Goodhue, Rector P. Louthan, and Kenneth E. Cantrel, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Feb. 5, 1962, Ser. No. 171,250
17 Claims. (Cl. 167—22)

1. A method of combatting an insect which comprises subjecting said insect to the action of an effective amount of a compound having the formula:



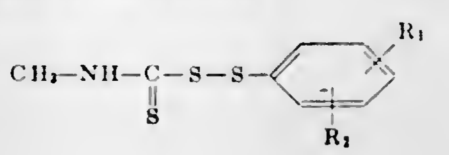
$$\mathrm{Cl-}\underset{R}{\overset{R}{C}}\mathrm{-}\underset{R}{\overset{R}{C}}\mathrm{-}\underset{H}{\overset{H}{C}}\mathrm{-S_n-}\underset{H}{\overset{H}{C}}\mathrm{-}\underset{R}{\overset{R}{C}}\mathrm{-}\underset{R}{\overset{R}{C}}\mathrm{-Cl}$$

wherein *n* is an integer in the range 2–5, inclusive, and R is a member selected from the group consisting of hydrogen and alkyl groups having 1–5 carbon atoms.

3,185,621
METHOD FOR CONTROL OF NEMATODES WITH DITHIOCARBAMIC ACID DERIVATIVES

Alfred Margot, Basel, Switzerland, assignor to J. R. Geigy A.-G., Basel, Switzerland
No Drawing. Original application Nov. 20, 1961, Ser. No. 153,716. Divided and this application Dec. 28, 1962, Ser. No 253,019
Claims priority, application Switzerland, Nov. 21, 1960, 13,006/60
6 Claims. (Cl. 167—30)

1. A method of controlling plant-parasitic nematodes which comprises introducing into at least the surface layer of a soil serving for the cultivation of plants and in an amount sufficient to control nematodes, an agricultural composition comprising an N-methyl-S-phenylmercaptodithiocarbamate of the formula



wherein

R_1 is a member selected from the group consisting of hydrogen, bromine, chlorine, lower alkyl and nitro, and

R_2 is a member selected from the group consisting of hydrogen, chlorine and lower alkyl, and an agricultural carrier.

3,185,622
RODENTICIDE BAIT COMPOSITION WITH MONOSODIUM GLUTAMATE

Guido M. Miescher, Terre Haute, Ind., assignor to Commercial Solvents Corporation, a corporation of Maryland
No Drawing. Filed Feb. 4, 1963, Ser. No. 256,121
10 Claims. (Cl. 167—48)

1. A rodenticide bait composition containing as an essential ingredient monosodium glutamate in an amount sufficient to improve the acceptability of the rodenticide bait.

3,185,623
PRESERVATION OF ANIMAL SEMEN

Fred Smith, Wayzata, and Edmund F. Graham, St. Paul, Minn., assignors to The Regents of the University of Minnesota, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 20, 1961, Ser. No. 99,007
23 Claims. (Cl. 167—53.2)

1. A stable composition of matter comprising animal semen containing living sperm cel's admixture with a solution containing a small amount of at least one added stabilizing compound selected from the group consisting of sugar alcohols having the formula $C_nH_{n+2}(OH)_n$ wherein *n* is a whole number from 4 to 7 and cyclitols having the formula $C_6H_6(OH)_6$ and derivatives thereof having the formulas $C_6H_6(OH)_5OCH_3$. $C_6H_6(OH)_4$. $C_6H_6O(OH)_5$. $C_6H_7(OH)_5$. $C_6H_8(OH)_4$ and

$$C_6H_5(OH)_6CH_3$$

said added stabilizing compound being present in said solution in concentration between about 0.1% and 2% not to exceed the isotonic limit of the animal semen, and said solution of stabilizing compound also including at least one of the substances selected from the group consisting of hydrogen ion buffering material, sugar nutrients and colloid stabilizers.

3,185,624
PREPARATION OF PURIFIED LIPID A FROM CRUDE LIPID A DERIVED FROM LIPOPOLYSACCHARIDES OF GRAM-NEGATIVE BACTERIA

Masao Nakazawa, Nakanoku, Tokyo, Japan, assignor to Taisho Pharmaceutical Co., Ltd., Tokyo, Japan
No Drawing. Filed Mar. 14, 1963, Ser. No. 265,044
Claims priority, application Japan, Mar. 26, 1962, 37/11.085
5 Claims. (Cl. 167—78)

1. A process of preparing purified lipid A from the lipopolysaccharides derived from gram-negative bacteria by phenol extraction and acid hydrolysis of the so-obtained extract, which comprises dissolving crude lipid A in chloroform, fractionating the resulting crude lipid A fractions on a silicic acid column by means of chloroform-methanol (6:4) eluant, distilling off the solvents from the thus-obtained fractions, adding acetone to the resultant concentrated solution of purified lipid A, collecting the flocculent precipitates by centrifugation, and drying in vacuo.

3,185,625
INJECTIONABLE SUBSTANCES

Ethan Allan Brown, 75 Bay State Road, Boston, Mass.
No Drawing. Filed Nov. 8, 1961, Ser. No. 150,899
16 Claims. (Cl. 167—82)

1. A composition of matter comprising an oil suspension of finely divided micro-particles having an active drug adsorbed thereon and encapsulated in a film forming substance, said film forming substance and micro-particles being capable of being assimilated by a living being without harmful effects.

3,185,626
TABLET COATING METHOD

Claude W. Baker, Albany, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 6, 1963, Ser. No. 263,100
5 Claims. (Cl. 167—82)

1. A method of coating tablets which comprises repeatedly adding portions of an aqueous suspending medium containing a non-toxic pharmaceutically acceptable pigment to sized, unround tablets rotating in a coating pan.

3,185,627
SILICONE COMPOSITION

Gus S. Kass, Chicago, Ill., assignor, by mesne assignments, to Hazel Bishop Inc., Newark, N.J., a corporation of New York
No Drawing. Filed Sept. 3, 1954, Ser. No. 454,222
13 Claims. (Cl. 167—90)

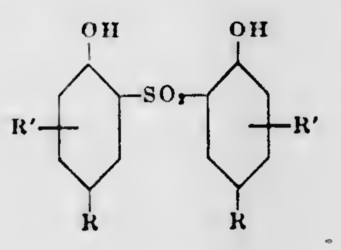
1. A composition comprising a C_1–C_3 alkyl C_8–C_{14} alkanoate and an organo-silicon polymer dissolved therein, wherein, when the alkyl radical is C_1 the alkanoate radical is C_{11}–C_{14}, and when the alkyl radical is C_2–C_3 the alkanoate radical is C_8–C_{14}.

12. A cosmetic composition consisting essentially of isopropyl myristate and an organopolysiloxane, forming a single phase.

3,185,628
SUNSCREENING DIHYDROXY-DIPHENYL-SULFONE DERIVATIVES

Charles A. Fetscher, Short Hills, and Stanley Lipowski, Newark, N.J., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey
Filed Mar. 18, 1960, Ser. No. 15,880
11 Claims. (Cl. 167—90)

1. A method of screening out erythemal ultraviolet light radiation having a wave length of between about 2800 A. and 3150 A. from skin while at the same time permitting tanning of the skin which comprises topically applying to human skin which is subject to sunburn a thin film of a sunscreen composition containing (1) a sunscreen agent having the formula



wherein R is selected from the group consisting of halogen and straight and branched chain saturated aliphatic hydrocarbon substituents having from one to five carbon atoms and R′ is selected from the group consisting of hydrogen, halogen and straight and branched chain saturated aliphatic hydrocarbon substituents having from one to five carbon atoms, said sunscreen agent further characterized by absorbing ultraviolet light radiation having a wave length between about 2800 A. and 3150 A. and (2) a pharmaceutically acceptable vehicle for said sunscreen agent, said sunscreen agent being present in said vehicle in an amount sufficient to screen out substantially all of said ultraviolet light radiation having a wave length of between about 2800 A. and 3150 A. when applied to the skin in a thin film.

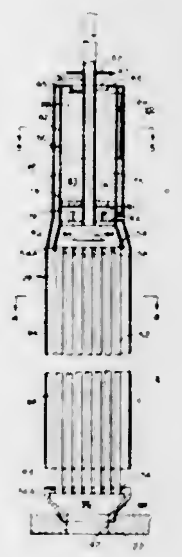
3,185,629
PERFUME OILS CONTAINING 2-METHYL-3-(3′,4′-METHYLENEDIOXYPHENYL)-PROPANAL

Muus G. J. Beets and Harm Van Essen, Hilversum, Netherlands, assignors to International Flavors & Fragrances I.F.F. (Nederland) N.V.
No Drawing. Original application Jan. 29, 1959, Ser. No. 789,795, now Patent No. 3,008,968, dated Nov. 14, 1961. Divided and this application Jan. 19, 1961, Ser. No. 98,998
Claims priority, application Great Britain, Feb. 11, 1958, 4,390/58
3 Claims. (Cl. 167—94)

1. A composition consisting of perfume oil and 2-methyl-3-(3′,4′-methylenedioxyphenyl)-propanal.

3,185,630
BOILING COOLANT REACTOR WITH INTEGRAL VAPOR SEPARATION AND NUCLEAR SUPERHEAT

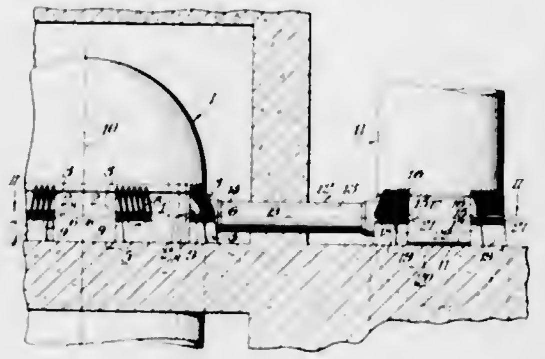
Johannes H. Ammon, Akron, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 1, 1960, Ser. No. 72,958
9 Claims. (Cl. 176—54)



1. A fuel element assembly for use in a boiling coolant nuclear reactor arranged to superheat vapor generated therein comprising a first bundle of spaced elongated tubular fuel elements, a second bundle of spaced elongated pin-type fuel components in axial alignment with but spaced from said first bundle of fuel elements, wall means disposed laterally about and spaced from said first and second bundles to form a vapor generation chamber containing said bundles, a vapor-liquid separator disposed within said vapor generation chamber in axial alignment with and spaced from said first bundle by said second bundle, and a conduit having its inlet located above said vapor-liquid separator and extending downwardly to said first bundle of tubular fuel elements for flowing vapor through said tubular fuel elements.

3,185,631
ASSEMBLY COMPRISING A HEAT SOURCE AND ASSOCIATED APPARATUS

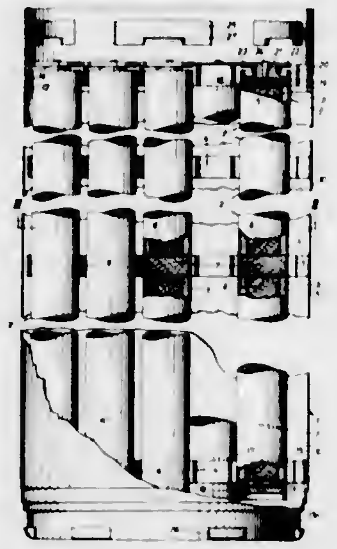
Everett Long and William Rodwell, Culcheth, near Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Aug. 11, 1959, Ser. No. 832,960
Claims priority, application Great Britain, Aug. 11, 1958, 25,799/63
7 Claims. (Cl. 176—65)



1. In a nuclear reactor having a reactor core, a pressure vessel containing the core, a coolant circulator to circulate coolant through the vessel to extract heat from the core, a heat exchanger to which the coolant yields its heat, coaxial ducting extending between the pressure vessel and the heat exchanger for the transfer of coolant between them, and bearings for the pressure vessel and heat exchanger supporting the pressure vessel and heat exchanger for movement radially with respect to each other, said bearings lying in the same plane as the axis of the coaxial ducting.

3,185,632
FUEL ELEMENTS FOR NUCLEAR REACTORS

Norman Bradley, Culcheth, Warrington, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed June 2, 1960, Ser. No. 33,554
Claims priority, application Great Britain, June 29, 1959, 22,194/59
4 Claims. (Cl. 176—68)



1. A nuclear fuel assembly comprising a tubular coolant conducting housing, a cluster of elongate fuel members disposed in parallel array longitudinally within the housing, fuel member end-support means carried by the housing, and at least one fuel member spacing structure of grid-form disposed transverse the housing intermediate the ends of the fuel members and defining with adjacent parts of said fuel members passages for coolant flow along the fuel members, said fuel members each comprising a tubular sheath, and a stack of bodies enclosed by the sheath, said bodies being of non-fissile, heat insulating material in the plane of said spacing structure and of fissile material outside the plane of said spacing structure.

3,185,633
STARCH CONVERSION

Josef Krebs, Darmstadt, Germany, assignor to Rohm & Haas G.m.b.H., Darmstadt, Germany
No Drawing. Filed Mar. 2, 1961, Ser. No. 92,748
Claims priority, application Germany, Mar. 3, 1960, R 27,469
5 Claims. (Cl. 195—17)

1. A process for the preparation of converted starch syrup containing dextrin and sugars, the solids content of said syrup being at least 50 percent by weight, which process comprises stirring a mixture of starch and an amylase into water heated to a temperature above the gelatinization temperature of the starch but below a temperature at which substantial amounts of the amylase are inactivated, then lowering the temperature of the resulting mixture into a temperature region in which said amylase is optimally effective and maintaining the mixture in said temperature region until the desired degree of starch conversion is obtained.

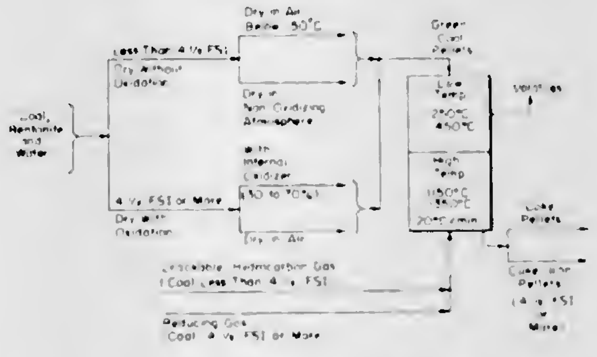
3,185,634
OIL RECOVERY BY FOAM DRIVE

Forrest F. Craig, Jr., and James L. Lummus, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
No Drawing. Filed July 14, 1961, Ser. No. 123,998
4 Claims. (Cl. 166—9)

1. A method of recovering oil from a formation having an input well and an output well, comprising; passing a gas through a permeable body immersed in a solution containing a foaming agent to generate a stable foam, injecting said foam into said input well and displacing said foam from said input well into said formation, and recovering oil from said output well while continuing the displacement of said foam through said formation.

3,185,635
METHOD FOR PRODUCING METALLURGICAL COKE AND METAL-COKE FROM BOTH COKING AND NON-COKING COALS

Loran A. Creglow, Salt Lake City, Utah, assignor to United States Smelting Refining and Mining Company, Boston, Mass., a corporation of Maine
Filed May 10, 1961, Ser. No. 110,307
27 Claims. (Cl. 202—15)



1. In a high temperature process for producing coke from coal, the steps of applying heat to a quantity of coal in a non-oxidizing atmosphere to carbonize the same, and during the carbonizing of the coal contacting the coal with a stream of dissociable hydrocarbon gas, the temperature of the carbonizing being maintained at a value of from about 1100 to 1350° C. to cause rapid dissociation of said hydrocarbon gas, said coal maintained in contact with said hydrocarbon gas for a sufficient time at said temperature to cause a substantial amount of free carbon to form on the coal, and said hydrocarbon gas being provided separate from any dissociable hydrocarbon gas evolving from the coal during high temperature carbonizing thereof.

3,185,636
REMOVAL OF SATURATED CARBONYLS FROM ACRYLONITRILE

Donald G. Stevens and Gerald E. King, Lima, and Arthur F. Miller, Lyndhurst, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Feb. 19, 1962, Ser. No. 174,292
2 Claims. (Cl. 202—57)

1. A process for purifying an unsaturated nitrile selected from the group consisting of acrylonitrile and methacrylonitrile which is contaminated by substantial amounts of hydrogen cyanide and trace amounts of saturated carbonyl compounds selected from the group consisting of acetaldehyde, propionaldehyde, acrolein, methacrolein, acetone, and methyl ethyl ketone, which comprises absorbing said unsaturated nitrile in an aqueous solution at a pH of 6.5 to 8.5 whereby the saturated carbonyls form cyanhydrins with the hydrogen cyanide, distilling as overhead the unsaturated nitrile with at least a part of the cyanhydrins from the absorbing solution, stabilizing the cyanhydrins remaining in the unsaturated nitrile collected as overhead by maintaining the unsaturated nitrile at a pH of 2 to 5 by the addition of acid thereto, and distilling the unsaturated nitrile overhead from the acid stabilized cyanhydrins.

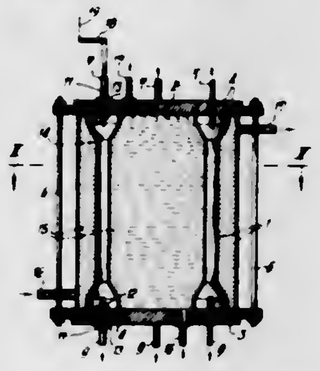
3,185,637
PLATING BATH CONTAINING FORMALDEHYDE PRODUCING MATERIAL

Anthony Debe, 18203 Canterbury Road, Cleveland, Ohio
No Drawing. Filed June 28, 1961, Ser. No. 120,207
2 Claims. (Cl. 204—55)

1. An aqueous plating bath of the alkaline cyanide type for depositing a metal comprising zinc, the bath containing as a brightening agent about 0.005 to 2.5% by volume of a reaction product of about 1 mole of dicyandiamide, about 3.5 to 5 moles of formaldehyde, and about 0.1 to 1 mole of boric acid, the reaction products being soluble in cold water and non precipitating even on extreme dilution of aqueous solution, and the reaction product having a pH of about 7½ to 8½.

3,185,638
APPARATUS FOR CHEMICAL REACTIONS

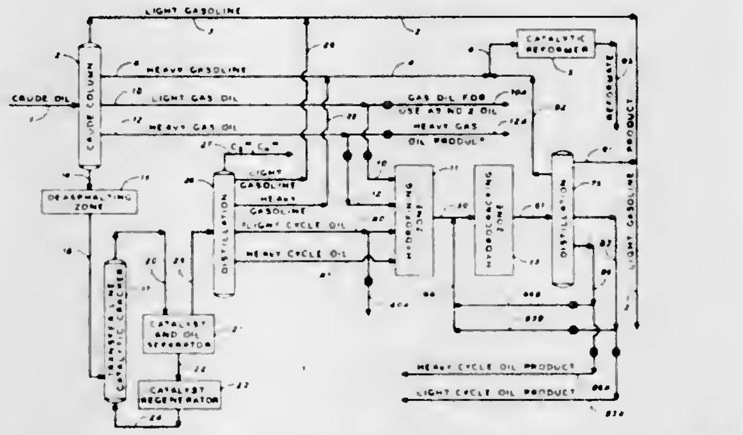
Joseph Cremer, Hermulheim, near Cologne, and Franz Rodis, Knapsack, near Cologne, Germany, assignors to Knapsack - Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
Filed Jan. 16, 1961, Ser. No. 82,857
Claims priority, application Germany, Jan. 29, 1960, K 39,759
17 Claims. (Cl. 204—312)



1. Apparatus for continuously carrying out chemical reactions by an electrical discharge comprising a plurality of elongated, concentrically arranged, spaced-apart and open-ended hollow cylinders placed one within the other and forming concentric chambers therebetween, a first and second end wall sealing off the open ends of said cylinders, electrodes extending through said first end wall into one of said concentric chambers formed by said concentric hollow cylinders which comprises an electrode chamber, inlets extending through said first end wall and into said electrode chamber for introducing gaseous or vaporous reactants into said electrode chamber, electrodes extending through said second end wall and into said electrode chamber, outlets extending through said second end wall into said electrode chamber for discharging the reaction products of said gaseous or vaporous reactants from said chamber, inlets extending into each of the remaining chambers for introducing a temperature controlling medium into said chambers, outlets from each of said remaining chambers for discharging the temperature controlling medium, and means for supplying electrical power to said electrodes.

3,185,639
HYDROCARBON CONVERSION PROCESS

Norman J. Paterson, San Rafael, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware
Filed Apr. 6, 1964, Ser. No. 358,151
1 Claim. (Cl. 208—68)



In a process for converting substantially all of a crude hydrocarbon feed to fuel values in high liquid yield, which comprises separating said crude into fractions including a light gasoline fraction, a heavy gasoline fraction, a gas oil fraction and a residual fraction, converting at least a portion of said gas oil fraction to gasoline in a hydrocracking zone and converting at least a portion of said residual fraction to gasoline and catalytic cycle oil in a catalytic cracking zone operating at low conversion, the improvement which comprises:

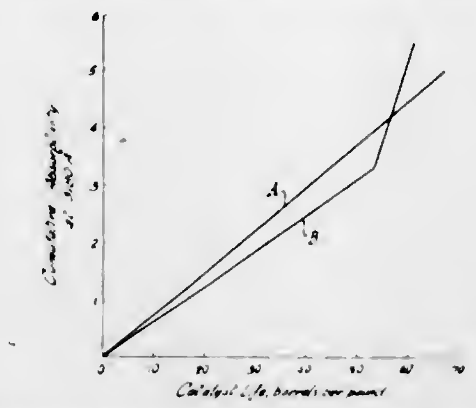
(*a*) passing substantially all of said gas oil fraction to said hydrocracking zone;
(*b*) operating said catalytic cracking zone at an oil to catalyst contact time below 10 seconds;
(*c*) passing at least a portion of said catalytic cycle oil to said hydrocracking zone; and
(*d*) recovering from said hydrocracking zone a gasoline product derived in part from said gas oil fraction and in part from said catalytic cycle oil.

3,185,640
REFORMING REACTION IN WHICH THE REACTION IS CONTROLLED BY ULTRAVIOLET ANALYSIS OF THE REFORMATE

David K. Beavon, Lockport, Ill., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 11, 1961, Ser. No. 145,534
5 Claims. (Cl. 208—134)

1. In a catalytic reforming process wherein a hydrocarbon naphtha fraction is passed at an elevated temperature and pressure through an effective reforming catalyst under reforming conditions in which condensed polycyclic aromatic compounds are formed as a by-product and in

which said catalyst gradually becomes deactivated, the improvement which comprises analyzing the normally liquid portion of the reaction product by passing ultraviolet radiation through said liquid portion at a wave length of 3000 to 3800 A., determining the absorptivity



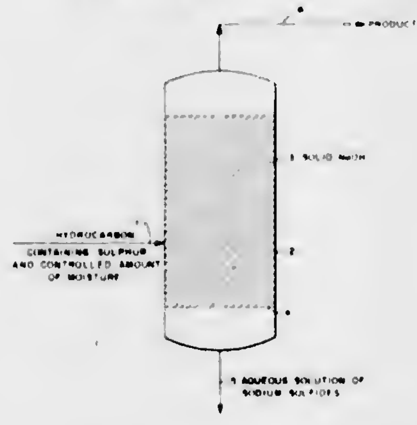
for said liquid portion, discontinuing said reforming when the corrected cumulative absorptivity lies within a predetermined range and resuming the reforming process by passing the hydrocarbon naphtha feed in contact with a reforming catalyst of higher activity than the deactivated catalyst.

3,185,641
REMOVAL OF ELEMENTAL SULFUR FROM HYDROCARBONS

Robert H. Cowden, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Dec. 15, 1961, Ser. No. 159,659

6 Claims. (Cl. 208—226)


PRODUCT
SOLID NaOH
HYDROCARBON CONTAINING SULPHUR AND CONTROLLED AMOUNT OF MOISTURE
AQUEOUS SOLUTION OF SODIUM SULFIDES

1. A method for removing elemental sulfur from a liquid hydrocarbon which comprises contacting with a treating agent consisting of solid sodium hydroxide a hydrocarbon stream having included therein at least a trace of elemental sulfur and at least 7.6 parts by weight of water per part by weight of sulfur contained therein to yield a hydrocarbon phase and an aqueous phase containing removed sulfur, and recovering said hydrocarbon phase.

3,185,642
DRILLING FLUID AND MUD THICKENING AGENT THEREFOR

Edgar W. Sawyer, Jr., and Walter L. Haden, Jr., both of Metuchen, N.J., assignors to Minerals & Chemicals Philipp Corporation, Menlo Park, N.J., a corporation of Maryland

Filed June 12, 1961, Ser. No. 116,607

20 Claims. (Cl. 252—8.5)

1. An admixture adapted for use as a thickening agent for fresh water and salt contaminated aqueous drilling muds comprising colloidal attapulgite clay and a magnesium compound selected from the group consisting of hydratable MgO and $Mg(OH)_2$ in an amount within the range of from about ¼% to 4% based on the weight of said attapulgite clay, said amount of magnesium compound being such that said admixture has an API saturated salt-water mud yield substantially higher than the API saturated salt-water yield of said clay in the absence of said magnesium compound, said admixture being further characterized by the fact that the clay therein has never been heated to a temperature greater than about 300° F.

3,185,643
OXIDATION RESISTANT LUBRICANTS

Warren Lowe, Berkeley, and Frank A. Stuart, Orinda, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

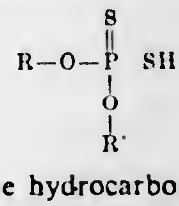
No Drawing. Filed Sept. 28, 1962, Ser. No. 227,036

5 Claims. (Cl. 252—32.7)

1. A lubricating oil composition comprising a major proportion of an oil of lubricating viscosity and from 0.1% to 40% by weight, of a product obtained by (1) reacting an alkenyl succinic anhydride having from 50 to 200 carbon atoms in the alkenyl radical with a polyalkylene polyamine of the formula

$$NH_2R(NHR)_xNH_2$$

wherein R is a divalent radical selected from the group consisting of ethylene and propylene and x is a number having a value from 1 to 10, wherein the polyamine-anhydried mol ratio is from 0.5:1 to 1:1, followed by (2) reacting the product of (1) with dihydrocarbyl dithiophosphoric acid of the formula



$$R-O-\underset{\substack{| \\ O \\ | \\ R'}}{\overset{\substack{8 \\ \|}}{P}}\ SH$$

wherein R and R′ are hydrocarbon radicals each having from 4 to 20 carbon atoms and having a combined number of carbon atoms from 10 to 40, wherein the mol ratio of the product of (1) to dithiophosphoric acid is from 1:1 to 1:4, said reaction (1) being carried out by heating at a temperature from about 220° F. to about 550° F., and said reaction (2) being carried out by heating at a temperature from about 150° F. to about 200° F.

3,185,644
LUBRICATING COMPOSITIONS CONTAINING AMINE SALTS OF BORON-CONTAINING COMPOUNDS

Edwin C. Knowles, Poughkeepsie, N.Y., and Edward L. Kay, Akron, Ohio, assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 17, 1961, Ser. No. 83,173

6 Claims. (Cl. 252—33.6)

1. A lubricating oil containing an amine salt of a tetracovalent boron acid in an amount sufficient to improve the load carrying properties thereof, said amine salt having the following general formula:

$$(RO)_3—B^-—O—R'—N^+HR''R'''$$

wherein R is a monovalent hydrocarbyl radical containing one carbon atom to about 30 carbon atoms, R′ is a divalent hydrocarbylene radical containing 1 to 10 carbon atoms and R″ and R‴ are selected from the group consisting of hydrogen and a monovalent hydrocarbyl radical containing 1 to 24 carbon atoms.

3,185,645
OXIDATION INHIBITED LUBRICANTS

James O. Clayton, Berkeley, Calif., assignor to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 28, 1962, Ser. No. 227,042

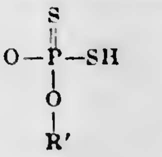
5 Claims. (Cl. 252—46.7)

1. A composition of matter comprising a major proportion of an oil of lubricating viscosity and from 0.1% to 40% by weight of a product obtained by reacting (1)

an alkenyl succinic anhydride having from 50 to 200 carbon atoms in said alkenyl radical, (2) a polyalkylene polyamine of the formula

$$NH_2R(NHR)_xNH_2$$

wherein R is a divalent radical selected from the group consisting of ethylene and propylene and x is a number having a value from 1 to 10, and (3) a dihydrocarbyl dithiophosphoric acid of the formula



$$R-O-\underset{\substack{| \\ O \\ | \\ R'}}{\overset{\substack{S \\ \|}}{P}}-SH$$

wherein R and R′ are hydrocarbon radicals each having from 4 to 20 carbon atoms with a combined total of 10 to 40 carbon atoms, wherein the mole ratio of said dithiophosphoric acid of said polyamine is from $(X-1):1$ to 1:1, wherein X is the number of titratable amine groups in said polyamine, wherein the mole ratio of said polyalkylene polyamine to said anhydride is from 0.5:1 to 1:1, said reaction being at temperatures of 210° F. to 400° F. sufficient to cause evolution of hydrogen sulfide.

3,185,646
CORROSION INHIBITED LUBRICANTS

Robert G. Anderson, Novato, and Yngve G. Hendrickson, El Cerrito, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 28, 1962, Ser. No. 227,052

5 Claims. (Cl. 252—46.7)

1. A lubricating oil composition comprising a major proportion of an oil of lubricating viscosity and from 0.1% to 40%, by weight, of a product obtained by reacting (1) an alkenyl succinic anhydride having from 30 to 200 carbon atoms in the alkenyl radical with phosphorus pentasulfide at temperatures in the range of 100° F. to 450° F. wherein the phosphorus pentasulfide-anhydride mol ratio is from 5:1 to 0.5:1 followed by (2) reacting the product of (1) with a polyalkylene polyamine at temperatures from 250° F. to 450° F. wherein the mol ratio of said polyamine to said anhydride is from 0.5:1 to 1:1, said polyalkylene polyamine being of the formula

$$NH_2R(NHR)_xNH_2$$

wherein R is selected from the group consisting of ethylene and propylene and x is a number from 1 to 10.

3,185,647
LUBRICANT COMPOSITION

Robert G. Anderson, Novato, and Yngve G. Hendrickson, El Cerrito, Calif., assignors to California Research Corporation, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 28, 1962, Ser. No. 227,053

5 Claims. (Cl. 252—46.7)

1. A lubricating oil composition comprising a major proportion of a lubricating oil having incorporated therein from 0.1% to 40% of a product obtained by (1) reacting an N-alkyl alkenyl succinimide having from 30 to 200 carbon atoms in said alkenyl group and from 1 to 20 carbon atoms in said alkyl radical with phosphorus pentasulfide at temperatures from 70° F. to 400° F. wherein the phosphorus pentasulfide-succinimide mol ratio is from 5:1 to 1:20 followed by (2) reacting the product of (1) with a polyalkylene polyamide at temperatures from 250° F. to 450° F. wherein the mol ratio of polyamine to succinimide is from 0.5:1 to 1:1, said polyalkylene polyamine being of the formula

$$NH_2R(NHR)_xNH_2$$

wherein R is selected from the group consisting of ethylene and propylene and x is a number from 1 to 10.

3,185,648
DEICER COMPOSITION

Norman W. Standish, Cleveland, and Gordon G. Cross, Chagrin Falls, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 19, 1962, Ser. No. 224,821

9 Claims. (Cl. 252—70)

1. A solid deicer composition having a deicing temperature of no higher than about −5° F. consisting of from 22 to 29% by weight of urea, from 78 to 71% by weight of ammonium nitrate, and from 0 to 2% by weight of a corrosion inhibitor selected from the group consisting of trisodium phosphate and the sodium polyphosphates.

3. A solid deicer composition having a deicing temperature no higher than about −8° F. consisting of 26% by weight of urea and 74% by weight of ammonium nitrate.

3,185,649
BLEACHING COMPOSITIONS

George Charlesworth Hampson, Neston, Wirral, and William Rickatson, Bebington, England, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed July 21, 1961, Ser. No. 125,656

Claims priority, application Great Britain, July 28, 1960, 26,360/60

6 Claims. (Cl. 252—99)

1. A bleaching and detergent tablet consisting essentially of sodium perborate in an amount sufficient to provide from 0.5 to 2% of available oxygen based on the weight of the tablet and sodium p-acetoxy-benzene sulfonate, the weight ratio of said sulfonate to the perborate being approximately 1:1 to 1.5:1 and the sulfonate being in a section of the tablet which is uncoated and is substantially free of any ingredient of the tablet detrimental to the stability of the sulfonate.

3,185.650
PHOSPHOR-DIELECTRIC COMPOSITION

Edward Franklin Gurnee and Reet T. Fernandez, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 23, 1962, Ser. No. 168,222

3 Claims. (Cl. 252—301.3)

1. A phosphor-dielectric layer consisting essentially of between about 10% and about 90% by weight of a particulated electroluminescent phosphor material selected from the class consisting of copper-activated and chlorine-activated zinc sulfide substantially uniformly dispersed in a plastisol to make a total of 100% of said mixture, said plastisol consisting of between about 15% and about 60% polyvinyl chloride dispersed in sufficient organic plasticizer to make a total of 100% plastisol, said plasticizer having a critical specific resistivity of greater than 10^7 and less than 10^{10} ohm-centimeters and selected from the class consisting of cresyl diphenyl phosphate, tri(2-ethvlhexyl) phosphate, ortho-tricresyl phosphate, metatricresyl phosphate, 2-biphenyl diphenyl phosphate, diethylene glycol bidenzoate, dimethyl phthalate, diethyl phthalate, dibutyl phthalate, and butyl cyclohexyl phthalate.

3,185,651
METHOD OF PREPARING AN ALUMINA-SUPPORTED CATALYST COMPOSITION AND THE PRODUCT THEREOF

Robert Bosc, Maisons-Laffitte. and Paul Belon, Salindres, France, assignors to Société Francaise des Produits Pour Catalyse, Seine et Oise, France

No Drawing. Filed Apr. 3, 1961, Ser. No. 100,021

Claims priority, application France, Apr. 9, 1960, 823,926

6 Claims. (Cl. 252—463)

1. A process for manufacturing alumina base catalytic conglomerates exhibiting improved catalytic activity and

improved resistance to attrition, comprising the successive steps of—

(*a*) agglomerating powdered alumina-containing catalyst constituents;

(*b*) ageing the resulting conglomerates in moist air at less than about 150° C.;

(*c*) calcinating the aged conglomerates at about 300–700° C.;

(*d*) pulverizing the calcinated conglomerates to form a powder;

(*e*) agglomerating said powder;

(*f*) ageing at less than about 150° C. the conglomerates resulting from step (*e*); and

(*g*) calcinating the resulting aged conglomerates at about 300–700° C.

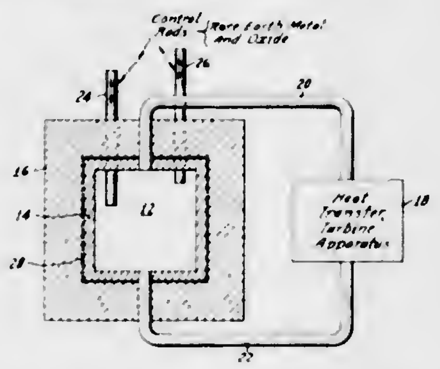
3,185,652

REFRACTORY RARE EARTH MATERIAL

Eugene V. Kleber, North Hollywood, Ronald C. Vickery, Malibu, and Hubert M. Muir, Sunland, Calif., assignors to Nuclear Corporation of America, Denville, N.J., a corporation of Delaware

Filed Apr. 29, 1960, Ser. No. 25,652

13 Claims. (Cl. 252—478)



1. A nuclear reactor control element consisting essentially of at least three percent by weight of an element having an atomic number within the group consisting of elements having numbers 21, 39 and 57 to 71 and at least three percent by weight of an oxide of an element within said group.

5. A ductile refractory composition of matter consisting essentially of a homogeneous melt of at least three percent by weight of an element having an atomic number within the group having numbers 21, 39 and 57 to 71 and an oxide of an element within said group.

7. A nuclear reactor shield consisting essentially of at least three percent by weight of an element having an atomic number within the group of elements having numbers 21, 39 and 57 to 71 and at least three percent by weight of an oxide of an element within said group.

3,185,653

MULTI-COLOR COATING COMPOSITIONS AND METHODS OF PREPARATION THEREOF

Karen Elstrup Knudsen, Allerod, Denmark, assignor to Farve- og Lakfabriken S. Dyrup & Co., Aktieselskab, Soborg, Denmark, a Danish company

No Drawing. Filed July 10, 1962, Ser. No. 208,920

Claims priority, application Denmark, Jan. 18, 1958, 163/1958

14 Claims. (Cl. 260—4)

1. A stable, liquid oil-in-water type emulsion coating composition containing pigmented globules adapted to produce a spotted color effect by brushing on a surface without rupture of the globules by the hair of the brush, which comprises at least two dispersed phases in a continuous aqueous phase of said emulsion; one of said two dispersed phases comprising a solution of cyclized rubber in at least one hydrocarbon solvent selected from the group consisting of aliphatic, cycloaliphatic and aromatic hydrocarbons, coloring pigment being incorporated in said solution of cyclized rubber; the second of said two dispersed phases comprising an emulsified synthetic polymeric material; at least one hydrocarbon solvent selected from the group consisting of aliphatic, cycloaliphatic and aromatic hydrocarbons being further emulgated in said continuous aqueous phase; said emulsion coating composition further comprising a colloidal stabilizing agent.

4. A method of preparing a coating composition comprising a stable emulsion of at least two dispersed phases in a continuous aqueous phase; one of said two dispersed phases comprising a colored solution of cyclized rubber in at least one hydrocarbon solvent selected from the group consisting of aliphatic, cycloaliphatic and aromatic hydrocarbons; the second of said two dispersed phases comprising an emulsified synthetic polymeric material; said method including the steps of emulsifying said second dispersed phase in said continuous aqueous phase, in order to obtain an emulsion component; emulsifying at least one hydrocarbon solvent selected from the group consisting of aliphatic, cycloaliphatic and aromatic hydrocarbons in said emulsion component, in order to obtain a first pre-emulsion; emulsifying said first dispersed phase in a colloidal stabilizing agent, in order to obtain a second pre-emulsion, and emulsifying said second pre-emulsion in said first pre-emulsion.

3,185,654

COMPOSITION CONTAINING RESOLE AND LIGNIN IN FREE ACID FORM AND PROCESS FOR PREPARING SAME

Frank J. Ball and Joseph B. Doughty, Charleston, and William G. Vardell, Summerville, S.C., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 8, 1958, Ser. No. 778,632

10 Claims. (Cl. 260—17.5)

1. A method of producing a resin which comprises dissolving alkali lignin in the free acid form in a solution of an alkaline catalyzed A stage resole in a volatile solvent, which solvent consists essentially of a solvent selected from the group consisting of methanol, ethanol, propanols, water and mixtures of said solvents with each other, to form a mutual solution at a pH between about 3 and about 7 which is substantially lower than that of said solution of said resole in the absence of said lignin, the ratio by weight of said lignin to said resole being from about 1:10 to about 5:1, separating the volatile solvent from the solids in said mutual solution and curing the residue.

3,185,655

COLORED POLYMER

Howard B. Dersnah, Thomas C. Schlotter, Jr., and Wayne C. Beach, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 18, 1960, Ser. No. 29,787

7 Claims. (Cl. 260—23)

1. A colored low melting castable polymer composition comprising (A) a polymeric substance selected from the group consisting of (1) the copolymerization reaction product of a mixture consisting essentially of 7 to 10 percent by weight coconut oil, the balance vinyl toluene monomer, (2) poly (alpha-methylstyrene) having an average molecular weight in the range of 600 to 1000, and a softening temperature of about 215° F., (3) a low melting polystyrene having an average molecular weight of about 17,500 and a softening temperature of about 300° F., (4) a polyethylene having an average molecular weight of about 7000 and sufficient fluidity to be pourable at temperatures above about 300° F., and (5) a mixture consisting of up to 35 percent by weight of a polystyrene having an average molecular weight of about 140.000 a softening temperature of about 300° F., and a melt viscosity of 500 to 1000 centipoises, the balance the said poly (alpha-methylstyrene), and (B) a color concentrate consisting essentially of a color imparting substance dispersed in a vehicle selected from the group consisting of (1) dioctylphthalate and (2) a mixture consisting of up to 20 percent by weight petrolatum, the balance dioctylphthalate.

3,185,656

PREPARATION OF LINEAR POLYUREAS UTILIZING A CYCLIC AMIDE SOLVENT

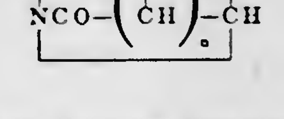
Rudolf Gabler, Zollikerberg, Zurich, and Helmut Müller, Oberrieden, Zurich, Switzerland, assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Mar. 23, 1961, Ser. No. 97,739

Claims priority, application Switzerland, Mar. 29, 1960, 3,510/60

8 Claims. (Cl. 260—30.2)

1. The process for the production of a linear, fiber-forming polyurea by the condensation of urea and a diamine selected from the group consisting of a linear aliphatic diamine and a cycloaliphatic diamine which comprises dissolving the reactants in a solvent, heating the resulting solution at an elevated temperature below 200° C. until the evolution of ammonia ceases, and subsequently continuing heating at a temperature from above 200° C. up to about 260° C., said solvent being a cyclic amide having the structure



$$\overset{R}{N}CO-\left(\overset{R^1}{CH}\right)_n-\overset{R^2}{CH}$$

where R, R¹ and R² represent substituents selected from the group consisting of hydrogen and a lower alkyl radical having 1 to 3 carbon atoms and *n* has one of the values 2 and 3.

3,185,657

SOLUTIONS OF ACRYLONITRILE HOMOPOLYMERS AND COPOLYMERS

Georges Balitrand and Pierre Lafont, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

No Drawing.. Filed Nov. 29, 1962, Ser. No. 241,050

Claims priority, application France, Dec. 7, 1961, 881,277

8 Claims. (Cl. 260—30.2)

1. Solution of acrylonitrile homopolymers and copolymers containing at least 60% by weight of acrylonitrile residues in a compound selected from the group consisting of N-oxides of pyridine, picolines, lutidines and mixtures thereof.

3,185,658

NON-SETTLING NEOPRENE-MODIFIED PHENOLIC RESIN ADHESIVES

Robert Roth Garrett, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 12, 1962, Ser. No. 186,857

8 Claims. (Cl. 260—31.8)

1. A non-settling adhesive cement composition comprising (*a*) 100 parts by weight of polychloroprene dissolved in volatile organic solvent, (*b*) 45 to 50 parts by weight of a magnesium salt of a resin made by reacting, in the pressure of an alkaline catalyst, from 1 to 2 moles of formaldehyde with 1 mole of a para substituted phenol in which the substituent is a hydrocarbon radiacl selected from the group consisting of aryl radicals and alkyl radicals containing from 3 to 6 carbon atoms, (*c*) 1 to 40 parts by weight of an organic carboxylic acid containing at least one carboxyl group, and (*d*) a minor proportion of stabilizing ingredients.

3,185,659

PROCESS FOR PREPARING A GRAFT POLYMER

Richard G. Adams, Montclair, Hadden Clark, Plainfield, and William H. Smyers, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Jan. 3, 1961, Ser. No. 80,311

4 Claims. (Cl. 260—33.6)

1. A process of preparing a graft copolymer solution which comprises adding a solution of a peroxide catalyst in a monovinyl monomeric crosslinking agent over a 15 minute period to a solution of an oily liquid polymer of a C_4 to C_6 conjugated diolefin in a hydrocarbon solvent maintained at a temperature of about 115° C. and maintaining said temperature for an additional 20 minutes, cooling the solution to about 100° C. and while at said temperature, adding a divinyl monomeric compound, followed by an additional amount of a peroxide catalyst dissolved in a hydrocarbon solvent, over a 30 minute period, cooling the admixture to a temperature of no more than about 40° C. and stripping sufficient hydrocarbon solvent from the resultant solution to obtain a final solution of between about 40 and 60 wt. percent nonvolatile material.

3,185,660

STABLE POLYMERIC DISPERSIONS

Lawrence Forwood Beste, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 15, 1962, Ser. No. 216,991

1 Claim. (Cl. 260—34.2)

A polymeric dispersion of improved stability and fluidity comprising a synthetic, linear high molecular weight polymer dispersed in an inert organic liquid, said polymer having recurring intralinear nitrogen containing linkages and being selected from the group consisting of polycarbonamides and polyurethanes, the weight ratio of said polymer to said liquid being 1 to 33:100, said dispersion containing 1.0 to 5.0% of an aluminum halide based on the weight of the polymer in the dispersion.

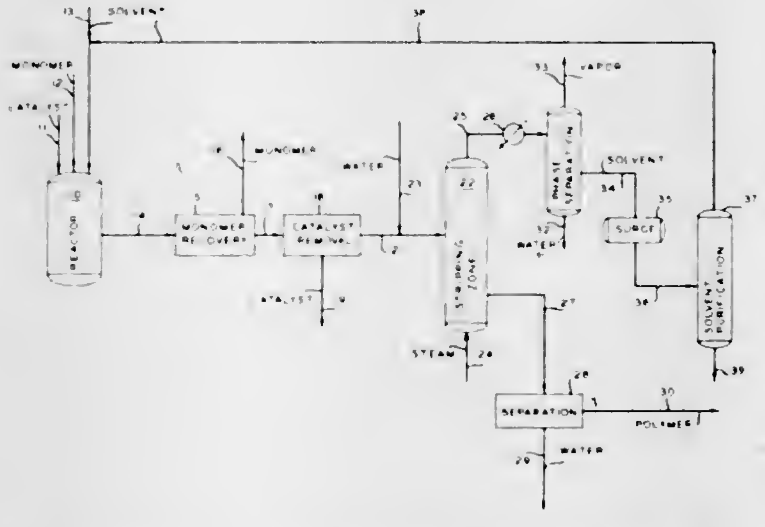
3,185,661

PARTICLE AGITATION SYSTEM

John S. Hubby, Pasadena, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed June 3, 1963, Ser. No. 285,084

2 Claims. (Cl. 260—34.2)

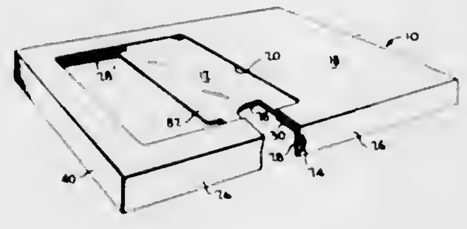


1. The method of preventing solid particles suspended in a liquid from settling out in a generally cylindrical storage vessel positioned so that the axis thereof is generally horizontal, which comprises introducing the liquid containing suspended particles into the vessel below the surface of the liquid at a plurality of spaced points and in directions generally tangential to the bottom of the vessel

and at velocities such that the material within the vessel is agitated sufficiently to retain the solid particles in suspension while the material is retained within the vessel, and subsequently removing the material from the vessel.

3,185,662
CARTON

Richard A. De Feo, Ardmore, Pa., assignor to Diamond International Corporation, a corporation of Delaware
Filed Feb. 21, 1963, Ser. No. 260,242
4 Claims. (Cl. 206—45.31)

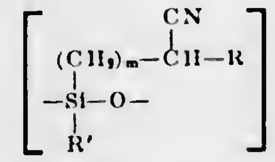


1. A blank forming a top member for a display carton comprising a rectangular, planar central panel, end and side wall panel elements hingedly connected to the marginal edges of said central panel, gusset panels hingedly connected to adjacent ends of said end and side wall panel elements on fold lines coinciding with the margins of said central panel, said gusset panels each including a diagonal fold line extending from the corner of said central panel through said gusset panels, said side and end wall panel elements each including a secondary inner wall panel element, said secondary inner wall panel elements of said end wall panel elements including an end flap extending along the length thereof, said secondary inner wall panel elements of said side wall panels including longitudinally extending, terminal lock tabs, and track-forming panel elements hingedly connected to the side margins of said side wall secondary inner wall panel elements, said secondary inner wall panel elements including a notch portion flanking said track-forming panel elements for receiving the terminal ends of the said end flaps thereat when the lid member is erected.

3,185,663
CYANOALKYL POLYSILOXANES

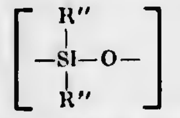
Maurice Prober, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 31, 1953, Ser. No. 401,701
12 Claims. (Cl. 260—46.5)

2. Organopolysiloxanes consisting essentially of the recurring structural unit



$$\left[-\underset{\substack{|\\R'}}{\overset{\substack{(CH_2)_m-\overset{\substack{CN\\|}}{C}H-R\\|}}{Si}}-O-\right]$$

intercondensed with siloxane units of the structure



$$\left[-\underset{\substack{|\\R''}}{\overset{\substack{R''\\|}}{Si}}-O-\right]$$

where R is a member selected from the class consisting of hydrogen and alkyl radicals; R' is a member selected from the class consisting of alkyl radicals and aryl radicals; the various R'' radicals are members selected from the class consisting of alkyl and aryl radicals and mixtures thereof; and *m* is a whole number equal to from zero to 5, inclusive.

4. An organopolysiloxane elastomer consisting essentially of recurring methyl cyanomethyl siloxane units.

3,185,664
HIGH MOLECULAR WEIGHT LINEAR POLYCARBONATES OF DI(HYDROXYPHENYL)-METHANES

André Jan Conix, Hove-Antwerp, Belgium, assignor to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed Jan. 26, 1962, Ser. No. 169,116
Claims priority, application Great Britain, Jan. 27, 1961, 3,328/61
1 Claim. (Cl. 260—47)

A high molecular weight linear polycarbonate resin of carbonic acid and a dihydric phenol, said dihydric phenol consisting essentially of a mixture containing 80–40% of 4,4'-di(hydroxyphenyl)-methane, 0–10% of 2,2'-di(hydroxyphenyl)-methane, and the remainder to total 100% of 2,4'-di(hydroxyphenyl)-methane, all percentages being by weight, said resin having a softening point not higher than about 110° C.

3,185,665
LINEAR POLYESTERS OF METHYLENE-4,4'-BIS (2-CHLORO-1-NAPHTHOL)

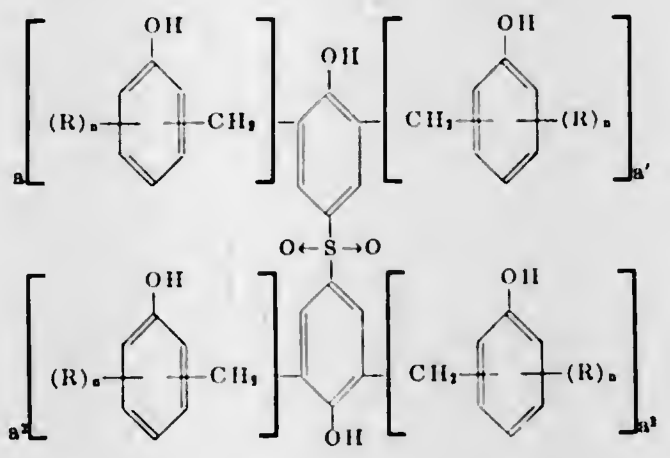
Ronald F. Lange, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 6, 1962, Ser. No. 208,097
4 Claims. (Cl. 260—47)

1. Poly[methylene - 4,4' - bis(2-chloro-1-naphthylene) sebacate].

3,185,666
PHENOL-ALDEHYDE CONDENSATES CONTAINING HYDROXYBENZYLATED SULFONES

James Harding, Greenbrook Township, Somerset County, Ralph F. Sellers, Middlebush, and Cal Y. Meyers, Princeton, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Original application Sept. 1, 1961, Ser. No. 135,453. Divided and this application Aug. 6, 1962, Ser. No. 219,809
20 Claims. (Cl. 260—49)

1. A thermosetting composition comprising a thermosetting precondensate of a phenol and an aldehyde selected from the group consisting of furfural and an aliphatic aldehyde having a single aldehyde group, said aldehyde group being the sole reactive group on said aldehyde, said precondensate being free of sulfur atoms; and a hydroxybenzylated 4,4'-dihydroxydiphenyl sulfone of the formula:



wherein *a*, *a'*, a^2, a^3 are integers having values of 0 to 1 inclusive with the sum of said integers being at least one and with the further limitation that each methylene group is bonded to the hydroxyphenyl group in a position other than meta to the hydroxy group; each individual R is a member selected from the group consisting of alkyl radicals, alkoxy radicals and halogen atoms; and each *n* is an integer having a value of 0 to 1 inclusive, said hydroxybenzylated sulfone being present in said composition in an amount of from about three percent by weight to about 250 percent by weight, based on the weight of said condensation product of a phenol and an aldehyde.

3,185,667
HALOMETHYLATED ADHESIVE COMPOSITION

George W. Ayers, Chicago, and William C. Allinder, Arlington Heights, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
No Drawing. Filed Feb. 3, 1960, Ser. No. 6,362
The portion of the term of the patent subsequent to January 29, 1980, has been disclaimed
11 Claims. (Cl. 260—67)

1. An adhesive halomethylated composition prepared by the reaction of

(1) about 1 mole of solvent extracts obtained in the solvent refining of mineral lubricating oils using a solvent selective for aromatic compounds,
(2) at least 0.5 mole of a phosphorus oxyhalide, and
(3) at least 1.5 moles of an alkanal of the group consisting of formaldehyde and polymers of formaldehyde,

at a temperature of about 40° to 115° C.

3,185,668
DIRECT ESTERIFICATION

Delbert H. Meyer and Paul J. Mehalso, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Aug. 31, 1959, Ser. No. 836,902
18 Claims. (Cl. 260—75)

12. In a process for the preparation of drawable film and fiber-forming polyesters from a diol which contains 2 to 10 carbon atoms in the molecule and which contains, other than the two hydroxy groups, only carbon and hydrogen atoms and from a phthalic acid whose carboxyl groups are separated by at least three ring carbon atoms said phthalic acid containing at least 65% terephthalic acid, the improved steps comprising heating with agitation at a temperature of from 200 to 300° C. in the absence of oxygen a mixture consisting essentially of from 2 to 6 moles of said diol for each mole of said phthalic acid which has a carboxybenzaldehyde content of less than 0.1 percent by weight in a closed reaction system at the autogenetic pressure of the mixture until a clear fluid product is obtained wherein at least 50% of the total carboxyl groups of said phthalic acid is converted to hydroxy ester groups, cooling the clear fluid product to a temperature in the range of from 180 to 200° C., removing water produced by the esterification reaction and excess diol by maintaining said cooled clear fluid product at 180 to 200° C. and at a pressure of from atmospheric to about 2.0 mm. Hg while agitating said clear fluid in an oxygen-free atmosphere, and heating the resulting dehydrated clear fluid with agitation in an oxygen-free atmosphere at a temperature above the melting point of the polyester product at a pressure of below about 0.5 mm. Hg until the polyester product has an intrinsic viscosity in the range of 0.4 to 0.7.

3,185,669
TOTAL LIQUID PHASE ESTERIFICATION

Aubrey R. McKinney, Hammond, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Aug. 31, 1959, Ser. No. 836,903
13 Claims. (Cl. 260—75)

13. A continuous process for the preparation of polyethylene terephthalate having an intrinsic viscosity in the range of from 0.5 to 0.7 which comprises: forming a slurry containing 3 to 6 moles of ethylene glycol for each mole of terephthalic acid having less than 0.1% 4-carboxybenzaldehyde, degassing said slurry to remove substantially all oxygen, maintaining said slurry in an inert oxygen-free atmosphere, continuously charging said oxygen-free slurry under pressure to a heated portion of a reaction zone, said reaction zone being completely fluid filled with a liquid reaction mixture comprising said slurry and products of the esterification reaction between said terephthalic acid and ethylene glycol all in the liquid phase at a temperature in the range of from 250° to 270° C. and a pressure in the range of from 7 to 25 atmospheres, maintaining the completely fluid filled reaction zone at said temperature and pressure until about 85% of the carboxyl groups of said terephthalic acid has been converted to hydroxyethyl ester groups and this portion of the reaction mixture is a clear fluid product containing said ester product, continuously withdrawing said clear fluid product from said reaction zone at a rate to maintain said reaction zone completely fluid filled, continuously removing water and excess ethylene glycol from said clear fluid product at a decreasing pressure down to about 2.0 mm. Hg, continuously heating the residue of said clear fluid product in the presence of nitrogen at a temperature in the range of from 275 to 300° C. at a pressure below about 0.5 mm. Hg while continuously removing ethylene glycol split out until the intrinsic viscosity of the resulting polyethylene terephthalate is in the range of from 0.5 to 1.5, and continuously withdrawing said polyethylene terephthalate.

3,185,670
PRESSURE ESTERIFICATION

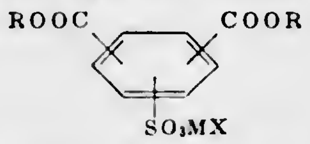
Aubrey R. McKinney, Hammond, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Aug. 31, 1959, Ser. No. 836,904
12 Claims. (Cl. 260—75)

12. A continuous process for preparing polyethylene terephthalate of intrinsic viscosity of 0.6 to 0.7 which comprises charging continuously to a reaction zone in a closed system including separate reaction zone, condensation zone, condensate receiving zone and product receiving zone, all being pressurized with oxygen-free nitrogen and all being under a total pressure of 6 to 8 atmospheres, a degassed slurry containing 3 to 5 moles ethylene glycol for each mole of terephthalic acid containing less than 0.1% 4-carboxybenzaldehyde heated to about 260° C., said reaction zone containing the clear fluid product substantially free of water resulting from the reaction of 3 to 5 moles of ethylene glycol for each mole of said terephthalic acid at 260° C. and 6 to 8 atmospheres until at least about 85% to 99% of the total carboxyl groups of said terephthalic acid has been converted to hydroxyethyl ester groups, continuously condensing water formed during the esterification together with a minor portion of the excess glycol, continuously collecting said condensate, continuously withdrawing from the lower portion of said reaction zone to said product receiving zone a portion of said ester product, the charging to and withdrawal from said reaction zone being regulated to provide a residence time in said reaction zone of from about one-half to three hours, said withdrawn ester product being characterized by being fluid at 260° C. and contains an ester product wherein 85 to 99% of the total carboxyl groups of said terephthalic acid is converted to hydroxyethyl groups, continuously removing the excess ethylene glycol from the withdrawn ester product at reduced pressure of down to 2 mm. Hg, continuously heating the residue in an oxygen-free atmosphere at 280° C. to 300° C. at 0.5 to 0.1 mm. Hg to an intrinsic viscosity of 0.6 to 0.7, continuously withdrawing and cooling said polyethylene terephthalate.

3,185,671
ACYLOXYMETALLOSULFOPHTHALATE CONTAINING DYEABLE POLYESTERS

Christian F. Horn, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Mar. 20, 1961, Ser. No. 96,674
10 Claims. (Cl. 260—75)

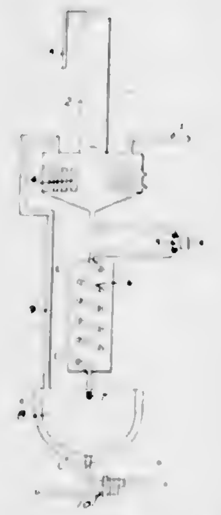
1. A linear polyester consisting of the condensation product of (1) an aliphatic glycol containing from 2 to about 10 carbon atoms, (2) from about 0.1 to about 10 mole percent, based on the total amount of carboxylic acid compounds present, of an acyloxymetallosulfophthalate represented by the general formula:



wherein R is a member selected from the group consisting of a hydrogen atoms, an an alkyl radical containing from 1 to above 10 carbon atoms; M is a divalent metal atom selected from the group consisting of beryllium, magnesium, calcium, zinc, strontium, barium, and tin; and X is an acyloxy radical of the formula —OCCR′, wherein R′ is a monovalent hydrocarbyl radical containing from 1 to about 15 carbon atoms, and (3) at least one different compound selected from the group consisting of the aromatic dicarboxylic acids and the dialkyl esters thereof.

3,185,672
POLYMERIZATION OF AQUEOUS SOLUTIONS OF POLYAMIDE-FORMING REACTANTS WITH ADIABATIC EXPANSION THEREOF

Philip Francis Clemo, Tynemouth, Northshields, James Anthony Briggs, Croesycelliog, Cwmbran, William Wilson, Abergavenny, and John Anthony Carter, Newport, England, assignors to British Nylon Spinners Limited, Pontypool, England
Filed May 26, 1960, Ser. No. 32,048
Claims priority, application Great Britain, June 6, 1959, 19,408/59
3 Claims. (Cl. 260—78)



1. A process for the manufacture of high molecular weight polyamides by the condensation polymerization of polymethylene diammonium salts of aliphatic alpha, omega-dicarboxylic acids which salts contain from 8 to 24 carbon atoms, comprising pumping a hot aqueous solution of the salt containing from 45 to 70% by weight of said salt through a pressure tube at polyamide-forming temperatures under a pressure at least sufficient to prevent the evolution of steam at said polyamide-forming temperature and for a time such that a degree of polymerization of from 1.15 to 1.37 is attained, suddenly reducing the pressure to atmospheric pressure by passing the resulting solution of prepolymer having said degree of polymerization of from 1.15 to 1.37 through a narrow orifice into a chamber maintained at substantially atmospheric pressure in a manner such that the ensuing expansion is approximately adiabatic, to reduce the pressure of said solution without solidifying it, and then heating said solution at polyamide forming temperature, in order to complete polymerization, at at least atmospheric pressure, the pressure being below that which will prevent the water of reaction being removed in the form of steam.

3,185,673
PROCESS OF CURING ELASTOMERIC MATERIALS

Charles Edwin Kendall, Coleshill, Douglas Wynne Huke, Sutton Coldfield, and Douglas David Callander, Birmingham, England, assignors to Dunlop Rubber Company Limited, London, England, a company of Great Britain
No Drawing. Filed Jan. 17, 1962, Ser. No. 166,938
Claims priority, application Great Britain, Feb. 2, 1961, 3,912/61
6 Claims. (Cl. 260—79.5)

1. A process for the production of a cured elastomer which comprises heating at least one synthetic elastomer selected from the class consisting of rubber-like butadiene/styrene and butadiene/acrylonitrile copolymers, cis- and trans-polybutadiene, trans-polyisoprene, copolymers of butadiene with unsaturated ketones, copolymers of butadiene with acrylates, copolymers of butadiene with substituted acrylates, polychlorobutadiene, chlorosulphonated polyethylenes, chlorine-containing copolymers of vinyl chloride with ethylene, and chlorine-containing copolymers of vinyl chloride with propylene, with sulphur as a curing agent and with, as accelerator, an aliphatic amine monocarbamate of the general formula

$$R_1R_2NCOO^-R_1R_2NH_2^+$$

wherein R_1 and R_2 each represent a member selected from the class consisting of alkyl groups, cycloalkyl groups and heterocyclic groups, and wherein R_1 can also represent a hydrogen atom.

3,185,674
CRYSTALLINE POLY(2,2,2-TRIFLUOROETHYL VINYL ETHER), CRYSTALLINE IN THE UNORIENTED STATE

Richard F. Heck, McDaniel Crest, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 14, 1959, Ser. No. 839,546
2 Claims. (Cl. 260—91.1)

1. As a new composition of matter, high molecular weight, crystalline poly(2,2,2-trifluoroethyl vinyl ether), crystalline in the unoriented state, having a high degree of crystallinity and exhibiting a very strong crystalline X-ray diffraction pattern, and having a melting point of about 128° C. and a reduced specific viscosity of 0.46 to 0.6 measured on a 0.1% solution in acetone.

3,185,675
PEPTIDE

Henry Schmitz, Syracuse, and Robert L. De Vault, North Syracuse, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 28, 1963, Ser. No. 268,552
1 Claim. (Cl. 260—112)

A polypeptide free of carbohydrates and lipids which is soluble in water to the extent of 35 mgm./ml. and is insoluble in glacial acetic acid, dimethylformamide and dioxane, is reprecipitated from aqueous solution by 60% ethanol and by 0.3 molar ammonium sulfate, exhibits in water an ultraviolet spectrum showing one peak at 270 mμ with an absorptivity of 1.68. exhibits when pelleted in potassium bromide infrared absorption maxima at 2.8,

3.2, 3.4, 5.9, 6.2, 6.3 and 6.7 microns, has as its specific rotation $[\alpha]_D^{25°}$ −53.7° (c.=1, H_2O), decomposes on heating at 240° C., has a molecular weight of 15,000 ±20% as determined from ultracentrifuge data, is found by analysis to contain about 50.0% carbon, 6.82% hydrogen and 15.0% nitrogen and yields on hydrolysis the following seventeen amino acids in the proportions indicated in parentheses in terms of grams per 100 g. polypeptide:

aspartic acid	(11.38)
threonine	(8.12)
serine	(5.01)
glutamic acid	(10.17)
proline	(6.50)
glycine	(7.12)
alanine	(7.85)
½-cystine	(1.74)
valine	(8.03)
methionine	(1.29)
iso-leucine	(5.66)
leucine	(7.89)
tyrosine	(3.32)
phenylalanine	(3.04)
lysine	(13.23)
histidine	(0.64)
and	
arginine	(6.53)

3,185,676
METHOD OF AZO DYE CHROMATION

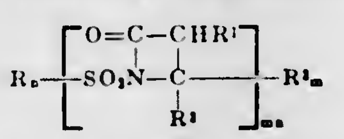
Karl J. Klein, Slingerlands, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 12, 1960, Ser. No. 49,127
4 Claims. (Cl. 260—145)

1. Method of chroming o,o′-metallizable azo dyes which are free of sulfonic acid groups, which comprises, (A) separately adding to an aqueous solution of an o,o′-metallizable dye having a pH in the range of about 5 to 6.8 (1) an amount of a chroming agent consisting of a water-dispersible, non-chelated trivalent chromium-containing compound, corresponding to provide a mole ratio of dye to chromium of about 2 in the resulting dye-chroming agent mixture, and (2) a chelating agent selected from the group consisting of polyhydroxy, hydroxy-carboxy, and dicarboxy-chelating agents, said chelating agent being added in an amount corresponding to provide a mole ratio of chelating agent to chromium in the range of from about 0.5:1 to 1:1 in the final dye-chroming agent-chelating agent mixture, and (B) heating the mixture at a temperature of about 100 to 130° C. for about 1 to 20 hours to provide a chromed dye.

3,185,677
SULFONYL AZETIDINONE COMPOUNDS

Horace R. Davis, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed July 8, 1960, Ser. No. 41,500
12 Claims. (Cl. 260—239)

1. A sulfonyl azetidinone compound of the formula:



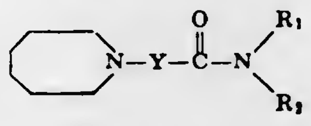
$$R_n\text{—}\left[\begin{array}{c}O=C-CHR^1\\ \quad|\qquad|\\ -SO_2N-C-\\ |\\ R^2\end{array}\right]_m\text{—}R^3_m$$

wherein R is selected from the class consisting of m-valent hydrocarbon and halogenated hydrocarbon containing up to 20 carbon atoms, phenoxyphenyl, 2-benzothiazolyl and 2-thienyl, R^1 is selected from the class consisting of hydrogen and lower alkyl, R^1 together with R^3 forms five and six-membered carbocyclic rings through the carbon atoms to which they are attached, R^2 is selected from the class consisting of hydrogen and lower alkyl, R^3 is selected from the class consisting of mono- and divalent hydrocarbon containing up to 10 carbon atoms, the carbon-carbon single bond and hydrocarbon which joins with R^1 to form five and six-membered carbocyclic rings, *m* is 1 to 2, *n* is 1 when the R^1R^3 carbocyclic ring is formed and corresponds to the valence of R^3 when the R^1R^3 carbocyclic ring is not formed, and the sum of *m* and *n* is not more than 3.

3,185,678
POLYMETHYLENIMINOALKYLAMIDES

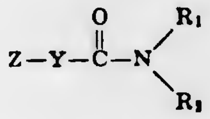
Leo G. Abood, Oak Park, Ill., assignor to Colgate-Palmolive Company, a corporation of Delaware
No Drawing. Filed Aug. 4, 1961, Ser. No. 129,245
7 Claims. (Cl. 260—239)

1. A compound of the formula



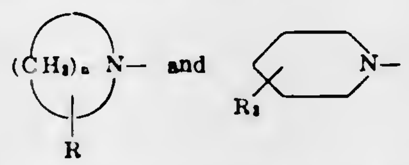
wherein R_1 and R_2 are hydrogen, and Y is lower alkylene.

7. A member of the group consisting of compounds of the formula



$$Z-Y-\overset{\overset{\large O}{\|}}{C}-N\begin{array}{l}\diagup R_1\\ \diagdown R_2\end{array}$$

and nontoxic acid addition salts thereof, wherein Y is lower alkylene, R_1 and R_2 are hydrogen and Z is a member of the group consisting of

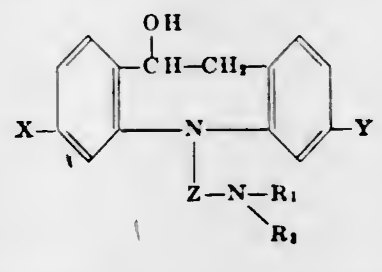


wherein *n* is an integer from 6 to 7, R is a member of the group consisting of hydrogen, 1 to 6 methyl groups, hydroxy, and the hydroxy group on the ring with 1 to 4 methyl groups, and R_3 is a member of the group consisting of hydroxy, and the hydroxy group on the ring with 1 to 4 methyl groups.

3,185,679
AZEPINE DERIVATIVES

Walter Schindler, Riehen, and Hans Blattner, Basel, Switzerland, assignors to Geigy Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 2, 1963, Ser. No. 327,507
Claims priority, application Switzerland, Dec. 6, 1962, 14,326/62
2 Claims. (Cl. 260—239)

1. A compound of the formula:



wherein

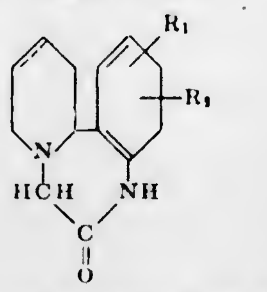
each of X and Y is a member selected from the group consisting of hydrogen and chloro
Z is alkylene of from 2 to 4 carbon atoms
R_1 is a member selected from the group consisting of hydrogen and lower alkyl and
R_2 is lower alkyl.

3,185,680
REDUCED BENZODIAZEPINIUM COMPOUNDS

Peter Hsing-Lien Wei, Upper Darby, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 16, 1962, Ser. No. 231,043
3 Claims. (Cl. 260—239.3)

1. A compound having the formula:



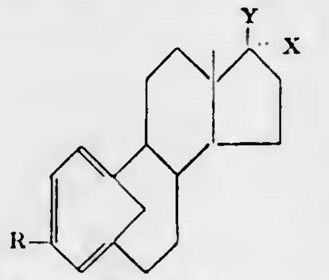
wherein the dotted line indicates that the linkage between the 10 and the 11 positions is selected from the group consisting of a single bond and a double bond; R_1 is selected from the group consisting of hydrogen, chlorine, bromine, and trifluoromethyl; and R_2 is selected from the group consisting of hydrogen and chlorine.

3,185,681
5,10-SECO-5,19-CYCLO-STEROIDS OF THE ANDROSTANE AND PREGNANE SERIES

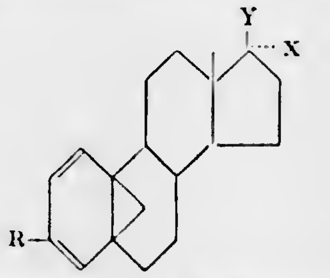
Lawrence H. Knox, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed June 11, 1963, Ser. No. 286,916
Claims priority, application Mexico, Dec. 21, 1962, 70,272
22 Claims. (Cl. 260—239.5)

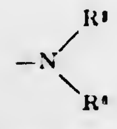
1. A compound selected from the group consisting of compounds represented by the formula:



and compounds represented by the formula:



wherein R is selected from the group consisting of $—OR^4$ and



$-N(R^5)(R^6)$

R^4 being selected from the group consisting of a lower alkyl group and an acyl group containing up to 12 carbon atoms, R^5 being selected from the group consisting of a lower alkyl group, a monocyclic aryl group and a monocyclic aralkyl group, and R^6 being selected from the group consisting of hydrogen, a lower alkyl group, an aryl group containing up to 8 carbon atoms and an aralkyl group containing up to 8 carbon atoms, with R^5 and R^6 taken together, along with the nitrogen atom to which they are attached, being a heterocyclic group selected from the group consisting of piperidino, pyrollidino, morpholino and piperazino; X is selected from the group consisting of hydrogen, a lower alkyl group, a lower alkenyl group and a lower alkinyl group, and Y is selected from the group consisting of hydroxyl and an acyloxy group containing up to 12 carbon atoms; with X and Y taken together being a keto group.

9. 5,10 - methylene-3(N-pyrrolidyl)-19-nor-$\Delta^{1,3}$-androstadien-17β-ol.

3,185,682
STEROID GLUCURONIDES AND PROCESSES FOR PREPARING THE SAME

Lewis Sarett, Princeton, Robert G. Strachan, Summit, and Ralph Hirschmann, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 4, 1961, Ser. No. 142,792
16 Claims. (Cl. 260—239.55)

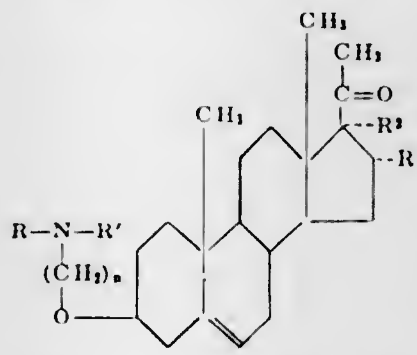
1. Sodium salt of 11β,17α,21-trihydroxy-1,4-pregnadiene-3,20-dione 21-glucuronide.

3,185,683
ALKYL AMINOALKYLENEOXY PREGNENES

Edward Warren Cantrall, Pearl River, Seymour Bernstein, New City, and Benjamin Arthur Riccardi, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 14, 1963, Ser. No. 265,027
12 Claims. (Cl. 260—239.55)

1. A compound of the formula:



in which R and R′ are lower alkyl, R_2 and R_3 are hydroxyl and when taken together represent a diloweralkylidenedioxy group, and *n* represents an integer from 2 to 4 inclusive.

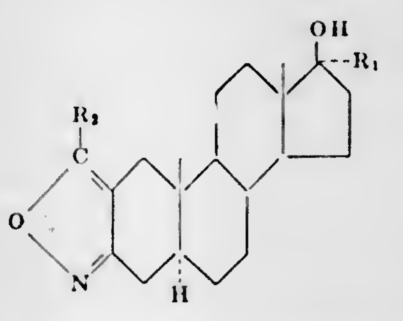
6. The compound 3-dimethylaminoethoxy-16α,17α-isopropylidenedioxy-5-pregnen-20-one.

3,185,684
SUBSTITUTED STEROIDAL ISOXAZOLES

Pietro de Ruggieri, Carmelo Gandolfi, and Umberto Guzzi, Milan, Italy, assignors to Ormonoterapia Richter S.p.A., a corporation of Italy

No Drawing. Filed May 10, 1963, Ser. No. 279,630
Claims priority, application Italy, May 12, 1962, 9,512/62
5 Claims. (Cl. 260—239.55)

1. A compound of the formula



wherein R_1 is a member selected from the group consisting of hydrogen and methyl and R_2 is a member selected from the group consisting of chloro,bromo and hydroxy.

3,185,685
MANUFACTURE OF 2-BENZTHIAZYL-SULPHENOMORPHOLIDE

Alfons Anzelm Komander and Neville Tyreman, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 10, 1962, Ser. No. 186,353
Claims priority, application Great Britain, May 3, 1961, 16,012
7 Claims. (Cl. 260—247.1)

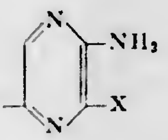
1. A process for making 2-benzthiazylsulphenomorpholide by reacting in an aqueous medium substantially equimolar amounts of a salt selected from the group consisting of the alkali and alkaline earth metal salts of mercaptobenzthiazole and N-chloromorpholine, said process comprising the steps of providing a mixture of morpholine and water containing at least 15% by weight of a water-soluble salt selected from the group consisting of alkali and alkaline earth metal salts of a strong inorganic acid, simultaneously adding to said mixture an aqueous solution of said mercaptobenzthiazole salt, a hypochlorite and strong, inorganic acid, the rate of addition being such that the pH of the resulting reaction mixture is maintained between 9.0 and 13.0, maintaining sufficient free hypochlorite in the reaction mixture to give a redox potential of 110 to 180 millivolts during said reaction and also maintaining the concentration of said water-soluble salt at not less than 15% by weight of said mixture during said reaction.

3,185,686
PYRAZINE DERIVATIVES

Bruno Camerino and Giorgio Palamidessi, Milan, Italy, assignors to Societá Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Original application July 12, 1960, Ser. No. 42,236. Divided and this application Sept. 20, 1961, Ser. No. 139,347
Claims priority, application Great Britain, July 14, 1959, 24,146/59; Mar. 14, 1960, 8,830/60 and 8,831/60; Apr. 25, 1960, 14,400/60
8 Claims. (Cl. 260—250)

1. A 2-amino-pyrazine derivative of the formula:



wherein X is a radical of the group consisting of Br, OCH_3, and OC_2H_5; Y is a radical of the group consisting of H and Br, provided that when X is Br, Y is also Br.

3,185,687
4-NITRO-PYRIDAZINES

Hideo Kano, Koromodanadorimarutamachi-agaru, Kamikyo-ku, Kyoto-shi, and Masaru Ogata, Higashinada-ku, Kobe-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed Dec. 4, 1962, Ser. No. 242,069
Claims priority, application Japan, Feb. 26, 1962, 37/7,479
3 Claims. (C. 260—250)

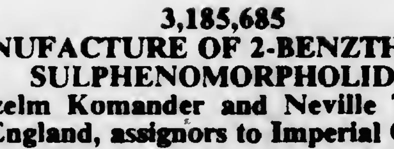
1. 3-lower alkoxy-4-nitro-6-low-r alkylpyridazine-1-oxide.

3,185,688
3,6-DIAMINO-N-(SUBSTITUTED)-2-QUINOXALINE CARBOXAMIDES

Thomas S. Osdene, Berwyn, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

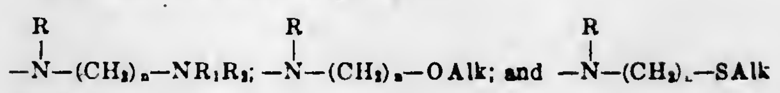
No Drawing. Filed July 24, 1963, Ser. No. 297,232
3 Claims. (Cl. 260—250)

1. A compound of the formula



wherein

Z is selected from the group of:



$-N(R)-(CH_2)_n-NR_1R_2;\ -N(R)-(CH_2)_n-O\,Alk;$ and $-N(R)-(CH_2)_n-S\,Alk$

wherein

X and R are selected from the group of hydrogen and lower alkyl radicals having from 1 to 5 carbon atoms;

R_1 and R_2 are lower alkyl groups, having up to 5 carbon atoms, and when taken together form a closed ring selected from the group consisting of morpholino, piperidino and pyrrolidino; and Alk represents a lower alkyl group having up to 4 carbon atoms; and *n* represents a number ranging from 2 to 4.

3,185,689
3-O-TOLYL-4-(3H)-PYRIMIDONES

Heinrich Ruschig, Bad Soden, Taunus, Karl Schmitt and Leopold Ther, Frankfurt am Main, and Wilhelm Meixner, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany

No Drawing. Filed Aug. 6, 1962, Ser. No. 214,826
Claims priority, application Germany, Aug. 16, 1961, F 34,698
2 Claims. (Cl. 260—251)

1. 2 - methoxymethyl - 6 - n - propyl - 3 - o - tolyl - 3,4-dihydro-pyrimidone-(4)-hydrochloride.

2. 2 - methyl - 6 - n - propyl - 3 - (3 - hydroxy - 4-carbethoxyphenyl) - 3,4 - dihydro - pyrimidone - (4)-hydrochloride.

3,185,690
2-CHLORO-4-AMINO-5-FLUOROPYRIMIDINE

Robert Duschinsky, Essex Fells, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application June 3, 1959, Ser. No. 817,736, now Patent No. 3,040,026, dated June 19, 1962. Divided and this application Sept. 14, 1961, Ser. No. 137,991
1 Claim. (Cl. 260—256.4)

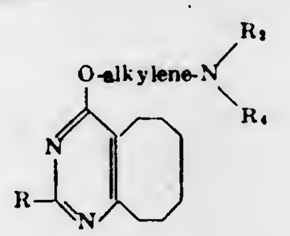
2-chloro-4-amino-5-fluoropyrimidine.

3,185,691
CYCLOOCTENO-PYRIMIDINES

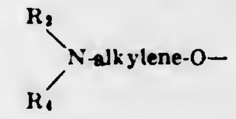
Edward Joseph Pribyl, Metuchen, and Chester Frank Turk, Elizabeth, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Sept. 14, 1962, Ser. No. 224,281
8 Claims. (Cl. 260—256.4)

3. A compound selected from the group consisting of bases of the formula



wherein R is a member of the group consisting of amino,



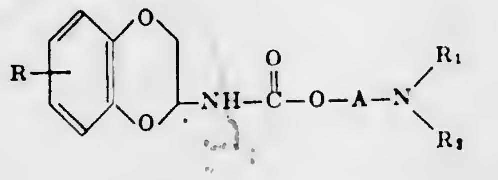
$(R_3)(R_4)N\text{-alkylene-O}—$

R_3 and R_4 each is a member of the group consisting of hydrogen, lower alkyl, hydroxy-lower alkyl, phenyl-lower alkyl and, together with the nitrogen to which they are attached a member of the group consisting of piperidino, (lower alkyl)piperidino, di(lower alkyl)piperidino, (lower alkoxy)piperidino, pyrrolidino, (lower alkyl)pyrrolidino, di(lower alkyl)pyrrolidino, (lower alkoxy)pyrrolidino, morpholino, (lower alkyl)morpholino, di(lower alkyl)morpholino, (lower alkoxy)morpholino, thiamorpholino, (lower alkyl)thiamorpholino, di(lower alkyl) thiamorpholino, (lower alkoxy)thiamorpholino, piperazino, (lower alkyl)piperazino, di(lower alkyl)piperazino and hexamethyleneimino, and alkylene has up to about twelve carbon atoms and acid-addition salts of said bases.

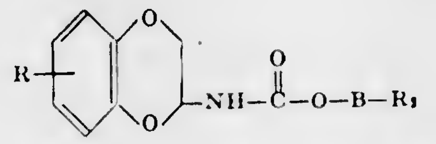
3,185,692
AMINOALKYL-N-BENZODIOXYL CARBAMATES

Claude I. Judd, Mequon, Wis., assignor to Colgate-Palmolive Company, a corporation of Delaware
No Drawing. Filed June 28, 1962, Ser. No. 205,849
19 Claims. (Cl. 260—268)

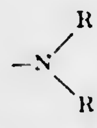
1. A member of the group consisting of compounds of the formula



and



wherein R is at least one member of the group consisting of hydrogen, lower alkyl, lower alkoxy, halo, trifluoromethyl and lower alkyl thio groups, R_1 and R_2 are members of the group consisting of hydrogen, lower alkyl, phenyl, phenyl-lower alkyl, lower alkenyl, lower alkynyl and groups in which

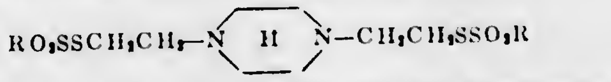


represents a cyclic amino of the group consisting of piperidino, morpholino, pyrrolidino, piperazino, quinuclidino, 4-lower alkyl piperazino, 4-(hydroxy-lower alkyl)-piperazino and 4-(phenyl-lower alkyl)-piperazino, R_3 is a member of the group consisting of pyridyl, piperidyl, pyrrolidyl, N-lower alkyl piperidyl, N-(pheny'-lower alkyl)-piperidyl, N-di-lower alkyl amino-lower alkyl piperidyl, N-lower alkyl pyrrolidyl, N-(phenyl-lower alkyl)-pyrrolidyl, N-acetamido-pyrrolidyl, N-acetamido-piperidyl, quinuclidinyl and N-di-lower alkyl amino-lower alkyl pyrrolidyl, A is a lower alkylene and B is a member of the group consisting of a chemical bond and lower alkylene groups, but B is not a bond when the quinuclidinyl, piperidyl and pyrrolidyl groups are bonded in the 2-positions of these rings and the pyridyl group is bonded in the 2 and 4 positions of this ring, and nontoxic acid addition salts thereof.

3,185,693
β,β'-BIS(SUBSTITUTED SULFONYLTHIO)DIETHYL PIPERAZINE

Joseph E. Dunbar, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Oct. 28, 1963, Ser. No. 319,508
3 Claims. (Cl. 260—268)

1. A compound corresponding to the formula

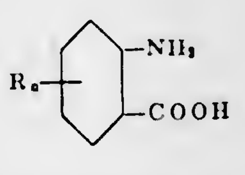


and the hydrohalide salts thereof, wherein R represents a member of the group consisting of lower alkyl, phenyl, lower alkylphenyl, halophenyl, and lower alkyl-halophenyl.

3,185,694
PROCESS FOR PREPARING QUINACRIDONE-QUINONES

Edward E. Jaffee, Union, and Ronald L. Sweet, Westfield, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Sept. 17, 1962, Ser. No. 224,251
2 Claims. (Cl. 260—279)

1. In a process for the preparation of a quinacridonequinone the steps comprising heating, in water at a pH of about 2.5 to 5 and in the presence of vanadium pentoxide as a catalyst and an alkali metal chlorate as an oxidizing agent, a quinone compound selected from the group consisting of benzoquinone, hydroquinone, quinhydrone, and mixtures thereof with an anthranilic acid of the formula

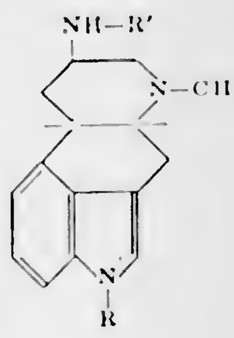


where *n* is 0–2, both limits being included, and R is selected from the group consisting of lower alkyl, lower alkoxy, and halogen, the molar proportion of the anthranilic acid to the quinone compound being about 2.4:1, recovering a 2,5-bis(2-carboxyarylamino)benzoquinone from the water, cyclizing the latter compound in concentrated sulfuric acid to form a quinacridonequinone, and then purifying said quinacridonequinone by refluxing in an acid dichromate solution.

3,185,695
6-METHYL- and 1,6-DIMETHYL-ERGOLINE II DERIVATIVES

Luigi Bernardi, Onofrio Goffredo, and Germano Bosisio, Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy
No Drawing. Filed Nov. 13, 1962, Ser. No. 237,367
Claims priority, application Italy, Nov. 28, 1961, 21,387/61
4 Claims. (Cl. 260—285.5)

4. An ergoline II compound of the formula:

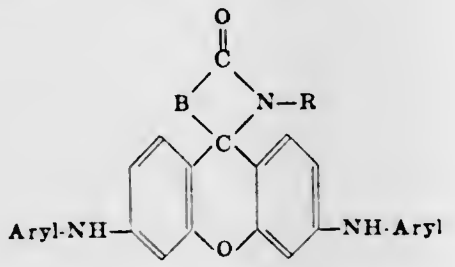


wherein
- R is selected from the group consisting of hydrogen and methyl; and
- R' is selected from an acyl group consisting of
  - (*a*) substituted and unsubstituted saturated aliphatic acids, with up to 10 carbon atoms, wherein the substituent is from the group consisting of phenyl and phenoxy;
  - (*b*) saturated cycloaliphatic acids with up to 8 carbon atoms, wherein the cycloaliphatic ring has 5 carbon atoms;
  - (*c*) substituted and unsubstituted benzoic acid, wherein the substituent is methoxy; and
  - (*d*) nicotinic acid.

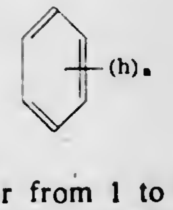
3,185,696
3',6'-DIAMINOFLUORAN DERIVATIVES OF γ-LACTAM

Jack M. Tien, Tainan, Taiwan, China
(32 Willow St., Beacon, N.Y.)
No Drawing. Continuation of application Ser. No. 798,846, Mar. 12, 1959. This application Mar. 14, 1962, Ser. No. 179,787
14 Claims. (Cl. 260—295)

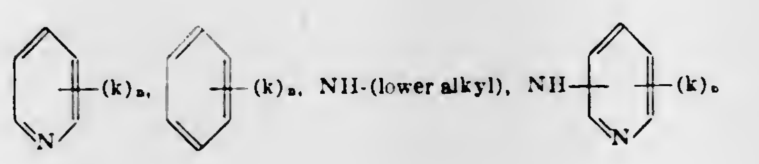
1. A compound of the formula

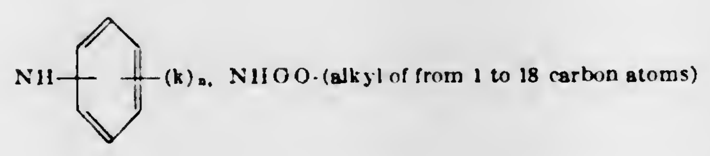


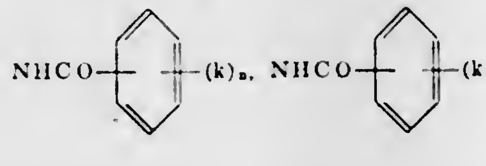
wherein B is a member selected from the group consisting of o-phenylene, halo-o-phenylene and o-naphthylene; Aryl is a member selected from the group consisting of cyclohexylphenyl, naphthyl and



where *n* is an integer from 1 to 4 and h is a member chosen from the group consisting of hydrogen, lower alkyl, hydroxy, lower alkoxy and halogen; R is a member selected from the group consisting of hydrogen, alkyl of from 1 to 18 carbon atoms,







where k is a member selected from the group consisting of hydrogen, lower alkyl, hydroxy, lower alkoxy, nitro, halogen and cyano and *n* is an integer from 1 to 4.

12. The compound of claim 1 in which B is dichloro-o-phenylene, Aryl is p-ethoxyphenyi and R is NHCO-pyridyl.

3,185,697
BICYCLO-(2.2.1)-HEPT-5-ENE-2-CARBINYL-NICOTINATE

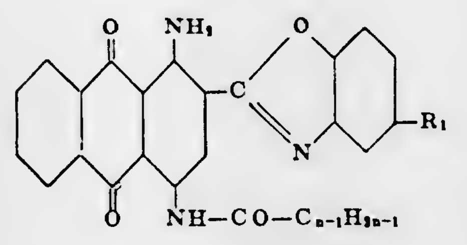
Perttu V. Laakso, Tower Lakes, Barrington, Ill., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
No Drawing. Filed Aug. 21, 1961, Ser. No. 132,545
1 Claim. (Cl. 260—295.5)

Bicyclo-(2.2.1)-hept-5-ene-2-carbinylnicotinate.

3,185,698
NEW ANTHRAQUINONE DYESTUFFS

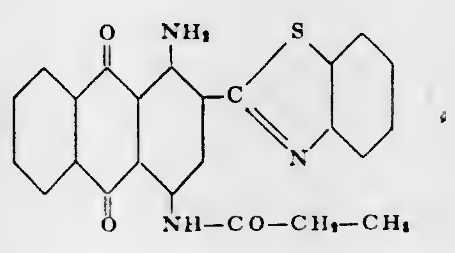
Jacob Koch and Max Jost, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Feb. 18, 1963, Ser. No. 259,362
Claims priority, application Switzerland, Feb. 21, 1962, 2,091/62; Feb. 6, 1963, 1,411/63
4 Claims. (Cl. 260—303)

1. Anthraquinone dyestuffs of the formula

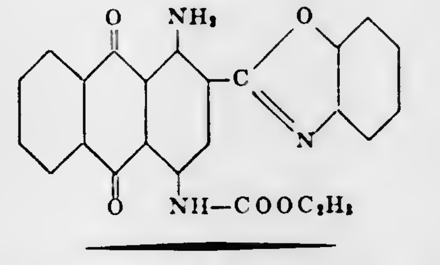


in which *n* represents an integer of 2 to 4, and R_1 represents a member selected from the group consisting of a hydrogen atom, a halogen atom, lower alkyl, amino, phenylsulfonyl and amidosulfonyl.

3. The dyestuff of the formula



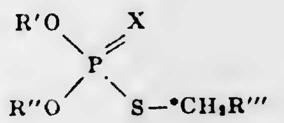
4. The dyestuff of the formula



3,185,699
HETEROCYCLIC PHOSPHOROTHIOATES

Edward Sherlock, Bracknell, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Apr. 11, 1960, Ser. No. 21,133
Claims priority, application Great Britain, Apr. 23, 1959, 13,940/59
5 Claims. (Cl. 260—309)

1. A compound selected from the group consisting of compounds having the formula



in which R' and R'' are alkyl having up to four carbon atoms, X is an atom selected from the group consisting of oxygen and sulfur, and R''' is selected from the group consisting of unsubstituted imidazole ring attached to the carbon atom designated by an asterisk through a carbon atom of said ring and imidazole rings substituted by a member of the group consisting of alkyl having 1–4 carbon atoms, cyclohexyl, phenyl, benzyl, amino and hydroxyl and acid addition salts of said compounds.

3,185,700

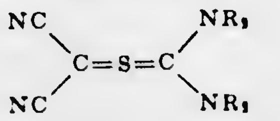
DICYANO-S-DIAMINOMETHYLENESULFILIDENES AND DICYANO-S-DI(SUBSTITUTED) AMINOMETHYLENESULFILIDENES AND PREPARATION THEREOF

William J. Middleton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 29, 1963, Ser. No. 269,187

5 Claims. (Cl. 260—309.7)

1. A compound of the formula

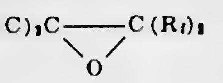


wherein

each of the R's, taken singly, represents a member selected from the group consisting of hydrogen and aliphatically saturated alkyl and cycloalkyl of up to 20 carbons, and

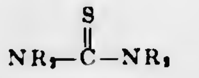
any two R's may be taken together to form alkylene of 2–7 carbons.

5. A process of preparing a compound of claim 1 which comprises contacting a compound of the formula



wherein each of the R_f's, taken singly, is of up to 18 carbons and represents a member selected from the group consisting of perfluoroalkyl, ω-chloroperfluoroalkyl and ω-hydroperfluoroalkyl, and the two R_f's, conjointly are perfluoroalkylene of 3–8 carbons,

with a compound of the formula



$$NR_2-\overset{S}{\overset{\|}{C}}-NR_2$$

wherein R is as defined in claim 1,

at a temperature from −80° to 250° C.

3,185,701

PREPARATION OF WATER-SOLUBLE PHTHALOCYANINE SULFONAMIDE DYESTUFFS

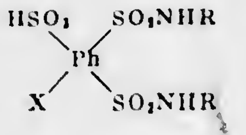
Marco Tessandori, Milan, and Aldo Pasquarelli, Seveso, Milan, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy

No Drawing. Filed Feb. 25, 1963, Ser. No. 260,828

Claims priority, application Italy, Feb. 27, 1962, 3,978/62

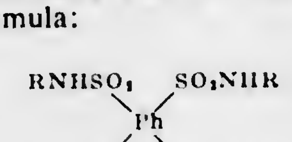
1 Claim. (Cl. 260—314.5)

A process for the preparation of a phthalocyanine dyestuff of the formula:



(1)

said process comprising partially hydrolyzing a compound of the formula:



wherein Ph is the residue from copper phthalocyanine, R is selected from the group consisting of cyclohexyl, phenyl and tolyl, and Y is selected from the group consisting of —SO_2NHR and H, by treating said compound with concentrated H_2SO_4 at a temperature of about 30° C., treating the resultant compound, which contains two —SO_2NHR groups, with water and then precipitating by salting.

3,185,702

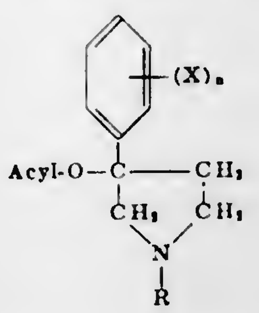
BASIC ESTERS OF 3-ARYL-3-PYRROLIDINOLS

Carl Dalton Lunsford, 1407 Cummings Drive, Richmond, Va.

No Drawing. Filed Mar. 16, 1959, Ser. No. 799,441

10 Claims. (Cl. 260—326.3)

1. A compound selected from the group consisting of 3-phenyl-3-pyrrolidyl basic esters of the following formula:



wherein

R is selected from the group consisting of hydrogen, lower alkyl, cycloalkyl, phen-lower-alkyl, and phenoxy-lower-alkyl;

wherein

Acyl is a radical selected from the group consisting of acetyl, propionyl, phenoxyacetyl and phenoxypropionyl; and wherein

X is selected from the group consisting of hydrogen, halogen, hydroxy, lower alkyl and lower alkoxy and *n* is a whole number less than 3; and nontoxic acid addition and quaternary ammonium salts thereof, in which quaternary ammonium salts the organic radical is selected from the group consisting of loweralkyl and aralkyl containing a maximum of eight carbon atoms.

3,185,703

RACEMIZATION OF OPTICALLY-ACTIVE PYROGLUTAMIC ACID

Hiroh Kageyama and Hajime Okamoto, Yokohama-shi, Kanagawa-ken, and Masaaki Iida, Ohta-ku, Tokyo, and Ko Ohno, Setagayaku, Tokyo, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

Filed July 17, 1962, Ser. No. 210,533

Claims priority, application Japan, July 18, 1961, 36/25,221

4 Claims. (Cl. 260—326.3)

1. A process of racemizing optically-active pyroglutamic acid, comprising the steps of mixing the optically-active pyroglutamic acid with water in a weight ratio of acid to water between 10:90 and 90:10, any substance selected from the group of alkaline and acidic substances present in the mixture being limited to a molar ratio of less than 0.75 in the case of an alkaline substance and less than 1 in the case of an acidic substance, in relation to the pyroglutamic acid, and heating the mixture to a temperature between about 160° C. and 220° C.

3,185,704

FORMAMIDE OF MONO-ALKENYL SUCCINIMIDE

Donald J. Kahn, Elizabeth, and Roger E. Chandler, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 4, 1962, Ser. No. 221,364

4 Claims. (Cl. 260—326.3)

1. A formamide of 1 to 2 molar proportions of formic acid and 1 molar proportion of mono-alkenyl succinimide wherein said alkenyl group is unsubstituted and contains 40 to 250 carbon atoms and said succinimide is the succinimide of mono-alkenyl succinic anhydride and a polyamine of the formula:

$$NH_2(CH_2)_n[NH(CH_2)_n]_m—NH_2$$

where *n* is 2 to 3 and *m* is 0 to 4.

3,185,705

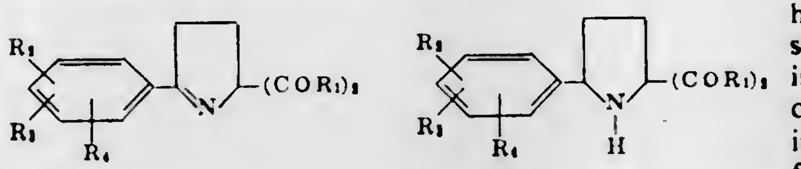
2-PHENYL-5,5-DI-ESTERS AND DI-AMIDES OF 2-PYRROLINE AND THE CORRESPONDING PYRROLIDINES

Frederick Leonard, Yonkers, and Norbert Gruenfeld, Bronx, N.Y., assignors to Geigy Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 24, 1963, Ser. No. 275,245

7 Claims. (Cl. 260—326.3)

1. A compound of the class consisting of a substituted heterocyclic base and its non-toxic, pharmaceutically acceptable acid addition salts, said base being selected from the group consisting of derivatives of pyrroline and pyrrolidine of the formulae:



wherein

R_1 is a member selected from the group consisting of lower alkoxy, amino and lower alkylamino;

R_2, R_3 and R_4 are chosen from the group consisting of hydrogen, chlorine, bromine, lower alkyl and lower alkoxy.

3,185,706

METHOD FOR PREPARING ALKALI METAL PYRROLIDONES

Thomas D. Mutaffis, North Plainfield, N.J., and Frank Carluccio and Max E. Chiddix, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 3, 1963, Ser. No. 270,177

11 Claims. (Cl. 260—326.5)

1. A method for preparing an alkali metal pyrrolidone which comprises passing pyrrolidone in the form of a film through a reaction zone maintained at temperature and pressure conditions above the dew point of water, contacting said pyrrolidone in said reaction zone with an alkali metal base selected from the group consisting of the hydroxides, carbonates, and mixtures thereof at a temperature in the range of from about 170° to about 250° C. whereby alkali metal pyrrolidone and water are formed, said alkali metal pyrrolidone remaining in said film and said water being converted to vapor and passing from said film, continuously removing said water vapor from said reaction zone, and recovering substantially undegraded alkali metal pyrrolidone from said reaction zone.

3,185,707

ALPHA SUBSTITUTED PHENYL ACETO NITRILES AND HYDROCINNAMONITRILES AND THE CORRESPONDING CARBAMATES THEREOF

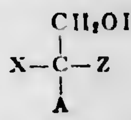
Joseph Albert Meschino, North Wales, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Filed Apr. 19, 1961, Ser. No. 103,985

15 Claims. (Cl. 260—340.5)

3. The compound alpha-hydroxymethyl-3,4-methylenedioxyhydrocinnamonitrile.

15. A compound of the formula



$$X-\underset{A}{\overset{CH_2OR}{C}}-Z$$

wherein Z is a member of the group consisting of nitrile and carbamoyl; A is a member of the group consisting of hydrogen and phenyl; X is a member of the group consisting of phenyl, benzhydryl, benzyl, loweralkoxybenzyl, di-loweralkoxybenzyl, tri-loweralkoxybenzyl, loweralkylbenzyl, chlorobenzyl, methylenedioxybenzyl and nitrobenzyl; and R is a member of the group consisting of hydrogen, carbamoyl and N-phenyl carbamoyl.

3,185,708

FUSED TRICYCLIC LACTONES AND THEIR PREPARATION

Samuel S. Mims, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey

No Drawing. Filed Mar. 7, 1962, Ser. No. 177,987

3 Claims. (Cl. 260—343.2)

2. A method of preparing 2,3,6,6a,7,8,9,10,10a,10b-decahydro - 7,7,10a-trimethyl-1H-naphtho(2,1-b)pyran-3-one and 1,2,5,5a,6,7,8,9,9a,9b-decahydro-6,6,9a-trimethyl-naphtho(2,1-b)furan-2-one which comprises heating in the presence of magnesium sulfate and sodium sulfate a hydrocarbon solution of sclareol to obtain a mixture of sclarene isomers, contacting said mixture of sclarene isomers in ethyl acetate solution with ozone to form an ozonide, removing ethyl acetate from the ozonide, refluxing said ozonide in the presence of hydrogen peroxide to form an oxidation product, and then refluxing the said oxidation product in the presence of an acetic anhydride solvent containing sodium acetate for a time sufficient to form the compounds 2,3,6,6a,7,8,9,10,10a,10b-decahydro-7,7,10a-trimethyl-1H-naphtho(2,1-b)pyran-3-one, and 1,2,5,5a,6,7,8,9,9a,9b - decahydro - 6,6,9a - trimethyl-naphtho (2,1-b)furan-2-one and then separating said compounds from the reaction mixture.

3,185,709

PROCESS FOR OBTAINING CRYSTAL VIOLET LACTONE

Albert E. Munro and Nathan N. Crounse, Cincinnati, and Edward M. Davis, Amberley Village, Ohio, assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 21, 1963, Ser. No. 325,466

7 Claims. (Cl. 260—343.4)

1. The method which comprises: producing crystal violet lactone by intimately admixing gaseous molecular oxygen with an aqueous solution of an alkali metal salt of 2-[4,4′ - bis(dimethylamino)benzohydryl]-5-dimethylaminobenzoic acid at a pH in the approximate range 8 to 12.5 and at a temperature in the approximate range 15 to 160° C.; and recovering from the resulting aqueous reaction mixture the crystal violet lactone thus produced.

3,185,710

RESOLUTION OF PANTOLACTONE AND PHENYLETHYLAMINE

Morris Dunkel, Kew Gardens, N.Y., Ira Loter, East Paterson, N.J., and Howard C. Klein, Brooklyn, N.Y., assignors to Nopco Chemical Company, Newark, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 6, 1961, Ser. No. 136,196

10 Claims. (Cl. 260—343.6)

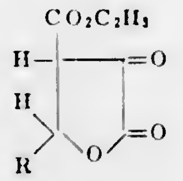
1. A process for obtaining D (—)-α-hydroxy-β,β-dimethyl - γ - butyrolactone from racemic α-hydroxy - β,β-dimethyl-γ-butyrolactone which comprises the steps of bringing into contact with each other racemic α-hydroxy-β,β-dimethyl-γ-butyrolactone and 1-α-phenylethylamine, recovering from the resulting reaction mixture the amide of 1-α-phenylethylamine and D (—)-α-hydroxy-β,β-dimethyl-γ-butyrolactone, cleaving said amide and recovering D (—)-α-hydroxy-β,β-dimethyl-γ-butyrolactone.

6. A process for obtaining 1-α-phenylethylamine from racemic α-phenylethylamine which comprises the steps of bringing into contact with each other racemic α-phenylethylamine and D (—)-α-hydroxy-β,β-dimethyl-γ-butyrolactone, recovering from the resulting reaction mixture the amide of 1-α-phenylethylamine and D (—)-α-hydroxy-β,β-dimethyl - γ - butyrolactone, cleaving said amide and recovering 1-α-phenylethylamine.

3,185,711
OXOBUTYROLACTONES

Harold G. Monsimer, Philadelphia, Pa., assignor to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 19, 1963, Ser. No. 310,159
3 Claims. (Cl. 260—343.6)

1. A composition of the formula:

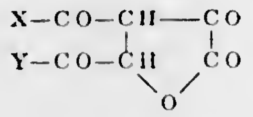


wherein R is a member selected from the group consisting of p-acetamidophenyl and p-fluorophenyl.

3,185,712
ALPHA-KETO-GAMMA-LACTONE DERIVATIVES

William Taub, 43 Ben-Zion St., Rehoboth, and Sander Vromen, 5 Vitkin St., Haifa, Israel
No Drawing. Filed Oct. 2, 1963, Ser. No. 313,195
7 Claims. (Cl. 260—343.6)

1. A compound of the formula

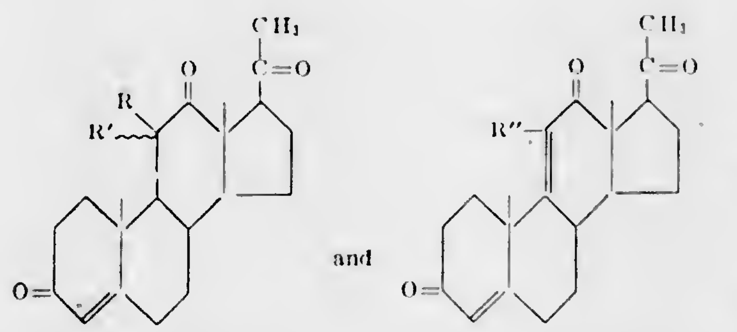


in which X and Y are members selected from the group consisting of alkyl having up to 8 carbon atoms, cycloalkyl having from 3 to 7 carbon atoms, phenyl, monohalogenated phenyl, alkoxyphenyl said alkoxy having up to 8 carbon atoms, naphthyl, biphenylyl, alkylphenyl said alkyl having up to 8 carbon atoms, phenylamino, —O-alkyl having up to 8 carbon atoms, benzyloxy and —O-cycloalkyl having 3 to 7 carbon atoms with the proviso that only one of the symbols X and Y may represent a member selected from the group consisting of —O-alkyl having up to 8 carbon atoms, benzyloxy and —O-cycloalkyl having 3 to 7 carbon atoms.

3,185,713
12-KETO PROGESTATIONAL STEROIDS AND DERIVATIVES THEREOF

Edward Joseph Becker, Princeton, and Allen Cohen, East Brunswick, N.J., assignors to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Apr. 12, 1963, Ser. No. 272,552
10 Claims. (Cl. 260—397.3)

1. A compound selected from the group consisting of steroids of the formulae



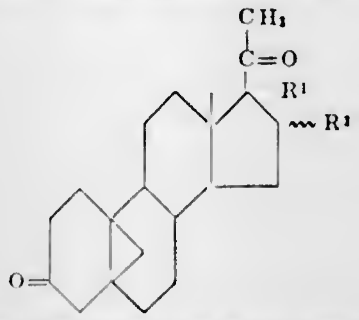
wherein R is hydrogen; R′ is selected from the group consisting of hydroxy and acyloxy; and together R and R′ is oxo; and R″ is selected from the group consisting of hydroxy, acyloxy and lower alkoxy; wherein acyl is of a hydrocarbon carboxylic acid of less than ten carbon atoms.

5. 11,12-dioxoprogesterone.

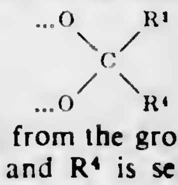
3,185,714
5,10-METHYLENE-19-NOR-PREGNANES, PREGNENES AND PREGNADIENES

Lawrence H. Knox, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed June 11, 1963, Ser. No. 286,912
Claims priority, application Mexico, Dec. 21, 1962 70,273
24 Claims. (Cl. 260—397.3)

1. A compound represented by the formula:



wherein R^1 is selected from the group consisting of hydrogen, hydroxyl and acyloxy containing less than 12 carbon atoms; R^2 is selected from the group consisting of hydrogen, α-methyl, β-methyl and α-hydroxyl and R^1 and R^2 taken together represent the grouping:



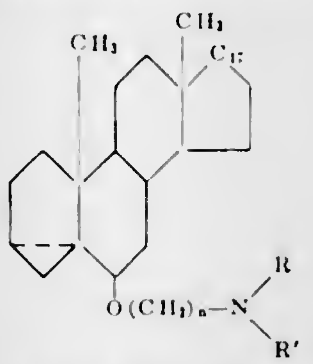
wherein R^3 is selected from the group consisting of hydrogen and lower alkyl and R^4 is selected from the group consisting of hydrogen and lower alkyl, monocyclic aryl, monocyclic aralkyl and monocyclic alkaryl.

2. 5,10-methylene-19-nor-pregnane-3,20-dione.

3,185,715
SUBSTITUTED 6-AMINO ALKYLENEOXY 3,5-CYCLOANDROSTANES

Edward W. Cantrall, Pearl River, Seymour Bernstein, New City, and Samuel Gordon, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Oct. 31, 1962, Ser. No. 234,554
8 Claims. (Cl. 260—397.4)

1. A compound selected from the group consisting of a compound of the formula:



in which R and R′ are lower alkyl and *n* is an integer from 2 to 4, and C_{17} is a member of the group consisting of $>CH_2$, $>C{=}O$, $>C{=}NOH$, $>C{=}N{-}O$-lower alkyl and $>CHOH$ and hydrohalide salts thereof.

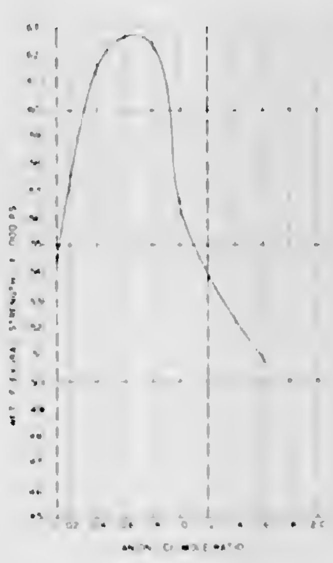
3,185,716
PROCESS OF CHROMATOGRAPHIC EXTRACTION OF VITAMIN D_2 AND/OR PRE-VITAMIN D_2

Francis Balestic, Versailles, France, assignor to Commissariat à l'Energie Atomique
No Drawing. Filed Mar. 18, 1963, Ser. No. 266,046
Claims priority, application France, Mar. 29, 1962, 892,625
6 Claims. (Cl. 260—397.25)

1. A process of chromatographic extraction of vitamin D_2 and pre-vitamin D_2 prepared by the ultraviolet irradiation of ergosterol, which comprises forming a solution of the irradiation products associated with the vitamin D_2 and pre-vitamin D_2 and unconverted products in non-polar or weakly polar organic solvent, effecting chromatographic adsorption of the solution by passage through Florida fuller's earth and eluting the said vitamins with an organic solvent which is not less polar than the first-mentioned solvent.

3,185,717
PREPARATION OF WERNER COMPLEXES OF CHROMIUM AND ALKENYL MONOCARBOXYLIC ACIDS

John W. Trebilcock, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 23, 1962, Ser. No. 175,311
2 Claims. (Cl. 260—438)



1. The process for preparing a Werner complex of a carboxylic acid and chromium comprising: simultaneously admixing a water-soluble hexavalent chromium compound and hydrochloric acid with a solution of an alkenyl monocarboxylic acid in an alkanol that is water-soluble to an extent of at least 5% at 20° C., said hydrochloric acid and said chromium compound being used in amounts that provide from 0.1 to 1.2 chloride atoms per chromium atom in said complex.

3,185,718
PREPARATION OF CYCLOPENTADIENYL COORDINATION COMPOUNDS OF GROUPS VIII AND IB METALS

Jerome E. Brown, Detroit, and Earl G. De Witt, Royal Oak, Mich., and Hymin Shapiro, East Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Dec. 9, 1957, Ser. No. 701,311
7 Claims. (Cl. 260—439)

1. The process for forming a cyclopentadienyl metal coordination compound wherein the metal is selected from Groups VIII and IB of the periodic table and wherein the metal achieves the electron configuration of the next higher rare gas by coordination with a cyclopentadienyl hydrocarbon radical containing from five to about 13 carbon atoms in addition to electron donor groups selected from the class consisting of radicals and molecular species which contain labile electrons, said radicals and molecular species being selected from the class consisting of the hydrogen atom, univalent organic hydrocarbon radicals of 1–12 carbon atoms, the cyanide radical, carbon monoxide, ammonia, tert-amines whose organic radicals are univalent organic hydrocarbon radicals of 1–12 carbon atoms, tert-phosphines whose organic radicals are univalent organic hydrocarbon radicals of 1–12 carbon atoms, phosphorus trihalides and nitric oxide, such that said electrons assume more stable configurations in the molecule when associated with the metal to give it the configuration of the next heavier rare gas, which method comprises reacting a compound selected from the group consisting of cyclopentadienyl Grignard reagents wherein the cyclopentadienyl radical is a cyclopentadienyl hydrocarbon radical of 5 to about 13 carbon atoms, alkali metal cyclopentadienyl compounds wherein the cyclopentadienyl radical is a cyclopentadienyl hydrocarbon radical of 5 to about 13 carbon atoms, and cyclopentadienyl zinc halides wherein the cyclopentadienyl radical is a cyclopentadienyl hydrocarbon radical of 5 to about 13 carbon atoms, with a halide of a metal selected from Groups VIII and IB of the periodic table in a non-reactive liquid medium to produce a dicyclopentadienyl-Group VIII–IB-metal compound wherein each cyclopentadienyl radical is a cyclopentadienyl hydrocarbon radical of 5 to about 13 carbon atoms and reacting said dicyclopentadienyl-Group VIII–IB-metal compound with a compound capable of contributing electron donor groups to the metal atom, said electron donor groups being selected from the class consisting of radicals and molecular species which contain labile electrons, said radicals and molecular species being selected from the class consisting of the hydrogen atom, univalent organic hydrocarbon radicals of 1–12 carbon atoms, the cyanide radical, carbon monoxide, ammonia, tert-amines whose organic radicals are univalent organic hydrocarbon radicals of 1–12 carbon atoms, tert-phosphines whose organic radicals are univalent organic hydrocarbon radicals of 1–12 carbon atoms, phosphorus trihalides and nitric oxide.

3,185,719
ORGANOSILICON COMPOUNDS CONTAINING NITRILE RADICALS

Maurice Prober, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 31, 1953, Ser. No. 401,704
8 Claims. (Cl. 260—448.2)

1. Organosilanes having at least one

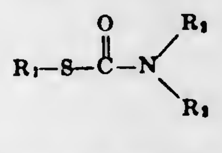
$$—(CH_2)_n—CH(CN)R'$$

radical attached to silicon where R′ is a member selected from the class consisting of hydrogen, alkyl, radicals, aryl radicals, and aralkyl radicals, and *n* is a whole number equal to from 1 to 10, inclusive, and at least one hydrolyzable group attached directly to silicone, with any remaining valences of silicon being satisfied by members selected from the class consisting of hydrogen, alkyl radicals, aryl radicals and aralkyl radicals.

3,185,720
ASYMMETRIC THIOLCARBAMATES

Harry Tilles, El Cerrito, and Joe Antognini, Mountain View, Calif., assignors to Stauffer Chemical Company, a corporation of Delaware
No Drawing. Filed Aug. 21, 1962, Ser. No. 218,426
5 Claims. (Cl. 260—455)

1. A compound of the formula



$$R_1{-}S{-}\overset{\overset{O}{\|}}{C}{-}N\begin{matrix}\diagup R_2\\ \diagdown R_3\end{matrix}$$

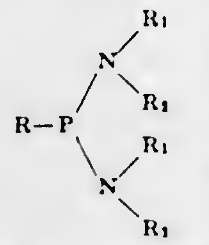
wherein R_1 is selected from ethyl and n-propyl radicals, wherein R_2 is an ethyl radical and wherein R_3 is selected from n-butyl and cyclohexyl radicals.

3,185,721

THIOPHOSPHONIC ACID ESTERS OR ESTER AMIDES AND PROCESSES FOR THE PRODUCTION THEREOF

Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Mar. 3, 1961, Ser. No. 93,028
Claims priority, application Germany, Mar. 5, 1960, F 39,691
9 Claims. (Cl. 260—461)

1. The process for the production of a member selected from the group consisting of thionophosphonic acid-diester and thiophosphonic ester amide which comprises contacting a phosphonous acid diamide of the following formula:



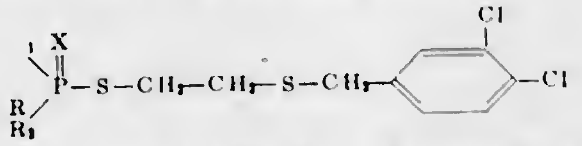
in which R, R_1, and R_2 when take alone stand independently for a member selected from the group consisting of alkyl and alkenyl having up to 12 carbon atoms, substituted derivatives of said alkyl and alkenyl wherein the substituents are selected from the group consisting of halogen, lower alkoxy and nitro, benzyl, phenyl ethyl, phenyl, naphthyl and substituted derivatives of said phenyl and naphthyl wherein the substituents are selected from the group consisting of lower alkyl, halogen, nitro and amino, and wherein R_1 and R_2 when taken together with N stand for a member selected from the group consisting of piperidyl and morpholinyl with a member selected from the group consisting of phenol, thiophenol, substituted phenol and substituted thio phenol wherein the substituents on said substituted phenol and substituted thiophenol are selected from the group consisting of lower alkyl, halogen, nitro and cyano at a temperature between about 50° C. and 150° C. and subsequently reacting this intermediate with sulfur.

3,185,722

PHOSPHONIC AND PHOSPHINIC ACIDS AND THEIR THIO ANALOGUES CONTAINING A DICHLOROBENZYLTHIO-ETHER GROUP

Gerhard Schrader, Wuppertal-Cronenberg, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed May 29, 1962, Ser. No. 198,430
Claims priority, application Germany, June 8, 1961, F 34,112
6 Claims. (Cl. 260—461)

1. A compound of the following formula:



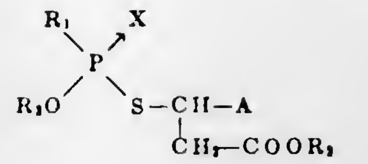
wherein R_1 stands for lower alkyl, R_2 stands for a member selected from the group consisting of lower alkyl- and lower alkoxy-radicals and X is a member of the group consisting of oxygen and sulfur.

3,185,723

O-ALKYL, S, 1-PHENYL-2-ALKOXYCARBONYLETHYL ALKYLPHOSPHONOTHIOATES

Arthur John Floyd, Bracknell, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed July 30, 1962, Ser. No. 213,093
Claims priority, application Great Britain, Aug. 3, 1961, 28,246/61
10 Claims. (Cl. 260—461)

1. A compound having the formula:



where:
R is alkyl having 1–4 carbon atoms;
R_2 is alkyl having 1–6 carbon atoms;
R_3 is selected from the group consisting of hydrogen and alkyl having 1–4 carbon atoms;
A is selected from the group consisting of phenyl, halophenyl, alkoxyphenyl and alkylphenyl wherein the alkoxy and alkyl substituents include from 1–4 carbon atoms; and
X is selected from the group consisting of oxygen and sulphur.

3,185,724

PROCESS FOR MANUFACTURE OF ORGANOBORON HALIDES AND ESTERS

Nathaniel L. Remes, Elgin, and Thomas W. Martinek, Round Lake, Ill., assignors to The Pure Oil Company, Chicago, Ill., a corporation of Ohio
No Drawing. Filed July 10, 1957, Ser. No. 670,867
10 Claims. (Cl. 260—462)

1. A method of preparing aryl-substituted boron intermediates which yield aryl-substituted hydroxy boranes upon hydrolysis, which comprises reacting a sodium metal complex of a compound selected from the group consisting of polycyclic fused-ring aromatic hydrocarbons and aromatic hydrocarbons containing at least 2 benzene rings connected by a carbon-carbon double bond in solution in an inert solvent with a compound selected from the group consisting of boron halides and lower trialkyl borate esters.

3,185,725

PREPARATION OF 2,6-DICHLOROBENZONITRILE

Harmannus Koopman, Weesp, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 27, 1960, Ser. No. 24,916
Claims priority, application Netherlands, Apr. 28, 1959, 238,687
2 Claims. (Cl. 260—465)

1. 2-chloro-6-nitrobenzonitrile.
2. 2-amino-6-chlorobenzonitrile.

3,185,726

NEW METHOD FOR THE PREPARATION OF HIGH ENERGY FUEL

Jean P. Picard, Morristown, and Hans Walter, Dover, N.J., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Nov. 5, 1962, Ser. No. 235,583
11 Claims. (Cl. 260—467)
(Granted under Title 35 U.S. Code (1952), sec. 266)

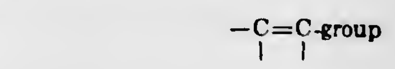
1. A method of producing a family of high energy fuels comprising condensing a member of the group consisting of trimethylolnitromethane and trimethylolaminomethane by reacting it with a compound selected from the group consisting of acrylic acid; acrylyl chloride; methacrylyl chloride; ethylene oxide; hexamethylene diisocyanate; tolylene 2,4-diisocyanate; nitrophenylene diisocyanate; dinitrophenylene diisocyanate; 2,4,6-trinitrobenzene diisocyanate; epichlorohydrin; and 2,4-dinitro-1-chlorobutene, polymerizing the resultant product and nitrating the polymerized composition by reacting it with a nitrogen-oxygen radical containing compound selected from the group consisting of nitryl fluoride, nitronium perchlorate, nitric acid, mixed nitric and sulfuric acid, acetyl nitrate, dinitrogen pentoxide, and picryl chloride.

3,185,727

HYDROGENATION PROCESS

Jack Kwiatek and Irving L. Mador, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Feb. 10, 1961, Ser. No. 88,288
2 Claims. (Cl. 260—491)

1. A homogeneous hydrogenation process which comprises contacting an aliphatic olefinic compound containing a



$$-\underset{|}{C}=\underset{|}{C}\text{-group}$$

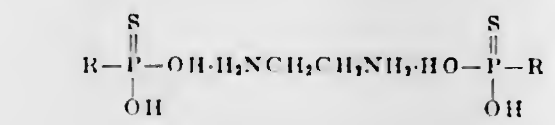
conjugated with a carbonyl group, in the presence of hydrogen, with an aqueous solution containing cyanide anions and ions of a cobalt group metal, said aqueous solution having a pH of at least 7.

3,185,728

ETHYLENE DIAMINE SALTS OF THIOPHOSPHONIC ACIDS

Elmer E. Schallenberg, Beacon, and Roger G. Lacoste, Hopewell Junction, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 20, 1960, Ser. No. 37,092
2 Claims. (Cl. 260—501)

1. An ethylenediamine salt of hydrocarbyl thiophosphonic acid having the following formula:



$$R-\underset{OH}{\overset{S}{\overset{\|}{P}}}-OH\cdot H_2NCH_2CH_2NH_2\cdot HO-\underset{OH}{\overset{S}{\overset{\|}{P}}}-R$$

where R is an olefinic hydrocarbyl radical having at least 12 carbon atoms.

3,185,729

DIAMINO CAPROIC ACID DERIVATIVES AND PROCESS OF MAKING SAME

Bernard Goffinet, Paris, and Gaston Amiard, Noisy-le-Sec, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France
No Drawing. Filed June 21, 1960, Ser. No. 37,569
Claims priority, application France July 17, 1956, 718,686
1 Claim. (Cl. 260—534)

The caproic acid substituted in α- and ε-position by trimethyl ammonium chloride groups.

3,185,730

ORGANOFLUORO BORATES AND BORANES

Steward L. Stafford, Morris Township, Morris County, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 31, 1962, Ser. No. 220,908
13 Claims. (Cl. 260—543)

1. The compound $MRBF_3$ in which M is a metal selected from the group consisting of potassium, cesium and rubidium, and R is a radical selected from the group consisting of $CH_2{=}CH$ and CH_3.

4. Process for making $M^+RBF_3^-$ in which M is a metal selected from the group consisting of potassium, cesium and rubidium, and R is a radical selected from the group consisting of $CH_2{=}CH$ and CH_3 which process comprises contacting RBF_2 with an aqueous solution of MF at temperature at which said solution is maintained in liquid phase but not higher than about 30° C. to form $M^+RBF_3^-$, and recovering $M^+RBF_3^-$ from the resulting reaction mass.

9. Process for making substantially pure RBF_2 in which R is a radical selected from the group consisting of $CH_2{=}CH$ and CH_3 which process comprises contacting BF_3-contaminated RBF_2 with an aqueous solution of MF, in which M is a metal selected from the group consisting of potassium, cesium and rubidium, said MF being present in amount at least one molecular proportion per molecular proportion of RBF_2, at temperature at which said solution is maintained in liquid phase but not higher than about 30° C. to form a reaction mass containing $MRBF_3$ and MBF_4, substantially dehydrating the said reaction mass while maintaining the same at temperature not higher than about 30° C., recovering $MRBF_3$ from the resulting dehydrated material, heating said $MRBF_3$ to temperature above the decomposition temperature thereof to form substantially pure gaseous RBF_2 and a solid MF residue, and recovering substantially pure RBF_2.

3,185,731

CRYSTALLIZATION OF UREA

Petrus J. C. Kaasenbrood, Sittard, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed Oct. 18, 1962, Ser. No. 231,593
Claims priority, application Netherlands, Oct. 26, 1961, 270,676
1 Claim. (Cl. 260—555)

A cyclic process for the crystallization in vacuo of urea from a biuret-containing urea solution comprising continuously introducing the biuret-containing urea solution into a crystallizer, crystallizing urea from said solution in said crystallizer at a temperature of at least 90° C. and a pressure below 160 mm., continuously withdrawing from the crystallizer a suspension of urea crystals in a mother liquor containing at least 15 and at most 25 percent by weight of biuret, separating and removing from the withdrawn liquid an amount of biuret substantially equal to the amount introduced by the fresh biuret-containing urea solution to be crystallized and recirculating the mother liquor to the urea crystallizer.

3,185,732

METHOD FOR PRODUCING OXIMES

Pierre Bapseres and Christos Nicolaides, Pau, France, assignors to Société National des Petroles d'Aquitaine, Paris, France, a corporation of France
No Drawing. Filed July 11, 1962, Ser. No. 209,264
Claims priority, application France, Mar. 6, 1962, 890,097
8 Claims. (Cl. 260—566)

1. A method for producing oximes, comprising the steps of

(*a*) treating a solution of bisulphite with a material selected from the group consisting of cyclohexanone and methylcyclohexanone to form a bisulphite compound of the said material,

(*b*) adding thiosulphate in the amount of 0.05 to 0.2 mol of thiosulphate per mol of bisulphite present,

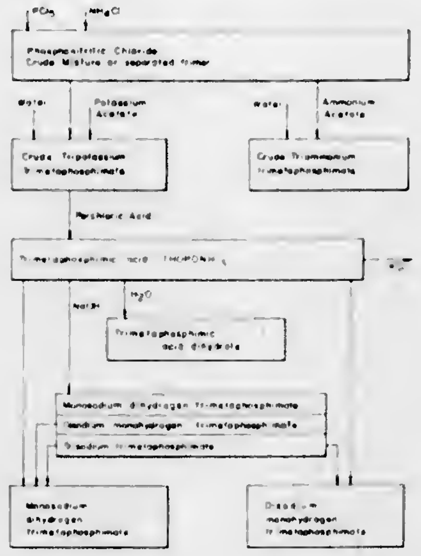
(*c*) subjecting the sulphite compound thus formed in an aqueous medium to nitrous oxide vapors at a temperature in the range from −5° C. to +35° C. until the pH is in the range from 7.5 to 8.0 and to sulphur dioxide at a temperature in the range from 15° C. to 25° C. until the pH decreases to 3.0,

(*d*) hydrolyzing the resulting hydroxylamine ammonium disulphonate at a temperature in the range from 30° C. to 100° C., and

(*e*) subjecting the resulting solution to oximation at room temperature with agitation in the presence of dissolved thiosulphate in the amount of 0.05 to 0.2 mol of thiosulphate per mole of bisulphite present.

3,185,733
AMINE SALTS OF TRIMETAPHOSPHIMIC ACID

Morris L. Nielsen, Dayton, Ohio, assignor to Monsanto Company, a corporation of Delaware
Original application Oct. 17, 1957, Ser. No. 690,865, now Patent No. 3,018,167, dated Jan. 23, 1962. Divided and this application Feb. 20, 1961, Ser. No. 90,546
1 Claim. (Cl. 260—579)


PCl5
NH4Cl
Phosphonitrilic Chloride
Crude Mixture or separated trimer
Water
Potassium Acetate
Water
Ammonium Acetate
Crude Tripotassium Trimetaphosphimate
Crude Triammonium trimetaphosphimate
Perchloric Acid
Trimetaphosphimic acid (HPO2NH)3
NaOH
H2O
Trimetaphosphimic acid dihydrate
Monosodium dihydrogen trimetaphosphimate
Disodium monohydrogen trimetaphosphimate
Trisodium trimetaphosphimate
Monosodium dihydrogen trimetaphosphimate
Disodium monohydrogen trimetaphosphimate

The o-tolidine salt of trimetaphosphimic acid.

3,185,734
NOVEL POLYFLUORO-SUBSTITUTED KETONES AND THEIR PREPARATION FROM POLYFLUORO ACID FLUORIDES

Frank S. Fawcett and Ronald D. Smith, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 25, 1960, Ser. No. 64,727
11 Claims. (Cl. 260—586)

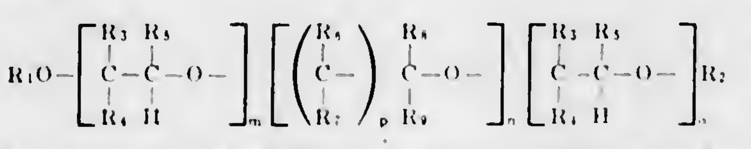
1. The process of preparing polyfluoro-substituted ketones which comprises reacting a compound selected from the group consisting of hexafluoropropylene and octafluoroisobutylene with a compound selected from the group consisting of polyfluoroalkanoic acid fluorides, polyfluoroalkanedioic acid fluorides and polyfluorocycloalkylalkanoic acid fluorides, in the presence of fluoride ions and at a temperature between 50° and 250° C.

11. Perfluoro(2,8-dimethyl-3,7-nonanedione).

3,185,735
STABILIZATION OF POLYOXYALKYLENE COMPOUNDS

Donald G. Leis, St. Albans, and George Magnus and Henry E. Fritz, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 3, 1961, Ser. No. 128,949
1 Claim. (Cl. 260—611.5)

Oxidation-stabilizer polyoxyalkylene compositions comprising (*a*) a polyoxyalkylene compound having the general formula



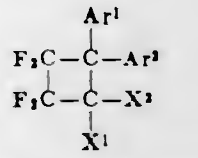
$$R_1O-\left[\begin{matrix}R_3 & R_5\\ | & |\\ C- & C-O-\\ | & |\\ R_4 & H\end{matrix}\right]_m \left[\left(\begin{matrix}R_6\\ |\\ C-\\ |\\ R_7\end{matrix}\right)_p \begin{matrix}R_8\\ |\\ C-O-\\ |\\ R_9\end{matrix}\right]_n \left[\begin{matrix}R_3 & R_5\\ | & |\\ C- & C-O-\\ | & |\\ R_4 & H\end{matrix}\right]_o R_2$$

wherein R_1 is selected from the group consisting of hydrogen and alkyl radicals having from 1 to about 10 carbon atoms; R_2 is selected from the group consisting of hydrogen and alkyl radicals having from 1 to about 8 carbon atoms; R_3, R_4, R_5, R_6, R_7, R_8, and R_9 are selected from the group consisting of hydrogen and alkyl radicals having from 1 to about six carbon atoms; *m* is an integer having a value from 1 to about 150; *n* is an integer having a value from 0 to 4; *o* is an integer having a value from 0 to about 150, but is such that the sum of *m* and *n* is not greater than 150; and *p* is an integer having a value from 1 to 3; and (*b*) from .01 to 5.0 percent by weight, based upon the total weight of the polyoxyalkylene composition, of 6-tertiary-butyl-5-indanol.

3,185,736
1,1-DIARYL-2,2,3,3-TETRAFLUORO-4,4-DIHALOCYCLOBUTANES

Ellsworth K. Ellingboe, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 31, 1960, Ser. No. 32,514
8 Claims. (Cl. 260—619)

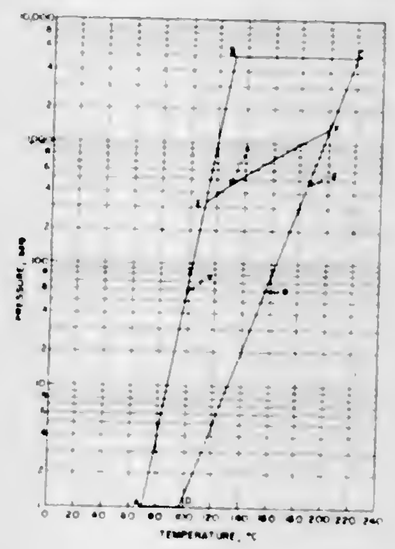
1. A compound of the formula



wherein Ar^1 and Ar^2 are monovalent, carbocyclic, aromatic radicals of up to three fused benzene nuclei, any substituents on said nuclei being selected from the group consisting of hydrocarbyl, hydrocarbyloxy, and dihydrocarbylamino of up to 8 carbons free of acyclic carbon-carbon unsaturation, halogen and hydroxyl and X^1 and X^2 are halogen of atomic number 9–35.

3,185,737
ORTHO ALKYLATION OF PHENOLS

James C. Geddes, Jr., Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Dec. 19, 1960, Ser. No. 76,725
10 Claims. (Cl. 260—624)



1. A reaction involving alkylation of a phenol having a replaceable hydrogen atom on the carbon atom para to the hydroxyl group, a replaceable hydrogen atom on one of the carbon atoms ortho to the hydroxyl group, and on the other carbon atom ortho to the hydroxyl group a radical selected from the group consisting of a replaceable hydrogen atom and an alkyl group having up to 4 carbon atoms with isobutylenes and an aluminum halide catalyst for the production of 2,6-dialkyl phenols; the improvement whereby throughout substantially the entire alkylation reaction period

(1) the reaction system is maintained at an essentially constant pressure within the limits of 1 to 5,000 p.s.i.g.,

(2) the temperature of the reaction mixture is maintained with the temperature limits defined by the points of intersection of a horizontal line along the pressure selected and the area defined by lines AB and CD of the figure, and

(3) the total content of halogen as a material in the form of organic halides, hydrogen halides, and mixtures thereof is maintained below about 0.02 gram atom per gram mole of said phenol reactant.

3,185,738
PREPARATION OF META-DINITROBENZENE BY A TWO-STAGE NITRATION PROCESS

Karl F. Cossaboon, Jr., Claymont, Del., and George M. Eyerman, Carney's Point, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 1, 1962, Ser. No. 234,879
3 Claims. (Cl. 260—645)

1. A multi-stage nitration process for the preparation of meta-dinitrobenzene which comprises reacting at 5–40° C. benzene and a mixed acid of the following composition by weight: 60–85% sulfuric acid, 2–30% nitric acid, and 5–25% water, separating the spent acid from the nitrobody formed as a result of the reaction, and then further reacting the nitrobody at least once and at temperatures of from 5–40° C. with a mixed acid of the following composition by weight: 50–90% sulfuric acid, 10–50% nitric acid, and 0–15% water, the volume ratio of acid to nitrobody being in the range of 3:1 to 8:1, thus forming meta-dinitrobenzene in a slurry in unreacted acid, and recovering said meta-dinitrobenzene from said unreacted acid.

3,185,739
CONVERSION OF CYCLOTRIENE COMPOUNDS

Roy A. Gray and John E. Mahan, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed May 19, 1960, Ser. No. 30,084
15 Claims. (Cl. 260—666)

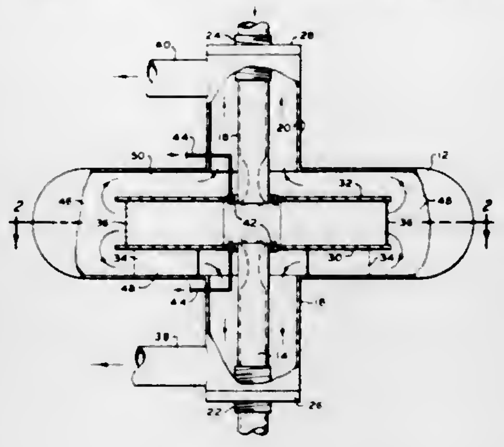
1. A mixture of polycyclic hydrocarbons characterized by: a density at 20° C. within the range of about 0.9283 to about 0.955; a refractive index n_D^{20} within the range of about 1.4957 to about 1.5132; boiling within the range of about 35 to about 55° C. at about 0.1 to 0.2 mm. of Hg pressure; and consisting essentially of bicyclic hydrocarbons containing two carbon to carbon double bonds per molecule, tricyclic hydrocarbons containing one carbon to carbon double bond per molecule, saturated tetracyclic hydrocarbons, bicyclic hydrocarbons containing one carbon to carbon double bond per molecule, and tetracyclic hydrocarbons containing one carbon to carbon double bond per molecule; said hydrocarbons having an average empirical formula selected from the group consisting of $C_{12}H_{18}$ and $C_{15}H_{24}$.

4. A process for converting a cyclotriene hydrocarbon having an empirical formula selected from the group consisting of $C_{12}H_{18}$ and $C_{15}H_{24}$ to a mixture of polycyclic hydrocarbons each containing the same number of carbon atoms as said starting cyclotriene hydrocarbon, said mixture consisting essentially of polycyclic hydrocarbons containing one carbon to carbon double bond per molecule, polycyclic hydrocarbons containing two carbon to carbon double bonds per molecule, and saturated polycyclic hydrocarbons, which process comprises: contacting said cyclotriene under isomerizing conditions with an isomerization catalyst selected from the group consisting of concentrated sulfuric acid, an acid of phosphorus supported on a solid adsorbent, polyphosphoric acid, boron trifluoride, and boron trifluoride hydrates; and recovering said polycyclic hydrocarbons from the resulting reaction products.

3,185,740
FAST CHEMICAL REACTION AND PROCESS

Emil A. Malick, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 4, 1960, Ser. No. 67,355
10 Claims. (Cl. 260—666)

1. A process for producing fast reaction between two reactants which comprises directing a gaseous stream of a first reactant axially into a generally toroidal zone at sonic to supersonic velocity; simultaneously directing a gaseous stream of a second reactant, readily reactable with said first reactant, axially into said zone from the opposite side thereof at sonic to supersonic velocity so that the two streams impinge on each other forming shock waves of



each reactant with substantially instantaneous mixing and reaction; withdrawing reaction products radially of said zone directly from the impingment area while expanding and quenching same by injecting quench fluid into the reaction products in an annular pattern immediately surrounding said impingement area; and recovering quenched product from said zone.

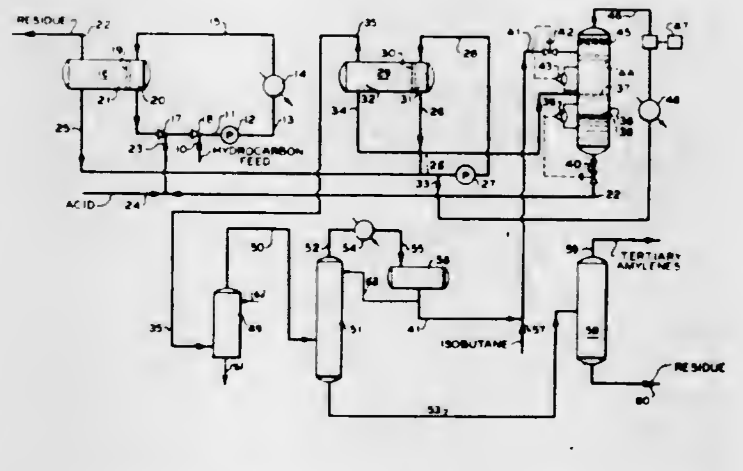
3,185,741
DIENE TRIMERIZATION

Ernest A. Zuech and William G. Roberts, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 19, 1962, Ser. No. 238,747
12 Claims. (Cl. 260—666)

1. A process for the production of a 1,5,9-cyclododecatriene which comprises contacting a reactant compound selected from the group consisting of 1.3-butadiene, isoprene and piperylene with a cataylst system formed by admixing titanium tetrachloride, a dialkylaluminum halide and a vanadium compound selected from the group consisting of vanadium tetrachloride and vanadium oxytrichloride.

3,185,742
SEPARATION AND RECOVERY OF TERTIARY AMYLENES

Fred T. Sherk and John E. Cottle, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed May 26, 1961, Ser. No. 125,611
6 Claims. (Cl. 260—677)



1. A process for the separation and recovery of tertiary amylenes from a mixture containing said tertiary

amylenes and other C_5 hydrocarbons which comprises contacting said mixture with an aqueous sulfuric acid in an absorption zone, maintaining the temperature within said absorption zone below 100° F., said aqueous sulfuric acid having an acid concentration in the range of 50–70 weight percent, passing from said absorption zone a rich sulfuric acid containing said tertiary amylene to an extraction zone, passing a vaporous hydrocarbon selected from the group consisting of paraffinic hydrocarbons and straight chain olefinic hydrocarbons containing 3–4 carbon atoms per molecule to said extraction zone, maintaining the temperature of said vaporous hydrocarbon passed to said extraction zone in the range of 80–135° F., contacting said rich sulfuric acid in said extraction zone with said vaporous hydrocarbon, condensing said vaporous hydrocarbon in said extraction zone, withdrawing from said extraction zone said hydrocarbon as a liquid containing said tertiary amylenes, and withdrawing from said extraction zone the aqueous sulfuric acid.

3,185,743

PRODUCTION OF OLEFINIC COMPOUNDS FROM ALLYL SULFONES

Edward M. La Combe, Charleston, and Byron Stewart, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 24, 1960, Ser. No. 51,536

1 Claim. (Cl. 260—682)

The process for the production of 1-butene which comprises the pyrolytic rearrangement with simultaneous elimination of sulfur dioxide of allyl methyl sulfone at a temperature of at least about 175° C. but below the decarbonization temperature thereof.

3,185,744

PROCESS FOR ISOMERIZING THE DOUBLE BOND OF STRAIGHT CHAIN TERMINAL MONO-OLEFINS

Charles D. Broaddus, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 13, 1962, Ser. No. 187,197

2 Claims. (Cl. 260—683.2)

1. A process for isomerizing a straight chain terminal monoolefin having from six to about 25 carbon atoms which comprises reacting a molar excess of said monoolefin at a temperature between about −25° C. and about 30° C. with an alkyl alkali metal compound selected from the group consisting of alkyl potassium, alkyl rubidium and alkyl cesium compounds containing from one to about twelve carbon atoms and recovering from the reaction mixture the unmetalated excess of said monoolefin which is isomerized to the α- and β-positions.

3,185,745

OLEFIN DIMERIZATION

Kenneth L. Lindsay, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Aug. 30, 1961, Ser. No. 134,839

7 Claims. (Cl. 260—683.15)

1. A process for dimerizing a straight chain olefin characterized by having one double bond and from 3 up to about 8 carbon atoms which comprises heating said olefin in contact with a catalyst consisting essentially of an alkali metal and an oxide of a metal selected from the group consisting of alkali metals having an atomic number of 19 to 55, inclusive, and barium, said oxide being present in an amount between about 1 to 50 percent by weight based on the total weight of the catalyst mixture.

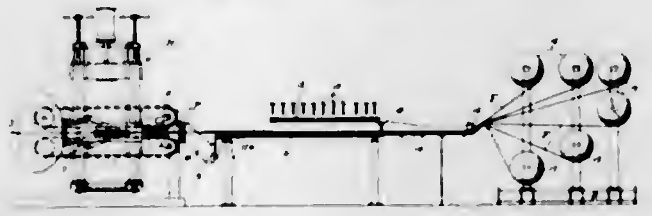
3,185,746

METHOD FOR INITIATING AN OPERATION OF MAKING FIBER REINFORCED PLASTIC PIECES

Le Roy R. Boggs, Bristol, Tenn., assignor to Universal Moulded Fiber Glass Corp., Bristol, Va., a corporation of Delaware

Filed Sept. 15, 1961, Ser. No. 138,350

8 Claims. (Cl. 264—137)



1. A method for initiating the operation of making an elongated piece composed of fiber reinforced plastic material in a machine having a multi-separable part forming die and a mechanism for pulling the formed piece through the die, which method comprises placing an elongated fiber reinforcement in the position of the die with the parts of the die separated and with the reinforcement extended both in advance of the entrance end of the die and beyond the exit end of the die, lap jointing the leading end of the reinforcement beyond the exit end of the die with the trailing end of a pilot piece adapted to be engaged by the puller mechanism, adhesively bonding the lapped joint, applying a liquid thermosetting resin to the fiber reinforcement in the position of the die, bringing the seperated die parts together, impregnating the fiber reinforcement with a liquid thermosetting resin in advance of the die, heating the die, and operating the puller mechanism to initiate the operation.

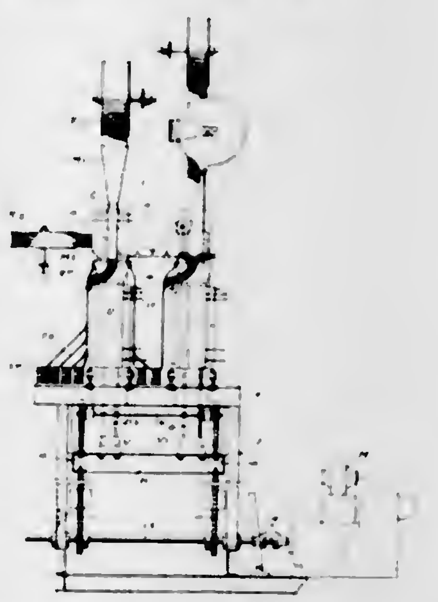
3,185,747

METHOD FOR INITIATING AN OPERATION FOR MAKING FIBER REINFORCED PLASTIC ARTICLES

Le Roy R. Boggs, Bristol, Tenn., assignor to Universal Moulded Fiber Glass Corp., Bristol, Va., a corporation of Delaware

Filed Dec. 26, 1962, Ser. No. 247,189

8 Claims. (Cl. 264—209)



1. A method for initiating an operation for making a fiber reinforced resin article in equipment comprising a forming device having a forming passage of cross section conforming to that of the article to be formed, a puller mechanism beyond the discharge end of the forming passage, and still further comprising a receptacle for a charge of liquid heat curable resin with the entrance end of the forming passage communicating with the resin receptacle below the top of the resin charge adapted to be received therein, which method comprises threading fiber reinforcement through the resin receptacle and into and through the communicating forming passage and into engagement with the puller mechanism, said threading being effected in the absence of resin in the resin receptacle and with the puller mechanism inactive, delivering a charge of liquid heat curable resin to the resin receptacle to a height above the entrance end of the forming passage and with the forming device heated to resin curing temperature, and starting the puller mechanism to thereby progressively impregnate fiber reinforcement with the liquid resin and to advance the impregnated reinforcement through the heated forming device to effect curing of the resin therein and solidification of the article being formed.

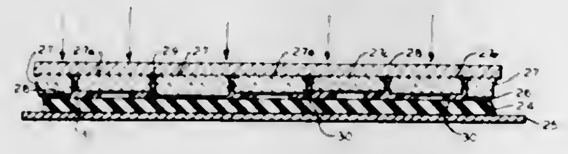
3,185,748

METHOD OF FABRICATING A MULTIPLE UNIT ASSEMBLY

Herbert G. Macdonald, Corona, Calif., and David J. Barbour, Karl M. Claus, and Robert B. Cleverly, Zanesville, Ohio, assignors to The Mosaic Tile Company, Zanesville, Ohio, a corporation of Ohio

Filed Jan. 27, 1961, Ser. No. 85,367

1 Claim. (Cl. 264—261)



A method for fabricating an assembly of a plurality of individual complementary ceramic tile pieces, each of said pieces having front and back major faces and edge surfaces, said major faces being at least substantially parallel and spaced from each other and said edge surfaces extending between and generally normal to said front and back major faces, said method comprising (A) placing measured, discrete masses of settable resin on a planar surface in a spaced pattern, (A–1) each of said discrete masses of resin being of a size sufficient to contact only edge portions of said back surfaces of at least two of said pieces in such selected spaced relationship and to contact only portions of said edge surfaces of the same ones of said pieces contiguous to said portions of said back surfaces and for bridging and fully occupying the space between said portions of said edge surfaces, (A–2) said pattern of masses of resin being arranged so that each of said tile pieces receives at least two of said masses for bonding each of said pieces to at least two adjacent pieces. (B) arranging a plurality of said pieces with the front ones of their major faces turned in the same direction and their edge surfaces in selected spaced relationship, (C) engaging the front major faces of all of said pieces with a planar platen, (D) moving said platen into a position parallel to said planar surface and spaced therefrom a distance only slightly greater than the maximum thickness of said pieces with the arranged pieces oriented relative to the spaced pattern of said masses such that each of said masses is aligned with the spaces between the tile pieces to be contacted thereby (D–1) and, simultaneously, pressing said back major faces against said small discrete masses of settable resin. (D–2) and flattening the backs of said masses of resin against said planar surface. (D–3) and forcing intrusions of said resin into the spaces between said portions of said edge surfaces of adjacent pieces and (D–4) directly into contact with said portions of said edge surfaces; the resin in said masses being compatible with adhesives for retaining said assembly on a surface. and capable of being set up to a condition in which it is (*a*) stable at room temperature, (*b*) flexible to a degree providing for slight angular movement of adjacent pieces relative to each other, (*c*) resistant to deformation. (*d*) capable of maintaining said pieces in said selected spaced relationship, (*e*) preventing engagement of adjacent tile pieces with each other and (*f*) resisting separation of adjacent tile pieces, all under forces normally encountered in shipping, handling and laying such assemblies, (E) setting up such resin to securely bond said masses of resin directly to and in contact with said portions of said back faces and said edge surfaces of said pieces and (F) removing said assembly from said planar surface.

3,185,749

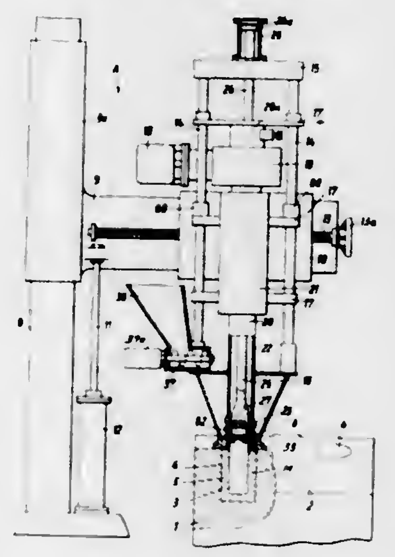
PROCESS AND APPARATUS FOR CENTERING AND ANCHORING A SMALLER-DIAMETER ARTICLE IN A LARGER-DIAMETER BORE

Peter Gitzinger, Franz Bayer, and Rudolf Koppatz, Grevenbroich, Lower Rhine, Germany, assignors to Vereinigte Aluminium-Werke Aktiengesellschaft, Bonn, Germany

Filed May 2, 1961, Ser. No. 107,136

Claims priority, application Germany, May 7, 1960, U 18,573

12 Claims. (Cl. 264—262)



1. A process for anchoring a slightly smaller-diameter nipple in a larger-diameter blind bore formed in a carbon anode, comprising the steps of inserting the nipple into the bore to such an extent that one end of the nipple is slightly spaced from the bottom wall of the bore; centering the nipple in the bore so that its axis coincides with the axis of the bore and that an annular space of small radial dimension is formed between the periphery of the nipple and the cylindrical wall of the bore; holding the nipple against axial, angular and radial displacements with respects to the bore walls; and extruding a current-conducting plastic mass between the nipple and the walls of the bore so that the plastic mass first fills the space between the end of the nipple and the bottom wall of the bore, and that the mass thereupon progressively fills said annular space from the bottom wall to the open end of the bore to anchor the nipple in the anode.

3,185,750

METHOD FOR FORMING DIELECTRIC ELEMENTS

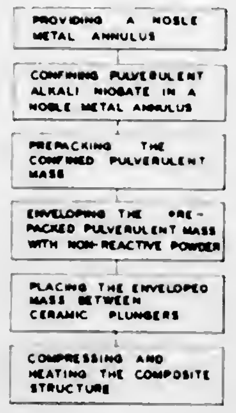
Dean A. Buckner, Perinton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Dec. 20, 1962, Ser. No. 246,232

5 Claims. (Cl. 264—294)

5. A method of forming a sodium-potassium niobate transducer comprising the steps of providing a platinum ring, filling the cavity defined by the platinum ring with sodium-potassium niobate, pre-packing the confined sodium-potassium niobate to form a composite coherent mass, enveloping the coherent mass with relatively pure powdered alumina, deforming the ring by uni-directional pressing at a pressure of about 5600 p.s.i. to thereby com-

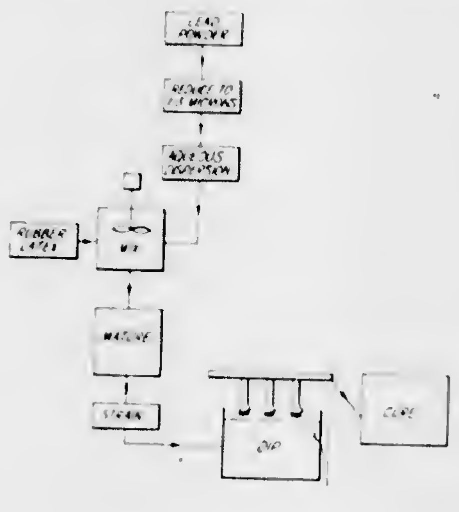
press the sodium-potassium niobate, heating the alkali niobate to a temperature within the range of 2030° to 2050° F. simultaneously with said pressing operation,


PROVIDING A NOBLE METAL ANNULUS
CONFINING PULVERULENT ALKALI NIOBATE IN A NOBLE METAL ANNULUS
PREPACKING THE CONFINED PULVERULENT MASS
ENVELOPING THE PRE-PACKED PULVERULENT MASS WITH NON-REACTIVE POWDER
PLACING THE ENVELOPED MASS BETWEEN CERAMIC PLUNGERS
COMPRESSING AND HEATING THE COMPOSITE STRUCTURE

maintaining the mass at said elevated temperature and pressure for a period of 20–30 minutes, and cooling the mass to an ambient temperature.

3,185,751
MANUFACTURE OF LATICES, DISPERSIONS AND COMPOUNDS OF POLYMERIC ORGANIC MATERIALS CONTAINING METAL

Sidney David Sutton, Slough, England, assignor to Veedip Limited, Slough, England, a British company
Filed Dec. 11, 1961, Ser. No. 158,240
Claims priority, application Great Britain, Mar. 7, 1961, 8,280/61
20 Claims. (Cl. 264—301)



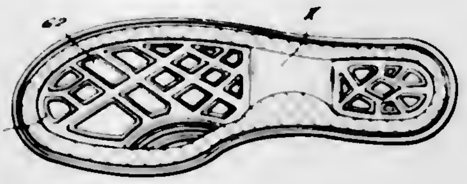
7. A method of manufacturing a flexible article or material containing a high proportion of lead from a latex which comprises preparing a liquid aqueous dispersion of lead of a particle size of less than 6 microns, mixing the dispersion with the latex to form a compounded latex in liquid form, allowing the mixture to mature until it becomes stable and then depositing a solid flexible compound from the latex, the concentration and quantity of the lead dispersion being such that the resultant flexible compound has a higher lead content by weight than its content of organic polymeric material.

12. A method of manufacturing an article, as claimed in claim 7, in which the article is formed by a process involving dipping a shaped former in the compounded latex to deposit a layer of the organic polymeric material containing lead on the former.

13. A method as claimed in claim 12 in which prior to dipping in the compound latex containing lead the former is dipped in a latex not containing lead to deposit a layer of organic polymeric material not containing lead thereon.

3,185,752
METHOD OF VENTING SOLE ATTACHING MOLDS

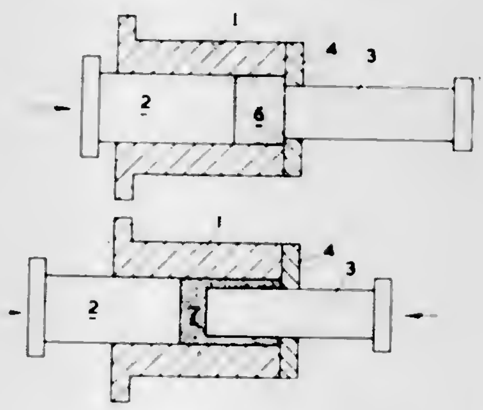
George H. Bingham, Jr., Westminster, Md., assignor to Cambridge Rubber Company, Taneytown, Md., a corporation of Maryland
Filed Oct. 24, 1962, Ser. No. 232,736
6 Claims. (Cl. 264—316)



6. That method of making an outer sole of elastomeric material and whose tread surface has a pattern defined by integral, downwardly directed elements, providing a conventional rigid mold having side walls and a bottom, the bottom having integral, upstanding elements collectively forming a pattern which is a replica, but in reverse, of the pattern which is to appear on the tread surface of the outer sole, placing within the mold a thin imperforate piece of air-pervious organic tissue of approximately the size and shape of the outer sole to be made, providing a partially cured blank of the proper size, contour, thickness and material to form the desired outer sole, placing said blank within the mold and applying heat and pressure thereby to conform the lower surface of the blank to the mold bottom, while concomitantly completing the curing of the elastomeric material and disintegrating said sheet material.

3,185,753
METHOD FOR THE PRODUCTION OF SHAPED PRODUCTS

Denis Haley, Abberley, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed July 25, 1962, Ser. No. 212,295
Claims priority, application Great Britain, July 28, 1961, 27,437/61
5 Claims. (Cl. 264—331)



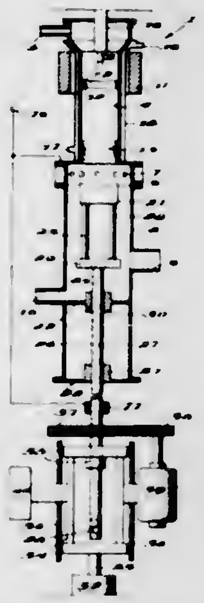
1. A method for the production of a solid tubular article by compression moulding of plastics material comprising: compressing a particulate plastics material in a mould having a tubular cavity fitted with a piston, said mould cavity having a transverse dimension equal to the outside transverse dimension of the tubular article to be moulded, said compressing being effected by relative telescopic movement between said piston and said mould; heating the compressed plastics material to a temperature at which it is flowable under the pressure within said mould cavity; moving a solid core having a transverse dimension equal to the inner transverse dimension of the tubular article to be produced into the mould cavity from the end thereof opposite to said piston and in a direction opposite to the direction of said piston during said compressing step whereby an annular

space is formed between said core and said mould, said movement being effected by relative telescopic movement between said mould and said core; simultaneously effecting relative telescopic movement between said mould and said piston in a direction opposite to their movement during said compressing step and at a rate to maintain the plastics material under substantially the pressure exerted during said compressing step whereby the compressed plastics material is forced into said annular space between said core and said mould; and solidifying the plastics material while maintaining said pressure to thereby form said solid tubular article.

ELECTRICAL

3,185,754
SCRAPING APPARATUS FOR ARC-ACETYLENE FURNACE

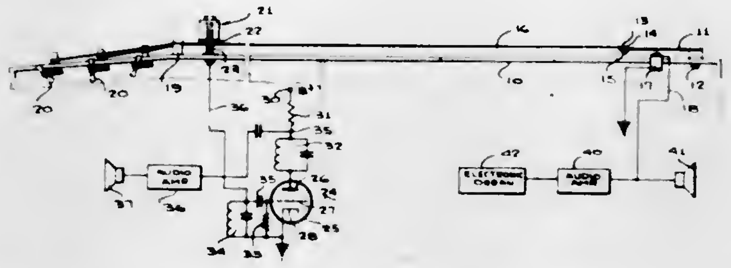
George Doukas, Beaumont, Tex., and Ralph H. Reed, Louisville, Ky., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 17, 1962, Ser. No. 245,070
3 Claims. (Cl. 13—9)



1. In combination, an arc furnace for the pyrolysis of hydrocarbons to acetylene and having a central electrode and a surrounding coaxially aligned elongated cylindrical electrode extending down-stream from the central electrode and having an arc operating between said electrodes and rotating around the central electrode along the cylindrical electrode in a path generally transverse to the length thereof and apparatus for removing the hard, firmly adhering carbon deposits from the arc region of the last mentioned electrode, comprising, means including a shaft movably positioned along the axis of said cylindrical electrode, means including a scraping member having a base mounted substantially at the end of said shaft, with said base having at least one flute extending therefrom and having a longitudinal scraping portion at its outer extremity adapted to make at least periodic scraping contact with said carbon deposits upon movement of said shaft, means operatively connected to said shaft to cause reciprocation thereof, and means operatively connected to said shaft to cause rotation thereof simultaneously with said reciprocation, whereby said scraping member is periodically extended to contact and remove said carbon deposits.

3,185,755
MUSICAL DEVICE

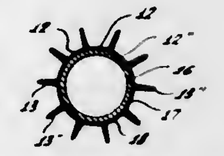
Richard E. Williams, Fairfax, and John S. Gerig, McLean, Va., assignors to Scope, Incorporated, Falls Church, Va., a corporation of New Hampshire
Filed June 12, 1961, Ser. No. 116,461
11 Claims. (Cl. 84—1.24)



3. In a reverberatory system, a source of a gamut of semi-tones of the musical scale, a plurality of stretched strings having only fundamental resonant frequencies spaced apart by approximately two of said semi-tones, and means coupled to said source for simultaneously vibrating said stretched strings in response to said gamut of tones.

3,185,756
HEAT-DISSIPATING TUBE SHIELD

Donald K. Allison, Albuquerque, N. Mex., assignor to Cool Fin Electronics Corporation, Los Angeles, Calif., a corporation of Nevada
Filed May 2, 1960, Ser. No. 26,170
4 Claims. (Cl. 174—35)



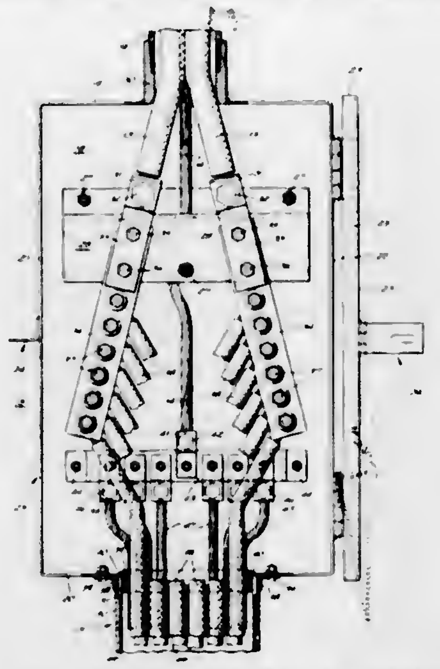
1. A heat dissipating electrical shield for an electronic component comprising: a finned cylinder formed from a continuous sheet of metal and having the outer surfaces of the cylinder and fins free to radiate remotely into the ambient atmosphere, each of said fins being double walled and being formed by two closely adjacent metal surfaces which extend outwardly from a narrow longitudinal slot in the wall of said cylinder and which are integrally connected at their outer ends, said cylindrical shield being thereby provided with radial resiliency whereby said shield is urged to contract; and a heat conducting bonding material between the inner surface of said cylinder and the outer surface of the electronic component to facilitate heat transfer therebetween.

3,185,757
POLE MOUNTED TERMINAL BOX AND SECTIONAL LEAD-IN CONDUIT

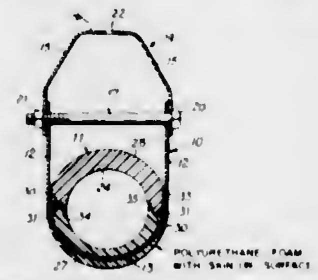
Davis M. Phillips, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Sept. 5, 1961, Ser. No. 135,981
2 Claims. (Cl. 174—38)

1. The combination of an elongate cable enclosure member and an elevated terminal box adapted to be mounted on a distribution transformer bearing pole between the transformer and ground, said terminal box comprising a housing having top and bottom walls and a movable closure portion; cable entrance means communicating with said box through said top wall; cable exit means interconnecting said cable enclosure member and said box through said bottom wall; and a pair of terminal means fixedly positioned within said housing in horizontally spaced downwardly diverging relation, each of said terminal means presenting a plurality of conductor connecting portions along the diverging portions thereof accessible

from between said diverging portions, the axis of said exit means lying in a plane intermediate the divergent ends of said terminal means, whereby conductors extending into said box through said enclosure member may approach and be connected to said terminal means without excessive bending and said cable enclosure comprising a relatively shallow first channel member extending from below the ground line to said box; a relatively deep second channel member with the flanges thereof extending toward and overlapping the flanges of said first channel, said second channel member extending below the ground line and a third channel member extending from said second channel member to said box with flange portions of said third channel member overlapping and releasably secured to the flanges of said first channel member, said channel members forming a continuous enclosure from said ground line to said box.



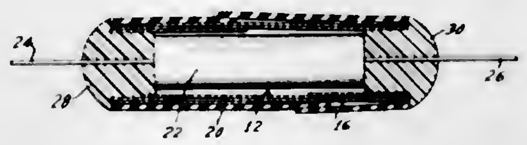
3,185,758
INSULATED PIPE HANGER
Milton B. Litz, 639 Langton Drive, St. Louis, Mo.
Filed Mar. 5, 1962, Ser. No. 177,309
3 Claims. (Cl. 174—40)



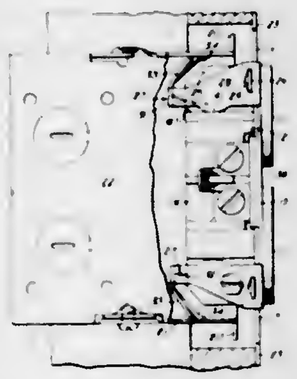
1. A pipe hanger comprising:
  (*a*) a substantially U-shaped strap, and
  (*b*) an insulating member adapted to embrace a pipe, the insulating member including a pair of mating sections, one of said sections being attached to said strap, and the other of said sections being reduced along its sides at least from one of its ends to enable insertion within said U-shaped strap and detachably connected to said one section.

3,185,759
TUBULAR ELECTRICAL CONDENSERS WITH OVERLAP SEAM LAMINATED CASING
Joseph P. Sheehan, Forest Hills, West Sanford, N.C., assignor to Cornell-Dubilier Electric Corporation, a corporation of Delaware
Filed June 22, 1961, Ser. No. 118,855
6 Claims. (Cl. 174—52)

1. An electrical circuit component including a body having projecting terminal wires and an encasing tube, said encasing tube including an unfilled plastic-film tube having overlap seams joined by a moisture-impervious adhesive, and a rigidized and impregnated external covering of paper on said plastic tube, and a cured-resin end-fill covering each end of said body and bonded to the inner surface of said tube.



3,185,760
PUSH-IN BOX MOUNTING FOR WIRING DEVICES
Victor R. Despard, Syracuse, N.Y., assignor to Pass & Seymour, Inc., Syracuse, N.Y., a corporation of New York
Filed July 6, 1962, Ser. No. 207,930
8 Claims. (Cl. 174—54)

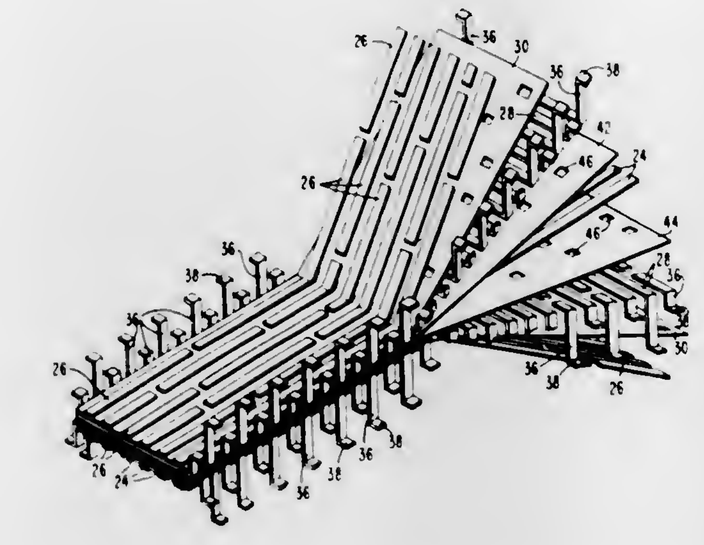


4. A wiring device for use flush mounted in a wall box comprising in combination; a housing of insulating material containing contact and terminal elements and having a portion adapted to extend through a wall plate, a metal mounting strap for and secured to said housing and having longitudinal sections, portions of which extend beyond the ends of said housing in a plane near the front face of the housing, a pair of U-shaped stirrups each having two side members and an integral connecting bottom member, means securing the outer ends of the side members of each stirrup to a different one of said longitudinal sections of said mounting strap so that their connecting bottom member is displaced beneath the strap, and a pair of laterally spaced, sharpened prongs integral with and projecting from the bottom member of the stirrup toward the adjacent ends of the strap for engaging the end walls of the said box for positioning and securing the wiring device therein.

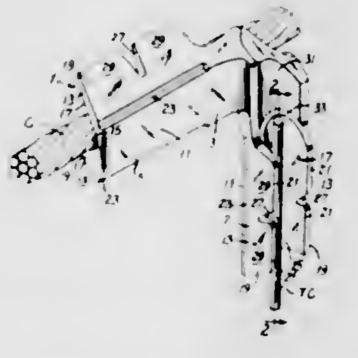
3,185,761
FABRICATED CIRCUIT STRUCTURE
Donald H. McHugh, Garden City, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 12, 1963, Ser. No. 258,057
2 Claims. (Cl. 174—68.5)

1. A fabricated mounting and circuit structure for electronic components comprising a pair of channel structures each including a plurality of laterally positioned longitudinal rows of conductor members, a plurality of rows of cross conductor members forming a matrix with the conductor members of said first-mentioned plurality of rows of conductor members, a sheet of dielectric material interposed between said pluralities of conductor members and having access holes to align respectively with certain ones of the conductor member cross points of the matrix, means structurally and electrically connecting together the conductor members of the first-mentioned and second-mentioned rows of conductor members

only where the cross points align with the holes, said matrix and dielectric sheet forming the web of the channel structure, opposite end portions of the cross members extending transverse to said web to form the sides of the channel structure and circuit terminals, said pair of channel structures arranged back to back with the webs in broadside relationship to each other, a plurality of laterally spaced conducting webs interposed between the webs of said channel structures in parallel and staggered relation to said longitudinal rows of conductor members, and means electrically and structurally connecting said plurality of webs respectively to conductor members of said cross rows of conductor members.

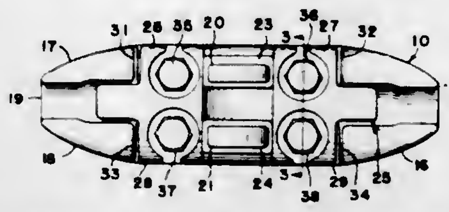


3,185,762
CABLE CONNECTORS
Truman B. Shaw, Montevallo, Ala., assignor to Anderson Electric Corporation, Leeds, Ala., a corporation of Alabama
Filed Dec. 21, 1962, Ser. No. 246,512
18 Claims. (Cl. 174—71)



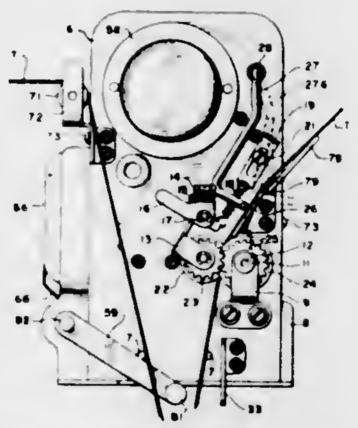
1. A cable connector adapted for being crimped to effect a generally cruciform crimp, said connector in its uncrimped state comprising a malleable body having a base and side members integral with the base and adapted to receive a cable in the space defined by the base and said side members, said side members each having an end joined to the base and a free outer end away from the base, said body having recesses located exteriorly thereof generally at the junctures of the side members and the base, the span between the innermost portions of the recesses being less than the distance from the innermost portions of the recesses to the free outer ends of the side members, the distance between the innermost portions of the recesses being substantially the same as the distance between the outer surfaces of the side members adjacent their free ends.

3,185,763
CORONA REDUCTION IN CONDUCTOR CLAMPS FOR HIGH VOLTAGE TRANSMISSION LINES
Robert W. Harmon, Doylestown, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Mar. 18, 1963, Ser. No. 266,469
9 Claims. (Cl. 174—144)



6. A suspension clamp for line conductors comprising an elongate clamp body having a longitudinal cable-receiving groove constituted by a bottom wall and spaced side walls, a keeper in the cable groove comprising an elongate member having a seat on the interior surface thereof opposed to a cable seat on the interior surface of the bottom wall of the clamp body, side pieces on the keeper extending transversely outward from the body of the keeper and into recesses in the side walls, means securing the keeper to the clamp body comprising a plurality of bolt fasteners extending vertically through the side pieces and into the side walls, the bolt fasteners being received in openings extending vertically through the side walls to the exterior of the clamp body at the lower part of the body, means at the lower part of the body electrically shielding the lower extremities of the fasteners, and means at the upper part of the body electrically shielding the side pieces and the upper extremities of the fasteners, each of the extremities of the fasteners having an associated shielding means, all for corona-free electrification of the clamp at voltages to at least 500 kv.

3,185,764
TAPE CRIMPER
Oscar W. Swenson, Cedar Grove, N.J., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed July 1, 1959, Ser. No. 824,394
8 Claims. (Cl. 178—17)

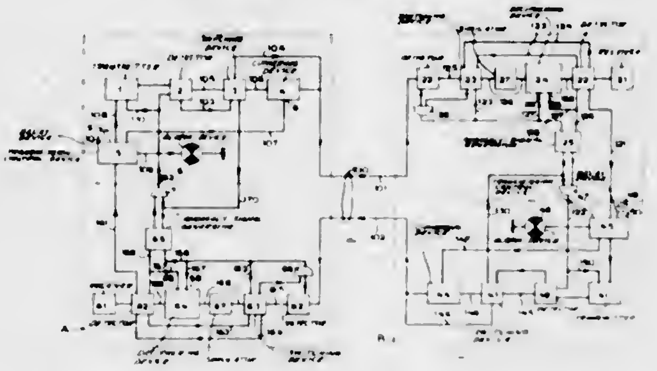


1. A tape crimper for location in advance of transmitting equipment in the line of tape travel and following perforating equipment energizable to provide a succession of blanks comprising a pair of roller die means for imparting longitudinal creasing to paper telegraph tape moving into a downward storage loop, gear means on each of said pair of roller die means engaged for locking them in step, motor means to drive said roller die means, friction clutch means connected between said gear motor means and said roller die means, adjustable as to driving torque for applying a predetermined limited tension to said tape, switch means having an operating arm located out of the path of normal tape loop exit but within the loop for tape engagement upon tape loop tightening to energize perforating equipment to provide a succession of blanks and

to deenergize transmitting equipment upon further tightening, an entering tape guide plate having an aperture covered by the tape, an electric switch mounted alongside the line of tape travel and having an operating switch arm positioned over said aperture and pressed against said tape for out-of-tape detection by switching action upon tape arm movement into the aperture, and current interrupter means comprising a commutator having spaced electrically interconnected segments and coupled for rotation with said roller die means, and brush means contacting said commutator for current modulation during die rotation whereby intergeared dies maintain a preset adhesive tape pull at reduced die pressure for tape breakage elimination so that loop switch operation indicates stoppage of preceding equipment in the presence of commutator modulation and an out-of-tape condition in its absence.

3,185,765
CIPHER TELEGRAPH SYSTEM

Pierre R. Berjon, La Celle-Saint-Cloud, France, assignor to Societe d'Applications Generales d'Electricite et de Mecanique, Paris, France, a French company
Filed Feb. 17, 1961, Ser. No. 90,118
Claims priority, application France, Feb. 18, 1960, 818,946
4 Claims. (Cl. 178—22)

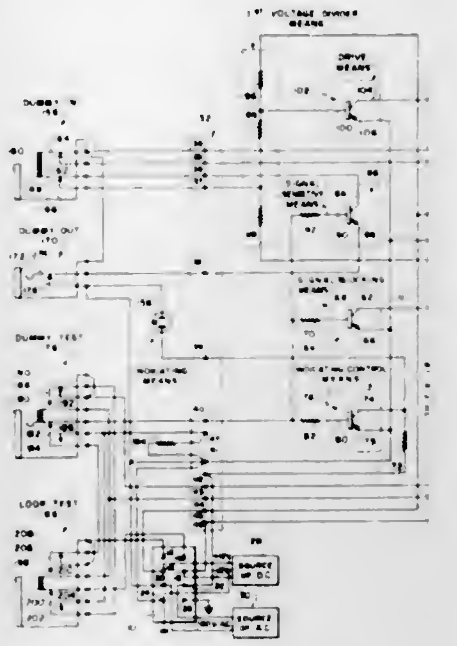


1. A two-way cipher telegraph communication system employing on-the-line ciphering and comprising at each of two stations separate telegraph signal transmitting and receiving means, means to develop for ciphering and deciphering a sequence of telegraph signals, said sequence being the same at both stations, ciphering and deciphering means operating by combination of said sequence signals with intelligence signals to be enciphered and with said enciphered intelligence signals to be deciphered respectively, means to actuate said ciphering and deciphering means in response to a head-end signal for ciphered messages and to deactivate said ciphering and deciphering means in response to a tail-end signal for ciphered messages, and means to control the generation of said sequence signals at both of said stations, said control means comprising means responsive to incorrect deciphering of a signal for ciphered messages subsequent to said head-end signal to initiate advance to a common reference point of said telegraph signal sequence developing means at both of said stations.

3,185,766
NETWORK REPEATER

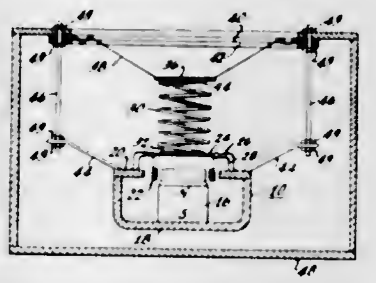
Harry C. Likel, Brooklyn, N.Y., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed Aug. 11, 1960, Ser. No. 49,090
13 Claims. (Cl. 178—70)

1. A module of a network repeater comprising a signal sensitive means sensitive to positive and negative polarity signals, a drive means driven selectively to an active or an inactive state by said signal sensitive means, an output network coupled to said drive means to pass a signal having a first polarity when said drive means is in an active state and a second polarity when said drive means is in an inactive state, and signal blocking means coupled to said signal sensitive means and said output network to inhibit selectively said output network from passing a positive signal.



3,185,767
LOUDSPEAKERS

Harry F. Olson, Princeton, and John Preston, Trenton, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Oct. 10, 1960, Ser. No. 61,537
9 Claims. (Cl. 179—1)



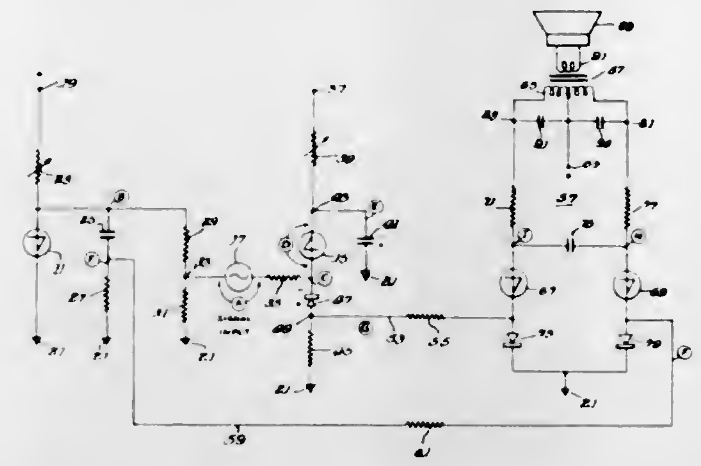
1. A loudspeaker reverberator comprising in combination an electro-mechanical transducer; a spring wound in the form of a helix and having a given characteristic mechanical impedance, coupled at one end to said electromechanical transducer; said spring having a time delay vibration-transmitting characteristic; and a mechano-acoustical transducer coupled to the other end of said spring, said mechano-acoustical transducer having a lesser mechanical resistance than the characteristic impedance of said spring whereby vibration reflection occurs at said mechano-acoustical transducer.

3,185,768
AMPLIFIER CIRCUIT

Michael J. Cudahy, Skokie, Ill., assignor to Cozzens & Cudahy, Inc., Skokie, Ill., a corporation of Illinois
Filed Jan. 31, 1961, Ser. No. 86,040
5 Claims. (Cl. 179—1)

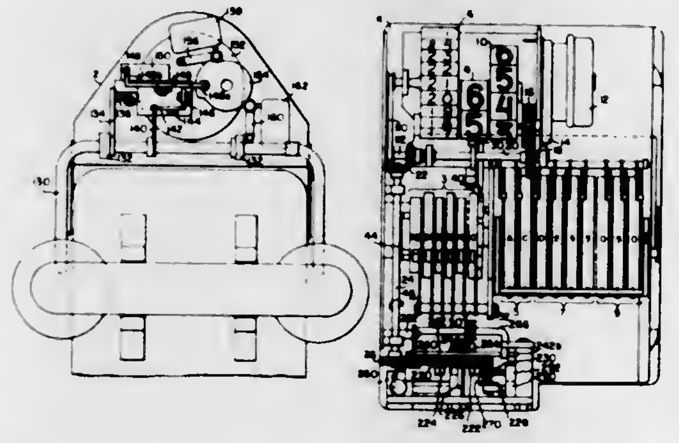
1. An amplifying circuit comprising a pair of complementary relaxation oscillators, means to develop an energy pulse during each cycle of each oscillator operation, means to develop a pair of symmetrically shaped electrical waves of equal and opposite amplitude, means to supply input signals of varying amplitude and frequency for amplification, means controlled by the developed energy pulses to determine the symmetry of the electrical waves, signal controlled means to phase-modulate the output voltages from the relaxation oscillators relative to

each other in proportion to the input signals available at the input means thereby to modify the time of occurrence of the developed pulses relative to each other and to vary under the control thereof also the symmetry of the developed waves, and means to supply the developed waves to a signal transducer for recreating the modulating signal.



3,185,769
TELEPHONE MESSAGE TIME RECORDING APPARATUS

Daniel L. Lombard, 639 Wick Ave., Youngstown, Ohio
Filed Mar. 30, 1961, Ser. No. 99,563
5 Claims. (Cl. 179—7.1)

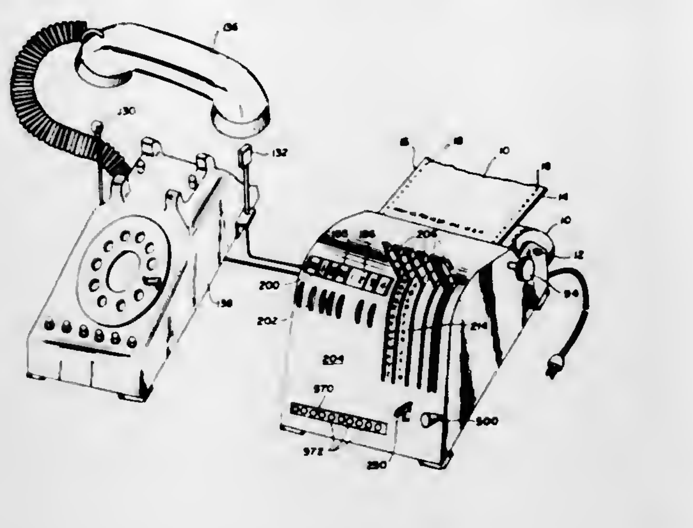


5. Information registering apparatus for a telephone comprising, in combination; a plurality of information storage sections; means for recording pertinent information in at least one of said sections upon initiation of a telephone call; electric motor constant speed drive means; a timing gear mechanically connected to said constant speed drive means and having stud means positioned thereon; means including a latching device mechanically engageable with said stud means for registering the termination of an initial time interval; and means including a device mechanically engageable with said stud means for registering incremental time intervals thereafter.

3,185,770
RECORDING APPARATUS

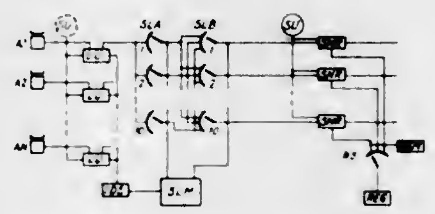
Daniel L. Lombard, Pittsburgh, Pa.
(639 Wick Ave., P.O. Box 177, Youngstown, Ohio)
Filed Feb. 23, 1962, Ser. No. 175,026
11 Claims. (Cl. 179—7.1)

1. In apparatus for recording the duration of telephone use, the combination comprising: extrinsic sensing means mounted on a telephone for sensing the initiation and the termination of the use of said telephone; motor means operable by said sensing means only at the initiation and the termination of the use of said telephone; printing means for printing information relating to the use of said telephone; strip material supported adjacent to said printing means; means connected with said motor means for bringing into engagement said printing means and said strip material whereby the information carried by said printing means is printed on said strip material; and advancing means driven by said motor means for moving said strip material through a predetermined distance after each printing operation.



3,185,771
BUSY LINE OR TRUNK INDICATING CIRCUIT

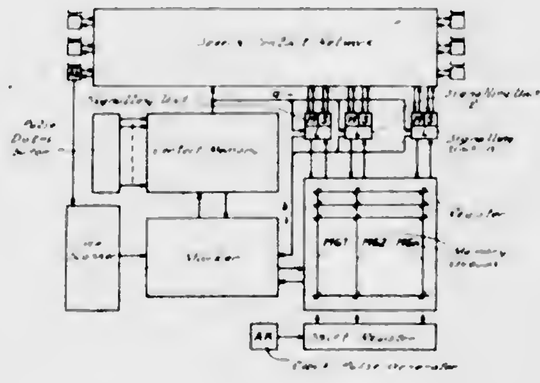
Rolf August Dahlblom and Bernhard Lillsunde, Hagersten Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Feb. 9, 1961, Ser. No. 88,131
Claims priority, application Sweden, Feb. 15, 1960, 1,493/60
2 Claims. (Cl. 179—18)



1. An automatic telephone system comprising, in combination, connecting relay sets for establishing a connection between a calling subscriber and a called subscriber through the sets, each of said sets including means for maintaining operated the respective connecting relay set connected to the speech circuit of a calling subscriber in the presence of an operational condition preventing the establishment of a speech connection between the calling subscriber and a called subscriber, selector stages each including selectors and a marker for connecting the calling subscriber to an idle connecting set in response to a call, each of said markers comprising testing means including a test wire connected to the respective selectors and connecting relay sets and activating the marker in accordance with the busy or idle marking potential of the respective test wire as caused by the respective selector and connecting relay set, means for connecting said speech circuit to a source of sound through said connected connecting relay set, second testing means activated by a busy condition of all the selectors and connecting relay sets, said second testing means upon being activated changing the busy condition signifying potential of test wires connected to selectors and connecting relay sets included in a circuit connection between the calling subscriber and a connecting relay set and being operated only for the purpose of indicating an operational condition preventing the establishment of a speech circuit between the calling subscriber and the called subscriber to render said connecting relay sets and the selectors included in the speech circuit between the calling subscriber and said connecting relay sets accessible for setting up a speech circuit between the

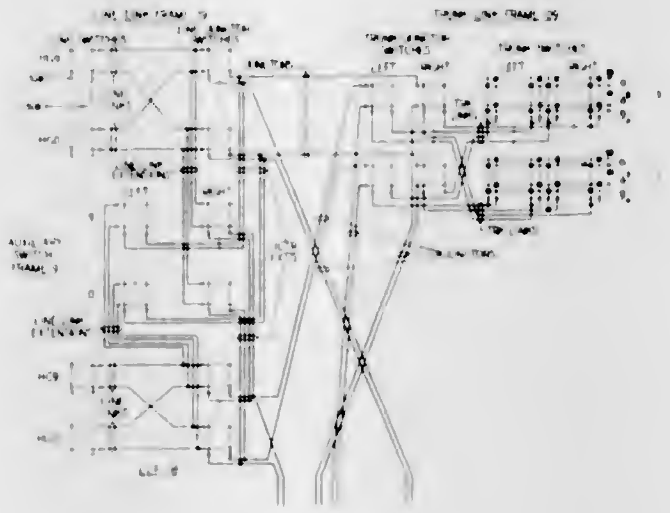
calling subscriber and the called subscriber whereby an indication is given to a calling subscriber that a speech circuit selected by him is not available due to an existing operational condition in the telephone system without requiring special indicating means in the line equipment of each individual subscriber, a source of potential, a first group of resistance means, circuit means for connecting each of said resistance means in series with one of said first testing means in response to a testing operation to supply an operating potential to the respective first testing means, said potential being divided between said resistance means and the corresponding first testing means, each of said resistance means being connected to the first testing means at the same point as the respective test wire, the drop of potential across said resistance means being indicative of the busy and idle marking potential respectively of the respective test wire, a busy marking potential blocking activation of the testing means and the idle marking potential permitting activation thereof, a second group of resistance means, and circuit means for connecting said second group of resistance means to the test wires connected to connecting relay sets in the operational condition preventing the establishment of a circuit connection to change the drop of potential across the resistance means in said first group from the busy marking potential to the idle marking potential.

3,185,772
SIGNALLING UNIT FOR ELECTRONIC TELEPHONE SYSTEMS
Nils Herbert Edström, Hagersten, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed May 22, 1961, Ser. No. 111,538
Claims priority, application Sweden, Mar. 8, 1961, 2,434/61
1 Claim. (Cl. 179—18)



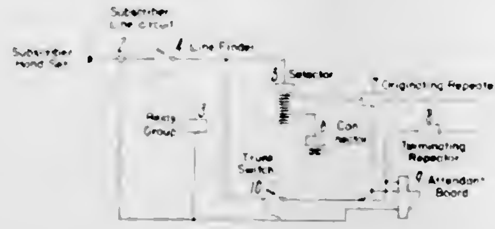
In an electronic time division multiplex telephone system including groups of memory storage means for storing digit signals, each of said memory storage means being scanned in its pulse position in which write-in and readout digit signals may be effected while in other pulse positions the memory storage means of each group remain unchanged, a signalling unit for receiving and sending digit signals for each group of memory storage means, each of said signalling units comprising bistable circuits, means for feeding cyclically scanning pulses to said signalling units simultaneously with the pulse position of a respective memory group to activate said bistable circuits, thereby to open a path for digit signals into and out of said memory group respectively during the respective pulse position, a switch contact belonging to the respective unit and other switch contacts for controlling external devices with which the respective memory group has to be connected for digit transmission, means for producing contact operating pulses so as to close simultaneously one signalling unit contact and one of said other contacts in one of the pulse positions selected for connection with the respective external device, a test wire for each of the signalling units for marking by its state of potential the idle or busy condition of the respective unit, an integrating circuit fed by said position pulses and producing an idle marking potential on the respective test wire when the integrating circuit receives said position pulses, an inhibit circuit connected to said means for producing said switch contact operating pulses for blocking the idle marking potential of the respective test wire in response to receiving said contact operating pulses, said inhibit circuit being also connected to each of said bistable circuits in the respective signalling unit for blocking the idle marking potential of said test wire in response to a not restored position of said binary circuits, and a restoring circuit for restoring all the circuits to rest position in the idle state of the respective signalling unit and for discontinuing said restoring function upon receiving a contact operating pulse.

3,185,773
SWITCHING SYSTEM CHANNEL SELECTION
John C. Engeman, North Babylon, Leo Frieg, Jr., Seaford, and George J. Hartmann, Lindenhurst, N.Y., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed May 21, 1962, Ser. No. 196,289
18 Claims. (Cl. 179—22)



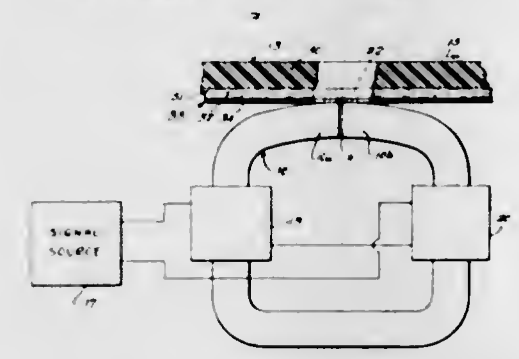
1. In a switching office wherein pairs of mutually disconnected terminals at said office may be interconnected only over a channel serially connected therebetween,
- a plurality of channels divided into subgroups where a pair of terminals to be connected at said office is normally interconnectable only over a channel of a corresponding subgroup,
- testing means selectively connectable to any said subgroup for ascertaining channel availability in a subgroup connected thereto,
- means for designating any said pair of terminals for interconnection with each other over a channel and for causing said testing means to be connected to a first subgroup corresponding to said one designated pair,
- and circuit means
  - (*a*) controlled by said testing means incident to unavailability of a channel in said first subgroup for causing said testing means to be connected to a second subgroup corresponding to a pair other than said one designated pair
  - (*b*) and controlled by said testing means incident to availability of a channel in said second subgroup for making said second subgroup available to interconnect at said office said one designated pair while maintaining said one designated pair disconnected from said other pair.

3,185,774
PRIVATE BRANCH TELEPHONE EXCHANGE
Masatoshi Kamoshida, Fujisawa, and Akira Hayashi, Tokyo, Japan, assignors to Oki Electric Industry Company, Limited, Tokyo, Japan, a corporation of Japan
Filed June 26, 1961, Ser. No. 119,515
2 Claims. (Cl. 179—27)



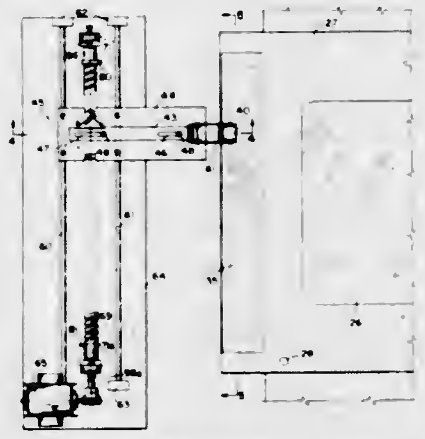
1. A private branch telephone exchange, including a termination of a main line from a main telephone exchange, comprising: a plurality of subscriber telephone sets; a plurality of line circuits; each telephone set being connected to a respective one of said line circuits; connector switch means operable for selectively interconnecting any one of said line circuits with any other one of said ine circuits; originating repeater means operable for connecting any one of said line circuits with the termination of the main line; selector switch means operable for operating said connector switch means and said originating repeater means; line-finder switching means connected with each said line circuit and operable for operating said selector switch means; relay means connected with each line circuit for operating said line-finder switching means in response to subscriber actuation of the telephone set connected thereto, said line-finder switching means being operated to interconnect the subscriber-actuated telephone set and its associated line circuit with said selector switch means; a telephone switchboard connected with all said line circuits and including manually operable switch means for connecting any said line circuit directly to said originating repeater means; terminating repeater means connected between the termination of the main line and said switchboard; and trunk switch means connected between said line-finder switching means and said switchboard, said switchboard including additional switch means to interconnect said terminating repeater means with any said line circuit and to operate said relay means and said line-finder switching means and to actuate said trunk switch means to operate said line-finder switching means thereby causing said terminating repeater means to be connected to said line circuit through said trunk switch means and said line-finder switching means.

3,185,775
ORIENTED TAPE
Marvin Camras, Glencoe, Ill., assignor to IIT Research Institute, a corporation of Illinois
Filed Mar. 10, 1958, Ser. No. 720,289
20 Claims. (Cl. 179—100.2)



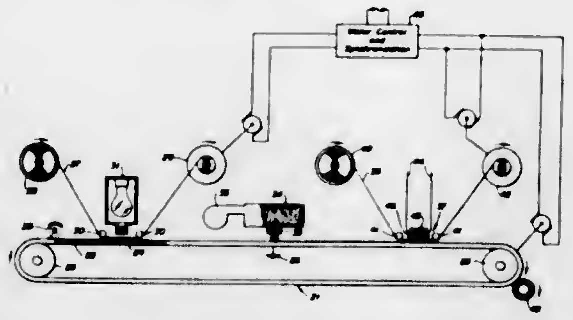
20. In combination, a magnetic record comprising a member having an active surface which is to be scanned along a predetermined scanning path, said member comprising a first layer of magnetizable particles oriented substantially parallel to said scanning path and to said active surface and a second layer of magnetizable particles of size substantially smaller than the particles of said first layer disposed in overlying relation to said first layer and providing said active surface of said member, said first layer having a thickness in the direction normal to said active surface of at least about .00025 inch and said second layer having a thickness substantially less than the thickness of said first layer and substantially less than .00025 inch, and a magnetic head having a pair of poles spaced in the direction of said scanning path and defining therebetween a scanning gap and movable relative to said active surface with said poles in sliding contact with said active surface over said scanning path, said magnetic poles defining a magnetic field in said member which is generally normal to said active surface in said second layer and which is predominantly parallel to said scanning path and to said active surface in said first layer, said scanning gap of said magnetic head having a dimension in the direction of said scanning path of the order of the thickness of said first layer but substantially greater than the thickness of said second layer.

3,185,776
INSTALLATION FOR REPRODUCING SOUND FROM A STATIONARY SOUND RECORD AREA
Werner K. Bender, Hultenius St., Plainville, Conn.
Filed Nov. 23, 1960, Ser. No. 71,349
25 Claims. (Cl. 179—100.2)



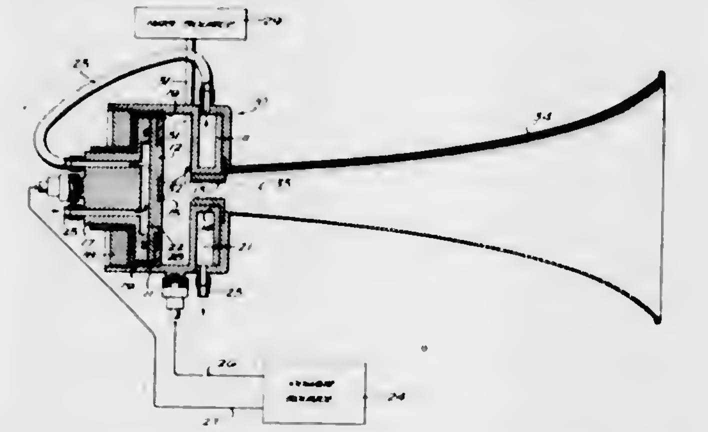
8. An installation for reproducing sound from a sound record area associated with a visually observable object, said installation comprising a sound track support having thereon a sound record area in the form of two arrays of parallel linear sound tracks of equal length, said arrays being disposed on opposite sides of the object to be visually observed, and a pair of sound pickup assemblies each coacting with one of said arrays, a carrier supporting said pickup assemblies, guide means supporting and guiding said carrier along said arrays, a pair of drive means for driving said carrier along said guide means, one of said drive means being arranged to drive the carrier in one direction and the other in the opposite direction, said pickup assemblies being mounted on the carrier slidable transversely of the path of travel of the carrier, coupling means for drivingly coupling said carrier with either one of said drive means, first control means disposed adjacent to each end of said arrays and operated by the carrier upon reaching an end of one of said guide means to couple the carrier with the respective other one of said drive means thereby effecting reciprocatory travel of the carrier along said arrays, and second control means for controlling the transverse positions of said pickup assemblies on the carrier, said second control means being actuated in response to the carrier reaching either end of its travel, actuation of the second control means alternately displacing the pickup assemblies into sound reproducing position with the next adjacent sound track of the respective array.

3,185,777
MAGNETIC RECORDING
John J. Rheinfrank, Columbus, Ohio, assignor, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 27, 1963, Ser. No. 268,431
4 Claims. (Cl. 179—100.2)



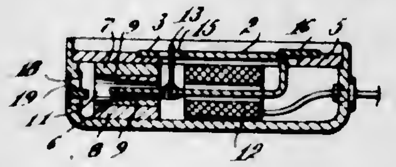
4. A process for optically producing a permanent magnetic sound track comprising electrostatically charging the light sensitive layer of a xerographic plate, said layer comprising a photoconductive pigment in an electrically insulating resin binder, modulating a beam of light with an audio signal, scanning the charged layer with the modulated beam of light thereby forming an electrostatic image corresponding to said modulated beam of light, contacting said xerographic plate with a carrier-toner mixture, said toner comprising finely-divided ferromagnetic particles ranging in size from about 1 to about 20 microns and which particles comprise at least about 20% by weight of magnetic component, whereby said toner particles deposit in accordance with said electrostatic image, bonding said toner particles to said layer in image configuration thereby producing a permanent image of said toner particles, and feeding said xerographic plate through a constant magnetic field to magnetize the bonded toner particles in a direction parallel to the direction of motion of said xerographic plate relative to said magnetic field.

3,185,778
APPARATUS FOR PRODUCING SOUND
Gabriel M. Giannini and Adriano C. Ducati, Newport Beach, Calif., assignors, by mesne assignments, to Giannini Scientific Corporation, Amityville, Long Island, N.Y., a corporation of Delaware
Filed May 1, 1962, Ser. No. 191,549
6 Claims. (Cl. 179—113)



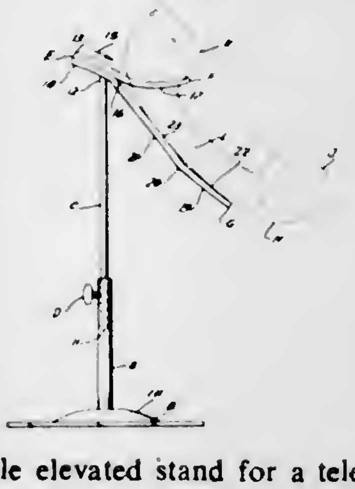
1. Apparatus for producing sound, which comprises a nozzle element having a nozzle passage therethrough, electrode means including a back electrode having an arcing portion disposed in the vicinity of said nozzle passage, means to effect cooling of said electrode means, current-supply means connected electrically to said electrode means to maintain a high-current electric arc from said arcing portion through at least a portion of said nozzle passage, said current-supply means being adapted to supply at least on the order of fifty amperes current to said electrode means, a source of gas under substantial pressure, conduit means connecting said source to said nozzle passage to effect forced flow of gas therethrough whereby said gas is heated substantially by said arc and is discharged from said nozzle passage in the form of plasma, and means to alter the characteristics of said arc and thus of said plasma at frequencies within the audio range to thereby effect generation of sound.

3,185,779
MAGNETIC ADJUSTING MEANS FOR MAGNETIC TRANSLATING DEVICE
Joseph A. Sawyer, Camden, Maine, assignor to Tibbetts Industries, Inc., Camden, Maine, a corporation of Maine
Filed Jan. 23, 1962, Ser. No. 168,160
15 Claims. (Cl. 179—114)



1. A magnetic translating device comprising a casing of magnetic material, means within the casing defining opposed surfaces with a gap therebetween, means for creating magnetic flux between the two surfaces, and means mounted on said casing adjacent said gap to short a part of said flux from either surface to said casing.

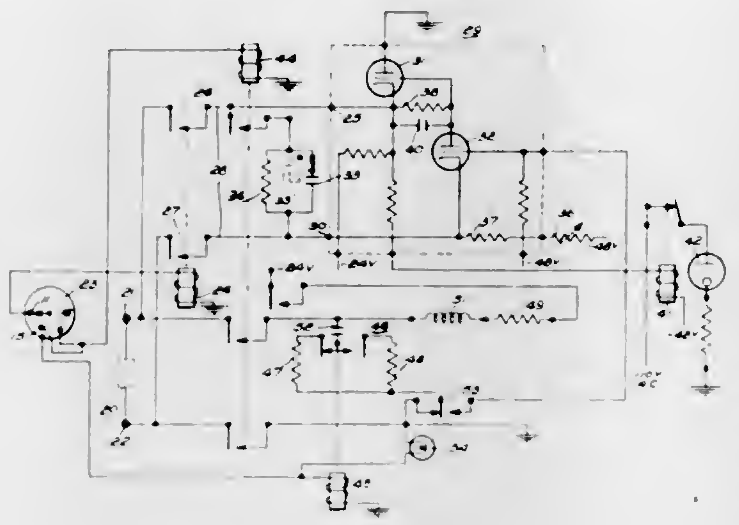
3,185,780
TELEPHONE HOLDER DEVICE
Michael M. De Falla, 32—25 60th St., Woodside, N.Y.
Filed Feb. 8, 1960, Ser. No. 7,322
7 Claims. (Cl. 179—148)



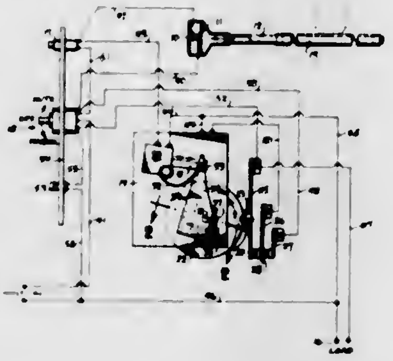
1. An adjustable elevated stand for a telephone handset for supporting the same in elevated position where the ear-piece and mouth-piece will be adjacent to the ear and mouth of the user, and in proper speaking and hearing location, said support comprising a base with an elevated telescoping standard having an adjustable upwardly extending extension rod and a top downwardly inclined support double downwardly divergent oblique plate structure having an upper clevis structure for supporting the sides of the earpiece and a depending more sharply downwardly inclined narrower tongue structure for supporting the back of the handset.

3,185,781
TELEPHONE TEST SET
Walter B. Lueft, North Merrick, N.Y., and Jaan Raamot, Cresskill, N.J., assignors to Western Electric Company, Incorporated, a corporation of New York
Filed Feb. 20, 1961, Ser. No. 90,464
8 Claims. (Cl. 179—175)

1. A testing circuit including a bistable circuit capable of oscillatory operation, the circuit having a pair of electron devices, means for biasing the respective inputs of the devices so that one device is adapted to remain in the conducting condition and the other device is adapted to remain in the non-conducting condition, means for coupling an electrical device to be tested to the input of one of the devices, the bias of the input so coupled being controlled in dependence on the change in bias provided by the electrical device, whereby the bistable circuit is enabled to oscillate or to assume one of its two stable states, and indicating means coupled to the output of the bistable circuit to indicate the response of the bistable circuit to the electrical device being tested.

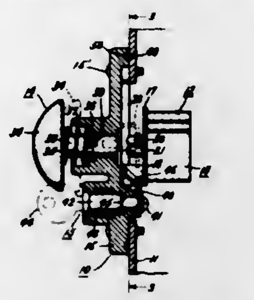


3,185,782
TIMER CONTROL SYSTEM FOR ELECTRICAL LOADS
Theodore J. Lakin, 1326 James St., Kent, Wash.
Filed Mar. 30, 1961, Ser. No. 99,482
2 Claims. (Cl. 200—33)



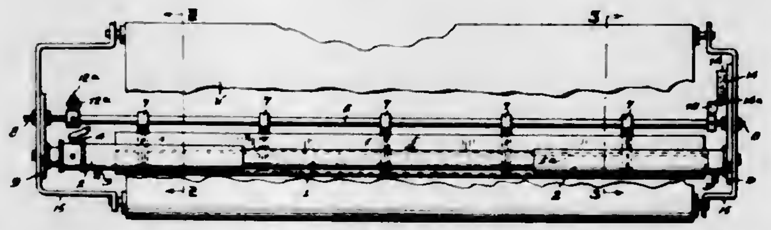
1. In a timer control system, a self-opening switch, a solenoid, an electric clock with a friction-driven output shaft, a cam fixed on said shaft and having a constant-radius surface and a depressed surface, a follower on said cam arranged to close said self-opening switch when the follower engages said constant-radius surface and to permit said self-opening switch to open when the follower engages said depressed surface, a link pivotally connected at one end to the armature rod of the solenoid and freely journaled toward its other end on an axis in alinement with said clock shaft, a crank fixed on said clock shaft and having a stop screw arranged to be engaged by said other end of the link during turning of the latter responsive to endwise movement of the solenoid rod, and spring means for returning the solenoid rod and link when the solenoid is deenergized.

3,185,783
PUSH BUTTON SWITCH WITH LOCKING FEATURE
Walter F. Dowdle, Lincoln, and Roy E. Wheeler, Bloomington, Ill., assignors to General Electric Company, a corporation of New York
Filed June 22, 1962, Ser. No. 204,398
8 Claims. (Cl. 200—44)



1. A switch device comprising support means, a pair of switches mounted on said support means each having an operating element displaceable between first and second positions, said operating elements normally being in said first positions to establish preselected switch operating conditions and being displaceable to said second positions to establish other switch operating conditions, a switch actuator mounted on said support means for movement relative thereto to simultaneously displace said operating elements between said first and second positions, and key-operated locking means mounted on said support means including a locking member mounted for rotation relative to said support means between inactive and locking positions about an axis generally parallel to the direction of movement of said switch actuator, said locking member extending generally perpendicular to its axis of rotation, said locking member having a first part which during movement of the locking member to the locking position operates to displace a single one of said operating elements to its second position, said locking member when in its locking position engaging and holding said one operating element in its second position, said locking member having a second part which confronts the switch actuator when the locking member is in its locking position to prevent movement of the switch actuator in a direction for displacing said operating elements.

3,185,784
WEB BREAK DETECTOR
Clarence A. Geiger, Canterbury, N.H., and Theodore Elliott, 23 1st St., Concord, N.H.
Filed Sept. 5, 1962, Ser. No. 221,587
2 Claims. (Cl. 200—61.18)

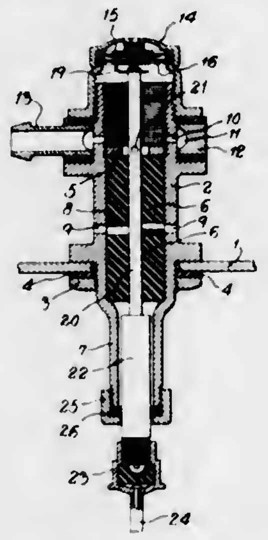


1. A web-break detector for mounting on a web-fed apparatus and having the moving web pass through said detector comprising the combination of: a pair of spaced apart end plates, a pivot pin mounted on each of said end plates, an elongated support shaft carried by said pivot pins, a plurality of depending bracket members having one end thereof rigidly attached to said shaft, an elongated vane member conjoining the other ends of said brackets and extending substantially the width of the moving web, an adjustable counterweight mechanism rigidly mounted near one end of said shaft and extending radially therefrom, a small block mounted on the other end of said shaft and carrying thereon a conventional mercury switch; a hollow tube rotatably carried by the

aforesaid end plates extending the width of the moving web, said tube juxtaposed the lower end of said vane, a plurality of air egress holes extending linearly substantially the length of said tube, concentric slotted sleeves carried on each end of said tube, a locking mechanism appended to each of said slotted sleeves for selectively positioning the sleeves with respect to said hollow tube; and means mounted on said hollow tube for receiving pressurized air.

3,185,785
COMBINED INFLATION VALVE AND CIRCUIT-CLOSING MECHANISM FOR PNEUMATIC TIRES

Frank A. Howard, New York, N.Y.; Irma Amelie Howard, Frank A. Howard, Jr., and The Chase Manhattan Bank, executors of said Frank A. Howard, deceased
Filed Apr. 13, 1961, Ser. No. 102,726
8 Claims. (Cl. 200—61.25)

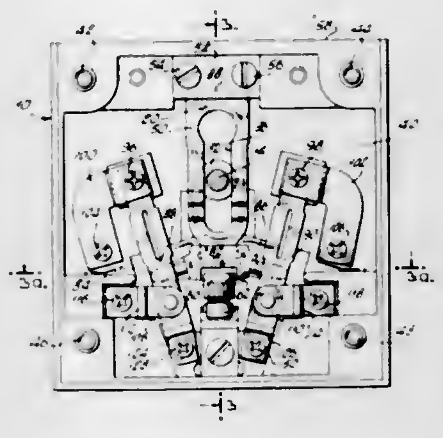


1. A combined inflation valve and circuit-closing mechanism for pneumatic tires comprising an elongated valve body carrying means intermediate its length for mounting it in the valve opening of a metallic rim to form electrical contact therewith, and with one portion of the valve body extending through the rim opening so as to be located in the air chamber of a tire mounted on the rim and the other portion extending outward from the rim and terminating in a portion adapted for detachable connection with an air inflation conduit, controllable means within the valve body for interrupting or permitting passage of air therethrough, a movable contact element responsive in its motion to air pressure around it carried by the inner portion of the valve body so as to lie within a tire mounted on the rim, a stationary contact element also carried by the said inner portion so as to lie within the tire and in operative relation to said movable element, and means for completing an external electrical circuit to the rim through the outwardly extending portion of the valve body and through the said contact elements.

3,185,786
SNAP-ACTION ELECTRIC SWITCH

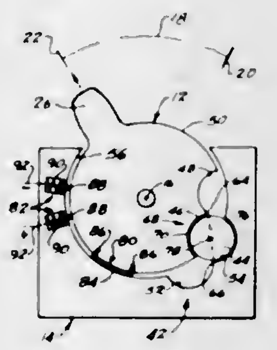
Wallace D. Wilson, Middletown, N.J., assignor to Elastic Stop Nut Corporation of America, Union, N.J., a corporation of New Jersey
Filed Mar. 22, 1963, Ser. No. 267,088
3 Claims. (Cl. 200—67)

1. In a switch of the type wherein a fixed contact is adapted to be engaged by a movable contact, and wherein said movable contact is moved by means including a spring loaded lever member, the improvement comprising, in combination,
(*a*) a base,
(*b*) said lever member having two opposite ends,
(*c*) means pivotally mounting one of said ends of said lever member on said base,
(*d*) over-center spring means having two opposite ends,
(*e*) means pivotally mounting one of said ends of said over-center spring means on said base, the other ends of said lever member and said over-center spring means pivotally engaging each other and compressing said over-center spring means to bias said lever member in either of two opposite directions from a dead center position,
(*f*) motion transmitting means engaging said lever member to urge it in either of said two opposite directions, and
(*g*) adjustable means disposed to engage and limit the movement of said lever member in one of said two opposite directions.



3,185,787
TOGGLE MECHANISM EMPLOYING ELASTIC ACTUATING MEANS BETWEEN OPPOSED SOCKETS

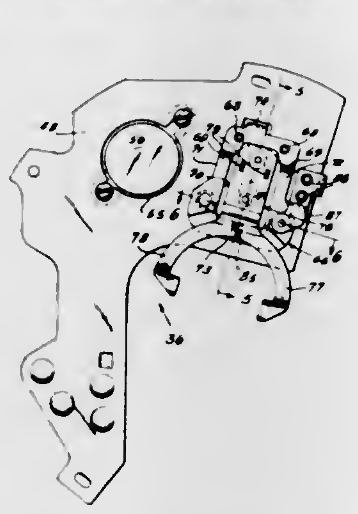
Charles Deibel, 414 N. 3rd St., and Joseph Evanicsko, Jr., Spanish Villa, R.D. 2, both of Jeannette, Pa.
Filed May 28, 1963, Ser. No. 283,786
14 Claims. (Cl. 200—68)



1. In a toggle mechanism, the combination comprising a pair of members having adjacent surfaces, a plurality of sockets formed in side-by-side relation in each of said surfaces, resilient actuating means disposed in a cavity formed by a selected pair of directly opposite sockets, cooperating means for sequentially compressing and expanding while moving said resilient actuating means into the next adjacent cavity formed by a second pair of directly opposite sockets, certain cavities thus formed comprising rest points for one of said members, and means supporting one of said members for reciprocal movement relative to the other of said members whereby when said one of said members is moved from one rest point to the next adjacent rest point it is sequentially opposed by the compression of said resilient actuating means and thereafter aided by the expansion of said resilient actuating means.

3,185,788
CENTRIFUGAL CONTROL DEVICE WITH TWO SETS OF ENGAGEABLE CONTACTS

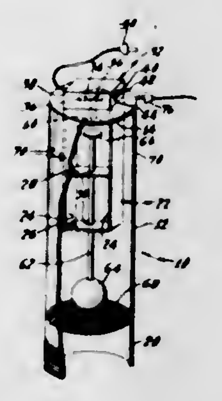
William J. Zollmann, Jr., Foristell, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed Dec. 12, 1960, Ser. No. 75,217
14 Claims. (Cl. 200—80)



14. A switch mechanism comprising a base plate, a pair of spaced contacts on said base plate, a contact member connected with said base plate and resiliently urged therefrom including spaced contact means adapted for respective engagement with said contacts, and a portion interconnecting said contact means for concert movement thereof toward engagement with said contacts, a movable actuating member separate from said contact member and mounted on said base plate for pivotal movement relative to said base plate and contact member including a portion biased from said plate and overlying said contact member portion for driving engagement therewith, and pivotal abutment means disposed on one of said portions for engagement with the other of said portions for pivotal movement of said actuating member relative to said contact member and effect concert movement of said members toward said plate to engage said contact means with said contacts in response to an applied force on said actuating member.

3,185,789
FLUID OVERFLOW SWITCH APPARATUS

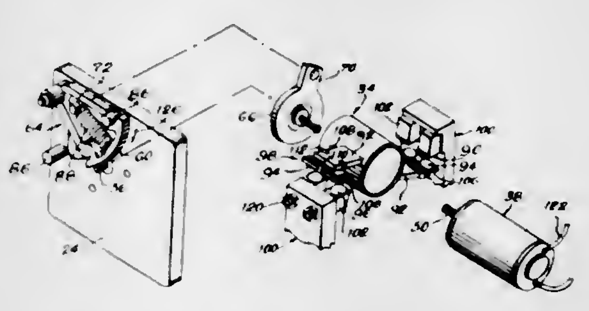
Philip Lawrence Gunther, 39 S. Corona Ave., Valley Stream, N.Y.
Filed Sept. 26, 1962, Ser. No. 226,394
1 Claim. (Cl. 200—84)



In a fluid overflow switch apparatus for washing machines wherein the fluid exhaust of the washing machine is connected with a drain pipe, said apparatus comprising a casing adapted to be connected with a drain pipe at a level substantially equal to or lower than the connection of the fluid exhaust of a washing machine with the drain pipe, said casing being hollow and having a closed top, a substantially U-shaped support connected with said top and depending downward into said casing, said support including a cross member connected between the legs thereof and spaced between said top and base of said support, said top, cross member and base of said support each having aligned openings defined therein, a shaft movable in said openings of said cross member and base, said shaft having a float at one end thereof beneath said base and a switch actuator at the other end thereof, a switch device on said top and including normally closed contacts adapted to be connected with a source of electricity and with the washing machine to close an electrical circuit to the washing machine from said source, said switch device including contact means extending through said opening in said top and into said casing in alignment with but spaced from said switch actuator whereby when said float shaft is lifted in response to the rise of fluid in said casing, said switch actuator will be caused to move into engagement with said switch contact to actuate the same to open the electrical circuit to the washing machine to stop the exhaust of fluid therefrom, said plurality of switch contacts being two, each of which is relatively spaced from the other and said contact means normally engaging said switch contacts to close the same, a plug receptacle in said switch device having a pair of contacts, one of said switch contacts and one of said plug contacts having conductors adapted to be connected with a source of electricity, and a conductor electrically connecting the other one of said switch contacts with the other one of said plug contacts.

3,185,790
MOTOR OPERATED POWER TRANSFER SWITCH

Paul G. Salerno, Glen View, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed June 5, 1963, Ser. No. 285,747
4 Claims. (Cl. 200—92)

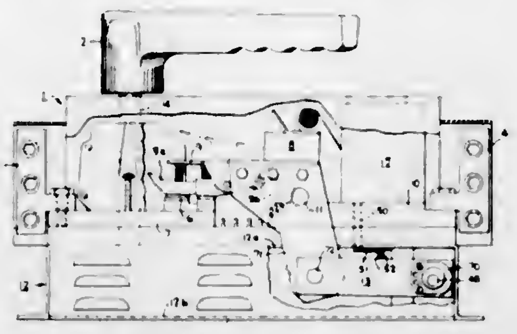


1. A switch of the character disclosed comprising, in combination, mounting means, a set of stationary contacts supported by said mounting means, a contact carriage having contactor means thereon and movable between opposite positions in which the contactor means is respectively in and out of electrical engagement with said contacts, a mechanical overcenter mechanism including a member movable between opposite limit positions, said over-center mechanism also including a compression spring reacting between said movable member and contact carriage, a reversible electric motor having driving connection with said movable member and operable for moving the latter to over-center position in each direction toward its opposite limit position, said movable member being operable, acting through said compression spring for moving said contact carriage to its opposite position in response to its own movement to over-center position, said contact carriage being rockable about a central longitudinal axis, the stationary contacts including contacts on radially opposite sides of the contact carriage and the contactor means including movable contacts on each of radially opposite sides of the contact carriage positioned for engaging respective ones of said stationary contacts, whereby the contact carriage is balanced by distribution of mass symmetrically around said axis, and said motor being mounted within and carried by said contact carriage.

3,185,791

CIRCUIT BREAKER WITH PANCAKE TYPE OPERATING MECHANISM AND IMPROVED FORCE TRANSMISSION MEANS

Dallas E. Cain, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 18, 1963, Ser. No. 273,955
5 Claims. (Cl. 200—106)



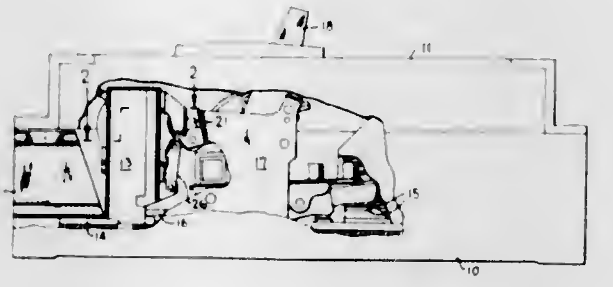
5. An electric circuit breaker comprising:
- (*a*) a support,
- (*b*) at least one stationary contact mounted on said support,
- (*c*) at least one relatively movable contact supported on said support,
- (*d*) a releasable member pivotally supported on said support,
- (*e*) means releasably latching one end of said releasable member to retain said releasable member in a predetermined first position with respect to said support,
- (*f*) a first switch operating member pivotally supported on said releasable member intermediate the pivot of said releasable member and said latched end thereof,
- (*g*) spring-supporting means pivotally supported on said support,
- (*h*) an elongated tension-type operating spring interconnecting said spring-supporting means and said first switch operating member, whereby movement of said spring supporting means between open and closed circuit positions moves said tension spring across the pivot of said first switch operating member to move said switch operating member between open and closed circuit positions with a snap-action,
- (*i*) a first pulley sector supported on said support,
- (*j*) a manually operable member supported on said support and connected to said first pulley sector,
- (*k*) said spring supporting member having an integral second pulley sector, and
- (*l*) a flexible tensile force-transmitting member having one end thereof connected to one end of said first pulley sector and having the other end connected to the opposite end of said second pulley sector, whereby rotational movement of said first pulley by said manually operable member tends to wind said tensile force-transmitting member onto said first pulley sector and off of said second pulley sector to move said spring-supporting member between said open and closed circuit positions.

3,185,792

CIRCUIT BREAKER TRIP MECHANISM

George R. Buys, Denver, Colo., and Gilbert H. Nettleton, Plainville, Conn., assignors to General Electric Company, a corporation of New York
Filed May 24, 1961, Ser. No. 112,281
4 Claims. (Cl. 200—116)

1. An electric circuit breaker comprising:
- (*a*) an insulating casing,
- (*b*) at least one pair of relatively movable contacts supported in said insulating casing.
- (*c*) trip means supported in said insulating casing and connected to said relatively movable contacts,
- (*d*) first and second discrete trip bar elements pivotally supported in said insulating casing for rotation about a common axis,
- (*e*) first current responsive means mounted in said insulating casing and acting on said first trip bar element to rotate said first trip bar element in a predetermined direction upon the occurrence of predetermined current conditions,
- (*f*) means connecting said first trip bar element to said trip means to move said trip means in a direction to cause opening of said relatively movable contacts upon movement thereof in said predetermined direction,
- (*g*) second current responsive means supported in said insulating casing and acting on said second trip bar element to rotate said second trip bar element in said predetermined direction upon the occurrence of predetermined current conditions,
- (*h*) interconnecting means for said trip bar elements comprising an axially extending integral portion on said first trip bar element eccentric to said common axis extending toward said second trip bar element and an axially extending integral portion on said said first trip bar element eccentric to said common axis extending toward said first trip bar element and overlapping said axially extending portion of said first trip bar element, said axially extending portion of said first trip bar element being closely adjacent said axially extending portion of said second trip bar element at the side thereof in the tripping direction whereby any substantial rotation of said second trip bar element in said tripping direction causes substantially equal rotation of said first trip bar element in said direction, said extending portions being dimensioned to provide clearance between said portions at the side of said axially extending portion of said first trip bar element in said tripping direction to permit rotation of said first trip bar element in tripping direction at least to trip operating position without rotation of said second trip bar element thereby.



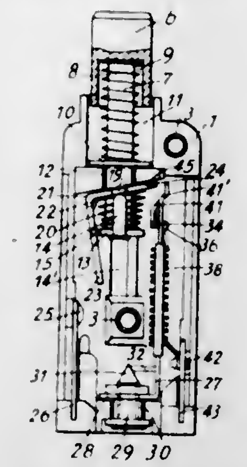
3,185,793

PUSHBUTTON OPERATED OVERLOAD CIRCUIT BREAKER

Jakob Philipp Ellenberger, Altdorf, near Nurnberg, Germany, assignor to Ellenberger & Poensgen G.m.b.H., Altdorf, near Nurnberg, Germany, a firm of Germany
Filed July 13, 1962, Ser. No. 209,703
Claims priority, application Germany, July 21, 1961, E 21,409
11 Claims. (Cl. 200—116)

9. An overload circuit breaker comprising a support member having a top portion provided with an opening therewithin, an arm connected to one side of said top portion provided with an aperture therewithin; a bimetal strip member in operative relationship with the opposite side of said top portion and spaced from said arm, a control rod member substantially parallel to said arm and disposed within said opening, a sheet metal member connected to the lower end of said control rod, said sheet metal member having a coupling projection

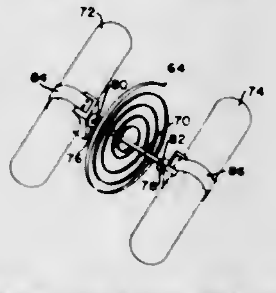
disposed and supported within said aperture, and a coil spring member having a truncated-cone configuration disposed upon said control rod between the top portion of said support and said sheet metal member, the end of said coil spring having the smallest diameter being adjacent said sheet metal member.



3,185,794

DUAL MERCURY SWITCH HAVING COMMON CONDUCTOR AND SPIRAL BIMETAL ACTUATION

John Scarr, Jr., Penn Hills Township, Allegheny County, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Original application July 31, 1959, Ser. No. 830,897, now Patent No. 3,047,273. Divided and this application Dec. 1, 1961, Ser. No. 156,410
8 Claims. (Cl. 200—138)



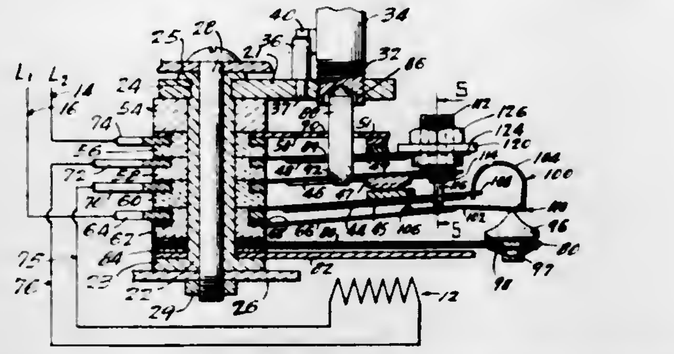
1. Control means including first and second mercury switches, rotatable means coupled to said mercury switches adapted to rotate said switches on a substantially horizontal axis, each of said switches having a central conductor and a first and a second contact at its opposite ends, means electrically connecting the central conductors of the switches, each of said first contacts being at the forward end of its respective switch in relation to switch rotation in one direction, each of said second contacts being at the forward end of its respective switch in relation to switch rotation in the opposite direction, said mercury switches being inclined with respect to each other in the vertical plane so that one of said switches is more forwardly inclined with regard to rotation in one direction while the other of said switches is more forwardly inclined with regard to rotation in the opposite direction.

3,185,795

STACKED-TYPE DUAL THERMORESPONSIVE SWITCH

John W. Huffman, Mansfield, Ohio, assignor to Pace, Inc., Mansfield, Ohio, a corporation of Ohio
Filed Jan. 31, 1963, Ser. No. 255,331
9 Claims. (Cl. 200—138)

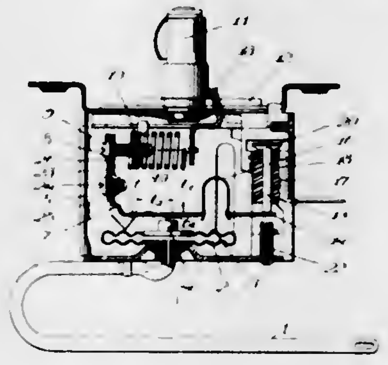
1. Switch mechanism comprising, in combination, support means, two pairs of switch members mounted by the support means, cooperating contacts carried by said pairs of switch members, manually actuable means mounted on the support means for adjusting the position of one switch member of the first pair, snap action thermoresponsive actuated means mounted on the support means to influence movement of the other switch member of the first pair, a tubular member carried by the switch member engaged by the manually actuable means, and an element of insulating material engaging the tubular member and having a portion engageable with a switch member of the second pair whereby movement of said manually actuable means to a predetermined position moves the said switch member of the second pair to separate the contacts carried by said second pair of switch members.



3,185,796

SNAP-ACTION CONDITION RESPONSIVE SWITCH

Shigeo Mamiya and Takeshi Odashima, Tokyo, Japan, assignors to Saginomiya Seisakusho Co., Ltd., Saginomiya, Nakano-ku, Tokyo, Japan
Filed Dec. 14, 1961, Ser. No. 159,280
Claims priority, application Japan, Mar. 8, 1961, 7,689/61
9 Claims. (Cl. 200—140)



1. In a condition responsive switch, first and second levers, first means mounting said levers in normally coplanar relation for independent pivotal movement about respective adjacent first and second parallel axes in the common plane thereof, said levers including respective first and second confronting adjacent abutments in said plane and offset from said axes, a toggle spring interposed between and engaging said abutments to exert a force normally in said plane and urging said abutments apart, second means engaging said first lever in offset relation with said first axis and effective to pivot said first lever in one direction, by and in response to a change in pressure, spring means connected with said first lever and urging the same into pivotal movement in the opposite direction, and contact closing means responsive to pivoting of said second lever about said second axis.

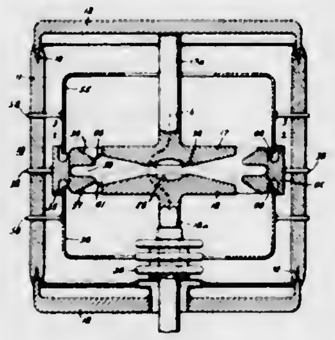
3,185,797

VACUUM-TYPE CIRCUIT INTERRUPTER WITH IMPROVED ARC SPLITTING MEANS

Joseph W. Porter, Media, Pa., assignor to General Electric Company, a corporation of New York
Filed July 17, 1962, Ser. No. 210,416
12 Claims. (Cl. 200—144)

1. A vacuum-type electric circuit interrupter comprising:
- (*a*) a highly evacuated envelope,

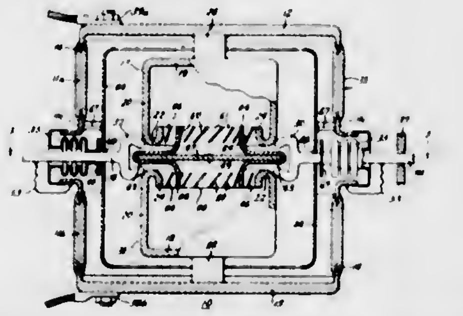
(*b*) a pair of separable contacts of disc configuration disposed within said envelope,
(*c*) means for separating said contacts to establish an arcing gap therebetween across which an arc is adapted to be established,
(*d*) an annular ring surrounding said arcing gap and having annular arc-running surfaces at axially-opposed sides of said ring, each of said arc-running surfaces being separated from an adajcent disc contact by a secondary arcing gap that extends about the outer peripheral portion of said adjacent disc contact,
(*e*) said ring projecting radially inwardly from said envelope and normally being electrically isolated from said contacts,



(*f*) means for magnetically driving said arc on to the outer peripheral region of said contacts and into engagement with said ring to establish series-related arclets across said secondary arcing gaps,
(*g*) means for causing each of said series-related arclets to move circumferentially about said ring along one of said arc-running surfaces, said arc-moving means comprising slots extending from the inner periphery of said ring radially outwardly via paths that have a tangential component relative to said ring,
(*h*) and means for forcing current flowing through said ring between aligned points on the two arc-running surfaces near the inner periphery of the ring to follow a path that extends between said slots and has a net component extending in a direction tangential of said ring,
(*i*) and groove means separating said two arc-running surfaces in the inner peripheral region of said ring for preventing the passage of current between said aligned points via the inner peripheral region of said ring.

3,185,798
ELECTRIC CIRCUIT INTERRUPTER OF THE VACUUM TYPE WITH SERIES-RELATED ARCING GAPS

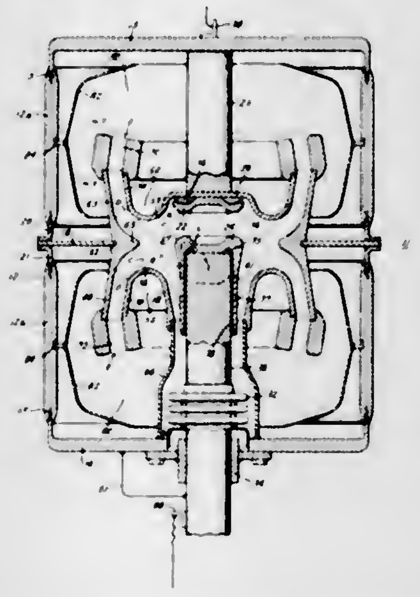
Charles H. Titus, Newtown Square, Pa., assignor to General Electric Company, a corporation of New York
Filed Oct. 8, 1962, Ser. No. 228,799
11 Claims. (Cl. 200—144)



1. A vacuum-type circuit interrupter comprising:
(*a*) a pair of cup-shaped electrodes, each comprising a body portion and a tubular skirt projecting from said body portion and terminating in an outer end of annular configuration,
(*b*) means for mounting said electrodes in spaced-apart relationship with said skirts generally aligned and said outer ends spaced from each other,
(*c*) each of said cup-shaped electrodes further comprising a tubular arc-running portion located radially inwardly of said skirt and means electrically interconnecting said skirt and said tubular arc-running portion in such a manner that current flowing between said tubular arc-running portion and said skirt is forced to flow through said outer end,
(*d*) an intermediate electrode having two tubular portions,
(*e*) means for electrically insulating said intermediate electrode from said cup-shaped electrodes when said interrupter is open and for mounting said intermediate electrode in such a position that its tubular portions are respectively located radially inwardly of the tubular arc-running portions of said cup-shaped electrodes with annular spaces therebetween constituting series-related arcing gaps,
(*f*) contact means operable in a closed position to conduct current between said cup-shaped electrodes and movable toward an open position to establish a pair of series-related arcs in an arc-initiation region adjacent the outer ends of said skirts,
(*g*) and means for driving said arcs in a radially-inward direction from said arc-initiation region into said series-related arcing gaps.

3,185,799
VACUUM-TYPE ELECTRIC CIRCUIT INTERRUPTER IN WHICH A MAIN ARC IS DIVIDED INTO SERIES-RELATED ARCS

Allan N. Greenwood and Joseph W. Porter, Media, Pa., assignors to General Electric Company, a corporation of New York
Filed Dec. 17, 1962, Ser. No. 245,275
9 Claims. (Cl. 200—144)

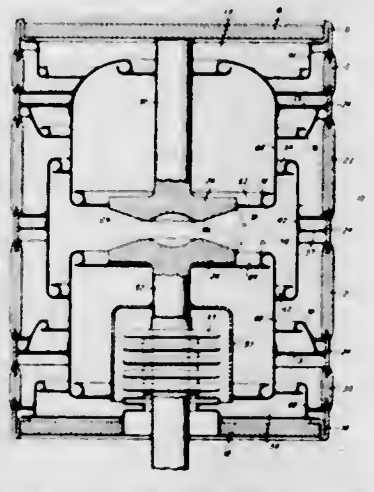


1. An electric circuit interrupter of the vacuum type comprising:
(*a*) a highly evacuated envelope of tubular form having longitudinally opposed ends and a tubular wall at least partially of insulating material extending longitudinally of said envelope between said ends,
(*b*) a first contact located within said envelope,
(*c*) a second contact engageable with said first contact and movable out of engagement with said first contact to produce a main arcing gap between said contacts located generally centrally of the length of said envelope,
(*d*) a first arc runner of a generally cup-shaped configuration comprising a base portion generally surrounding said first contact and a tubular flange at the outer periphery of said base portion projecting from said base portion in a direction away from said main arcing gap and toward one of the ends of said envelope,

(*e*) a second arc runner of a generally cup-shaped configuration comprising a base portion generally surrounding said second contact and a tubular flange at the outer periphery of said base portion projecting from said base portion in a direction away from said main arcing gap and toward the other end of said envelope,
(*f*) means for electrically connecting said first arc runner to said first contact and said second arc runner to said second contact,
(*g*) a third arc runner normally electrically isolated from said first and second arc runners and comprising an annular central region surrounding said main arcing gap and a pair of tubular portions respectively projecting from said central region toward said ends of said envelope, said tubular portions respectively surrounding the tubular flanges of said first and second arc runners in spaced-apart relationship to said tubular flanges so as to define secondary arcing gaps of annular configuration about said tubular flanges between said tubular portions and said tubular flanges,
(*h*) the tubular flanges of said first and second arc runners and the tubular portions of said third arc runner terminating at points longitudinally spaced from the end of said envelope toward which the flange projects so that a vapor-receiving space is present within said envelope between said secondary arcing gap and said end into which arcing products may be freely vented,
(*i*) each of said flanges and the tubular portion surrounding each said flange having an end portion adjacent its termination point that extends longitudinally of said envelope so that an arc located in a secondary arcing gap between an adjacent pair of said end portions extends generally perpendicular to the length of said envelope,
(*j*) and means including said vapor-receiving space for normally preventing an arc in said secondary arcing gap from moving past said termination points.

3,185,800
VACUUM TYPE CIRCUIT INTERRUPTER WITH IMPROVED VAPOR-CONDENSING SHIELDING

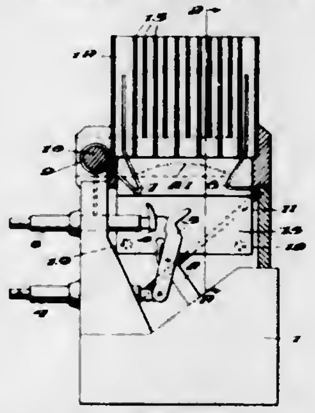
Charles H. Titus, Newtown Square, Pa., assignor to General Electric Company, a corporation of New York
Filed Feb. 18, 1963, Ser. No. 259,298
5 Claims. (Cl. 200—144)



1. A vacuum-type electric circuit interrupter comprising:
(*a*) an evacuated envelope comprising a tubular portion of insulating material,
(*b*) a pair of relatively movable contacts disposed within said envelope in a location surrounded by said tubular insulating portion,
(*c*) said contacts being separable to form an arcing gap therebetween across which electric arcs are adapted to be developed,
(*d*) a pair of tubular metallic shields disposed internally of said tubular insulating portion for protecting said tubular insulating portion from arc-generated vapors,
(*e*) said tubular shields being spaced from each other in a direction longitudinal of said tubular insulating portion with an annular gap between adjacent ends of said shields,
(*f*) said annular gap surrounding said arcing gap and being located generally in alignment with said arcing gap in a direction longitudinal of said tubular insulating portion,
(*g*) means for mounting said shields in electrically isolated relationship with respect to each other and with respect to said contacts,
(*h*) a third tubular shield surrounding said annular gap and the adjacent ends of said first two shields,
(*i*) means for mounting said third shield in radially-spaced relationship relative to said first two shields and in electrically isolated relationship relative to said first two shields and relative to said contacts,
(*j*) said three tubular shields being sufficiently spaced radially outward from said contacts that arcs established between the contacts do not normally engage said shields.

3,185,801
POWER SWITCH WITH MAGNETIC BLOW-OUT CHAMBER AND AN ADJACENT ARC CHAMBER HAVING SPRING-MOUNTED WALLS WITHIN WHICH THE SWITCH CONTACTS ARE LOCATED

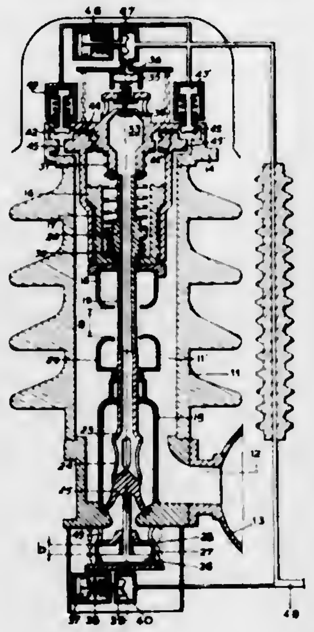
Paul Baltensperger, Wurenlos, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Oct. 15, 1962, Ser. No. 230,615
Claims priority, application Switzerland, Jan. 29, 1960, 974/60
2 Claims. (Cl. 200—147)



1. In an electrical switch, the combination comprising a stationary switch contact and a movable switch contact arranged to engage and be disengaged from each other, a magnetic blow-out chamber located above said switch contacts, a pair of spaced arcing horns extending upwardly into said blow-out chamber, means electrically connecting one of said arcing horns with one of said switch contacts, means electrically connecting the other arcing horn with the other switch contact through a magnetic blow-out coil, and a further arc chamber portion in communication with said blow-out chamber, said further arc chamber portion including a pair of spaced walls within which said switch contacts are located, means pivotally mounting said walls at one end thereof adjacent the entrance to said blow-out chamber and spring means engaged with said walls at a distance remote from said pivotal mounting means thereby enabling said walls to be pivotally moved apart against a counter biasing action of said spring means, the extent of said wall movement being variable with the magnitude of the current passing through said contacts when they disengage.

3,185,802
GAS BLAST CIRCUIT BREAKERS HAVING AT LEAST ONE TUBULAR CONTACT

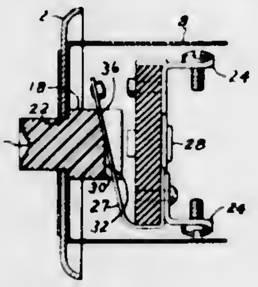
Jean Amalric, Grenoble, Isere, France, assignor to Etablissements Merlin & Gerin
Filed July 18, 1961, Ser. No. 124,948
Claims priority, application France, July 18, 1960, 4,274, Patent 1,270,584
4 Claims. (Cl. 200—148)



1. A gas blast circuit breaker comprising in combination two aligned relatively movable elongated contact members, at least one of said contact members being tubular, a pair of screen members defining around said contact members a substantially annular space through which the gas blast exhausts into at least one of said contact members at the moment of their separation, means to bring said screen members nearer to each other just before the moment of separation of said contact members, and means to bring said screen members to their original relative position after extinction of the arc drawn between said contact members.

3,185,803
PUSH BUTTON SWITCH WITH FLEXIBLE CONTACT

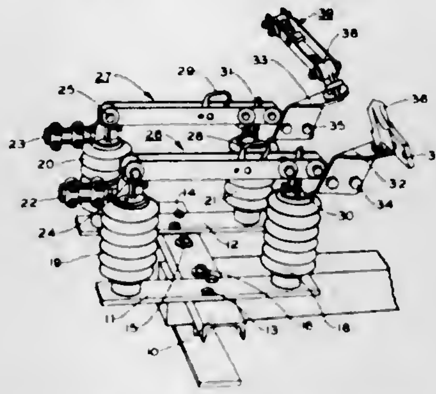
Nell J. Driscoll, 20980 Costanso St., Woodland Hills, Calif.
Filed Sept. 11, 1964, Ser. No. 396,813
18 Claims. (Cl. 200—159)



1. In a control device, the combination of an apertured cover, a base carried by the cover and having a supporting element in spaced relation to the cover, a flexible contact carrying finger secured to the element and normally biased in the direction of the cover, a push button having an upper segment received within the cover aperture and a lower segment below said cover, said button being movable transversely of the cover, and means operative to properly position the push button in all positions of movement thereof, said means comprising a slot formed on the bottom side of the lower segment and receiving said finger, said finger being biased upwardly to engage said button within said slot in all positions of button movement, said slot comprising two surface portions in angular relation to each other, said finger engaging one of said portions in the maximum upward button position and engaging the other of said portions in the maximum downward button position.

3,185,804
BY-PASS SWITCH ARRANGEMENT

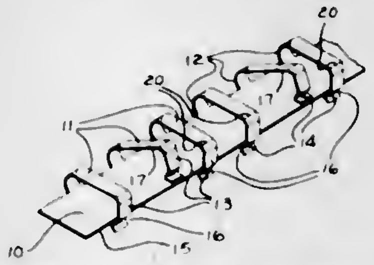
John C. Howell, Griffin, Ga., assignor to Southern States, Inc., a corporation of Georgia
Filed Apr. 8, 1963, Ser. No. 271,305
1 Claim. (Cl. 200—162)



A by-pass switch arrangement comprising a base, a first pair of insulators mounted on said base, a first pair of switch contacts respectively affixed to said insulators and in coaxial relation, a pair of mounting pads respectively connected with said first switch contacts, each mounting pad having a flat mounting surface tilted toward the associated one of said first pair of contacts at an acute angle so that an imaginary line drawn from and normal to each of said mounting surfaces and in a direction away from said base intersects an imaginary extension of the axis of the associated insulator and contact at an acute angle, a third fixed switch contact mounted on one of said mounting surfaces normal to said surface, a switch blade pivotally mounted normal to the other mounting surface and arranged to swing into and out of engagement with said third fixed contact through a plane which includes the imaginary line normal to said mounting surfaces, a second pair of insulators mounted on said base and disposed with respect to said first pair of insulators in the direction in which said mounting surfaces are tilted, and a pair of switch blades pivotally mounted on said second pair of insulators respectively, said pair of switch blades being arranged to swing into and out of engagement with said fixed pair of switch contacts respectively and being disposed so that the swing ends thereof inscribe an arc which is spaced from the imaginary lines which are normal respectively to said mounting surfaces.

3,185,805
SPRING CONNECTOR FOR MAKING ELECTRICAL CONNECTION TO A CIRCUIT MEMBER

Geoffrey D. Green, Wilmette, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 19, 1962, Ser. No. 210,969
2 Claims. (Cl. 200—166)

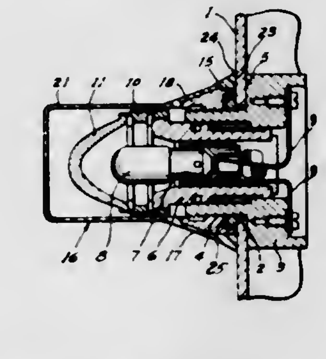


1. A spring connector for making electrical connection to a plurality of circuit members, which comprises:

a flat base strip of resilient metal having formed integrally at one edge thereof a plurality of spaced contact fingers, each bent back over said base strip to form therewith an acute angle, the free end of each of said fingers being bent toward the opposite edge of said base strip and having an undulation therein forming a catch cooperable with said opposite edge to releaseably latch that finger in a first or open-circuit position wherein it is spaced from an associated circuit member, and each of said fingers being biased by the inherent resilience thereof to move away from the base strip, when released, to a second or closed-cricuit position wherein it contacts the associated circuit member.

3,185,806
PROTECTIVE SEALING CAP FOR PUSH BUTTONS

Robert J. Bowman, Milwaukee, and Earl F. Mekelburg, Wauwatosa, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Feb. 21, 1962, Ser. No. 174,916
3 Claims. (Cl. 200—168)

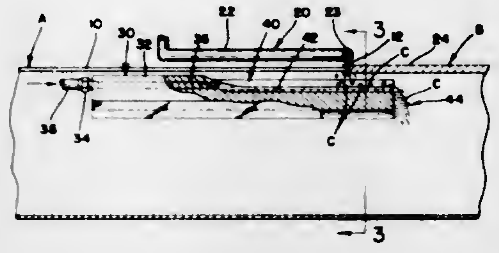


1. A protective means for a pushbutton of a pushbutton operated device and comprising a supporting wall having an opening therein, an externally threaded support mounted in the opening and adapted to support the pushbutton for movement axially of the opening, said support extending from one face of the wall through the opening and protruding beyond the other face, abutment means on the support at one end engaging said one face to constrain the support from movement entirely through the opening from said one face, an internally threaded ring nut in threaded engagement with the support at the other face of the wall and cooperable with the abutment means to clamp the support to the wall in position in said opening, a flexible cap for the pushbutton, an internally threaded clamping ring in the cap at the open end thereof and in threaded engagement with the support, said cap having a resilient peripheral sealing flange at its open end disposed outwardly from the ring and normally protruding endwise of the ring beyond the ring in a direction toward the wall for engagement with the adjacent face of the wall, the threaded relation of said ring and support being such that by screwing the ring onto the support the resilient peripheral sealing flange can be held under pressure in sealing engagement throughout its extent, against the wall outwardly from the ring, said ring having a cavity open toward the open end of the cap and accommodating the ring nut in radially and axially spaced relation to the ring and cap when the cap is in said sealing engagement.

3,185,807
FLUSHING DEVICE FOR PIPE WELDING MILL

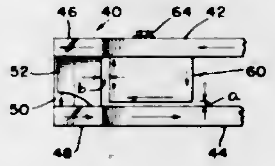
John F. Cachat, Cleveland, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed July 12, 1962, Ser. No. 209,389
2 Claims. (Cl. 219—8.5)

1. A device for preventing the accumulation of metal particles between a C-shaped skelp being welded into a pipe at a welding point adjacent the point of convergence of the skelp edges and a current pattern controlling member having an internal cooling passage and being located within said pipe directly below said welding point, said device comprising: an open trough in said current pattern controlling member and located directly below said welding point and facing upwardly toward said welding point, said trough having an inlet and an outlet, said inlet connected to said internal passage, and said outlet communicating with the interior of said pipe.



3,185,808
INDUCTOR FOR HARDENING GEAR TEETH

Phillips N. Sorensen, Bedford, and Ralph P. Alberts, Garfield Heights, Ohio, assignors to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 22, 1962, Ser. No. 181,736
8 Claims. (Cl. 219—10.43)



1. In an inductor for progressively heating the oppositely facing working surfaces of adjacent gear teeth by moving said inductor longitudinally between said teeth, said inductor comprising a generally U-shaped, electrical conductor adapted to extend between said teeth and having spaced legs terminating in a lower longitudinally extending portion closely spaced from the root of said teeth during use, the improvement comprising: a low electrical resistance member adjacent the outermost portion of said teeth during use and between said legs for controlling the shape of the heating pattern in said working surfaces to limit the heating at the outermost portions of said teeth, said low resistance member having an electrical resistivity on the order of copper.

3,185,809
TEMPERATURE SENSITIVE CONTROL

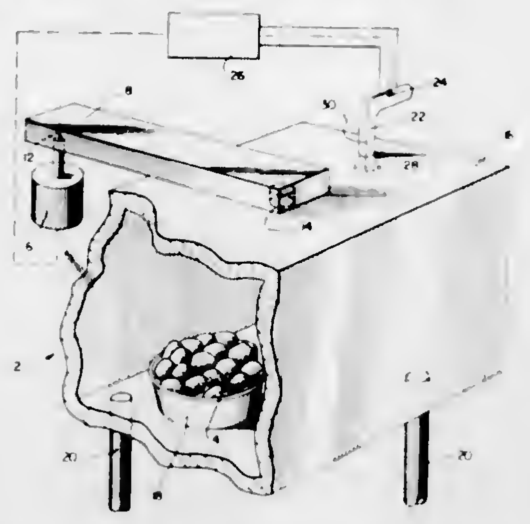
Helmut Bohm, Rockford, Ill., and Herbert Duras, Oberderdingen, Germany, assignors to Miwag Mikrowellen Aktien Gesellschaft, a corporation of Switzerland
Filed Aug. 31, 1962, Ser. No. 220,808
Claims priority, application Germany, Sept. 4, 1961, D 36,960
4 Claims. (Cl. 219—10.55)

1. In heating apparatus of the type employing an oven enclosure for confining microwave energy, a source of microwave energy, and means for coupling energy from the source into the enclosure, the improvement comprising:

an exhaust duct venting the oven enclosure;

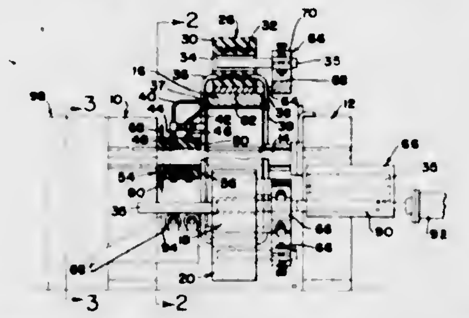
means for causing vapors and gases in the oven enclosure to pass into the exhaust duct;

a temperature sensitive element disposed in the exhaust duct, the temperature sensitive element being located where it is not exposed to wave energy radiating from the oven enclosure; and



means governed by the temperature sensitive element for controlling the application of microwave energy to the oven enclosure.

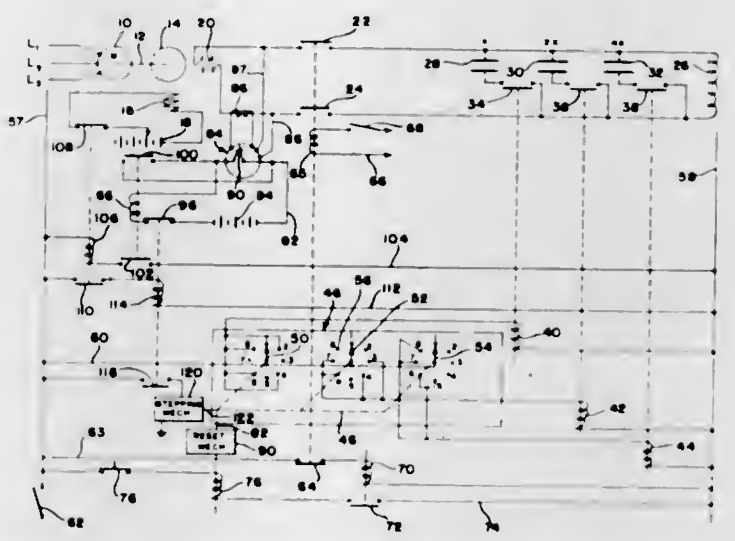
3,185,810
BAR END HEATING APPARATUS
William F. Peschel, Birmingham, Mich., and Chester A. Tudbury, White Plains, N.Y., assignors to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed July 27, 1960, Ser. No. 45,624
5 Claims. (Cl. 219—10.69)



5. An induction heating apparatus comprising a generally circular frame rotatable about a stationary axis, a plurality of mounting surfaces on said frame, a plurality of heating stations each comprising a base, an individual cylindrical induction coil with a central passage therethrough mounted on said base and a spring biased clamping device having a first element mounted on said base and a second element reciprocally mounted with respect to said first element and spring biased toward said first element to hold a workpiece between said element, said base of each heating station attached on one of said mounting surfaces of said frame to secure said heating station on said frame, means located at a fixed angular position about said axis for loading workpieces into the induction coil, and apparatus for rotating the frame member step-by-step whereby each heating station will be brought in succession adjacent the loading means to permit the loading means to insert a workpiece into one end of said central passage, and ejecting means for ejecting a heated workpiece from said heating station.

3,185,811
AUTOMATIC INDUCTION FURNACE CONTROL
Robert J. Kasper, Seven Hills, and Richard F. Seyfried, Parma Heights, Ohio, assignors to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 26, 1961, Ser. No. 147,774
6 Claims. (Cl. 219—10.77)

2. In an induction heating device having a power source, an inductive load connected to said power source, a plurality of power factor correcting capacitors adapted to be connected in parallel with said load, and a stepping switch for connecting one or more of said capacitors in parallel with said load to increase the capacitance across the load and correct the power factor of the device, the improvement comprising: a control circuit for automatically controlling the power factor of the power supplied from said power source, said circuit comprising a sensing means for sensing the lag in the current supplied to the load, an actuating means for actuating said stepping switch to increase the capacitance across said load as said actuating means is energized, said sensing means operably connected to said actuating means to energize said actuating means when said lag in current reaches a preset amount, said power source comprising a generator having a field winding and an output winding, said output winding connected to said load, and a disconnect means for disconnecting said field winding, said disconnect means being energized to disconnect said field winding while said actuating means actuates said stepping switch.

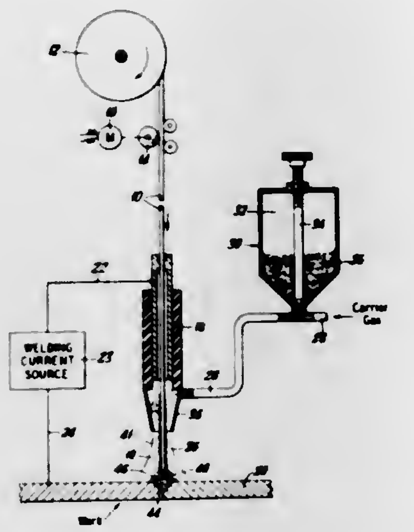


3,185,812
GAS-SHIELDED ELECTRIC ARC WELDING
Kenneth E. Richter, Morristown, and Thomas A. Craig, Linden, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Nov. 23, 1962, Ser. No. 239,765
5 Claims. (Cl. 219—74)

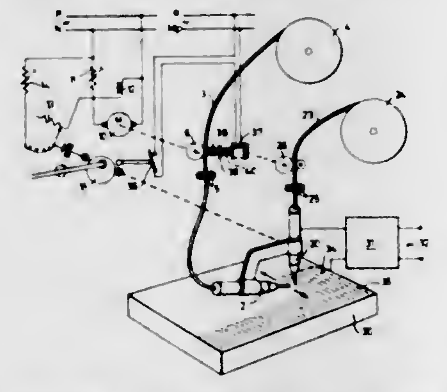
1. A process for gas-shielded arc welding of stainless steel and maraging steels which comprises establishing a welding arc between a consumable electrode and the work; shielding the arc and adjacent metal with a gas mixture consisting of from about 85 percent to 95 percent helium, about 3 percent to about 11 percent argon, and about 1 percent to about 4 percent carbon dioxide; repetitively short circuiting said consumable electrode with said work at a frequency which permits transfer of metal from the consumable electrode to the work during short circuiting only.

3,185,813
WELDING PROCESS AND COMPOSITION THEREFOR
Harry E. Kennedy, Berkeley, Calif., assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 3, 1963, Ser. No. 249,218
20 Claims. (Cl. 219—74)

19. The process of electric arc welding which comprises, establishing and maintaining an electric arc between a metal workpiece and a consumable metal electrode with current flowing through at least a portion of said electrode adjacent the arc whereby a magnetic field is established around said portion of the electrode, ensheathing said portion of said electrode with a stream of shielding gas by flowing the same along said portion of the electrode to the arc and the weld zone formed thereby, and delivering to the electrode as a component of said shielding gas stream a granular non-gas-evolving welding composition comprising substantially uniformly, in each granule mixture of magnetizable and non-magnetizable slag forming materials bonded together in finely divided solid form and in which composition said magnetizable material is in an amount sufficient to cause a substantial portion of said composition granules to separate from said shielding gas stream and cling magnetically as a coating to said electrode as a result of the magnetic field created around said electrode, characterized in that such composition granules evolve substantially no gas when fused in welding, thereby increasing the magnetic attractivity while reducing the quantity thereof required for welding in a protective gas.



3,185,814
METHOD AND APPARATUS FOR OVERLAY WELDING
Wolfgang Rössner, Gert Schaller, and Erhard Ulrich, Nurnberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Oct. 19, 1962, Ser. No. 232,346
Claims priority, application Germany, Oct. 21, 1961, S 76,366; Dec. 30, 1961, S 77,376; Mar. 3, 1962, S 78,308; Apr. 14, 1962, S 79,001; Sept. 15, 1962, S 81,482
13 Claims. (Cl. 219—76)



1. The arc welding method for depositing welding material upon base material by means of an oscillating electrode which comprises the steps of

(*a*) increasing the absolute welding rate along the oscillation amplitude to a value about one power of ten higher than the normal welding rate;

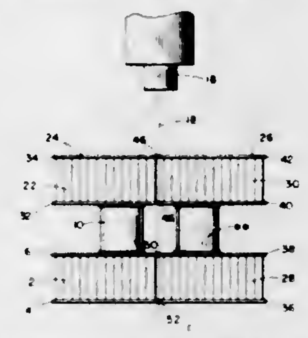
(*b*) maintaining an essentially uniform rate of welding along the oscillation amplitude;

(*c*) holding the electrode during welding at an angle of at most 90° relative to the workpiece surface and relative to the weld being formed, so that the electrode generally is inclined toward the workpiece and directed toward the weld;

(*d*) supplying to the welding location the amount of cold wire required to just fully melt that amount; and

(*e*) surrounding the arc and the welding location by protective, air-excluding medium.

3,185,815
WELDED STRUCTURE AND METHOD FOR MAKING SAME
Gerald V. Anderson, Long Beach, Calif., assignor to North American Aviation, Inc.
Filed July 26, 1962, Ser. No. 212,569
10 Claims. (Cl. 219—137)

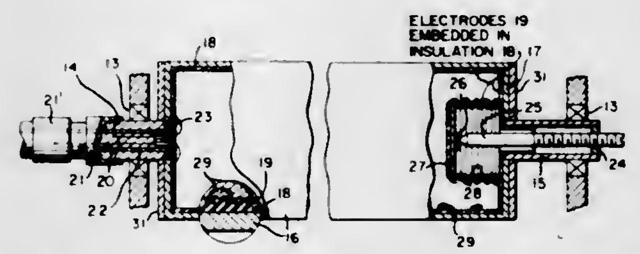


1. A method of simultaneously welding along a plurality of co-planar and spaced-apart weld seams in a plurality of surfaces comprising:

directing an electron beam through each of said surfaces, and

moving said beam relative to said surfaces along a path defining said seams.

3,185,816
TEMPERATURE CONTROLLED DEVICE
Elmer Henry Lusebrink, New Shrewsbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 30, 1963, Ser. No. 305,736
7 Claims. (Cl. 219—471)

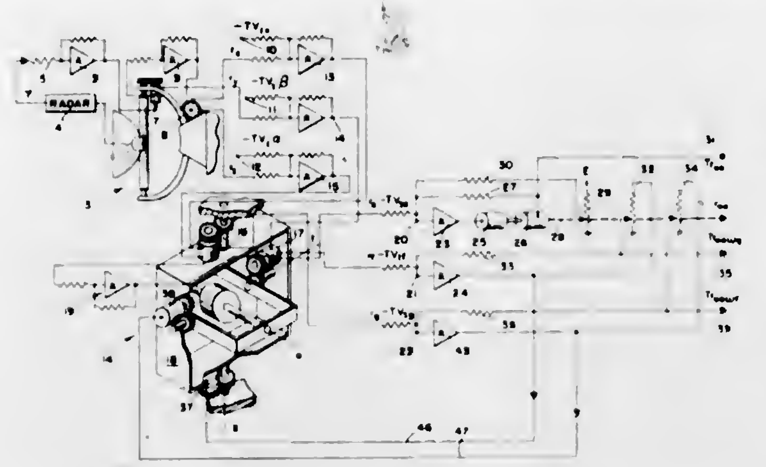


1. A temperature controlled device comprising a frame member which supports a hermetically-sealed, rotatable hollow roll having walls or low heat capacity and a lining of dielectric material on the entire inner surfaces of said walls, spaced electrodes embedded in said lining with their outer surfaces exposed to the hollow interior of the roll, said electrodes being distributed over the entire inner wall surfaces of the roll so as to permit operation of the device in any disposition or orientation of the roll, and insulated leads extending from the electrodes to conductor elements outside the roll, said roll containing small, measured amounts of an electrically conductive liquid of low vapor pressure which is liquid at 25° C. at normal pressure and exists in the form of a vapor at a temperature within the range from 50° C. to 180° C.

3,185,817
GYROSCOPE FILTERING AND COMPUTING SYSTEM
Rulon G. Shelley, Downey, Calif., assignor to North American Aviation, Inc.
Filed Sept. 30, 1954, Ser. No. 459,401
8 Claims. (Cl. 235—61.5)

1. A vector computing and filtering system comprising means producing signals representing the components of a vector expressed in a first coordinate system, a torqued

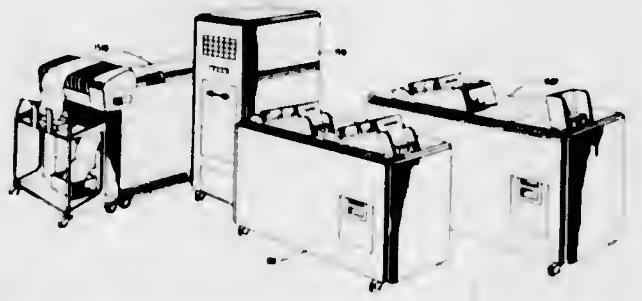
gyroscopic reference defining a second coordinate system, means for transforming said signals into signals representing said vector in said second coordinate system defined by a gyroscopic reference, means for filtering one of said transformed components of said vector, means for



modifying the remaining transformed components according to said filtered component to obtain the components of the rate of change of said transformed vector, and means for torquing said gyroscopic reference to thereby orient said second coordinate system in accordance with said modified components of said vector.

3,185,818
MACHINE FOR PREPARING ACCOUNTING INSTRUMENTS

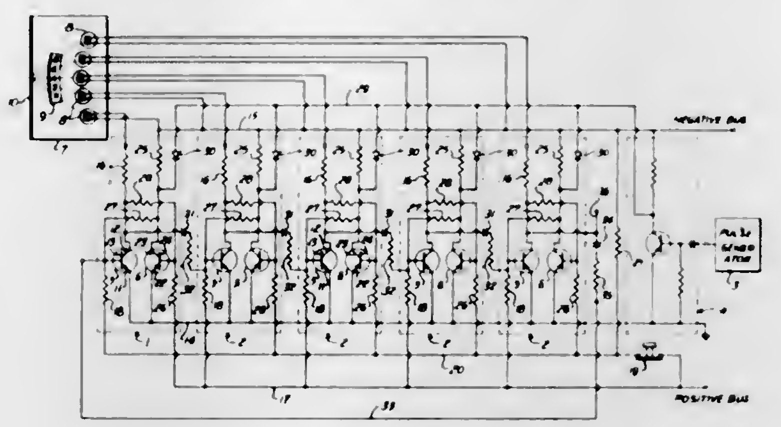
Frank J. Furman, Endicott, and Victor R. Simpson, Owego, N.Y., assignors to International Business Machines Corporation, New York, a corporation of New York
Filed Dec. 21, 1959, Ser. No. 860,809
23 Claims. (Cl. 235—61.9)



1. In a machine for preparing accounting instruments under control of records; means for statically sensing a plurality of said records; a magnetic storage device; means under control of said static sensing means for recording data from the records onto said magnetic storage device; an accumulator; means under control of said sensing means for entering amounts into said accumulator for computation; a magazine with accounting instruments; means for feeding said instruments successively out of said magazine; a printing mechanism including selectively settable devices for simultaneously printing on both sides of each accounting instrument at a single printing station through which said instruments pass successively; means under control of said static sensing means and said magnetic storage device and said accumulator for controlling the selection of the settings of said settable devices, said printing mechanism thereby being selectively set to record data derived from said records onto both sides of said accounting instruments; and a punching mechanism cooperating with each instrument successively, said punching mechanism being controlled by said sensing devices and magnetic storage device and accumulator to perforate each instrument with data related to the data printed thereon.

3,185,819
ASYMMETRICAL BINARY COUNTER

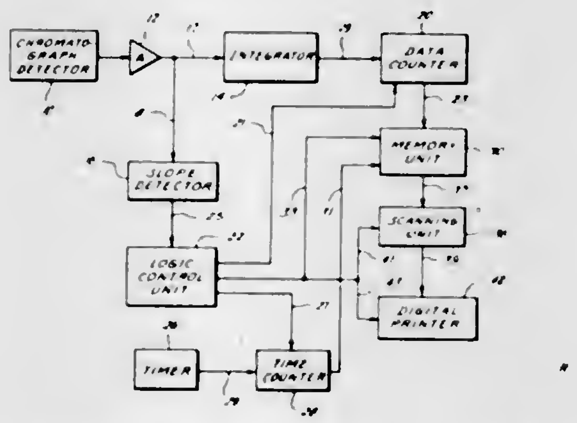
Richard A. Greiner, Madison, Wis., assignor to Gisholt Machine Company, Madison, Wis., a corporation of Wisconsin
Filed Sept. 14, 1960, Ser. No. 55,997
12 Claims. (Cl. 235—92)



11. In a transistor circuit including a series of binary stages connected to a power supply and having an individual incandescent lamp connected in each stage to establish an output, an output transistor and a control transistor in each stage, a load resistor connected in series with the control transistor, a first regenerative resistor connected between the input of the output transistor and the output of the control transistor, said first regenerative resistor being selected to establish a large current through the output transistor upon turning of the output transistor on, a second regenerative resistor connected between the input of the control transistor and the output of the output transistor, said second regenerative resistor being selected to establish a small current through the control transistor, the impedance of each lamp being insufficient to establish a binary gain allowing switching of the output transistor to conduct, and gain resistors connected one each in series with the lamps to increase the binary gain and allow switching of the output transistor to conduct.

3,185,820
INTEGRATOR AND RECORDER APPARATUS

Alvie P. Williams, Hal J. Jones, Clinton D. Frisby, and Francis J. Niven, Jr., all of Houston, Tex., assignors to Infotronics Corp., Houston, Tex., a corporation of Texas
Filed Feb. 12, 1962, Ser. No. 172,425
8 Claims. (Cl. 235—92)



1. An apparatus for determining the peak amplitudes of variable voltage or current waves and for also determining the area under such variable waves, comprising

(*a*) an integrator adapted to receive an output signal of said waves and convert them into pulses at frequencies which are proportionate to the varying amplitudes of said waves,

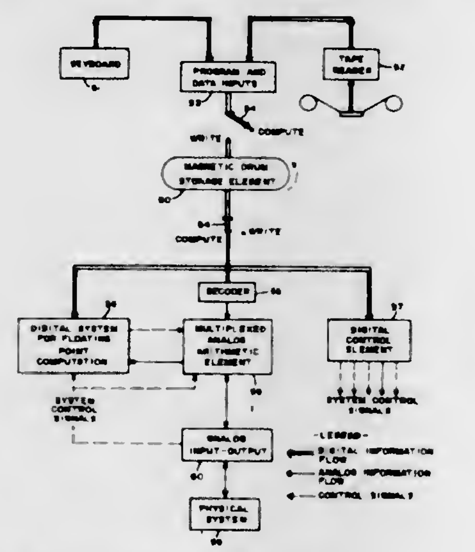
(*b*) a slope detector also adapted to receive said output signal and to determine whether the rate of change of the signal is zero, increasing or decreasing

(*c*) an electronic counter connected to said integrator for counting the pulses received therefrom, and

(*d*) a logic control unit connected to said slope detector and said counter and operable by said slope detector for controlling the operation of the counter to thereby control the counting of the frequency pulses from the integrator.

3,185,821
PULSED ANALOG COMPUTER

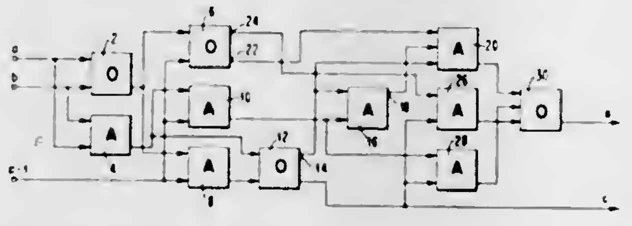
Richard C. Lee, Allston, Fred B. Cox, Cambridge, and Mark E. Connelly, Concord, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Original application May 19, 1959, Ser. No. 814,363, now Patent No. 3,037,699, dated June 5, 1962. Divided and this application Feb. 23, 1962, Ser. No. 186,567
2 Claims. (Cl. 235—150)



1. An analog computer comprising;
a main bus,
an analog multiplier computing element, connected to said main bus,
an analog divider computing element, connected to said main bus,
an analog adder computing element, connected to said main bus, and
controlling means, coupled to said computing elements, for allowing each of said computing elements to operate on different variables in the computer in time sequence, thereby allowing each of said elements to be time shared by the variables in said computer.

3,185,822
BINARY ADDER

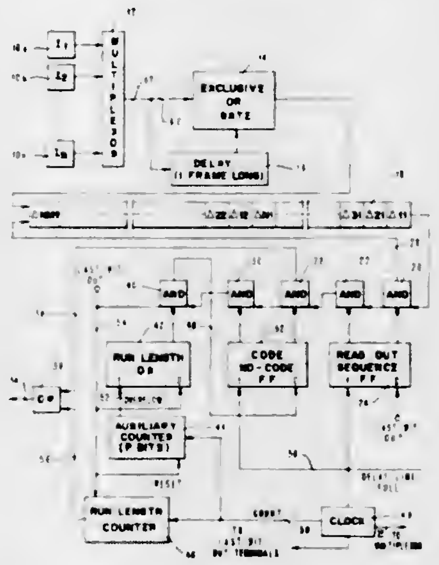
Claud M. Davis, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 1, 1961, Ser. No. 156,288
6 Claims. (Cl. 235—153)



1. In a binary full adder, the combination comprising:
means for generating a sum signal and a carry signal as a function of three binary input signals;
and means for detecting an erroneous carry signal;
said sum generating means being responsive to said detection means to provide an erroneous sum signal when an erroneous carry signal is detected.

3,185,823
DATA COMPACTOR

Frederick W. Ellersick, Jr., Rockville, Md., and Wesley R. Peavy, Washington, D.C., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 24, 1961, Ser. No. 147,223
4 Claims. (Cl. 235—154)

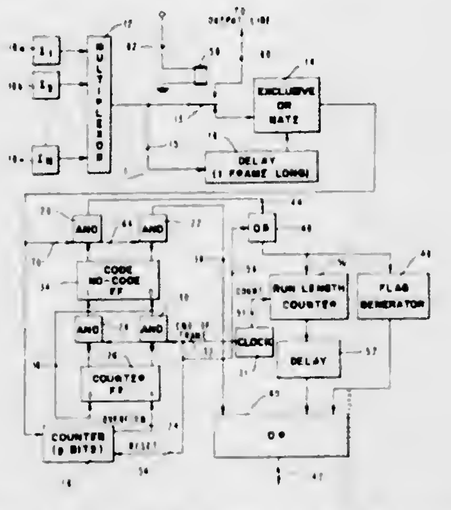


4. An adaptive circuit for reducing the number of binary bits required at the circuit output line to represent a frame of binary data from a plurality of input sources comprising in combination:
means for successively sampling the bits of said input sources, to thereby generate a series of frames of binary data, each frame comprised of a bit sample from each of said input sources;
delay means for delaying successive frames;
circuit means for comparing data bits in a given frame with the corresponding data bits in the preceding frame on a bit by bit basis and for generating an output when the bits compared disagree;
a delay line, means for applying the output from said circuit means to said delay line, the shift rate of said delay line being equal to the number of input means times the rate at which bits are applied to said circuit means;
feedback means for normally causing the output from said delay to be recirculated, the recirculation time for a given bit being one shift time less than the time required to compare the bits from a single input source in said circuit means;
a gating circuit, pulse means operating synchronously with said sampling means for issuing a pulse coincidently with the filling of said delay line, said feedback means being responsive to said pulse for switching the delay line output to said gating circuit;
a run length counter, said pulse means being operative, when said delay line is full, to apply count pulses to said run length counter, the rate at which said count pulses are applied to said counter being equal to the shift rate of said delay line;
said gating circuit including means normally responsive to an output from said delay line for causing the contents of said run length counter to be presented to the circuit output line;
counter means for counting the number of units of shift time between outputs from said delay line, the capacity of said counter means being less than the number of bits in one frame, said counter means including means for generating a control signal when the capacity of the counter means is exceeded, and means responsive to the occurrence of an output from said delay line prior to the occurrence of said

control signal for causing subsequently occurring outputs from said delay line to pass directly to said circuit output line.

3,185,824
ADAPTIVE DATA COMPACTOR

Herman Blasbalg, Baltimore, Md., and Richard Van Blerkom, Washington, D.C., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 24, 1961, Ser. No. 147,343
4 Claims. (Cl. 235—154)



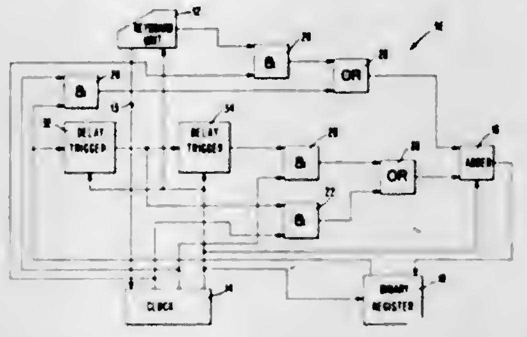
4. An adaptive circuit for reducing the amount of binary bits required at a circuit output line to represent a sequence of binary data from an input source comprising in combination:

- a comparison circuit having two inputs and an output;
- a delay circuit for delaying each binary bit sequence applied to it a predetermined amount;
- means for applying each bit of the binary data simultaneously to one input of said comparison circuit and to said delay circuit;
- means for applying the output of said delay circuit to the other input of said comparison circuit;
- variable encoder means, having an input connected to the output of said comparison circuit and an output connected to the circuit output line, for encoding the output from said comparison circuit;
- means responsive to the input source for analyzing the statistics of the input data and for generating an output in response to predetermined variations therein; and
- means responsive to the output of said analyzing means for selecting from the possible coding actions of said variable encoder, the coding action which will yield the least number of bits at the circuit output line.

3,185,825
METHOD AND APPARATUS FOR TRANSLATING DECIMAL NUMBERS TO EQUIVALENT BINARY NUMBERS

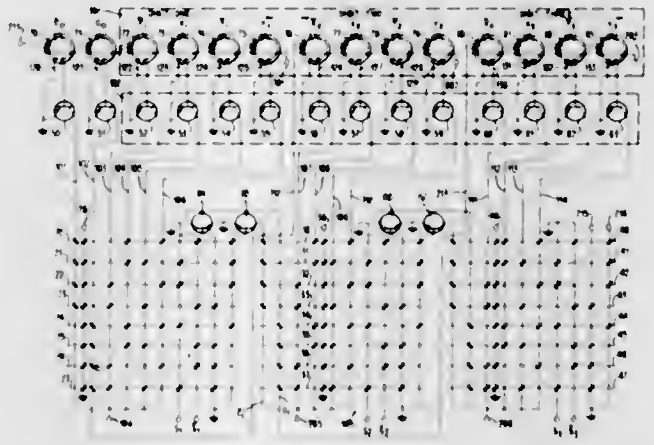
William L. McDonald and Ray H. Thurmond, Lexington, Ky., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 23, 1961, Ser. No. 112,116
5 Claims. (Cl. 235—155)

5. A circuit apparatus for translating a multi-digit decimal number to its binary equivalent, comprising a storage register having an input and an output, an adder having a pair of inputs and an output, means for translating decimal digits to their binary equivalents and for representing the binary digits of each decimal digit translation by electrical potentials in a series of equally spaced time intervals, means including first gating means for applying the series of potentials representing binary digits to one input of said adder, and means coupling the output of said adder to the input of said storage register, a pair of delay circuits each having an input and an output and being effective to interpose a delay of one of said time intervals to pulses applied to its input, means coupling the output of one of said delay circuits to the input of the other delay circuit, means coupling the output of said storage register to the input of one of said delay circuits, second and third gating means for coupling the respective outputs of said delay circuits to the other input of said adder, fourth gating means for coupling the output of said storage register to the one input of said adder and means for controlling said first gating means for entering the binary equivalents of decimal digits to said storage trigger through said adder, means during a first cycle of translation for controlling said second and fourth gating circuits for circulating a binary number stored in said storage register through said delay circuits to effectively multiply the same by four and for adding the product so produced to the number itself to produce a sum five times as great as said number, and means during a second cycle of translation for controlling said first and third gating circuits for circulating said sum number through said one delay circuit to multiply the same by two and for adding the binary equivalent of the next lower order decimal digit whereby a succession of first and second cycles of operation is effective to translate a multi-digit decimal number to its binary equivalent and store the same in said storage register.



3,185,826
CORE ADDER

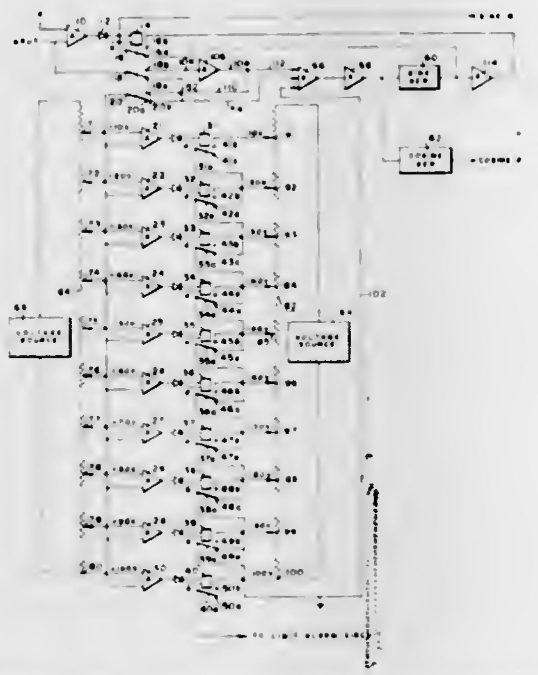
Carroll A. Andrews, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 4, 1960, Ser. No. 19,703
6 Claims. (Cl. 235—175)



1. An adder comprising in combination a multidigit magnetic core register for storing augend digits; a multidigit magnetic core register for storing addend digits; register read out means for each digital position for simultaneously reading out the respective augend and addend digits; adding means for each digital position, said adding means comprising means for producing a signal representative of the sum digit for the respective digital position and carry means for producing signals representative of either a carry or no carry out of the respective digital position, each of said adding means being responsive to the read out means for the respective digital position and to the carry means in the next lower digital position; and means in each of the respective digital positions connected to activate the register read out means in a higher order digital position, said means being responsive to the carry means in the respective digital position.

3,185,827
COMPUTER FUNCTION GENERATION

Thomas R. Herndon, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware
Filed Sept. 26, 1960, Ser. No. 58,535
6 Claims. (Cl. 235—197)

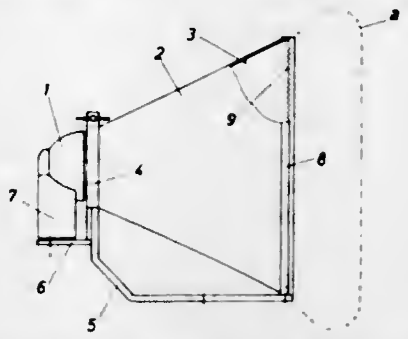


1. A system for producing signals representing functions of signals representing continuously variable angles comprising: a signal input; a differential amplifier for receiving the signals representing the continuously variable angles fed through said signal input; a relay circuit electrically connected to said signal input, said relay circuit including a plurality of relays successively responsive to predetermined algebraic signal magnitude increments, each succeeding increment representing a successive integer of a predetermined angle; a signal line leading from the relay circuit to the differential amplifier; means controlled by said plurality of relays for feeding a signal from the relay circuit to the differential amplifier, said signal fed to the differential amplifier from the relay circuit being of opposite polarity when compared to the polarity of the signals fed to the relay circuit, and increasing in incremental steps each time a signal representing a successive integer of a predetermined angle is fed to the relay circuit; and function generator means electrically connected to the differential amplifier for receiving the signals from the differential amplifier and generating a function of the received signals.

3,185,828
PHOTOGRAPHIC FLASHLIGHT ILLUMINATION

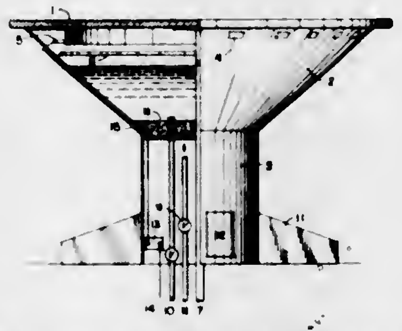
Wolfgang Ludloff, Porz-Westhoven, Germany, assignor to Gesellschaft für Multiblitz-Gerate, Dr.-Ing. D.A. Mannesmann m.b.H., Porz-Westhoven, Germany
Filed Jan. 7, 1963, Ser. No. 249,958
Claims priority, application Germany, Jan. 5, 1962, G 33,955
4 Claims. (Cl. 240—1.3)

1. In a photographic flashlight having a specular reflector and a light source arranged therein, in combination, a conical tubus diverging from the reflector and having a length several times the depth of the reflector, and a light scattering plate arranged transversely at the large end of the tubus, said plate having light scattering means comprising a plurality of pyramidal prisms distributed uniformly throughout and covering the inner surface thereof.



3,185,829
DINING ROOM TABLE

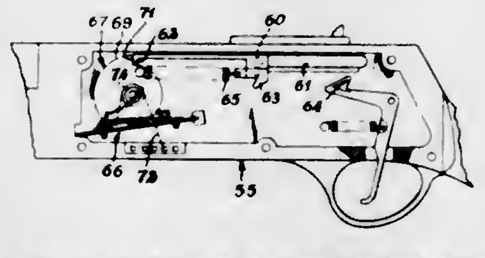
Allen E. Rau, 417 Ferry St., Tumwater, Wash.
Filed May 21, 1962, Ser. No. 198,404
1 Claim. (Cl. 240—4)



A dining table comprising a tank portion closed at its bottom end and adapted to hold a supply of liquid, the upper end of the tank portion having an annular inwardly extending horizontal flange section terminating at its inner edge in a downwardly directed annular section, the space within said downwardly directed annular section defining the open upper end of the tank portion, a transparent table top supported on the horizontal flange section and covering the open upper end of the tank portion, a liquid inlet pipe projecting into the tank and terminating at its upper end below the downwardly directed annular section in an annular, horizontally disposed pipe portion having a plurality of outlet openings for admitting liquid into the tank, means in the tank defining an overflow opening spaced above the bottom end of the tank but below the horizontally disposed pipe portion, and annular lighting means disposed interiorly of the tank outwardly and above the bottom end of said downwardly directed annular section for lighting the table top by reflection off liquid in the tank.

3,185,830
TARGET APPARATUS

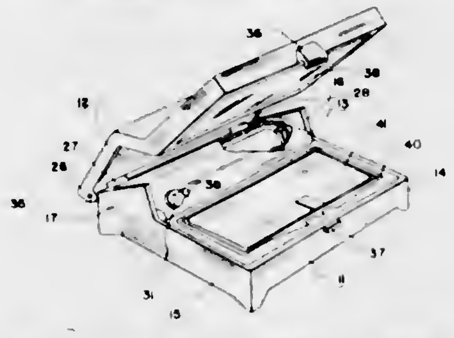
Thomas C. Mills, Wheaton, and Frank K. Miyagawa, Chicago, Ill., assignors to Manning Manufacturing Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 26, 1962, Ser. No. 246,927
2 Claims. (Cl. 240—6.41)



2. A toy gun including a casing having a barrel open at one end, an electric lamp in said barrel, a battery housing integral with said casing adapted to contain a dry cell battery, an electric circuit connecting said bat-

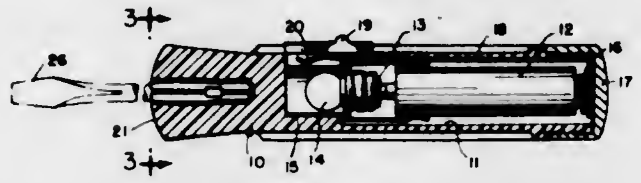
tery and said lamp, a normally open toggle switch in said circuit, an oscillatably rotatable cam element in said casing, means operably connecting the cam element to said toggle switch, a reciprocable bolt element in said casing, manually actuable trigger means on said casing engageable by said bolt element to normally hold the bolt element in a retracted position spaced from the oscillatably rotatable cam element, spring means operable when the bolt element is disengaged from the trigger means upon manipulation of said trigger means to cause the bolt element to strike the cam element and rotate said cam element in a direction to actuate the switch to light the lamp, and spring means to return the cam element to its initial position to allow said switch to open.

3,185,831
ILLUMINATED COMPACTS
Emma Jean Ray, 1111 S. Colver, and Eugene Irich, 3348 N. 60th St., both of Lincoln, Nebr.
Filed Jan. 22, 1962, Ser. No. 167,864
1 Claim. (Cl. 240—6.45)



In a compact, an open box-like base section rectangular in shape and having upwardly extending ears on the side walls thereof and having a transverse ridge portion internally of the base at the end in which the said two ears are formed, and having also two recessed spacer ears formed between the rear wall of the box and the ridge portion and having transverse notches therein, a battery received in the recessed ears and a contact strip extending beneath the battery and located in the notches and having an upturned end to selectively engage the base of the battery, a battery cover angular in cross section, the frontal portion of the angular cover having an opening therein, an illuminating lamp received therein, the end of the contact strip opposite the upturned end positioned to make contact with the button base contact of the lamp and the threaded metal shoulder of the lamp contacting the terminal of the battery, a lever at one end of the base member extending through the wall of the base member and abutting against the upturned end of the contact strip whereby pressure on the lever moves the upturned end transversely of the case to close the circuit through the battery and the lamp, a lid hinged to the rear of the box, the lid being provided with a mirror on the inside and the rectangular base having a tray to hold face powder and powder puff.

3,185,832
ILLUMINATED SCREW DRIVER
Tadayuki Nagamori, 851 Yukigaya-cho, Ota-ku, Tokyo, Japan
Filed Dec. 20, 1961, Ser. No. 160,853
1 Claim. (Cl. 240—6.46)



An illuminated screw driver, comprising a hollow tubular insulating handle formed of translucent resin plastic,

a flashlight bulb and battery housed within said handle, a cylindrical reflector about said bulb, means in said handle including a manually-operated switch for coupling said bulb and battery for illuminating said bulb,

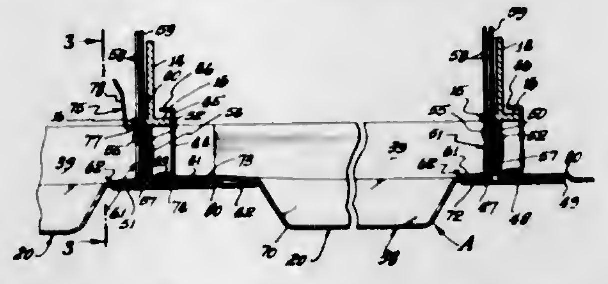
said handle having a convex forward face forming a condenser lens and a slot extending axially therefrom with laterally-extending openings,

a metal spring retainer mounted within said slot and having pairs of laterally-extending wings received in said lateral openings, and

a screw driver member having a shank provided with laterally-extending flanges held within said retainer, with each flange being confined by a pair of said wings,

said wings having reflective surfaces extending axially of said handle between said condenser lens and bulb, whereby said wings are adapted to reflect rays of light from said bulb into a condensed pattern about said screw driver member.

3,185,833
LIGHT DIFFUSER APPARATUS
Jacob H. Blitzer, Jr., Los Angeles, Calif., assignor to Integrated Ceilings & Grilleworks, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 11, 1961, Ser. No. 158,525
11 Claims. (Cl. 240—9)

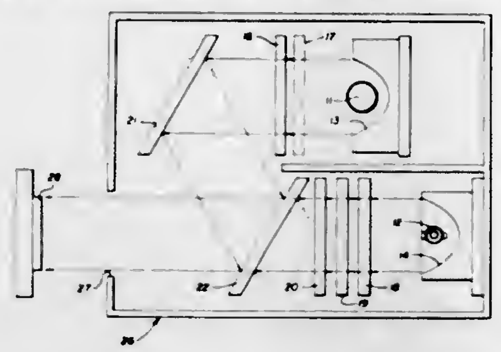


1. In light diffuser apparatus: a supporting frame adapted to be carried by and disposed below a ceiling structure, said frame having a plurality of openings; light diffusing devices covering said openings, the front of each device being in overlapping relation to the rear of an adjacent device, each of said devices having rear support means fixed thereto against movement with respect to said device and overlying and engageable with said frame to limit movement of the rear of said device downwardly from said frame, said rear support means of each device being movable with such device as a unit forwardly from overlying relation to said frame, each device also having front spring means engaging said frame to yieldably urge the front of said device upwardly against said frame and and upwardly against the rear of an adjacent device to urge said adjacent device upwardly toward said frame.

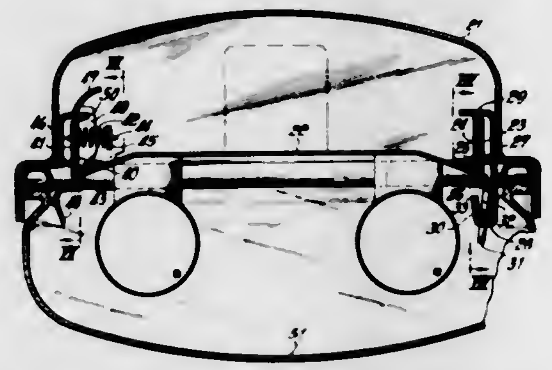
3,185,834
LIGHT SOURCE
Alfred J. Thelen and Joseph H. Apfel, Santa Rosa, Calif., assignors to Optical Coating Laboratory, Inc., Santa Rosa, Calif., a corporation of Delaware
Filed Apr. 25, 1962, Ser. No. 190,139
12 Claims. (Cl. 240—41.35)

1. In a light source for illuminating a plane test area with radiation substantially equal in intensity and spectral content to that provided by the sun at the outer edge of the earth's atmosphere, a first light source having radiation in a predetermined spectral region, a second light source having radiation in a predetermined spectral region different from the radiation in the spectral region of the first light source, a first cold mirror positioned in front of and receiving the radiation from the first light source and having means thereon for reflecting a desired portion of the radiation from the first light source and transmitting the undesired portion of the radiation from

the first light source, and a second cold mirror positioned forward of said light source transmitting a desired portion of the radiation from the second light source and reflecting the undesired portion of the radiation from the second light source, said first and second cold mirrors being positioned so that the second cold mirror receives radiation reflected from the first cold mirror and reflects the same while transmitting the desired portion of the radiation from the second light source to thereby combine the desired portions of the radiation from the first and second light sources.



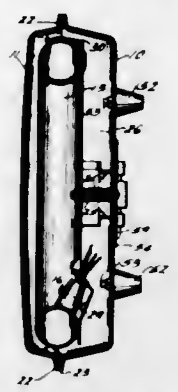
3,185,835
LAMP FOR FLUORESCENT ILLUMINATION
Josef Müller and Karl Löwenstein, Neheim-Husten, Germany, assignors to Trilux-Lenze K.G., Neheim-Husten, Germany, a firm
Filed June 29, 1962, Ser. No. 206,342
Claims priority, application Germany, July 3, 1961, T 13,493; Jan. 19, 1962, T 14,235
6 Claims. (Cl. 240—51.11)



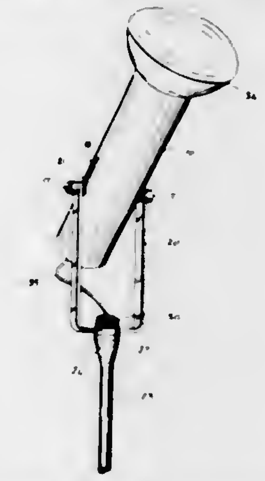
1. A lamp comprising a casing, a reflector, hinge means swingably mounting the reflector within the casing, said hinge means including a supporting element and a bearing element, said supporting element being joined to a bent portion of said reflector, said bearing element being joined to an inner surface portion of said casing, said bearing element terminating at a lower portion in a hook and at an upper portion in a bent portion directed toward the bent portion of the reflector, said supporting element having a first portion received in said hook and a second portion in underlying abutment with said upper bent portion of the bearing element whereby disengagement of the supporting and bearing elements is precluded when the reflector is secured in the casing, and catch means for securing the reflector in the casing.

3,185,836
PORTABLE ELECTRIC LAMP
Lawrence L. Flaugher, Pewaukee, and Thomas G. Bur, Elm Grove, Wis., assignors to Applied Power Industries, Inc., West Allis, Wis., a corporation of Wisconsin
Filed May 14, 1962, Ser. No. 194,562
6 Claims. (Cl. 240—51.12)

1. A portable lighting assemblage comprising, a dish-shaped base having a radiating peripheral flange, a reflector secured at its medial portion only within said base in spaced relation to the bottom wall thereof, a fluorescent lamp secured solely to said reflector, operating mechanism and wiring for said lamp housed within said base, an electric power supply cord extending from said base and connected to said lamp and said lamp operating mechanism for connection to a source of electric power, a dish-shaped cover having a radiating peripheral flange seated on said base flange, and a resilient ring member having a groove snugly receiving both said seated cover and base flanges to retain said cover and said base in assembled condition.



3,185,837
ELECTRIC LIGHT FITTINGS
Bernard Stern, London, England, assignor to Rotaflex (Great Britain) Limited, London, England, a corporation of Great Britain
Filed July 5, 1962, Ser. No. 207,602
5 Claims. (Cl. 240—52)

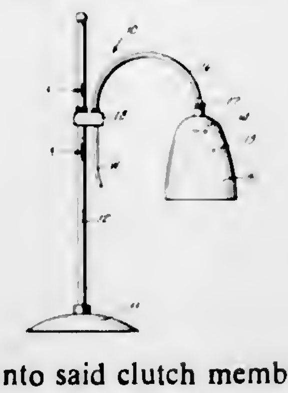


1. An electric lighting fitting comprising a main tube to enclose at least the stem portion of an electric lamp, an inner tube slidable within said main tube, a diametrical wall in said inner tube, said diametrical wall having an opening to receive an electric lamp holder, axially disposed slots in said main tube, radially outward projecting screwed studs on said inner tube, said studs extending slidably through said slots in said main tube, a U-shaped bracket embracing said main tube, said screwed studs extending through holes in the arms of said U-shaped bracket, and nuts on the outer ends of said screwed studs for locking the inner tube in an axially adjusted position along the main tube and locking the main tube in angularly adjusted position upon said U-shaped bracket.

3,185,838
FRICTION CONTROLLED SLIDABLE AND ROTATABLE MOUNTING FOR LAMPS
Jerome Warshawsky, 3285 Bertha Drive, Baldwin, N.Y.
Filed Mar. 6, 1963, Ser. No. 263,317
3 Claims. (Cl. 240—81)

1. In a lamp construction, a non-abrasive friction controlled slide mounting comprising a cylindrical vertically disposed standard, an electrical socket and bulb for said lamp, a clutch member carrying said electrical socket and bulb rotatable on and axially slidable along said standard, said clutch member having a bore through which the standard extends, one end of said bore having a reduced

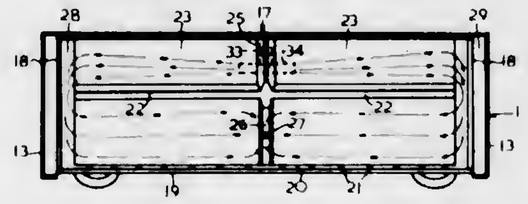
diameter forming an internal shoulder, the opposite end of said bore being internally threaded, a tubular shaped bushing of elastomeric resinous plastic having non-compressible, semi-rigid, deformable, moderately self-lubricating non-abrasive properties snugly fitting said bore, and a manually adjustable compression nut having an axial bore threaded into said clutch member bore to contact said bushing and urging the latter against said internal shoulder, said compression nut bore and said reduced diameter bore being of larger diameter than the standard and the bushing being of sufficient length to minimize torque whereby said bushing is the sole contact between the standard and clutch member.



3,185,839
APPARATUS FOR STERILISING LIQUIDS

Douglas Haigh Glasson, Turramurra, and Harold Charles Bourne, Kogarah, New South Wales, Australia, assignors to Aquatron Corporation (Australia) Pty. Limited, Marrickville, New South Wales, Australia, a company of Australia

Filed July 10, 1963, Ser. No. 294,091
Claims priority, application Australia, July 12, 1962, 19,903/62
4 Claims. (Cl. 250—43)

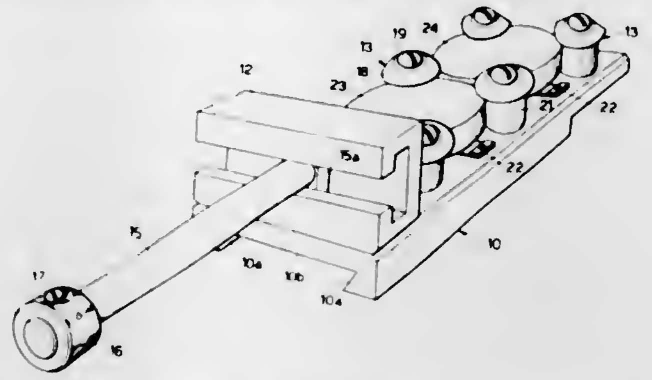


1. Apparatus for sterilizing liquids comprising a rectangular casing divided into an upper and a lower compartment by a division plate having its bottom face formed as a reflecting surface, a plurality of ultra-violet ray tubes mounted below said division plate and connected to electrical equipment in the upper compartment; a water tray mounted in said lower compartment, the bottom of said water tray being divided by a longitudinal inverted V rib into two flat bottom troughs, one said trough being divided medially by a transverse inverted V rib, said other trough having medially therein a water outlet channel tapering to an outlet pipe; the floor of said transverse ribbed trough being shaped upwardly from said transverse rib to channels formed at each end of said tray and the floor of the other trough being sloped upwardly from said end channels to said water outlet channel, a water supply pipe having outlets to the trough divided by the transverse rib on each side of said rib, and means to regulate the rate of flow of water over the high edges of the floors of the troughs.

3,185,840
MULTI-PURPOSE STAGE FOR ELECTRONIC PROBE MICROANALYSIS

Jacques Lemaitre, Via per Besozzo 25,
Cocquio S. Andrea, Varese, Italy
Filed May 9, 1963, Ser. No. 279,144
4 Claims. (Cl. 250—49.5)

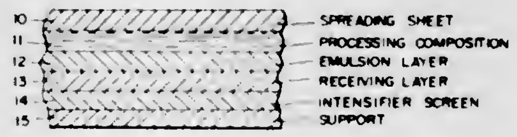
1. A multi-purpose stage for electronic probe microanalysis comprising a frame, side guides under said frame, two pluralities of vertical apertures in the frame, a first plurality of apertures lateraly located in the frame at distances between 15 and 19 mm., and adapted to receive a number of securing elements, the securing elements being positioned to receive, within their locations, test-pieces to be examined, a second plurality of apertures centrally located and adapted to receive thin section holders, the axial distances between the apertures of each plurality of apertures being substantially 7 mm., and the diameter of the first and second pluralities of apertures being substantially and respectively 2 and 6 mm., an operating slide guide, an operating rod fixed to the operating slide guide for displacement of the frame along the slide guides.



3,185,841
PHOTOGRAPHIC PRODUCT HAVING X-RAY INTENSIFIER SCREEN AS AN INTEGRAL COMPONENT OF THE IMAGE RECEIVING SHEET

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed May 29, 1961, Ser. No. 113,275
13 Claims. (Cl. 250—65)



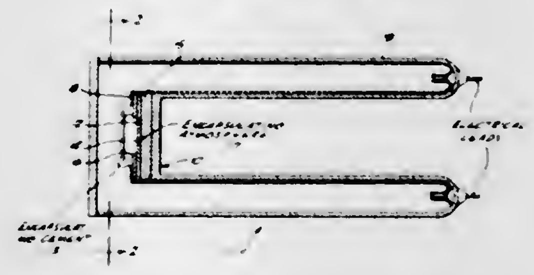
1. An integral photographic product comprising a photosensitive emulsion layer, an X-ray intensifier screen, and an image-receiving layer laminated between said emulsion layer and said intensifier screen.

10. A photographic product for receiving and viewing radiographs which comprises, in combination, a support, an image-receiving layer, and an X-ray intensifier screen between said support and said image-receiving layer.

3,185,842
METHOD OF STABILIZATION OF DEWAR PACKAGE THIN FILM DETECTORS

Thomas H. Johnson, Santa Barbara, Calif., assignor to Santa Barbara Research Center, Goleta, Calif., a corporation of California

Filed Nov. 20, 1962, Ser. No. 239,016
6 Claims. (Cl. 250—83)

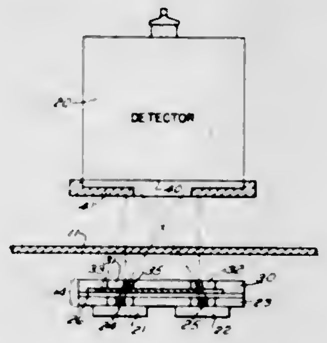


4. In an infrared detector package including a detector cell mounted upon the re-entrant portion of an evacuated Dewar flask, the improvement which consists of sealing the infrared sensitive layer of the cell in a gas-filled, gas-tight compartment on the evacuated side of the re-entrant portion of the Dewar flask, said compartment consisting of a substrate upon which the infrared sensitive layer of the cell is supported, an encapsulating window in spaced relationship with the infrared sensitive layer and encapsulating cement sealing the window to the substrate to form the gas-tight compartment.

3,185,843
COLLIMATOR SYSTEM FOR BETA RADIATION THICKNESS GAUGE SENSOR

Carl Woodrow Hansen, Wayland, Mass., assignor, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware

Filed June 20, 1961, Ser. No. 118,414
7 Claims. (Cl. 250—83.3)

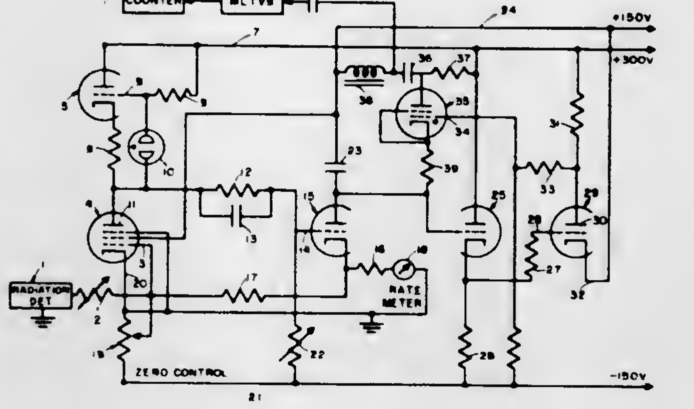


1. A radioactive thickness gauge sensor comprising, a radiation detector having a generally planar detection surface; first and second radioactive sources disposed in spaced apart relation on a plane vertically displaced from and parallel with said detection surface, each of said radioactive sources being formed of a material which emits beta radiation; collimating means adapted to form a defined beam of said beta radiation directed toward said detection surface and to confine said directed radiation to a predetermined area on said detection surface, said predetermined area having at least a portion of its periphery lying within the periphery of said detection surface; an absorber plate disposed adjacent to said detection surface and adapted to cover said surface, said absorber plate being formed of a material which absorbs substantially all of said beta radiation impingent upon it, said absorber plate having a substantially rectangular opening therein adapted to transmit said beta radiations to said detector surface, said rectangular opening being substantially centered at the center of said detection surface, said opening being such that said predetermined area overlaps the edges of said opening along one axis only of said rectangle.

3,185,844
RADIATION DOSIMETER CIRCUIT

Leon Bess, 1706 Jonquil Terrace, Apt. 3G, Chicago, Ill.
Filed Sept. 19, 1961, Ser. No. 139,238
10 Claims. (Cl. 250—83.3)

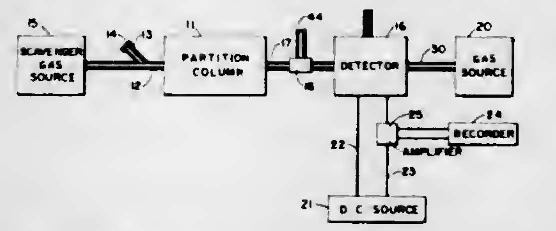
1. In a dosimeter circuit for providing an indication of the radiation level within a given environment, the combination of a radiation detector disposed within said environment and developing a unidirectional signal voltage the amplitude of which is proportional to the intensity of the illuminating radiation, a first storage capacitor, means for charging said first storage capacitor from a first to a second level at a rate determined by the amplitude of said signal voltage, a second storage capacitor, means for charging said second storage capacitor to a given level, means operative when the charge across said first storage capacitor reaches said second level for transferring part of the charge of said second storage capacitor to said first storage capacitor so as to reduce the charge thereacross to said first level whereby the voltage across said first storage capacitor has a saw-tooth appearance, and means for indicating the number of saw-tooth wave forms appearing across said first storage capacitor during a given period whereby a measure of the radiation level is obtained.



3,185,845
METHOD OF AND APPARATUS FOR ANALYZING CHEMICAL COMPOUNDS

Lawrence D. Lively and George M. Rouayheb, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Feb. 15, 1961, Ser. No. 89,464
16 Claims. (Cl. 250—83.6)

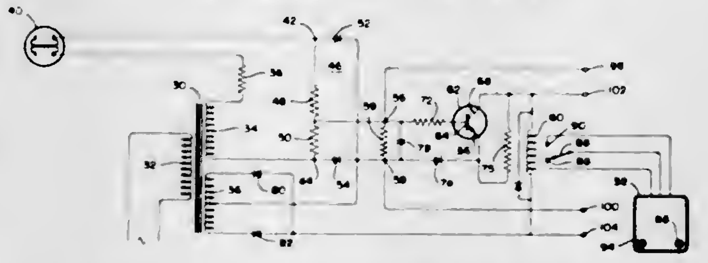


1. The method for determining the relative amounts of the constituents of a chemical sample which comprises the steps of resolving said sample into its various constituents, serially passing said constituents in a vaporized state and in a carrier gas through an electrostatic field, subjecting said gas and constituents to above about 300 millicuries of radiation while said gas and constituents are in said electrostatic field to ionize at least a portion of said constituents, producing a curve representing the levels of ionization in said electrostatic field as each of the constituents pass therethrough and measuring the magnitude of the area under the curve produced by each constiituent relative to the total magnitude of the area under the curves produced by all of said constituents.

3,185,846
ULTRA-VIOLET RADIATION FLAME MONITOR

Lyman F. Gilbert, Lyndhurst, and John R. McWhorter, Cleveland, Ohio, assignors to Bailey Meter Company, a corporation of Delaware

Filed May 16, 1961, Ser. No. 110,414
16 Claims. (Cl. 250—83.6)

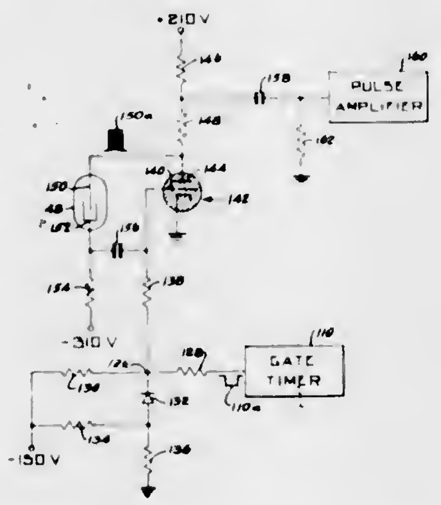


2. A device for monitoring the flame in a combustion chamber produced by the burning of a fuel comprising, a casing adapted to be mounted on a wall of the com-

bustion chamber, a tubular extension extending from said casing into the combustion chamber and having a transparent window closing and sealing the end thereof, a radiation responsive detector mounted in the end of said extension adjacent said window to receive radiation from the flame, said detector being sensitive to invisible ultraviolet radiation emitted by the combustion flame and operative to become electrically conductive in response to radiation in a predetermined wave-length range, an electric circuit positioned within said casing responsive to conduction or non-conduction of said detector to manifest the existence or non-existence of a flame within the combustion chamber, a tubular member inclosing said extension and having an open end terminating adjacent the end of said extension, and means for supplying air under pressure to said tubular member to produce an air flow through the space between said extension and said tubular member and out of the open end of said member to provide a continuous air purge of the end of said extension to prevent the collection of dust and products of combustion on said window.

3,185,847
QUENCH CIRCUIT FOR RADIATION COUNTER TUBE

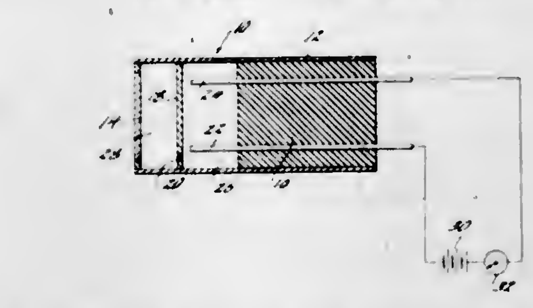
Eric W. Leaver and George R. Mounce, Willowdale, Ontario, Canada, assignors to Electronic Associates Limited, a Canadian company
Original application Apr. 18, 1957, Ser. No. 653,570, now Patent No. 3,038,606, dated June 12, 1962. Divided and this application Feb. 6, 1962, Ser. No. 181,494
2 Claims. (Cl. 250—83.6)



1. In combination with a radiation counter tube having an anode and a cathode, a quench circuit therefor comprising an electron tube having an anode, a cathode and a grid, a source of operating potential having at least one high potential terminal and at least one low potential terminal, means including resistor connecting the cathode of said counter tube to one of said low potential terminals, means connecting the anode of said counter tube to one of said high potential terminals and the anode of said electron tube to one of said high potential terminals, said last-named means including a resistance providing a path for the anode currents of both of said tubes, means connecting the cathode of said electron tube to one of said low potential terminals, so as to bias said electron tube for plate current saturation whereby the anode to cathode potential of said counter tube is normally below its striking potential, means coupling said counter tube cathode to said grid and means for applying a negative gate pulse through said coupling means simultaneously to the grid of said electron tube and the cathode of said counter tube thereby to cut off the plate current of said electron tube and enabling generation of pulses by said counter tube momentarily and immediately quenching each of said pulses.

3,185,848
INFRARED RADIATION DETECTOR CELL UTILIZING IONIZED GAS

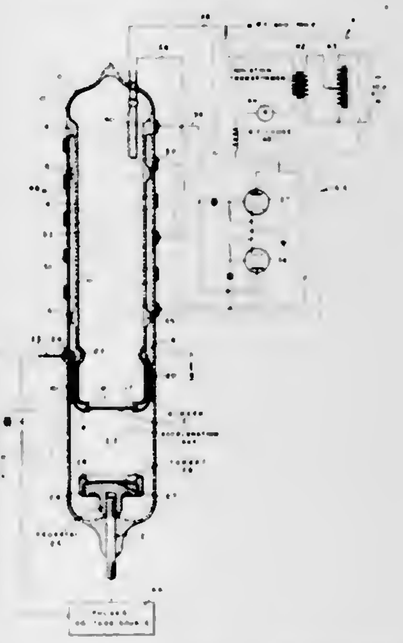
Laurence R. Alexander, Armonk, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed June 12, 1962, Ser. No. 201,898
10 Claims. (Cl. 250—83.6)



1. An infrared detector cell comprising a sealed container, an infrared window defining at least a portion of one of the walls of said container, a partition in said container defining a pair of gas chambers, said partition having an aperture therein, an ionized gas in said chambers and a pair of electrodes positioned to receive the flow of electrons through the gas in said second chamber.

3,185,849
PULSED NEUTRON SOURCE UTILIZING AN ACCELERATOR TUBE

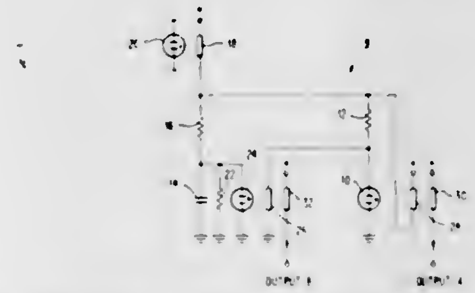
Wilmer A. Hoyer and Robert C. Rumble, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Nov. 30, 1962, Ser. No. 241,444
4 Claims. (Cl. 250—84.5)



1. An accelerator tube for use in generating neutrons comprising:
a closed tube;
an open-ended cylinder sealed inside said tube;
an extraction electrode arranged adjacent one end of said cylinder and including a mesh screen dividing said tube into an ionizing chamber and an accelerating chamber;
a high-frequency coil surrounding the ionizing chamber portion of said tube;
ion plasma contained within said ionizing chamber;
a target arranged in the accelerating chamber portion of said tube and spaced from said screen;
electrical oscillator means connected to said coil adapted to supply continuous high-frequency current to said coil to ionize said plasma;
a pulsed voltage source connected to said target and to said extraction electrode adapted to apply high-voltage pulses to said target and extraction voltage pulses to said extraction electrode; and
means connected between said extraction electrode and said pulsed voltage source adapted to change the phase relation between the extraction pulses and high voltage pulses to delay ion extraction until the accelerating voltage has reached the threshold value required for the ion target reaction.

3,185,850
PHOTOSENSITIVE TWO STATE CIRCUITS AND SYSTEMS

René H. Terlet, Ossining, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 29, 1961, Ser. No. 120,702
10 Claims. (Cl. 250—209)

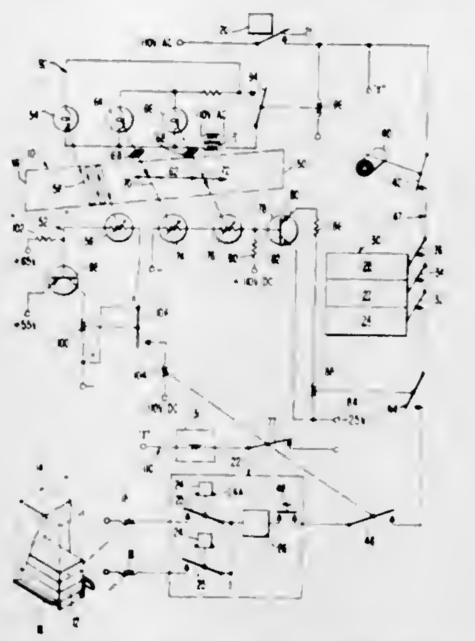


8. A switching system for providing a sequence of timed pulses comprising a pair of two state circuits, each of said two state circuits including a first voltage responsive light source, a capacitor connected to be energized through a resistive circuit path concurrently with the energization of said first light source, a second voltage responsive light source connected in parallel with said capacitor for illumination when a sufficient charge voltage is achieved on said capacitor, a first photoresponsive device positioned to receive illumination from said second light source and connected in parallel with said first light source, said first photoresponsive device being operable when illuminated to extinguish said first light source, a second photo-responsive device responsive to illumination from said first light source of each two-state circuit and connected in parallel with said capacitor of the other two-state circuit to provide, when illuminated, a discharge path for said last-recited capacitor, and an output photoresponsive device responsive to illumination from one of said first light sources for providing said sequence of timed pulses.

3,185,851
PHOTOCELL CONTROLLED ANTI-EJECTION CIRCUIT FOR AN ARTICLE HANDLING APPARATUS

Armand D'Emilio, Holmes, Pa., assignor to Brewer Pharmacal Engineering Corporation, Upper Darby, Pa., a corporation of Pennsylvania
Filed June 29, 1962, Ser. No. 206,471
10 Claims. (Cl. 250—223)

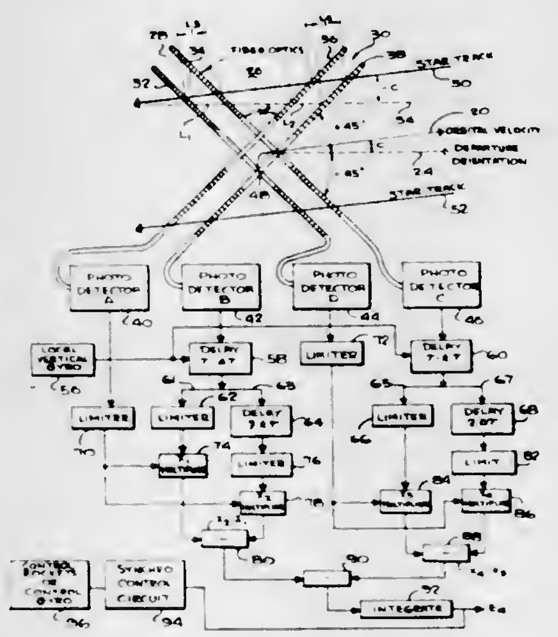
1. In electrically operative article ejecting and handling apparatus operable to eject an article into and to pass it through a chute from one point to another:
(A) an electrical control circuit for connecting said apparatus to a source of electricity;
(B) a first sensing means positioned between said points in the chute to sense an article as it passes along its path of movement through the chute and responsive thereto to actuate associated apparatus; and
(C) a second sensing means positioned between said one point and said first sensing means to sense material placed in the path of movement of said article to prevent the article from passing through said first sensing means during a cycle of operation, and operable in the presence of such material in the path of movement to render the article handling apparatus inoperable until the material is removed;



(D) said second sensing means having means to delay its operation for a period of time normally to permit the said article to pass thereby without rendering said apparatus inoperable.

3,185,852
SATELLITE SENSOR AND CONTROL SYSTEM

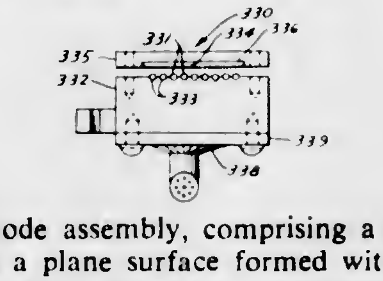
Bernard L. Lewis, Winter Park, Fla., assignor to Radiation, Incorporated, Melbourne, Fla., a corporation of Florida
Filed Sept. 15, 1961, Ser. No. 138,475
1 Claim. (Cl. 250—227)



Apparatus for sensing and controlling the rotation of a space vehicle about a local vertical comprising first and second pairs of parallel optical lines, each line consisting of a plurality of discrete optical fiber ends, there being an angular displacement between said pairs, photodetector means connected to each optical line for producing pulses responsive to an image thereon, a time delay channel connected to said photodetector means of one optical line of each pair, a direct channel connected to said photodetector means of the other optical line of each pair, a sub-channel having further time delay means therein connected to each time delay channel, means to multiply the output of said direct channel of each pair by the outputs of the time delay channel and of the sub-channel respectively of that same pair, means to compare the multiplied output of said time delay channel with the multiplied output of said channel of each pair, and means to subtract the compared output of said time delay channel and subchannel of one pair from the compared output of said time delay channel and subchannel of said other pair.

3,185,853
ASSEMBLY OF SMALL PHOTOSENSITIVE FRAGILE ELEMENTS

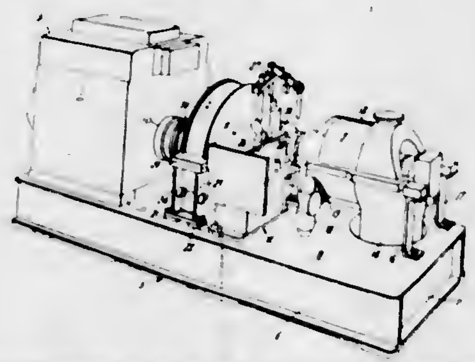
Theodore A. Jackson, Detroit, Mich., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 25, 1961, Ser. No. 140,501
2 Claims. (Cl. 250—239)



1. A photodiode assembly, comprising a first support member having a plane surface formed with a series of parallel spaced half cylindrical depressions extending across the width thereof, said first support member being rigid, a cylindrical photodiode having substantially the same diameter as said depressions and positioned in each of said depressions so that half of each photodiode extends above said plane surface, the light sensitive ends of said photodiodes being aligned along one edge of said plane surface and the opposite ends thereof extending beyond the opposite edge of said plane surface, a second rigid support member having a plane surface in engagement with said plane surface of said first support member so that said rigid support members establish a predetermined rigid reference position for said photodiodes, said plane surface of said second support member being formed with a notch longer than the distance between the end depressions, a block of material filling said notch, said block of material being resilient and soft relative to said rigid members, and said first and second support members being secured together so that the extending portions of said photodiodes are pressed into said resilient material and held in said depressions by the deformation of said resilient material.

3,185,854
TURBINE-GENERATOR

Herbert N. Hoffman, Lunenburg, Mass., assignor to General Electric Company, a corporation of New York
Filed Aug. 14, 1964, Ser. No. 389,746
8 Claims. (Cl. 290—52)



1. In a turbine-generator set of the type having a turbine with a casing and a rotor shaft, a reduction gear with a casing and high speed and low speed shafts, and a generator with a casing and rotor shaft, all mounted on a single base subject to deflection, the improvement comprising:

first means supporting said reduction gear casing on the base and constructed to be substantially flexible in an axial direction but substantially rigid in other directions,

second means supporting said turbine on the base and including an axially rigid pedestal supporting the end of the turbine nearest the reduction gear,

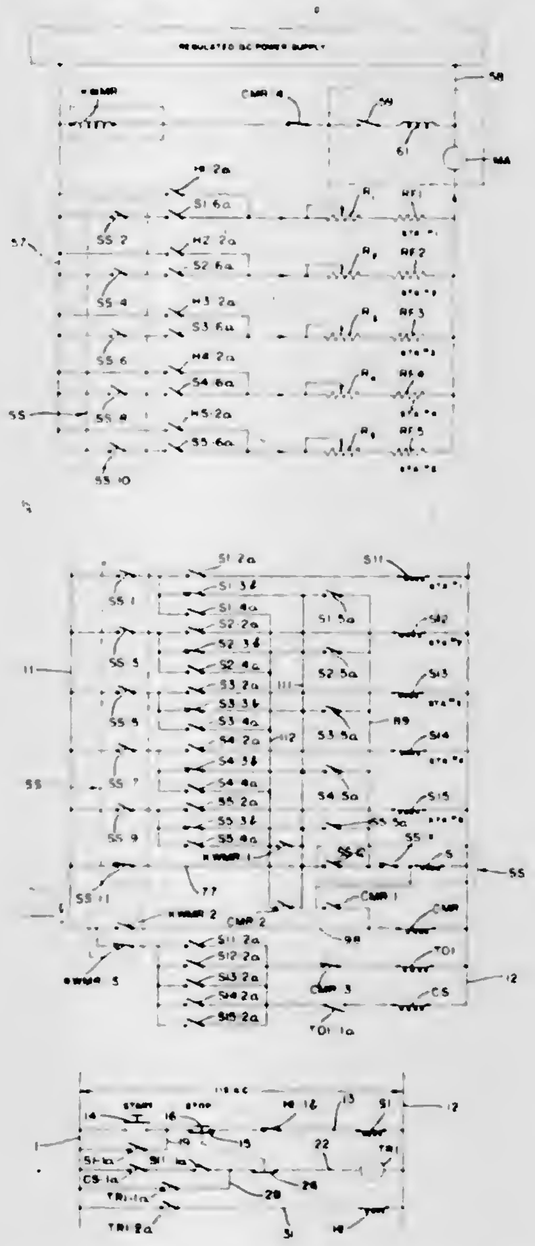
laterally flexible spacer means connecting the gear casing and the turbine casing adjacent said rigid support pedestal so as to maintain the axial position of the gear casing relative to the turbine casing by causing the first support means to flex axially,

a thrust bearing for said high speed gear shaft constructed to fix the high speed gear shaft axially relative to the gear casing, and

a first thrust-transmitting flexible coupling connecting the turbine shaft with the high speed gear shaft so as to locate the turbine shaft axially relative to the high speed gear shaft.

3,185,855
CONTROL CIRCUIT FOR MULTI-STATION SEQUENCING AND LOAD POWER SEARCHING SYSTEM

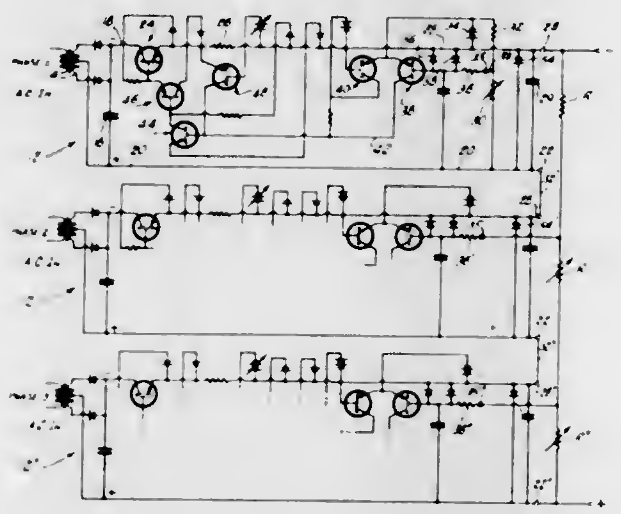
Kenneth R. Kelly, Fox Chapel, and Edward R. Fitzgerald, Pittsburgh, Pa., assignors to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 16, 1961, Ser. No. 96,222
4 Claims. (Cl. 307—35)



1. A control circuit for an electrical system comprising a plurality of stations adapted to individually demand power from a first common power source of limited capacity whereby the instantaneous total demand of the stations will not exceed the capacity of the power source, said control circuit comprising a second power source, a resistor for each station adjusted to a value proportional to the power required at said station, a contact making ammeter, said resistors being connected in parallel to each other and in series with said ammeter across said second power source, means for causing a current to flow through a station resistor and the ammeter when power is demanded at said station whereby said current will be proportional to the power required at the station, the ammeter being adapted to measure in sum the currents flowing through the station resistors at any instant, said ammeter contact being operable by excessive current flow through the ammeter to prevent the application of additional power from said first power source, a stepping switch movable to each station adapted to selectively complete circuits at a station in accordance with the current flow through the ammeter accepting and rejecting the application of power at said station, and means responsive to power demands at a station for automatically moving the stepping switch to said station.

3,185,856
INTERCONNECTION OF POWER SUPPLY UNITS

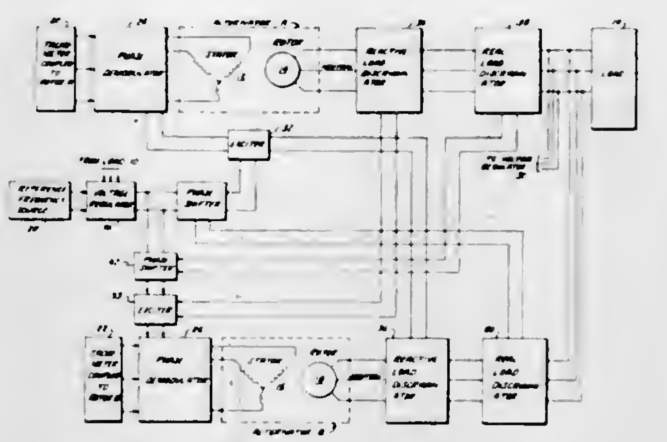
Charles William Harrison, Millington, N.J., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Feb. 28, 1961, Ser. No. 92,392
6 Claims. (Cl. 307—55)



1. A power supply circuit comprising a pair of output terminals, a first power supply unit having an input adapted to be energized with unregulated direct voltage and having a pair of output terminals, a main regulating voltage dropping element for the first power supply unit connected in series relation between said input and output of the first power supply unit, a resistor connected to the output of said first power supply unit, an amplifier for the first power supply unit having an input and having an output connected to control the conductivity of said element in the first power supply unit, said amplifier having its input connected to said resistor to receive a signal related to the output of said first power supply unit for controlling said regulating element in proper phase relationship to maintain the output voltage of the first unit constant, and a second unit substantially like the first, means connecting the outputs of said units in only one of series and parallel circuit to the output terminals of said power supply circuit, means including a sensing resistor connected between one of said output terminals of the power supply circuit and a point in said power supply circuit of different potential than the potential on said one output terminal when one of said units is delivering power to said output terminals for providing a voltage drop across the sensing resistor which is proportional to the power delivered by said first power supply unit, and means connecting the input of the amplifier of said second unit to the sensing resistor, whereby said units deliver proportional amounts of the total power supplied at the output terminals of said power supply circuit.

3,185,857
CONTROL APPARATUS FOR THE PARALLEL OPERATION OF ALTERNATORS

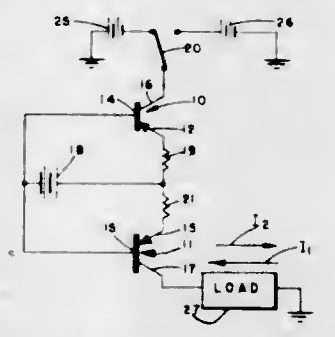
Leopold J. Johnson, Santa Ana, Calif., assignor to Lear Siegler, Inc., a corporation of Delaware
Filed Feb. 1, 1960, Ser. No. 5,845
14 Claims. (Cl. 307—57)



3. Apparatus for controlling the load on alternators operating in parallel including at least a pair of non-salient pole alternators having polyphase field windings, the alternators having their output circuits connected in parallel circuit relationship, means connected to the polyphase field windings of each of the alternators for energizing same to provide a rotatable field, means for providing a reference signal of preselected frequency, means coupled to the alternators for providing a signal proportional to the speed of rotation of each of the alternators, demodulating means coupled between the means for producing the reference signal and the speed signal and the field energizing means for each of the alternators for providing control signals to the fields thereof to control the direction and the speed of rotation of the magnetic field, means connected to the output circuits of said alternators for sensing a load supplied by each alternator and providing an output signal representative thereof, and correction means connected to be responsive to a load output signal for one alternator and coupled to the demodulating means for controlling the demodulated output signals in accordance with the sensed load on each alternator to bring the load on each alternator in balance.

3,185,858
BI-DIRECTIONAL CONSTANT CURRENT DEVICE

Orris H. Flatten, Fullerton, Calif., assignor to North American Aviation, Inc.
Filed July 8, 1959, Ser. No. 825,775
19 Claims. (Cl. 307—88.5)



17. An electrical circuit comprising:

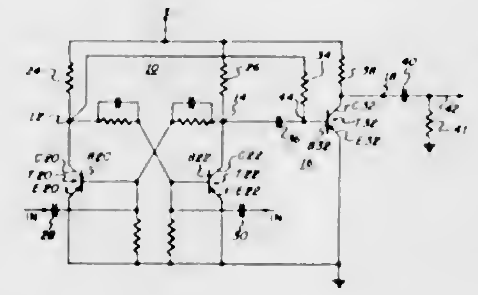
a source of electrical current,

a first current controlling means connected in series with said source and providing control of current, flowing therethrough in a first direction, to a substantially constant non-zero magnitude, and having substantially no opposition to the flow of current therethrough in a second direction opposite to said first direction; and a second current controlling means, connected in series with said first means, providing control of current flowing therethrough in said second direction to a substantially constant non-zero magnitude, and having substantially no opposition to the flow of current therethrough in said first direction.

3,185,859
DELAYED-RESPONSE SIGNAL TRANSFER CIRCUIT

David B. Borkum, Valley Stream, N.Y., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Feb. 15, 1960, Ser. No. 8,826
14 Claims. (Cl. 307—88.5)

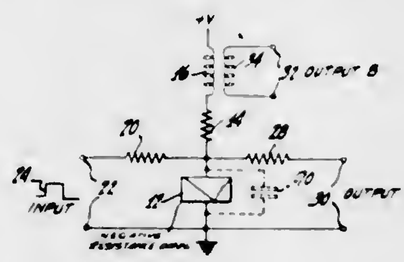


1. A delayed-response signal generator comprising a source having a pair of reversible output terminals for respectively supplying first and second voltage levels in one mode of operation and the reverse thereof in a second mode of operation, an electron device having an output circuit and an input control electrode, means for causing said electron device to produce in its output circuit a step voltage in a delayed response to change from one to the other of said modes of operation, said means comprising a resistor having one end connected to one of said output terminals, a capacitor having one side connected to the other of said output terminals, a junction connecting the other end of the resistor to the other side of the capacitor, and a connection from said junction to said control electrode.

3,185,860
BISTABLE DEVICE

Hanoch Ur, Camden, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Apr. 20, 1960, Ser. No. 23,531
12 Claims. (Cl. 307—88.5)

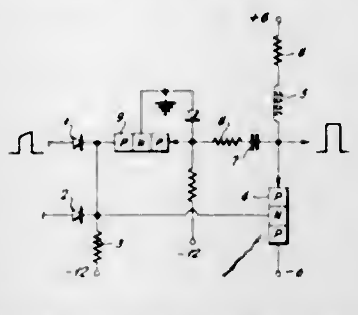


1. The combination comprising a two terminal device having capacitance between the terminals and having a volt-ampere characteristic with a negative resistance portion; a transformer primary winding and a voltage source serially connected with said device in a direct current path: means for biasing said device for operation as a bistable element; pulse input means connected across said device for selectively supplying input pulses of a single one polarity having a duration less than the full switching time of said device from one stable state to the other; a pair of output terminals; and a secondary winding of the transformer connected between said output terminals.

3,185,861
REGENERATIVE AMPLIFIER

Genung L. Clapper, Vestal, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 29, 1960, Ser. No. 79,308
2 Claims. (Cl. 307—88.5)

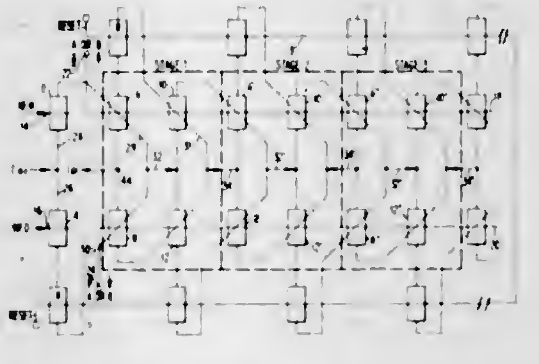


1. A regenerative amplifier for producing a reshaped pulse output in response to the occurrence of a pulse input comprising diode OR circuitry, said pulse inputs being connected to the inputs to said OR circuitry, an emitter follower output transistor, the collector of said emitter follower being connected to a source of potential of a first polarity, an inductance, a load resistance and a source of potential of a second polarity, said three last named elements being connected in series, the emitter of said emitter follower being connected to said inductance, the output of said OR circuitry being connected to the base of said emitter follower, a coupling capacitor, the emitter of said emitter follower being connected to one side of said coupling capacitor, a feedback transistor, the base of said feedback transistor being grounded, the other side of said coupling capacitor being connected to the emitter of said feedback transistor, the collector of said feedback transistor being connected to the base of said emitter follower transistor.

3,185,862
CRYOTRON SHIFT REGISTER

James P. Beesley, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed May 29, 1961, Ser. No. 113,408
3 Claims. (Cl. 307—88.5)

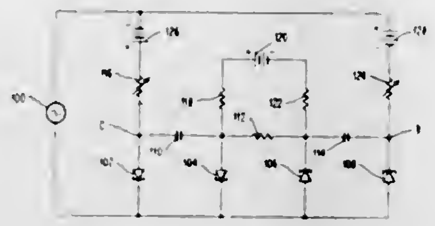


1. A shift register comprising a plurality of stages each of which includes four cryotrons, control currents of a first and a second cryotron of a given stage serving as the gate current respectively of a third and a fourth cryotron of the previous stage and control currents of the third and fourth cryotrons of said previous stage serving as the gate current respectively of the first and second cryotrons of said previous stage, a first shift line connected to all the odd cryotrons serving as control lines thereto, a second shift line connected to all the even cryotrons and serving as control lines thereto, means for simultaneously applying bipolar current pulses to said shift lines, wherein current pulses of one polarity are additive to said control currents of the first and second cryotrons but subtractive from said control currents of the third and fourth cryotrons.

3,185,863
WAVEFORM LEVEL GATING CIRCUIT EMPLOYING A TWO TUNNEL-DIODE FLIP-FLOP CONTROLLED BY ANOTHER TWO TUNNEL-DIODE FLIP-FLOP

Brian Elliott Sear, Oreland, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 2, 1961, Ser. No. 142,219
8 Claims. (Cl. 307—88.5)

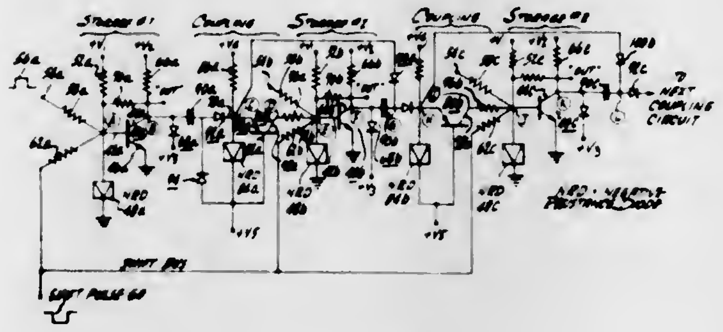


1. A circuit comprising; a plurality of tunnel diodes each of which has an anode and a cathode, each of said tunnel diodes being characterized by On and Off conditions which correspond to large and small current conducting conditions respectively, first and second tunnel diodes having the anodes thereof connected together, third and fourth tunnel diodes having the cathodes thereof connected together and to the anodes of said first and second tunnel diodes, separate bias means coupled to each of said tunnel diodes and operative to bias each tunnel diode for bi-staple operation, one of said second and third tunnel diodes being normally biased to the Off condition by the associated bias means, means for supplying input signals to said circuit via said first and fourth tunnel diodes, and means coupling said tunnel diodes together whereby the input signal may be selectively passed from tunnel diode to tunnel diode.

3,185,864
TUNNEL DIODE SHIFT REGISTER WITH AUTOMATIC RESET

Juan J. Amodei, Levittown, Pa., and Joseph R. Burns, Trenton, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed Apr. 27, 1962, Ser. No. 190,756
15 Claims. (Cl. 307—88.5)

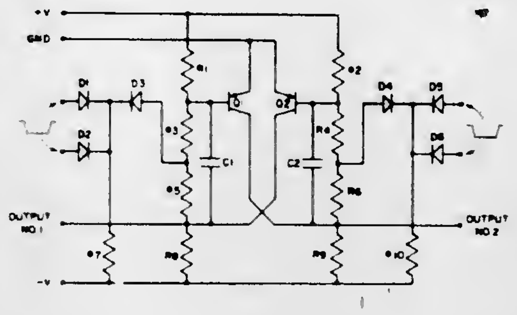


1. The combination comprising:
a plurality of bistable circuits connected in cascade and each having an input and an output;
direct current conducting means connecting the outputs of alternate ones of said circuits to the inputs of the next succeeding other ones of said circuits;
first unidirectional conducting means connecting the outputs of said other circuits to the inputs of the next succeeding ones of said alternate circuits, said first unidirectional conducting means being poled to pass output signals of a first polarity;
and second unidirectional conducting means connecting the outputs of said other circuits to the inputs of the next preceding ones of said alternate circuits, said second unidirectional conducting means being poled to pass output signals of a second polarity opposite to said first polarity.

3,185,865
TRANSISTORIZED MULTIVIBRATOR WITH BUILT-IN TIME DELAY

Bert W. Larey, Ventura, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 26, 1963, Ser. No. 268,162
4 Claims. (Cl. 307—88.5)
(Granted under Title 35, U.S. Code (1952), sec. 266)



1. In a bistable multivibrator having two steady-state conditions, said multivibrator changing from one such condition to the other upon reception of a negative trigger pulse thereby, the combination of:

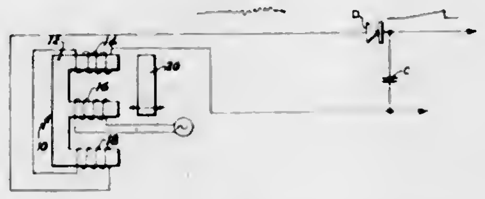
(*a*) a pair of PNP transistors each having base, collector and emitter electrodes, the emitter electrode of each transistor being grounded,
(*b*) a pair of voltage dividers respectively associated with said pair of transistors,
(*c*) a source of positive unvarying unidirectional potential connected to corresponding ends of said pair of voltage dividers,
(*d*) a source of negative unvarying unidirectional potential connected to the remaining end of each voltage divider,
(*e*) a connection between the output collector electrode of one transistor and a first point on the voltage divider associated with the other transistor, such point constituting one output terminal of the multivibrator,
(*f*) a connection between the output collector electrode of said other transistor and a first point on the voltage divider associated with said one transistor, such point constituting the second output terminal of the multivibrator,
(*g*) means for connecting the base electrode of each transistor to a point on its associated voltage divider which is normally at positive potential so that such transistor is non-conductive,
(*h*) a D.-C. connection for applying a negative trigger pulse to a point on the voltage divider associated with said one transistor which lies between the point to which such transistor base electrode is connected and the point which constitutes the output of said other transistor, thereby placing a negative voltage on the base electrode of said one transistor and causing the latter to become conductive to consequently place the multivibrator in one of its steady-state conditions,
(*i*) means including a unidirectional circuit element for applying a negative trigger pulse to a point on the voltage divider associated with said other transistor which lies between the point to which such transistor base electrode is connected and the point which constitutes the output of said one transistor, thereby placing a negative voltage on the base electrode of said other transistor and causing the latter to become conductive to consequently place the multivibrator in the other of its steady-state conditions, and
(*j*) a pair of capacitors, one capacitor being connected between the base electrode of each transistor and the point on the voltage divider associated therewith

to which the collector electrode of the other transistor is connected.

3,185,866

MAGNETIC FUNCTION GENERATOR

George F. Harpell, Concord, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 8, 1962, Ser. No. 172,035
8 Claims. (Cl. 307—107)
(Granted under Title 35, U.S. Code (1952), sec. 266)

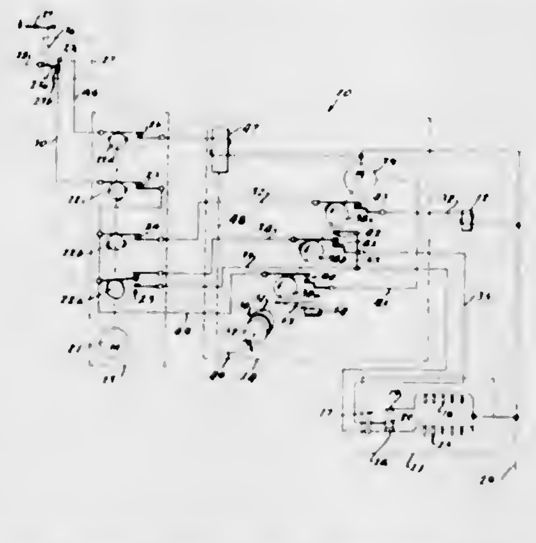


1. A magnetic function generator comprising a transformer including an E-type core having a primary winding on the center leg, a function winding on one of the outer legs and a bucking winding on the other of said outer legs, said function winding and said bucking winding being connected in series opposition, permeable means overlying only said center leg and said outer leg with said function winding, and means for varying the distance of said permeable means above said center and said outer leg.

3,185,867

TIME DELAY CIRCUIT AND MECHANISM

Joe Bowman, Greentown, Ind., assignor to Kingston Products Corporation, Kokomo, Ind., a corporation of Indiana
Filed Apr. 10, 1961, Ser. No. 101,933
12 Claims. (Cl. 307—141.4)

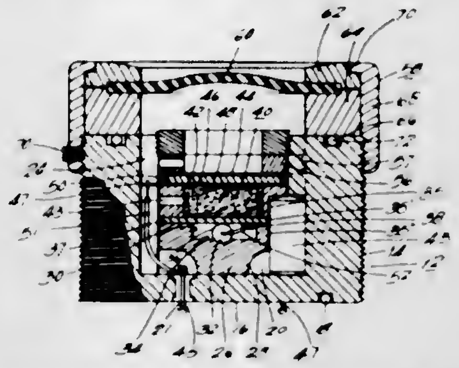


12. An interval timer for controlling a device having two load circuits, said timer comprising in combination: a timer motor; cam-means driven by said motor; a plurality of switch circuits under the operative control of said cam-means, said cam-means having a predetermined start position; one of said switch circuits being normally closed for energizing a first of the load circuits, and being open at said start position; a second of said switch circuits being normally open, and being closed at said start position for energizing a second of the load circuits; a third of said switch circuits being normally open, and being closed at said start position for energizing said timer motor; and a reset mechanism responsive to each occurrence of a predetermined condition and connected to said cam-means for driving said cam-means in a direction opposite to said timer motor to said start position for initiating a predetermined switching cycle defined by said cam-means.

3,185,868

ACOUSTIC ABSORBER PAD

Forrest E. Coyle, Glen Burnie, and Frank P. Hodges, Baltimore, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 28, 1962, Ser. No. 198,382
3 Claims. (Cl. 310—8.2)

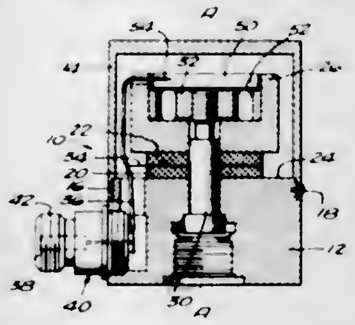


1. In an electromechanical transducer, a disk-shaped piezoelectric element, and a fibrous sound absorbing pad, said sound absorbing pad comprising a batt of fibers of polyester of ethylene glycol and terephthalic acid with curled copper filings distributed therethrough.

3,185,869

TRANSDUCER

Bernard A. Shoor, Pasadena, Calif., assignor to Endevco Corporation, Pasadena, Calif., a corporation of California
Filed Dec. 1, 1961, Ser. No. 156,312
9 Claims. (Cl. 310—8.4)



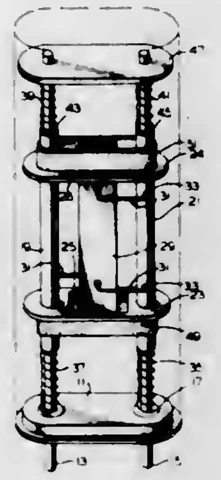
1. In a transducer:
a piezoelectric element mounted within a case,
a capacitor in the case,
the piezoelectric element and the capacitor being electrically connected to terminals adapted for connection to an external circuit,
the temperature coefficient of the capacitance of the capacitor being low compared with the temperature coefficient of the voltage sensitivity of the piezoelectric element whereby the transfer ratio of the transducer varies with temperature less than if the capacitor were omitted.

3,185,870

CRYSTAL CAGE ASSEMBLY

William G. Stoddard and Andre J. De Glas, Carlisle, Pa., assignors to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Oct. 26, 1961, Ser. No. 147,843
9 Claims. (Cl. 310—9.4)

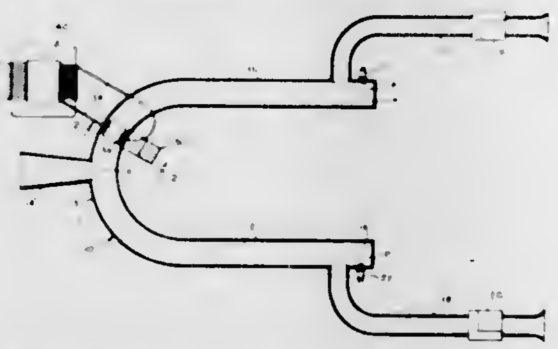
1. A crystal cage assembly comprising a base, a plurality of substantially parallel support members extending upwardly from said base, a rigid plate secured to the free ends of said support members and extending therebetween, a sleeve on each of said support members between said base and said plate, said sleeves being slidable on said support members, a coil spring on each of said support members between said sleeves and said plate, said springs being secured at one end thereof to said plate and at the other end thereof to said sleeves, first and second substantially parallel rigid spacers mounted between said sleeves at opposite ends thereof, each of said spacers having centrally located apertures therethrough, a piezoelectric crystal element extending through said apertures, a plurality of wires each attached at their base ends to said sleeves and connected at their other ends to respective ones of spaced points on said crystal element to support it in cantilever fashion, a plurality of flexible continuous dielectric belts substantially adjacent to each of said spacers and extending between said sleeves, each of said belts encompassing a portion of said crystal element.



3,185,871

ALTERNATING CURRENT MAGNETOHYDRODYNAMIC GENERATOR

Albert G. Bodine, Jr., Sherman Oaks, Calif.
(7877 Woodley Ave., Van Nuys, Calif.)
Filed July 20, 1961, Ser. No. 125,532
7 Claims. (Cl. 310—11)



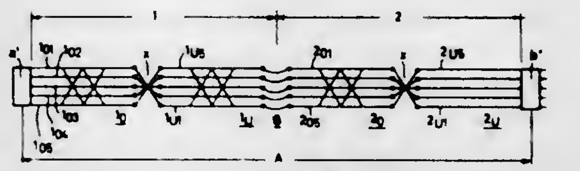
1. In a magnetohydrodynamic generator, the combination of: a conduit containing a column of gas, means for setting up and maintaining in said column a longitudinal sonic standing wave, with at least one velocity antinode therealong, means for ionizing at least that portion of the gas in the region of said velocity antinode, means for setting up a magnetic field transversely across said gas column in said conduit in the region of said velocity antinode, whereby an alternating electric current flows transversely across said gas column at right angles to said magnetic field, and collector means and an output circuit for said alternating current.

3,185,872

LIQUID-COOLED WINDING FOR ELECTRIC MACHINES

Herbert Weissheimer and Arnold Abolins, both of Mulheim (Ruhr), Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed July 20, 1961, Ser. No. 125,549
Claims priority, application Germany, July 30, 1960, S 69,703
7 Claims. (Cl. 310—54)

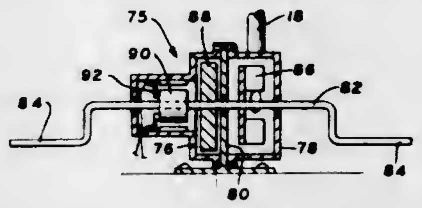
6. In combination with a slotted iron body of an electrodynamic machine, a liquid-cooled winding passing through the slots of said body and being composed of internally transposed component conductors which are tubular and form a coolant conduit, said winding comprising a plurality of electrically sequential winding portions each including a plurality of winding turns, a number of connectors, each interconnecting two of said winding portions at an end turn of said winding, each of said connectors forming an electric terminal connection of said winding, and duct means communicating with the interior of said interconnected winding portions for passing liquid coolant therethrough, said tubular conductors in each of said winding portions being electrically insulated from each other and being electrically counter-connected with each other for substantially compensating the additional voltages due to the stray magnetic fields at the axial ends of the machine.



3,185,873

GENERATOR AND VENTILATION MEANS

Morton M. Rosenfeld, Mount Vernon, N.Y.
(271 Madison Ave., New York, N.Y.)
Filed Oct. 19, 1961, Ser. No. 146,225
2 Claims. (Cl. 310—66)



1. Apparatus comprising a pair of cup-shaped housings having their opened ends juxtaposed to one another with a separator plate disposed therebetween, coupling means coupling the open ends of said cup-shaped housing with said separator plate therebetween in a closed unitary structure, a rotatably mounted shaft extending through aligned holes in said housings and separator plate, fan blades secured to said shaft within one of said housings, a generator disposed within the other of said housings, said generator including a rotor fixedly secured to said shaft, a fly wheel secured to said shaft within said closed structure, and manual means for rotating said shaft, said manual means including extensions of said shaft extending outside of both of said cup-shaped housings, said shaft extensions having handles thereon for enabling persons on opposite sides of said structure to rotate said shaft.

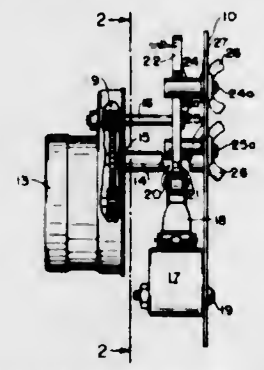
3,185,874

ADJUSTABLE CYCLE PERCENTAGE TIMER

Charles A. Hunt, Wolcott, and Lewis E. Schoonmaker, Marion, Conn., assignors to The Sessions Clock Company, Forestville, Conn., a corporation of Connecticut
Filed Mar. 7, 1963, Ser. No. 263,491
8 Claims. (Cl. 310—69)

1. An adjustable, repetitive, cycle-actuating mechanism, comprising
(*a*) an electric motor having bi-directional starting and running characteristics,
(*b*) a power shaft operatively associated with said motor,
(*c*) output gear means operatively associated with said power shaft,
(*d*) an actuable mechanism having two conditions,
(*e*) a motor reversing arm rotatable in a predetermined circular path of travel toward, through and beyond a predetermined critical transfer position in said path

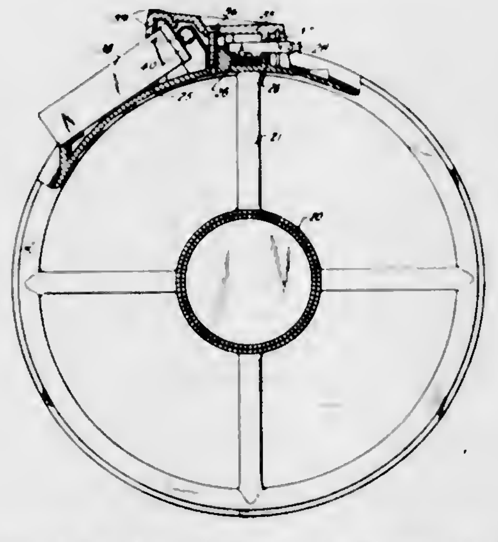
at which position said actuable mechanism is transferred to one of its conditions,
(*f*) said reversing arm being fixedly mounted to said power shaft for rotation therewith in said predetermined circular path of travel,
(*g*) an actuating cam fixedly mounted to said power shaft and driven thereby to periodically initiate actuating movement in said actuable mechanism,
(*h*) said cam having a pair of contiguous active portions cooperating with said actuable mechanism to maintain said mechanism in one of its two conditions,
(*i*) said cam having a transfer point between said two active positions at which point said cam cooperates with said actuable mechanism to transfer said mechanism to one of its two conditions,



(*j*) a pair of stop surfaces disposed in said circular path of travel and limiting the rotation of said reversing arm in the direction in which said arm is being driven by said motor, said stop surfaces being mutually, adjustably positionable,
(*k*) each of said stop surfaces being adapted to cooperate with said reversing arm upon impact therewith to stall said motor and to effect a force reversal of said motor,
(*l*) whereby said reversing arm is cyclically oscillated between said stop surfaces in cycles having predetermined frequencies which are a function of the speed of said output shaft and the mutual displacement of said stop surfaces, and,
(*m*) said cam actuates said actuable mechanism for predetermined durations which are functions of the speed of said output shaft and the displacement of each of said stop surfaces from said critical position.

3,185,875
MOTOR TERMINAL ASSEMBLY

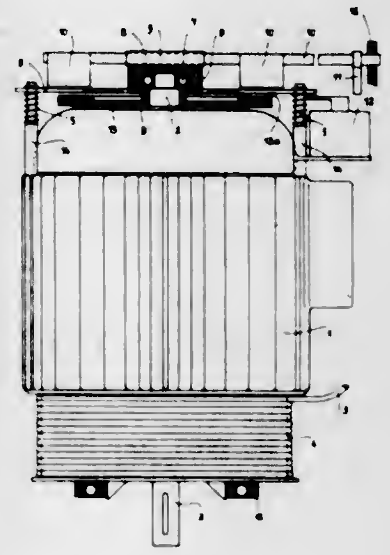
Dwight E. Harris, Woodstock, N.Y., assignor to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York
Filed Jan. 14, 1963, Ser. No. 251,203
4 Claims. (Cl. 310—71)



1. In combination a motor housing, a support extending therefrom, a plurality of terminals carried by said support, a shiftable terminal of said plurality slidably movable with respect thereto, a capacitor receiving well, a contact member of said capacitor receiving well, a first position of said shiftable terminal in contact with said contact member and a second position of said shiftable terminal spaced from said contact member.

3,185,876
APPARATUS FOR BRAKING OR SWITCHING OFF ELECTRIC MOTORS

Horst Broziat, 44 Radolfzeller Strasse, Allensbach (Bodensee), Germany
Filed Nov. 1, 1961, Ser. No. 149,237
Claims priority, application Germany, Nov. 8, 1960, B 60,019
2 Claims. (Cl. 310—77)

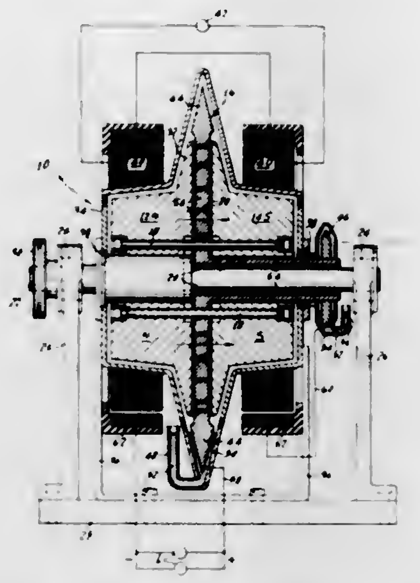


1. Apparatus for braking an electric motor in which both the motor housing and drive shaft rotate freely relative to each other, comprising a brake disc mounted on one end of said drive shaft, a thrust disc, spring mounted on said housing and means for selectively pressing said thrust disc into contact with said brake disc, said means for selectively pressing said thrust disc into contact with said brake disc comprising a plurality of cams mounted on a cam shaft having an operating handle, said cam shaft being mounted adjacent said brake disc in a bearing collar mounted on said drive shaft.

3,185,877
DIRECT CURRENT HOMOPOLAR GENERATOR

Anthony Sears, New York, N.Y.
(88—00 Shore Front Parkway, Rockaway Beach, N.Y.)
Filed Jan. 14, 1963, Ser. No. 251,398
10 Claims. (Cl. 310—115)

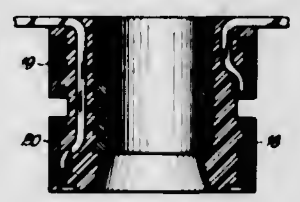
8. A homopolar generator comprising a rotatable rotor, including radially disposed inductor means and means on opposite axial sides of said inductor means energizable to produce a magnetic field in a direction axially through said inductor means, a housing in which said rotor rotates, means to rotate said rotor, means on said housing to energize said energizable means, said inductor means including an electrically conductive element wound with a plurality of turns in a spiral form, said inductor means having a plurality of circularly shaped contact surfaces, one of said contact surfaces being on said inductor means at a greater outward radial distance than another of said contact surfaces, an electrical contact means in said housing engaging each one of said contact surfaces, and means



connecting each of said contact means to complete a circuit therebetween.

3,185,878
SLIP-RING ASSEMBLY

Ludwig Reisnecker, Rommelshausen, near Waiblingen, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Dec. 19, 1962, Ser. No. 245,849
Claims priority, application Germany, Dec. 22, 1961, B 65,337
10 Claims. (Cl. 310—232)



3. A slip-ring assembly comprising, in combination, an electrically non-conductive body; an electrically conductive tubular sleeve carried by said body at the exterior thereof, said sleeve being formed with openings into which portions of said body respectively extend for anchoring said sleeve to said body; at least one electrical conductor embedded in said body and fixed to said sleeve so as to be electrically connected thereto; and a pair of slip rings surrounding and fixed to said sleeve so as to be electrically connected therewith, said slip rings being made of corrosion-resistant material and having exposed, outer running surfaces.

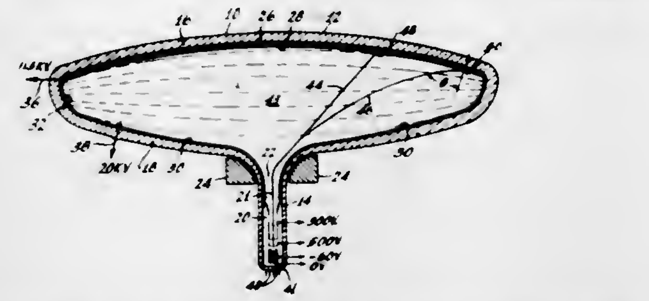
ERRATUM

For Class 313—65 see:
Patent No. 3,185,891

3,185,879
CATHODE RAY TUBE HAVING DEFLECTION ENHANCEMENT MEANS

John Evans, Jr., Lancaster, Pa., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 17, 1960, Ser. No. 15,705
12 Claims. (Cl. 313—78)

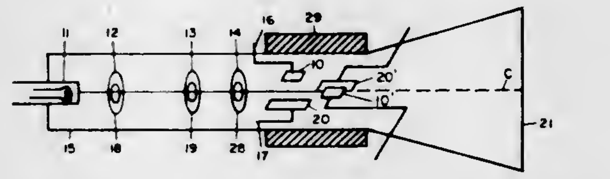
1. A cathode ray tube comprising an envelope, a phosphor screen within said envelope, an electron gun including a cathode disposed in said envelope and adapted to project an electron beam through a primary deflection zone and upon said phosphor screen, and means including a conductive electrode surface supported on the inside of said envelope and producing an overall electron accelerating field of one polarity between said cathode and said zone and an overall electron decelerating field of opposite polarity between said zone and said screen, said



conductive electrode surface being spaced from said phosphor screen by an insulative region of substantially uniform width on said envelope.

3,185,880
ELECTRON STREAM DEFLECTION APPARATUS

Jacob Goldberg, Burlington, Mass., assignor to Edgerton, Germeshausen & Grier, Inc., Boston, Mass., a corporation of Massachusetts
Filed June 30, 1961, Ser. No. 121,231
7 Claims. (Cl. 313—78)



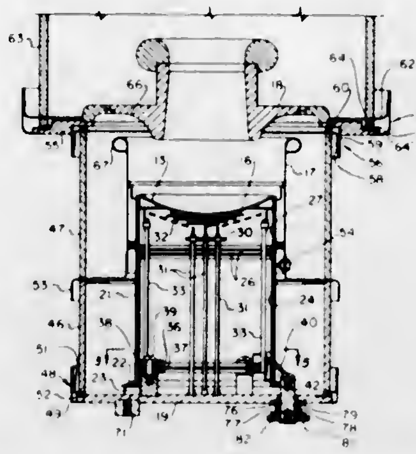
7. In a cathode-ray tube of the type having an electron gun for emitting a source of electrons, electron-stream forming, controlling and accelerating electrodes, a focusing system and a display screen, an electron-stream deflection system comprising:
a first electrostatic deflection plate having a substantially planar surface positioned adjacent to the electron stream;
a second electrostatic deflection plate having a substantially planar surface positioned adjacent to the electron stream on the side opposite to the first plate with its surface facing the surface of the first plate, said second plate extending a greater distance along the path of the electron stream in both directions than does the first plate, the greater distance being at least one and one-half times the spacing between the two plates measured at the ends of the first plate nearer each extension, and said second plate being also disposed a greater distance from the path of the electron stream than the first plate, measured when the electron stream is not subject to any deflection forces, to provide substantially symmetrical scan of the electron stream;
means for connecting the first plate to a source of deflecting signals; and
means for connecting the second plate to a reference potential, said reference potential being substantially equal to the potential of the closest of the said electrodes to said second plate.

3,185,881
CATHODE MOUNT AND LEAD-IN STRUCTURE FOR ELECTRON TUBES

Anthony S. Wolfson, Sunnyvale, Calif., assignor to Eitel-McCullough, Inc., San Carlos, Calif., a corporation of California
Continuation of application Ser. No. 760,205, Sept. 10, 1958. This application July 27, 1961, Ser. No. 127,401
17 Claims. (Cl. 313—82)

1. An electron gun comprising a flat metallic base plate, a cathode assembly including an indirectly heated cathode dish supported on said base plate, a pair of ceramic cylinders carried by said base plate, a focusing electrode sup-

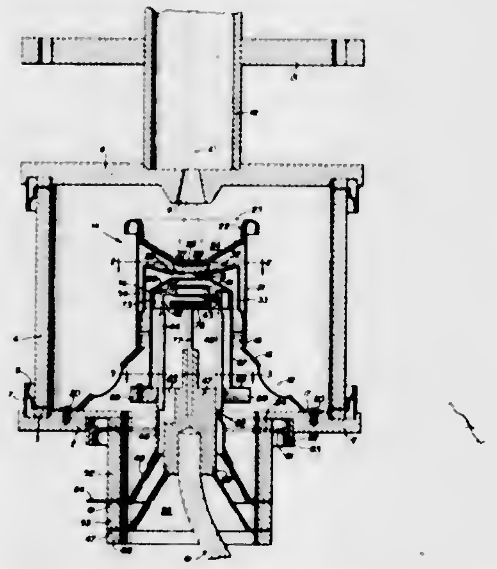
ported on said base plate and surrounding said cathode, an anode carried by the upper end of the upper cylinder, and a plurality of heater sections positioned adjacent said dish, each of said sections being sector-shaped to uniformly radiate the entire dish.



3,185,882

ELECTRON DISCHARGE DEVICE INCLUDING CATHODE-FOCUS ELECTRODE ASSEMBLIES THEREFOR

Vernon W. Dryden, Palo Alto, and Bertram G. James, San Mateo, Calif., assignors to Eitel-McCullough, Inc., San Carlos, Calif., a corporation of California
Filed Jan. 16, 1961, Ser. No. 82,869
6 Claims. (Cl. 313—83)



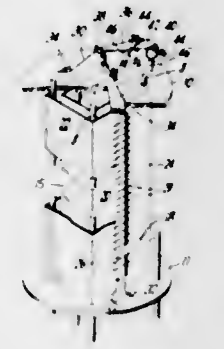
1. In an electron discharge device, a cathode-focus electrode assembly comprising a hollow focus electrode shell, a tubular support shell surrounding at least a portion of the focus electrode shell and integral therewith, a cathode button within the tubular support shell spaced from one end of the focus electrode shell, and means including a plurality of radially extending spokes interposed between the underside of the cathode button and the tubular support shell to support the button in operative relation to the focus electrode.

2. In an electron discharge device having a base, a pair of electron beam forming electrode assemblies arranged in tandem on the base, each electrode assembly including a mechanically and electrically interconnected cathode and focus electrode cooperating to form an electron beam having a predetermined minimum cross-sectional area at a predetermined distance from the cathode, the predetermined minimum cross-sectional area of the beam projected by one of said electrode assemblies being substantially equal to the emissive area of the cathode of the other electrode assembly and the distance between the cathodes of the two assemblies being substantially equal to the predetermined distance of the minimum cross-sectional area of one of the beams from the associated cathode.

3,185,883

NON-MICROPHONIC TUBE CONSTRUCTION

Lester Feinstein, Bellerose, N.Y., assignor, by mesne assignments, to Sylvania Electric Products Inc., Wilmington, Del., a corporation of Delaware
Filed July 1, 1952, Ser. No. 296,631
8 Claims. (Cl. 313—269)

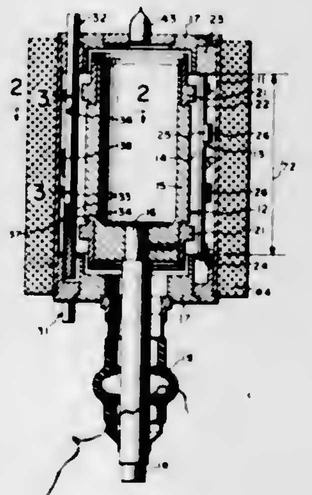


1. An electron discharge device having an envelope enclosing a rectangular anode, a rectangular grid of conductive sheet material surrounding said anode and having a number of electron apertures, and an electron source adjacent to said apertures, said grid including an elongated tubular portion of high strength to weight ratio.

3,185,884

MICROWAVE COUPLING APPARATUS FOR SLOW WAVE CIRCUITS AND TUBES USING SAME

Andrew S. Wilczek, Old Bridge, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey
Filed Aug. 1, 1962, Ser. No. 214,114
8 Claims. (Cl. 315—3.5)

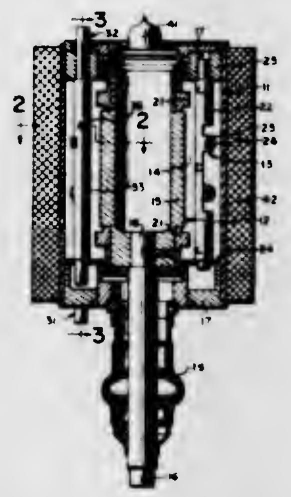


1. A wave propagating structure comprising
(*a*) an array of conducting elements distributed along a desired path of wave propagation,
(*b*) at least one of said elements extending along its axis away from said array,
(*c*) a hollow cylindrical conducting member surrounding said one element,
(*d*) means for connecting said one element to an adjacent element, said one element and said hollow conductor comprising a coaxial line for coupling wave energy to or from said slow-wave structure, and
(*e*) means for preferentially capacitively coupling said conducting member to said adjacent element.

3,185,885

CROSSED-FIELD TUBE COUPLING APPARATUS

Andrew S. Wilczek, Old Bridge, and Richard F. Doyle, Maplewood, N.J., assignors to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey
Filed Aug. 1, 1962, Ser. No. 214,115
6 Claims. (Cl. 315—3.5)

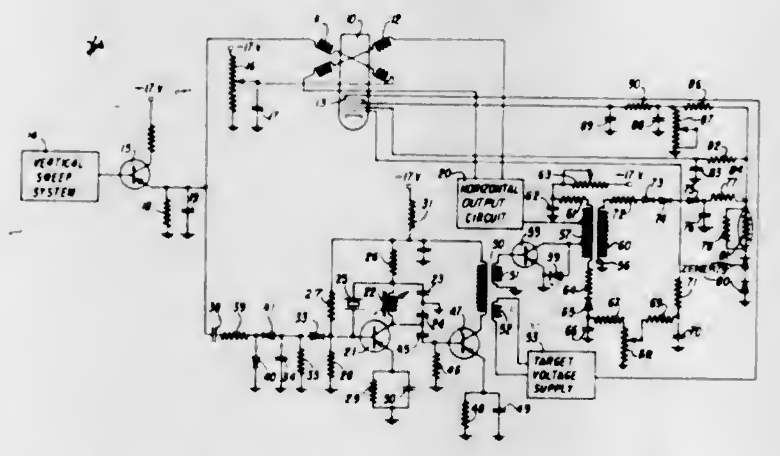


1. A wave propagating structure comprising
(*a*) an array of resonant conducting rods distributed along desired path of wave propagation,
(*b*) at least one of said rods being hollow, and extending along its axis away from said array,
(*c*) a center conductor positioned within said hollow rod, and
(*d*) means for coupling said center conductor to an adjacent rod, said center conductor and said hollow rod comprising a coaxial line for coupling wave energy to or from said slow-wave structure.

3,185,886

SWEEP FAILURE PROTECTIVE SYSTEM

Albert J. Leitich, Chicago, and De Loss J. Tanner, Bensenville, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 10, 1962, Ser. No. 243,327
10 Claims. (Cl. 315—20)

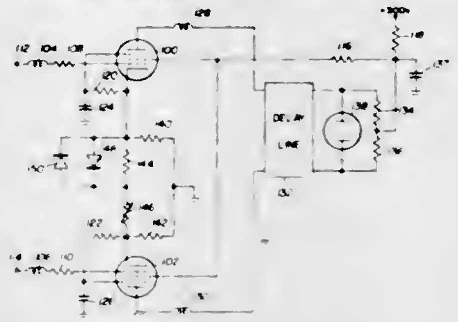


1. A system for operating a cathode ray tube which produces an electron beam including in combination, a first circuit for deflecting the electron beam in a first direction and providing a first signal, a second circuit for deflecting the electron beam in a second direction and providing a second signal, a circuit coupled to said first circuit for providing high voltage for the tube and operative in response to said first signal, a disabling circuit coupled to said first circuit for preventing operation thereof, said disabling circuit including rectifier means for disabling said first circuit, and a bias circuit connected to said second circuit and to said rectifier means, said bias circuit producing a voltag in response to said second signal and applying said voltage to said rectifier means to render said disabling circuit inoperative.

3,185,887

DEFLECTION AMPLIFIER COMPENSATION LINEARIZER CIRCUIT

John R. Kobbe, Beaverton, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Mar. 20, 1961, Ser. No. 96,803
10 Claims. (Cl. 315—26)

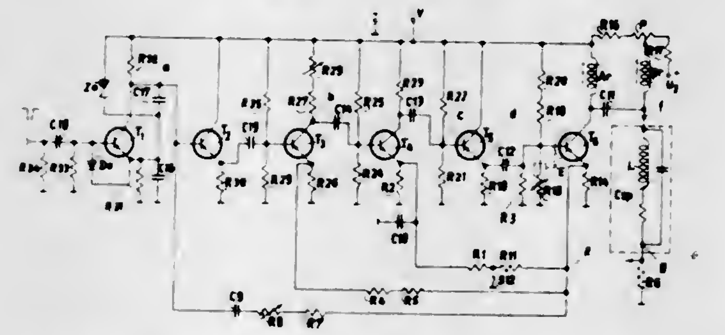


1. An electrical amplifier circuit having an extended range of linear operation comprising:
an electrical signal translating device having an emitting electrode, a collecting electrode and a control electrode, said emitting electrode being connected to the input terminal of said amplifier circuit and said collecting electrode being connected to the output terminal of said amplifier circuit,
a feedback impedance connected to said emitting electrode to provide degenerative current feedback for said device,
a non-linear element of variable impedance connected across said feedback impedance, and
means to apply a feedback signal voltage across said element so that said element has a high forward impedance during the linear operation of said device and a low forward impedance during the non-linear operation of said device to vary the effective degenerative feedback impedance to compensate for the non-linear amplifying characteristics of said device.

3,185,888

SCANNING TRANSISTOR CIRCUIT

Hans-Dieter Schneider, Gross-Gerau, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany
Filed Nov. 14, 1961, Ser. No. 152,187
Claims priority, application Germany, Nov. 16, 1960, F 32,558
16 Claims. (Cl. 315—27)



1. A transistor horizontal scan generator for supplying control voltages to a television deflector system to control the horizontal trace and retrace beam movements, comprising, in combination, a sawtooth voltage generator; at least one preamplifier means for amplifying the output of said sawtooth voltage generator; output amplifier means arranged to be supplied with an amplified voltage derived from said preamplifier means and adapted to feed a modified sawtooth control voltage having in every wave an ascending slope period and a descending slope period to the television deflector system; and means for applying a positive feedback voltage from said output amplifier means to a point between said output amplifier means and said preamplifier means for reducing the internal resistance of said output amplifier means and for reducing said positive feedback voltage only during said descending slope period

so as to effect during said period an increase of the internal resistance of said output amplifier means, whereby the duration of said descending slope period in said modified sawtooth voltage and thereby the retrace time are reduced.

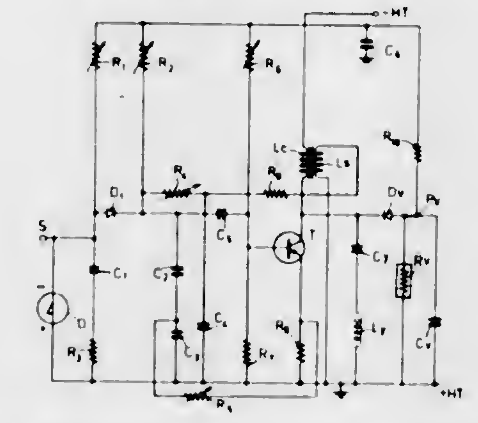
3,185,889
TIME-BASE CIRCUIT EMPLOYING TRANSISTORS

Brian Ernest Attwood, Burstow, near Horley, Surrey, England, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed May 29, 1962, Ser. No. 198,664

Claims priority, application Great Britain, June 1, 1961, 19,810/61

10 Claims. (Cl. 315—27)



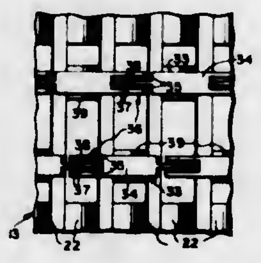
1. A deflection circuit for a magnetic beam deflection system, comprising a transistor amplifier output stage having an output electrode and a control electrode, an output circuit comprising an inductance element coupled to said output electrode, a source of direct voltage having a terminal connected to a point of fixed potential and connected so as to supply operating potentials to said transistor amplifier, a charge circuit comprising a capacitor for supplying a sawtooth drive signal to said transistor control electrode, circuit means for providing a stable operating voltage comprising a voltage dependent impedance element and a second capacitor, means connecting said second capacitor and said impedance element in parallel for alternating currents, a diode coupling said output circuit to said circuit means, said circuit means further comprising means connecting said voltage dependent impedance element to said diode and to said point of fixed potential, means for applying said stable voltage to said charge circuit thereby providing operating potential for said charge circuit, and switching means coupled to said charge circuiut for periodically discharging said capacitor.

3,185,890
TEMPERATURE COMPENSATED SLOW WAVE STRUCTURE

Hunter L. McDowell, Chatham Township, Morris County, and Joseph E. Sidoti, Middletown, N.J., assignors to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey

Filed July 16, 1962, Ser. No. 209,911

3 Claims. (Cl. 315—39.69)



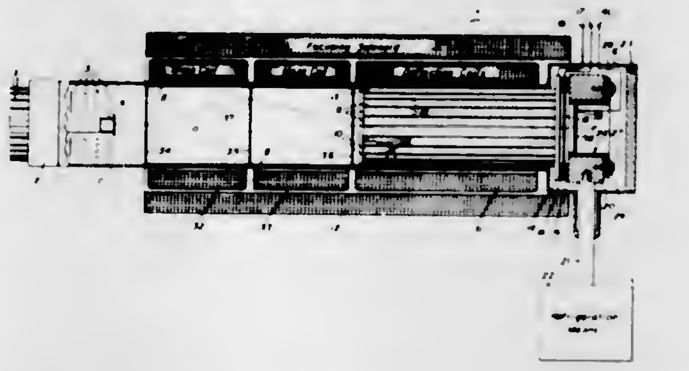
1. A microwave amplifier tube including, means for producing a stream of electrons, an array of resonant conductive elements having separate predominately capacitive and inductive regions thereof disposed adjacent said stream of electrons to form a forward wave slow wave circuit for electromagnetic interaction between electrons of said stream and wave energy traveling on said array of resonant conductive elements, means for coupling amplified signal wave energy from the tube apparatus for propagation to a suitable load, means forming a pair of conductive straps conductively connected to said array of conductive elements predominately in the capacitive regions thereof, one of said straps being conductively connected to every other one of said resonant conductive elements of said array and the other one of said straps being conductively connected to the ones of said conductive elements of said array which are not connected to said first strap means and which are disposed inbetween said resonant elements connected to said first strap means, and at least said first straps means including a plurality of capacitor means series connected in said strap with a capacitor means series connected in said first strap means between successive ones of said connections of said strap means to every other one of said resonant elements, and said series capacitor means including a bifurcated portion of said strap forming one part of said capacitor means with a second portion of said capacitor means formed by another portion of said first strap and disposed inbetween and spaced from the bifurcated portion of said strap whereby the capacitance of said capacitor means is rendered substantially non-responsive to relative movement between connected portions of said strap occasioned by temperature variations of said slow wave circuit.

3,185,891
ELECTRON OPTICS FOR INFRARED CAMERA TUBES

Rowland W. Redington and Pieter J. van Heerden, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Sept. 19, 1960, Ser. No. 56,798

14 Claims. (Cl. 313—65)



1. In an infrared camera tube including an infrared radiation sensitive target and electron generating means spaced in front of said target for generating a slow beam of electrons scanning said target, drift space walls defining the outer perimeter of a drift space located between said electron generating means and said target, said drift space walls comprising a plurality of interlocked channels extending along said drift space and electrically insulated from one another to forestall the formation of eddy currents in said drift space walls while shielding said drift space and said target from infrared radiation external of said drift space walls.

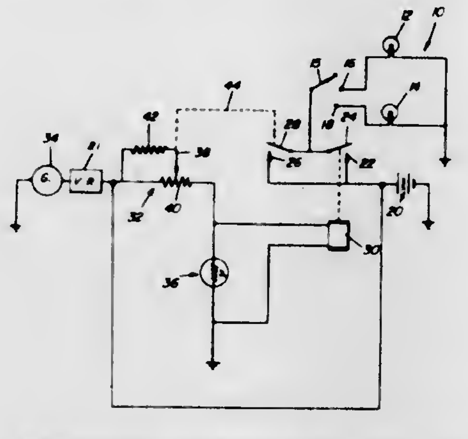
3,185,892
AUTOMATIC AUTOMOBILE LIGHTING SYSTEM

Norman E. La Mantia, Walpole, Mass.
(1041 Kingston Drive, Olean, N.Y.)

Filed Sept. 13, 1962, Ser. No. 223,363

6 Claims. (Cl. 315—82)

1. In combination with selectively controlled illuminating means for a vehicle having a source of potential, a light controlling system comprising relay means operatively connected to said source of potential for energization thereby, light sensing resistance means operatively connected to said source in parallel relation to the relay means for controlling energization thereof in accordance with light conditions externally of said vehicle, sensitivity control means operatively connected to said source in series relation to the relay means for varying the response of the relay means to the light sensing resistance means, selective control means operatively connected to said relay



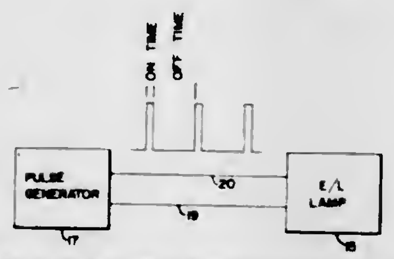
means for selectively rendering the illuminating means operative in response to energization of the relay means, and overcontrol means operatively connected to said sensitivity control means and illuminating means to simultaneously energize the illuminating means independently of the relay means and reduce the voltage applied to the light sensing means to a minimum.

3,185,893
CONTROL APPARATUS FOR RESTORATION OF BRIGHTNESS IN ELECTROLUMINESCENT CELLS

Herman G. Sperling, St. Louis Park, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed Dec. 30, 1960, Ser. No. 79,834

5 Claims. (Cl. 315—246)



1. Apparatus of the class described comprising, in combination: an electroluminescent lamp having a normally considered sinusoidal voltage frequency maximum; a pulsating voltage source wherein the pulses occur during less than 30% of the operating time, said pulsating voltage source producing pulses at a frequency in excess of the normally considered maximum, the voltage source providing an output voltage which changes in amplitude as a function of time to keep the luminescence of said lamp within predetermined limits; and means connecting said electroluminescent lamp to be energized by said pulsating D.C. voltage source.

3,185,894
MEANS FOR INDICATING FAULTS IN THE CRUCIBLE OF INDUCTION MELTING FURNACES

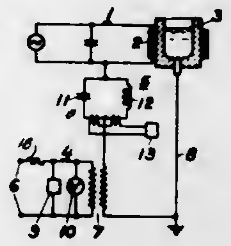
Ivar Beckius, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Aug. 10, 1961, Ser. No. 130,691

Claims priority, application Sweden, Aug. 17, 1960, 7,875/60

6 Claims. (Cl. 317—9)

1. In combination with a crucible having an induction coil adjacent thereto and an A.C. power supply connected to the coil for feeding current thereto, a connection from the crucible to ground, an indicator circuit for indicating an insulation fault in the crucible comprising a transformer having a secondary winding connected between said ground connection and said power supply, an auxiliary A.C. source, means including a resistance connecting said auxiliary source to the primary winding of said transformer, measuring means in said connecting means, said measuring means being responsive to the flow of current



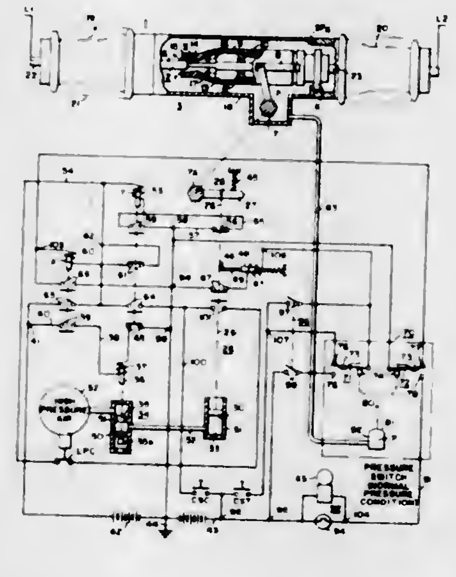
occurring in said connecting means upon a break-down in insulation between the coil and the crucible, and blocking means coupled in series with the secondary winding of the transformer, said blocking means being tuned to the frequency of the power supply and including means to keep the flow of current therethrough at such frequency relatively low without substantially impeding flow of current in said connecting means.

3,185,895
PRESSURE-CONTROL CIRCUITS FOR GAS-TYPE CIRCUIT INTERRUPTERS

Gilbert J. Easley, Edgewood, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 12, 1961, Ser. No. 144,705

9 Claims. (Cl. 317—59)



1. A gas-type circuit interrupter including a casing filled with an arc-extinguishing gas, a pair of separable contacts disposed within said casing in the ambient of said enclosed gas, the interrupting integrity of the gas-type circuit interrupter being dependent upon the pressure of said enclosed gas, a single pressure switch responsive to the pressure of the gas within said casing and having independent dual contact structure actuated thereby, an operating mechanism for operating said separable contacts, circuit means for said operating mechanism including a closing coil and a tripping coil, a closing relay for energizing said closing coil, said independent dual contact structure associated with said single pressure switch having normally closed contacts in series with the circuit for said closing relay under normal pressurized condition of said casing, said independent dual contact structure in addition having normally closed contacts in series with said tripping coil, said pressure switch functioning to open both said pairs of normally-closed contacts upon a hazardous drop of pressure, whereby a drop of pressure with-

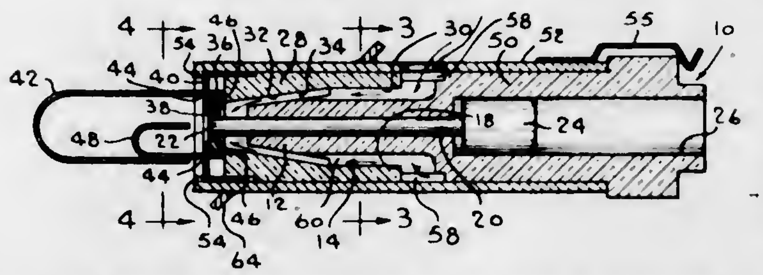
in said casing to a dangerous state will open said independent dual normally closed contacts to prevent closing and tripping of the gas-type circuit interrupter.

3,185,896
IGNITION DEVICE

Herman A. Gorske and Lourdes V. McCarty, Milwaukee, Wis., assignors to Controls Company of America, Schiller Park, Ill., a corporation of Delaware

Filed Oct. 5, 1961, Ser. No. 143,135

10 Claims. (Cl. 317—88)



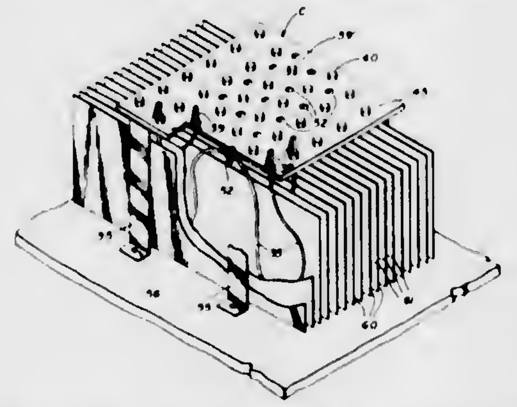
1. A spark ignition device for use in a pot-type oil burner comprising, in combination, an elongated body having a generally conical end and a plurality of longitudinally extending peripherally spaced grooves, a first electrode supported from said conical end, a first member disposed in surrounding relationship with said body adjacent said conical end, an annular electrode supported on said first member in spaced surrounding relationship from said first electrode and forming a spark gap therewith, said first member including a generally conical inner wall disposed in spaced relation from said conical end of said body and forming therewith a conical passage extending between said grooves and said spark gap, means supported on said first member for engaging said annular electrode and urging said annular electrode into engagement with said first member, a wick extending from said spark ignition device and having a portion disposed between said annular electrode and said first member, and a sleeve member disposed in surrounding relationship with said body and engaging said first member to clamp said annular electrode on said first member with said portion of said wick therebetween, said sleeve including an aperture opening into said grooves for ingress of air so that air passes through said grooves and said conical passage and is discharged through said spark gap.

3,185,897
ELECTRONIC CIRCUIT BOARD

Robert D. Goodin, 2025 Mercury Way,
Sacramento 25, Calif.

Filed June 9, 1961, Ser. No. 116,190

2 Claims. (Cl. 317—101)



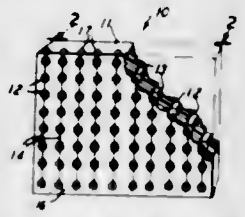
1. An electronic circuit board for carrying electronic components in such a way that they can be removably connected to each other to obtain selected electronic circuits, comprising a board formed with a centrally located aperture, electrical components mounted on said board, connector terminals mounted on said board, electronic components connected to said connector terminals, jumper wire support means, a face plate covering said jumper wire support means, means to mount said board over said jumper wire support means with the face plate being located within the aperture of said board and aligned in substantially coplanar relation with said board, a plurality of ports formed in said face plate, a plurality of jumper wires carried within said jumper wire support means, each of said jumper wires projecting outwardly from one of said ports, and clip means mounted on the exterior end of each said jumper wire, each said wire being of sufficient length to enable the clip means connected to the wire to connect to any of said connector terminals on said board, each of said wires electrically connected to at least one other said wire within said jumper wire support means, the interior of said jumper wire support means formed with a plurality of spaced apart parallel vertical walls, the spacing between said walls being slightly larger than the thickness of said jumper wires, each of said jumper wires being aligned to nest between a pair of said vertical walls whereby the vertical walls form guides to mechanically separate the respective wires from each other within the jumper wire support means.

3,185,898
PACKAGED ASSEMBLY FOR ELECTRONIC SWITCHING UNITS

Arthur J. Ehlschlager, Columbus, Ohio, assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 23, 1962, Ser. No. 189,511

2 Claims. (Cl. 317—101)



1. An electronic switching unit for switching a plurality of signals from input circuits to output circuits comprising:

an insulation panel,

a plurality of electronic switches positioned in rows in the panel,

a plurality of input conductors connected to the switches on a first side of the panel in a parallel array, and

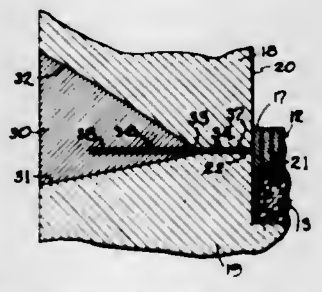
a lesser plurality of output conductors connected to the switches on a second side of the panel in a parallel array which is at right angles to the parallel array on the first side so that a signal applied to any of the input circuits may appear on any of the output circuits.

3,185,899
MAGNET STRUCTURE

Frank C. Skelton, Jr., Beloit, Wis., assignor to Warner Electric Brake & Clutch Company, South Beloit, Ill., a corporation of Delaware

Filed May 21, 1962, Ser. No. 196,372

3 Claims. (Cl. 317—158)



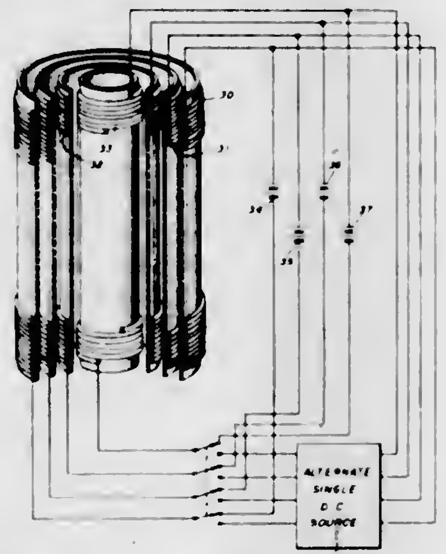
1. In a magnet construction, the combination of, a thin strip of non-magnetic metal, two magnetic pole pieces arranged edge to edge in surface abutment with opposite sides of one edge portion of said strip and having exposed end faces disposed in a common plane substantially flush with the edge of said one end portion, the edge surface of said pieces opposite the other edge portion of said strip diverging away from opposite sides of such portion so as to define a V-shaped groove divided by such other edge portion of the strip and a rigid metal filling disposed in said groove and bonded securely to said other edge portion of the strip and the diverging side walls of said groove so as to unite said pole pieces and said strip into a rigid structure with said pole faces and the side surfaces of said pole pieces magnetically separated by said one edge portion of said strip.

3,185,900
HIGH FIELD SUPERCONDUCTING DEVICES

Vincent Jaccarino, Morristown, N.J., and Martin Peter, Geneva, Switzerland, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Sept. 25, 1962, Ser. No. 226,017

7 Claims. (Cl. 317—158)



1. A superconducting device comprising a negative field material permitting complete magnetic field penetration and having an electronic specific heat, C_v, given by the formula:

$$C_v<3\times 10^{-4} \text{ T cal./mole degrees}$$

where T is the temperature in degrees K. and which material exhibits a finite resistance at 1° K., means associated with said material for subjecting it to the influence of a magnetic field H given by the relation:

$$H>H_N-18400T_c$$

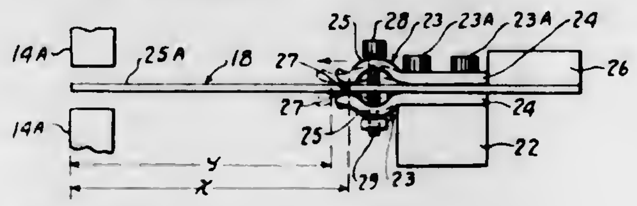
where H_N is the negative field value and T_c is the transition temperature of the material and cryogenic means for maintaining the negative field material below its transition temperature.

3,185,901
RESONANT REED ADJUSTING MEANS

Robert H. Voigt, Milford, Mich., assignor to Aseco, Incorporated, a corporation of Michigan

Filed May 31, 1962, Ser. No. 198,822

6 Claims. (Cl. 317—182)



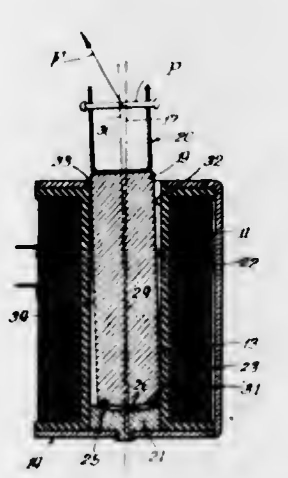
1. In a resonant relay
(*a*) a support member
(*b*) a resonant reed member
(*c*) mounting means securing one end of said reed member to said support member,
(*d*) said mounting means comprising a pair of clamp members, each of said clamp members comprising a first portion and a second portion engaging said reed member,
(*e*) said first portions of said clamp members engaging opposite sides of said reed member and said second portions being longitudinally spaced from said first portions and engaging opposite sides of said reed members,
(*f*) means fixing said first portions with respect to said reed member and means selectively operable to move said second portions longitudinally with respect to said reed member and said first portions whereby to vary the natural frequency of said reed member.

3,185,902
ANTI-CHATTER SOLENOID

Rhine G. Fecho, Baroda, and David A. Johnson, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware

Filed July 25, 1963, Ser. No. 297,566

7 Claims. (Cl. 317—184)



1. A solenoid structure comprising: annular electromagnetic coil means defining an axial space; a pole piece at one end of said space and having an inner surface confronting said space; and a plunger axially movable through said space, said plunger having lateral clearance with said coil means and having an outer end defining an outer surface confronting said pole piece surface, said surfaces being complementarily segmentally spherical and having a radius of curvature substantially equal to one-half the length of said space inwardly from said pole piece surface to the other end of said space, whereby said surfaces may have facial engagement with the plunger disposed in any one of a plurality of positions skewed substantially to the coil axis including a maximum skewed position wherein said outer end of the plunger substantially contacts said coil means.

3,185,903
HERMETICALLY SEALED VARIABLE CAPACITOR

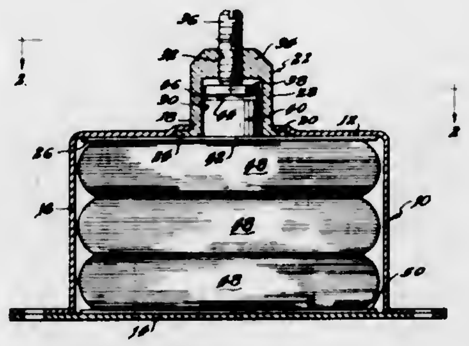
Anthony N. Genovese, Chicago, Ill., assignor to Chicago Condenser Corporation, Chicago, Ill., a corporation of Illinois

Filed June 15, 1961, Ser. No. 117,232

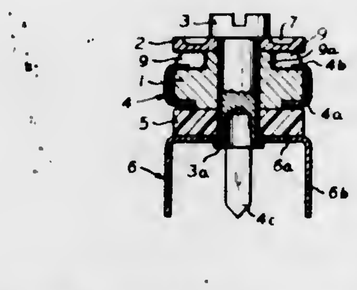
3 Claims. (Cl. 317—245)

1. An adjustable capacitor comprising an air tight casing having two parallel flat walls, one of said walls having an opening therein, a dome sealed to the exterior of the casing confronting the opening and having a straight channel extending therein aligned with the opening and

normal to the walls of the casing, said dome having a bore extending from the channel to the exterior of the dome, a piston slidably disposed in the channel having a groove disposed thereabout in a plane parallel to the walls of the casing, an elastomer sealing ring disposed in the groove in sealing engagement with the piston and the surface of the channel, means for positioning the piston in the channel from the exterior to the dome through the bore of the dome, a flat plate disposed within the casing parallel to the walls and in abutment with the piston, and a capacitor winding disposed within the casing between the side of the plate opposite the piston and the confronting wall, side winding being wound about an axis disposed generally parallel to the walls of the casing.

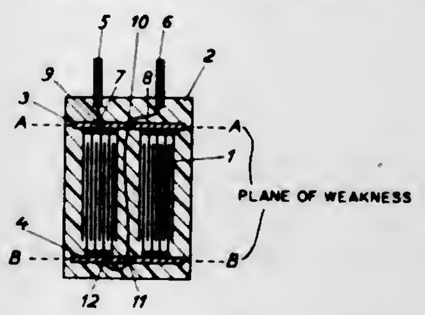


3,185,904
CERAMIC DISK TRIMMING CONDENSER
Heinrich Werner Gans, Ruckersdorf uber Nurnberg, Germany, assignor to Stettner & Company, Lauf (Pegnitz), near Nurnberg, Germany, a Kommanditgesellschaft of Germany
Filed Feb. 21, 1963, Ser. No. 260,262
Claims priority, application Germany, Dec. 13, 1962, St 20,070
16 Claims. (Cl. 317—249)



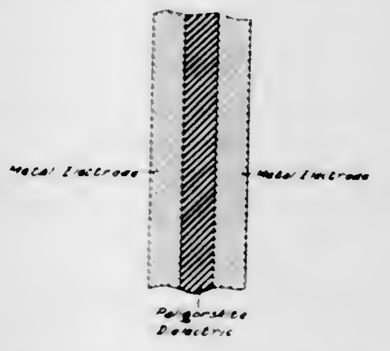
1. A trimming condenser comprising
- (*a*) two cylindrical operating members, one being a stator and the other being a rotor rotatable relative to said stator;
- (*b*) resilient means for holding said operating members in end abutment;
- (*c*) an electrically conductive coating on each of said operating members;
- (*d*) terminal means for said operating members, and
- (*e*) a lead for electrically connecting at least one of said conductive coatings with one of said terminal means, the said lead having a first portion extending parallel to the axis of at least one of said cylindrical operative members and formed with means abutting said operative member, said lead having a second, bent-in portion to form the electrical connection with one of said conductive coatings, means slidably rotatably securing said members, and said resilient means; and means secured to one of said operating members for rotating said member relative to said other operating member.

3,185,905
ELECTRIC CONDENSER EMBEDDED IN A THERMOSETTING RESIN AND PROVIDED WITH A PROTECTOR BREAKABLE BY AN INTERIOR OVERPRESSURE
Olaf Sternbeck, Vallingby, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Dec. 21, 1962, Ser. No. 246,416
Claims priority, application Sweden, Feb. 2, 1962, 1,145/62
2 Claims. (Cl. 317—256)



1. A potted capacitor comprising a capacitor coil made of metallized dielectric foil, a substantially rigid disc disposed adjacent to one end face of the coil substantially parallel thereto, a body of hardened thermosetting resin encapsulating said coil and said disc, said disc being loosely adhered to said resin body and having a diameter extending close to the outside of said body, said resin body having a plane of structural weakness in the plane of said disc, and wire conductors extending from the outside through said body and connected at the inner end to the terminals of said coil, one of said wire conductors extending through said plane of weakness and being held substantially taut in said body whereby said wire conductor is torn when the body is ruptured at said plane.

3,185,906
PALIGORSKITE DIELECTRIC CAPACITOR
Lawrence J. Hogue, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 26, 1959, Ser. No. 815,786
1 Claim. (Cl. 317—258)

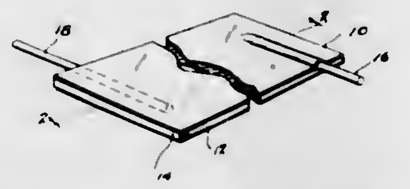


A capacitor comprising armatures, and as a dielectric spacing therefor, a sheet material comprising heat treated reconstituted paligorskite having improved power factor, dielectric strength, and microfarad product values, said heat treatment being carried out at a temperature of at least 300° C.

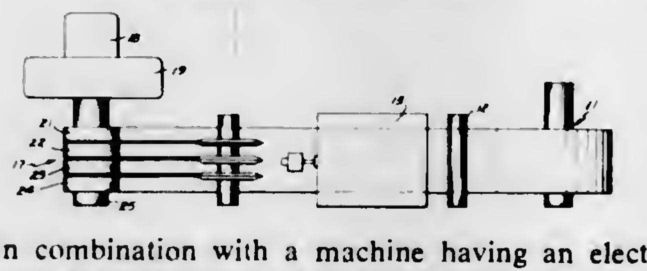
3,185,907
CAPACITOR WITH METALLIC EMBEDDED PLASTIC ELECTRODES
Chester W. McKee, Flossmoor, Richard W. McKee, Lake Forest, and Charles M. Rich, Chicago, Ill., assignors to Welding Service, Inc., Franklin Park, Ill., a corporation of California
Filed Nov. 2, 1959, Ser. No. 850,345
2 Claims. (Cl. 317—258)

1. A frequency variable electrical condenser comprising two elongated planar electrodes having a dielectric disposed therebetween, said electrodes being comprised of

flake graphite of a size such as to pass through a 300-mesh screen dispersed in a non-conductive plastic carrier, the concentration of the graphite in the plastic carrier and the thickness of the electrode being such as to provide a resistance per unit of effective area over about 100 ohms per square inch, a first lead connected along one transverse end of one of said electrodes, and a second lead connected along the transverse end of said other electrode which is opposite the end where said first lead is connected to said one electrode.

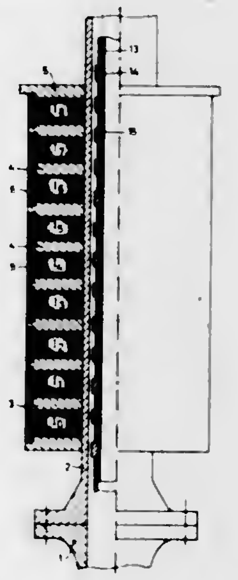


3,185,908
MOTOR SPEED CONTROL APPARATUS FOR STEEL SLITTING MACHINE
Hubert Brooks Hollis, 717 W. Madison Ave., Montebello, Calif.
Continuation of application Ser. No. 219.153, Aug. 24, 1962. This application Oct. 19, 1964, Ser. No. 406,658
5 Claims. (Cl. 318—6)



1. In combination with a machine having an electric prime mover for driving a roll to move a strip of material, a device for manually or automatically adjusting the linear speed of said strip to a desired rate, including:
- (*a*) a rheostat comprising a rotatable shaft for controlling the magnitude of the electric current flowing to said prime mover, said shaft when rotated in a first direction increasing the quantity of said current flowing to said prime mover to increase the rate of rotation of said prime mover and roll, with said shaft when rotated in a second direction decreasing the quantity of said current flowing to said prime mover to decrease the rate of rotation of said prime mover and roll;
- (*b*) first means for manually rotating said shaft;
- (*c*) a reversible electric motor that rotates in a first direction upon receiving a first electric signal and in a second direction upon receiving a second electric signal;
- (*d*) a clutch interposed between said shaft and motor to permit said shaft to be rotated in either a first or second direction by said motor;
- (*e*) a movable arm for moving said clutch to an engaging or disengaging position;
- (*f*) a solenoid, which when energized, moves said arm to place said clutch in an engaging position to permit said shaft to be rotated by said motor;
- (*g*) a selector switch, which when in a closed position, energizes said solenoid from a source of electric power to permit said shaft to be driven by said motor, with said switch when in an open position permitting said first means to be used to manually rotate said shaft;
- (*h*) a first normally open switch and a second normally closed switch spaced therefrom;
- (*i*) a rotatable cam, which as it rotates sequentially and momentarily, closes said first switch and opens said second switch;
- (*j*) second means for rotating said cam at a rate that is proportional to the linear speed of said strip;
- (*k*) an electrically operated timer which after actuation takes a predetermined period of time to reach a "timed-out" position, which period is the same length of time as that required by said cam to close said first switch and open said second switch when said strip is moving at said desired rate; and
- (*l*) first and second normally open electrical circuits including holding means, of which said first and second switches and said timer form a part, for sending said first and second signals to said motor, said timer being started when said cam closes said first switch, said first circuit being closed to send said first signal when said timer has reached said "timed-out" position prior to opening of said second switch by said cam, which first signal continues to be sent until said cam opens said second switch, with said second circuit being closed to send said second signal when said cam opens said second switch prior to said timer reaching said "timed-out" position, with said second signal continuing to be sent until said timer reaches said "timed-out" position, and with neither said first nor second circuits being closed if said cam opens said second switch concurrently with said timer as it reaches said "timed-out" position.

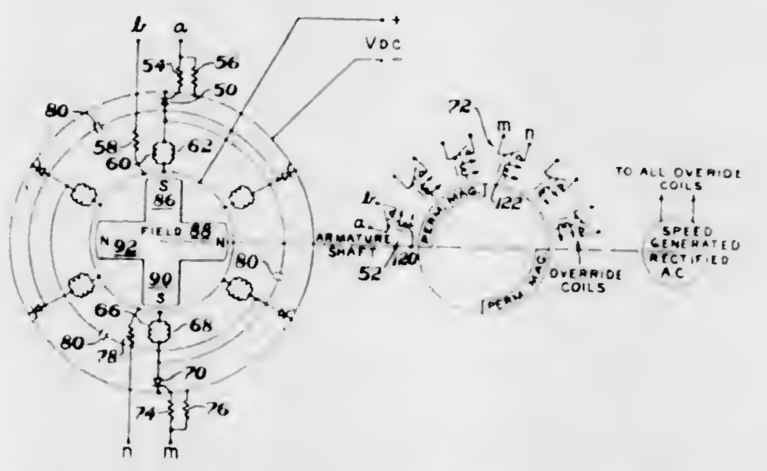
3,185,909
ELECTROMAGNET SYSTEM FOR LIFTING AND LOWERING A ROD STRUCTURE IN A TUBULAR HOUSING
Günther Jahn, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a German corporation
Filed May 31, 1962, Ser. No. 199,005
Claims priority, application Germany, June 6, 1961, S 74,217
2 Claims. (Cl. 318—135)



1. Electromagnetic apparatus for lifting and lowering a rod structure within an enclosure by magnetic force applied from the outside, comprising a tubular housing and a rod structure longitudinally displaceable therein in lifting and lowering directions, a multiplicity of electromagnets axially aligned along said housing at the outside thereof and having uniformly spaced magnet poles, said rod structure having magnetizable teeth forming armatures for said respective magnets, the number of said teeth along the length of said multiplicity of aligned magnets differing from the number of said poles in accordance with a vernier ratio, energizing electric circuit means connected with said electromagnets and having sequence switch means for progressively energizing a given subgroup of cyclically adjacent ones of said electromagnets at a time to selectively cause displacement of said rod structure in one of said respective directions through successive unit distances corresponding to the

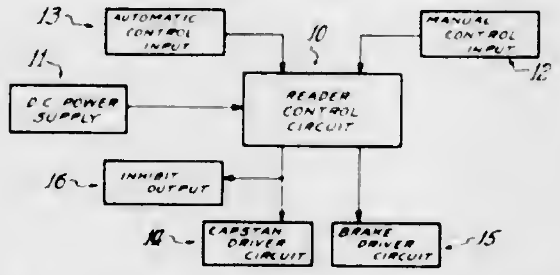
spacing between two adjacent poles as each new lead magnet of said progressively energized subgroup is energized in direct sequence, and additional magnetizing means joined with the lowermost one of said poles of said group and poled in flux-augmenting sense relative to said lowermost pole for magnetically increasing the displacing force exerted by said lowermost pole on said rod structure, said additional magnetizing means being active simultaneously with the uppermost one of said electromagnets of said multiplicity of electromagnets.

3,185,910
MAGNETIC SWITCH-SCR FOR MOTOR SPEED CONTROL SYSTEM
Theodore F. Knapp, Grand Rapids, Mich., assignor to Lear Siegler, Inc.
Filed June 21, 1962, Ser. No. 204,223
8 Claims. (Cl. 318—138)



1. A brushless direct current motor, comprising: a winding; solid-state switch means connecting said winding to a source of direct-current power; said solid-state switch means controlling the current flow in said winding; magnetic switch means connected to said solid-state switch means to control their operation below a predetermined motor speed; and means for disabling said magnetic switch means when the speed of said motor exceeds a predetermined value.

3,185,911
CONTROL CIRCUIT FOR TAPE DRIVE MECHANISM
Herman Epstein, Philadelphia, and Andrew E. Trollo, Broomall, Pa., assignors to Omnitronics, Inc., Philadelphia, Pa., a corporation of Delaware
Filed Dec. 7, 1961, Ser. No. 157,722
4 Claims. (Cl. 318—275)

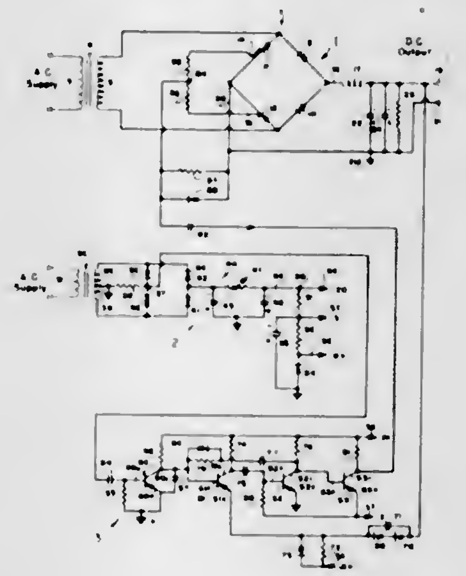


1. In a control arrangement for regulating operation of a drive means and a brake means including energy input means and a bistable network operative in a first state to deenergize the drive means and energize the brake means and operative in a second state to energize the drive means and deenergize the brake means, the improvement which comprises

first switching means operative in a first position to maintain both said drive means and said brake means deenergized and operative in a second position to complete a portion of a circuit for placing said bistable network in said first state, and

second switching means, operative in a first position to interrupt said circuit and operative in a second position to complete another portion of said circuit, actuation of said second switching means to its second position when said first switching means is in its second position being effective to complete the circuit for placing said bistable network in the first state and thereby energize said brake means.

3,185,912
RECORDER POWER SUPPLY
John W. Smith, Whitestone, and Donald F. Cleary, West Islip, N.Y., assignors to Hogan Faximile Corporation, New York, N.Y.
Filed Dec. 16, 1960, Ser. No. 76,299
3 Claims. (Cl. 321—18)



1. An electrical system including a controlled rectifier, a control electrode for the controlled rectifier, a load circuit, a source of alternating current connected in series with the rectifier and the load circuit, means providing a voltage reference, means for comparing the load voltage with the voltage reference for establishing a control potential responsive to the load voltage, a source of timing pulses synchronized with the alternating current source, first and second transistors each having an emitter, a base, and a collector, the source of timing pulses coupled to the base of the first transistor, a capacitor connected between the first emitter and the first collector, means providing a charging potential for the capacitor so that a sawtooth pulse voltage is produced across the capacitor responsive to said timing pulses, the capacitor connected to the base of the second transistor, bias means for the collector of the second transistor, means coupling the collector of the second transistor to the control electrode of the controlled rectifier, and means coupling said control potential to the emitter of the second transistor so that the control potential is compared with said sawtooth pulse voltage to produce a control pulse of a desired phase relationship with respect to the voltage of the alternating current source, whereby the load voltage is maintained substantially constant.

3,185,913
LOW PASS INVERTER
Reginald I. Gray, 513 Sampson Road, Dahlgren, Va. Original application Jan. 31, 1962, Ser. No. 170,031. Divided and this application May 28, 1963, Ser. No. 284,293
6 Claims. (Cl. 321—49)

5. In a low pass D.C. to A.C. converter, the combination comprising:

a tubular structure of magnetic material;

a first end cap closing off the first end of said structure, said end cap having a centrally located aperture;

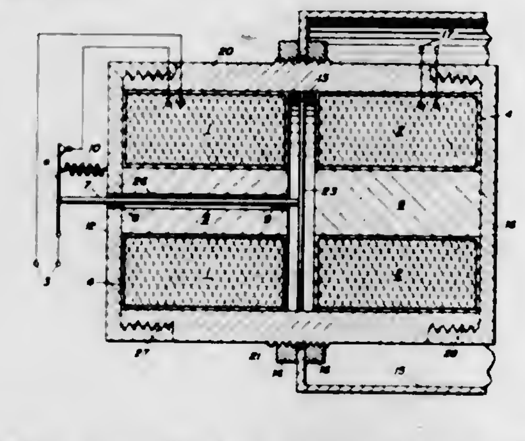
a second end cap closing off the second end of said structure;

a first annular-shaped coil concentric with said structure and abutting the interior face of said first end cap;

a second annular-shaped coil concentric with said structure and abutting the interior face of second end cap; the sum of the lengths of said first coil and said second coil being less than the length of said tubular structure;

input terminals for supplying electrical power to said first coil;

input conductors connecting said input terminals to said first coil;

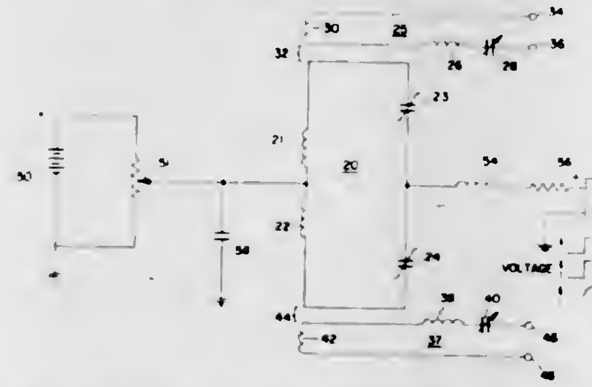


a diaphragm comprising an electromagnetic shield positioned perpendicularly to the magnetic axis of said coil, said diaphragm being rigidly attached at its periphery to the interior wall of said structure and spaced between the interior ends of said coils, said diaphragm having a movable central portion;

an actuating rod rigidly attached to the said central portion of said diaphragm and extending along the axis of said first coil and through said aperture of said first end cap;

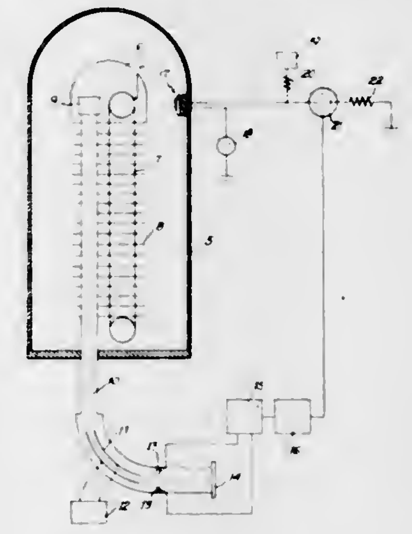
switch means interposed in said input conductors for making and breaking the electrical connection between said input at the terminals and operated by an actuating rod whereby the intermittent opening and closing of said switch means causes an alternating voltage to be induced in said second coil.

3,185,914
PARAMETRIC DEVICE FOR INCREASING FREQUENCY AND/OR POWER
John Battiscombe Gunn, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 14, 1960, Ser. No. 75,866
15 Claims. (Cl. 321—69)



1. A frequency increaser and power amplifier comprising, in combination, a resonant circuit including an element of variable reactance, said resonant circuit having a natural frequency f_1 in the initial state of said variable reactance, means to vary the reactance of said variable reactance element from said initial state over a range whereby the resultant natural frequency of the circuit varies from said frequency f_1 to a materially higher frequency f_2, said reactance varying means being so adapted and designed as to require several cycles at said frequency f_1 to change the natural frequency from f_1 to f_2, input means selective substantially to frequency f_1 coupled to said resonant circuit, and output means selective substantially to frequency f_2 coupled to said resonant circuit, whereby input power at substantially frequency f_1 becomes amplified at substantially frequency f_2.

3,185,915
POSITIVE CORONA STABILIZATION APPARATUS FOR AN ELECTROSTATIC VOLTAGE GENERATOR
Jan Roos, Arlington, Mass., assignor to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts
Filed June 1, 1962, Ser. No. 199,445
9 Claims. (Cl. 322—2)

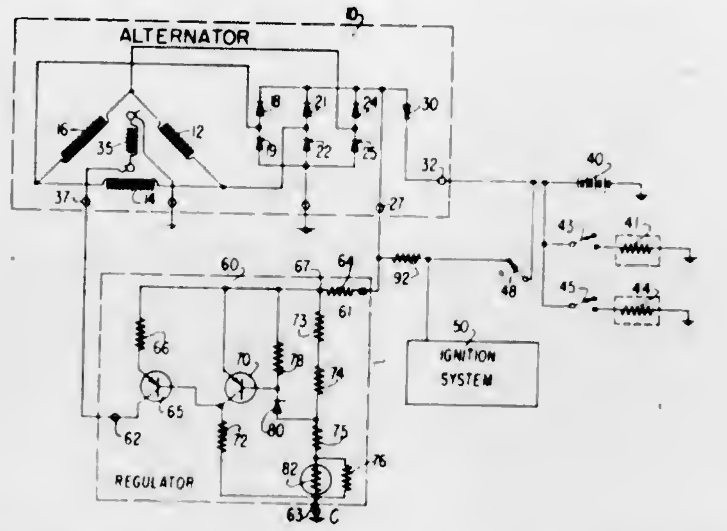


2. In an electrostatic voltage generator, means for establishing negative terminal to positive point corona discharge comprising an array of pointed metal members, a metal shield member having apertures therein, the pointed ends of said pointed metal members being arranged to protrude through said apertures in proximate relationship to said negative terminal, said pointed metal members being electrically insulated from said shield member and having the distal ends thereof connected to a common electrical ground, and means for establishing an electrical potential on said shield member.

3,185,916
VOLTAGE REGULATOR WITH LOAD COMPENSATION
Franklin C. Brewster, Franklin Park, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 20, 1961, Ser. No. 146,558
7 Claims. (Cl. 322—28)

2. A voltage regulating circuit for use with a vehicular electrical system having a source of direct current potential, said circuit including in combination, a voltage regulator, said regulator including first and second input terminals and an output terminal, first transistor circuit means connected between said first input terminal and said output terminal to control current conduction therebetween, voltage divider means connected between said first and second input terminals, zener diode circuit means connected between a tap joint on said voltage divider and said first input terminal, second transistor circuit means connected between said first and second input terminals and responsive to the voltage therebetween, means connecting said zener diode circuit means to the input of said second transistor circuit means, means connecting the output of said second transistor circuit means to the input of said first transistor circuit means; and resistance means connecting the said first input terminal of the regulator to

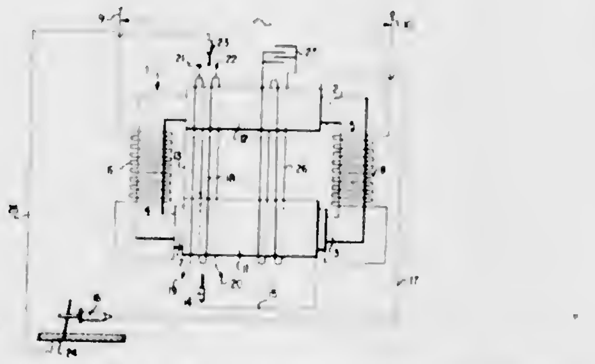
said potential source, whereby current conduction between the first input terminal and the output terminal of the



regulator produces a compensating voltage drop across said resistance means.

3,185,917
PERIMETER WOUND TRANSFORMER

Frederick C. Owen, 204 Fenton Place, Charlotte 7, N.C.
Filed June 14, 1962, Ser. No. 202,445
4 Claims. (Cl. 323—45)

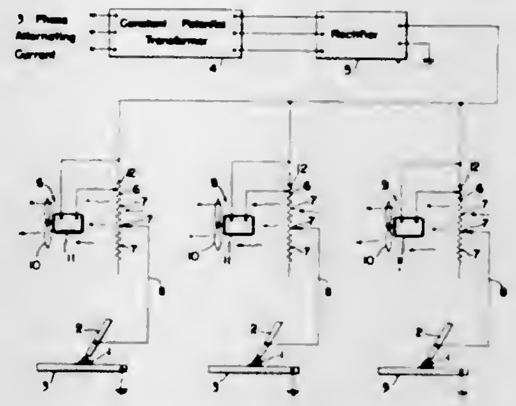


3. In combination with a welding transformer including a primary winding and main secondary winding, a voltage regulating secondary winding connected with the main secondary winding and wound encompassingly about the transformer and over and upon the primary and main secondary windings, a reactance of a character to materially improve the power factor of the welding transformer, and an energizing winding connected to said reactance and wound encompassingly about the transformer and over and upon the primary and main secondary winding, whereby said voltage regulating secondary winding and said energizing winding are inductively coupled with the primary and main secondary windings when the secondary is placed under load to thereby render the reactance effective only when the secondary windings are placed under load.

3,185,918
RESISTANCE CONTROLLED REGULATING SYSTEM FOR MULTI-ARC WELDING APPARATUS

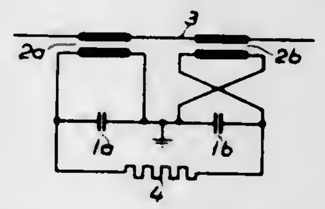
Arthur E. Johnson, Elkhorn, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed June 27, 1960, Ser. No. 39,131
5 Claims. (Cl. 323—68)

1. A current control device for a multi-arc welding system having a single power source, for establishing a plurality of paralleled arc circuits, said current control device being adapted to control current in one of said arc circuits and comprising an impedance unit including a base portion and an adjustable portion connected in series and adapted to be connected between the power source and one welding station to individually control the current to the corresponding arc with said base portion being adapted to be connected directly to the power source, and an electrically operated cooling fan including a motor connected across at least a portion of the base portion of the impedance unit to supply current to the arc and to the motor in series with said adjustable portion and thereby to establish cooling of the corresponding impedance incident to and in proportion to the corresponding arc current.



3,185,919
MEANS FOR SUPPRESSING FERROMAGNETIC OSCILLATIONS ARISING IN ELECTRICAL INSTALLATIONS

Sven Helmersson, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Mar. 16, 1962, Ser. No. 180,076
Claims priority, application Sweden, Mar. 18, 1961, 2,914/61
2 Claims. (Cl. 323—77)

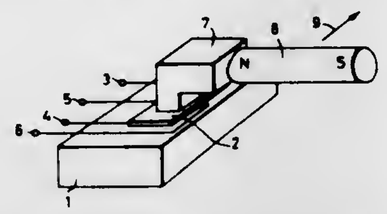


1. For connection to an electrical installation in order to suppress ferromagnetic oscillations therein, a line having two primary transformer windings series connected therein, at least two capacitors, separate secondary windings one associated with each primary winding, means connecting each secondary winding to one of the capacitors, each transformer and capacitor connected therewith constituting a group, the groups being dimensioned for the same secondary voltage but different power, the iron core of the transformer dimensioned for less power being over-dimensioned to such a degree that it is not saturated at any load arising in practice, and means connecting the capacitors to prevent substantial current flow through such connecting means at normal loads while permitting a substantial current flow when ferromagnetic oscillations arise.

3,185,920
SIGNAL-VOLTAGE GENERATING DEVICE

Julius Brunner, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Sept. 27, 1961, Ser. No. 141,167
Claims priority, application Germany, Sept. 30, 1960, S 70,731
4 Claims. (Cl. 323—94)

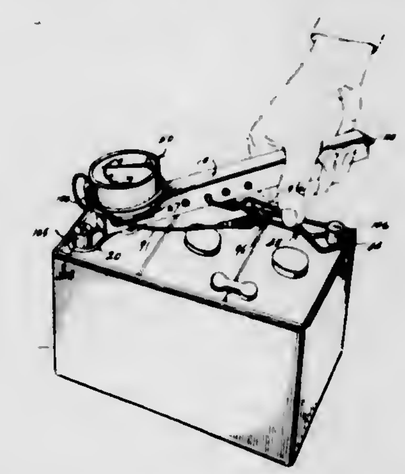
1. A signal voltage generating device comprising a Hall generator and movable structure having a given path of travel past the location of said Hall generator and having permanent magnet means mounted on said structure for subjecting said Hall generator to magnetic flux when said magnet means pass by said Hall generator, said Hall generator having a Hall plate with current supply leads and signal voltage output leads and having a ferrite plate member in face-to-face contact with said Hall plate, and said Hall generator having a substantially L-shaped bridge



piece of ferrite, said bridge piece having one planar end face-to-face with said Hall plate at the side opposite said ferrite plate member and having its other end facing said travel path for directing magnetic flux from said magnet means through said Hall plate.

3,185,921
COMBINATION BATTERY CARRIER AND VOLTMETER

Chester A. Sumter, Rte. 11, Knoxville 18, Tenn.
Filed Aug. 10, 1961, Ser. No. 130,687
8 Claims. (Cl. 324—29.5)

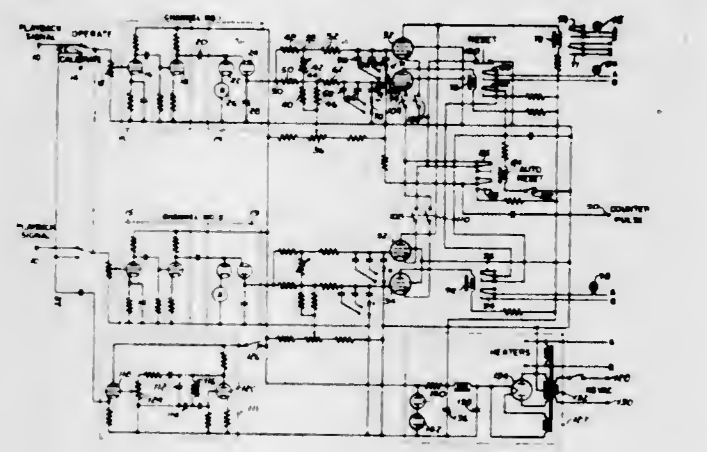


1. In a combination battery carrier and voltmeter, the combination of a battery carrier comprising an elongated insulated handle, a battery post engaging and connecting member mounted on said handle, said member being of electrically conductive material, a second battery post connecting member of conductive material mounted on said handle in insulated relation with respect to the first mentioned battery post engaging member, said post connecting members having means thereon to grip the battery posts as the handle is lifted, a voltmeter including a casing portion, a scale face, a pointer and operating means for the pointer connected upon said handle with the scale reading facing upwardly, said voltmeter having a pair of terminals, one of which is electrically connected to one of said battery post connecting members and the other terminal being connected conductively to the other battery post connecting member.

3,185,922
DEVICE FOR DETERMINING THE REPRODUCTION CHARACTERISTICS OF A MAGNETIC RECORDING MEDIUM

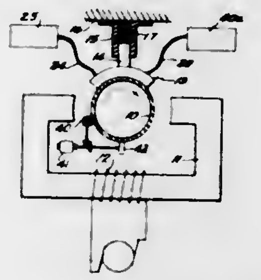
Don M. Wherry, 2121 Grandview Drive, Camarillo, Calif.
Filed Feb. 24, 1961, Ser. No. 91,554
1 Claim. (Cl. 324—34)
(Granted under Title 35, U.S. Code (1952), sec. 266)

In a magnetic recording media tester which analyzes a playback signal from the media to determine different dropout conditions within the signal, each condition representing a specified depth with respect to the signal level and width with respect to time; means for amplifying the playback signal, means responsive to the amplifying means for rectifying the playback signal into a uniform level voltage, means for producing a plurality of reference signals, means for summing the rectified playback signal with each of the reference signals so as to produce a plurality of resultant signals, a thyratron tube responsive to each resultant signal and biased thereby in an off condition when the playback signal is at a normal level, each thyratron tube having a firing level of a particular depth below the normal level of the resultant signal, the depth of the firing level being a function of one of the specified depths, means for adjusting the level of each reference signal so that the firing level of each thyratron tube can be varied, a network having an adjustable time constant between the summing means and each thyratron tube for delaying the rate of change of each resultant signal according to a function of one of the dropout conditions so that a thyratron tube will fire upon the occurrence of one of the dropout conditions, means responsive to at least one of the outputs of the thyratron tube for returning the tube when fired to an off condition so that the tube is continuously readied for a succeeding dropout and means responsive to the thyratron tubes for indicating when the tubes are being fired whereby the different dropout conditions are determined.



3,185,923
MAGNETIC INSPECTION DEVICE HAVING VARIABLE INTENSITY AUDIBLE ALARM MEANS RESPONSIVE TO SPACING BETWEEN DEVICE AND TEST PIECE

Michael Sadofsky, Houston, Tex., assignor, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed July 29, 1960, Ser. No. 46,145
1 Claim. (Cl. 324—37)



In an apparatus for magnetically inspecting a tubular ferromagnetic member for defects, the combination comprising:

- an arcuate search shoe shaped for engaging the outside surface of said tubular member and having
  - a search coil fixedly mounted therein for producing electrical defect signals as an incident of defects detected in said tubular member, and
  - an air-core differential transformer having at least one input coil inductively coupled to at least one output coil, said input and output coils being fixedly mounted in said shoe,

said at least one output coil being operative to produce variations in electrical output when said shoe is moved radially with respect to the outside magnetizable surface of said tubular member, the size of said variations being proportional to the size of said radial movement,

said search coil being operative to provide significant electrical defect signals only when said movement of said shoe is limited to maintain said shoe within a predetermined distance from said outside surface of said tubular member;

means for providing relative non-radial motion between said shoe and said wall of said tubular member during engagement between said shoe and said outside surface of said tubular member;

indicator means responsive to said defect signals produced during said relative non-radial movement for indicating defects in said tubular member;

a loudspeaker;

an electrical circuit interconnecting said at least one output coil and said loudspeaker,

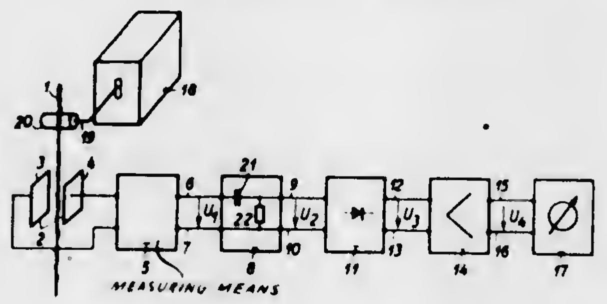
said circuit being responsive to said variation in electrical output from said at least one output coil to transmit energizing signals to said loudspeaker when said variations are above a predetermined level,

said energizing signals being directly proportional to the radial spacing between said shoe and said outside magnetizable surface of said tubular member;

whereby said loudspeaker is increasingly energized in proportion to said radial spacing and only when said spacing exceeds said predetermined distance.

3,185,924
APPARATUS UTILIZING CAPACITANCE MEASURING MEANS FOR THE CONTINUOUS MONITORING OF ELONGATE MATERIALS DURING PRODUCTION TO PERMIT DETERMINATION OF THE DEVIATION OF THE DENIER FROM A DESIRED VALUE

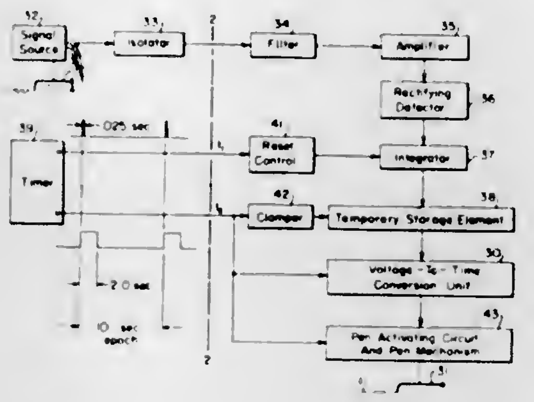
Hans Locher, Uster, Switzerland, assignor to Zellweger Ltd., Uster, Switzerland, a corporation of Switzerland
Filed July 14, 1959, Ser. No. 827,053
15 Claims. (Cl. 324—61)



1. Means for continuously supervising an elongate textile material during production to permit determination of the deviation of the measurement of the material from a desired value, said means comprising: measuring means providing an electrical signal representative of a quality of the textile material; vibrating means for effecting periodic relative movement between the material and said measuring means so as to produce a periodicity in the electrical signal provided by said measuring means; and frequency filtering means connected to receive as an input signal the signal from said measuring means, said filtering means passing an output signal containing only those frequencies of the input signal higher than the frequency of the relative movement between the material and said measuring means, whereby the output of said filtering means will be a signal representative only of quality variations of the material unaffected by the effects of long term disturbances on the measuring means.

3,185,925
ELECTROENCEPHALOGRAPHIC ANALYZING AND RECORDING APPARATUS

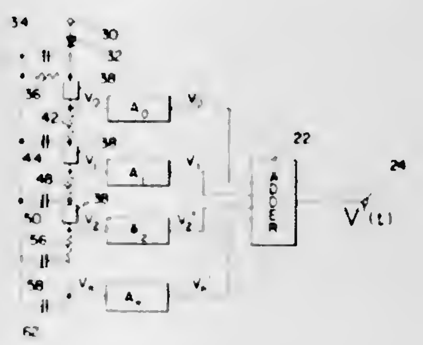
Albert M. Grass, 77 Reservoir Road, Quincy, Mass.
Filed Aug. 16, 1960, Ser. No. 49,861
12 Claims. (Cl. 324—77)



1. Apparatus for analyzing the waveforms of electrical signals as said signals are received, and for recording the analysis on a moving chart, said apparatus comprising, means for moving said chart in a predetermined relationship to the time of receipt of said signals, filtering means to transmit selected frequency components of said signals, detection means to derive direct signal voltages from said signal components, integrating means to provide output voltages representing integral functions of said signal voltages, circuit means to cause said output voltages to decay at a predetermined rate to a predetermined level, and writing means to generate traces on said chart which have lengths determined by the decay times of said voltages, whereby each of said traces corresponds with portions of said signals received during a predetermined identifiable time.

3,185,926
SYSTEM FOR RECOGNITION OF PARTICULAR DISTRIBUTIONS OF PULSES REPRESENTING AN INPUT WAVEFORM

Joris M. Brinkerhoff, Arlington, Mass., assignor to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed July 26, 1962, Ser. No. 212,685
10 Claims. (Cl. 324—77)



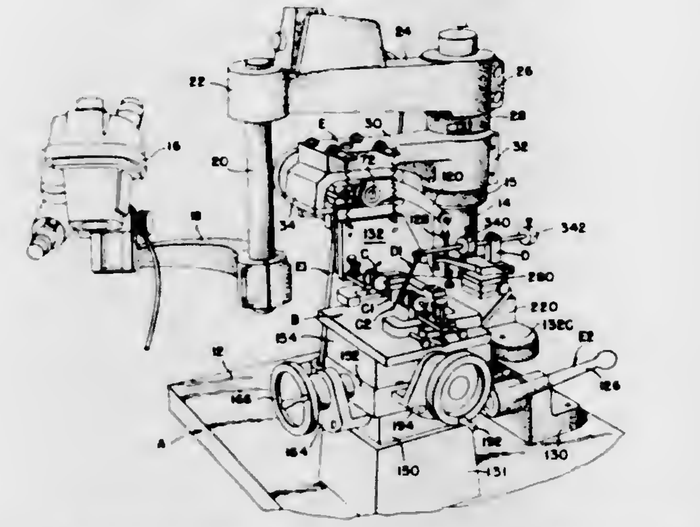
1. Recognition system for identifying a series of pulses of substantially constant duration and amplitude as having a distribution in time characteristic of a known waveform comprising:

(*a*) means for generating in response to each of said pulses a specific voltage time waveform, said specific waveform being selected as a predetermined mathematical function of said known waveform; and

(*b*) means for continuously summing all of said specific waveforms to give an integrated output thereof, the magnitude of said output being indicative of the likelihood that said series of pulses represents said known waveform.

3,185,927
PROBE INSTRUMENT FOR INSPECTING SEMICONDUCTOR WAFERS INCLUDING MEANS FOR MARKING DEFECTIVE ZONES

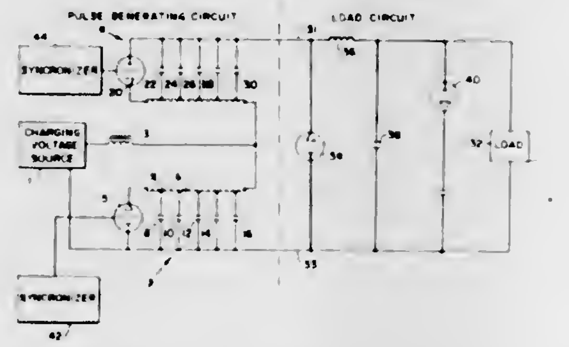
Lawrence G. Margulis and Earl A. Zanger, Jr., Philadelphia, Pa., assignors to Kulicke & Soffa Mfg. Co., Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 31, 1961, Ser. No. 86,165
27 Claims. (Cl. 324—158)



21. A probe instrument for inspecting semiconductor wafers having surface electrodes comprising a frame, a chuck supporting a wafer to be tested, a probe head vertically reciprocable in said frame above said chuck, a probe tip hingedly depending from said head and restrained from pivoting below a predetermined horizontal axis, a gouging tip supported in said head adjacent said probe tip; means to depress said head so that first said probe tip and then said gouging tip are urged into abutment with said wafer, and means actuated by the depression of said probe head below a predetermined level pivotally withdrawing said probe tip out of engagement with said wafer before said gouging tip engages therewith.

3,185,928
PULSE GENERATOR EMPLOYING PLURAL PULSE-FORMING-NETWORKS WITH PULSE PRODUCING MEANS FOR CANCELLATION OF UNDESIRABLE REFLECTED PULSE

Michael J. Coyle, Bay Shore, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed May 24, 1963, Ser. No. 283,124
4 Claims. (Cl. 328—65)



1. A pulse generating circuit for supplying a high voltage pulse to a load free from re-excitation by reflected pulses, said circuit comprising:

(*a*) a pair of series coupled pulse forming networks connected to said load,

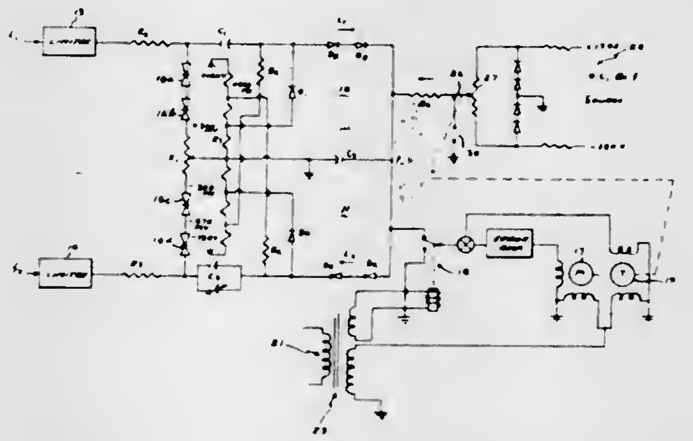
(*b*) a voltage source connected to said pulse forming networks for charging said networks to a desired potential,

(*c*) means connected to one of said pulse forming networks for discharging said networks across said load, and

(*d*) means connected to one of said pulse forming networks for reversing the polarity of an impulse transmitted thereto from the load, whereby the reflected pulses emerging from said pulse forming networks will be of opposite polarity and cancel one another.

3,185,929
SUM AND DIFFERENCE FREQUENCY COMPUTERS FOR AMPLITUDE MODULATORS

Hugh P. Taylor, Wayland, and James C. Davis, Jr., Carlisle, Mass., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 28, 1963, Ser. No. 268,839
5 Claims. (Cl. 328—133)



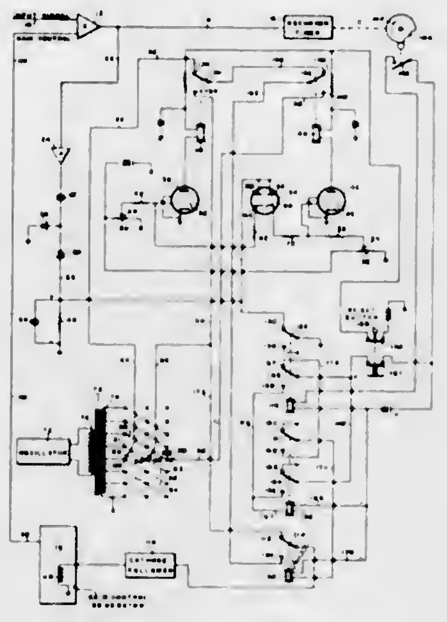
1. A device for producing a control voltage proportional to a mathematical function of two frequencies comprising; a first capacitor, a charging circuit for said first capacitor including a silicon diode, a second capacitor, a charging circuit for said second capacitor including a second silicon diode, means for applying a square wave signal of a first frequency to the charging circuit for said first capacitor, means for applying a square wave of equal amplitude and a second frequency to the charging circuit for said second capacitor, a third capacitor, means including a first pair of diodes connected in series between said first capacitor and said third capacitor for transferring charge from said first capacitor to said third capacitor, means including a second pair of diodes connected in series between said second capacitor and said third capacitor for transferring charge from said second capacitor to said third capacitor, a source of reference potential, a servocontrolled potentiometer connected across said source of reference potential, a feedback resistor connected between the center arm of said servocontrolled potentiometer and the junction between said first and second pair of diodes and said third capacitor, means responsive to the voltage at the junction of said first and second pair of diodes and said third capacitor for adjusting the center arm of said serovcontrolled potentiometer to provide a nulling current to said junction and an output circuit connected to the junction of said feedback resistor and the center arm of said servocontrolled potentiometer.

3,185,930
AUTOMATIC GAIN LEVEL ADJUSTER

Thomas H. Crawford, Benjamin F. Ehrlich, and James R. Ording, Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Dec. 17, 1962, Ser. No. 245,290
3 Claims. (Cl. 328—175)

1. In combination: a signal input circuit; a recording and timing circuit for receiving the signals from the signal input circuit; a gain control generator; means for conducting a gain control signal from the gain control generator to the signal input circuit; a rectifier connected to the signal input circuit for receiving signals from the signal input circuit; a first and a second normally nonconducting member; switching means including a first

switch and a second switch controlled by the first and second normally nonconducting members, respectively; adjustable means for applying different biases to each of said normally nonconducting members; switch controlled means for conducting the rectified signals from the rectifier to said normally nonconducting members; a voltage source; means for providing three different voltages from said voltage source to said switching means; and a conducting line leading from said switching means to the gain control generator, whereby the biases on said normally nonconducting members can be adjusted so that the positions of the first and second switches in said switching means will be such that the proper voltage will be fed to the gain control generator to keep the magnitudes of the input signals fed to the recording and timing circuit within a predetermined magnitude range.

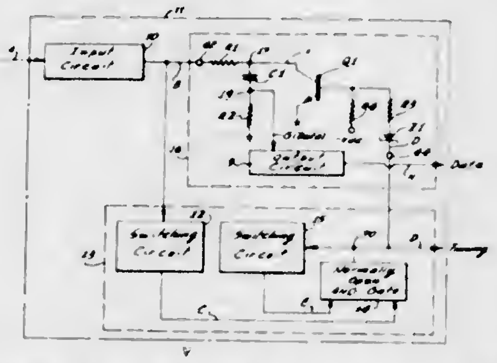


3,185,931
DIFFERENTIALLY COHERENT BIPHASE DEMODULATOR

Harry C. Collins, Canoga Park, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.

Filed Oct. 22, 1962, Ser. No. 232,234

9 Claims. (Cl. 329—103)



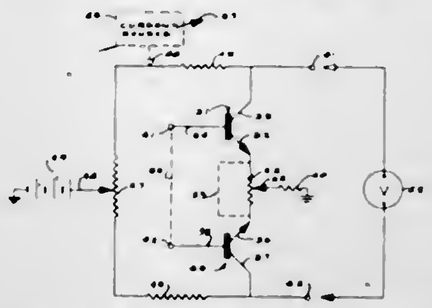
1. A biphase demodulating apparatus for separating an applied differentially phase modulated input signal, having timing and data information contained therein, into a train of regularly recurring timing signals and a series of data signals, respectively representing said timing and data information, said apparatus comprising:
- a timing signal generator responsive to the differentially phase modulated input signal for producing a timing signal of predetermined period T; and
- a differentially coherent biphase detection means receiving the phase modulated signal and responsive to said timing signal for integrating said phase modulated signal over each time period T defined by the timing signal to selectively produce a data output signal in accordance with the information contained in said phase modulated signal.

3,185,932
METHOD OF ADJUSTING DIRECT-CURRENT AMPLIFIER TO ACHIEVE SUBSTANTIALLY ZERO TEMPERATURE DRIFT COEFFICIENT

Norman C. Walker and James A. Nelson, San Diego, Calif., assignors to Dana Laboratories, Inc., Santa Ana, Calif., a corporation of California

Filed Aug. 27, 1962, Ser. No. 219,592

5 Claims. (Cl. 330—12)



1. The method of adjusting a direct-current transistor amplifier to have a substantially zero temperature drift coefficient, said amplifier having one stage which includes first and second transistors having unequal characteristics each having an emitter, a collector, and a base, and a resistive impedance element connected between said emitters, said method comprising the steps of:

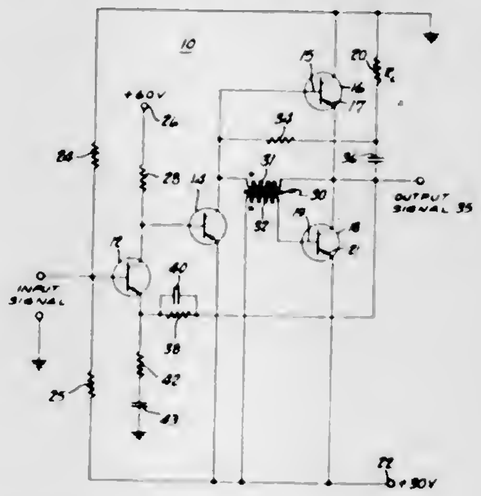
(1) Applying an input signal to said stage,
  (*a*) said input signal having a fixed predetermined value;
(2) Setting V_{BE1} substantially equal to V_{BE2}, where
  (*a*) V_{BE1} is the voltage drop between the base and emitter of one of said transistors, and
  (*b*) V_{BE2} is the voltage drop between the base and emitter of the other of said transistors; and
(3) Adjusting at least one circuit element in said amplifier until the output voltage thereof reaches a predetermined value corresponding to said predetermined fixed input signal.

3,185,933
CLASS B AMPLIFIER CIRCUIT

Robert J. Ehret, Los Altos, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Nov. 20, 1961, Ser. No. 153,509

5 Claims. (Cl. 330—14)



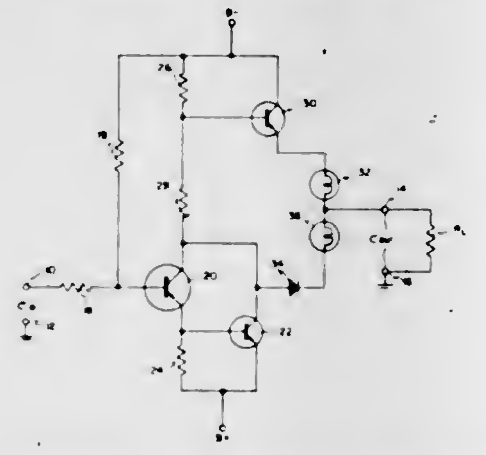
1. An electrical signal amplifying circuit comprising: a pair of output devices each having output electrodes arranged in a quasi-complementary configuration so that the respective devices amplify input signals of opposite polarity respectively, means connecting selected output electrodes of said devices together in a common output connection, a load connected to said common output connection, each of said devices having an input electrode and a third electrode, a transformer having primary and secondary windings, means connecting the primary winding of said transformer directly between the input electrode of a first one of said devices and the common output connection to provide a path therebetween having a resistance equal to that of said primary winding, means connecting the secondary winding of said transformer directly between the input electrode and third electrode of the second of said devices to provide a current path therebetween having a resistance equal to that of said secondary winding, bias means coupled between said third electrodes of said first and second ones of said output devices, and means directly coupled by purely resistive circuit paths to the input electrode of said first device and to said primary winding for applying information signals thereto in order to control both of said devices.

3,185,934
DIRECT COUPLED HIGH GAIN TRANSISTOR AMPLIFIER INCLUDING SHORT CIRCUIT PROTECTION MEANS

James R. Patmore, Neptune, N.J., and Charles R. Killian, Baton Rouge, La., assignors to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey

Filed Aug. 6, 1962, Ser. No. 214,889

8 Claims. (Cl. 330—19)



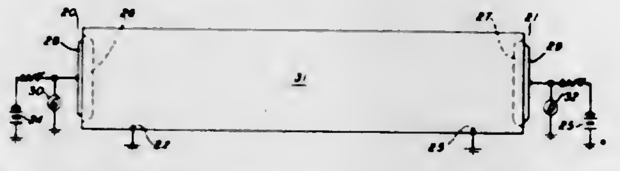
8. A D.C. amplifier comprising an input terminal and an output terminal,
- first transistor means,
- means connecting a base of said first transistor means to said input terminal,
- a second transistor means being connected to receive an input signal at its base from the collector of said first transistor means,
- means including a diode connected between said collector of said first transistor means and said output terminal, and
- means including at least one short circuit protection device connecting said emitter of said second transistor to said output terminal.

3,185,935
PIEZOELECTRIC TRANSDUCER

Donald L. White, Mendham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 25, 1960, Ser. No. 64,808

10 Claims. (Cl. 333—30)



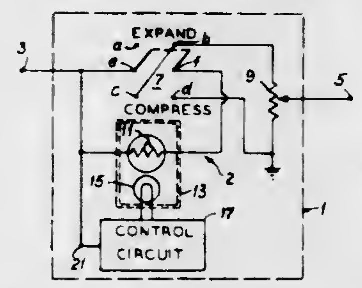
1. A piezoelectric transducer comprising a piezoelectric semiconductor material, a D.C. source connected to a piezoelectric face of said semiconductor material, a p-n junction in the semiconductor material and a depletion layer accompanying said p-n junction, said depletion layer extending substantially in the direction of a piezoelectric axis of said material and having a thickness as measured in a direction parallel to a piezoelectric axis in the range of 10^{-3} cm. to 10^{-6} cm., an electrical lead attached to a piezoelectric face of said semiconductor material and adapted to carry a high frequency signal and an additional ground contact on an adjoining face of said semiconductor, said contact having a resistance to forward currents of less than half the resistance of the said p-n junction to reverse currents.

3,185,936
DYNAMIC RANGE MODIFIER

Steven B. Fuller, 226 Spring Ave., Webster Groves 19, Mo.

Filed Dec. 8, 1961, Ser. No. 158,079

11 Claims. (Cl. 330—59)



1. Apparatus for modifying the dynamic range of an electrical signal comprising:
- a first electrical circuit through which said electrical signal is conducted, said circuit having an input circuit and an output circuit including an output resistance,
- an incandescent source of luminous energy,
- a second electrical circuit having an input circuit to which said electrical signal is applied, said second electrical circuit having an output circuit connected to said source for variably controlling the intensity of the luminous energy radiated by said source as a generally smooth continuous function of the amplitude level of said electrical signal over a substantial range of amplitude levels thereof,
- a light-sensitive resistor positioned in light-receiving relationship with said source, said light-sensitive resistor having a resistance which varies as a function of the intensity of the luminous energy impinging thereon, said light-sensitive resistor being connected in said first electrical circuit to vary the conductivity thereof as a function of said intensity, and
- a switch having first and second positions connected in said first electrical circuit and adapted, when in said first position, to place said light-sensitive resistor in parallel with said output resistance and, when in said second position, to place said light-sensitive resistor in series with said output resistance, whereby said electrical circuits function, with said switch in said first position, to compress the dynamic range of the electrical signal conducted through said first electrical circuit and, with said switch in said second position, to expand the dynamic range of the electrical signal conducted through said first electrical circuit.

3,185,937
MAGNETO-RESISTANCE NONRECIPROCAL SIGNAL AMPLIFIER

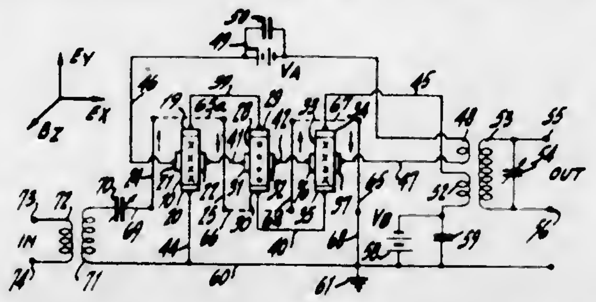
Kern K. N. Chang, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Feb. 27, 1961, Ser. No. 91,902

15 Claims. (Cl. 330—63)

1. A magneto-resistance nonreciprocal signal amplifier comprising in combination, a body of semiconductor material having spaced electrodal surface contact elements arranged thereon in opposed pairs along two different axes, means for applying a signal-variable unidirectional magnetic field through said body along a third axis, means

connected with said pairs of contact elements for applying direct-current voltages thereto in predetermined magnitude relation to establish electrical fields in said body and a predetermined high degree of sensitivity to said magnetic field variations for magneto-resistance variation of current flow through said body, and a signal translating circuit connected with one of said pairs of contact elements.



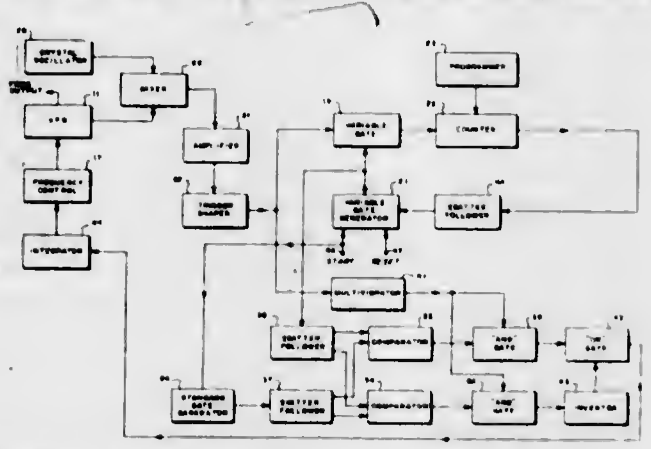
3,185,938
VFO CONTROL FOR GENERATING STABLE DISCRETE FREQUENCIES

Louis V. Pelosi, Oreland, Pa., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 27, 1962, Ser. No. 176,162

1 Claim. (Cl. 331—11)

(Granted under Title 35, U.S. Code (1952), sec. 266)



A system for providing a multiplicity of selectable frequency output signals, comprising in combination:

variable frequency oscillator means.

frequency control means connected to said variable frequency oscillator means for varying the output frequency of said variable frequency oscillator,

crystal oscillator means,

mixer means connected to said frequency oscillator means and said crystal oscillator means providing a frequency output signal lower than the frequency output of said variable frequency oscillator means,

shaping circuit means connected to said mixer for shaping the output from said mixer into trigger pulses,

means connected to said mixer for deriving a control voltage therefrom,

counter means providing an output pulse after a predetermined count,

programmer means connected to said counter means for inserting a selected count into said counter means to cause said counter to emit said output pulse when the sum of the count from said shaping circuit means and said programmer means equals said predetermined count,

gate means connected between said shaping circuit means and said counter means for passing the output of said shaping circuit means to said counter means,

variable gate generator means for generating a pulse of variable duration,

standard gate generator means for generating a pulse of predetermined duration,

terminal means for supplying a start pulse to said variable gate generator means and said standard gate generator means,

first conductor means connecting said counter means to said variable gate generator means for cutting off said variable gate pulse when said counter means reaches said predetermined count,

second conductor means connecting said variable gate generator means to said gate means for opening said gate means for the duration of said variable gate pulse,

a first comparator circuit connected to said variable gate generator means and said standard gate generator means providing a first output pulse proportional to the amount the duration of said variable gate pulse exceeds the duration of said standard gate pulse,

a second comparator circuit connected to said variable gate generator means and said standard gate generator means providing a second output pulse proportional to the amount the duration of said standard gate pulse exceeds the duration of said variable gate pulse,

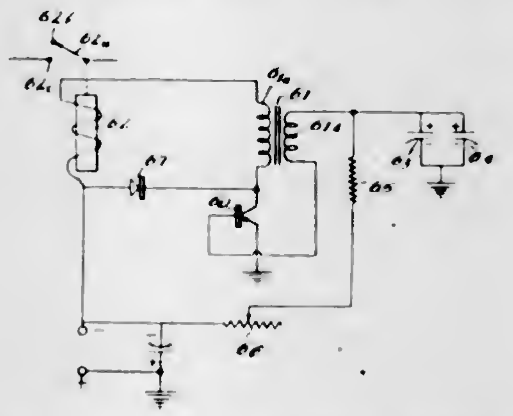
and circuit means connected between said first comparator circuit means and said frequency control means and receiving said control voltage for converting said first output pulse from said first comparator circuit to a voltage whereby the frequency output of said variable frequency oscillator means is decreased to cause said pulse durations to become equal, said circuit means connected between said second comparator circuit means and said frequency control means and receiving said control voltage for converting said second output pulse from said second comparator circuit to a voltage whereby the frequency output of said variable frequency oscillator means is increased to cause said pulse durations to become equal.

3,185,939
GENERATOR WITH BLOCKING OSCILLATOR CONTROLS

John I. Moss, Skokie, Ill., and William J. Browner, San Leandro, Calif., assignors to Relax-Acizor, Inc., a corporation of California

Original application Sept. 12, 1958, Ser. No. 760,635, now Patent No. 3,108,597, dated Oct. 29, 1963. Divided and this application May 6, 1963, Ser. No. 278,268

4 Claims. (Cl. 331—52)



1. In an electronic muscle stimulator, means for generating electrical signals for muscle stimulation, comprising: a source of operating potential; a timing pulse generating transistor blocking oscillator having collector, emitter and base elements; a feedback transformer having a primary winding connected in the emitter-collector circuit of said transistor, across said source of operating potential, said transformer having a secondary winding connected with said base; a reactance network connected between said secondary winding and said source; a pulse responsive relay having an operating coil connected in series with said transformer primary in the emitter collector circuit of the transistor blocking oscillator and having switch means with a first and second condition, said switch means being periodically actuated from one

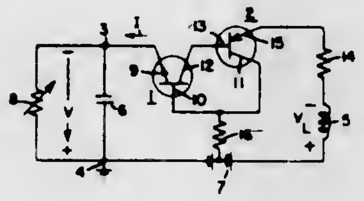
condition to the other by successive pulses of said timing oscillator; a diode connected in parallel with the series combination of said primary winding and relay coil and poled to conduct current flowing in a direction opposite the flow of current through said transistor to dissipate transient voltages developed in said transformer and relay coil; and a muscle stimulating signal generator connected with said switch means and having an operative and an inoperative condition, dependent on the condition of said switch means.

3,185,940
COMPLEMENTARY TRANSISTOR NEGATIVE RESISTANCE RELAXATION OSCILLATOR

Harold W. Abbott and Heinz Raillard, Syracuse, N.Y., assignors to General Electric Company, a corporation of New York

Filed July 6, 1961, Ser. No. 122,135

3 Claims. (Cl. 331—111)



1. A low duty cycle pulse generator circuit comprising a semiconductor arrangement having at least four alternate regions of opposite conductivity and exhibiting current amplification, having a current ejecting electrode, a control electrode and a current injecting electrode, a first series connection of a first resistance and a means providing a first energizing potential connected in the order recited between said control electrode and said current injecting electrode, said semiconductor arrangement thereby providing a negative resistance characteristic in response to energy applied thereto, a second series connection including a second resistance and a means providing a second energizing potential connected between the current ejecting electrode and a point on said first series connection, a capacitance connected in shunt with a portion of said second series connection, said portion including said second resistance, said circuit thereby operating as an oscillator, during the course of the oscillations said semiconductor arrangement being switched between a conducting and a nonconducting state, a path including said capacitance being thereby formed which joins said current ejecting electrode and said current injecting electrode, an inductance connected in said path having a transient current generated therein upon conduction of said semiconductor arrangement, the rise time of said transient current as determined by the circuit parameters including said inductance being a small fraction of the time of conduction per cycle of said semiconductor arrangement whereby the oscillations of said circuit provide an efficient low duty cycle pulse across said inductance.

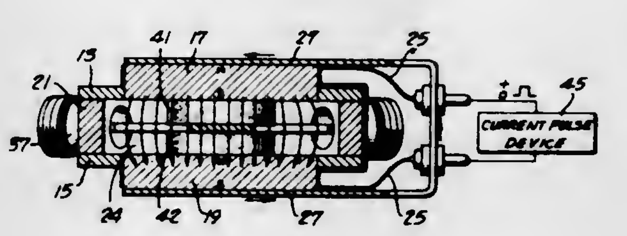
3,185,941
PULSE-ACTUATED STRIP LINE FERRITE CIRCULATOR SWITCH UTILIZING RESIDUAL MAGNETIZATION TO ELIMINATE HOLDING CURRENT

Leo Freiberg, San Jose, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Apr. 30, 1962, Ser. No. 191,358

2 Claims. (Cl. 333—1.1)

1. A microwave switch comprising means forming a cavity, an input communicating with said cavity, first and second outputs communicating with said cavity, a member disposed in said cavity and having first, second and third legs connected to a common junction, the other ends of said first, second and third legs respectively connected to said input and first and second outputs, first and second members operatively connected to said means and located on opposite sides of said common junction, ferrite material in facial contact with said first member and one side of said junction, ferrite material in facial contact with said second member and the other side of said junction, said first and second members consisting of switchable magnetic SAE 4130 steel which retains residual magnetization upon being switched, windings disposed about said first and second members, means operatively connected to said windings for applying positive and negative current pulses, whereby after the application of a positive current pulse said first and second members retain residual magnetization and provide a field in a first direction through said junction resulting in the transmission of a microwave signal from said input to said first output and after the application of a negative current pulse said first and second members retain residual magnetization and provide a field in a direction opposite to said first direction through said junction resulting in the transmission of a microwave signal from said input to said second output.



ERRATUM

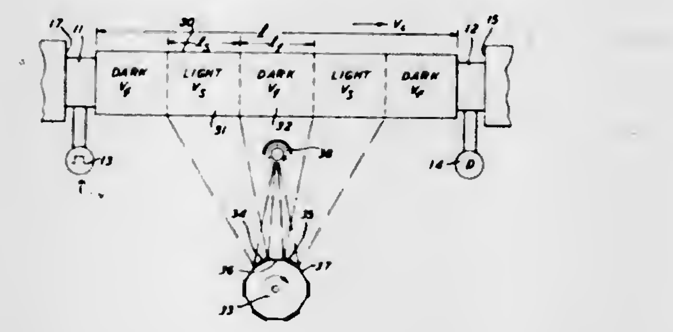
For Class 333—30 see:
Patent No. 3,185,935

3,185,942
PULSE TIME AND FREQUENCY CHANGER UTILIZING DELAY LINE WITH CONTROLLABLE DELAY

Donald L. White, Mendham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 29, 1961, Ser. No. 163,304

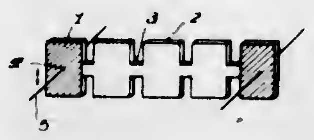
5 Claims. (Cl. 333—30)



1. In combination, a source of pulses of ultrasonic wave energy, a propagation medium to which said pulses are applied for propagation therealong, said medium having at least two sections of first and second different propagation velocities for said energy and an interface between said sections, and means for moving said interface along said medium at a third velocity different from both said first and second velocities.

3,185,943
ONE-PIECE MECHANICAL FILTER HAVING PORTIONS FORMING PLURAL RESONATORS AND COUPLING MEANS

Seiichi Honda, Hitachi-shi, Ibaragi-ken, and Yuzo Nakazawa, Kawasaki-shi, Kanagawa-ken, Japan, assignors to Toyotsushinki Kabushiki Kaisha (known as Toyo Communication Equipment Co., Ltd.), Kawasaki-shi, Japan
Original application Apr. 16, 1957, Ser. No. 653,190, now Patent No. 3,015,789, dated Jan. 2, 1962. Divided and this application Dec. 29, 1961, Ser. No. 188,291
3 Claims. (Cl. 333—72)

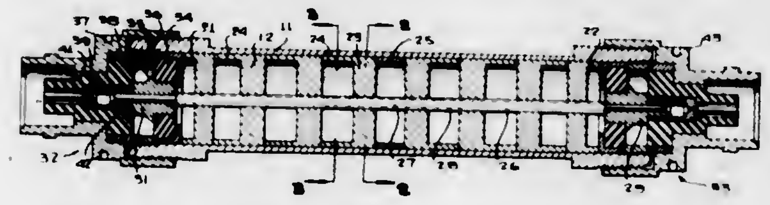


1. An electro-mechanical filter comprising a plurality of resonators, means coupling said resonators in series and means coupling a transducer to each end resonator of the series, the resonators, transducers and coupling means being a single quartz element,

wherein each said coupling means is connected to the adjacent resonators at points adjacent the nodal points of vibration of each said element.

3,185,944
COAXIAL FILTER

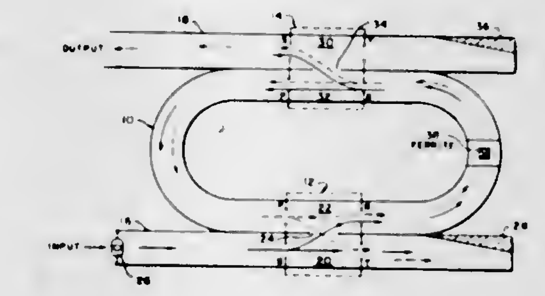
Howard C. Turnage, Vienna, Va., and Bernd Vossen, Beverly Hills, Calif., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Oct. 24, 1961, Ser. No. 147,349
4 Claims. (Cl. 333—73)



1. A coaxial low pass filter comprising an elongated inner conductor of substantially constant diameter, an outer elongated hollow conductor concentric with, insulated from and substantially surrounding said inner conductor, said conductors having substantially the same length, first coaxial connector means connected to both of said conductors at one end of said filter, second coaxial connector means connected to both of said conductors at the other end of said filter, said outer conductor comprising a plurality of discrete annuli of substantially the same outer diameter positioned in stacked relationship throughout the distance between both said connector means and held in place longitudinally of said inner conductor by both said connector means, said annuli, together in the stacked relationship, including a plurality of sections having high and low characteristic impedances, said sections of high and low characteristic impedance being alternately disposed along the length of said inner conductor, said sections of low characteristic impedance including annuli having their innermost surface separated from said inner conductor by a relatively short distance to provide relatively large capacity and inductance with said inner conductor, said sections of high characteristic impedance including annuli having their innermost surface separated from said inner conductor by a relatively large distance to provide relatively small capacity and inductance with said inner conductor, said elements having no fixed connection with said inner conductor and being slidable relative thereto when one of said connector means is detached, a sleeve having an inner diameter substantially equal to the outer diameter of said annuli and having its inner surface in contact with the outer surfaces of all of said annuli throughout the distance between said connector means so that said conductors bear primarily against said sleeve and said connector means, wherein one of said annuli comprises: a cup-like member having a cylindrical base segment with a bore through which said inner conductor extends, a cylindrical flange segment extending from one face of said base segment; said base segment of said cup forming one of said high characteristic impedance sections, said flange segment of said cup forming one of said low characteristic impedance sections.

3,185,945
AMPLIFIED MICROWAVE POWER LIMITER

William H. Wright, Jr., Wall Township, Monmouth County, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 2, 1960, Ser. No. 73,461
6 Claims. (Cl. 333—81)
(Granted under Title 35, U.S. Code (1952), sec. 266)



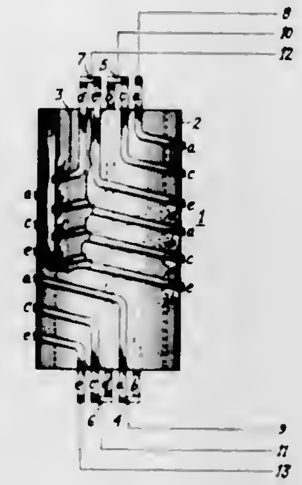
1. A microwave power-limiter comprising, rectilinear input and output waveguides each terminated at corresponding ends by energy absorbing means, a source supplying electromagnetic wave energy coupled to the other end of said input waveguide, a waveguide ring resonator, discrete means included in said ring resonator in respective coupling relationship with said input and output waveguides whereby said electromagnetic energy is coupled into said ring resonator from said input waveguide and electromagnetic energy is coupled out of said ring resonator to said output waveguide, the coupling means associated with the input waveguide having a prescribed coupling coefficient C, and a non-linear power sensitive element mounted within said ring resonator and responsive to the electromagnetic wave energy therein such that the output power derived therefrom will increase linearly with power input until a threshold power is reached at which time the output power levels off and remains constant, the power level in said waveguide ring resonator being above the power level of said energy source by the factor

$$\frac{1}{C^2}$$

3,185,946
TRANSFORMER TAP WINDING

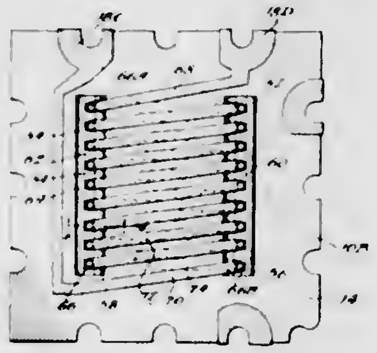
Wallace M. Johnson, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Nov. 20, 1962, Ser. No. 238,987
1 Claim. (Cl. 336—181)

A double layer tap winding for electromagnetic induction apparatus comprising concentric coaxial inner and outer layers of oppositely interwound multi-turn winding sections, said sections being of substantially equal length, a plurality of external terminals at each axially opposite end of said winding, adjacent ends of winding sections in different layers being connected through said terminals to connect all said winding sections in series circuit relation between a single pair of coil end terminals, one said winding layer having one more section than the other layer whereby equal numbers of said external terminals including a single coil end terminal are located at each axial end of said winding, and a separate tap lead connected to each of said external terminals thereby to provide an equal number of tap leads at each axial end of said winding with a tap-to-tap voltage therebetween equal to the winding section voltage.



3,185,947
INDUCTIVE MODULE FOR ELECTRONIC DEVICES

Bragi Freymodsson, Chicago, Ill., assignor to A.R.F. Products, Inc., River Forest, Ill., a corporation of Illinois
Filed Nov. 16, 1959, Ser. No. 853,319
12 Claims. (Cl. 336—200)

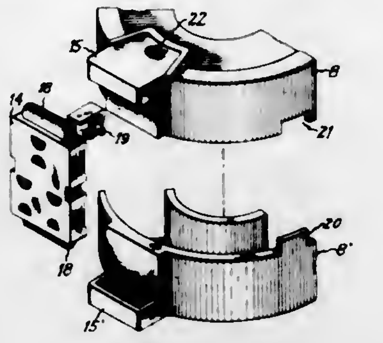


1. An inductance module comprising a thin wafer having first and second parallel surfaces and at least two notches extending therein from the periphery thereof, said wafer being constructed of material having at least the electrical resistivity of ferrite and a magnetic reluctance no greater than ferrite, an electrically conducting strip disposed on the surface of the wafer forming a coil, the coil being spiral in form and totally disposed on one surface of the wafer, electrically conducting land areas at the two notches, and electrical conductors extending from the ends of the coil to the land areas.

3,185,948
ELECTRICAL REGULATOR

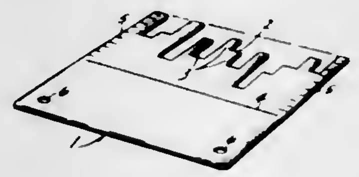
Henry J. Helberg, West Stockbridge, Mass., assignor to General Electric Company, a corporation of New York
Filed Mar. 14, 1962, Ser. No. 179,555
6 Claims. (Cl. 336—192)

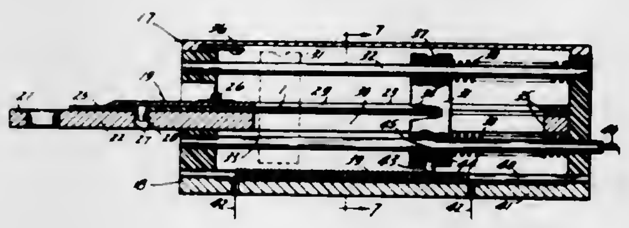
1. In a variable transformer, spaced pieces of solid insulation, a magnetic core within said pieces of insulation, a conducting multiple turn coil surrounding said pieces of insulation, said pieces of insulation being between said coil and said core, a space between certain turns of said coil, and a terminal board in said space, said terminal board and said pieces of insulation having interlocking surfaces anchoring said terminal board in said space.



3,185,949
CODED CONTROL PLATE READER WITH PLURAL SIGNAL ACTUATED MEANS

Charles E. Jordan, Milwaukee, Wis., assignor to Jordan Controls, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Jan. 24, 1961, Ser. No. 84,619
20 Claims. (Cl. 338—131)





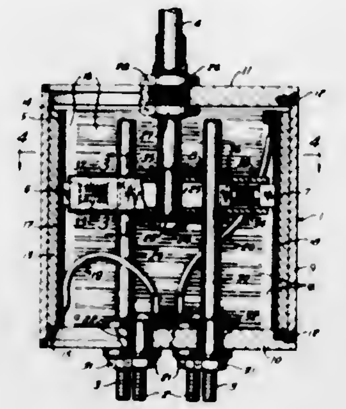
1. A code storage actuator for actuating a control including a plurality of operating control means each having a positioning element movably mounted for positioning movement in response to a rectilinear force applied thereto, said elements being arranged in laterally spaced relation, an actuating member disposed in the control actuator and having an operating edge extending coextensive of the positioning elements, means for positioning the elements into the location of the actuating member, and said operating edge being off-set to define a plurality of fingers aligned with the control means and said actuating member constituting the prime mover for moving said positioning elements in accordance with the length of the aligned fingers upon proper positioning of the member in the control.

3,185,950
ADJUSTABLE RESISTANCE DEVICE

Lionel E. Weyenberg, 3845 N. 169th St., Brookfield, Wis.
Filed Oct. 23, 1961, Ser. No. 146,904
8 Claims. (Cl. 338—176)

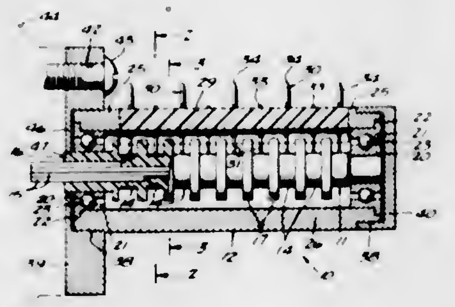
1. In an adjustable electrical resistance device, a tubular metallic casing, a resistance wire coil within the casing, a bonding and insulating material securing the coil to the casing, said coil including at least diametrically opposed facings free of said material, a brush holder slid-

ably mounted within the casing and movable axially therein, and a pair of contacts resiliently secured in the brush holder in individual engagement with the opposed facings.



3,185,951
SLIP RING ASSEMBLY

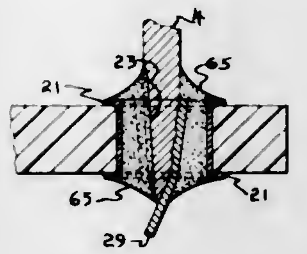
Lee Le Beau, 3120 Stanford Ave., Venice, Calif.
Filed Feb. 20, 1962, Ser. No. 174,606
7 Claims. (Cl. 339—5)



1. A unitary fully enclosed miniature slip ring assembly for use with gyroscopes and the like rotary devices, said assembly comprising a rotor assembly of dielectric material having bonded thereto a plurality of metallic slip rings each connected to an insulated lead wire extending lengthwise through said rotor assembly, housing means fully enclosing said rotor assembly and formed in a plurality of parts designed for assembly laterally toward said rotor assembly from the opposite sides thereof, at least one of said housing parts having electrically conductive brushes extending through and sealed to the walls thereof with their bifurcated inner ends positioned to engage an associated one of said slip rings from the diametrically opposed sides thereof, bearing means between said rotor assembly and said housing parts, means embracing the opposite ends of said housing parts to hold the parts thereof snugly assembled said brushes each comprising a single length of small-diameter resilient material having a generally U-shaped configuration to provide a pair of parallel legs straddling said rings and lightly spring pressed against the diametrically opposed sides thereof under substantially identical predetermined pressures, and the junction of one leg and the bight portion of said brushes including a small loop providing a soldering terminal for said brushes lying closely adjacent the exterior side wall of said housing, and said soldering terminals of adjacent ones of said brushes being at the opposite ends of said bight portions so as to be staggered and arranged in two parallel rows along one side of said housing.

3,185,952
LEAD CONNECTION FOR PRINTED CIRCUIT BOARD

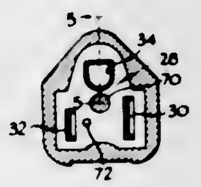
Rossiter R. Potter and Robert Ullman, Harrisburg, and Glenwood A. Fuller, Elizabethtown, Pa., assignors to AMP Incorporated, a corporation of New Jersey
Filed July 7, 1955, Ser. No. 520,544
19 Claims. (Cl. 339—17)



15. In an electrical assembly including a printed circuitry board having a hole from which a conductive strip on the surface of the board radiates, a lead wire disposed within the hole, an adapter member surrounding and in tight engagement with the lead wire, said member being in engagement with the side walls of the hole, a longitudinal opening in said member exposing the metal of said lead wire, a solder fillet surrounding said member and lead wire on said surface of the board and overlying and contacting the conductive strip, and a capillary solder filament in connection with said fillet and disposed in said opening in contact with said lead wire.

3,185,953
CONNECTOR

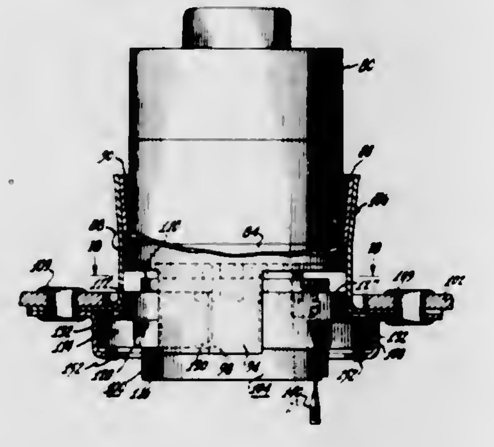
John Stanley Prifogle, New Garden Township, Wayne County, Ind., assignor to Belden Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 16, 1963, Ser. No. 309,063
2 Claims. (Cl. 339—59)



1. A polarized female electric connector comprising a molded relatively yieldable dielectric body having an end face, at least three elongated female contact members having outer ends adjacent said end face and extending therefrom generally parallel to each other within said body, each of said female contact members being adapted to receive an associated male contact extending from a complementary male plug having male contacts of different cross section, one of said female contact members being a grounding connection generally non-circular and made of sheet metal formed into a tube with a longitudinal seam, said body having an opening therein extending from said end face toward each of said female contact members for providing access to each female contact member by the associated male contact, and a relatively rigid one-piece sheet dielectric barrier within said body, extending across said openings inwardly of said end face and encased in said body, said barrier having a plurality of passages therethrough for accommodating the male contacts of the complementary male plug, one of said passages receiving the mouth of said tubular female contact member and closely encircling said mouth for effectively preventing distortion of said tubular female contact member at said mouth, the other passages being in alignment with the other openings and being of slightly larger cross section than the complementary associated male contacts, the outer ends of said other female contact members being spaced inwardly from the inner face of the barrier.

3,185,954
ELECTRON TUBE AND SOCKET

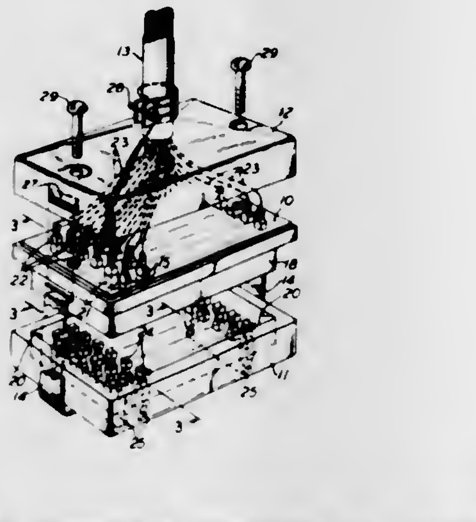
Otto H. Schade, Sr., West Caldwell, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Original application Feb. 24, 1959, Ser. No. 795,087, now Patent No. 3,051,864, dated Aug. 28, 1962. Divided and this application Jan. 26, 1962, Ser. No. 168,979
5 Claims. (Cl. 339—90)



1. An electron tube comprising an envelope, a base including a circular header member and a plurality of lead-in conductors sealed through and extending from said header member in a first direction and a tubular member disposed coaxially around said base in thermal contact therewith, said tubular member being outwardly flared away from said base in a second direction opposite to said first direction and having a pair of oppositely disposed elongated arcuate lugs of different arcuate length extending longitudinally from the periphery of said circular header in said first direction parallel to and beyond the outer ends of said lead-in conductors.

3,185,955
MULTIPLE WIRE ELECTRICAL CONNECTOR

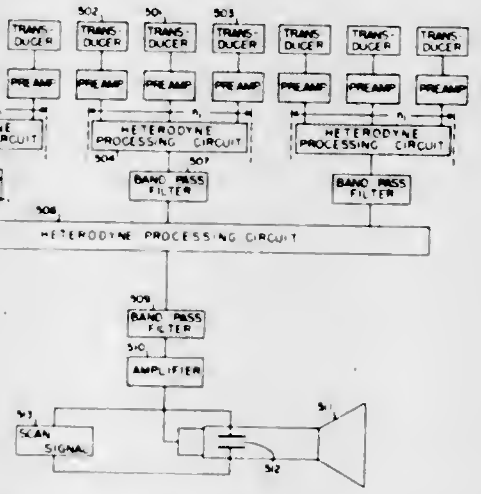
Arthur C. Keller, Bronxville, N.Y., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 21, 1963, Ser. No. 266,842
11 Claims. (Cl. 339—91)



1. An electrical connector comprising an insulating block having terminals mounted therein, the latter having cam means on one end, and; a second insulating block having mounted therein a plurality of terminals, the latter having cam receiving means on one end, said second block adapted to mate with said first-mentioned block, the terminals rigidly mounted in both blocks such that when said blocks are mated, said cam means cooperate with said cam receiving means, said cooperation comprising the inducing of rotational displacement of said cam receiving means by said cam means without rotationally displacing said terminals with respect to said blocks, said displacement causing a resistive torque which creates contact pressure between said cam means and said cam receiving means.

3,185,956
OBJECT DETECTING AND LOCATING APPARATUS

Gregory Michael Voglis, Teddington, and Hector Ford Willis, St. James' Park, London, England, assignors to The Commissioners for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland
Original application May 31, 1957, Ser. No. 662,942, now Patent No. 3,161,851, dated Dec. 15, 1964. Divided and this application Apr. 23, 1963, Ser. No. 275,796
2 Claims. (Cl. 340—6)



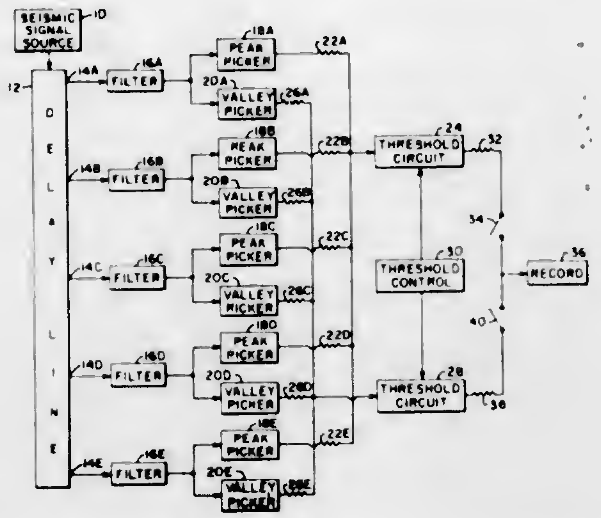
1. A scanning system, comprising:
a plurality of apparatus for controlling the directional reception of compressional waves in a fluid medium by a plurality of arrays of transducers, the central point of each being disposed about a second central point;
each of said apparatus comprising a plurality of modulating means each coupled to one of said transducers to modulate the signals received therefrom at a frequency proportional to the spacing of each transducer from said central point, and first combining means to combine the modulated signals from each of said transducers;
a second plurality of modulating means to modulate the output signals from each of said apparatus at a frequency proportional to the spacing of the central point of each apparatus from said second central point and the number of transducers therein;
and second combining means to combine the modulated signals from all of the apparatus.

3,185,957
ANALYSIS OF A SEISMIC SIGNAL FOR DETECTION OF A REFLECTED WAVELET

Wallace L. Ikard, Alexandria, Va., and Duane E. Soland, Minneapolis, Minn., assignors, by mesne assignments, to Esso Production Research Company
Filed July 27, 1960, Ser. No. 45,732
11 Claims. (Cl. 340—15.5)

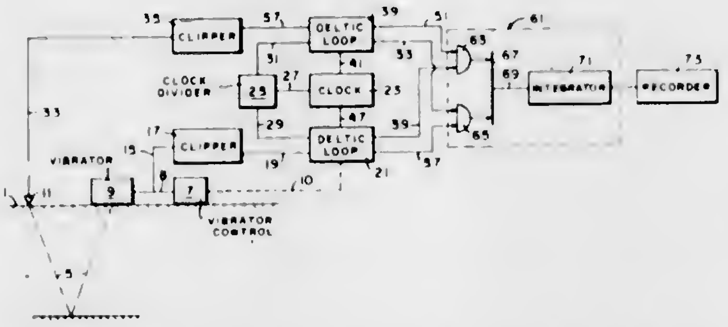
9. A method of analyzing a seismic signal which comprises: separating the seismic signal into a plurality of frequency components spaced over a selected spectrum;

detecting transient significant characteristics in each frequency component; and generating a pulse upon the simultaneous detection of such significant characteristics in at least two frequency component signals.



3,185,958
METHOD OF CONTINUOUS WAVE SEISMIC PROSPECTING

Horace T. Masterson, Troy N. Crook, and Alton C. Reid, all of Houston, Tex., assignors, by mesne assignments, to Esso Production Research Company, Houston, Tex., a corporation of Delaware
Filed Apr. 9, 1962, Ser. No. 186,124
8 Claims. (Cl. 340—15.5)



1. In the method of measuring the travel time along at least one path of propagation through the earth between spaced first and second points thereon of a vibratory signal having a characteristic thereof varying in accordance with a binary code of maximal length and which is nonrepetitive during a time interval substantially longer than the travel time of said signal along any of those paths of its propagation through the earth by which it reaches said second point at usable energy levels, and wherein is produced an electrical replica of the signal as transmitted and an electrical signal representative of the vibratory signal as received at said second point, the improvement which comprises:

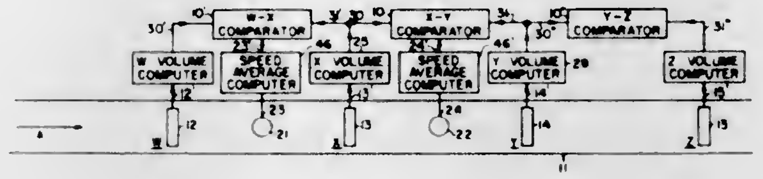
producing electrical pulses at salient points in the waveform of said electrical replica to form a first pulse train and producing electrical pulses at salient points on the waveform of said electrical signal representative of the signals as received to produce a second pulse train;

compressing said first and second pulse trains in real time to increase the pulse repetition rate thereof while maintaining constant the relative time spacing between pulses; and

cross correlating said compressed first and second pulse trains at a predetermined number of time-phase relationships to each other whereby travel time is established in accordance with the value of time-phase relationship between said pulse trains corresponding to a maximum value of correlation magnitude.

3,185,959
TRAFFIC MONITORING SYSTEM

John L. Barker, Norwalk, Conn., assignor, by mesne assignments, to Laboratory for Electronics, Inc., Boston, Mass., a corporation of Delaware
Filed Dec. 24, 1959, Ser. No. 861,975
22 Claims. (Cl. 340—38)



1. A traffic monitoring system for comparing the volume of traffic passing two widely spaced locations on a roadway in the same direction, including in combination,

two detector means for sensing vehicles in the same lane of the roadway, said detectors being widely spaced from each other so that a vehicle moving in said direction will pass said detectors in sequence,

volume computer means individual to each of said detectors for generating a signal voltage in accordance with the volume of traffic detected by its associated detector,

means for storing the volume signal voltage generated by the computer means for the first of said detectors in said direction,

means for comparing signal voltages,

means for applying the signal voltage from said storage means to said comparison means after a time delay approximating travel time for such traffic between said detectors,

means for applying the signal voltage generated by the computer means for the second detector to said comparison means whereby the signal voltages are compared at a time substantially when the traffic so sensed at the first location before said time delay should be passing the second location after said time delay,

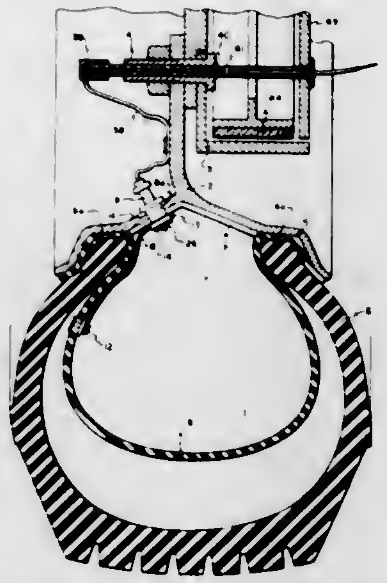
and indicator means activated by the output of said comparison means.

3,185,960
TIRE PRESSURE ALARM

Frank A. Howard, New York, N.Y.; Irma Amelie Howard, Frank A. Howard, Jr., and The Chase Manhattan Bank, executors of said Frank A. Howard, deceased
Original application May 16, 1956, Ser. No. 585,223, now Patent No. 2,969,824, dated Jan. 31, 1961. Divided and this application Dec. 9, 1960, Ser. No. 74,911
3 Claims. (Cl. 340—58)

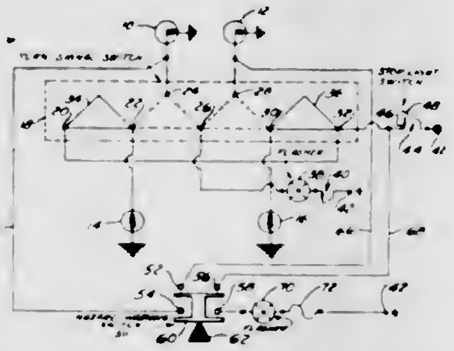
1. A pneumatic tire deflation alarm system for a vehicle comprising in combination a wheel, a wheel hub having outer and inner faces, a circle of threaded studs mounted in the hub for securing the wheel to the outer face thereof, one of said studs having an opening therein, electrical contacts carried by the wheel, means for closing said contacts in response to a drop of the tire inflation pressure to a predetermined pressure, an insulated electrical conductor passing through said stud opening and having an insulated electrical contact adjacent the inner face of the hub and moving therewith, an electrical conductor connecting the electrical contacts carried by the wheel to said insulated conductor, a stationary electrical contact carried by the vehicle and lying in the path of rotation of the contact on the inner face of the hub, and an alarm circuit carried by the vehicle and adapted to be energized when the electrical contacts carried by the wheel are closed in response to the drop of

the tire inflation pressure to the predetermined pressure and the insulated contact on the inner face of the hub and the stationary contact are intermittently closed during revolution of the wheel.



3,185,961
DISABLED VEHICLE SIGNALING CIRCUIT

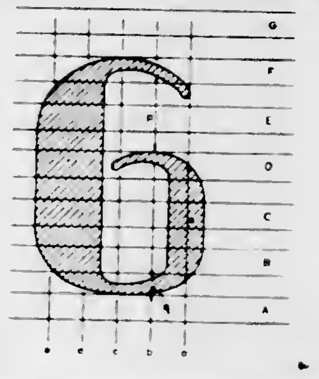
Gideon A. Du Rocher, Mount Clemens, Mich., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan
Filed Nov. 5, 1962, Ser. No. 235,422
4 Claims. (Cl. 340—81)



1. An electrical signaling system for automotive vehicles comprising the combination of an electrical power source; a turn signal circuit connected to said electrical power source, said turn signal circuit comprising front and rear lamps adapted to be selectively energized from said power source to indicate a turning movement of the automotive vehicle, a turn signal switch having a plurality of contacts adapted to be selectively actuated for determining the lamps to be energized, and a circuit interrupting flasher connected between said turn signal switch and said power source for repetitively interrupting the current flow to the lamps selected by said turn signal switch to provide a flashing indication of the automotive vehicle turning movement; a stop light switch having contacts connected between the power source and the rear lamp terminals of said turn signal switch and adapted when actuated to energize the rear lamps of the automotive vehicle; and a hazard warning circuit for causing all of said front and rear lamps to be repetitively energized and flashed simultaneously to indicate a hazard condition of the automotive vehicle, said hazard warning circuit comprising four stationary contact members and a selectively movable contact member, two of said stationary contact members being connected respectively to said front lamps, a third stationary contact member being connected to a circuit interrupting flasher, and the fourth stationary contact member being connected to the contact of said stop light switch which is connected to the rear lamps through the turn signal switch, said movable contact member normally being out of contact with said stationary contact members and being adapted when actuated to complete a circuit between all four of said stationary contact members to cause all of said front and rear lamps to be flashed simultaneously to indicate the existence of a hazard condition.

3,185,962
READING OF CHARACTERS

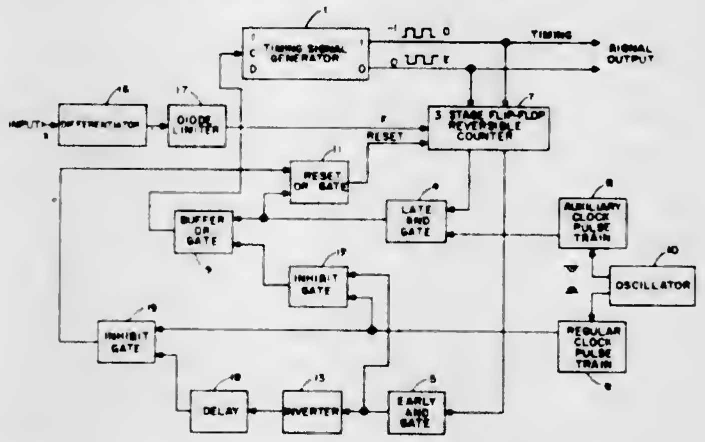
William Ellis Ingham, Ealing, London, England, assignor to Electric & Musical Industries Limited, Hayes, Middlesex, England, a company of Great Britain
Filed Aug. 20, 1959, Ser. No. 835,088
Claims priority, application Great Britain, Aug. 23, 1958, 27,126/58
11 Claims. (Cl. 340—146.3)



1. Apparatus for reading printed characters comprising means for analysing a character to produce a plurality of groups of discrete signals characteristic of the character, the number of kinds of said discrete signals being less than the number of said signals, means for producing for each group of said first discrete signals a further discrete signal of one kind if one particular criterion is satisfied by the respective group of first discrete signals and a further signal of another kind if that criterion is not so satisfied, and means responsive to the combination of said further discrete signals for identifying the character.

3,185,963
SYNCHRONIZING SYSTEM HAVING REVERSIBLE COUNTER MEANS

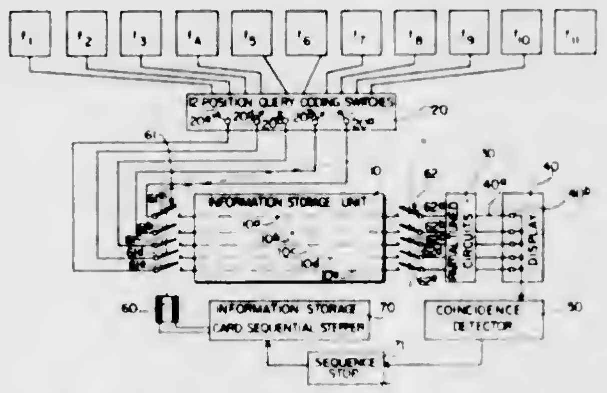
Norman E. Peterson and Ernest E. Courchene, Jr., Fairfield County, Conn., assignors to Stelma, Inc., Stamford, Conn., a corporation of Connecticut
Filed Nov. 25, 1960, Ser. No. 71,759
4 Claims. (Cl. 340—168)



1. A system for synchronizing an incoming binary information signal with a local timing signal, said system comprising means for generating clock pulses, first counter means, means for feeding said clock pulses to said first counter means to cause said first counter to generate said timing signals upon the receipt of a predetermined number of said clock pulses, reversible counter means having control means for causing said reversible counter means to count in either a forward or a reverse direction, means for generating transition pulses when-

ever the said binary information signals change from one selected state to the other, input means for coupling said transition pulses to the input of said reversible counter means, means for coupling the timing signals to said control means to operate the said reversible counter means to count in a forward direction when the timing signals are late with respect to the information signals and in a reverse direction when the timing signals are early with respect to the information signals, first gating means connected to said reversible counter means for recognizing a predetermined forward count in said reversible counter, means connected to and responsive to said first gating means and connected to said clock pulse feeding means for increasing the rate at which said clock pulses are fed to said first counter means, second gating means connected to said reversible counter means for recognizing a predetermined reverse count in said reversible counter, and means connected to and responsive to said second gating means and connecting to said clock pulse feeding means for decreasing the rate at which said clock pulses are applied to said first counter.

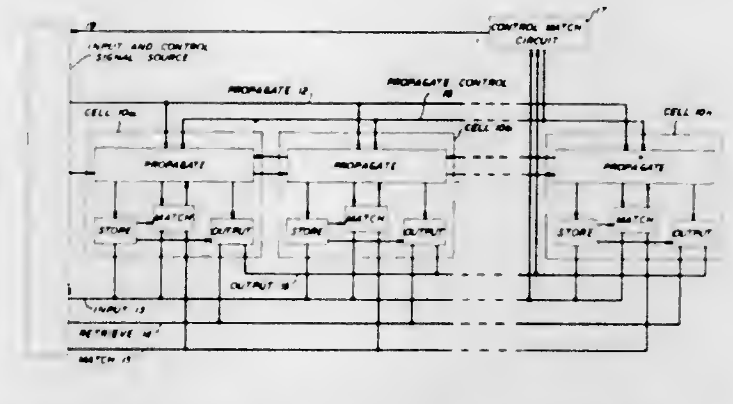
3,185,964
DATA SYSTEMS
Irwin B. Margiloff, 201 E. 19th St., New York, N.Y.
Filed Apr. 2, 1962, Ser. No. 184,207
23 Claims. (Cl. 340—172.5)



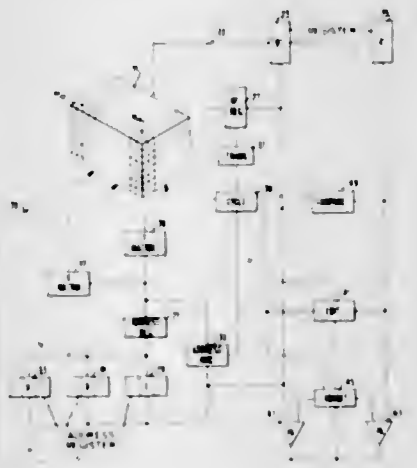
1. A data storage and retrieval system comprising a plurality of data storage units each having plural signal paths and at least some of the paths including reactance circuit elements; query signal generating means for delivering plural selected oscillation frequencies; partial tuned circuit means including plural paths at least some of which include reactances; switch means for coupling said query signal generating means with the paths of said partial tuned circuit means via corresponding paths of successive data storage units; and coincidence detector means coupled with the paths of said partial tuned circuit means for detecting simultaneous conduction through plural paths of a storage unit when the reactive paths are tuned by their circuit elements coupled with said reactance to said selected oscillation frequencies.

3,185,965
INFORMATION STORAGE SYSTEM
Chi-Yuan Lee, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 30, 1962, Ser. No. 190,856
23 Claims. (Cl. 340—172.5)

20. A data storage and retrieval system comprising a plurality of distinct cells connected in series, each of said cells comprising data storage elements, first activity indicating means, output elements and comparison means, means for applying signals indicating the content of said data storage elements and said activity indicating means to said comparison means, means for storing data in said data storage elements, and means for retrieving stored data from said system comprising means for applying each of a series of data symbols simultaneously to said comparison means in each of said plurality of cells, first propagating means responsive to a match in said comparison means of one cell for activating the indicating means in the succeeding cell in the series, and means for applying enabling signals to each cell following the application of said series of data symbols, said output elements in cells having the corresponding indicating means active being responsive to said enabling signals for providing output signals corresponding to the stored data symbol, said propagating means also responding to said enabling signals for activating the indicating means in the succeeding cell.



3,185,966
DATA EDITING SYSTEM
Richard L. Bennett, Vestal, and Francis O. Underwood, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 838,456, Sept. 8, 1959. This application May 4, 1962, Ser. No. 193,898
14 Claims. (Cl. 340—172.5)



1. Apparatus for editing data characters contained in a data word in accordance with a control word which contains characters which include edit control characters and data replaceable characters to form an edited data word comprising:

(*a*) means for scanning the characters in said control word, to generate an output indicative of each said character,

(*b*) means for scanning the characters in said data word to generate an output indicative of each said character,

(*c*) means for selectively receiving the output from said control character scanning means or said data character scanning means,

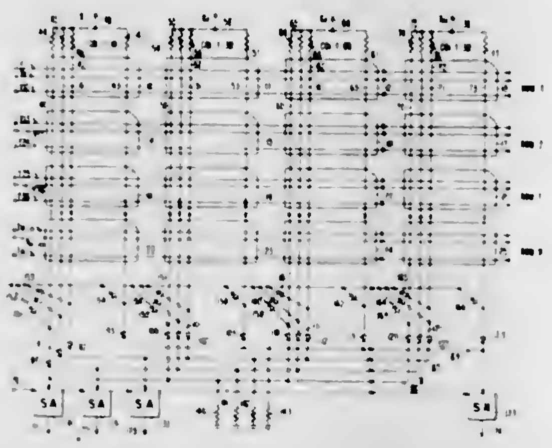
(*d*) means responsive to the transfer of a control character or a data character from the output of either said scanning means to said receiving means for controlling said scanning means to scan the next successive character in said associated control word or data word respectively,

(*e*) said receiving means normally operative to receive the output from said control character scanning means,

(*f*) and sensing means responsive to the output of said control word scanning means indicative of a data replaceable character to control said receiving means to receive the output from said data word scanning means,

(*g*) whereby data characters from said data word are interspersed with said control word characters in place of said data replaceable characters.

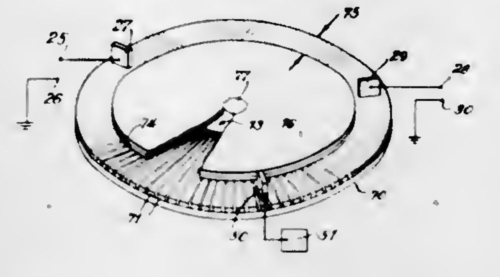
3,185,967
TWO DIMENSIONAL SELECTION SYSTEM FOR READ ONLY MEMORY
Henry R. Foglia, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Feb. 23, 1962, Ser. No. 175,076
1 Claim. (Cl. 340—173)



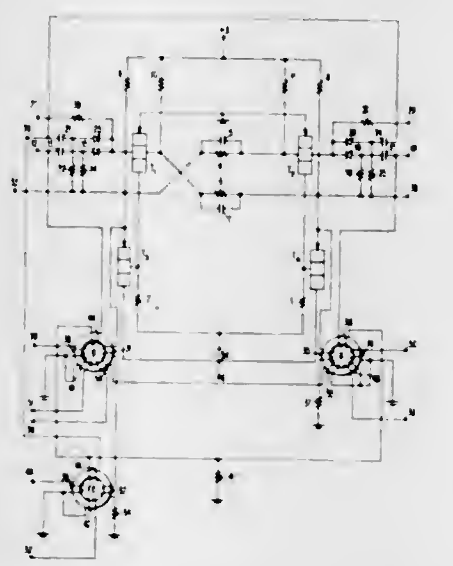
A card-capacitor memory matrix including a plurality of cards arranged in columns and rows, each card containing data manifesting perforations therein arranged in columns and rows, Y horizontal lines disposed on one side of the cards in alignment with the rows of the cards, X groups of vertical lines, one group of vertical lines for each column of the matrix, disposed on the opposite side of the cards in alignment with the columns of the cards, sensing means coupled to corresponding vertical lines of each group of vertical lines responsive to a signal on a selected vertical line for indicating information, diode means coupled between each vertical line and the associated sensing means for reducing unwanted or noise signals, and further diode means coupled to each vertical line and responsive to a signal having a polarity opposite to that applied to the selected X column for neutralizing any capacitive charge associated with the selective group of vertical lines.

3,185,968
ELECTRICAL SIGNAL DELAY APPARATUS
Robert J. Hammond, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Apr. 9, 1962, Ser. No. 185,963
23 Claims. (Cl. 340—173)

1. A signal storage arrangement comprising storage members having a first and a second electrically conductive surface separated by a dielectric, input means for engaging at least one portion of one of said surfaces including write means for modulating the electrical charge distribution on said one portion in accordance with the value of an electrical input signal, and output means including readout means operative to derive an output electrical signal related to the charge distribution at said one portion on said storage surface as said one portion and said readout means are moved into engagement with each other, said one of said conductive surfaces possessing relatively high conductivity from its exposed outer surface down to the dielectric and very low conductivity across said surface in the direction of surface movement with respect to said write-in means and read-out means.



3,185,969
CORE-TRANSISTOR LOGICAL DEVICE
William E. Burns, Los Gatos, Calif., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 14, 1960, Ser. No. 69,149
8 Claims. (Cl. 340—174)



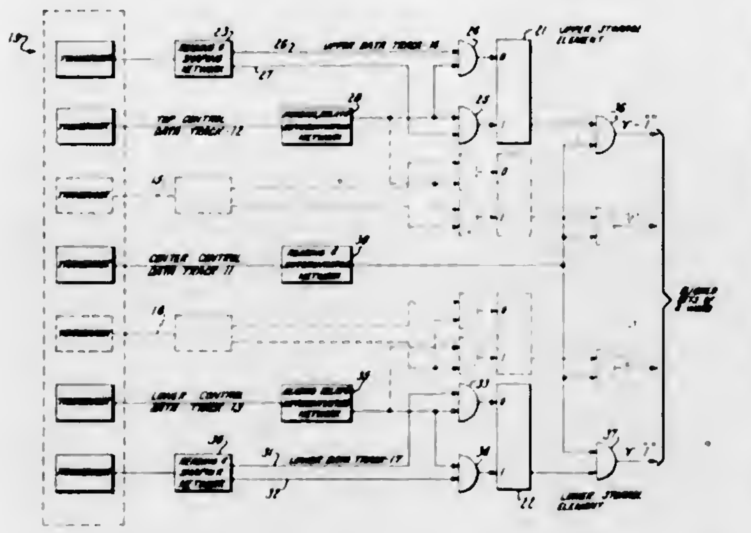
1. A device for performing logical operations on first and second binary values comprising: a bistable trigger having first and second output means representing 1 and 0 respectively, said trigger having first and second input means for setting said trigger to 1 and 0 respectively, means, including said input means, for setting said trigger to a first binary value, first and second storage devices having first and second partial select means connected to said first and second output means respectively, logical OR function select means connected to said first storage device, said OR function select means and said first partial select means being operable to fully select said first storage device when the first binary value is a 1, logical AND function select means connected to said second storage device, said AND function select means and said second partial select means being operable to fully select said second storage device when the first binary value is a 0, means, including said input means, for setting said trigger to a second binary value, first and second output terminals for said first and second storage devices respectively, means respectively connecting said first and second output terminals to said first and second trigger input means, and readout means associated with said storage devices for producing an output signal from the fully selected storage device to set said trigger to the value representing the selected logical operation on said first and second binary values.

3,185,970
TAPE APPARATUS

Ralph G. Cromleigh, Altadena, and Frank A. Paulus, Covina, Calif., assignors, by mesne assignments, to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California

Filed Feb. 2, 1959, Ser. No. 790,555

6 Claims. (Cl. 340—174.1)



1. In tape apparatus including tape having a plurality of data recording tracks thereon and a plurality of control data recording tracks, said plurality of control data recording tracks including a substantially centrally recorded control data track and a control data track recorded and arranged to sub-divide in half the recording tracks on opposite sides of said central control track, each of said recording tracks having binary coded signals comprising a word and the control data therefor recorded in alignment thereon, transducing means for reading each of the recording tracks of said tape and transversely aligned thereon for reading the tracks substantially simultaneously, said transducing means and said tape being subject to transverse misalignment whereby the binary coded data signals comprising a word derived from said transducers are misaligned, individual correction means connected to said transducing means and responsive to the aligned or misaligned data signals from each of said halves of the tape in combination with the respective control data signal for aligning the signals on each half of the tape, and circuit means responsive to each of the thus aligned signals in combination with the central control signal to produce aligned output combinations of signals comprising a single word.

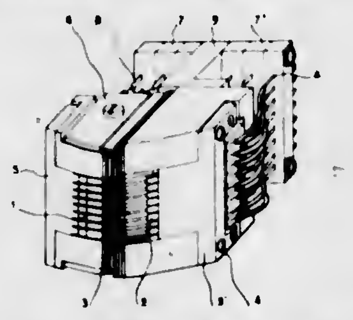
3,185,971
DOUBLE MAGNETIC HEAD

Yves-Jean Francois Brette, Sevres, and Jacques Pierre Léon Droux, Paris, France, assignors to Compagnie des Machines Bull (Societe Anonyme), Paris, France

Filed May 3, 1961, Ser. No. 107,428

Claims priority, application France, May 25, 1960, 828,219, Patent 1,265,942

6 Claims. (Cl. 340—174.1)



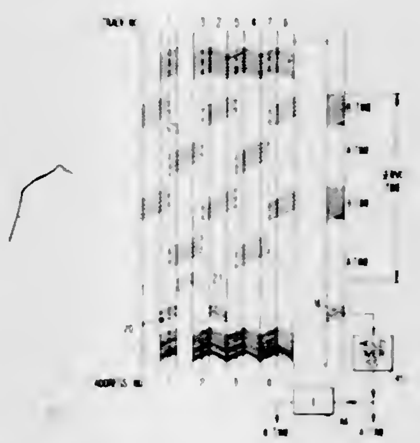
1. Apparatus for recording and reading information on a multiple-track magnetic recording medium, comprising as many superposed recording transducer elements as there are tracks in the medium, a same quantity of superposed reading transducer elements, so disposed that the air gaps of the recording transducer elements are absolutely aligned, that the air gaps of the reading transducer elements are also absolutely aligned, and that the two parallel planes extending through the air gap lines perpendicularly to the recording medium are at a very short distance apart, each recording or reading transducer element consisting of a core formed of two parts, of which the first one is U-shaped and comprises unequal legs, each carrying one winding on its rectilinear portion, while the second part is a parallelepipedic member, these two parts forming between them a non-magnetic air gap, two immediately adjacent transducer elements being magnetically and electrically insulated from one another by shields, one of which extends beyond said second core part at the level of the air gaps, while the two assemblies formed of all the recording transducer elements and all the reading transducer elements are in addition separated from one another by a series of plane shields consisting of alternately magnetic and conductive materials.

3,185,972
TRANSDUCER POSITIONING SYSTEM UTILIZING RECORD WITH INTERSPERSED DATA AND POSITIONING INFORMATION

Robert J. Sippel, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Oct. 10, 1961, Ser. No. 144,100

17 Claims. (Cl. 340—174.1)



1. A memory system comprising:
a movable record medium having a number of discrete areas alternately providing a periodic sequence of data and interspersed transducer positioning information,
an information responsive transducer movable relative to said movable record medium, said interspersed transducer positioning information defining a desired path to be transcribed by said transducer,
means coupled to said transducer for selecting only said positioning information from said interspersed data and positioning information,
and circuit means responsive to signals developed by the transducer operative with said positioning information for developing signals representative of the position of said transducer relative to said desired path.

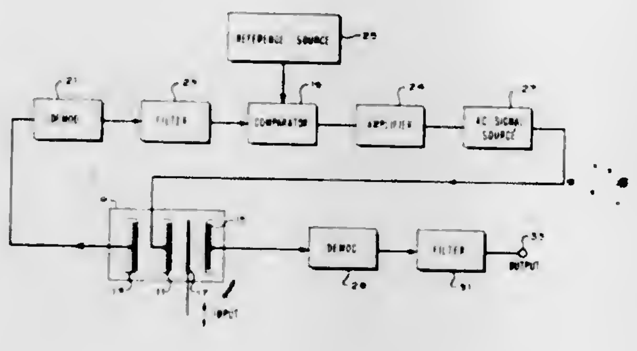
3,185,973
DIFFERENTIAL TRANSFORMERS

Thomas Garber, Framingham, Mass., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Nov. 28, 1962, Ser. No. 240,590

6 Claims. (Cl. 340—199)

2. Apparatus for converting mechanical displacement to an electrical signal, said apparatus comprising:
a differential transformer having primary and secondary windings and having a core so adapted to move with respect to said windings as to vary the coupling therebetween;
another winding on said transformer;
the magnetic coupling between said other winding and said primary winding being independent of core position;
a source of alternating signal;
a source of reference signal;



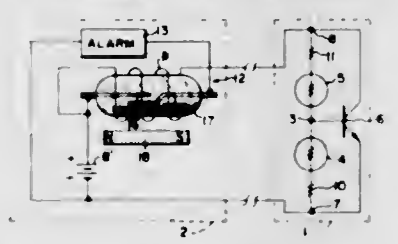
means for comparing the signal from said other winding with said reference signal to produce an error signal;
means responsive to said error signal to control the alternating signal applied to said primary winding;
and means to derive an output signal related to the displacement of said core from said secondary winding.

3,185,974
FIRE DETECTION SYSTEM

Rex C. Doane, Palo Alto, Calif.
(1150 Bruckner Circle, Mountain View, Calif.)

Filed Dec. 1, 1961, Ser. No. 156,342

9 Claims. (Cl. 340—233)



9. A fire detection system comprising an alarm actuating means in series with at least one sensing circuit, said sensing circuit comprising a transistor connected in a network with two temperature-sensitive resistances having substantially different response times to temperature changes, said network establishing two parallel current paths, the resistance of one of said paths decreasing with an excessive temperature rise condition and the resistance of the other of said paths decreasing with an excessive rate of temperature rise condition to establish a current through said alarm actuating means which rises above a predetermined alarm level for either of said conditions.

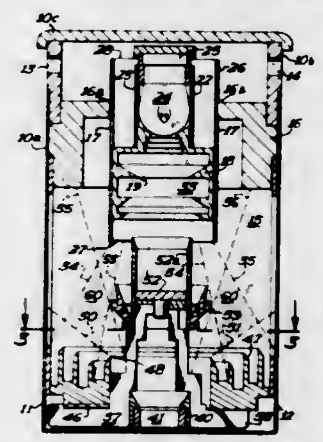
3,185,975
PHOTOELECTRIC SMOKE DETECTOR

Arlon D. Kompelien, Richfield, Minn., assignor to Honeywell Inc., a corporation of Delaware

Filed June 18, 1962, Ser. No. 203,304

2 Claims. (Cl. 340—237)

2. A smoke detection device comprising, a casing having openings to permit the flow of air therethrough, light source means mounted in said casing and adapted to maintain said air flow, light directing means associated with said source means, said directing means having an aperture through which a beam of light is projected into said casing, a plurality of light deflecting means, said deflecting means being in the form of a ridge-like protrusion encircling the interior circumference of said aperture, each of said deflecting means being mounted within said aperture at a predetermined distance from and at a desired angle with respect to said light source whereby said deflecting means inhibit the reflection of extraneous light outside the limits of the required light beam; a photoelectric cell, said cell being mounted to have a field of view in the direction of said light source, light blocking means, said blocking means being mounted directly between said light source means and said cell to prevent light from falling directly on said cell, said cell responding to light reflected from smoke particles suspended in the air passing through an area common to both said light beam and said field of view of said photoelectric cell; and light absorbing means, said absorbing means being cylindrical in form and mounted in concentric ridged rings around said photoelectric cell in the path of said light beam, said light beam being reflected from said absorbing means in such a direction that it does not impinge on an inner surface of said casing within said field of view of said photoelectric cell.



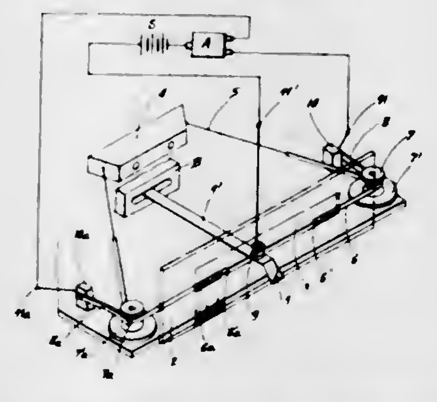
3,185,976
ADJUSTABLE CONTACTING DEVICE, PARTICULARLY FOR METERING APPARATUS

René Auguste Joseph Goyon, Massy, France, assignor to Compagnie des Compteurs, Paris, France, a company of France

Filed June 13, 1961, Ser. No. 116,853

Claims priority, application France, June 21, 1960, 830,611, Patent 1,269,134

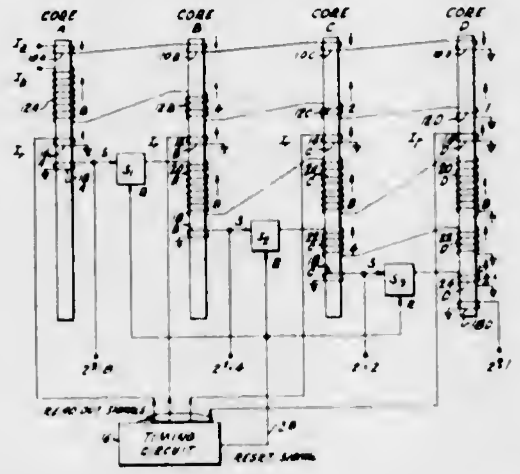
5 Claims. (Cl. 340—266)



1. Adjustable contacting device for metering apparatus, relays and similar appliances provided with a movable index, comprising a substantially wire-shaped member made of insulating material, a support for the two ends of said substantially wire-shaped member, a flexible conducting element fitted on said wire-shaped member but being movable with respect thereto, a pulley engaging said flexible conducting element and, through the intermediary of said conducting element, tensioning said wire-shaped member and maintaining it in close contact with

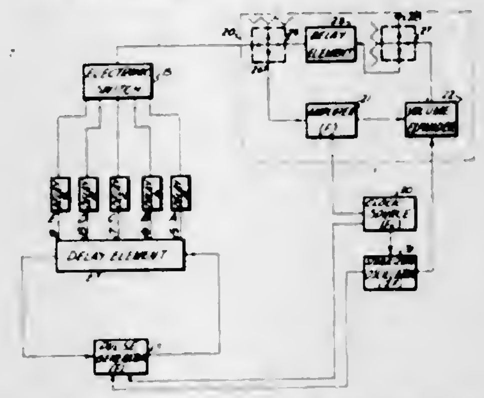
said movable index of the metering apparatus, an operating member to rotate said pulley and thus to move said flexible conducting element with respect to said wire-shaped member, a signalling mechanism electrically connected to said flexible conducting element, and conductive means carried by said index for movement therewith and being electrically connected to said signalling mechanism, said conductive means being arranged to move with respect to said wire-shaped member and said flexible conducting element upon deflection of said index, in consequence of which the electric circuit incorporating said signalling mechanism is closed when said index has been deflected to a position in which said conductive means carried by said index contacts said flexible conducting element, the particular deflection of said index at which such circuit closing occurs being dependent on the particular position of said flexible conducting element with respect to said wire-shaped member.

3,185,977
ANALOG TO DIGITAL CONVERTERS
Charles H. Sie, Pennsauken, N.J., and Leroy H. Werner, Levittown, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Filed June 28, 1961, Ser. No. 120,275
3 Claims. (Cl. 340—347)



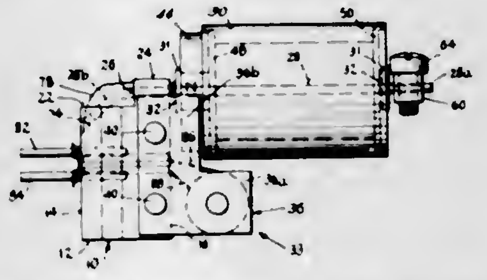
3. An analog to digital converter comprising a number of successive magnetic cores equal to the number of desired digital outputs, equal input analog signal windings on all of said cores, means to couple an analog input signal to all of said analog signal windings to produce equal analog magnetomotive forces in a first direction in all of said cores, different fixed bias windings on each of said cores, means to apply a fixed bias current to said fixed bias windings to produce a bias magnetomotive force in an opposite direction in each successive core, the bias force in each successive core being equal in magnitude to the magnetomotive force produced by a progressively different lower value of analog signal, a read-out winding and a sense winding on each core, switch circuits for all cores except the last one, each said switch circuit having a control input connected to the sense winding of a respective core and having an output, sets of conditional bias windings, each set being connected to a respective switch output and being located on all successive cores to produce therein magnetomotive forces in said opposite direction, means to successively apply read-out currents to said read-out windings to produce magnetomotive forces in said first direction, the switch circuit corresponding with each core being operative when the analog force exceeds the bias forces in the respective core, and the read-out current thus causes a switching of the flux direction, to energize the corresponding conditional bias windings on successive cores, and means to derive successive digital output signals from said sense windings.

3,185,978
SYSTEM FOR RECIRCULATING MEMORY
William A. Edson, Los Altos Hills, Calif., assignor to General Electric Company, a corporation of New York
Filed Feb. 24, 1961, Ser. No. 91,518
4 Claims. (Cl. 340—350)



1. In combination with a recirculating memory for storing binary digital information, a read-in, read-out system comprising, a plurality of channels each corresponding to a binary digit, a pulse generator, a delay element, means connecting said pulse generator to said delay element, means connecting each of said channels to a different time-spaced point along said delay element, and phase varying means cooperating with said pulse in each of said channels to provide a phase represented binary digit.

3,185,979
ELECTRICAL INDICATOR DEVICE
John A. Jackman, Watertown, Conn., assignor to Lewis Engineering Company, Naugatuck, Conn., a corporation of Connecticut
Filed Dec. 22, 1961, Ser. No. 161,990
4 Claims. (Cl. 340—373)



1. A compact, shock-resistant, electric current-responsive indicator device for connection to a D.C. circuit to indicate conditions of energization and deenergization thereof comprising, in combination:

(*a*) a right-angled base block of insulating material, said block having an opening at one side thereof,

(*b*) a stationary shaft carried at solely one end by the base block, said shaft being disposed in the opening of the block and projecting from the said side thereof to have a free end,

(*c*) an indicator drum having indicia, said drum being turnably carried by the shaft, one end of the drum being adjacent the said side of the base block,

(*d*) a permanent magnet affixed to the drum at the said one end thereof, to turn therewith, said magnet being closely adjacent the portion of the block which supports the shaft and being remote from the free end of the shaft, thereby to minimize lateral deflection of the shaft by the magnet,

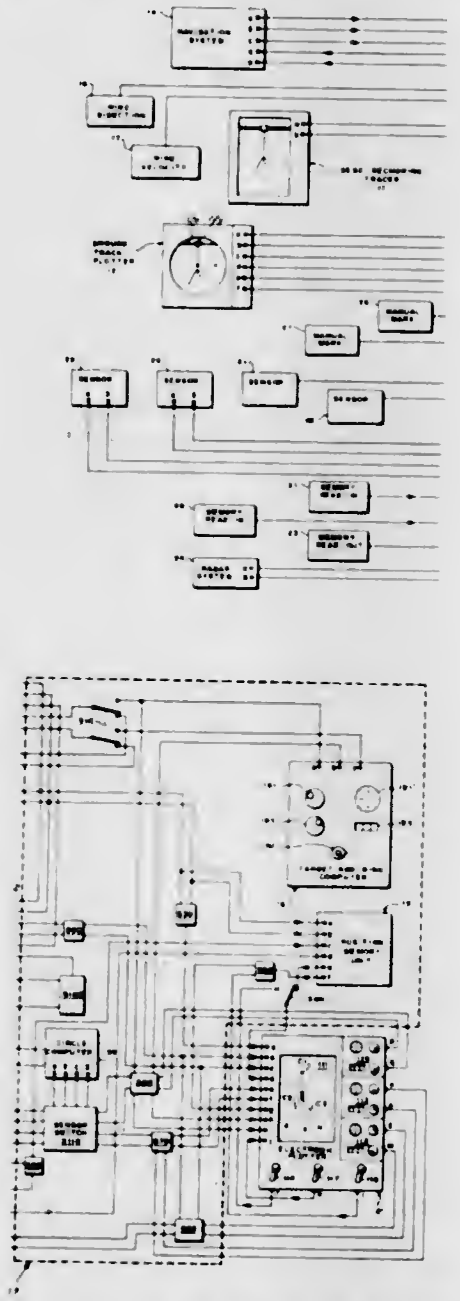
(*e*) an electromagnet having poles of magnetic material, said electromagnet being carried by the base block with at least one pole portion located in the immediate field of influence of the permanent magnet, the magnetic attraction by the latter tending to hold the drum in an "off," deenergization-indicating position when the electromagnet is unenergized, and D.C. energization of the electromagnet in one sense effecting a repulsion of the permanent magnet and shifting of the same and the drum to another and "on" rotative position indicating energization of the electromagnet,

(*f*) the poles of the electromagnet comprising L-shaped plates disposed respectively against opposite parallel sides of the base block located at right angles to the said other side of the block,

(*g*) said pole plates having pairs of opposite legs, one pair of legs being extended clear of the block and the other pair engaging the block along their lengths, one leg of said other pair constituting the said pole portion located in the field of the permanent magnet,

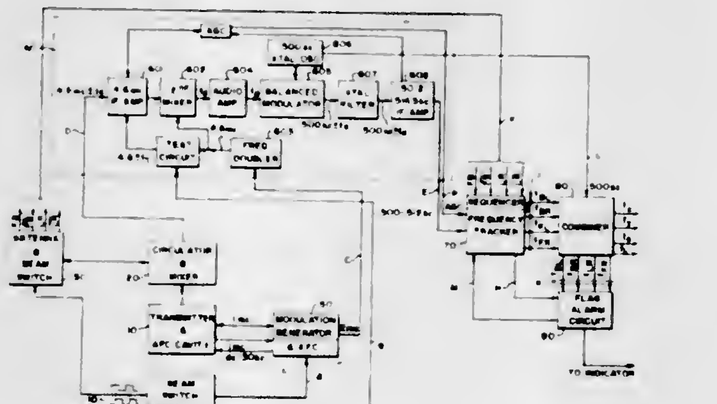
(*h*) said electromagnet including a coil disposed between and magnetizing the said one pair of legs of the pole plates, said coil being disposed broadside to the indicator drum.

3,185,980
AIRBORNE INTEGRATED DISPLAY SYSTEM
Walter R. Gustafson, Furlong, William H. McMillen, Levittown, James R. Rounding, Jr., Doylestown, and Leo Shore, Abington, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Sept. 8, 1961, Ser. No. 137,943
10 Claims. (Cl. 343—6)
(Granted under Title 35, U.S. Code (1952), sec. 266)



10. A display system for use in an aircraft having installed therein a ground reference navigation system, operative to provide signals proportional to aircraft ground track, and a plurality of object locating systems, each operative to provide signals proportional to the bearing and range of objects with respect to said aircraft, said display system comprising: a ground track plotter including a stylus mechanism engaging a recording media and coupled to be actuated by said navigation system ground track signals; electronic plotter means comprising, a cathode ray tube system operative to independently generate and display a plurality of rotatable cursors on the screen of a cathode tube and including cursor origin, bearing, and range strobe control means, a plurality of cursor origin slew signal generating means adapted to be coupled to said cursor origin control means, a plurality of cursor bearing signal generating means adapted to be coupled to said cursor bearing control means, and a plurality of cursor range strobe signal generating means adapted to be coupled to said cursor range strobe control means; a plurality of means operative to couple said cursor origin control means to selected cursor origin slew signal generators or to said navigation system; a plurality of means operative to couple said cursor bearing control means to selected object locating systems; a plurality of means operative to couple said cursor range strobe control means to selected object locating systems; means operative to concurrently couple said ground track plotter stylus mechanism and said cursor bearing control means to a selected electronic plotter cursor bearing signal generating means; and means operative to concurrently couple said ground track plotter stylus mechanism and said cursor range strobe control means to a selected electronic plotter range strobe signal generating means.

3,185,981
DOPPLER NAVIGATION SYSTEM
William F. Gunkel, Baltimore, Robert E. Willey, Parkville, Charles L. Christianson and Ernest O. Kirner, Towson, James H. Jackson, Lutherville-Timonium, Burton L. Cordry, Glenarm, Nicholas M. Papanicolaou, Baltimore, Carl C. Bath, Towson, and Wilbur A. Visher, Lutherville-Timonium, Md., assignors to The Bendix Corporation, Towson, Md., a corporation of Delaware
Filed Oct. 7, 1959, Ser. No. 845,034
91 Claims. (Cl. 343—9)



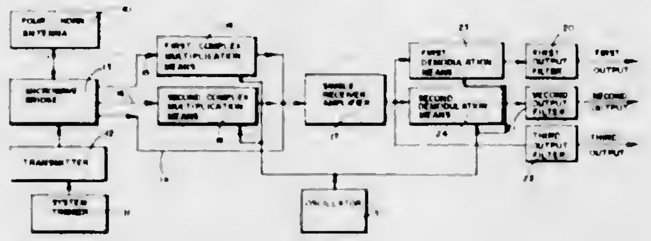
1. A Doppler navigation system comprising a fixed antenna array; a feed system for said array; electrical means including said array and said feed system for determining a plurality of positions for a directive pattern of said array; means for controlling said electrical means to direct said pattern sequentially to said positions; a microwave oscillator having a low-Q resonator with a substantially flat response region on each side of resonance; an AFC loop having a predetermined cutoff frequency for maintaining the frequency of said oscillator fixed; means for frequency modulating said oscillator with a modulation frequency above said predetermined cutoff frequency and deviation within said regions; means for changing said modulation frequency in synchronism with the sequential positions of said pattern; means for coupling microwave energy from said oscillator to said feed system; means for isolating energy received by said array from energy transmitted by said array; a mixer; means for

coupling said received energy and a portion of said microwave energy from said oscillator to said mixer; means for selecting a higher order harmonic of said modulation frequency from the output of said mixer; means for mixing said harmonic with the same order harmonic of said modulation frequency to recover the Doppler spectrum on said received energy; a stable sub-carrier source; means for amplitude modulating said sub-carrier with said spectrum; a spectrum center tracker for generating a frequency equal to the frequency center of power of an input spectrum; means for applying said Doppler spectrum modulated sub-carrier to the input of said tracker; means for sequentially operating said tracker in synchronism with the positions of said antenna pattern to generate a center-frequency for the Doppler spectrum for each said position; means for maintaining each of said center-frequencies during the intervals when the corresponding Doppler spectrum is not applied to said tracker; means for combining said center-frequencies to obtain separate frequencies representative of the velocity components of the aircraft; means for combining said center-frequencies to obtain a frequency which is substantially invariant when all of said center-frequencies are present, means responsive to said invariant frequency to indicate when substantial deviation occurs in said invariant frequency, means responsive to said frequencies representative of velocity components for generating a frequency directly proportional to ground speed; means responsive to frequencies related to forward and transverse velocity components for generating a current representative of the magnitude and sense of the drift angle; means for modifying said current in accordance with a function of the product of pitch and roll; and a utilization device for said ground speed frequency and said drift angle current.

3,185,982
MONOPULSE RECEIVER SYSTEM

Robert O. Case, Jr., La Habra, and Claude H. Child, Paramount, Calif., assignors to North American Aviation, Inc.

Filed Dec. 1, 1961, Ser. No. 157,308
8 Claims. (Cl. 343—16)



1. A monopulse system comprising in combination: means for transmitting a substantially rectangular energy pulse, receiving reflections of said pulse and providing a first, second and thitrd source of azimuth error, elevator error and sum signals respectively having a mutually similar IF carrier; a single receiver-amplifier responsively connected to said sources, first and second complex multiplication means interposed between said receiver-amplifier and said first and second source respectively and responsively coupled to a common source of modulating frequency; said single receiver having a bandwidth Δf (in cycles per second) equal to

$$\pm\left(\frac{\omega_1}{\pi}+\frac{2}{T}\right)$$

where ω_1 is the modulating frequency (in radians per second) of said multiplication means and T is the duration in seconds of a rectangular pulse of said monopulse system; first, second and third bandpass output filters responsively connected to said receiver, each said filter having a bandpass equal to

$$\frac{2}{T}$$

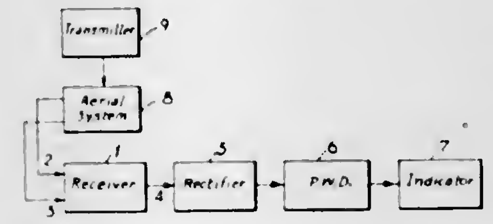
cycles per second, and first and second demodulating means interposed between said receiver-amplifier and said first and second output filters respectively and responsively coupled to said common source, said modulating frequency being an integer multiple of

$$\frac{2\pi}{T}$$

3,185,983
DIRECTION RESPONSIVE RADAR SYSTEM WITH IMPROVED TARGET DETECTION CIRCUIT

Guy Le Parquier, Paris, France, assignor to Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Apr. 26, 1961, Ser. No. 105,773
Claims priority, application France, May 4, 1960, 826,165
5 Claims. (Cl. 343—17.1)

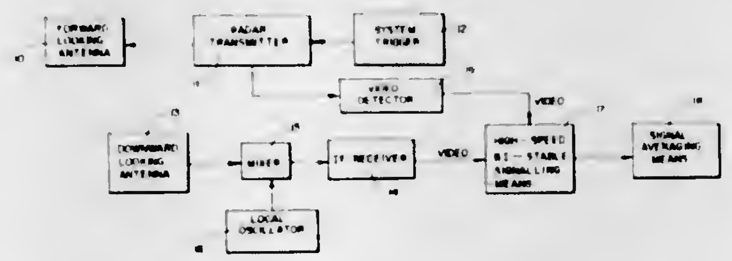


1. A pulse radar system comprising transmitting means for transmitting pulses of predetermined duration; aerial means comprising at least two receiving parts having respective outputs; receiving means coupled to said outputs for deriving from the echo signals collected by said aerial means other signals which, in the presence of only one source of radiation, are substantially dependent only upon the angular location of said source relative to a reference frame tied to said aerial means; selecting means coupled to said receiving means for selecting, among said other signals, pulse signals having substantially said predetermined duration and signal portions corresponding to impulsive signal level fluctuations having substantially said predetermined duration; means for indicating the presence of a target coupled to said selecting means.

3,185,984
RADAR ALTIMETER

Claude H. Child, Paramount, and Lawrence R. Frasure, Anaheim, Calif., assignors to North American Aviation, Inc.

Filed Aug. 16, 1962, Ser. No. 217,367
1 Claim. (Cl. 343—17.1)



In a pulsed radar system adapted for airborne use and having a transmitter, a forward-looking antenna producing side-lobe energy which radiates downwardly, and a system trigger, the combination comprising

- a downward-looking directional antenna responsive to ground reflections of said downwardly radiated side-lobe energy and located aft of said forward-looking antenna by an amount representing at least 100 decibels attentuation in the forward-looking antenna radiation pattern;
- a radar receiver responsively connected to said downward-looking antenna;

- a non-saturating bistable multivibrator having a first and second input;
- a first and second normally non-conductive switching transistor, each having an emitter-collector circuit interposed at a respective one of said inputs to said multivibrator;
  - a control electrode of said first transistor being responsively coupled to the transmitter as a control input for inducing a first state in said bistable multivibrator,
  - and a control electrode of said second transistor being responsively coupled to said receiver as a control input for inducing a second state in said multivibrator,
- a first fast-peaking signal circuit interposed between said transmitter and said first transistor;
- a second fast-peaking signal circuit interposed between said receiver and said second transistor;

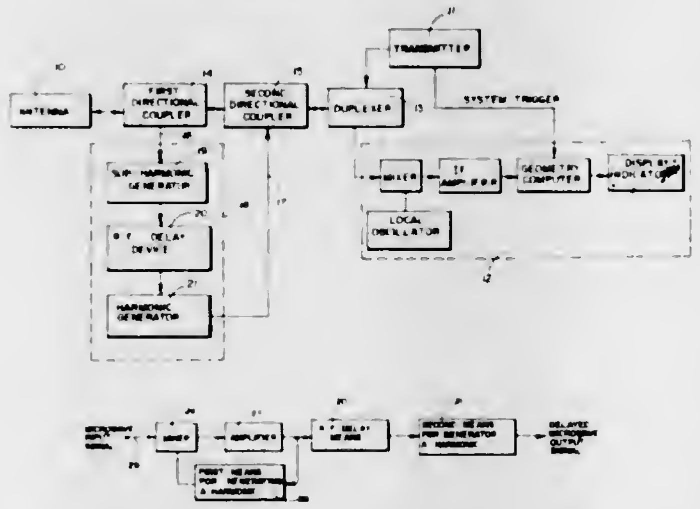
each said fast-peaking signal circuit comprising

  - a shunt resistor and shunt inductor commonly interconnecting the control electrode and emitter electrode of said transistor,
  - a diode conductively connecting said control electrode to a source of potential for non-conductively biasing said transistor,
  - a blocking capacitor connected in series with said diode for interconnecting a control input thereto;
- a bootstrap amplifier responsive to said multivibrator for providing a cyclically increasing unipolar output signal having a peak amplitude indicative of the duration of the first state of said multivibrator; and
- a boxcar detector responsively coupled to said bootstrap amplifier for providing an output signal indicative of the peak value of the cyclical unipolar output thereof.

3,185,985
MICROWAVE DELAY SYSTEM

Claude H. Child, Paramount, and Robert E. Hovda, Yorba Linda, Calif., assignors to North American Aviation, Inc.

Filed June 18, 1962, Ser. No. 203,132
10 Claims. (Cl. 343—17.7)



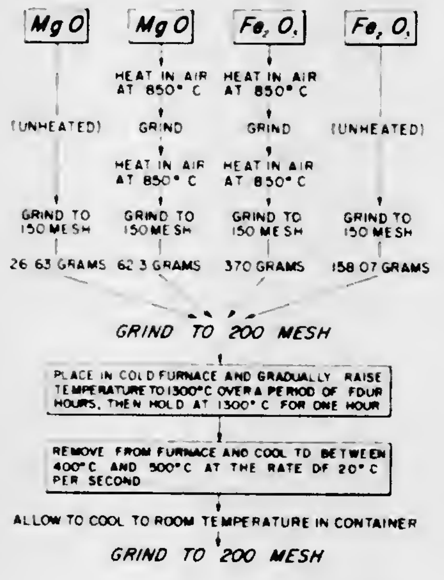
2. A microwave signal delay device comprising: an amplifier for amplifying a signal of radio frequency; a first harmonic generator responsively connected to the output of said amplifier; a radio frequency mixer responsively connected to the output of said first harmonic generator, and adapted to be connected to a microwave signal source; said amplifier being responsively connected to the output of said mixer; a radio frequency delay element responsively connected to the output of said amplifier for providing a time delay to radio frequency signals; and a harmonic generator responsively connected to the output of said time delay element and providing an output signal having a microwave frequency equal to that of the microwave signal source.

7. Testing means for a pulsed microwave radar system having an antenna used for transmitting and receiving, comprising: switch means for switching to provide said antenna with signals from the transmitter of said radar and for switching to provide the receiver of said radar with signals returned to said radar, a first and second microwave directional coupler interposed between said antenna and said switch means; and a time-delay generator responsively connected to said first coupler and having an output thereof connected to said second coupler, whereby a simulated target range signal of predetermined time delay is fed from said second coupler to said switch means in response to transmitter signals fed from said switch means to said antenna and said couplers.

3,185,986
MICROWAVE ABSORBER AND METHOD OF MANUFACTURE

James R. McCaughna, 65 Eucalyptus Lane, Santa Barbara, Calif., and Roger R. Todesca, 540 W. Highland Drive, Camarillo, Calif.

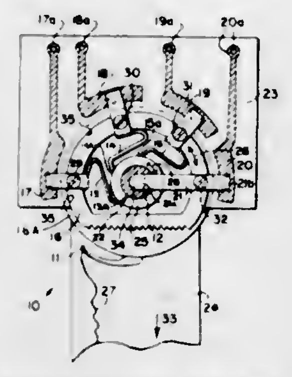
Filed Mar. 5, 1959, Ser. No. 797,546
3 Claims. (Cl. 343—18)



1. The process of preparing a product which, with respect to impinging electromagnetic energy, exhibits a high degree of absorption and a correspondingly low reflectivity factor in thicknesses not exceeding approximately $\frac{1}{400}$ of an inch, said process including the steps of: adding to a selected quantity of unheated magnesium oxide a larger quantity of magnesium oxide that has been heated to approximately 850° C., and then comminuting this mixture using an iron mill and iron balls to approximately 150 mesh; adding to a selected quantity of unheated ferric oxide a larger quantity of ferric oxide that has been heated to approximately 850° C., and then comminuting this mixture using an iron mill and iron balls to approximately 150 mesh; combining the magnesium oxide mixture and the ferric oxide mixture in a molar ratio of approximately two parts by gram-molecular weight of the former to three parts by gram-molecular weight of the latter, heating the resulting mixture to approximately 1300° C. and maintaining such temperature for approximately one hour; cooling approximately to between 400° C. and 500° C. at the rate of approximately 20° C. per second; further cooling at a slower rate to room temperature; and then comminuting using an iron mill and iron balls the cooled product so that the size of any single particle thereof is not in excess of approximately 74 microns.

3,185,987
OSCILLATION CONTROL DEVICE FOR USE IN RECORDING INSTRUMENTS

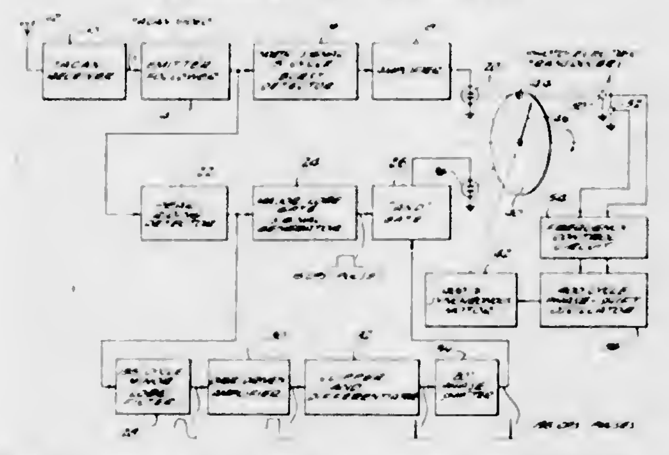
Kiyoshi Miyagawa and Yasohachi Katagiri, both of Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan
Filed July 11, 1961, Ser. No. 123,183
Claims priority, application Japan July 13, 1960, 35/31,638
10 Claims. (Cl. 346—65)



1. Oscillation control means for use in recording instruments comprising a shaft for connection with a suitable driving means, a recording stylus secured to said shaft means for generating a plot on a moving medium in response to rotation of said driving means, cam means secured to said shaft and rotatable therewith, a plurality of oscillation signal input means slidably engaged by said cam means for selecting an oscillation frequency signal related to the angular position of said rotatable cam means, oscillation signal selection means including an adjustable means for modifying the relative angular positions of said oscillation signal selection means with respect to said cam means for adjusting the recording range of the data to be recorded, oscillation signal input brushes secured to said adjustable means each being connectable to an associated oscillation source and rotatable with said adjustable means for enabling the said generation of said plot.

3,185,988
NAVIGATION BEARING INDICATOR SYSTEM

Conrad D. Ramalho, Manhattan Beach, Calif., assignor to Hoffman Electronics Corporation, a corporation of California
Filed Dec. 17, 1962, Ser. No. 245,093
6 Claims. (Cl. 343—106)

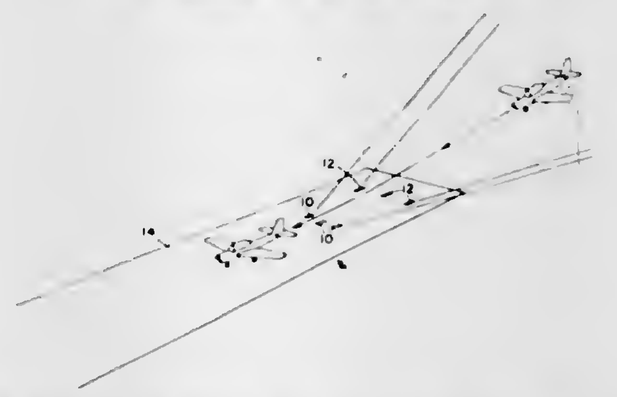


1. A receiver for use in a vehicle for receiving a signal from a beacon source, the received signal having a plurality of modulation components whose phase relationship indicates the bearing of the vehicle with respect to the beacon source, said receiver including:

(*a*) a movable member having an indicating marking,
(*b*) drive means coupled to said movable member for driving said movable member at a predetermined rate,
(*c*) circuit means coupled to said drive means for synchronizing said drive means with one of the modulation components of the received signal,
(*d*) means optically coupled to said movable member for illuminating said marking, and
(*e*) a strobing circuit coupled to said illuminating means for recurrently energizing said illuminating means at a predetermined rate in response to further modulation components of the received signal and with a timing determined by the aforementioned phase relationship between the modulation components of the received signal, said strobing circuit including circuits for producing first and second series of pulses in response to said further components of said received signal, and in which said strobing circuit further includes a gate circuit responsive to pulses of said first series for passing selected pulses of said second series to said illuminating means recurrently to energize said illuminating means.

3,185,989
WIDE ANGLE GLIDE PATH SYSTEM

Maurice G. Chatelain, San Diego, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Nov. 8, 1962, Ser. No. 236,261
7 Claims. (Cl. 343—108)



1. A wide angle glide path antenna system, comprising:
a plurality of antennas each having a beam type radiation pattern;
certain of said antennas being spaced along a first base line;
others of said antennas being spaced along a second base line;
said base lines being spaced apart such that the average spacing between all the pairs of antennas, each pair comprising one antenna on one base line and another antenna on the other base line, is substantially equal to a predetermined nominal spacing at which signals from each pair of antennas are in phase.

ERRATA

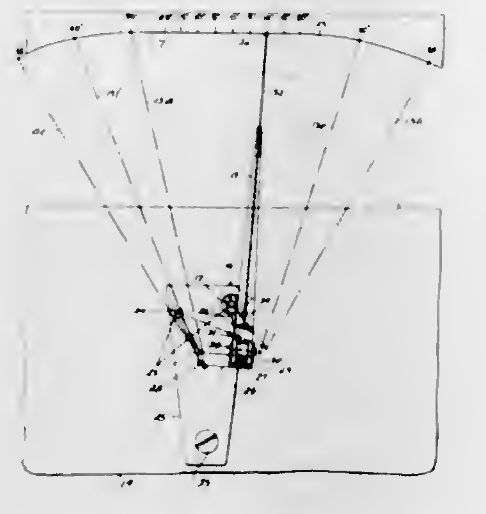
For Class 343—228 see:
Patent No. 3,185,992

For Class 343—911 see:
Patent No. 3,185,993

3,185,990
RECORDING EQUIPMENT

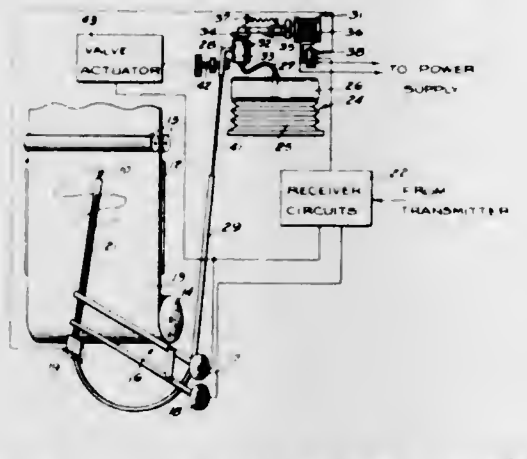
Huntly D. Millar, Houston, Tex., assignor to E & M Instrument Co., Inc., Houston, Tex., a corporation of Texas
Filed Dec. 31, 1962, Ser. No. 248,475
8 Claims. (Cl. 346—112)

1. Recording equipment comprising, in combination with a travelling record element and with a shaft oscillatable about its axis in either direction from a mid position in accordance with a variable to be recorded on said element, a first lever connected with said shaft to oscillate therewith, a second lever pivotally mounted on an axis paralleling the axis of said shaft, said two levers being extended generally in the same direction from their mounting axes, a link pivotally interconnecting the free ends of said levers, and a stylus arm connected with said link to move therewith in its pivotal motion and carrying a recording tool cooperating with said record element and located approximately on a line passing through the axis of oscillation of said shaft and the axis of the pivot of the link on said first lever when the oscillatable shaft is in its mid position, said tool further being located on said line and at the side of the oscillatable shaft opposite said link.



3,185,991
INK SUPPLY SYSTEM FOR RECORDING APPARATUS

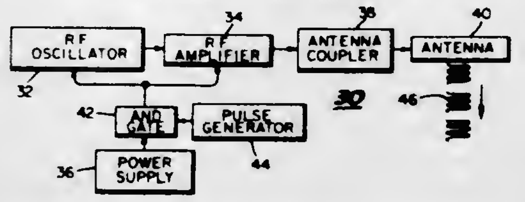
Robert F. Gill, Jr., La Grange, and Carl A. Levin, Park Ridge, Ill., assignors, by mesne assignments, to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 2, 1961, Ser. No. 86,699
3 Claims. (Cl. 346—140)



1. A graphic communication receiver comprising: a recording pen; a substantially vertical recording surface; means for moving the pen vertically across said recording surface in response to a received vertical movement signal; means for moving the pen toward and away from the recording surface between a recording position and a non-recording position in response to a received pen-contact signal; ink reservoir means for storing a supply of ink under an essentially constant static pressure; a conduit connecting said ink reservoir means to the recording pen; signal-actuated valve means comprising a normally closed valve interposed in said conduit between said ink reservoir means and said pen; means for applying said pen-contact signal to said valve means to open said valve whenever said pen is moved to said recording position; signal-actuated resistance means, interposed in said conduit, for varying the effective resistance of said conduit to ink flow; and means for applying said vertical movement signal to said resistance means to increase the effective resistance thereof when said pen moves downwardly and to decrease the resistance when said pen moves upwardly across the recording surface.

3,185,992
VEHICLE WARNING SYSTEM

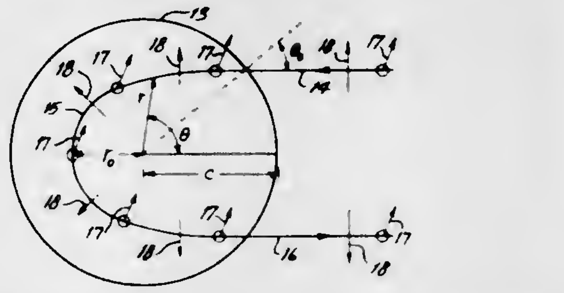
Gerald L. Smith, Round Bay, Box 125–B, Severna Park, Md.
Filed May 14, 1959, Ser. No. 813,304
6 Claims. (Cl. 343—228)



1. A warning system for an operator-manned vehicle traveling on a course including a zone of restricted operation comprising, means for continuously generating and radiating radio-frequency energy, means for periodically interrupting said radiated energy to produce pulses of radiated energy at a magnitude to be radiated outwardly in all directions, a transmitting antenna, means for mounting said transmitting antenna substantially at the center of said restricted zone, adjustable means for coupling a portion of said interrupted radio-frequency energy to said transmitting antenna to establish an area of coverage about said restricted zone, means for adjusting said coupling means to change said area of coverage, a receiving antenna for converting said radiated pulses of radio-frequency energy into an electrical potential, means for mounting said receiving antenna on said vehicle, electrical circuit means including means for amplifying said potential and a detector for producing electrical impulses in accordance therewith, an operator alarm responsive to said electrical impulses, means for locating said operator alarm within said vehicle, and means for connecting said electrical circuit means to said operator alarm to continually energize the same when said vehicle is located within said predetermined area of coverage.

3,185,993
MULTI-DIRECTIONAL RADIO FREQUENCY ELECTRO-MAGNETIC ENERGY DEFLECTOR

Visvaldis Mangulis, Brooklyn, N.Y., assignor, by mesne assignments, to Control Data Corporation, South Minneapolis, Minn., a corporation of Minnesota
Continuation of application Ser. No. 782,518, Dec. 23, 1958. This application Jan. 2, 1964, Ser. No. 337,976
11 Claims. (Cl. 343—911)



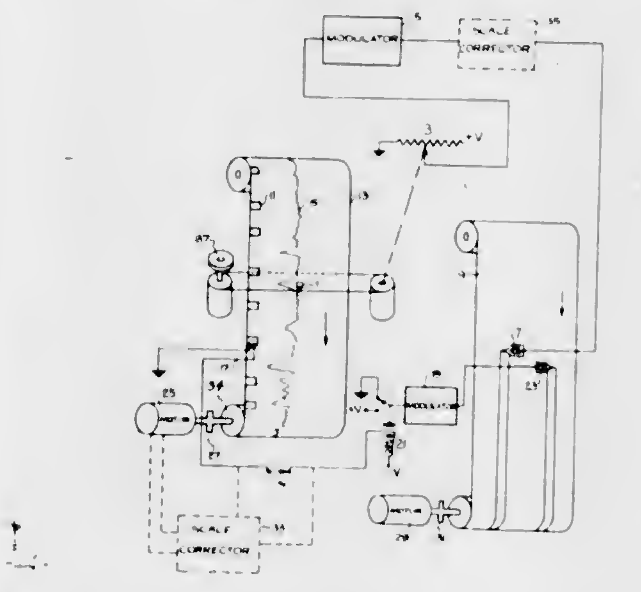
1. A retroflector structure for electromagnetic energy comprising a spherical body of material having an index of refraction for said energy which is non-uniform and varies as a function of the position of the material, said function being selected to continuously refract an incident ray and turn it through an angle of approximately 180° at its point of emergence, said body having portions of altered transmission characteristics for said electromagnetic energy to prevent said continuous refraction of certain of said rays in said portions, said portions intercepting rays passing through a sector of at least one central cross-section of said body, said sector being angularly spaced by 90° from a part of said cross-section not containing such portion to prevent said continuous refraction of rays passing through said portions whereby part of rays impinging on said body of material are refracted through approxi-

mately 180°, and the remaining part of said impinging rays are intercepted by said portions to prevent their continuous refraction through approximately 180°, so that emergent rays so polarized as to interfere with other emergent rays are at least partly effectively eliminated.

3,185,994
LOG TRANSCRIBING AND SCALE CHANGING METHOD AND APPARATUS

John P. Woods and Edwin B. Neitzel, Dallas, and Tom Prickett, Jr., Richardson, Tex., assignors to The Atlantic Refining Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 20, 1960, Ser. No. 63,750
20 Claims. (Cl. 346—1)

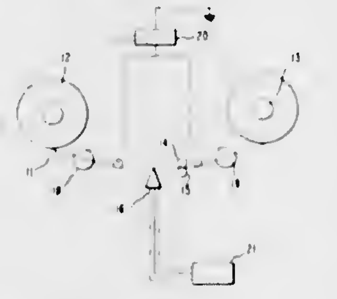


1. A method of transferring information recorded in analog form on one medium to a second medium comprising the steps of translating the originally recorded information into electrical signals, modulating a carrier with said electrical signals, making predetermined scale changes, and recording said signals on the second medium.

3,185,995
ELECTROSTATIC RECORDING PROCESS

John E. Dickens, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 5, 1962, Ser. No. 177,621
10 Claims. (Cl. 346—1)

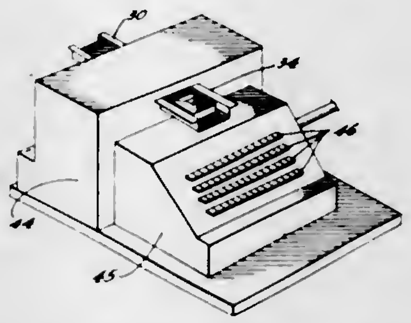


1. In the process of electrostatic recording wherein a dielectric recording tape is passed between a pair of electrodes, a frontal recording electrode and a backing electrode, and is subjected to a voltage across the electrodes, said voltage being above the threshold voltage for current flow to said dielectric tape and also being directly related to a signal voltage whereby a charge is impressed in said dielectric tape corresponding to the signal, the improvement wherein the surface of the dielectric tape distant from said frontal recording electrode is electrically conductive.

3,185,996
CARD HANDLING AND WRITING APPARATUS

Lester W. Ferris, Los Angeles, and Maurice S. Martin, Hermosa Beach, Calif., assignors to The Magnavox Company, Torrance, Calif., a corporation of Delaware

Filed May 15, 1961, Ser. No. 109,945
25 Claims. (Cl. 346—22)



1. In an apparatus for handling cards for the purpose of placing data thereon, the combination of: rotary means for providing a rotary movement; a platen facing outward from the rotary means; second means to support the platen on the rotary means for movement radially outwardly and inwardly relative to the rotary means; cyclic means to actuate said rotary means to move the platen in an orbit past a loading station, a writing station, and an unloading station in sequence with pauses of the platen opposite each of the stations; means to shift the platen radially outwardly of its orbit when the platen pauses opposite each of the stations and to retract the platen before the platen moves along its orbit to the next station; means to releasably retain successive new cards at said receiving station; suction means on said platen to attract successive new cards to the platen at said loading station in opposition to said retaining means and to hold the cards on the platen as the platen moves in its orbit to the unloading station; and means to apply data to the successive cards on the platen at said writing station.

ERRATUM

For Class 346—65 see:
Patent No. 3,185,987

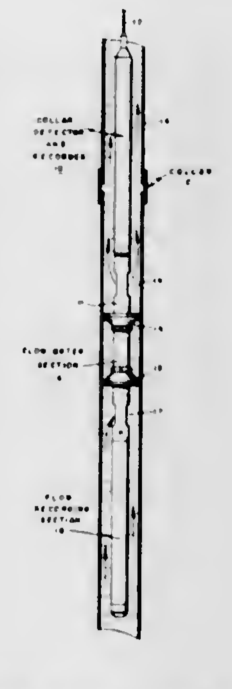
3,185,997
PIPE COLLAR LOCATOR

Louis A. Carlton, Houston, and Aaron E. Pierce, Humble, Tex., assignors, by mesne assignments, to Esso Production Research Company

Filed July 1, 1963, Ser. No. 291,860
1 Claim. (Cl. 346—33)

A self-contained, subsurface recording collar locator adapted to be suspended in a well pipe on a wire line comprising:

- a pipe collar sensing means including a coil of wire biased by permanent magnets adapted to generate signals when passing the pipe collars of said pipe string in which said pipe collar locator is suspended;
- means for amplifying said signals;
- a movable, constant speed recording tape for recording said amplified signals;
- a movable stylus adapted to record the occurrence of said signals on said recording tape;
- signal-responsive means connected to said sytlus adapted to move said stylus to record said signals;
- means for transmitting said signals to said signal-responsive means; and
- means for driving said tape at constant speed whereby when said collar locator is lowered in said well pipe at a constant speed past at least two pipe collars next to and above a selected stop point and stopped at said selected stop point and then further lowered in said well pipe at a constant speed past at least two pipe collars next to and below said selected stop point, an accurate depth of said collar locator at said stop point is obtainable by determining the distance said stop point is below the pipe collar next to and above said stop point from the rates of speed of lowering said instrument, the distance between the two pipe collars next to and above and below said stop point, the total time taken for the instrument to travel between said two pipe collars and the stop point, and then adding such distance to the depth of the collar next to and above the stop point.



ERRATA

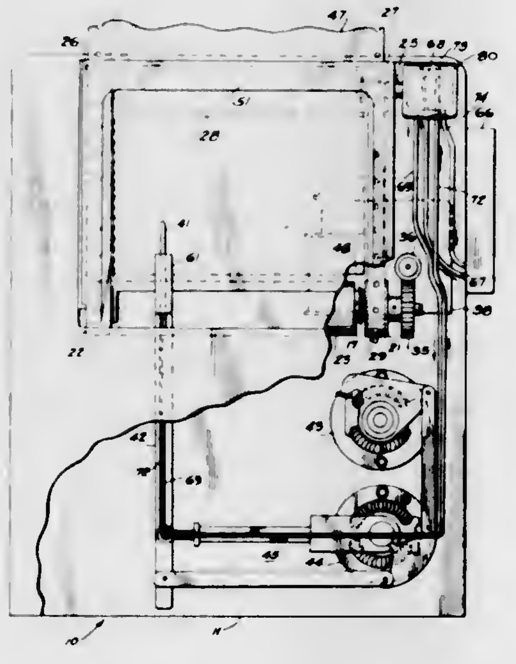
For Class 346—112 see:
Patent No. 3,185,990

For Class 346—140 see:
Patent No. 3,185,991

3,185,998
RECORDING DEVICE

William H. Bussey and Alvin G. Gunter, Jr., Rockford, Ill., assignors to Peter G. S. Mero, Evanston, Ill.

Filed Feb. 11, 1963, Ser. No. 257,472
8 Claims. (Cl. 346—140)



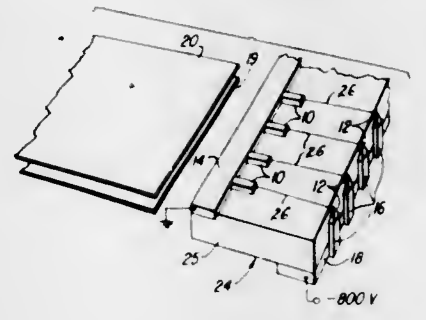
1. An ink supply system for a graphic communication recording station comprising a recording base for supporting a record-receiving sheet, a movable support member for moving a pen across said base to record data on a record-receiving sheet disposed on the recording base, and a pen mounted on said support member, said ink supply system comprising:

- an auxiliary ink reservoir mounted on said support member at a predetermined elevation relative to the pen;
- an ink supply line connecting said pen to said auxiliary reservoir;
- a main ink reservoir;
- and means for maintaining a substantially constant supply of fresh ink in said auxiliary reservoir, said means including conduits interconnecting said reservoirs and an intermittently actuated pump for pumping ink between said reservoirs at predetermined spaced time intervals.

3,185,999
METHOD AND MEANS FOR MAKING REPRODUCTIONS

Joseph James Stone, Jr., Glenview, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois

Filed Dec. 5, 1960, Ser. No. 73,582
8 Claims. (Cl. 346—74)



1. Apparatus for duplicating an image on a sheet which is capable of recording images by means of discrete charged areas, comprising the combination of a matrix of photoconductive elements for receiving light from the image, a matrix of writing styli corresponding to said photoconductive elements for supplying variable discrete charges to the recording sheet, first and second common leads adapted to be connected to the oppositely polarized terminals of a source of high voltage, each of said photoconductive elements being connected between said first common lead and the corresponding stylus, and a plurality of resistors connected between the individual styli and said second common lead whereby the variable currents through said photoconductive elements will produce variable voltage drops across said resistors.

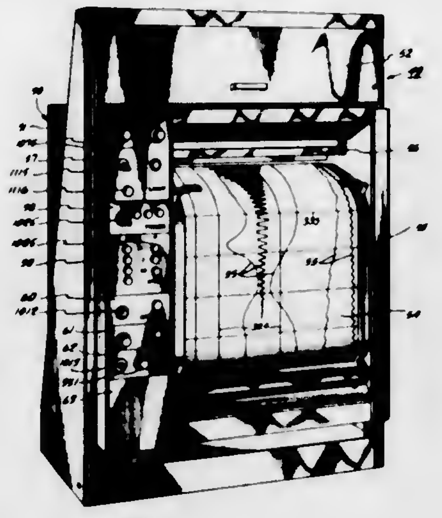
3,186,000
MODULAR OSCILLOGRAPH

Kauno E. Sihvonen, Arcadia, and Albert W. Fischer, Pasadena, Calif., assignors to Consolidated Electrodynamics Corporation, a corporation of California

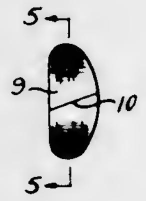
Filed Sept. 20, 1960, Ser. No. 57,289
9 Claims. (Cl. 346—109)

1. An optical component for an oscillograph wherein movable beams of illumination are relied upon to record variations of oscillograph input signals on a moving sheet of photosensitive material, the apparatus comprising a plurality of galvanometers, means adapted for supplying the input signals to the galvanometers, a source of continuous illumination, means for projecting illumination in opposite directions from the source onto the galvanometers, means for reflecting said illumination from the galvanometers along a first preselected path, an ordinate-forming plate adapted to pass illumination from

the source therethrough only at preselected locations of the plate, and means for directing illuminations from the source along a second preselected path so as to fall on the ordinate-forming plate, the apparatus being adapted for disposition in the oscillograph relative to the photosensitive material so that illuminations following the first path and illuminations passing through the ordinate-forming plate are incident upon the photosensitive material.



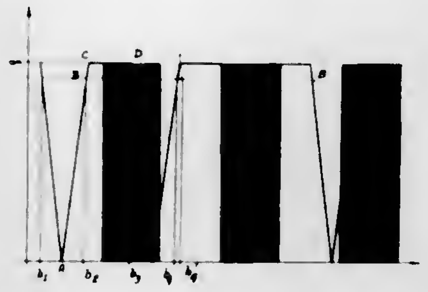
3,186,001
PAD FOR NOSE REST FOR EYEGLASSES
Delmar M. Roeder, 217 Reis Ave., Evansville, Ind.
Filed Dec. 26, 1962, Ser. No. 246,953
1 Claim. (Cl. 351—138)



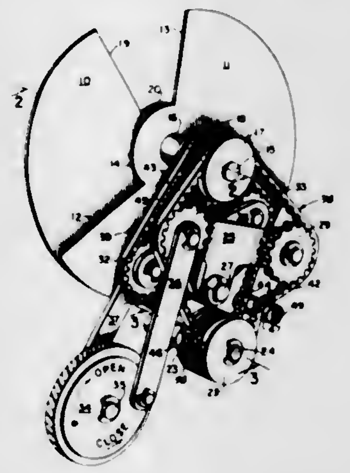
For use with an optometric mounting of the type having nose rests, an article comprising a cushion pad for said nose rests, siad pad being a uniformly thick body of foam rubber having a straight side, opposed ends curved on an arc of a circle, and a side curved on an arc of a circle of greater radius of curvature, a lever of adhesive substance on one face of the body, a covering strip of scrim material over the layer of adhesive substance, and a line of separation through the covering strip forming a fold line for the cushion pad and indicia along the line of separation to delineate the latter, said line of separation being positioned transversely of the cushion pad obliquely to said straight edge, and passing through the intersection of a construction line through the centers of the rounded ends of the cushion pad and an intersecting construction line bisecting the arc of the curved side, whereby, upon flexing of said cushion pad with the line of separation outwardly, the inner separated ends of said covering strip, each with an acute angle thereon, will be exposed for ready removal from the cushion pad.

3,186,002
METHOD OF OBTAINING CINEMATOGRAPHIC PICTURE, AND APPARATUS THEREFOR
Theophile Pathe, 20 Rue du Ranelagh, Paris, France
Filed Mar. 9, 1962, Ser. No. 178,765
Claims priority, application France, Mar. 10, 1961,
855,159, Patent 1,291,017
5 Claims. (Cl. 352—86)

1. In a process of cinematically photographing a three dimensional subject on a film strip which is periodically advanced to expose a predetermined number of frames per second, an improvement comprising: projecting an image of the subject on the film strip while varying, during at least a portion of the exposure time of each frame on the film strip, the focus of the image between conditions of focus at a distant plane in the view and focus at a close plane in the view, the focus being varied uniformly between said conditions of focus and being permitted to dwell at the condition of focus for the distant plane in the view.



3,186,003
VARIABLE SHUTTER MECHANISM
Charles A. Gregory, Jr., and James C. Mills, Jr., Richmond, Va., assignors to Flight Research, Incorporated, Richmond, Va., a corporation of Virginia
Filed Dec. 1, 1961, Ser. No. 156,453
11 Claims. (Cl. 352—208)



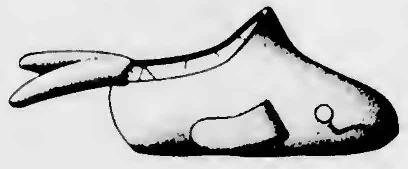
1. A mechanism having low inertia at high speeds for varying the angular relationship between two coaxial rotary members while rotating at high speeds, comprising:
first and second coaxial rotary members mounted for rotation about their common axis;
a third rotary member mounted for rotation about an axis spaced from the axis of said first and second rotary members;
first and second endless flexible loops, said first loop passing around said first and third rotary members and connecting said first and third rotary members in a non-slip, driving manner, said second loop passing around said second and third rotary members and connecting said second and third rotary members in a non-slip, driving manner;
means to drive the combination of said three rotary members and said loops, whereby all of said three rotary members are caused to rotate;
each of said loops having two generally opposed runs extending between the two rotary members which it connects;
at least one of said loops being longer than would be required merely to connect the two rotary members around which it passes;
loop shifting means engaging both runs of said longer loop so as to take up the slack which would otherwise exist in said longer loop;

means to impart to said loop shifting means a motion having a component in a direction perpendicular to a line connecting the axis of said first and second coaxial rotary members and the axis of said third rotary member, whereby the position of said longer loop engaged by said loop shifting means is shifted so that the relative lengths of its two runs are altered, the relative angular positions of the two rotary members which said longer loop connects are altered, and consequently the relative angular positions of said first and second coaxial rotary members are altered.

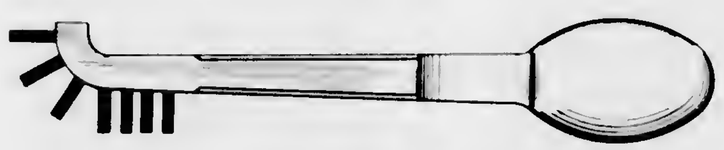
DESIGNS

MAY 25, 1965

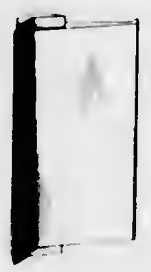
201,172
SLIPPER
Donald A. Kellogg and Lorraine S. Kellogg, both of 115 Seabreeze Blvd., Daytona Beach, Fla.
Filed Nov. 5, 1964, Ser. No. 82,488
Term of patent 14 years
(Cl. D7—5)



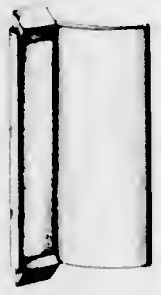
201,173
COMBINED FISH SCALER AND CLEANER
Clarence W. Velt Kamp, 4434 N. Pacific Highway, Central Point, Oreg.
Filed July 7, 1964, Ser. No. 80,735
Term of patent 14 years
(Cl. D9—6)



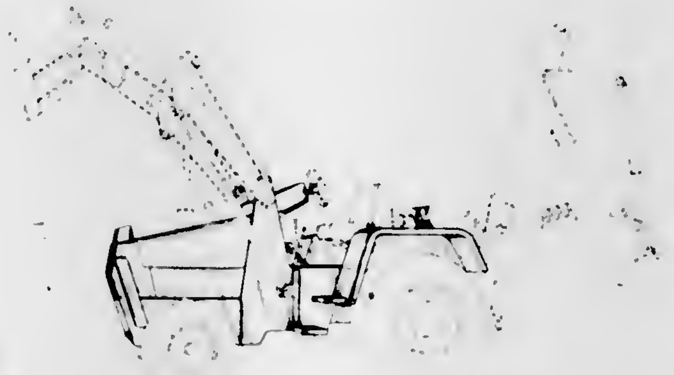
201,174
DOOR PULL
Harry B. Neal and Raymond V. Burnham, Atlanta, Ga., assignors to Anaconda Aluminum Company, Louisville, Ky., a corporation of Montana
Filed Dec. 14, 1964, Ser. No. 83,005
Term of patent 14 years
(Cl. D10—8)



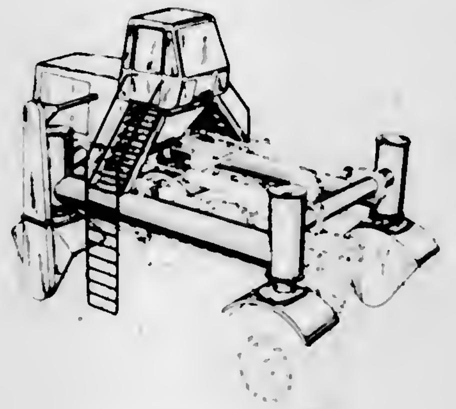
201,175
DOOR PULL
Harry B. Neal and Raymond V. Burnham, Atlanta, Ga., assignors to Anaconda Aluminum Company, Louisville, Ky., a corporation of Montana
Filed Dec. 14, 1964, Ser. No. 83,031
Term of patent 14 years
(Cl. D10—8)



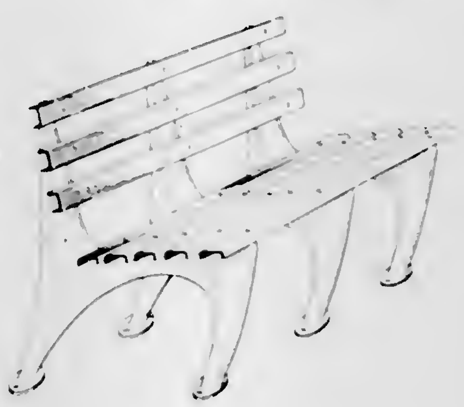
201,176
INDUSTRIAL TRACTOR
Warner K. Brown, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 21, 1964, Ser. No. 83,092
Term of patent 14 years
(Cl. D14—3)



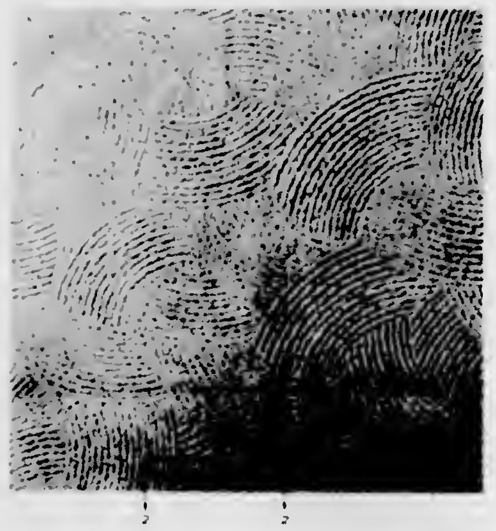
201,177
STRADDLE CARRIER
Marshall D. Sawdey and William A. Williamson, Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Dec. 24, 1964, Ser. No. 83,149
Term of patent 14 years
(Cl. D14—3)



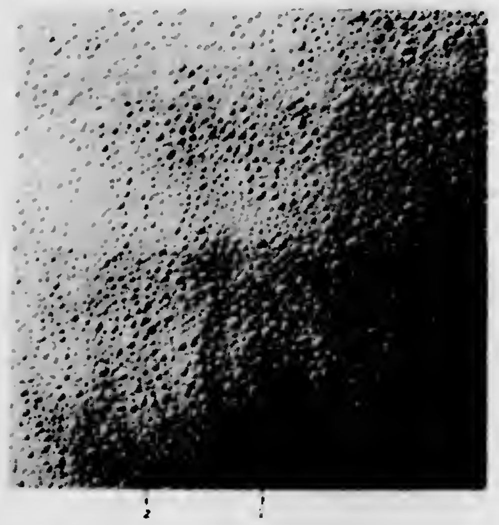
201,178
BENCH
Gilmore D. Clarke, New York, N.Y., assignor to Clarke and Rapuano, Inc., New York, N.Y., a corporation of New York
Filed June 18, 1964, Ser. No. 80,464
Term of patent 14 years
(Cl. D15—11)



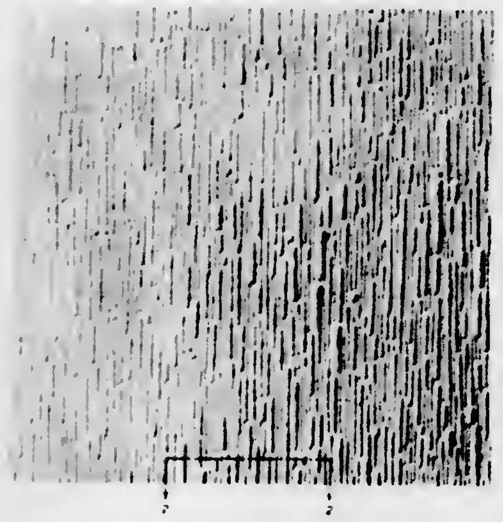
201,179
CEILING PANEL
Thomas R. Smith, Providence Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Aug. 18, 1964, Ser. No. 81,331
Term of patent 14 years
(Cl. D18—2)



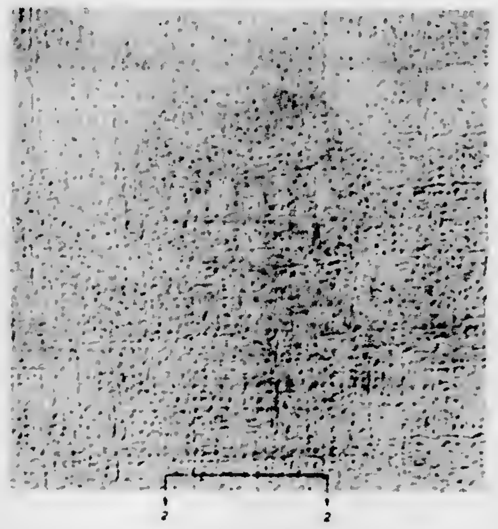
201,180
CEILING PANEL
Thomas R. Smith, Providence Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Aug. 18, 1964, Ser. No. 81,332
Term of patent 14 years
(Cl. D18—2)



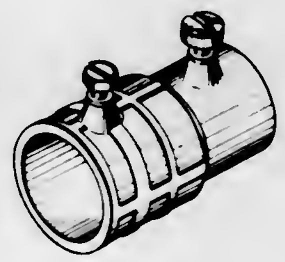
201,181
CEILING PANEL
Merritt W. Seymour, Leola, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Aug. 18, 1964, Ser. No. 81,333
Term of patent 14 years
(Cl. D18—2)



201,182
CEILING PANEL
James E. Hazeley, West Hempfield Township, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Aug. 18, 1964, Ser. No. 81,334
Term of patent 14 years
(Cl. D18—2)



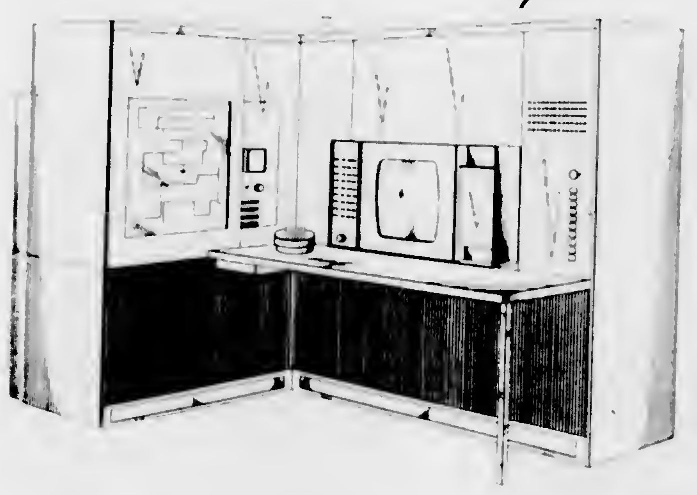
201,183
THREADLESS ELECTRICAL COUPLING
Stephen Sanders, 181 Circle Drive, Plandome, N.Y.
Filed Jan. 16, 1964, Ser. No. 78,223
Term of patent 14 years
(Cl. D26—1)



201,184
CABINET FOR A GRAPHIC IMAGE PROCESSOR

Ronald I. Conway, Kingston, Clarence F. Graser, Poughkeepsie, and William S. Sheppley, Jr., of Rhinebeck, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

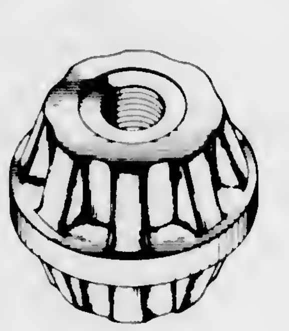
Filed Apr. 30, 1964, Ser. No. 79,758
Term of patent 14 years
(Cl. D26—5)



201,185
STAND-OFF INSULATOR

Maurice G. Knoy, Lafayette, Ind., assignor to Rostone Corporation, Lafayette, Ind., a corporation of Indiana

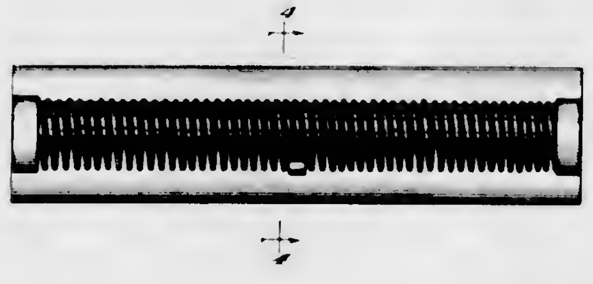
Filed Sept. 27, 1963, Ser. No. 76,759
Term of patent 14 years
(Cl. D26—10)



201,186
NECKTIE RACK

Roger E. Davis, Traverse City, Mich., assignor to The Setwell Company, Traverse City, Mich., a corporation of Illinois

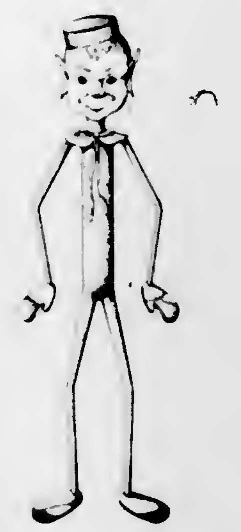
Filed Dec. 27, 1963, Ser. No. 77,947
Term of patent 14 years
(Cl. D33—8)



201,187
DOLL OR SIMILAR ARTICLE

Virginia Peck Thurman, 179 Howeland Circle, Danville, Va.

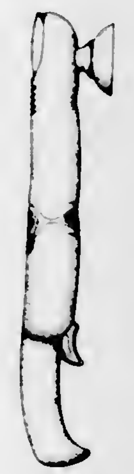
Filed Oct. 9, 1964, Ser. No. 82,107
Term of patent 14 years
(Cl. D34—4)



201,188
TOY BALL CATCHER

John H. Weimer, 445 High Meadow Road, Amherst, Ohio

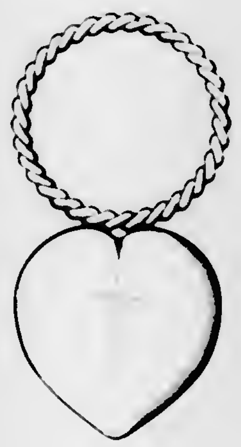
Filed Nov. 25, 1964, Ser. No. 82,780
Tem of patent 14 years
(Cl. D34—5)



201,189
INFANT'S RATTLE

Ralph H. Walker, 10711 Riverside Drive, North Hollywood, Calif.

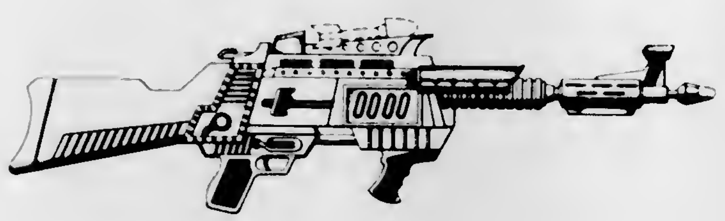
Filed Apr. 1, 1963, Ser. No. 74,229
Term of patent 14 years
(Cl. D34—15)



201,190
TAKE-APART TOY GUN OR THE LIKE

Roy F. Constan, Staten Island, N.Y., assignor to De Luxe Reading Corp., Elizabeth, N.J., a corporation of New Jersey

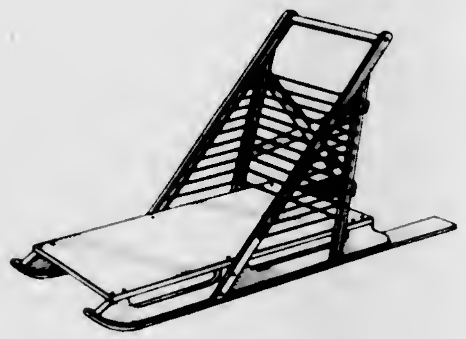
Filed June 19, 1964, Ser. No. 80,475
Term of patent 7 years
(Cl. D34—15)



201,191
SNOW SLED

Calvin R. Kurrasch, 2315 N. Olive Lane, Santa Ana, Calif.

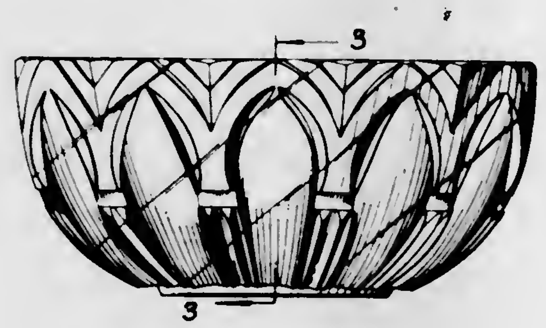
Filed Nov. 6, 1964, Ser. No. 82,497
Term of patent 14 years
(Cl. D34—15)



201,192
BOWL OR SIMILAR ARTICLE

Donald R. Neil, Short Hills, N.J., assignor to Paul A. Straub and Company, Inc., New York, N.Y., a corporation of New York

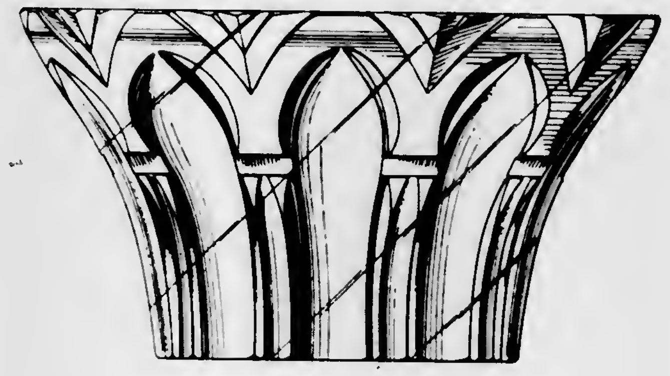
Filed Nov. 17, 1964, Ser. No. 82,648
Term of patent 7 years
(Cl. D36—2)



201,193
BOWL OR SIMILAR ARTICLE

Donald R. Neil, Short Hills, N.J., assignor to Paul A. Straub and Company, Inc., New York, N.Y., a corporation of New York

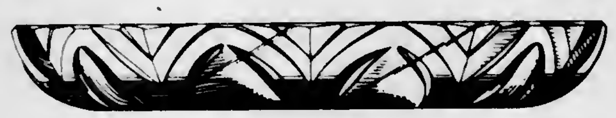
Filed Nov. 17, 1964, Ser. No. 82,649
Term of patent 7 years
(Cl. D36—2)



201,194
DISH OR SIMILAR ARTICLE

Donald R. Neil, Short Hills, N.J., assignor to Paul A. Straub and Company, Inc., New York, N.Y., a corporation of New York

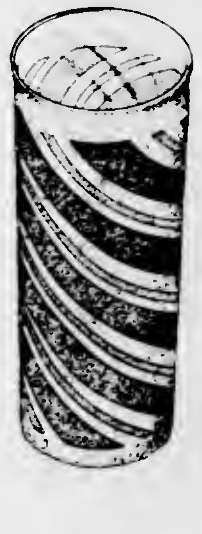
Filed Nov. 17, 1964, Ser. No. 82,650
Term of patent 7 years
(Cl. D36—2)



201,195
TUMBLER OR THE LIKE

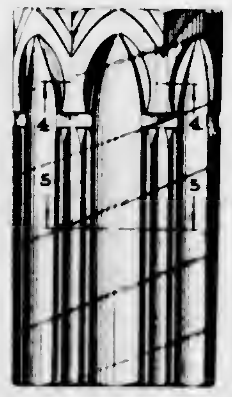
Jerome Lewis, 230 5th Ave., New York, N.Y.

Filed Apr. 15, 1963, Ser. No. 74,448
Term of patent 14 years
(Cl. D36—8)



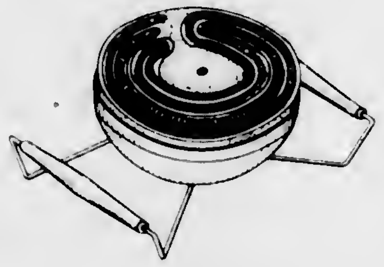
201,196
TUMBLER OR SIMILAR ARTICLE

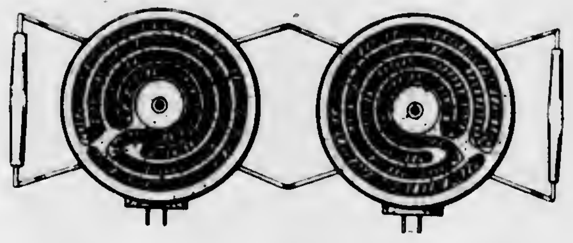
Donald R. Neil, Short Hills, N.J., assignor to Paul A. Straub and Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 17, 1964, Ser. No. 82,660
Term of patent 7 years
(Cl. D36—8)



201,197
HOT PLATE

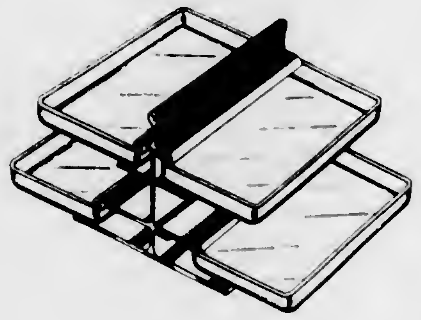
Rollin Stuart Davis, Jr., 32021 Weston Drive, Birmingham, Mich.
Filed July 5, 1963, Ser. No. 75,683
Term of patent 14 years
(Cl. D44—10)





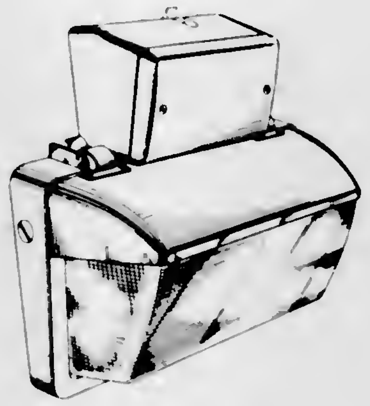
201,198
HOSTESS TRAY OR THE LIKE

Max Tucker, Waterloo, Iowa, assignor to Waterloo Idea Companies, doing business as King Midas Products, Waterloo, Iowa, a corporation of Iowa
Filed Oct. 19, 1964, Ser. No. 82,262
Term of patent 14 years
(Cl. D44—10)



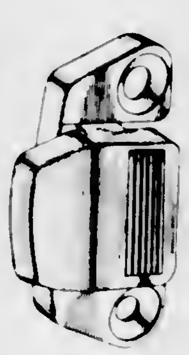
201,199
PRISMATIC PHOTOELECTRIC-CONTROLLED OUT-DOOR LUMINAIRE

Frank Van Steenhoven, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed July 26, 1963, Ser. No. 75,985
Term of patent 14 years
(Cl. D48—4)



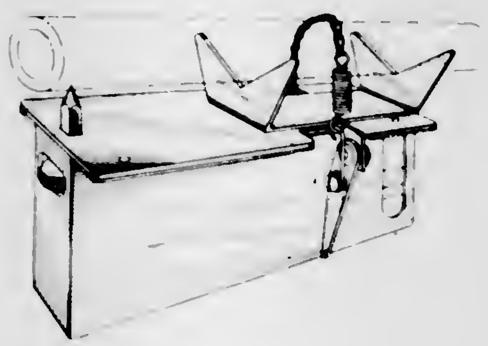
201,200
WINDOW LATCH

Philip Crain, Valley Stream, N.Y., assignor to Allen-Stevens Corp., Woodside, N.Y., a corporation of New York
Filed June 20, 1963, Ser. No. 75,456
Term of patent 14 years
(Cl. D50—5)



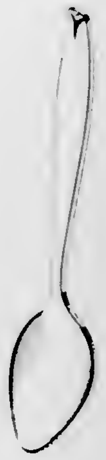
201,201
UNIVERSAL JOINT TESTER

Allen C. Wideburg, Chicago, Ill., assignor, by mesne assignments, to Avrum Gray and Sheldon W. Gray, both of Chicago, Ill.
Filed Feb. 10, 1964, Ser. No. 78,565
Term of patent 14 years
(Cl. D52—6)



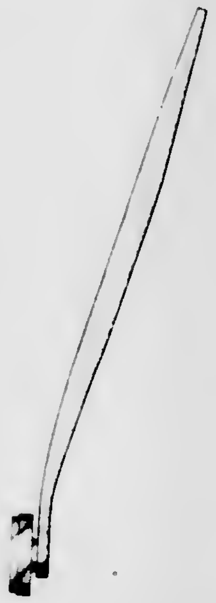
201,202
SPOON OR SIMILAR ARTICLE

Erik Nielsen, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Dec. 3, 1962, Ser. No. 72,686
Term of patent 14 years
(Cl. D54—12)



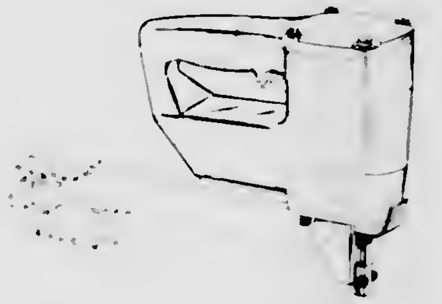
201,203
GLAZING TOOL

Lewis B. Ives, Hollywood, Calif., assignor to Northrop Architectural Systems, Los Angeles, Calif., a corporation of California
Filed Apr. 2, 1964, Ser. No. 79,317
Term of patent 14 years
(Cl. D54—13)



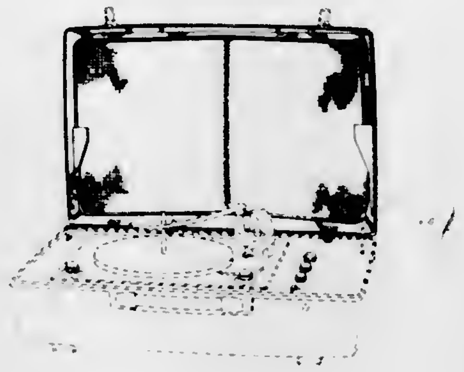
201,204
POWER UNIT FOR A DRIVING MACHINE

Werner Schafroth, P.O. Box 247, Herrin, Ill., and Anthony E. Cairatti, Herrin, Ill., said Cairatti assignor to said Schafroth
Filed Oct. 19, 1964, Ser. No. 82,225
Term of patent 14 years
(Cl. D54—14)



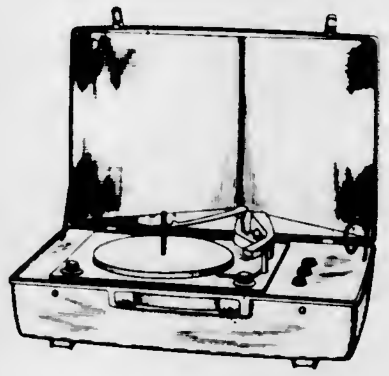
201,205
PORTABLE PHONOGRAPH OR THE LIKE

Cornelius W. Christie, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Oct. 30, 1963, Ser. No. 77,211
Term of patent 14 years
(Cl. D56—4)



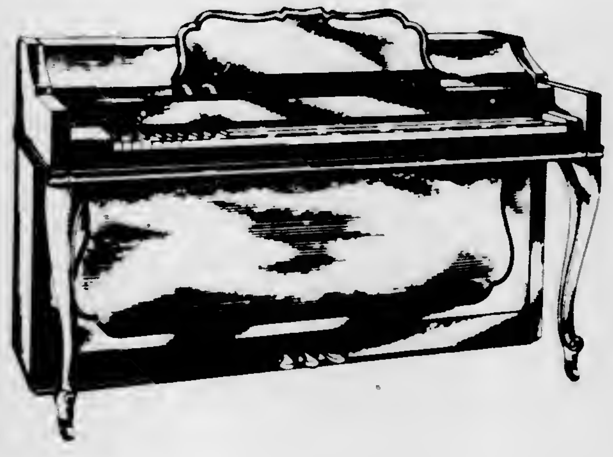
201,206
PORTABLE PHONOGRAPH OR THE LIKE

Roger L. Funk, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 4, 1963, Ser. No. 77,260
Term of patent 14 years
(Cl. D56—4)



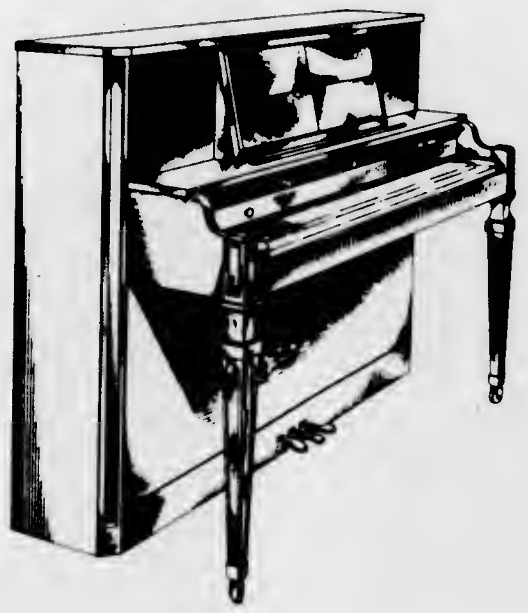
201,207
PIANO CASE

Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 18, 1964, Ser. No. 82,662
Term of patent 14 years
(Cl. D56—9)



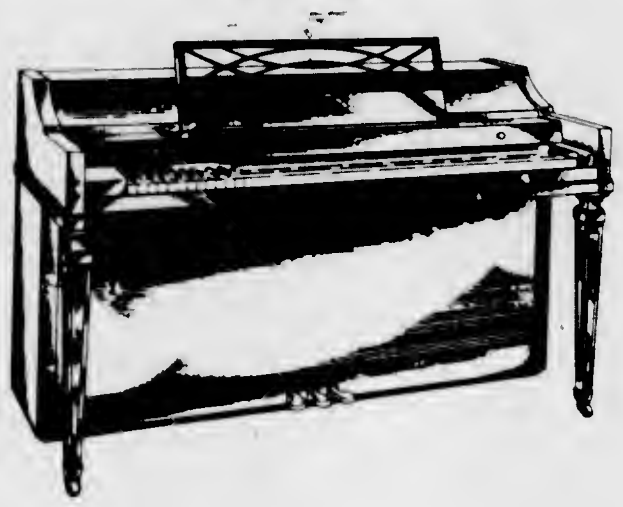
201,208
PIANO CASE

Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 18, 1964, Ser. No. 82,681
Term of patent 14 years
(Cl. D56—9)



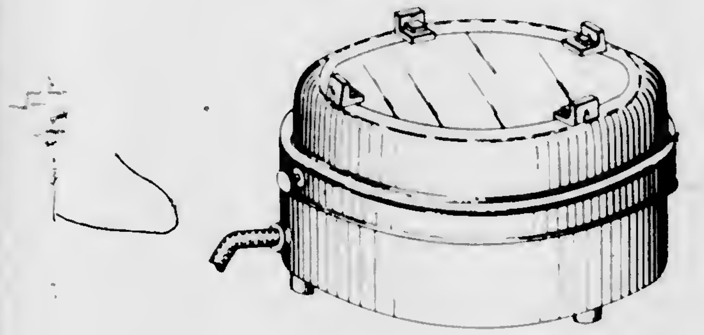
201,209
PIANO CASE

Winsor D. White, Jr., Blowing Rock, N.C., assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 20, 1964, Ser. No. 82,732
Term of patent 14 years
(Cl. D56—9)



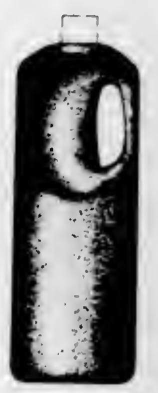
201,210
LIGHT TABLE

Alex J. Weinstein, Mount Vernon, N.Y., assignor, by mesne assignments, to The Edna Lite Corporation, Peekskill, N.Y., a corporation of New York
Filed Oct. 2, 1962, Ser. No. 71,954
Term of patent 14 years
(Cl. D57—1)



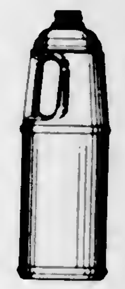
201,211
JUG

Martin Schnur, West Orange, N.J.
Filed July 13, 1964, Ser. No. 80,834
Term of patent 14 years
(Cl. D58—5)



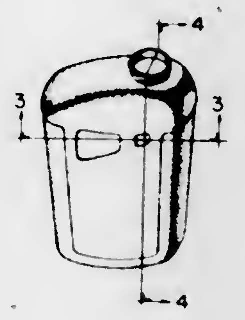
201,212
JUG

Robert L. Bailey, Spokane, Wash., assignor to Spokane Pres-To-Log Co., Inc., Spokane, Wash., a corporation of Washington
Filed Sept. 8, 1964, Ser. No. 81,644
Term of patent 14 years
(Cl. D58—5)



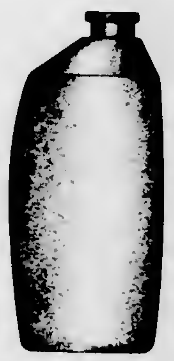
201,213
BOTTLE

Albert C. Petitto, Hudson, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Sept. 24, 1963, Ser. No. 76,711
Term of patent 14 years
(Cl. D58—6)



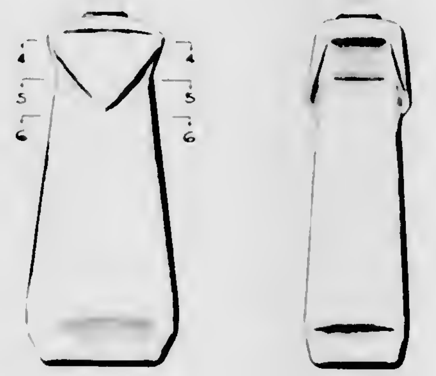
201,214
BOTTLE

Melvin Earl St. Clair, Punch Brook Road, Burlington, Conn.
Filed June 17, 1964, Ser. No. 80,433
Term of patent 14 years
(Cl. D58—6)



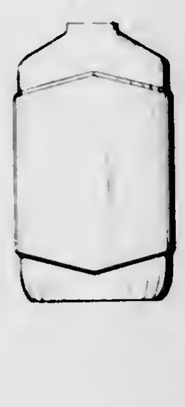
201,215
BOTTLE

Richard L. Platte, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich.
Filed July 8, 1964, Ser. No. 80,765
Term of patent 14 years
(Cl. D58—6)



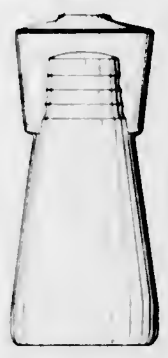
201,216
BOTTLE

Arnold I. Lorenzen, deceased, late of Toledo, Ohio, by Gertrude M. Lorenzen, executrix, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed July 22, 1964, Ser. No. 80,974
Term of patent 14 years
(Cl. D58—6)



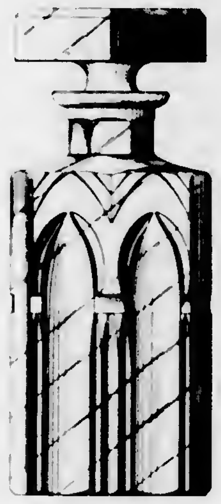
201,217
BOTTLE

Arnold I. Lorenzen, deceased, late of Toledo, Ohio, by Gertrude M. Lorenzen, executrix, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed July 22, 1964, Ser. No. 80,976
Term of patent 14 years
(D58—6)



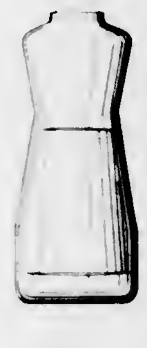
201,218
DECANTER

Donald R. Neil, Short Hills, N.J., assignor to Paul A. Straub and Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 13, 1964, Ser. No. 82,584
Term of patent 7 years
(D58—6)



201,219
BOTTLE

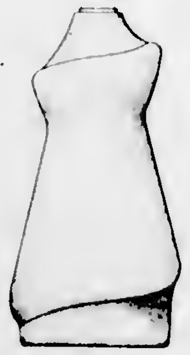
James A. Shepler, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Oct. 21, 1964, Ser. No. 82,276
Term of patent 14 years
(Cl. D58—6)



201,220
BOTTLE

Arnold I. Lorenzen, deceased, late of Toledo, Ohio, by Gertrude M. Lorenzen, executrix, Toledo, Ohio, assignor to Owens-Illinois Glass Company, Toledo, Ohio, a corporation of Ohio

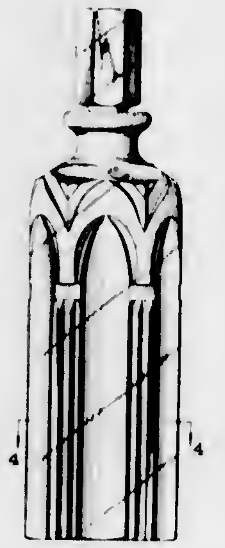
Filed July 22, 1964, Ser. No. 80,975
Term of patent 14 years
(Cl. D58—8)



201,221
DECANTER

Donald R. Neil, Short Hills, N.J., assignor to Paul A. Straub and Company, Inc., New York, N.Y., a corporation of New York

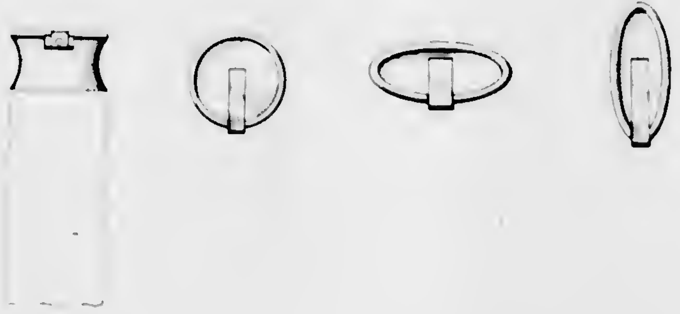
Filed Nov. 13, 1964, Ser. No. 82,583
Term of patent 7 years
(Cl. D58—8)



201,222
DISPENSING TOP

Woodrow S. Wilson, Altadena, Calif., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts

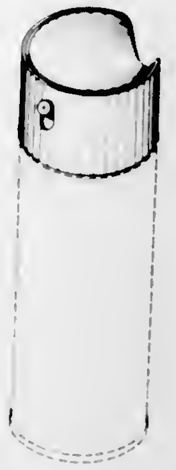
Filed July 22, 1963, Ser. No. 75,895
Term of patent 14 years
(Cl. D58—26)



201,223
DISPENSER TOP FOR A PRESSURE CONTAINER

William C. Harris, Racine, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.

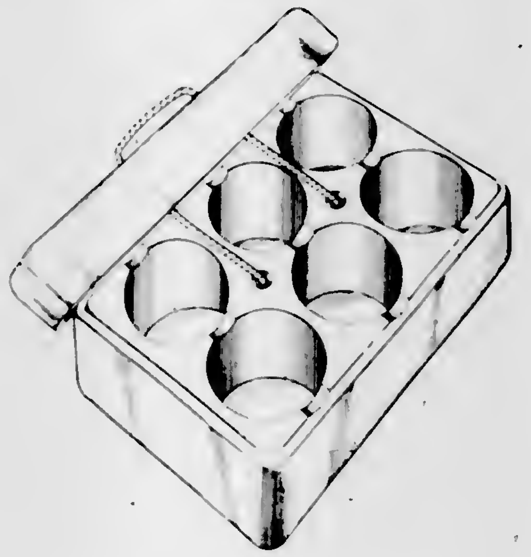
Filed Sept. 27, 1963, Ser. No. 76,771
Term of patent 14 years
(Cl. D58—26)



201,224
COMBINED CONTAINER AND CARRIER FOR BEVERAGE CANS OR THE LIKE

Alfred A. Schroeder, P.O. Box 12039, San Antonio, Tex. Continuation of design application Ser. No. 71,350, Aug. 20, 1962. This application Apr. 28, 1964, Ser. No. 79,714

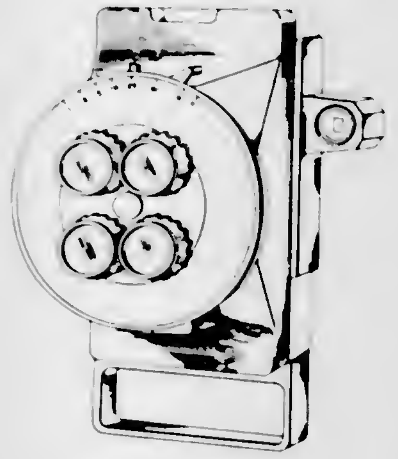
Term of patent 14 years
(Cl. D58—26)



201,225
MULTIPLE LENS CAMERA

Samuel Kitrosser, Lexington, and Frederick W. Macone, Carlisle, Mass., assignors to Avant Incorporated, Lincoln, Mass., a corporation of Massachusetts

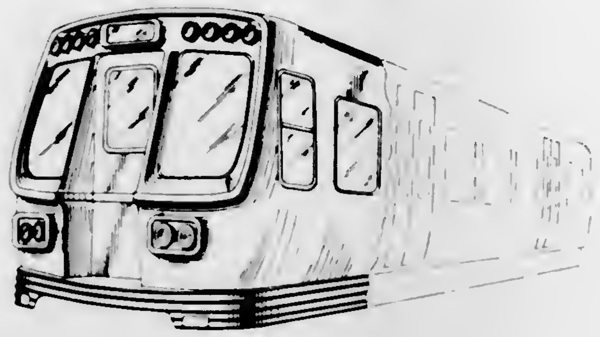
Filed Oct. 30, 1963, Ser. No. 77,210
Term of patent 14 years
(Cl. D61—1)



201,226
RAILWAY RAPID TRANSIT CAR BODY

William M. Schmidt, Harper Woods, Mich., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

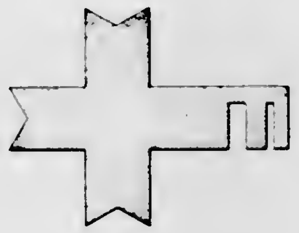
Filed Aug. 12, 1964, Ser. No. 81,257
Term of patent 14 years
(Cl. D66—1)



201,227
DISTRESS SIGNAL FOR AUTOMOBILES

Charles W. Grinnell, Wellesley, Maurice A. Williamson, Jr., Wellesley Hills, and Albert F. Cleaveland, Wellesey, Mass., assignors to Colony Manufacturing Co. Inc., Brockton, Mass., a corporation of Rhode Island

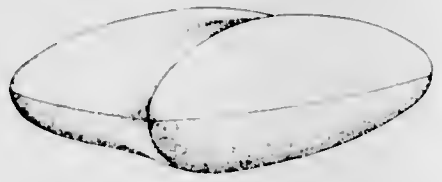
Filed Feb. 19, 1963, Ser. No. 73,631
Term of patent 3½ years
(Cl. D72—1)



201,228
BAR OF SOAP OR THE LIKE

Willard Reeder Horne, Northvale, N.J., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

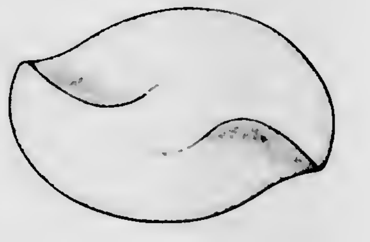
Filed Jan. 30, 1964, Ser. No. 78,423
Term of patent 14 years
(Cl. D73—1)



201,229
SOAP BAR

Frederick Burke, Mamaroneck, N.Y., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

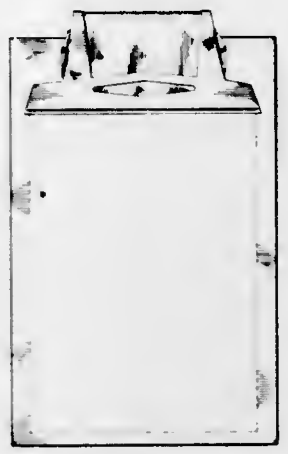
Filed Jan. 6, 1965, Ser. No. 83,302
Term of patent 14 years
(Cl. D73—1)



201,230
DESK PAD HOLDER

Richard McFadyen, Essex Fells, N.J., assignor to Ketcham and McDougall, Inc., Roseland, N.J., a corporation of New Jersey

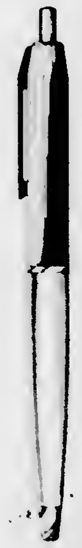
Filed Sept. 6, 1963, Ser. No. 76,500
Term of patent 14 years
(Cl. D74—1)



201,231
BALL POINT PEN

Roy M. Jenkins, 3411A W. Alameda, Burbank, Calif.

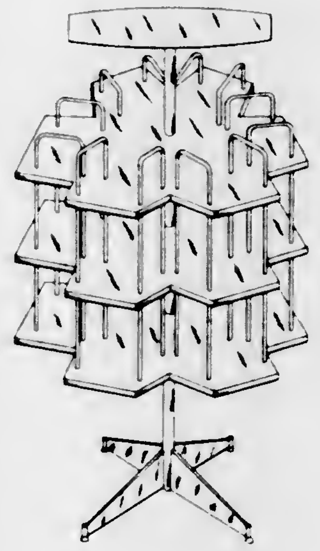
Filed Aug. 5, 1963, Ser. No. 76,105
Term of patent 14 years
(Cl. D74—17)



201,232
DISPLAY STAND

Robert L. Merens, 325 Park Place, Glencoe, Ill.

Filed May 21, 1963, Ser. No. 74,984
Term of patent 7 years
(Cl. D80—9)



201,233

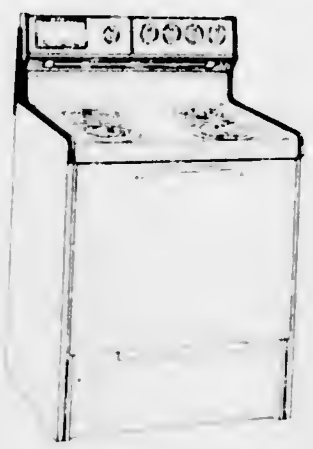
DOMESTIC RANGE CABINET OR SIMILAR ARTICLE

Russell R. Dunbar, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 8, 1964, Ser. No. 78,122

Term of patent 7 years

(Cl. D81—4)



201,234

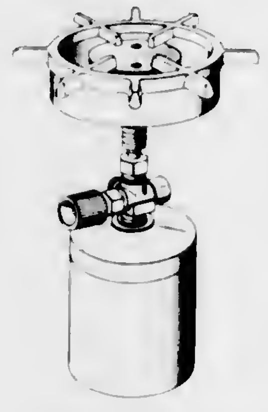
PORTABLE COOK STOVE, OR THE LIKE

Herman K. Busse, 3201 Palos Verdes Drive N., Palos Verdes Estates, Calif.

Filed Feb. 11, 1964, Ser. No. 78,593

Term of patent 14 years

(Cl. D81—10)



201,235

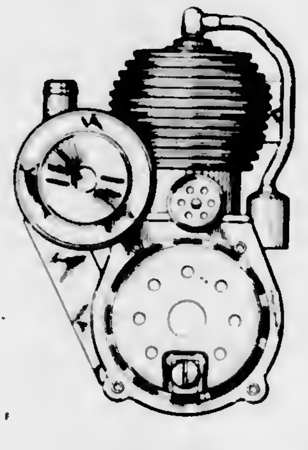
TOY MOTOR

Carl J. Merl, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York

Filed June 22, 1964, Ser. No. 80,519

Term of patent 14 years

(Cl. D90—1)



201,236

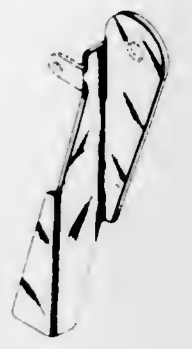
GUARD FOR DERAILLEUR BICYCLE GEARS

Carl A. Swenson, 615 N. Berlyn Ave., Ontario, Calif.

Filed Dec. 11, 1963, Ser. No. 77,759

Term of patent 14 years

(Cl. D90—5)



201,237

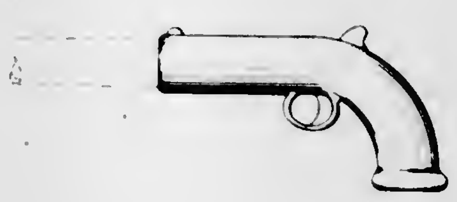
HANDLEBAR GRIP

Sid Corlin, 6125 N. Talman Ave., Chicago, Ill.

Filed May 20, 1964, Ser. No. 80,071

Term of patent 14 years

(Cl. D90—11)



201,238

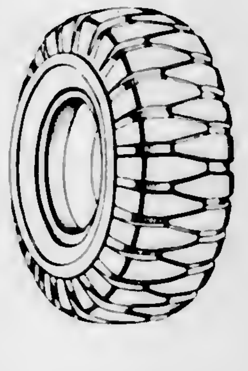
RUBBER VEHICLE TIRE

Jordan S. Fishman, 6335 N. Bell Ave., Chicago, Ill.

Filed Mar. 16, 1964, Ser. No. 79,027

Term of patent 14 years

(Cl. D90—20)



LIST OF PLANT PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 25TH DAY OF MAY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Brownell, Herbert C. Rose plant. 2,521, 5–25–65, Cl. 19.
Dunham, Orville O., to Stern's Nurseries, Inc. Chrysanthemum plant. 2,517, 5–25–65, Cl. 80.
Dunham, Orville O., to Stern's Nurseries, Inc. Chrysanthemum plant. 2,518, 5–25–65, Cl. 77.
Dunham, Orville O., to Stern's Nurseries, Inc. Chrysanthemum plant. 2,519, 5–25–65, Cl. 82.
Dunham, Orville O., to Stern's Nurseries, Inc. Chrysanthemum plant. 2,520, 5–25–65, Cl. 79.
Stern's Nurseries, Inc.: *See—*
  Dunham, Orville O. 2,517.
  Dunham, Orville O. 2,518.
  Dunham, Orville O. 2,519.
  Dunham, Orville O. 2,520.

LIST OF DESIGN PATENTEES

Allen-Stevens Corp.: *See—*
  Crain, Philip. 201,200.
Alloy Industries, Inc.: *See—*
  Wideburg, Allen C. 201,201.
Anaconda Aluminum Co.: *See—*
  Neal, Harry B., and Burnham. 201,174.
Armstrong Cork Co.: *See—*
  Hazeley, James E. 201,182.
  Seymour, Merritt W. 201,181.
  Smith, Thomas R. 201,179.
  Smith, Thomas R. 201,180.
Avant Inc.: *See—*
  Kitrosser, Samuel, and Macone. 201,225.
Bailey, Robert L., to Spokane Pres-To-Log Co., Inc. Jug. 201,212, 5–25–65, Cl. D58—5.
Baldwin, D. H., Co.: *See—*
  White, Winsor D., Jr. 201,207.
  White, Winsor D., Jr. 201,208.
  White, Winsor D., Jr. 201,209.
Brown, Warner K., to Clark Equipment Co. Industrial tractor. 201,176, 5–25–65, Cl. D14—3.
Burke, Frederick, to Lever Bros. Co. Soap bar. 201,229, 5–25–65, Cl. D73—1.
Burnham, Raymond V.: *See—*
  Neal, Harry B. 201,174.
  Neal, Harry B. 201,175.
Busse, Herman K. Portable cook stove, or the like. 201,234, 5–25–65, Cl. D81—10.
Cairatti, Anthony E.: *See—*
  Schafroth, Werner, and Cairatti. 201,204.
Christie, Cornelius W., to General Electric Co. Portable phonograph or the like. 201,205, 5–25–65, Cl. D56—4.
Clark Equipment Co.: *See—*
  Brown, Warner K. 201,176.
  Sawdey, Marshall D., and Williamson. 201,177.
Clarke and Rapuano, Inc.: *See—*
  Clarke, Gilmore D. 201,178.
Clarke, Gilmore D., to Clarke and Rapuano, Inc. Bench. 201,178, 5–25–65, Cl. D15—11.
Cleaveland, Albert F.: *See—*
  Grinnell, Charles W., Williamson, and Cleaveland. 201,227.
Colony Mfg. Co., Inc.: *See—*
  Grinnell, Charles W., Williamson, and Cleaveland. 201,227.
Constan, Roy F., to De Luxe Reading Corp. Take-apart toy gun or the like. 201,190, 5–25–65, Cl. D34—15.
Conway, Ronald I., C. F. Graser, and W. S. Sheppley, Jr., to International Business Machines Corp. Cabinet for a graphic image processor. 201,184, 5–25–65, Cl. D26—5.
Corlin, Sid. Handlebar grip. 201,237, 5–25–65, Cl. D90—11.
Crain, Philip, to Allen-Stevens Corp. Window latch. 201,200, 5–25–65, Cl. D50—5.
Davis, Roger E., to The Setwell Co. Necktie rack. 201,186, 5–25–65, Cl. D33—8.
Davis, Rollin S., Jr. Hot plate. 201,197, 5–25–65, Cl. D44—10.
De Luxe Reading Corp.: *See—*
  Constan, Roy F. 201,190.
Dunbar, Russell R., to General Motors Corp. Domestic range cabinet or similar article. 201,233, 5–25–65, Cl. D81—4.
EdnaLite Corp., The: *See—*
  Weinstein, Alex J. 201,210.
Fishman, Jordan S. Rubber vehicle tire. 201,238, 5–25–65, Cl. D90—20.
Foster Grant Co., Inc.: *See—*
  Petitto, Albert C. 201,213.
Funk, Roger L., to General Electric Co. Portable phonograph or the like. 201,206 5–25–65, Cl. D56—4.
General Electric Co.: *See—*
  Christie, Cornelius W. 201,205.
  Funk, Roger L. 201,206.
General Motors Corp.: *See—*
  Dunbar, Russell R. 201,233.
Graser, Clarence F.: *See—*
  Conway, Ronald I., Graser, and Sheppley. 201,184.
Grinnell, Charles W., M. A. Williamson, Jr., and A. F. Cleaveland, to Colony Mfg. Co., Inc. Distress signal for automobiles. 201,227, 5–25–65, Cl. D72—1.
Harris, William C., to S. C. Johnson & Son, Inc. Dispenser top for a pressure container. 201,223, 5–25–65, Cl. D58—26.
Hazeley, James E., to Armstrong Cork Co. Ceiling panel. 201,182, 5–25–65, Cl. D18—2.
Holophane Co., Inc.: *See—*
  Van Steenhoven, Frank. 201,199.
Hoover Ball and Bearing Co.: *See—*
  Platte, Richard L. 201,215.
Horne, Willard R., to The Procter & Gamble Co. Bar of soap or the like. 201,228, 5–25–65, Cl. D73—1.
International Business Machines Corp.: *See—*
  Conway, Ronald I., Graser, and Sheppley. 201,184.
Ives, Lewis B., to Northrop Architectural Systems. Glazing tool. 201,203, 5–25–65, Cl. D54—13.
Jenkins, Roy M. Ball point pen. 201,231, 5–25–65, Cl. D74—17.
Johnson, S. C., & Son, Inc.: *See—*
  Harris, William C. 201,223.
Kamp, Clarence W. W. Combined fish scaler and cleaner. 201,173, 5–25–65, Cl. D9—6.
Kellogg, Donald A. and L. S. Slipper. 201,172, 5–25–65, Cl. D7—5.
Kellogg, Lorraine S.: *See—*
  Kellogg, Donald A. and L. S. 201,172.
Ketcham and McDougall, Inc.: *See—*
  McFadyen, Richard. 201,230.
Kitrosser, Samuel, and F. W. Macone, to Avant Inc. Multiple lens camera. 201,225, 5–25–65, Cl. D61—1.
Knoy, Maurice G., to Rostone Corp. Stand-off insulator. 201,185, 5–25–65, Cl. D26—10.
Kurrasch, Calvin R. Snow sled. 201,191, 5–25–65, Cl. D34—15.
Lever Bros. Co.: *See—*
  Burke, Frederick. 201,229.
Lewis, Jerome. Tumbler or the like. 201,195, 5–25–65, Cl. D36—8.
Lorenzen, Arnold I., deceased, by G. M. Lorenzen, executrix, to Owens-Illinois Glass Co. Bottle. 201,217, 5–25–65, Cl. D58—6
Lorenzen, Arnold I., deceased, by G. M. Lorenzen, executrix, to Owens-Illinois Glass Co. Bottle. 201,216, 5–25–65, Cl. D58—6.
Lorenzen, Arnold I., deceased, by G. M. Lorenzen, executrix, to Owens-Illinois Glass Co. Bottle. 201,220, 5–25–65, Cl. D58—8.
Lorenzen, Gertrude M.: *See—*
  Lorenzen, Arnold I. 201,217.
  Lorenzen, Arnold I. 201,216.
  Lorenzen, Arnold I. 201,220.
Macone, Frederick W.: *See—*
  Kitrosser, Samuel, and Macone. 201,225.
Marx, Louis, & Co., Inc.: *See—*
  Merl, Carl J. 201,235.
McFadyen, Richard, to Ketcham and McDougall, Inc. Desk pad holder. 201,230, 5–25–65, Cl. D74—1.
Merens, Robert L. Display stand. 201,232, 5–25–65, Cl. D80—9.
Merl, Carl J., to Louis Marx & Co., Inc. Toy motor. 201,235, 5–25–65, Cl. D90—1.
Neal, Harry B., and R. V. Burnham, to Anaconda Aluminum Co. Door pull. 201,174, 5–25–65, Cl. D10—8.
Neil, Donald R., to Paul A. Straub and Co., Inc. Decanter. 201,221, 5–25–65, Cl. D58—8.
Neil, Donald R., to Paul A. Straub and Co., Inc. Decanter. 201,218, 5–25–65, Cl. D58—6.
Neil, Donald R., to Paul A. Straub and Co., Inc. Tumbler or similar article. 201,196, 5–25–65, Cl. D36—8.
Neil, Donald R., to Paul A. Straub and Co., Inc. Dish or similar article. 201,194, 5–25–65, Cl. D36—2.
Neil, Donald R., to Paul A. Straub and Co., Inc. Bowl or similar article. 201,193, 5–25–65, Cl. D36—2.
Neil, Donald R., to Paul A. Straub and Co., Inc. Bowl or similar article. 201,192, 5–25–65, Cl. D36—2.
Nielsen, Erik, to Oneida Ltd. Spoon or similar article. 201,202, 5–25–65, Cl. D54—12.
Northrop Architectural Systems: *See—*
  Ives, Lewis B. 201,203.
Oneida Ltd.: *See—*
  Nielsen, Erik. 201,202.

- Owens-Illinois Glass Co.: *See*—
  - Lorenzen, Arnold I. 201,216.
  - Lorenzen, Arnold I. 201,220.
  - Lorenzen, Arnold I. 201,217.
  - Shepler, James A. 201,219.
- Petitto, Albert C., to Foster Grant Co., Inc. Bottle. 201,213, 5-25-65, Cl. D58—6.
- Platte, Richard L., to Hoover Ball and Bearing Co. Bottle. 201,215, 5-25-65, Cl. D58—6.
- Polytop Corp.: *See*—
  - Wilson, Woodrow S. 201,222.
- Pullman Inc.: *See*—
  - Schmidt, William M. 201,226.
- Procter & Gamble Co., The: *See*—
  - Horne, Willard R. 201,228.
- Rostone Corp.: *See*—
  - Knoy, Maurice G. 201,185.
- Sanders, Stephen. Threadless electrical coupling. 201,183, 5-25-65 Cl. D26—1.
- Sawdey, Marshall D., and W. A. Williamson, to Clark Equipment Co. Straddle carrier. 201,177, 5-25-65, Cl. D14—3.
- Schafroth, Werner, and A. E. Cairatti; said Cairatti assor. to said Schafroth. Power unit for a driving machine. 201,204, 5-25-65, Cl. D54—14.
- Schmidt William M., to Pullman Inc. Railway rapid transit car body. 201,226, 5-25-65, Cl. D66—1.
- Schnur, Martin. Jug. 201,211, 5-25-65, Cl. D58—5.
- Schroeder, Alfred A. Combined container and carrier for beverage cans or the like. 201,224, 5-25-65, Cl. D58—26.
- Setwell Co., The: *See*—
  - Davis, Roger E. 201,186.
- Seymour Merritt W., to Armstrong Cork Co. Ceiling panel. 201,181, 5-25-65, Cl. D18—2.
- Shepler, James A., to Owens-Illinois Glass Co. Bottle. 201,219, 5-25-65, Cl. D58—6.
- Sheppley, William S., Jr.: *See*—
  - Conway, Ronald L., Graser, and Sheppley. 201,184.
- Smith Thomas R., to Armstrong Cork Co. Ceiling panel. 201,180, 5-25-65, Cl. D18—2.
- Smith, Thomas R., to Armstrong Cork Co. Ceiling panel. 201,179, 5-25-65, Cl. D18—2.
- Spokane Pres-To-Log Co., Inc.: *See*—
  - Bailey, Robert L. 201,212.
- St. Clair, Melvin E. Bottle. 201,214, 5-25-65 Cl. D58—6.
- Straub, Paul A., and Co., Inc.: *See*—
  - Neil, Donald R. 201,196.
  - Neil, Donald R. 201,192.
  - Neil, Donald R. 201,193.
  - Neil, Donald R. 201,218.
  - Neil Donald R. 201,221.
  - Neil, Donald R. 201,194.
- Swenson, Carl A. Guard for derailleur bicycle gears. 201,236, 5-25-65, Cl. D90—5.
- Thurman, Virginia P. Doll or similar article. 201,187, 5-25-65, Cl. D34—4.
- Tucker, Max, to Waterloo Idea Companies. Hostess tray or the like. 201,198, 5-25-65 Cl. D44—10.
- Van Steenhoven, Frank, to Holophane Co., Inc. Prismatic-photoelectric-controlled out-door luminaire. 201,199, 5-25-65, Cl. D48—4.
- Walker, Ralph H. Infant's rattle. 201,189 5-25-65, Cl. D34—15.
- Waterloo Idea Companies: *See*—
  - Tucker, Max. 201,198.
- Weimer, John H. Toy ball catcher. 201,188, 5-25-65, Cl D34—5.
- Weinstein, Alex J., to The Edna Lite Corp. Light table. 201,210, 5-25-65, Cl. D57—1.
- White, Winsor D. Jr., to D. H. Baldwin Co. Piano case. 201,209, 5-25-65, Cl. D56—9.
- White, Winsor D., Jr., to D. H. Baldwin Co. Piano case. 201,207, 5-25-65, Cl. D56—9.
- White, Winsor D., Jr., to D. H. Baldwin Co. Piano case. 201,208, 5-25-65, Cl. D56—9.
- Wideburg, Allen C., to Alloy Industries, Inc. Universal joint tester. 201,201, 5-25-65, Cl. D52—6.
- Williamson, William A.: *See*—
  - Sawdey, Marshall D. 201,177.
- Williamson, Maurice A., Jr.: *See*—
  - Grinnell, Charles W., Williamson, and Cleaveland. 201,227.
- Wilson, Woodrow S., to Polytop Corp. Dispensing top. 201,222, 5-25-65, Cl. D58—26.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 25TH DAY OF MAY, 1965

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- AMP Inc.: *See*—
  - Potter, Rossiter R., Ullman, and Fuller. 3,185,952.
  - Sitz, Gilbert C. 3,184,950.
- A.R.F. Products, Inc.: *See*—
  - Freymodsson, Bragi. 3,185,947.
- Abbott, Harold W., and H. Raillard, to General Electric Co. Complementary transistor negative resistance relaxation oscillator. 3,185,940, 5-25-65, Cl. 331—111.
- Abolins, Arnold: *See*—
  - Weissheimer, Herbert, and Abolins. 3,185,872.
- Abood, Leo G., to Colgate-Palmolive Co. Polymethyleniminoalkylamides. 3,185,678, 5-25-65, Cl. 260—239.
- Abplanalp, Robert H., and J. C. Pizzurro, to Precision Valve Corp. Tab cap valve actuator for an aerosol dispenser and protective head therefor. 3,185,350, 5-25-65, Cl. 222—182.
- Acker, Donald S., to E. I. du Pont de Nemours and Co. Herbicidal composition and method. 3,185,561, 5-25-65, Cl. 71—2.5.
- Ackermann, Jakob: *See*—
  - Codignola, Franco, Reni, and Ackermann. 3,184,900.
- Adams, Dustin S., to E. I. du Pont de Nemours and Co. Modular synthetic organic filaments. 3,185,613, 5-25-65, Cl. 161—179.
- Adams, Richard G.: *See*—
  - Schatz, Ralph H., Adams, and Smyers. 3,185,659.
- Aeroprojects Inc.: *See*—
  - Maropis, Nicholas. 3,184,842.
- Agfa Aktiengesellschaft: *See*—
  - Baron, Hans R. 3,185,052.
- Agnew, Vincent R. Pneumatic divider and distributor. 3,185,277, 5-25-65, Cl. 193—31.
- Ahlbrandt, Andreas, to Walter Durbeck Papiersackfabriken G.m.b.H. Folding flattened tubes. 3,185,044, 5-25-65, Cl. 93—20.
- Ahlemeyer, William L.: *See*—
  - Krause, James N., and Ahlemeyer. 3,185,383.
- Aircraft-Marine Products, Inc.: *See*—
  - Potter, Rossiter R., Ullman, and Fuller. 3,185,952.
- Air-Pressure Damp-Proofing Services, Inc.: *See*—
  - Black, Andrew F. 3,185,396.
- Air Reduction Co., Inc.: *See*—
  - Omilian, Francis A., Jr. 3,185,334.
- Ajax Mfg. Co., The: *See*—
  - Ware, Ben F. 3,184,943.
- Ajinomoto Co., Inc.: *See*
  - Kageyama, Hiroh, Okamoto, Iida, and Ohno. 3,185,703.
- Alberts, Ralph P.: *See*—
  - Sorensen, Phillips N., and Alberts. 3,185,808.
- Alegre, Antonio A. Process for making and finishing artificial hides of leathers. 3,185,582, 5-25-65, Cl. 117—11.
- Alexander, Laurence R., to Leesona Corp. Infrared radiation detector cell utilizing ionized gas. 3,185,848, 5-25-65, Cl. 250—83.6.
- Alisauskis, Edward M.: *See*—
  - Dziedzic, Harry R., and Alisauskis. 3,185,494.
- Allard, Gordon H., to Sta-Rite Products, Inc. Automatic release mechanism for milking apparatus. 3,185,132, 5-25-65, Cl. 119—14.08.
- Allen, John D., to Fawick Corp. Remote control hydraulic system. 3,184,921, 5-25-65, Cl. 60—54.5.
- Allen-Bradley Co.: *See*—
  - Freeburg, Walter S., and Ellsworth. 3,184,912.
  - Lohf, Gerald W., Walker, and Ellsworth. 3,184,909.
- Allgeier, Robert L.: *See*—
  - Mescher, Harold E., and Allgeier. 3,185,460.
- Alliance Tool Co.: *See*—
  - Rodman, Clarence J., and Broome. 3,185,611.
- Allied Chemical Corp.: *See*—
  - Anello, Louis G., and Woolf. 3,185,541.
- Allied Thermal Corp.: *See*—
  - Batchelor, William L. 3,185,067.
- Allied Chemical Corp.: *See*—
  - Stafford, Steward L. 3,185,730.
  - Trout, Horace Q., and Yodis. 3,185,543.
  - Yodis, Anthony W. 3,185,542.
- Allinder, William C: *See*—
  - Ayers, George W., and Allinder. 3,185,667.
- Allis-Chalmers Mfg. Co.: *See*—
  - Fiedler, Bruce H. 3,184,904.
  - Olsen, Norman G. 3,184,869.
  - Plate, John R. 3,185,175.
  - Wochner, Joseph J., and Washbond. 3,185,511.
- Allison, Donald K., to Cool Fin Electronic Corp. Heat-dissipating tube shield. 3,185,756, 5-25-65, Cl. 174—35.
- Allmanna Svenska Elektriska Aktiebolaget: *See*—
  - Beckius, Ivar. 3,185,894.
  - Dahle, Orvar. 3,184,963.
  - Helmersson, Sven. 3,185,919.
- Alsman, Eugene M.: *See*—
  - Eastman, Watson S., and Alsman. 3,185,619.
- Altman, Roy F., to Sylvania Electric Products, Inc. Metal oxidizing process. 3,185,597, 5-25-65, Cl. 148—16.
- Aluminum Development Corp.: *See*—
  - Coll-Palagos, Miguel. 3,185,471.
- Amalric, Jean, to Merlin & Gerin, Etablissements. Gas blast circuit breakers having at least one tubular contact. 3,185,802, 5-25-65, Cl. 200—148.
- Ambruster, Joseph R., to United States Steel Corp. Band-guiding mechanism. 3,185,404, 5-25-65, Cl. 242—79.
- Amchem Products, Inc.: *See*—
  - Schiffman, Louis. 3,185,596.
- Ament, Weston H. Reel brake. 3,185,406, 5-25-65, Cl. 242—84.5.
- American Brake Shoe Co.: *See*—
  - Ligon, D Elmon. 3,185,040.
- American Can Co.: *See*—
  - Downie, Robert H., and La Fond. 3,185,568.
  - Rubow, Eugene W. and L. R. 3,185,472.
- American Cyanamid Co.: *See*—
  - Cantrall, Edward W., Bernstein, and Riccardi. 3,185,683.
  - Cantrall, Edward W., Bernstein, and Gordon. 3,185,715.
  - Harvey, Max J. 3,185,573.
  - Madison, Richard K., and Van Loo. 3,185,539.
- American Flange & Mfg. Co., Inc.: *See*—
  - Laurizio, Jeremiah. 3,185,507.
- American Home Products Corp.: *See*—
  - Osdene, Thomas S. 3,185,688.
  - Wei Peter H.-L. 3,185,680.
- American Machine & Foundry Co.: *See*—
  - Fiore Joseph V., Hooper, Monte, Mosby, and Schmidt. 3,185,162.
  - Holloway, Robert L., and Levendoski. 3,185,368.
  - Quisenberry, Carter E. 3,185,498.
  - Sadofsky, Michael. 3,185,923.
- American Optical Co.: *See*—
  - Granitsas, George A. 3,185,555.
- American Schack Co., Inc., The: *See*—
  - Kuhne, Heinz A., Seehausen, and von Gebhardi. 3,185,210.
- American Telephone and Telegraph Co.: *See*—
  - Engeman, John C., Fring, and Hartmann. 3,185,773.
- Amiard, Gaston: *See*—
  - Goffinet, Bernard, and Amiard. 3,185,729.
- Ammco Tools, Inc.: *See*—
  - Kushmuk Walter P. 3,185,002.
- Ammon, Johannes H., to The Babcock & Wilcox Co. Boiling coolant reactor with integral vapor separation and nuclear superheat. 3,185,630, 5-25-65, Cl. 176—54.
- Amodei, Juan J., and J. R. Burns, to Radio Corp. of America. Tunnel diode shift register with automatic reset. 3,185,864, 5-25-65, Cl. 307—88.5.
- Ampex Corp.: *See*—
  - Ehret, Robert J. 3,185,933.
  - Kleist, Robert A. 3,185,364.
  - Maxey, Alexander R. 3,185,400.
- Anaconda Aluminum Co.: *See*—
  - Krause, James N. 3,185,577.
  - Krause, James N., and Ahlemeyer. 3,185,383.
  - Scharre, Edward W. 3,185,578.
- Anchor Coupling Co., Inc.: *See*—
  - Luther, Roger R. 3,185 500.
- Anchor Hocking Glass Corp.: *See*—
  - Runco, Joseph C., and Hoehn. 3,185,285.
  - Shriner, William E., and Runco. 3,184,897.
- Anderson, Arnold E., C. C. Bookout, and R. E. Kaptur, to Ford Motor Co. Control system for infinitely variable power transmission mechanism. 3,184,913, 5-25-65, Cl. 60—19.
- Anderson Co., The: *See*—
  - Beatty, Eldon L. 3,184,987.
- Anderson Electric Corp.: *See*—
  - Shaw, Truman B. 3,185,762.
- Anderson, Earl F. Stringed musical instrument. 3,185,011, 5-25-65, Cl. 84—293.
- Anderson, Earl R., to Filper Corp. Peach pitter. 3,185,195, 5-25-65, Cl. 146—28.
- Anderson, Gerald V., to North American Aviation, Inc. Welded structure and method for making same. 3,185,815, 5-25-65, Cl. 219—137.
- Anderson, Howard A.: *See*—
  - Lindberg, Carl A., and Anderson. 3,184,778.
- Anderson, Richard H., to The Robinson Clay Product Co. Seal for pipe joints. 3,185,491, 5-25-65, Cl. 277—237.
- Anderson, Robert G., and Y. G. Hendrickon, to California Research Corp. Corrosion inhibited lubricants. 3,185,646, 5-25-65, Cl. 252—46.7.
- Anderson, Robert G., and Y. G. Hendrickhon, to California Research Corp. Lubricant composition. 3,185,647, 5-25-65, Cl. 252—46.7.
- Andreassen, Alfred E. O., to Chamberlain Corp. Shelf structure. 3,185,315, 5-25-65, Cl. 211—153.
- Andreoli, Gianni, to Mitralux Establishment. Light and image projectors. 3,185,028, 5-25-65, Cl. 88—24.
- Andrews Carroll A., to International Business Machines Corp. Core adder. 3,185,826, 5-25-65, Cl. 235—175.

- Andrews, William G. Pistol stabilizer. 3,184,877, 5–25–65, Cl. 42—72.
- Anelex Corp.: *See*—
  - Rosen, Leo. 3,184,847.
- Anello, Louis G., and C. Woolf, to Allied Chemical Corp. Manufacture of fluorine compounds. 3,185,541, 5–25–65, Cl. 23—14.
- Angle, Kenneth J. Universal hose coupler. 3,185,503, 5–25–65, Cl. 285—74.
- Anstey, Doris B.: *See*—
  - Anstey, Richard W. and D. B. 3,184,760.
- Anstey, Richard W. and D. B. Positioning means for women's belts. 3,184,760, 5–25–65, Cl. 2—312.
- Antognini, Joe: *See*—
  - Tilles, Harry, and Antognini. 3,185,720.
- Anton, Mark, to Suburban Propane Gas Corp. Method of and means for storing liquefied petroleum gases underground. 3,184,922, 5–25–65, Cl. 61—.5.
- Apfel, Joseph H.: *See*—
  - Thelen, Alfred J., and Apfel. 3,185,834.
- Appleton, Arthur I. Hanger for pipe and conduit. 3,185,418, 5–25–65, Cl. 248—72.
- Applied Power Industries, Inc.: *See*—
  - Flaugher, Lawrence L., and Bur. 3,185,836.
- Aquatron Corp. (Aust.) Pty. Ltd.: *See*—
  - Glasson, Douglas H., and Bourne. 3,185,839.
- Araki, Katsuji, to The Toyo Rubber Industry Co., Ltd. Screw for the cold feed extruder of the compounded rubber. 3,184,790, 5–25–65, Cl. 18—12.
- Archer, Marie. Cable clamps. 3,184,817, 5–25–65, Cl. 24—123.
- Arentze, Cornelius: *See*—
  - Hess, Francis M., Arentze, and Shaver. 3,185,111.
- Armbruster, Eugene, and F. X. Leitmeier, to Optische Werke G. Rodenstock. Illuminated indicator device. 3,185,064, 5–25–65, Cl. 95—64.
- Armour, Donald F., to Monsanto Co. Dispensing device. 3,184,782, 5–25–65, Cl. 15—594.
- Armstrong Cork Co.: *See*—
  - Hager, Nathaniel E., Jr. 3,185,432.
- Armstrong, William H., to Borg-Warner Corp. Dresser. 3,185,536, 5–25–65, Cl. 312—281.
- Arnold, Carl, and H. Brandt, to Deutsche Flux G.m.b.H. Process of producing welding fluxes. 3,185,599, 5–25–65, Cl. 148—26.
- Arnold, Francis T.: *See*—
  - Pfaff, William A., Arnold, Kniffin, Brewster, and Crouse 3,185,025.
- Aseco, Inc.: *See*—
  - Voigt, Robert H. 3,185,901.
- Ashby, Gerald K.: *See*—
  - Gabby, John L., and Ashby. 3,185,574.
- Ateliers et Forges de la Loire, Societe Anonyme, Compagnie des: *See*—
  - Caubet, Jacques J., and Grassin. 3,185,459.
- Ateliers Provencaux de Reparations Novales et Industrielles: *See*—
  - Casas, Edmond R. 3,184,925.
- Atkinson, Wallace E., to Long Mfg. Co. Inc. Trunk lock. 3,184,935, 5–25–65, Cl. 70—75.
- Atlantic Refining Co., The: *See*—
  - Bradley, John S. 3,184,973.
  - Woods, John P., Neitzel, and Prickett. 3,185,994.
- Atlas Chemical Industries, Inc.: *See*—
  - Geisler, Alan S. 3,185,575.
- Attwood, Brian E., to North American Philips Co., Inc. Time-base circuit employing transistors. 3,185,889, 5–25–65, Cl. 315—27.
- Atwood Vacuum Machine Co.: *See*—
  - Kirk, Joseph R. 3,184,936.
- Auer, Ulrich W., to Societe des Compteurs de Geneve Sodeco. Driving device for impulse counter. 3,184,982, 5–25–65, Cl. 74—143.
- Aurandt, Richard D. Camera accessory. 3,185,062, 5–25–65, Cl. 95—53.
- Automotive Products Co. Ltd.: *See*—
  - Chouings, Leslie C. 3,185,259.
- Averill, Eugene F.: *See*—
  - Straub, Harold E., and Averill. 3,185,068.
  - Straub, Harold E., and Averill. 3,185,069.
- Avionics Research Products Corp.: *See*—
  - Thornton, William E., and Cherry. 3,184,966.
- Axthammer, Ludwig, to Fichtel & Sachs Aktiengesellschaft. Shock absorber structure and the like. 3,185,262, 5–25–65, Cl. 188—100.
- Ayers, George W., and W. C. Allinder, to The Pure Oil Co. Halomethylated adhesive composition. 3,185,667, 5–25–65, Cl. 260—67.
- Aziende Colori Nazionali Affini ACNA S.p.A.: *See*—
  - Tessandori, Marco, and Pasquarelli. 3,185,701.
- B.S.A. Tools Ltd.: *See*—
  - Graf, Ernest H. H., and Randall. 3,185,039.
- Babcock & Wilcox Co., The: *See*—
  - Ammon, Johannes H. 3,185,630.
  - Boll, Richard H., and Pirsh. 3,185,457.
- Bach, Ricardo O., and W. W. Boardman, Jr., to Lithium Corp. of America. Preparation of anhydrous lithium peroxide. 3,185,546, 5–25–65, Cl. 23—184.
- Bacharach Industrial Instrument Co.: *See*—
  - Stein, Joseph A. 3,185,041.
- Bader, John. Hydrofoil boat. 3,185,120, 5–25–65, Cl. 114—66.5.
- Bailey Meter Co.: *See*—
  - Gilbert, Lyman F., and McWhorter. 3,185,846.
- Baker, Claude W., to Sterling Drug Inc. Tablet coating method. 3,185,626, 5–25–65, Cl. 167—82.
- Baker Machinery Co.: *See*—
  - Lortz, William H. 3,185,234.
- Baker Perkins Holdings Ltd.: *See*—
  - Sollich, Helmut. 3,185,129.
- Balaz, Charles S., and I. H. Lundquist, to Friden, Inc. Postal meter having means for selectively controlling magnitude of work feed increment. 3,185,008, 5–25–65, Cl. 83—224.
- Baldwin-Lima Hamilton Corp.: *See*—
  - Sibler, Guentew W. 3,184,944.
- Balestic, Francis, to Commissariat a'l'Energie Atomique. Process of chromatographic extraction of vitamin D_3 and/or pre-vitamin D_3. 3,185,716, 5–25–65, Cl. 260—397.25.
- Balitrand, Georges, and P. Lafont, to Rhone-Poulenc S.A. Solutions of acrylonitrile homopolymers and copolymers. 3,185,657, 5–25–65, Cl. 260—30.2.
- Ball, Frank J., J. B. Doughty, and W. G. Vardell, to West Virginia Pulp and Paper Co. Composition containing resole and lignin in free acid form and process for preparing same. 3,185,654, 5–25–65, Cl. 260—17.5.
- Ballinger, Peter, to California Research Corp. Acetylenic lead compounds and gasoline compositions thereof. 3,185,553, 5–25–65, Cl. 44—69.
- Baltensperger, Paul, to Brown, Boveri & Cie, Aktiengesellschaft. Power switch with magnetic blow-out chamber and an adjacent arc chamber having spring-mounted walls within which the switch contacts are located. 3,185,801, 5–25–65, Cl. 200—147.
- Bank of America National Trust and Savings Assn.: *See*—
  - Hearon, Guy H., and Campbell. 3,185,057.
- Bapseres, Pierre, and C. Nicolaides, to Societe National des/Petroles d'Aquitaine. Method for producing oximes. 3,185,732, 5–25–65, Cl. 260—566.
- Babour, David J.: *See*—
  - Macdonald, Herbert G., Barbour, Claus, and Cleverly. 3,185,748.
- Barbour, Richard T. Attachment for drinking canned beverages. 3,185,341, 5–25–65, Cl. 220—90.6.
- Barker, John L., to Laboratory For Electronics, Inc. Traffic monitoring system. 3,185,959, 5–25–65, Cl. 340—38.
- Barnes, Hugh R.: *See*—
  - Pensavecchia, Frank G., and Barnes. 3,185,083.
- Barnes, William A.: *See*—
  - Zeidler, Reinhold C., Barnes, and Lysett. 3,184,833.
- Baron, Hans R., to Agfa Aktiengesellschaft. Structure for controlling the light which reaches a photosensitive element of a camera. 3,185,052, 5–25–65, Cl. 95—10.
- Barrett, Robert L., to Western Electric Co., Inc. Fixture for clamping articles to a strip for subsequent bonding. 3,185,469, 5–25–65, Cl. 269—74.
- Bart, Loren R.: *See*—
  - Brandenberg, Karl A., and Bart. 3,185,177.
- Bartfai, Bela and M., and J. Gonczi, L. Hajdu, M. Markovics, B. Ronai, and J. Szucs, to Metrimpex Magyar Muszeripari Kulkereskedelmi Vallalat. Silver electrode of silver-zinc storage cells and process for preparing them. 3,185,591, 5–25–65, Cl. 136—75.
- Bartfai, Miklos: *See*—
  - Bartfai, Bela and M., and Gonczi, Hajdu, Markovics, Ronai, and Szucs. 3,185,591.
- Barwood, Victor H. Method of assembling sealing washer and headed fastener. 3,184,769, 5–25–65, Cl. 10—10.
- Baschmann, Anson T.: *See*—
  - Bird, Walter W., Reitmeier, and Baschmann. 3,185,165.
- Batchelor, William L., to Allied Thermal Corp. Slot diffuser. 3,185,067, 5–25–65, Cl. 98—40.
- Bath, Carl C.: *See*—
  - Gunkel, William F., Willey, Christianson, Kirner, Jackson Cordry, Papanicolaou, Bath, and Visher. 3,185,981.
- Bath, Cyril J., to The Cyril J. Bath Co. Heavy duty stretch forming machine. 3,184,948, 5–25–65, Cl. 72—297.
- Bath, Cyril J., Co., The: *See*—
  - Bath, Cyril J. 3,184,948.
- Baumann, Kurt: *See*—
  - Hullmann, Heinrich and Baumann. 3,185,440.
- Baumann, Michael F., and W. R. Lawton, to Nashua Corp. Heat responsive marking sheets. 3,185,583, 5–25–65, Cl. 117—36.8.
- Baumann, Michael F., and W. R. Lawton, to Nashua Corp. Heat responsive marking sheets. 3,185 584, 5–25–65, Cl. 117—36.8.
- Baumann, Michael F., and W. R. Lawton, to Nashua Corp. Heat responsive marking sheets. 3,185,585, 5–25–65, Cl. 117—36.9.
- Bausch & Lomb Inc.: *See*—
  - Betensky, Ellis I. 3,185,033.
  - Betensky, Ellis I., and Rickless. 3,185,031.
  - Buckner, Dean A. 3,185,750.
  - Cala, Charles F. 3,185,556.
  - Peck, William G., and Pegis. 3,185,029.
  - Rickless, Nathan. 3 185,032.
  - Rickless, Nathan, and Ruben. 3,185,030.
  - Turner, Eugene L. 3,184 873.
- Baxter, Donald J., to Curtiss-Wright Corp. Vehicle speed governors and controls. 3,185 248, 5–25–65, Cl. 180—82.1.
- Bayer, Franz: *See*—
  - Gitzinger, Peter, Bayer, and Koppatz. 3,185,749.
- Bayerische Motoren Werke: *See*—
  - Hofmeister, Wilhelm. 3,185,266.
- Bayes, Lionel R. Portable tap valve grinder. 3,184,894, 5–25–65, Cl. 51—241.
- Beach, Wayne C.: *See*—
  - Dersnah Howard B. Schlotter, and Beach. 3,185,655.
- Bean, Harley F., to Sperry Rand Corp. Tape drive. 3,185,403, 5–25–65, Cl. 242—57.3.
- Beatty, Eldon L., to The Anderson Co. Motion-transmitting device. 3,184,987, 5–25–65, Cl. 74—424.8.
- Beaudry Walter A.: *See*—
  - Cushing, Vincent J., and Beaudry. 3,185,097.
- Beavon, David K., to Texaco Inc. Reforming reaction in which the reaction is controlled by ultraviolet analysis of the reformate. 3,185,640, 5–25–65, Cl. 208—134.

- Beber, Oral L.: *See*—
  - Folkins, Hillis O., and Beber. 3,185,301.
- Bechtold, Max T., to E. I. du Pont de Nemours and Co. Selected Mo-Nb-Si-Ti compositions and objects thereof. 3,184,834, 5–25–65, Cl. 29—182.
- Becker, Edward J., and A. Cohen, to Olin Mathieson Chemical Corp. 12-keto progestational steroids and derivatives thereof. 3,185,713, 5–25–65, Cl. 260—397.3.
- Beckius, Ivar, to Allmanna Svenska Elektriska Aktiebolaget. Means for indicating faults in the crucible of induction melting furnaces. 3,185,894, 5–25–65, Cl. 317—9.
- Beesley, James P., to International Business Machines Corp. Cryotron shift register. 3,185,862, 5–25–65, Cl. 307—88.5.
- Beets, Muus G. J., and H. van Essen, to International Flavors & Fragrances I.F.F. (Nederland N.V.) Perfume oils containing 2-methyl-3-(3′,4′-methylenedioxyphenyl)-propanol. 3,185,629, 5–25–65, Cl. 167—94.
- Behlen, Herbert P.: *See*—
  - Behlen, Walter D. and H. P. 3,184,805.
- Behlen Mfg. Co., Inc.: *See*—
  - Behlen, Walter D. and H. P. 3 184,805.
- Behlen, Walter D. and H. P., to Behlen Mfg Co., Inc. Door structure for grain storage bins. 3,184,805, 5–25–65, Cl. 20—39.
- Belden Mfg. Co.: *See*—
  - Prifogle, John S. 3,185,953.
- Bell, James F., to Marralaud Inc. Optical strain gauge. 3,184,961, 5–25–65, Cl. 73—88.
- Bell, Raymond W.: *See*—
  - Hanrahan, Francis P., Bell, and Webb. 3,185,580.
- Bell, Robert E., F. C. Carroll, and W. H. Gallo, to Toledo Scale Corp. Indicator. 3,185,229, 5–25–65, Cl. 177—37.
- Bell Telephone Laboratories, Inc.: *See*—
  - Jaccarino, Vincent, and Peter. 3,185,900.
  - Keller, Arthur C. 3,185,955.
  - Lee, Chi-Yuan. 3,185,965.
  - Sikorski, Mathew E. 3,184,972.
  - White, Donald L. 3,185,935.
  - White, Donald L. 3,185,942.
- Bellomo, Andrea. Universal homokinetic joint. 3,184,927, 5–25–65, Cl. 64—21.
- Beloit Corp.: *See*—
  - Justus, Edgar J. 3,185,617.
- Belon, Paul: *See*—
  - Bosc, Robert, and Belon. 3,185,651.
- Bender, Emil A. Wedge seal coupling. 3,185,508, 5–25–65, Cl. 285—341.
- Bender, Werner K. Installation for reproducing sound from a stationary sound record area. 3,185,776, 5–25–65, Cl. 179—100.2.
- Bendix Corp., The: *See*—
  - Gunkel, William F., Willey, Christianson, Kirner, Jackson, Cordry, Papanicolaou, Bath, and Visher. 3,185,981.
- Bennett, Charles F., Sr. Load-compensating load handling machines. 3,185,316, 5–25–65, Cl. 212—49.
- Bennett, Foster C., F. E. Robbins, and R. E. Warnock, to The Dow Chemical Co. Metering and delivery apparatus for molten metal and method of use. 3,184,811, 5–25–65, Cl. 22—70.
- Bennett, Foster C., F. E. Robbins, and R. E. Warnock, to The Dow Chemical Co. Metering and delivery apparatus for molten metal and method of use. 3,184,812, 5–25–65, Cl. 22—70.
- Bennett, Richard L., and F. O. Underwood, to International Business Machines Corp. Data editing system. 3,185,965, Cl. 340—172.5.
- Bennett, Richard L., and F. O. Underwood, to International Business Machines Corp. Data editing system. 3,185,966, 5–25–65, Cl. 340—172.5.
- Bennett William O., W. W. Mutter, and E. Van Haaften, to Bulova Watch Co., Inc. Electronically-controlled timepiece and motion transformer therefor. 3,184,981, 5–25–65, Cl. 74—142.
- Bentley Products, Inc.: *See*—
  - Silverman, Abraham. 3,185,305.
- Berg, Edward C.: *See*—
  - Broadway, Ralph H. 3,185,445.
- Bergey John M., to Hamilton Watch Co. Gyratory motion translator. 3,185,254, 5–25–65, Cl. 185—29.
- Bergman Wayne K. Lever-cam operated slidable jaw wrench. 3,185,000, 5–25–65, Cl. 81—128.
- Berjon, Pierre R., to Societe d'Applications Generales d'Electricite et d Mecanique. Cipher telegraph system. 3,185,765, 5–25–65, Cl. 178—22.
- Bernard, Charles H. M. Height adjustable tilting device for revolving chairs. 3,185,430, 5–25–65, Cl. 248—381.
- Bernard, George G., and O. C. Holbrook, to The Pure Oil Co. Recovery of oil from subterranean formations. 3,185,214, 5–25–65, Cl. 166—9.
- Bernardi, Luigi, O. Goffredo, and G. Bosisio, to Societa Farmaceutici Italia. 6-methyl- and 1,6-dimethyl-erogoline 11 derivatives. 3,185,695, 5–25–65, Cl. 260—285.5
- Berney, Joseph C. Flap positioning machine. 3,184,898, 5–25–65, Cl. 53—382.
- Bernstein, Seymour: *See*—
  - Cantrall, Edward W., Bernstein, and Gordon. 3,185 715.
  - Cantrall, Edward W., Bernstein, and Riccardi. 3,185,683.
- Berry, Roger N., to Diamond International Corp. Manufacture of match splints. 3,185,552, 5–25–65, Cl. 44—42.
- Bertolini, William A.: *See*—
  - Turnbull, Donald M., Bertolini, and Carr. 3,185,519.
- Bess, Leon. Radiation dosimeter circuit. 3,185,844, 5–25–65, Cl. 250—83.3.
- Beste, Lawrence F., to E. I. du Pont de Nemours and Co. Stable polymeric dispersions. 3,185,660, 5–25–65, Cl. 260—34.2.
- Betensky, Ellis I. to Bausch & Lomb Inc. Modified petzval type photographic objective. 3,185,033, 5–25–65, Cl. 88—57.
- Betensky, Ellis I., and N. Rickless, to Bausch & Lomb Inc. Symmetrical projection objective. 3,185,031, 5–25–65, Cl. 88—57.
- Better Packages, Inc.: *Seee*—
  - Krueger, Theodore H. 3,185,363.
- Big Dutchman, Inc.: *See*—
  - Kurtz, John S., and Graves. 3,185,289.
- Bingham, George H., Jr., to Cambridge Rubber Co. Method of venting sole attaching molds. 3,185,752, 5–26–65, Cl. 264—316.
- Bio-Engineering, Inc.: *See*—
  - Murr, William C., and Eilers. 3,184,960.
- Bird, Merrill S. Animal cage feeding device. 3,185,133, 5–25–65, Cl. 119—18.
- Bird, Merrill S. Ballast element. 3,185,255, 5–25–65, Cl. 188—1.
- Bird, Walter W., G. F. Reitmeier, and A. T. Baschmann, to United States of America, Army. Baffle vent for air supported building. 3,185,165, 5–25–65, Cl. 135—14.
- Bishop, Hazel Inc.: *See*—
  - Kass, Gus S. 3,185,627.
- Bissel Inc.: *See*—
  - Hoxie, Orville D. 3,184,781.
  - Lindberg, Carl A., and Anderson. 3,184,778.
- Bjerke, Alf J. Dismountable shelf suporting unit and bracket therefor. 3,185,426, 5–25–65, Cl. 248—250.
- Bjorksten Research Laboratories for Industry, Inc.: *See*—
  - Holinbeck, Dale G. 3,185,093.
- Black, Andrew F., to Air-Pressure Damp-Proofing Services, Inc. Building surface applictor. 3,185,396, 5–25–65, Cl. 239—336.
- Blackhawk Co.: *See*—
  - Nelson, Permil N. 3,184,800.
  - Nelson, Permil N. 3,185,397.
- Blake, Julian H., to Ray Winther Co. Refrigeration system. 3,184,926, 5–25–65, Cl. 62—155.
- Blanchard, Jean M., to Sirius. Laminated structures adapted to generate soundwaves and/or ultrasonic vibration, notably for producing vibratory effects along surfaces. 3,185,446, 5–25–65, Cl. 259—1.
- Blasbalg, Herman, and R. Van Bierkom, to International Business Machines Corp. Adaptive compactor. 3,185,824, 5–25–65, Cl. 235—154.
- Blattner, Hans: *See*—
  - Schindler, Walter, and Blattner. 3,185,679.
- Blitzer, Jacob H., Jr., to Integrated Ceilings & Grilleworks, Inc. Light diffuser apparatus. 3,185,833, 5–25–65, Cl. 240—9.
- Blough, Ronald S., to Fairfield Engineering and Mfg. Co. Apparatus for automatic weighing and distributing feed for livestock. 3,185,230, 5–25–65, Cl. 177—71.
- Blue White Industries, Ltd.: *See*—
  - King, Oswald M. 3,185,347.
- Boardman, William W., Jr.: *See*—
  - Bach, Ricardo O., and Boardman. 3,185,546.
- Bodine, Albert G., Jr. Alternating current magnetohydrodynamic generator. 3,185,871, 5–25–65, Cl. 310—11.
- Boeing Co., The: *See*—
  - Higgins, Harry C. 3,185,408.
- Boggs, LeRoy R., to Universal Moulded Fiber Glass Corp. Method and equipment for making fibre reinforced plastic shapes. 3,185,603, 5–25–65, Cl. 156—209.
- Boggs, LeRoy R., to Universal Moulder Fiber Glass Corp. Method for initiating an operation of making fiber reinforced plastic pieces. 3,185,746, 5–25–65, Cl. 264—137.
- Boggs, LeRoy R., to Universal Moulded Fiber Glass Corp. Method for initiating an operation for making fiber reinforced plastic articles. 3,185,747, 5–25–65, Cl. 264—209.
- Bohm, Helmut, and H. Duras, to Miwag Mikrowellen Aktien Gesellschaft. Temperature sensitive control. 3,185,809, 5–25–65, Cl. 219—10.55.
- Boll, Richard H., and E. A. Pirsch, to The Babcock & Wilcox Co. Method of and apparatus for heating fluids. 3,185,457, 5–25–65, Cl. 263—19.
- Bolton, Norman A., to General Signal Corp. Liquid level indication system. 3 184,969, 5–25–65, Cl. 73—290.
- Bomberger, Arthur L., to Teleflex Inc. Steering control. 3,184 991, 5–25–65, Cl. 74—507.
- Bonnard, Armand A. Cylindrical squeeze-type directional valve. 3 185,178, 5–25–65, Cl. 137—625.29.
- Bookout, Charles C.: *See*—
  - Anderson, Arnold E., Bookout, and Kaptur. 3,184,918.
- Booth, Frederick E., Jr.: *See*—
  - Irwin, Samuel N., and Booth. 3,185,077.
- Booth, Frederick E., Jr., to Control Data Corp. Hammer control circuit in high speed printers. 3,185,076, 5–25–65, Cl. 101—93.
- Booth, Weldon S., to Contact Foundation, Inc. Contact foundation method. 3,184,893, 5–25–65, Cl. 50—532.
- Borgemenke, Earl F.: *See*—
  - Struble, Glenn E., and Borgemenke. 3,185,047.
- Borghesani, Robert S., to Polaroid Corp. Photographic apparatus. 3,185 060, 5–25–65, Cl. 95—45.
- Borg-Warner Corp.: *See*—
  - Armstrong William H. 3,185 536.
  - Headings, William W. and Rose. 3,185,105.
  - Smirl, Richard L. 3,185 273.
  - Zeidler, Reinhold C., Barnes, and Lysett. 3 184,833.
- Borkum, David B., to Sperry Rand Corp. Delayed-response signal transfer circuit. 3,185,859, 5–25–65, Cl. 307—88.5.
- Bosc, Robert and P. Belon, to Societe Francaise des Produits Pour Catalyse. Method of preparing an alumina-supported catalyst composition and the product thereof. 3,185,651, 5–25–65, Cl. 252—463.
- Bosch, Robert, G.m.b.H.: *See*—
  - Heine, Joseph. 3,185,268
  - Reisnecker, Ludwig. 3,185,878.

Bosisio, Germano: *See—*
  Bernardi, Luigi, Goffredo, and Bosisio. 3,185,695.
Bossard, Werner: *See—*
  Voltz, Jacques, and Bossard. 3,185,538.
Bosse, Robert W.: *See—*
  Braendel, Felix W., and Bosse. 3,185,343.
Bourne, Harold C.: *See—*
  Glasson, Douglas H., and Bourne. 3,185,839.
Bowan, Walte J., and C. E. Floren, to Mueller Co. Electrical insulating pipe coupling. 3,185,501, 5–25–65, Cl. 285—52.
Bowles, Romald E.: *See—*
  Horton, Billy M., and Bowles. 3,185,166.
Bowman, Harry O., to Freeman-Toor Corp. Method of premarking shoe vamps preparatory to hand stitching. 3,184,771, 5–25–65, Cl. 12—142.
Bowman, Joe, to Kingston Products Corp. Time delay circuit and mechanism. 3,185,867, 5–25–65, Cl. 307—141.4.
Bowman, Robert J., and E. F. Mekelburg, to Square D Co. Protective sealing cap for push buttons. 3,185,806, 5–25–65, Cl. 200—168.
Bozich, Michael J. Conveying system and valve construction therefor. 3,185,434, 5–25–65, Cl. 251—134.
Bradfute, John H.: *See—*
  Christensen, Dan A., and Bradfute. 3,185,488.
Bradley, Addison B., to John Oster Mfg. Co. Shaft lock for a food processing device. 3,185,304, 5–25–65, Cl. 210—232.
Bradley, John S., to The Atlantic Refining Co. Mud sample pump. 3,184,973, 5–25–65, Cl. 73—422.
Bradley, Norman, to United Kingdom Atomic Energy Authority. Fuel elements for nuclear reactors. 3,185,632, 5–25–65, Cl. 176—68.
Braendel, Felix W., and R. W. Bosse, to Groov-Pin Corp. Insert orienting equipment. 3,185,343, 5–25–65, Cl. 221—13.
Bragman, Clifford I. Sliding closure structures. 3,184,806, 5–25–65, Cl. 20—52.
Brandeland, Howard A.: *See—*
  Coleman, Joseph J., Wilke, Steinhoff, and Brandeland. 3,185,593.
Brandenberg, Karl A., and L. R. Bart, to Modernair Corp. Three-way solenoid valve. 3,185,177, 5–25–65, Cl. 137—625.27.
Brander, Ian R., and J. B. Seed, to Imperial Chemical Industries Ltd. Method and apparatus for packaging plastic materials in elongated containers. 3,185,188, 5–25–65, Cl. 141—12.
Brandt, Heinrich: *See—*
  Arnold, Carl, and Brandt. 3,185,599.
Braun, Frank R.: *See—*
  Perkins, James M., Graf, and Braun. 3,184,832.
Braun, W., Co.: *See—*
  Lerner, Nathan B. 3,185,291.
Brearley Co., The: *See—*
  Provi, Mike A. 3,185,233.
Breck, Donald W., C. R. Castor, and R. M. Milton, to Union Carbide Corp. Method of removing carbon monoxide from gas mixtures. 3,185,540, 5–25–65, Cl. 23—2.
Breithaupt, Richard L., and H. J. Thomas, to National Mine Service Co. Material haulage vehicle. 3,185,324, 5–25–65, Cl. 214—83.36.
Breitinger, August F., to Jared Knitting Mills, Inc. Method of manufacturing knitted fabric. 3,184,930, 5–25–65, Cl. 66—200.
Breneman, Warren R., to Woodford Mfg. Co. Dock plate. 3,184,773, 5–25–65, Cl. 14—72.
Brette, Yves-Jean F., and J. P. L. Droux, to Compagnie des Machines Bull (Societe Anonyme). Double magnetic head. 3,185,971, 5–25–65, Cl. 340—174.1.
Brewer Pharmacal Engineering Corp.: *See—*
  D'Emilio, Armand. 3,185,851.
Brewster, Franklin C., to Motorola, Inc. Voltage regulator with load compensation. 3,185,916, 5–25–65, Cl. 322—28.
Brewster, Selah S., Jr.: *See—*
  Pfaff, William A., Arnold, Knoffin, Brewster, and Crouse. 3,185,025.
Briggs, James A.: *See—*
  Clemo, Philip F., Briggs, Wilson, and Carter. 3,185,672.
Brigham, James W. Caster device. 3,184,783, 5–25–65, Cl. 16—18.
Brightman, John W., to The Nylock Corp. Machine for inserting locking inserts in screws. 3,185,468, 5–25–65, Cl. 269—61.
Brillon, Norman L.: *See—*
  Byrne, William R., and Brillon. 3,184,840.
Brinkerhoff, Joris M., to Laboratory for Electronics, Inc. System for recognition of particular distributions of pulses repesenting an input waveform. 3,185,926, 5–25–65, Cl. 324—77.
Bristol-Myers Co.: *See—*
  Schmitz, Henry, and De Vault. 3,185,675.
Bristol Siddeley Engines Ltd.: *See—*
  Osborne, Leonard A., and Rivers. 3,185,605.
Bristow, Gavin C.: *See—*
  Vinton, David S., Bristow, and Winters. 3,184,919.
British Nylon Spinners Ltd.: *See—*
  Clemo, Philip F., Briggs, Wilson, and Carter. 3,185,672.
British Titan Products Co. Ltd.: *See—*
  Hughes, William, and Brown. 3,185,398.
Broaddus, Charles D., to The Procter & Gamble Co. Process for isomerizing the double bond of straight chain terminal monolefins. 3,185,744, 5–25–65, Cl. 260—683.2.
Broadway, Ralph H., to C. S. Pruscha, and E. C. Berg. Divided lane highway guard. 3,185,445, 5–25–65, Cl. 256—13.1.
Bronte, William H., and S. E. Lingenfelter, to Corrobilt Container Co. Method of constructing a corrugated container. 3,185,045, 5–25–65, Cl. 93—36.
Brooks, Eugene T., and J. A. La Monica, to Crane Co. Pump. 3,185,101, 5–25–65, Cl. 103—111.
Brooks, Fred A., Jr., and J. G. Richardson, to Esso Production Research Co. Well treatment to remove permeability block. 3,185,217, 5–25–65, Cl. 166—42.
Broome, Thorne K.: *See—*
  Rodman, Clarence J., and Broome. 3,185,611.
Broughton, Arthur E. Toilet system with pressure discharge pumping system. 3,184,761, 5–25–65, Cl. 4—90.
Brown, Alvin E.: *See—*
  Suellentrop, Fred J., Brown, and Rule. 3,184,959.
Brown, Arthur D.: *See—*
  Hughes, William, and Brown. 3,185,398.
Brown, Boveri & Cie, Aktiengesellschaft: *See—*
  Baltensperger, Paul. 3,185,801.
  Reuter, Hermann. 3,185,441.
Brown Citrus Machinery Corp.: *See—*
  Foss, Harry A., and Jones. 3,185,071.
  Rickard, Donn J. 3,185,072.
Brown, Ethan A. Injectionable substances. 3,185,625, 5–25–65 Cl. 167—82.
Brown, Jerome E., to E. G. De Witt, and H. Shapiro, to Ethyl Corp. Preparation of cyclopentadienyl co-ordination compounds of groups VIII and IB metals. 3,185,718, 5–25–65, Cl. 260—439.
Brown, Lloyd H., to The Quaker Oats Co. Process of forming a foundry mold with an acid curable binder. 3,184,814, 5–25–65, Cl. 22—193.
Browner, William J.: *See—*
  Moss, John I., and Browner. 3,185,939.
Broziat, Horst. Apparatus for braking or switching off electric motors. 3,185,876, 5–25–65, Cl. 310—77.
Brubaker, Robert D., to G. J. Levy. Tone arm mounted dust remover for phonograph record. 3,185,485, 5–25–65, Cl. 274—47.
Brunner, Julius, to Siemens-Schuckertwerke Aktiengesellschaft. Signal-voltage generating device. 3,185,920, 5–25–65, Cl. 323—94
Brush Beryllium Co., The: *See—*
  Hornak, Michael B., and Klein. 3,184,945.
  Melvin, John R. 3,184,827.
Bruun, Eugene R., T. A. Flanders, and M. Marcus, to United Aircraft Corp. Intercompartment pressure ratio regulator. 3,185,169, 5–25–65, Cl. 137—98.
Bryan, Eugene D. Fire fighting devices. 3,185,198, 5–25–65, Cl. 150—52.
Buchanan, Robert H.: *See—*
  Davies, Derec F. V., Buchanan, and Oedjoe. 3,185,529.
Buchner, Hans, to G. M. Pfaff, AG. Ironing machine. 3,184,870, 5–25–65, Cl. 38—59.
Buckingham, Edgar C., to Super-Temp Corp. Smoking element. 3,185,163, 5–25–65, Cl. 131—194.
Buckner, Dean A., to Bausch & Lomb Inc. Method for forming dielectric elements. 3,185,750, 5–25–65, Cl. 264—294.
Buckner, Jewell A., to Morpul Research Corp. Vehicle trailer spring suspension, load spring suspension, and frame raising and lowering means. 3,185,330, 5–25–65, Cl. 214—506.
Buechl, George H. Flush pin gauge. 3,184,857, 5–25–65, Cl. 33—169.
Bulova Watch Co., Inc.: *See—*
  Bennett, William O., Mutter, and Van Haaften. 3,184,981.
Buntle, Robert Z., to National Lock Co. Dispensing device for salt and the like. 3,185,359, 5–25–65, Cl. 222—480.
Bur, Thomas G.: *See*
  Flaugher, Lawrence L., and Bur. 3,185,836.
Burhack, John R. Shields for rear engined automobiles. 3,185,243, 5–25–65, Cl. 180—54.
Burch, Charles J., to United States Steel Corp. Checker-cleaning apparatus. 3,184,774, 5–25–65, Cl. 15—317.
Burdeno, Lawrence T., to R. B. Moore. Index rotor with plural heads for magnetic tape recorders. 3,185,484, 5–25–65, Cl. 274—4.
Burlington Industries, Inc.: *See—*
  Burnet, Arthur L., and Woods. 3,184,798.
Burnet, Arthur L., and H. J. Woods, to Burlington Industries, Inc. System for processing textile fibers. 3,184,798, 5–25–65, Cl. 19—65.
Burns, Joseph R.: *See*
  Amodei, Juan J., and Burns. 3,185,864.
Burns, Kay N.: *See—*
  Shanks, John L., Soland, and Burns. 3,185,249.
Burns, William E., to International Business Machines Corp. Core transistor logical device. 3,185,969, 5–25–65, Cl. 340—174.
Burroughs Corp.: *See—*
  McHugh, Donald H. 3,185,761.
  Rayfield, Harry F., and Nordman. 3,185,365.
Burt, F. N., Co., Inc.: *See—*
  Rosenburg, Charles W., Jr. 3,185,378.
Bussey, William H., and A. G. Gunter, Jr., to P. G. S. Mero. Recording device. 3,185,998, 5–25–65, Cl. 346—140.
Butterworth, Archibald J. Hydraulic rams. 3,185,237, 5–25–65, Cl. 180—1.
Butz, C. F., Engineering: *See*
  Muller, Donald C. 3,185,108.
Buys, George R., and G. H. Nettleton, to General Electric Co. Circuit breaker trip mechanism. 3,185,792, 5–25–65, Cl. 200—116
Byrne, William R., and N. L. Brillon, to Texas Instruments Inc. Methods of making variegated stock. 3,184,840, 5–25–65, Cl. 29—420.5.
Caccavo, Joseph F., and W. J. Piemonte. Apparatus for collecting, separating, storing and dispensing whole blood. 3,185,154, 5–25–65, Cl. 128—272.
Cachat, John F., to The Ohio Crankshaft Co. Flushing device for pipe welding mill. 3,185,807, 5–25–65, Cl. 219—8.5.
Caero, Jose G. Servo-type spreading disc brake. 3,185,257, 5–25–65, Cl. 188—72.
Cailliet, René. Removable roof on rapid-moving vehicles. 3,185,205, 5–25–65, Cl. 160—133.
Cain, Dallas E., to General Electric Co. Circuit breaker with pancake type operating mechanism and improved force transmission means. 3,185,791, 5–25–65, Cl. 200—106.

Cala, Charles F., to Bausch & Lomb Inc. Method of forming fused bifocal lens blanks. 3,185,556, 5–25–65, Cl. 65—39.
California Research Corp.: *See—*
  Anderson, Robert G., and Hendrickson. 3,185,646.
  Anderson, Robert G., and Hendrickson. 3,185,647.
  Ballinger, Peter. 3,185,553.
  Clayton, James O. 3,185,645.
  Ellis, William H., and Schmidt. 3,184,957.
  Lowe, Warren, and Stuart. 3,185,643.
  Paterson, Norman J. 3,185,639.
Callander, Douglas D.: *See—*
  Kendall, Charles E., Huke, and Callander. 3,185,673.
Cambridge Rubber Co.: *See—*
  Bingham, George H., Jr. 3,185,752.
Camerino, Bruno, and G. Palamidessi, to Societa Farmaceutici Italia. Pyrazine derivatives. 3,185,686, 5–25–65, Cl. 260—250.
Cameron, John A., to General Foods Corp. Method of forming a scouring article. 3,185,604, 5–25–65, Cl. 156—210.
Campbell, John J., V. P. Hendrickson, and A. W. Sieving, to Caterpillar Tractor Co. Wheel driven hydrodynamic retarder system. 3,185,261, 5–25–65, Cl. 188—90.
Campbell, Rouel R.: *See—*
  Hearon, Guy H., and Campbell. 3,185,057.
Camras, Marvin, to IIT Research Institute. Oriented tape. 3,185,775, 5–25–65, Cl. 179—100.2.
Canadian Ingersoll-Rand Co., Ltd.: *See—*
  Delcellier, Henri A. 3,185,192.
Canale, Antonio: *See—*
  Canale, Pietro and A. 3,184,911.
Canale, Pietro and A. Combined multiple clock and radio. 3,184,911, 5–25–65, Cl. 58—44.
Cantrall, Edward W., S. Bernstein, and S. Gordon, to American Cyanamid Co. Substituted 6-amino alkyleneoxy 3,5-cycloandrostanes. 3,185,715, 5–25–65, Cl. 260—397.4.
Cantrall, Edward W., S. Bernstein, and B. A. Riccardi, to American Cyanamid Co. Alkyl aminoalkyleneoxy pregnenes. 3,185,683, 5–25–65, Cl. 260—239.55.
Cantrel, Kenneth E.: *See—*
  Goodhue, Lyle D., Louthan, and Cantrel. 3,185,620.
Caouette, Zephirin A., and D. L. Fitton, to United Aircraft Corp. Reenforced seal for rocket nozzle. 3,184,917, 5–25–65, Cl. 60—35.55.
Capra, Ottavio A. Wrench of the pivoted jaw type. 3,184,999, 5–25–65, Cl. 81—101.
Cardiosonics Medical Instruments Corp.: *See—*
  Dudler, Hans A. 3,185,251.
Carlson, Carl O., D. B. Congleton, and D. A. Grafton, to The National Cash Register Co. Method and apparatus employing metachromatic material for forming a plurality of individual micro-images. 3,185,026, 5–25–65, Cl. 88—24.
Carlton, Louis A., and A. E. Pierce, to Esso Production Research Co. Pipe collar locator. 3,185,997, 5–25–65, Cl. 346—33.
Carluccio, Frank: *See—*
  Mutaffis, Thomas D., Carluccio, and Chiddix. 3,185,706.
Carr, George W.: *See—*
  Turnbull, Donald M., Bertolini, and Carr. 3,185,519.
Carr, Richard E.: *See—*
  Kirk, Roy C., and Carr. 3,185,592.
Carroll, Frederick C.: *See—*
  Bell, Robert E., Carroll, and Gallo. 3,185,229.
Carter, John A.: *See—*
  Clemo, Philip F., Briggs, Wilson, and Carter. 3,185,672.
Carter, Leslie W.: *See—*
  Welsher, Ronald A. G., Carter, and Salt. 3,185,509.
Casas, Edmond R., to Ateliers Provencaux de Reparations Novales et Industrielles. Keel-blocks. 3,184,925, 5–25–65, Cl. 61—66.
Cascade Industries, Inc.: *See—*
  West, Robert E. 3,184,764.
Cas-Craft, Inc.: *See—*
  White, John L. 3,184,819.
Case, J. I., Co.: *See—*
  Wright, Malcolm E. 3,185,221.
Case, Robert O., Jr., and C. H. Child, to North American Aviation, Inc. Monopulse receiver system. 3,185,982, 5–25–65, Cl. 343—16.
Castor, Charles R.: *See—*
  Breck, Donald W., Castor, and Milton. 3,185,540.
Caterpillar Tractor Co.: *See—*
  Campbell, John J., Hendrickson, and Sieving. 3,185,261.
  Lohbauer, Kenneth R., and Scheidt. 3,184,920.
  Peterson, Robert A. 3,185,528.
  Rhodes, Sammy J. 3,184,989.
  Stahl, Sebald K. 3,184,994.
  Vinton, David S., Bristow, and Winters. 3,184,919.
Catlin, Francis D., to Hardinge Bros., Inc. Indexing means for turrets. 3,184,996, 5–25–65, Cl. 74—822.
Caubet, Jacques J., and H. J. Grassin, to Compagnie des Ateliers et Forges de La Loire, Societe Anonyme, and Hydromecanique et Frottement S.A.R.L. Device for supporting a rotating body. 3,185,459, 5–25–65, Cl. 263—33.
Caughey, John M., to Hoover Ball and Bearing Co. Spring structure. 3,185,467, 5–25–65, Cl. 267—107.
Celanese Corp. of America: *See—*
  Singleton, Robert W., and Pulaski. 3,184,821.
Ceselski, Eugene P.: *See—*
  Lincoln, John D., and Ceselski. 3,185,610.
Chadwick, Earl L. Quick-change chuck. 3,185,493, 5–25–65, Cl. 279—82.
Chaloux, Marcel A.: *See—*
  Phillips, Harry, Chaloux, and De Vita. 3,184,770.
Chamberlain Corp.: *See—*
  Andreassen, Alfred E. O. 3,185,315.
  Orser, Lawrence D. 3,185,314.
Champagne, George L. Resuscitator. 3,185,147, 5–25–65, Cl. 128—29.
Chance, William E., to C. W. Cheney & Son Ltd. Handles. 3,185,272, 5–25–65, Cl. 190—57.
Chance, William E., to C. W. Cheney & Son Ltd. Luggage fittings. 3,185,513, 5–25–65, Cl. 292—281.
Chandler, Roger E.: *See—*
  Kahn, Donald J., and Chandler. 3,185,704.
Chang, Kern K. N., to Radio Corp. of America. Magnetoresistance nonreciprocal signal amplifier. 3,185,987, 5–25–65, Cl. 330—63.
Charlop, Herbert, to Metco, Inc. Flame spray construction. 3,185,366, 5–25–65, Cl. 226—176.
Chasar, Anthony R., and A. W. Mehrbrodt, to The Triax Co. Load extractor and inserter. 3,185,320, 5–25–65, Cl. 214—16.4.
Chase Manhattan Bank, The: *See—*
  Nebgen, William H. 3,185,212.
  Howard, Frank A. 3,185,785.
  Howard, Frank A. 3,185,960.
Chatelain, Maurice G., to The Ryan Aeronautical Co., Wide angle glide path system. 3,185,989, 5–25–65, Cl. 343—108.
Chedister, Ronald K., to Falcon Alarm Co. Alarm system. 3,185,127, 5–25–65, Cl. 116—86.
Cheney, C. W. & Son Ltd.: *See—*
  Chance, William E. 3,185,272.
  Chance, William E. 3,185,513.
Cherry, Isaac R.: *See—*
  Thornton, William E., and Cherry. 3,184,966.
Chesnais, Marie: *See—*
  Archer, Marie, and Chesnais. 3,184,817.
Chesney, Carl E.: *See—*
  Ellis, Earle B., and Chesney. 3,185,194.
Chicago Condenser Corp.: *See—*
  Genovese, Anthony N. 3,185,903.
Chiddix, Max E.: *See—*
  Mutaffis, Thomas D., Carluccio, and Chiddix. 3,185,706.
Child, Claude H.: *See—*
  Case, Robert O., Jr., and Child. 3,185,982.
Child, Claude H., and L. R. Frasure, to North American Aviation, Inc. Radar altimeter. 3,185,984, 5–25–65, Cl. 343—17.1.
Child, Claude H., and R. E. Hovda, to North American Aviation, Inc. Microwave delay system. 3,185,985, 5–25–65, Cl. 343—17.7.
Choshi, Chojiro. Mats. 3,185,119, 5–25–65, Cl. 112—412.
Chouings, Leslie C., to Automotive Products Co. Ltd. Self energizing, spot disc brakes. 3,185,259, 5–25–65, Cl. 188—73.
Christensen, Dan A., and J. H. Bradfute, to Federal-Mogul-Bower Bearings, Inc. Face seal. 3,185,488, 5–25–65, Cl. 277—42.
Christianson, Charles L.: *See—*
  Gunkel, William F., Willey, Christianson, Kirner, Jackson, Cordry, Papanicolaou, Bath, and Visher. 3,185,981.
Chute, Richard, to Continental Motors Corp. Regenerator sliding seals. 3,185,208, 5–25–65, Cl. 165—9.
Ciba Ltd.: *See—*
  Koch, Jacob, and Jost. 3,185,698.
Citroen, Andre, Societe Anonyme: *See—*
  Henry-Biabaud, Edmond. 3,185,431.
Claeys, Daniël A.: *See—*
  Thiers, Robrecht J., and Claeys. 3,185,571.
Clapper, Genung L., to International Business Machines Corp. Regenerative amplifier. 3,185,861, 5–25–65, Cl. 307—88.5.
Clark Equipment Co.: *See—*
  Dreitzler, Melvin E. 3,184,985.
  Erdman, William C., and Leonard. 3,184,984.
  Hoyt, Deryl R. 3,185,245.
  Mortrude, Albert D. 3,184,766.
  Schell, James D. 3,184,980.
Clarke, Walter W. H., to Inertia Switch Ltd. Brake testers. 3,184,977, 5–25–65, Cl. 73—492.
Claus, Karl M.: *See—*
  Macdonald, Herbert G., Barbour, Claus, and Cleverly. 3,185,748.
Clayton, James O., to California Research Corp. Oxidation inhibited lubricants. 3,185,645, 5–25–65, Cl. 252—46.7.
Cleary, Donald F.: *See—*
  Smith, John W., and Cleary. 3,185,912.
Clemo, Philip F., J. A. Briggs, W. Wilson, and J. A. Carter, to British Nylon Spinners Ltd. Polymerization of aqueous solutions of polyamide-forming reactants with adiabatic expansion thereof. 3,185,672, 5–25–65, Cl. 260—78.
Cleveland Trust Co., The: *See—*
  Webb, Ernest C. 3,185,477.
Cleverly, Robert B.: *See—*
  Macdonald, Herbert G., Barbour, Claus, and Cleverly. 3,185,748.
Coates, J. Edwin, to Douglas Aircraft Co., Inc. Pneumatic loadlifting and translating means. 3,185,238, 5–25–65, Cl. 180—7.
Cobb, Clifton A., E. E. Wiessner, and J. T. Williams, to Whirlpool Corp. Clothes washing machine with means for controlling duration of extracting cycle. 3,184,932, 5–25–65, Cl. 68—12.
Coberly, Clarence J., to Kobe, Inc. Apparatus for simultaneously running multiple tubing strings. 3,185,517, 5–25–65, Cl. 294—87.
Cockerell, Christopher S., to Hovercraft Development Ltd. Vehicles for travelling over land and/or water. 3,185,239, 5–25–65, Cl. 180—7.
Codignola, Franco, C. Reni, and J. Ackermann, to Societa Italiana Resine. Method of purifying gaseous formaldehyde. 3,184,900, 5–25–65, Cl. 55—31.
Cohen, Allen: *See—*
  Becker, Edward J., and Cohen. 3,185,713.
Cole, Samuel W., to General Electric Co. Thermal motor for rotating a rotisserie shaft. 3,184,914, 5–25–65, Cl. 60—23.

- Coleman, Joseph J., M. E. Wilke, E. F. Steinhoff, and H. A. Brandeland, to Servel, Inc. Primary voltaic cell having spirally wound electrodes and method of making same. 3,185,593, 5–25–65, Cl. 136—107.
- Colgate-Palmolive Co.: *See*—
  - Abood, Leo G. 3,185,678.
  - Judd, Claude I. 3,185,692.
- Coll-Palagos, Miguel, to Aluminum Development Corp. Exposure apparatus. 3,185,471, 5–25–65, Cl. 269—221.
- Collins, Harry C., to Litton Systems, Inc. Differentially coherent biphase demodulator. 3,185,931, 5–25–65, Cl. 329—103.
- Columbia Ribbon and Carbon Mfg. Co., Inc.: *See*—
  - Newman, Douglas A., and Dixon. 3,185,087.
- Combustion Engineering, Inc.: *See*—
  - Cozza, Florindo. 3,185,136.
- Commercial Solvents Corp.: *See*—
  - Miescher, Guido M. 3,185,622.
- Commissariat a' l'Energie Atomique: *See*—
  - Balestic, Francis. 3,185,716.
- Commissioners for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, The: *See*—
  - Voglis, Gregory M., and Willis. 3,185,956.
- Commisso, Nicholas D., to National Distillers and Chemical Corp. Variable orifice extrusion die. 3,184,792, 5–25–65, Cl. 18—14.
- Commonwealth Scientific and Industrial Research Organization: *See*—
  - Scott, Thomas R. 3,185,545.
- Compagnie Generale de Telegraphie Sans Fil: *See*—
  - Le Parquier, Guy. 3,185,983.
- Compteurs, Compagnie des: *See*—
  - Goyon, Rene A. J. 3,185,976.
- Compur-Werk Gesellschaft mit beschrankter Haftung & Co.: *See*—
  - Singer, Franz. 3,185,058.
- Congalton, Jack R. Lawn edge trimmer. 3,184,906, 5–25–65, Cl. 56—256.
- Congleton, David B.: *See*—
  - Carlson, Carl O., Congleton, and Grafton. 3,185,026.
- Conix, André J., to Gevaert-Photo-Producten N.V. High molecular weight linear polycarbonates of di(hydroxyphenyl)-methanes. 3,185,664, 5–25–65, Cl. 260—47.
- Connelly, Mark E.: *See*—
  - Lee, Richard C., Cox, and Connelly. 3,185,821.
- Conrad, Theodore T., to Thompson Ramo Wooldridge, Inc. Position deviation sensing device utilizing skin effect. 3,184,861, 5–25–65, Cl. 33—206.
- Consin, George J. Retractable table top shelf. 3,185,114, 5–25–65, Cl. 108—65.
- Consolidated Electrodynamics Corp.: *See*—
  - Cromleigh, Ralph G., and Paulus. 3,185,970.
  - Sihvonen, Kauno E., and Fischer. 3,186,000.
- Contact Foundation, Inc.: *See*—
  - Booth, Weldon S. 3,184,893.
- Continental Aviation and Engineering Corp.: *See*—
  - Dreyer, Herman T. 3,185,137.
  - Druzynski, Frank C. 3,185,138.
- Continental Can Co., Inc.: *See*—
  - Lincoln, John D., and Ceselski. 3,185,610.
- Continental Gummi-Werke Aktiengesellschaft: *See*—
  - Klingemann, Georg, and Klöhn. 3,185,199.
- Continental Motors Corp.: *See*—
  - Chute, Richard. 3,185,208.
- Continental Oil Co.: *See*—
  - Cowden, Robert H. 3,185,641.
  - Hunt, Mack W. 3,185,547.
  - Lively, Lawrence D., and Rouayheb. 3,185,845.
- Control Data Corp.: *See*—
  - Booth, Frederick E., Jr. 3,185,076.
  - Craig, Harrison I., and McGregor. 3,185,082.
  - Irwin, Samuel N., and Booth. 3,185,077.
  - Jackson, Theodore A. 3,185,853.
  - Mangulis, Visvaldis. 3,185,993.
  - McGregor, Arvin D., and Irvin. 3,185,075.
  - McGregor, Arvin D., and Goetsch. 3,185,079.
  - Pensavecchia, Frank G. 3,185,078.
  - Pensavecchia, Frank G., and Barnes. 3,185,083.
  - Spitsbergen, Merlin D. 3,185,081.
  - Spitsbergen, Merlin D., and Craig. 3,185,080.
  - Spitsbergen, Merlin D., and Pensavecchia. 3,185,283.
- Controls Co. of America: *See*—
  - Gorske, Herman A., and McCarty. 3,185,896.
- Cook, Melvin A., and D. H. Pack, to Intermountain Research and Engineering Co., Inc. Method of making an explosive booster. 3,185,017, 5–25–65, Cl. 86—1.
- Cookson Sheet Metal Developments Ltd.: *See*—
  - Cookson, William. 3,184,942.
- Cookson, William, to Cookson Sheet Metal Developments Ltd. Machine and method for shaping sheet metal. 3,184,942, 5–25–65, Cl. 72—179.
- Cool Fin Electronics Corp.: *See*—
  - Allison, Donald K. 3,185,756.
- Corbett, Herbert O.: *See*—
  - Merithew, Lester W., and Corbett. 3,185,609.
- Cordry, Burton L.: *See*—
  - Gunkel, William F., Willey, Christianson, Kirner, Jackson, Cordry, Papanicolaou, Bath, and Visher. 3,185,981.
- Cornelius Co., The: *See*—
  - Kovar, Henry C. 3,185,282.
- Cornell-Dubilier Electric Corp.: *See*—
  - Sheehan, Joseph P. 3,185,759.
- Corrobilt Container Co.: *See*—
  - Bronte, William H., and Lingenfelter. 3,185,045.
- Cossaboon, Karl F., Jr., and G. M. Eyerman, to E. I. du Pont de Nemours and Co. Preparation of meta-dinitrobenzene by a two-stage nitration process. 3,185,738, 5–25–65, Cl. 260—645.
- Cottle, John E.: *See*—
  - Sherk, Fred T., and Cottle. 3,185,742.
- Courchene, Ernest E., Jr.: *See*—
  - Peterson, Norman E., and Courchene. 3,185,963.
- Couzens, Reginald; 50% to M. Young. Tube making and label applying machine. 3,185,049, 5–25–65, Cl. 93—80.
- Cowden, Robert H., to Continental Oil Co. Removal of elemental sulfur from hydrocarbons. 3,185,641, 5–25–65, Cl. 208—226.
- Cox, Foy D.: *See*—
  - Smith, William S., Jr., and Cox. 3,185,327.
- Cox, Fred B.: *See*—
  - Lee, Richard C., Cox, and Connelly. 3,185,821.
- Coxe, Charles D., and A. S. McDonald, Jr., to Handy & Harman. Process for internally oxidation-hardening alloys, and alloys and structures made therefrom. 3,184,835, 5–25–65, Cl. 29—182.5.
- Coyle, Forrest E., and F. P. Hodges, to United States of America, Navy. Acoustic absorber pad. 3,185,868, 5–25–65, Cl. 310—8.2.
- Coyle, Michael J., to United States of America, Army. Pulse generator employing plural pulse-forming-networks with pulse producing means for cancellation of undesirable reflected pulse. 3,185,928, 5–25–65, Cl. 328—65.
- Cozza, Florindo, to Combustion Engineering, Inc. Steam generator organization. 3,185,136, 5–25–65, Cl. 122—406.
- Cozzens & Cudahy, Inc.: *See*—
  - Cudahy, Michael J. 3,185,768.
- Craig, Forrest F., Jr., and J. L. Lummus, to Pan American Petroleum Corp. Oil recovery by foam drive. 3,185,634, 5–25–65, Cl. 166—9.
- Craig, Harrison I.: *See*—
  - Spitsbergen, Merlin D., and Craig. 3,185,080.
- Craig, Harrison I., and A. D. McGregor, to Control Data Corp. Hammer control circuit for high speed printers. 3,185,082, 5–25–65, Cl. 101—93.
- Craig, Thomas A.: *See*—
  - Richter, Kenneth E., and Craig. 3,185,812.
- Crane Co.: *See*—
  - Brooks, Eugene T., and La Monica. 3,185,101.
- Crane, William B., Jr., to Union Bag-Camp Paper Corp. Combination three-dimensional article and closed display package therefor. 3,185,295, 5–25–65, Cl. 206—45.31.
- Crawford, Duncan J., and M. W. Miller, to Ex-Cell-O Corp. Gable top container closure. 3,185,376, 5–25–65, Cl. 229—17.
- Crawford, Thomas E. Dispenser for instant coffee and the like. 3,185,190, 5–25–65, Cl. 141—360.
- Crawford, Thomas H., B. F. Ehrlich, and J. R. Ording, to Esso Production Research Co. Automatic gain level adjuster 3,185,930, 5–25–65, Cl. 328—175.
- Crawford, Wiley C., Jr., and R. H. Gundelfinger, to Warner-Lambert Pharmaceutical Co. Fraction collector. 3,185,211, 5–25–65, Cl. 165—71.
- Creglow, Loran A., to United States Smelting Refining and Mining Co. Method for producing metallurgical coke and metal-coke from both coking and non-coking coals. 3,185,635, 5–25–65, Cl. 202—15.
- Cremer, Joseph, and F. Rodis, to Knapsack-Griesheim Aktiengesellschaft. Apparatus for chemical reactions. 3,185,638, 5–25–65, Cl. 204—312.
- Crile, Eugene E. Automatic mix regulating devices for cement block molding machines. 3,184,818, 5–25–65, Cl. 25—104.
- Cromleigh, Ralph G., and F. A. Paulus, to Consolidated Electrodynamics Corp. Tape apparatus. 3,185,970, 5–25–65, Cl. 340—174.1.
- Crook, Troy N.: *See*—
  - Masterson, Horace T., Crook, and Reid. 3,185,958.
- Cross, Gordon G.: *See*—
  - Standish, Norman W., and Cross. 3,185,648.
- Crounse, Nathan N.: *See*—
  - Munro, Albert E., Crounse, and Davis. 3,185,709.
- Crouse, George B.: *See*—
  - Pfaff, William A., Arnold, Knoffin, Brewster, and Crouse. 3,185,025.
- Crown Zellerbach Corp.: *See*—
  - Kohlhaas, Frank A. 3,185,379.
- Cudahy, Michael J., to Cozzens & Cudahy, Inc. Amplifier circuit. 3,185,768, 5–25–65, Cl. 179—1.
- Cummins, Clessie L.: *See*—
  - Cummins, Clessie L., Jr. 3,185,140.
- Cummins, Clessie L., Jr., to C. L. Cummins. Fuel supply system for compression ignition internal combustion engines. 3,185,140, 5–25–65, Cl. 123—140.
- Cunningham, Charles M., and M. B. McCadam; said McCadam assor. of 5% to W. H. Mahr. Cheese dispensing apparatus. 3,184,844, 5–25–65, Cl. 31—5.
- Cunningham, Richard, Jr.: *See*—
  - Mitchell, Gerald T., and Cunningham. 3,185,202.
- Curtis Helene Industries, Inc.: *See*—
  - Lustman, Eldred G. 3,185,294.
- Curtiss, Alan C., to Polaroid Corp. Photographic illumination apparatus. 3,185,055, 5–25–65, Cl. 95—11.
- Curtiss-Wright Corp.: *See*—
  - Baxter, Donald J. 3,185,248.
  - Sajovec, Frank M., Jr. 3,185,276.
  - Young, Merrill A. 3,184,998.
- Cushing, Vincent J., and W. A. Beaudry, to United States of America, Navy. Missile stabilizing means. 3,185,097, 5–25–65, Cl. 102—50.
- Czorny, Vasil P., to Sorenson Research Corp. Catheter placement unit. 3,185,151, 5–25–65, Cl. 128—214.
- Dahlblom, Rolf A., and B. Lillsunde, to Telefonaktiebolaget L M Ericsson. Busy line or trunk indicating circuit. 3,185,771, 5–25–65, Cl. 179—18.

- Dahle, Orvar, to Allmänna Svenska Elektriska Aktiebolaget. Means for measuring tensile or compressive stresses in an object of magnetostrictive material. 3,184,963, 5–25–65, Cl. 73—88.5.
- Dahlin, Carl E. I., to von Tell Trading Co. AB. Device for stowing hatch covers on ships. 3,185,206, 5–25–65, Cl. 160—193.
- D'Alessandro, Joseph. Flat-iron provided with a steam ejection device. 3,184,871, 5–25–65, Cl. 38—77.
- Dames, Carl W., Jr., to Polymer Processes, Inc. Roll covers. 3,184,828, 5–25–65, Cl. 29—129.
- Damm, Eugene P., Jr., to International Business Machines Corp. Method of coating finely divided metal particles. 3,185,589, 5–25–65, Cl. 117—100.
- Damon, Glenn H., J. Ribovich, and J. A. Herickes, to United States of America, Navy. Method of fuel unit assembly. 3,185,018, 5–25–65, Cl. 86—20.
- Dana Laboratories, Inc.: *See*—
  - Walker, Norman C., and Nelson. 3,185,932.
- Dardaine, Edgard J. M., and R. Mailbeaux, to E. P. Remy & Cie. Machine for handling objects. 3,185,328, 5–25–65, Cl. 214—309.
- Dauberay, Jean, to Metallurgique d'Esperance-Longdoz, S.A. Apparatus for conditioning air and gases for annealing steel plates and the like. 3,185,463, 5–25–65, Cl. 266—5.
- Daudelin, Roland G., to United States of America, Navy. Thrust reversal unit for rocket motor. 3,185,096, 5–25–65, Cl. 102—49.
- Davidson, Charles S.: *See*—
  - Hinsey, Robert S., and Davidson. 3,184,992.
- Davies, Derec F. V., R. H. Buchanan, and D. Oedjoe, to Unisearch Ltd. Apparatus for hydraulically conveying discrete solids. 3,185,529, 5–25–65, Cl. 302—14.
- Davis, Claud M., to International Business Machines Corp. Binary adder. 3,185,822, 5–25–65, Cl. 235—153.
- Davis, Earl E.: *See*—
  - Loveall, George A., Jr., and Davis. 3,185,346.
- Davis, Edward M.: *See*—
  - Munro, Albert E., Crounse, and Davis. 3,185,709.
- Davis, Horace R., to Minnesota Mining and Mfg. Co. Sulfonyl azetidinone compounds. 3,185,677, 5–25–65, Cl. 260—239.
- Davis, James C., Jr.: *See*—
  - Taylor, Hugh P., and Davis. 3,185,929.
- Dayco Corp.: *See*—
  - Waddell, Russell B., Jr., Osborn, and Medford. 3,185,182.
- Debe, Anthony. Plating bath containing formaldehyde producing material. 3,185,637, 5–25–65, Cl. 204—55.
- De Brie Perry, Forbes G., to National Research Development Corp. Transmission control system. 3,184,990, 5–25–65, Cl. 74—472.
- Deckel, Friedrich W.: *See*—
  - Lenzenberger, Horst. 3,185,038.
- Deckel, Hans: *See*—
  - Lenzenberger, Horst. 3,185,038.
- De Falla, Michael M. Telephone holder device. 3,185,780, 5–25–65, Cl. 179—148.
- De Feo, Richard A., to Diamond International Corp. Carton. 3,185,662, 5–25–65, Cl. 206—45.31.
- DeGlas, Andre J.: *See*—
  - Stoddard, William G., and DeGlas. 3,185,870.
- Dehne, Rudolf. Packaging of freshly baked bread. 3,185,579, 5–25–65, Cl. 99—172.
- Deibel, Charles, and J. Evanicsko, Jr. Toggle mechanism employing elastic actuating means between opposed sockets. 3,185,787, 5–25–65, Cl. 200—68.
- Delaney, Luke. Mattress display rack. 3,185,306, 5–25–65, Cl. 211—28.
- Delcellier, Henri A., to Canadian Ingersoll-Rand Co., Ltd. Mounting and drive means for barking apparatus. 3,185,192, 5–25–65, Cl. 144—208.
- De Luca, Joseph A., Jr., to E. I. du Pont de Nemours and Co. Protective glove. 3,184,756, 5–25–65, Cl. 2—161.
- D'Emilio, Armand, to Brewer Pharmacal Engineering Corp. Photocell controlled anti-ejection circuit for an article handling apparatus. 3,185,851, 5–25–65, Cl. 250—223.
- Demyan, Charles W., to Research-Cottrell, Inc. Diffuser swirl eliminator. 3,185,181, 5–25–65, Cl. 138—37.
- Denton, Eric B.: *See*—
  - Preusser, Henry M., and Denton. 3,185,455.
- DePrisco, Carmine F.: *See*—
  - Jones, James B., and DePrisco. 3,184,841.
- Dersnah, Howard B., T. C. Schlotter, Jr., and W. C. Beach, to The Dow Chemical Co. Colored polymer. 3,185,655, 5–25–65, Cl. 260—23.
- De Ruggieri, Pietro, C. Gandolfi, and U. Guzzi, to Ormonoterapia Richter S.p.A. Substituted steroidal isoxazoles. 3,185,684, 5–25–65, Cl. 260—239.55.
- Desai, Ramesh R., and L. Wallerstein, Jr., to Lord Mfg. Co. Bearing. 3,184,928, 5–25–65, Cl. 64—27.
- Despard, Victor R., to Pass & Seymour, Inc. Push-in box mounting for wiring devices. 3,185,760, 5–25–65, Cl. 174—54.
- Detroit Broach & Machine Co.: *See*—
  - Graf, Ernest H. H., and Randall. 3,185,039.
- Deutsche Flux G.m.b.H.: *See*—
  - Arnold, Carl, and Brandt. 3,185,599.
- De Vault, Robert L.: *See*—
  - Schmitz, Henry, and De Vault. 3,185,675.
- De Vita, Raymond A.: *See*—
  - Phillips, Harry, Chaloux, and De Vita. 3,184,770.
- De Witt, Earl G.: *See*—
  - Brown, Jerome E., De Witt, and Shapiro. 3,185,718.
- Diamond International Corp.: *See*—
  - Berry, Roger N. 3,185,552.
  - De Feo, Richard A. 3,185,662.
  - Peppler, William S. 3,184,896.
- Diamond International Corp.: *See*—Continued
  - Printz, Warren G., Rubenis, and Lithgo. 3,185,010.
  - Reifers, Richard F. 3,185,371.
  - Reifers, Richard F. 3,185,615.
  - Reifers, Richard F., and Hrozenchik. 3,185,380.
  - Reifers, Richard F., and Lord. 3,185,370.
  - Struble, Glenn E. 3,185,048.
  - Struble, Glenn E., and Borgemenke. 3,185,047
  - Weyman, Robert D., and Struble. 3,185,480.
- Dick, A. B., Co.: *See*—
  - Stone, Joseph J., Jr. 3,185,999.
- Dickens, John E., to E. I. du Pont de Nemours and Co. Electrostatic recording process. 3,185,995, 5–25–65, Cl. 346—1.
- Dietrich, Werner G. Stacker. 3,185,290, 5–25–65, Cl. 198—233.
- Dixon, Harold F. E.: *See*—
  - Newman, Douglas A., and Dixon. 3,185,087.
- Djevahirdjian, Vahan, to Industrie de Pierres Scientifiques Hrand Djevahirdjian S.A. Process for manufacturing a tubular body made of synthetic material, and installation for carrying out this process. 3,185,551, 5–25–65, Cl. 23—273.
- Doane, Rex C. Fire detection system. 3,185,974, 5–25–65, Cl. 340—233.
- Dodge, Adiel Y. Vortex jet pump. 3,185,107, 5–25–65, Cl. 103—263.
- Dominion Corset Co., Ltd.: *See*—
  - Gingras, Marcel. 3,185,157.
  - Gingras, Marcel. 3,185,160.
  - Mercier, Gilles. 3,185,353.
- Donart Electronics Inc.: *See*—
  - McCreanor, Richar A. 3,185,024.
- Doty, George I.: *See*—
  - Logan, Hugh H., Doty, and Nelson. 3,184,762.
- Doughty, Joseph B.: *See*—
  - Ball, Frank J., Doughty, and Vardell. 3,185,654.
- Douglas Aircraft Co., Inc.: *See*—
  - Coates, J. Edwin. 3,185 238.
- Douglas, John G., to Dunlop Rubber Co. Ltd. Spot-type servo disc brake. 3,185,258, 5–25–65, Cl. 188—73.
- Doukas, George, and R. H. Reed, to E. I. du Pont de Nemours and Co. Scraping apparatus for arc-acetylene furnace. 3 185.754, 5–25–65, Cl. 13—9.
- Dover Corp.: *See*—
  - Moore, Glenn E., and Hughes. 3,185,128.
- Dow Chemical Co., The: *See*—
  - Bennett, Foster C., Robbins, and Warnock. 3,184,811.
  - Bennett, Foster C., Robbins, and Warnock. 3,184,812.
  - Dersnah, Howard B., Schlotter, and Beach. 3,185,655.
  - Dunbar, Joseph E. 3,185,693.
  - Gurnee Edward F., and Fernandez. 3,185,650.
  - Kirk, Roy C., and Carr. 3,185,592.
  - Scoles, George W., and Kelly. 3,185,562.
- Dowdle, Walter F., and R. E. Wheeler, to General Electric Co. Push button switch with locking feature. 3,185,783, 5–25–65, Cl. 200—44.
- Downey, David F., and J. J. Moughty, to Electrolux Corp. Electric carpet sweepers. 3,184 775, 5–25–65, Cl. 15—328.
- Downie, Robert H., and R. J. La Fond, to American Can Co. Etching process using photosensitive materials as resists. 3 185.568, 5–25–65, Cl. 96—37.
- Doyle Richard F.: *See*—
  - Wilczek, Andrew S., and Doyle. 3,185,885.
- Dravo Corp.: *See*—
  - Loeb, Abraham P., and O'Laughlin. 3,185,204.
- Dreitzler, Melvin E., to Clark Equipment Co. Reduction drive wheel. 3,184,985 5–25–65, Cl. 74—377.
- Drew Chemical Corp.: *See*—
  - McGinn, Earl P. 3,185,145.
- Dreyer, Herman T., to Continental Aviation and Engineering Corp. Valve mounting and sealing structure. 3,185,137, 5–25–65, Cl. 123—48.
- Driscoll, Neil J. Push button switch with flexible contact. 3 185 803, 5–25–65, Cl. 200—159.
- Droux, Jacques P. L.: *See*—
  - Brette, Yves-Jean F., and Droux. 3,185,971.
- Druzynski Frank C, to Continental Aviation and Engineering Corp. Pressure regulating piston and valve. 3,185,138, 5–25–65, Cl. 123—48.
- Dryden, Vernon W. and B. G. James, to Eitel-McCullough, Inc. Electron discharge device including cathode-focus electrode assemblies therefor. 3,185,882, 5–25–65, Cl. 313—83.
- Ducati, Adriano C.: *See*—
  - Giannini, Gabriel M., and Ducati. 3,185,778.
- Dudler, Hans A., to Cardiosonics Medical Instruments Corp. Industrial stethoscope. 3,185,251, 5–25–65, Cl. 181—24.
- Duecy, George P. Cement transporting and placing machine. 3,185,450, 5–25–65, Cl. 259—172.
- Dugger, Ralph L. Door. 3,184,804, 5–25–65, Cl. 20—19.
- Dullberg, Eberhard, to Grumman Aircraft Engineering Corp. Cryogenic quenching method. 3,185,600, 5–25–65, Cl. 148—125.
- Dunbar, Joseph E., to The Dow Chemical Co. β,β-bis(substituted sulfonylthio)diethyl piperazine. 3,185,693, 5–25–65, Cl. 260—268.
- Dunham, Ansel W. Cylinder arrangement. 3,185,043, 5–25–65, Cl. 92—164.
- Dunham, Phillip N., to Hampshire Mfg. Corp. Seamed article and method for making same. 3,185,612, 5–25–65, Cl. 161—95.
- Dunkel, Morris, I. Loter, and H. C. Klein, to Nopco Chemical Co. Resolution of pantolactone and phenylethylamine. 3,185,710, 5–25–65, Cl. 260—343.6.
- Dunlop James. Capo tasto. 3,185,012, 5–25–65, Cl. 84—318.
- Dunlop Rubber Co., Ltd.: *See*—
  - Douglas, John G. 3,185,258.
  - Kendall, Charles E., Huke, and Callander. 3,185,673.

- Du Pont de Nemous, E. I., and Co. : *See—*
  - Acker, Douald S. 3,185,561.
  - Adams, Dustin S. 3,185,613.
  - Bechtold, Max T. 3,184,834.
  - Beste, Lawrence F. 3,185,660.
  - Cossaboon, Karl F., Jr., and Eyerman. 3,185,738.
  - De Luca, Joseph A., Jr. 3,184,756.
  - Dickens, John E. 3,185,995.
  - Doukas, George, and Reed. 3,185,754.
  - Ellingboe, Ellsworth K. 3,185,736.
  - Fawcett, Frank S., and Smith. 3,185,734.
  - Garrett, Robert R. 3,185,658.
  - Jaffee, Edward E., and Sweet. 3,185,694.
  - Lange, Ronald F. 3,185,665.
  - Luseorink, Elmer H. 3,185,816.
  - Middleton, William J. 3,185,700.
  - Trebilcock, John W. 3,185,717.
  - Weber, Hans. 3,185,569.
- Duras, Herbert : *See—*
  - Bohm, Helmut, and Duras. 3,185,809.
- Durbeck, Walter : *See—*
  - Ahlorandt, Andreas. 3,185,044.
- DuRocher, Gideon A., to Essex Wire Corp. Disable vehicle signaling circuit. 3,185,961, 5–25–65, Cl. 340—81.
- Durst, Julius, to J. Durst, L. and H. Oberrauch. Positioning arrangement for an objective lens. 3,185,059, 5–25–65, Cl. 95—44.
- Duschinsky, Robert, to Hoffman-La Roche Inc. 2-chloro-4-amino-5-fluoro-pyrimidine. 3,185,690, 5–25–65, Cl. 260—256.4.
- Dyna-Empire Inc. : *See—*
  - Shaper, Harry B. 3,184,858.
- Dynamics Corp. of America : *See—*
  - Stoddard, William G., and DeGlas. 3,185,870.
- Dziedzic, Harry R., to Scully-Jones and Co. Tool holding means. 3,185,492, 5–25–65, Cl. 279—44.
- Dziedzic, Harry R., and E. M. Alisauskis, to Scully-Anthony Corp. Latch mechanism. 3,185,494, 5–25–65, Cl. 279—89.
- Dzienislewicz, Joseph E. Automotive header protective assembly. 3,185,312, 5–25–65, Cl. 211—87.
- E & M Instrument Co., Inc. : *See—*
  - Millar, Huntly D. 3,185,990.
- Easley, Gilbert J., to Westinghouse Electric Corp. Pressure-control circuits for gas-type circuit interrupters. 3,185,895, 5–25–65, Cl. 317—59.
- Eastman, Watson S., and E. M. Alsman, to Molded Container Corp. Apparatus for molding pulp articles. 3,185,619, 5–25–65, Cl. 162—392.
- Eaton, Burton E., to Midwesco Enterprise, Inc. Conduit system. 3,184,958, 5–25–65, Cl. 73—40.5.
- Edgerton, Germeshausen & Grier, Inc. : *See—*
  - Goldberg, Jacob. 3,185,880.
- Edson, William A., to General Electric Co. System for recirculating memory. 3,185,978, 5–25–65, Cl. 340—350.
- Edstrom, Nils H., to Telefonaktiebolaget L M Ericsson. Signalling unit for electronic telephone systems. 3,185,772, 5–25–65, Cl. 179—18.
- Edwards, Bryant, to Illinois Tool Works Inc. Direct response valve. 3,185,174, 5–25–65, Cl. 137—533.21.
- Eggington, Wilfred J., and N. W. Lewis, to Vickers-Armstrongs (Engineers) Ltd. Air-cushion borne vehicles. 3,185,240, 5–25–65, Cl. 180—7.
- Ehlschlager, Arthur J., to Western Electric Co., Inc. Packaged assembly for electronic switching units. 3,185,898, 5–25–65, Cl. 317—101.
- Ehret, Robert J., to Ampex Corp. Class B. amplifier circuit. 3,185,933, 5–25–65, Cl. 330—14.
- Ehrlich, Benjamin F. : *See—*
  - Crawford, Thomas H., Ehrlich, and Ording. 3,185,930.
- Eilers, George J., Jr. : *See—*
  - Murr, William C., and Eilers. 3,184,960.
- Eimco Corp., The : *See—*
  - Schwartz, Daniel M., and Rosenblatt. 3,185,242.
- Eitel, Hans-Georg. Hydraulic straightening press. 3,184,939, 5–25–65, Cl. 72—22.
- Eitel, Jay M., to Teelsta Corp. Cable lashing apparatus. 3,185,443, 5–25–65, Cl. 254—134.3.
- Eitel, Jay M., to Telsta Corp. Method of installing cable on existing messenger. 3,185,444, 5–25–65, Cl. 254—134.3.
- Eitel-McCullough, Inc. : *See—*
  - Dryden, Vernon W., and James. 3,185,882.
  - Wolfson, Anthony S. 3,185,881.
- Elastic Stop Nut Corp. of America : *See—*
  - Wilson, Wallace D. 3,185,786.
- Electric & Musical Industries Ltd. : *See—*
  - Ingham, William E. 3,185,962.
- Electrolux Corp. : *See—*
  - Downey, David F., and Moughty. 3,184,775.
  - Vermeulen, William P. 3,184,776.
- Electronic Associates Inc. : *See—*
  - Patmore, James R., and Killian. 3,185,934.
- Electronic Associates Ltd. : *See—*
  - Leaver, Eric W., and Mounce. 3,185,847.
- Ellenberger, Jakob P., to Ellenberger & Paensgen G.m.b.H. Pushbutton operated overload circuit breaker. 3,185,793, 5–25–65, Cl. 200—116.
- Ellenberger & Paensgen G.m.b.H. : *See—*
  - Ellenberger, Jakob P. 3,185,793.
- Ellersick, Frederick W., Jr., and W. R. Peavy, to International-Business Machines Corp. Data compactor. 3,185,823, 5–25–65, Cl. 235—154.
- Ellingboe, Ellsworth K., to E. I. du Pont de Nemours and Co. 1,1 - diaryl-2,2 3,3-tetrafluoro-4,4-dihalocyclobutanes. 3,185,736, 5–25–65, Cl. 260—619.
- Elliott, James H., L. H. Stauffer, and J. G. Garbin, to Pittsburgh Plate Glass Co. Bending mold. 3,185,559, 5–25–65, Cl. 65—291.
- Elliott, Theodore : *See—*
  - Geiger, Clarence A., and Elliott. 3,185,784.
- Ellis, Earle B., and C. E. Chesney, to Standard Brands Inc. Egg separating apparatus. 3,185,194, 5–25–65, Cl. 146—2.
- Ellis, William H., and R. J. Schmidt, to California Research Corp. Asphalt permeability measurement apparatus. 3,184,957, 5–25–65, Cl. 73—38.
- Ellsworth, Alonzo R. : *See—*
  - Lohf, Gerald W., Walker, and Ellsworth. 3,184,909.
  - Freeburg, Walter S., and Ellsworth. 3,184,912.
- Emporius Specialties Co., Inc. : *See—*
  - Erskine, George B., and Gartner. 3,184,947.
- Endevco Corp. : *See—*
  - Shoor, Bernard A. 3,185,869.
- Engeman, John C., L. Fring, Jr., and G. J. Hartmann, to American Telephone and Telegraph Co. Switching system channel selection. 3,185,773, 5–25–65, Cl. 179—22.
- Engineered Equipment, Inc. : *See—*
  - Loveall, George A., Jr., and Davis. 3,185,346.
- Epstein, Herman, and A. E. Trollo, to Omnitronics, Inc. Control circuit for tape drive mechanism. 3,185,911, 5–25–65, Cl. 318—275.
- Erdman, William C., and W. F. Leonard, to Clark Equipment Co. Tranmissions. 3,184,984, 5–25–65, Cl. 74—333.
- Erskine, George B., and S. J. Gartner, to Emporius Specialties Co., Inc. Stud forming and transfer mechanisms. 3,184,947, 5–25–65, Cl. 72—294.
- Escher Wyss Aktiengesellschaft : *See—*
  - Loch. Erwin. 3,185,532.
- Essex Wire Corp. : *See—*
  - DuRocher, Gideon A. 3,185,961.
- Esso Production Research Co. : *See—*
  - Brooks, Fred A. Jr., and Richardson. 3,185,217.
  - Carlton, Louis A., and Pierce. 3,185,997.
  - Crawford, Thomas H., Ehrlich, and Ording. 3,185,930.
  - Glazier, Walter H. 3,185,250.
  - Hoyer, Wilmer A., and Rumble. 3,185,849.
  - Ikard, Wallace L., and Soland. 3 185,957.
  - Lawrence, Franklin L. 3,184,848.
  - Masterson, Horace T., Crook, and Reid. 3,185,958.
  - Robinson, Leon H., Jr. 3,185,224.
  - Shanks, John L., Soland, and Burns. 3,185,249.
- Esso Research and Engineering Co. : *See—*
  - Herbst, Walter A., Weeks, and Wilson. 3,185,201.
  - Herndon, Thomas R. 3,185,827.
  - Kahn, Donald J., and Chandler. 3,185,704.
  - Lewis, Oliver G., and Jacobus. 3,184,956.
  - Schatz, Ralph H., Adams, and Smyers. 3,185,659.
- Establissements Levivier Societe Anonyme des : *See—*
  - Lecler, Roger. 3,185,335.
- Ethyl Corp. : *See—*
  - Brown, Jerome E., De Witt, and Shapiro. 3,185,718.
  - Geddes, James C., Jr. 3,185,737.
  - Lindsay, Kenneth L. 3,185,745.
- Eutectic Welding Alloys Corp. : *See—*
  - Quaas, Joseph F., and Zielik. 3,185,598.
- Evaniesko, Joseph, Jr. : *See—*
  - Deibel, Charles, and Evaniesko. 3,185,787.
- Evans, John, Jr., to Radio Corp. of America. Cathode ray tube having deflection enhancement means. 3,185,879, 5–25–65, Cl. 313—78.
- Evans Products Co. : *See—*
  - Shook, Jackson A., and Rolfe. 3,185,110.
- Eves, Robert A., to Norton Co. Apparatus for use in the manufacture of grinding wheel and spindle assemblies. 3,184,797, 5–25–65, Cl. 18—30.
- Ewing, Lynn H. : *See—*
  - Nelson, Permil N. 3,184,800.
  - Nelson, Permil N. 3,185,397.
- Excelermatic, Inc. : *See—*
  - Kraus, Charles E. 3,184,983.
- Ex-Cell-O Corp. : *See—*
  - Crawford, Duncan J., and Miller. 3,185,376.
  - Thomas, Earl A. 3,185,375.
- Eyerman, George M. : *See—*
  - Cossaboon, Karl F., Jr., and Eyerman. 3,185,738.
- Fairbairn, John D., to Texas Instruments Inc. Method for plating a support for a silicon wafer in the manufacture of a semiconductor device. 3,184,824, 5–25–65, Cl. 29—25.3.
- Fairchild Camera and Instrument Corp. : *See—*
  - Mlaskoff, Leonard, and Warner. 3,185,473.
- Fairchild Hiller Corp. : *See—*
  - Grasse, Walter F. 3,184,854.
- Fairfield Engineering and Mfg. Co. : *See—*
  - Blough, Ronald S. 3,185,230.
- Falcon Alarm Co. : *See—*
  - Chedister, Ronald K. 3,185,127.
- Farabaugh, Bernard A., Jr., and J. T. Gwinn, Jr., to Lord Mfg. Co. Mounting system. 3,185,428, 5–25–65, Cl. 248—358.
- Farbenfabriken Bayer Aktiengesellschaft : *See—*
  - Schrader, Gerhard. 3,185,721.
  - Schrader, Gerhard. 3,185,722.
- Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning : *See—*
  - Ruschig, Heinrich, Schmitt, Ther, and Meixner. 3,185,689.
- Farrel Corp. : *See—*
  - Govan, William L. 3,184,946.
- Farrell, John. Attachment for garments. 3,185,394, 5–25–65, Cl. 239—36
- Farve-og Lakfabriken S. Dyrup & Co., Aktieselskab : *See—*
  - Knudsen, Karen E. 3,185 653.
- Faulhaber Roland A., to Trorel Mfg. Co. Saddle construction. 3,185,522, 5–25–65, Cl. 297—214.
- Faust, Howard L., and R. Garland, to Ingersoll-Rand Co. Tool holding assembly. 3,185,004, 5–25–65, Cl. 82—37.
- Fawcett, Frank S., and R. D. Smith, to E. I. du Pont de Nemours and Co. Novel polyfluoro-substituted ketones and their preparation from polyfluoro acid fluorides. 3,185,734, 5–25–65, Cl. 260—586.
- Fawick Corp. : *See—*
  - Allen, John D. 3,184,921.

- Fechner, Walter W. Spherical ball including an internal resilient hand grip. 3,185,476, 5–25–65, Cl. 273—58.
- Fecho, Rhine G., and D. A. Johnson, to Whirlpool Corp. Antichatter solenoid. 3,185,902, 5–25–65, Cl. 317—184.
- Federal-Mogul-Bower Bearings, Inc. : *See—*
  - Christensen, Dan A., and Bradfute. 3,185,488.
- Feeney, Joseph W., to International Paper Co. Carton and blank therefor. 3,185,374, 5–25–65, Cl. 229—17.
- Feinstein, Lester, to Sylvania Electric Products Inc. Nonmicrophonic tube construction. 3,185,883, 5–25–65, Cl. 313—269.
- Fernandez, Reet T. : *See—*
  - Gurnee, Edward F., and Fernandez. 3,185,650.
- Fernseh G.m.b.H. : *See—*
  - Schneider, Hans-Dieter. 3,185,888.
- Ferraro, Don J. Foil food container. 3,185,372, 5–25–65, Cl. 229—3.5.
- Ferris, Lester W., and M. S. Martin, to The Magnavox Co. Card handling and writing apparatus. 3,185,996, 5–25–65, Cl. 346—22.
- Ferris, Ray L., to Pullman Inc. Foldable stanchion. 3,185,421, 5–25–65, Cl. 248—119.
- Ferro Corp. : *See—*
  - Sweo, Benjamin J., and Ginther. 3,185,554.
- Fetscher, Charles A., and S. Lipowski, to Nopco Chemical Co. Sunscreening dihydroxy-diphenyl-sulfone derivatives. 3,185,628, 5–25–65, Cl. 167—90.
- Fiat Societa per Azioni : *See—*
  - Giacosa, Dante. 3,185,390.
- Fichtel & Sachs Aktiengesellschaft : *See—*
  - Axthammer, Ludwig. 3,185,262.
- Fiedler, Bruce H., to Allis-Chalmers Mfg. Co. Centrifugal disk seed harvester. 3,184,904, 5–25–65, Cl. 56—126.
- Fields, Paul R., M. H. Zirin, and L. Stein, to United States of America, Atomic Energy Commission. Process of making radon fluoride and of separating rare gases from each other. 3,185,548, 5–25–65, Cl. 23—205.
- Filler, William S., to United States of America, Navy. Explosive driven conical shock tube. 3,184,955, 5–25–65, Cl. 73—35.
- Filper Corp. : *See—*
  - Anderson, Earl R. 3,185,195.
- Finn, John J., ½ to Glenn Electric Heater Corp. Oven temperature control. 3,185,392, 5–25–65, Cl. 236—15.
- Fiore, Joseph V., H. A. Hooper, M. S. Monte, R. J. Moshy, and O. K. Schmidt. Tobacco manufacture. 3,185,161, 5–25–65, Cl. 131—17.
- Fiore, Joseph V., H. A. Hooper, M. S. Monte, R. J. Moshy, and O. K. Schmidt, to American Machine & Foundry Co. Process for making reconstituted sheet tobacco. 3,185,162, 5–25–65, Cl. 131—140.
- Fischer, Albert W. : *See—*
  - Sihvonen, Kauno E., and Fischer. 3,186,000.
- Fish, William A., Jr., and C. B. Wolf, to Westinghouse Electric Corp. Fluid-control valve with automatic fluid latching. 3,185,180, 5–25–65, Cl. 137—625.66.
- Fisher & Ludlow Ltd. : *See—*
  - Orwin, Olaf J. B. 3,185,275.
- Fitton, David L. : *See—*
  - Caouette, Zephirin A., and Fitton. 3,184,917.
- Fitzgerald, Edward R. : *See—*
  - Kelly, Kenneth R., and Fitzgerald. 3,185,855.
- Fjelstad, Leonard R. Attachment for rotary lawn mower. 3,184,903, 5–25–65, Cl. 56—25.4.
- Flanders, Theodore A. : *See—*
  - Bruun, Eugene R., Flanders, and Marcus. 3,185,169.
- Flatten, Orris H., to North American Aviation, Inc. Bidirectional constant current device. 3,185,858, 5–25–65, Cl. 307—88.5.
- Flaugher, Lawrence L., and T. G. Bur, to Applied Power Industries, Inc. Portable electric lamp. 3,185,836, 5–25–65, Cl. 240—51.12.
- Fleming, John M. Garbage bag holder. 3,185,339, 5–25–65, Cl. 220—65.
- Fletcher, George H., ⅛ to J. C. Renfro. Trim unit for facilitating the installation of lightweight window units. 3,184,801, 5–25–65, Cl. 20—11.
- Fletcher, Jack W., to The Mead Corp. Tilted display carton. 3,185,293, 5–25–65, Cl. 206—45.21.
- Flight Research, Inc. : *See—*
  - Gregory, Charles A., Jr., and Mills. 3,186,003.
- Flink, Leslie R., to Litton Systems, Inc. Direction and position indicating apparatus for vehicles such as aircraft. 3,184,846, 5–25–65, Cl. 33—1.
- Floren, Carl E. : *See—*
  - Bowan, Walte J., and Floren. 3,185,501.
- Florey, Quentin L., and L. O. Timblin, Jr., to United States of America, Interior. Apparatus for large-scale application of monomolecular layers to water surfaces using melted material. 3,184,789, 5–25–65, Cl. 18—2.4.
- Floyd, Arthur J., to Imperial Chemical Industries Ltd. O-alkyl, S, 1-phenyl-2-alkoxycarbonylethyl alkylphosphonothioates. 3,185,723, 5–25–65, Cl. 260—461.
- FluiDyne Engineering Corp. : *See—*
  - Hedrick, William S., and Wastvedt. 3 184,964.
- Fobiano, Frank E., and J. S. Haven, to Premier Carton Co. Locking tabs for cardboard containers. 3,185,381, 5–25–65, Cl. 229—35.
- Foglia, Henry R., to International Business Machines Corp. Two dimensional selection system for read only memory. 3,185,967, 5–25–65, Cl. 340—173.
- Folkins, Hillis O., and O. L. Beber, to The Pure Oil Co. Process of centrifugally separating minute porous particles. 3 185,301, 5–25–65, Cl. 209—3.
- Ford, Franklin C., E. B. Nelson, W. M. Trimble, and S. G. Zizzo, to United States of America, Atomic Energy Commission. Magnetically actuated shutter. 3,185,063, 5–25–65, Cl. 95—53.
- Ford Mfg. Co. : *See—*
  - Thorn, Richard P. 3,185,415.

- Ford Motor Co. : *See—*
  - Anderson, Arnold E., Bookout, and Kaptur. 3,184,918.
  - General, Norman T., and Zundel. 3,184,978.
- Fort Howard Paper Co. : *See—*
  - Wiggins, Robert B., and Roeser. 3,185,618.
- Foss, Harry A., and H. L. Jones, to Brown Citrus Machinery Corp. Citrus fruit juice extractor. 3,185,071, 5–25–65, Cl. 100—53.
- Foster, Charles E. Automatic fluorescent tube changer. 3,185,514, 5–25–65, Cl. 294—20.
- Francaise du Ferodo, Societe Anonyme : *See—*
  - Maurice, Jean. 3,185,274.
- Frank, Raymond G., to Pennsalt Chemicals Corp. Apparatus for drying comprising a removable cart with tray-supporting shelves. 3,184,862, 5–25–65, Cl. 34—87.
- Frantzen, Karl H., to Northern Gas Products Co. Propane gas dispenser assembly. 3,185,117, 5–25–65, Cl. 111—7.
- Frantzen, Karl H., to Northern Gas Products Co. Method of treating soil and growing plants. 3,184,891, 5–25–65, Cl. 47—58.
- Fraser, Reginald P., and G. T. Furman, to Urquhart's (1926) Ltd. Apparatus for mixing fluids. 3,185,448, 5–25–65, Cl. 259—4.
- Frasure, Lawrence R. : *See—*
  - Child, Claude H., and Frasure. 3,185,984.
- Frazier, David, to The Standard Oil Co. Helium separation. 3,184,899, 5–25–65, Cl. 55—16.
- Frederick, David L. : *See—*
  - Hodges, Claude D., and Frederick. 3,185,027.
- Freeburg, Walter S., and A. R. Ellsworth, to Allen-Bradley Co. Clock hands. 3,184,912, 5–25–65, Cl. 58—126.
- Freeman Shoe Corp. : *See—*
  - Bowman, Harry O. 3,184,771.
- Freeman-Toor Corp. : *See—*
  - Bowman, Harry O. 3,184,771.
- Freiberg, Leo, to Lockheed Aircraft Corp. Pulse-actuated strip line ferrite circulator switch utilizing residual magnetization to eliminate nolding current. 3,185,941, 5–25–65, Cl. 333—1.1.
- French, Thomas, & Sons Ltd. : *See—*
  - Gregory-Humphries, Eric W. 3,185,035.
- Freymodsson, Bragi, to A.R.F. Products, Inc. Inductive module for electronic devices. 3,185,947, 5–25–65, Cl. 336—200.
- Friden, Inc. : *See—*
  - Balas, Charles S., and Lundquist. 3,185,008.
- Fring, Leo, Jr. : *See—*
  - Engeman, John C., Fring, and Hartmann. 3,185,773.
- Frisby, Clinton D. : *See—*
  - Williams, Alvie P., Jones, Frisby, and Niven. 3,185,820.
- Fritz, Henry E. : *See—*
  - Leis, Donald G., Magnus, and Fritz. 3,185,735.
- Fruth, Hal F., and C. J. Mitchell. Liquid applicator device. 3,184,888, 5–25–65, Cl. 47—1.5.
- Fugassi, Lucien A., to National Steel Corp. Furnace construction. 3,185,461, 5–25–65, Cl. 263—41.
- Fujitsu Ltd. : *See—*
  - Inaba, Seiuemon, Ito, and Shirafuji. 3,185,489.
- Fuller, Glenwood A. : *See—*
  - Potter, Rossiter R., Ullman, and Fuller. 3,185,952.
- Fuller, Steven B. Dynamic range modifier. 3,185,936, 5–25–65, Cl. 330—59.
- Furman, Frank J., and V. R. Simpson, to International Business Machines Corp. Machine for preparing accounting instruments. 3,185,818, 5–25–65, Cl. 235—61.9.
- Furman, George T. : *See—*
  - Fraser, Reginald P., and Furman. 3,185,448.
- Gabby, John L., and G. K. Ashby, to Mead Johnson & Co. High protein baked piece and method of producing the same. 3,185,574, 5–25–65, Cl. 99—86.
- Gabler, Rudolf, and H. Müller, to W. R. Grace & Co. Preparation of linear polyureas utilizing a cyclic amide solvent. 3,185,656, 5–25–65, Cl. 260—30.2.
- Gagne, Archie R., to Gagne Enterprises, Inc. Reinforced gasket for bell and spigot concrete conduit. 3,185,490, 5–25–65, Cl. 277—170.
- Gagne Enterprises, Inc. : *See—*
  - Gagne, Archie R. 3,185,490.
- Gallo, William H. : *See—*
  - Bell, Robert E., Carroll, and Gallo. 3,185,229.
- Galmiche, Philippe, to Office National d'Etudes et de Recherches Aeronautiques. Methods of obtaining by heating sintered metallic pieces. 3,185,566, 5–25–65, Cl. 75—212.
- Galvaing, Lucien. Method of collecting oil or other residues on the waters of ports and elements for carrying out same. 3,184 923, 5–25–65, Cl. 61—1.
- Gamble, Paul E., L. A. Rosenthal, and J. W. Pendleton, to Union Carbide Corp. Apparatus for fabrication of thermoplastic resins. 3,184,791, 5–25–65, Cl. 18—14.
- Gandolfi, Carmelo : *See—*
  - De Ruggieri, Pietro, Gandolfi, and Guzzi. 3,185,684.
- Gans, Heinrich W. to Stettner & Co. Ceramic disk trimming condenser. 3,185 904, 5–25–65, Cl. 317—249.
- Garber, Thomas, to Hewlett-Packard Co. Differential transformers. 3,185,973 5–25–65, Cl. 340—199.
- Gardner-Denver Co. : *See—*
  - Loy, Fred W. 3,185,183.
  - Loy, Fred W., and Wells. 3,185,184.
- Garland, Richard : *See—*
  - Faust, Howard L., and Garland. 3 185,004.
- Garrett, Robert R., to E. I. du Pont de Nemours and Co. Non-settling neoprene-modified phenolic resin adhesives. 3,185 658, 5–25–65, Cl. 260—31.8.
- Garrison, Clifford L., to Oliver Instrument Co. Gauge. 3,184,860, 5–25–65, Cl. 33—201.
- Gartner, Stanley J. : *See—*
  - Erskine, George B., and Gartner. 3 184,947.
- Gattuso, Francis V. Adjustable and detachable, lower abdominal support for trousers. 3,185,158, 5–25–65, Cl. 128—519.

- Gaugler, Richard S., to General Motors Corp. Washing machine with a reciprocatable and rotatable drive motor. 3,184,933, 5-25-65, Cl. 68—23.
- Gauvain, Roger, to Societe Alsacienne de Constructions Mecaniques. Control mechanism for feed equipment of rectilinear combers. 3,184,779, 5-25-65, Cl. 19—225.
- Gay, Herman P. Strain type transducers. 3,184,962, 5-25-65, Cl. 73—88.5.
- Gaylord, John A., to H. Koch & Sons. Disconnect device for survival kits. 3,185,148, 5-25-65, Cl. 128—142.
- Geddes, James C., Jr., to Ethyl Corp. Ortho alkylation of phenols. 3,185,737, 5-25-65, Cl. 260—624.
- Geiger, Clarence A., and T. Elliott. Web break detector. 3,185,784, 5-25-65, Cl. 200—61.18.
- Geigy Chemical Corp. : *See—*
  - Leonard, Frederick, and Gruenfeld. 3,185,705.
  - Schindler, Walter, and Blattner. 3,185,679.
- Geigy, J. R., A.-G. : *See—*
  - Margot, Alfred. 3,185,621.
  - Voltz, Jacques, and Bossard. 3,185,538.
- Geisler, Alan S., to Atlas Chemical Industries, Inc. Universal shortening composition. 3,185,575, 5-25-65, Cl. 99—123.
- Gembe, Gerhard. Multiple celled airship. 3,185,411, 5-25-65, Cl. 244—30.
- General Aniline & Film Corp. : *See—*
  - Herrick, Clifford E., Jr., and Wimmer. 3,185,085.
  - Klein, Karl J. 3,185,676.
  - Mutaffis, Thomas D., Carluccio, and Chiddix. 3,185,706.
  - Welsh, John A. 3,185,570.
- General Electric Co. : *See—*
  - Abbott, Harold W., and Railliard. 3,185,940.
  - Buys, George R., and Nettleton. 3,185,792.
  - Cain, Dallas E. 3,185,791.
  - Cole, Samuel W. 3,184,914.
  - Dowdle, Walter F., and Wheeler. 3,185,783.
  - Edson, William A. 3,185,978.
  - Greenwood, Allan N., and Porter. 3,185,799.
  - Helberg, Harry J. 3,185,948.
  - Hoffman, Herbert N. 3,185,854.
  - Hogue, Lawrence J. 3,185 906.
  - Holeman, John M. 3,185,022.
  - Johnson, Wallace M. 3,185,946.
  - Porter, Joseph W. 3,185,797.
  - Prober, Maurice. 3,185,663.
  - Prober, Maurice. 3,185,719.
  - Redington, Rowland W., and van Heerden. 3,185,891.
  - Terwilliger, George E. 3,184,938.
  - Titus, Charles H. 3,185,798.
  - Titus, Charles H. 3,185,800.
- General Foods Corp. : *See—*
  - Cameron, John A. 3,185,604.
- General Motors Corp. : *See—*
  - Gaugler, Richard S. 3,184 933.
  - Gilbert, Gordon L. 3,185,116.
  - Kilgore, Harry A. 3,185,512.
  - Manning, Charles E. 3,1885,131.
- General, Norman T., and R. P. Zandel, to Ford Motor Co. Fluid pressure govenor mechanism. 3,184,978, 5-25-65, Cl. 73—523.
- General Signal Corp. : *See—*
  - Bolton, Norman A. 3,184,969.
- Genovese, Anthony N., to Chicago Condenser Corp. Hermetically sealed variable capacitor. 3,185,903, 5-25-65, Cl. 317—245.
- Gerber, Ernest. Hydraulic motor and control system therefor. 3,185,557, 5-25-65, Cl. 60—53.
- Gerig, John S. : *See—*
  - Williams, Richard E., and Gerig. 3,185,755.
- Gerlach, Karl. Method and device for reconditioning of worn railroad rails. 3,184,839, 5-25-65, Cl. 29—401.
- Gerlitz, Erwin C. : *See—*
  - Roberts, Ralph R., and Gerlitz. 3,185,311.
- Gersten, Gerald B. Reversible pouring spout. 3,185,361, 5-25-65, Cl. 222—539.
- Gesellschaft fur Multiblitz-Gerate, Dr. Ing. D.A. Mannesmann m.b.H. : *See—*
  - Ludloff, Wolfgang. 3,185,828.
- Gevaert-Photo-Producten N.V. : *See—*
  - Conix, André J. 3,185,664.
  - Steegmans, Paul J. 3,184,787.
  - Thiers, Robrecht J., and Claeys. 3,185,571.
  - Verspecht, Renaat J. 3,185,298.
- Ghisolfi, Vittorio. Device for nebulizing and dispensing fluent materials, particularly powders. 3,185,352, 5-25-65, Cl. 222—193.
- Giacosa, Dante, to Fiat Societa per Azioni. Centrifugal oil cleaner for internal combustion engines. 3,185,390, 5-25-65, Cl. 233—32.
- Giannini, Gabriel M., and A. C. Ducati, to Giannini Scientific Corp. Apparatus for producing sound. 3,185,778, 5-25-65, Cl. 179—113.
- Giannini Scientific Corp. : *See—*
  - Giannini, Gabriel M., and Ducati. 3,185,778.
- Gibson, James E., Jr., deceased; Wachovia Bank & Trust Co., executor. Plastic tethered aerial top. 3,184,885, 5-25-65, Cl. 46—61.
- Gilbert, Gordon L., to General Motors Corp. Refrigerating apparatus. 3,185,116, 5-25-65, Cl. 108—141.
- Gilbert, Lyman F., and J. R. McWhorter, to Bailey Meter Co. Ultra-violet radiation flame monitor. 3,185,846, 5-25-65, Cl. 250—83.6.
- Gill, Robert F., Jr., and C. A. Levin, to Victor Comptometer Corp. Ink supply system for recording apparatus. 3,185,991, 5-25-65, Cl. 346—140.
- Gillette Co., The : *See—*
  - Hunegs, James. 3,185,345.
- Gillis, George A. Device for calculating the readability of written material. 3,185,391, 5-25-65, Cl. 235—61.
- Gingras, Marcel, to Dominion Corset Co., Ltd. Brassiere with elastic support straps. 3,185,157, 5-25-65, Cl. 128—483.
- Gingras, Marcel, to Dominion Corset Co., Ltd. Panty girdle. 3,185,160, 5-25-65, Cl. 128—528.
- Ginies, Wolstan C., Enterprises Proprietary Ltd. : *See—*
  - Ginies, Wolstan C. 3,185,225.
- Ginies, Wolstan C., to Wolstan C. Ginies Enterprises Proprietary Ltd. Feeding apparatus for down hole drilling device. 3,185,225, 5-25-65, Cl. 175—94.
- Ginther, James H. : *See—*
  - Sweo, Benjamin J., and Ginther. 3,185,554.
- Gisholt Machine Co. : *See—*
  - Greiner, Richard A. 3,185,819.
  - Greiner, Richard A. 3,184,976.
- Gitzinger, Peter, F. Bayer, and R. Koppatz, to Vereinigte Aluminium-Werke Aktiengesellschaft. Process and apparatus for centering and anchoring a smaller-diameter article in a larger-diameter bore. 3,185,749, 5-25-65, Cl. 264—262.
- Glasson, Douglas H., and H. C. Bourne, to Aquatron Corp. (Aust.) Pty. Ltd. Apparatus for sterilising liquids. 3,185,839, 5-25-65, Cl. 250—43.
- Glazier, Walter H., to Esso Production Research Co. Seismic pulse generator. 3,185 250, 5-25-65, Cl. 181—.5.
- Glenn Electric Heater Corp : *See—*
  - Finn, John J. 3,185,392.
- Goetsch, Earl G. : *See—*
  - McGregor, Arvin D., and Goetsch. 3,185,079.
- Goffe, William L., to Xerox Corp. Xerographic method 3,185,051, 5-25-65, Cl. 95—1.7.
- Goffinet, Bernard, and G Amiard, to Roussel-UCLAF. Diamino caproic acid derivatives and process of making same. 3,185,729, 5-25-65, Cl. 260—534.
- Goffredo, Onofrio : *See—*
  - Bernardi, Luigi, Goffredo, and Bosisio. 3,185,695.
- Gold, Nathan, S. Kagan, and H. J. Watters, to Polaroid Corp. Electronic flash-photography. 3,185,056, 5-25-65, Cl. 95—11.5
- Goldberg, Jacob, to Edgerton, Germeshausen & Grier Inc. Electron stream deflection apparatus. 3,185,880, 5-25-65, Cl. 313—78.
- Gonczi, Jeno : *See—*
  - Bartfai, Bela M., Gonczi, Hajdu, Markovics, Ronai, and Szucs. 3 185,591.
- Goodhue, Lyle D., R. P. Louthan, and K E. Cantrel, to Phillips Petroleum Co. Method of combatting insects with polysulfides. 3,185,620, 5-25-65, Cl. 167—22.
- Goodin, Robert D. Electronic circuit board. 3,185,897, 5-25-65, Cl. 317—101.
- Goodman Mfg Co. : *See—*
  - Stalker, Kenneth W., and Young. 3,185,325.
- Goodrich, B. F., Co., The : *See—*
  - Schornstheimer, Robert E., and Rohrer. 3,184,807.
- Gordon, Samuel : *See—*
  - Cantrall, Edward W., Bernstein, and Gordon. 3 185,715.
- Gorske, Herman A., and L. V. McCarty, to Controls Co. of America. Ignition device. 3,185,896, 5-25-65, Cl. 317—88.
- Goss Gas : *See—*
  - Goss, Herbert C. 3,185,336.
- Goss, Herbert C., to Goss Gas. Protective device for valved fittings or the like 3,185,336, 5-25-65, Cl. 220—38.
- Gotham Industries, Inc. : *See—*
  - Gottsegen, Ronald B., Willow, and Winstone. 3,185,342.
- Gottsegen, Ronald B., B. F. Willow, and R. G. Winstone, to Gotham Industries, Inc. Handle attachment means for portable ice chest. 3,185,342, 5-25-65, Cl. 220—91.
- Govan, William L., to Farrel Corp. Die slide gib adjustment on an extrusion press. 3,184,946, 5-25-65, Cl. 72—263.
- Goyon, Rene A. J., to Compagnie des Compteurs. Adjustable contacting device, particularly for metering apparatus. 3,185,976, 5-25-65, Cl. 340—266.
- Grace, W. R., & Co. : *See—*
  - Gabler, Rudolf and Müller. 3,185,656.
  - Maher, Philip K. 3,185 544.
- Graf, Ernest H. H., and A. E J Randall, ½ each to Detroit Broach & Machine Co. and B.S.A. Tools Ltd. Machine for continuous internal broaching. 3,185,039, 5-25-65, Cl. 90—88
- Graf, Paul F. : *See—*
  - Perkins, James M., Graf, and Braun. 3,184,832.
- Grafton, David A. : *See—*
  - Carlson, Carl O., Congleton, and Grafton. 3,185,026.
- Graham Edmund F. : *See—*
  - Smith, Fred, and Graham. 3,185,623.
- Granitsas, George A., to American Optical Co Electronic devices and method of making same. 3,185,555, 5-25-65, Cl. 65—18.
- Grass, Albert M. Electroencephalographic analyzing and recording apparatus. 3,185 925, 5-25-65, Cl. 324—77.
- Grasse, Walter F., to Fairchild Hiller Corp. Position plotter. 3,184,854, 5-25-65, Cl. 33—67.
- Grassin, Henri J. : *See—*
  - Caubet, Jacques J., and Grassin. 3,185,459.
- Graves, Jewel : *See—*
  - Kurtz, John S., and Graves. 3,185,289.
- Gray, Charles E., J. F. Morgan, and A. O'Neal, to Union Carbide Corp. Plastic mulch laying machine. 3,184,889, 5-25-65, Cl. 47—9.
- Gray, Reginald I. Low pass inverter. 3,185,913, 5-25-65, Cl. 321—49.
- Gray, Roy A., and J. E. Mahan, to Phillips Petroleum Co. Conversion of cyclotriene compounds. 3,185,739, 5-25-65, Cl. 260—666.
- Green, Geoffrey D., to Western Electric Co., Inc. Spring connector for making electrical connection to a circuit member. 3,185,805, 5-25-65, Cl. 200—166.
- Green, Homer T., and R. A. Lawton, to The Parker Pen Co. Fountain pen. 3,185,135, 5-25-65, Cl. 120—50.

- Greene, Elwood. Corn planter signaling means. 3,185,118, 5-25-65, Cl. 111—51.
- Greenstein, Murray. Bottle cap. 3,185,332, 5-25-65, Cl. 215—38.
- Greenwood, Allan N., and J. W. Porter, to General Electric Co. Vacuum-type electric circuit interrupter in which a main arc is divided into series-related arcs. 3,185,799, 5-25-65, Cl. 200—144.
- Gregory, Charles A., Jr., and J. C. Mills, Jr., to Flight Research, Inc. Variable shutter mechanism. 3,186,003, 5-25-65, Cl. 352—208.
- Gregory, Emanuel J. Clothes hanger structure. 3,185,313, 5-25-65, Cl. 211—104.
- Gregory-Humphries, Eric W., to Thomas French & Sons Ltd. Rocket launchers. 3,185,035, 5-25-65, Cl. 89—1.7.
- Greiner, Richard A., to Gisholt Machine Co. Digital measuring system. 3,184,976, 5-25-65, Cl. 73—462.
- Greiner, Richard A., to Gisholt Machine Co. Asymmetrical binary counter. 3,185,819, 5-25-65, Cl. 235—92.
- Grimmer, George G. and H. B. Schramm, deceased (by J. Schramm, executrix), to Otis Engineering Corp. Shifting tool for valves. 3,185,219, 5-25-65, Cl. 166—215.
- Groov-Pin Corp. : *See—*
  - Braendel, Felix W., and Bosse. 3,185,343.
- Gross, Arthur R. Control system for change-making mechanism in vending machines and the like. 3,185,281, 5-25-65, Cl. 194—2.
- Gross, Frank C. Apparatus for and method of carton erection. 3,185,046, 5-25-65, Cl. 93—36.01.
- Groth, Willis G., to United States of America, National Aeronautics and Space Administration. Optical inspection apparatus. 3,185,023, 5-25-65, Cl. 88—14.
- Gruenfeld, Norbert : *See—*
  - Leonard, Frederick, and Gruenfeld. 3,185,705.
- Grumman Aircraft Engineering Corp. : *See—*
  - Dullberg, Eberhard. 3,185,600.
- Gulf Research & Development Co. : *See—*
  - Petrocelli, James A. 3,184,953.
  - Scarr, John, Jr. 3,185,794.
- Gundelfinger, Richard H. : *See—*
  - Crawford, Wiley C., Jr., and Gundelfinger. 3,185,211.
- Gunkel, William F., R. E. Willey, C. L. Christianson, E. O. Kirner, J. H. Jackson, B. L. Cordry, N. M. Papanicolaou, C. C. Bath, and W. A. Visher, to The Bendix Corp. Doppler navigation system. 3,185,981, 5-25-65, Cl. 343—9.
- Gunn, John B., to International Business Machines Corp. Parametric device for increasing frequency and/or power. 3,185,914, 5-25-65, Cl. 321—69.
- Gunter, Alvin G., Jr. : *See—*
  - Bussey, William H., and Gunter. 3,185,998.
- Gunther, Philip L. Fluid overflow switch apparatus. 3,185,789, 5-25-65, Cl. 200—84.
- Gurnee, Edward F., and R. T. Fernandez, to The Dow Chemical Co. Phosphor-dielectric composition. 3,185,650, 5-25-65, Cl. 252—301.3.
- Gussak, William. Musical drum. 3,185,013, 5-25-65, Cl. 84—411.
- Gustafson, Walter R., W. H. McMillen, J. R. Rounding, Jr., and L. Shore, to United States of America, Navy. Airborne integrated display system. 3,185,980, 5-25-65, Cl. 343—6.
- Guzzi, Umberto : *See—*
  - De Ruggieri, Pietro, Gandolfi, and Guzzi. 3,185,684.
- Gwinn, James T., Jr. : *See—*
  - Farabaugh, Bernard A., Jr., and Gwinn. 3,185,428.
- Haack, Alfred, to Arthur H. Thomas Co. Apparatus for performing analyses. 3,185,550, 5-25-65, Cl. 23—253.
- Hach Chemical Co. : *See—*
  - Hach, Clifford C. 3,185,447.
- Hach, Clifford C., to Hach Chemical Co. Analyzer mixing apparatus. 3,185,447, 5-25-65, Cl. 259—4.
- Hackl, Alphons J. Device for programmed instruction. 3,184,863, 5-25-65, Cl. 35—9.
- Haden, Walter L., Jr. : *See—*
  - Sawyer, Edgar W., Jr., and Haden. 3,185,642.
- Haessler, Walter M., to Tire Equipment Mfg. Corp. High pressure pump rod packing assembly. 3,185,487, 5-25-65, Cl. 277—20.
- Haeussler, Ernst : *See—*
  - Silberkuhl, Wilhelm J., and Haeussler. 3,184,892.
- Hageman, Chester W., to The Lyman Gun Sight Corp. Telescopic sight. 3,184,852, 5-25-65, Cl 33—50.5.
- Hageman, James R., to Whirlpool Corp. Cleaning tool. 3,184,780, 5-25-65, Cl. 15—547.
- Hager, Nathaniel E., Jr., to Armstrong Cork Co. Low-temperature, low-pressure mold. 3,185,432, 5-25-65, Cl. 249—78.
- Hahn, Paul R. T. : *See—*
  - Reiss, Raymond H., Sr., and Hahn. 3,185,530.
- Hajdu, Laszlo : *See—*
  - Bartfai, Bela M., Gonczi, Hajdu, Markovics, Ronai, and Szucs. 3,185,591.
- Hajek, William F. Push button faucet with alternately seating valves. 3,185,172, 5-25-65, Cl. 137—315.
- Haley, Denis, to Imperial Chemical Industries Ltd. Method for the production of shaped products. 3,185,753, 5-25-65, Cl. 264—331.
- Haley, Oliver A. Granular material spreading machine. 3,185,486, 5-25-65, Cl. 275—4.
- Haman, John F. Manually powered aquatic device. 3,185,125, 5-25-65, Cl. 115—26.3.
- Hamilton, John F., to Hercules Powder Co. Explosive container with yieldable seal. 3,185,091, 5-25-65, Cl. 102—24.
- Hamilton, John F., to Hercules Powder Co. Explosive container with yieldable seal. 3,185,092, 5-25-65, Cl. 102—24.
- Hamilton, Robert H., to Hartman-Leddon Co., Inc. Colorimetric determination of chlorides in serum. 3,185,549, 5-25-65, Cl. 23—230.
- Hamilton Watch Co. : *See—*
  - Bergey, John M. 3,185,254.
- Hamisch, Paul H., Jr. : *See—*
  - Rieger, Frederic L., and Hamisch. 3,185,367.
- Hammond, David L., to United States of America, Air Force. Device for providing spin rocket pre-release dwell time. 3,185,037, 5-25-65, Cl. 89—1.7.
- Hammond, Robert J., to V-M Corp. Electrical signal delay apparatus. 3,185,968, 5-25-65, Cl. 340—173.
- Hampshire Mfg. Corp. : *See—*
  - Dunham, Philip N. 3,185,612.
- Hampson, George C., and W. Rickatson, to Lever Bros. Co. Bleaching compositions. 3,185,649, 5-25-65, Cl. 252—99.
- Handy & Harman : *See—*
  - Coxe, Charles D., and McDonald. 3,184,835.
- Hanrahan, Francis P., R. W. Bell, and B. H. Webb, to United States of America, Agriculture. Process for making puff spray dried nonfat dry milk and related products. 3,185,580, 5-25-65, Cl. 99—203.
- Hansen, Carl W., to Laboratory For Electronics, Inc. Collimator system for beta radiation thickness gauge sensor. 3,185,843, 5-25-65, Cl. 250—83.3.
- Harautuneian, Andrew, to Pharmaseal Laboratories. Disposable valve. 3,185,179, 5-25-65, Cl. 137—625.47.
- Harbers, Henry C., to Western Unit Corp. Fifth wheel assembly. 3,185,496, 5-25-65, Cl. 280—125.
- Harding, James, R. F. Sellers, and C. Y. Meyers, to Union Carbide Corp. Phenol-aldehyde condensates containing hydroxybenzylated sulfones. 3,185,666, 5-25-65, Cl. 260—49.
- Hardinge Brothers, Inc. : *See—*
  - Catlin, Francis D. 3,184,996.
- Hardy, Maurice E., to Zenith Radio Corp. Tape recorder. 3,185,401, 5-25-65, Cl. 242—55.13.
- Harloff, Werner B. Power mower. 3,184,907, 5-25-65, Cl. 56—295.
- Harmon, Robert W., to The Ohio Brass Co. Corona reduction in conductor clamps for high voltage transmission lines. 3,185,763, 5-25-65, Cl. 174—144.
- Harpell, George F., to United States of America, Air Force. Magnetic function generator. 3,185,866, 5-25-65, Cl. 307—107.
- Harris, Dwight E., to Rotron Mfg. Co., Inc. Motor terminal assembly. 3,185,875, 5-25-65, Cl. 310—71.
- Harris-Intertype Corp. : *See—*
  - Norton, Robert K. 3,185,088.
- Harrison, Charles W., to Hewlett-Packard Co. Interconnection of power supply units. 3,185,856, 5-25-65, Cl. 307—55.
- Hartman-Leddon Co., Inc. : *See—*
  - Hamilton, Robert H. 3,185,549.
- Hartmann, George J. : *See—*
  - Engeman, John C., Fring, and Hartmann. 3,185,773.
- Harvey, Max J., to American Cyanamid Co. Animal feed composition and method of using same. 3,185,573, 5-25-65, Cl. 99—2.
- Hassa, Richard, to G. Kromschroder, A.G. Fully automatic flame protection device. 3,185,203, 5-25-65, Cl. 158—125.
- Hastings, Douglas A., to Parker-Hannifin Corp. Fluid pressure motor. 3,185,042, 5-25-65, Cl. 92—128.
- Hauser, Hugo, to Ultek Corp. Valve construction. 3,185,435, 5-25-65, Cl. 251—158.
- Haven, Joseph S. : *See—*
  - Fobiano, Frank E., and Haven. 3,185,381.
- Hayashi, Akira : *See—*
  - Kamoshida, Masatoshi, and Hayashi. 3,185,774.
- Hazelton, Burton W., to Pet Milk Co. Sheet metal can. 3,185,340, 5-25-65, Cl. 220—67.
- Headings, William W., and H. E. Rose, to Borg-Warner Corp. Variable displacement hydraulic apparatus. 3,185,105, 5-25-65, Cl. 103—162.
- Hearon, Guy H., and R. R. Campbell, to Bank of America National Trust and Savings Association. Panoramic camera with removable film casette. 3,185,057, 5-25-65, Cl. 95—34.
- Heck, Richard F., to Hercules Powder Co. Crystalline poly-(2,2,2-trifluoroethyl vinyl ether) crystalline in the unoriented state. 3,185,674, 5-25-65, Cl. 260—91.1.
- Hedrick, William S., and J. H. Wastvedt, to FluiDyne Engineering Corp. Thrust measuring device. 3,184,964, 5-25-65 Cl. 73—141.
- Heine, Joseph, to Robert Bosch, G.m.b.H. Structure for fastening articles to thin walls and method for manufacturing such structure. 3,185,268, 5-25-65, Cl. 189—36.
- Heitmann, Gunter : *See—*
  - Meyer, Kurt, Heitmann, and Janke. 3,185,464.
- Helberg, Henry J., to General Electric Co. Electrical regulator. 3,185,948, 5-25-65, Cl. 336—192.
- Helmar, Henry L. : *See—*
  - Nathan, Jerome, Helmar, and Reburn. 3,185,280.
- Helmersson, Sven, to Allmanna Svenska Elektriska Aktiebolaget. Means for suppressing ferromagnetic oscillations arising in electrical installations. 3,185,919, 5-25-65, Cl. 323—77.
- Hemphill, Monroe W. Timber wedge. 3,185,442, 5-25-65, Cl. 254—104.
- Hendrickson, Vergil P. : *See—*
  - Campbell, John J., Hendrickson, and Sieving. 3,185,261.
- Hendrickson, Yngve G. : *See—*
  - Anderson Robert G., and Hendrickson. 3,185,646.
  - Anderson, Robert G., and Hendrickson. 3,185,647.
- Henning, James L., to Plano Molding Co. Combination handle and latch for portable cases. 3,185,338, 5-25-65, Cl. 220—55.7.
- Henry-Biabaud Edmond, to Andre Citroen, Societe Anonyme. Adjustable seat for automobiles. 3,185,481, 5-25-65, Cl. 248—429.

- Herbst, Walter A., R. L. Weeks, and J. A. Wilson, to Esso Research and Engineering Co. Combustion device with thermoelectrically powered burner. 3,185,201, 5-25-65, Cl. 158—4.
- Hercules Powder Co.: *See*—
  - Hamilton, John F. 3,185,091.
  - Hamilton, John F. 3,185,092.
  - Heck, Richard F. 3,185,674.
- Herickes, Joseph A.: *See*—
  - Damon, Glenn H., Ribovich, and Herickes. 3,185,018.
- Herndon, Thomas R., to Esso Research and Engineering Co. Computer function generation. 3,185,827, 5-25-65, Cl. 235—197.
- Herrick, Clifford E., Jr., and A. E. Wimmer, to General Aniline & Film Corp. Method of adding hydrophobic images to the hydrophilic surface of positive or negative paper offset plates. 3,185,085, 5-25-65, Cl. 101—149.2.
- Herter's Inc.: *See*—
  - Mittelsteadt, Glen L. 3,185,235.
- Hess, Francis M., C. Arentze, and W. R. Shaver, to Pullman Inc. Load-gate positioning arrangement. 3,185,111, 5-25-65, Cl. 105—376.
- Hewlett-Packard Co.: *See*—
  - Garber, Thomas. 3,185,973.
  - Harrison, Charles W. 3,185,856.
- Higgins, Harry C., to The Boeing Co. Aircraft propulsion system. 3,185,408, 5-25-65, Cl. 244—7.
- Higgins, Robert H., to Steelcase, Inc. Tape storage rack. 3,185,807, 5-25-65, Cl. 211—40.
- High Voltage Engineering Corp.: *See*—
  - Roos, Jan. 3,185,915.
- Hiller Aircraft Co., Inc.: *See*—
  - Jacobsen, Edward H. 3,185,409.
- Hillier, Ramon L. Grain harvester. 3,184,905, 5-25-65, Cl. 56—130.
- Hilton, Clarence G. Power-operated bending machine. 3,184,951, 5-25-65, Cl. 72—453.
- Hinsey, Robert S., and C. S. Davidson, to Universal American Corp. Mechanism control. 3,184,992, 5-25-65, Cl. 74—584.
- Hirsch, Theodor F., to Maryon Hosiery Mill, Inc. Head bands. 3,184,758, 5-25-65, Cl. 2—209.
- Hirschmann, Ralph: *See*—
  - Sarett, Lewis, Strachan, and Hirschmann. 3,185,682.
- Hitchcock, Allen M.: *See*—
  - Hubert, Charles L., Hitchcock, Niemi, Hoyt, and Turner. 3,185,050.
- Hitzman, Donald O., to Phillips Petroleum Co. Controlling bacteria with hydrocarbon gases. 3,185,215, 5-25-65, Cl. 166—99.
- Hitzman, Donald O., to Phillips Petroleum Co. Use of bacteria in the recovery of petroleum from underground deposits. 3,185,216, 5-25-65, Cl. 166—42.
- Hoch, Robert S., to Phillips Petroleum Co. Cement reversing out tool for casingless completions. 3,185,218, 5-25-65, Cl. 166—156.
- Hodges, Claude D., and D. L. Frederick. Portable viewing apparatus. 3,185,027, 5-25-65, Cl. 88—24.
- Hodges, Frank P.: *See*—
  - Coyle, Forrest E., and Hodges. 3,185,868.
- Hoehn, Harry W.: *See*—
  - Runco, Joseph C., and Hoehn. 3,185,285.
- Hoern, Joseph H., deceased, W. L. Yeo, executor. Die casting and pressure molding machines. 3,184,810, 5-25-65, Cl. 22—69.
- Hoffman Electronics Corp.: *See*—
  - Ramalho, Conrad D. 3,185,988.
- Hoffman, Herbert N., to General Electric Co. Turbine-generator. 3 185,854, 5-25-65, Cl. 290—52.
- Hoffmann-La Roche Inc.: *See*—
  - Duschinsky, Robert. 3,185,690.
- Hofmeister, Wilhelm, to Bayerische Motoren Werke. Method for connecting and sealing sheet-metal parts. 3,185,266, 5-25-65, Cl. 189—34.
- Hogan Faximile Corp.: *See*—
  - Smith, John W., and Cleary. 3,185,912.
- Hogue, Lawrence J., to General Electric Co. Paligorskite dielectric capacitor. 3,185,906, 5-25-65, Cl. 317—258.
- Holbrook, Orrin C.: *See*—
  - Bernard, George G., and Holbrook. 3,185,214.
- Holeman, John M., to General Electric Co. Optical gage for testing surface imperfections. 3,185,022, 5-25-65, Cl. 88—14.
- Holinbeck, Dale G., to Bjorksten Research Laboratories for Industry, Inc. High frequency immune squib. 3,185,093, 5-25-65, Cl. 102—28.
- Hollis, Hubert B. Motor speed control apparatus for steel slitting machine. 3,185,908, 5-25-65 Cl. 318—6.
- Holloway, Robert L., and A. E. Levendoski, to American Machine & Foundry Co. Friction welding. 3,185,368, 5-25-65, Cl. 228—2.
- Holsman, Henry T. Tubular multiwire reinforcing member and method of making. 3,185,414, 5-25-65, Cl. 245—2.
- Home Products, Inc.: *See*—
  - Smith, Daniel L. 3,185,360.
- Honda, Seiichi, and Y. Nakazawa, to Toyotsushinki Kabushiki Kaisha (known at Toyo Communication Equipment Co., Ltd). One-piece mechanical filter having portions forming plural resonators and coupling means. 3,185,943, 5-25-65, Cl. 333—72.
- Honeywell Inc.: *See*—
  - Kompelien, Arlon D. 3,185,975.
  - Sperling, Herman G. 3,185,893.
- Hook, John T. Seat brace. 3,185,526, 5-25-65, Cl. 297—379.
- Hooper, Harry A.: *See*—
  - Fiore, Joseph V., Hooper, Monte, Moshy, and Schmidt. 3,185,161.
  - Fiore, Joseph V., Hooper, Monte, Moshy, and Schmidt. 3,185,162.
- Hoover Ball and Bearing Co.: *See*—
  - Caughey, John M. 3,185,467.
  - Meyers, John S. 3,185,466.
  - Meyers, John S. 3,184,767.
  - Van Hartesveldt, Carroll H., and Wahl. 3,185,073.
  - Welsh, Ralph F. 3,185,525.
- Horn, Christian F., to Union Carbide Corp. Acyloxymetallosulfophthalate containing dyeable polyesters. 3,185,671, 5-25-65, Cl. 260—75.
- Hornak, Michael B., and J. G. Klein, to The Brush Beryllium Co. Method and apparatus for hot pressure forming and back extruding. 3,184,945, 5-25-65, Cl. 72—256.
- Horton, Billy M., and R. E. Bowles. Fluid oscillator. 3,185,166, 5-25-65, Cl. 137—81.5.
- Horton Mfg. Co., Inc.: *See*—
  - Schilling, Hugh K. 3,185,256.
- Houston Co., The: *See*—
  - Pase, Hugh H. 3,185,173.
- Hovda, Robert E.: *See*—
  - Child, Claude H., and Hovda. 3,185,985.
- Hovercraft Development Ltd.: *See*—
  - Cockerell, Christopher S. 3,185,239.
- Howard Accessories, Inc.: *See*—
  - Howard, Fred. 3,185,308.
- Howard, Frank A., Jr.: *See*—
  - Nebgen, William H. 3,185,212.
  - Howard Frank A. 3,185,785.
  - Howard, Frank A. 3,185,960.
- Howard, Frank A.: *See*—
  - Nebgen, William H. 3,185,212.
- Howard, Frank A. deceased; I. A. and F. A. Howard, Jr., and The Chase Manhattan Bank, executors. Combined inflation valve and circuit-closing mechanism for pneumatic tires. 3,185,785, 5-25-65, Cl. 200—61.25.
- Howard, Frank A. deceased; I. A. and F. A. Howard, Jr., and The Chase Manhattan Bank, executors. Tire pressure alarm. 3,185,960, 5-25-65, Cl. 340—58.
- Howard, Fred, to Howard Accessories, Inc. Portable sample carpet holder. 3,185,308, 5-25-65, Cl. 211—45.
- Howard, Irma A.: *See*—
  - Nebgen, William H. 3,185,212.
  - Howard, Frank A. 3,185,785.
  - Howard, Frank A. 3,185,960.
- Howell, Alleyne C., Jr. Continuous coil winding apparatus. 3,184,795, 5-25-65, Cl. 18—19.
- Howell, John C., to Southern States, Inc. By-pass switch arrangement. 3,185,804, 5-25-65, Cl. 200—162.
- Hoxie, Orville D., to Bissell Inc. Aerosol upholstery shampooer. 3,184,781, 5-25-65, Cl. 15—552.
- Hoyer, Wilmer A., and R. C. Rumble, to Esso Production Research Co. Pulsed neutron source utilizing an accelerator tube. 3,185,849, 5-25-65, Cl. 250—84.5.
- Hoyt, Deryl R., to Clark Equipment Co. Steering mode selection and wheel synchronization system. 3,185,245, 5-25-65, Cl. 180—79.2.
- Hoyt, Hazen L., III: *See*—
  - Huber, Charles L., Hitchcock, Niemi, Hoyt, and Turner. 3,185,050.
- Hrozenchik, William J.: *See*—
  - Reifers, Richard F., and Hrozenchik. 3,185,380.
- Hubby, John S., to Phillips Petroleum Co. Particle agitation system. 3,185,661, 5-25-65, Cl. 260—34.2.
- Huber, Charles L., A. M. Hitchcock, O. W. Niemi, H. L. Hoyt, III, and L. H. Turner, to Xerox Corp. Xerographic image processor projector. 3,185,050, 5-25-65, Cl. 95—1.7.
- Huckins, Ralph A., and H. A. May, to United Aircraft Corp. Linkage interconnection. 3,185,510, 5-25-65, Cl. 287—100.
- Huffman, John W., to Pace, Inc. Stacked-type dual thermoresponsive switch. 3,185,795, 5-25-65, Cl. 200—138.
- Hughes, James L.: *See*—
  - Moore, Glenn E., and Hughes. 3,185,128.
- Hughes Tool Co.: *See*—
  - Kelly, Joseph L., Jr. 3,185,228.
- Hughes, William, and A. D. Brown, to British Titan Products Co. Ltd. Sand milling process and apparatus. 3,185,398, 5-25-65, Cl. 241—20.
- Huke, Douglas W.: *See*—
  - Kendall, Charles E., Huke, and Callander. 3,185,673.
- Hull, R. Dell. Spinning reel having a combined feathering and like pick-up means. 3,185,405, 5-25-65, Cl. 242—84.2.
- Hullmann, Heinrich, and K. Baumann, to Wyss, Escher, Aktiengesellschaft. Limiting the speed of the starting turbine of a pump-turbine or accumulator pump. 3,185,440, 5-25-65, Cl. 253—59.
- Humble, David R. Decoration structure. 3,185,207, 5-25-65, Cl. 160—382.
- Humphreys, Kenneth K., to United States Steel Corp. Method and apparatus for determining coke strength. 3,184,952, 5-25-65, Cl. 73—12.
- Hunegs, James, to The Gillette Co. Dispensing container with contents indicator. 3,185,345, 5-25-65, Cl. 222—45.
- Hunt, Charles A., and L. E. Schoonmaker, to The Sessions Clock Co. Adjustable cycle percentage timer. 3,185,874, 5-25-65, Cl. 310—69.
- Hunt, Mack W., to Continental Oil Co. Preparation of diborane. 3,185,547, 5-25-65, Cl. 23—204.
- Hydraxtor Co.: *See*—
  - Koplin, Harry. 3,185,286.
- Hydril Co.: *See*—
  - MacArthur, Melvin D. 3,185,502.
- Hydromecanique et Frottement S.A.R.L.: *See*—
  - Caubet, Jacques J., and Grassin. 3,185,459.
- Hynd, James V., to National Steel Corp. Furnace with flue gas sampler. 3,185,456, 5-25-65, Cl. 263—15.
- IIT Research Institute: *See*—
  - Camras, Marvin. 3,185,775.
- Ideal Toy Corp.: *See*—
  - Weih, Julius. 3,184,886.

- Iida, Masaaki: *See*—
  - Kageyama, Hiroh, Okamoto, Iida, and Ohno. 3,185,703.
- Ikard, Wallace L. and D. E. Soland, to Esso Production Research Co. Analysis of a seismic signal for detection of a reflected wavelet. 3,185,957, 5-25-65, Cl. 340—15.5.
- Illinois Tool Works Inc.: *See*—
  - Edwards, Bryant. 3,185,174.
- Imperial Chemical Industries Ltd.: *See*—
  - Brander, Ian R., and Seed. 3,185,188.
  - Floyd, Arthur J. 3,185,723.
  - Haley, Denis. 3 185,753.
  - Komander, Alfons A., and Tyreman. 3,185,685.
  - Sherlock, Edward. 3,185,699.
- Inaba, Seiuemon, K. Ito, and R. Shirafuji, to Fujitsu Ltd. Hydraulic motor control system. 3,185,439, 5-25-65, Cl. 253—1.
- Industrie de Pierres Scientifiques Hrand Djevahirdjian S.A.: *See*—
  - Djevahirdjian, Vahan. 3,185,551.
- Inertia Switch Ltd.: *See*—
  - Clarke, Walter W. H. 3,184,977.
- Infotronics Corp.: *See*—
  - Williams, Alvie P., Jones, Frisby, and Niven. 3,185,820.
- Ingersoll-Rand Co.: *See*—
  - Faust, Howard L., and Garland. 3,185,004.
  - Klem, Carl T. 3,185,310.
  - Smith, Ralph C. 3,185,106.
- Ingham, William E., to Electric & Musical Industries Ltd. Reading of characters. 3,185,962, 5-25-65, Cl. 340—146.3.
- Inland Steel Co.: *See*—
  - McNelly, George W. 3,184,970.
- Institute for Scientific Information: *See*—
  - Sher, Irving H. 3,184,937.
- Integrated Ceilings & Grilleworks, Inc.: *See*—
  - Blitzer, Jacob H., Jr. 3,185,833.
- Intermountain Research and Engineering Co., Inc.: *See*—
  - Cook, Melvin A., and Pack. 3,185,017.
- International Business Machines Corp.: *See*—
  - Andrews, Carroll A. 3,185,826.
  - Beesley, James P. 3,185,862.
  - Bennett, Richard L., and Underwood. 3,185,965.
  - Bennett, Richard L., and Underwood. 3,185,966.
  - Blasbalg, Herman, and Van Blerkom. 3,185,824.
  - Burns, Williams E. 3,185,969.
  - Clapper, Genung L. 3,185,861.
  - Damm, Eugene P., Jr. 3,185,589.
  - Davis, Claud M. 3,185,822.
  - Ellersick, Frederick W., Jr., and Peavy. 3,185,823.
  - Foglia, Henry R. 3,185,967.
  - Furman, Frank J., and Simpson. 3,185,818.
  - Gunn, John B. 3,185,914.
  - McDonald, William L., and Thurmond. 3,185,825.
  - Sippel, Robert J. 3,185,972.
  - Terlet, René H. 3,185,850.
- International Flavors & Fragrances I.F.F. (Nederland N.V.): *See*—
  - Beets, Muus G. J., and van Essen. 3,185,629.
- International Latex Corp.: *See*—
  - Spanel, Abraham N. 3,185,159.
- International Paper Co.: *See*—
  - Feeney, Joseph W. 3,185,374.
- International Research & Development Co.: *See*—
  - Resnick, Joseph V. 3,185,588.
- Irich, Eugene: *See*—
  - Ray, Emma J., and Irich. 3,185,831.
- Irvin, James M., Jr.: *See*—
  - McGregor, Arvin D., and Irvin. 3,185,075.
- Irwin, Samuel N., and F. E. Booth, Jr., to Control Data Corp. Hammer control means in high speed line printers. 3,185,077, 5-25-65, Cl. 101—93.
- Istag A.G. Suhr/AG: *See*—
  - Klinger-Lohr, Hubert. 3,185,489.
- Ito, Kohei: *See*—
  - Inaba, Seiuemon, Ito, and Shirafuji. 3,185,439.
- Ives, Clifford E., to Tee-Pak, Inc. Shirring method. 3,184,786, 5-25-65, Cl. 17—45.
- Iwasaki, Kanesuke, to Sankyo Co., Ltd. Microbalance with low-friction bearing. 3,185,231, 5-25-65, Cl. 177—190.
- Iwasaki, Kanesuke, to Sankyo Co., Ltd. Spring balance. 3,185,232, 5-25-65, Cl. 177—225.
- Jaccarino, Vincent, and M. Peter, to Bell Telephone Laboratories, Inc High field superconducting devices. 3,185,900, 5-25-65, Cl. 317—158.
- Jackes-Evans Mfg. Co.: *See*—
  - Sheets, Ray H. 3,185,134.
- Jackman, John A., to Lewis Engineering Co. Electrical indicator device. 3,185,979, 5-25-65, Cl. 340—373.
- Jackson, James H.: *See*—
  - Gunkel William F., Willey, Christianson, Kirner, Jackson, Cordry, Papanicolaou, Bath, and Visher. 3,185,981.
- Jackson, Melvin F., to J. I. Case Co. Fluid drive tractor. 3,185,241, 5-25-65, Cl. 180—53.
- Jackson, Theodore A., to Control Data Corp. Assembly of small photosensitive fragile elements. 3,185,853, 5-25-65, Cl. 250—239.
- Jacobsen, Edward H., to Hiller Aircraft Co., Inc. Foldable rotary wing aircraft. 3,185,409, 5-25-65, Cl. 244—17.11.
- Jacobus, Herbert R.: *See*—
  - Lewis, Oliver G., and Jacobus. 3,184,956.
- Jaffee Edward E., and R L. Sweet, to E. I. du Pont de Nemours and Co. Process for preparing quinocridonequinones 3,185,694, 5-25-65, Cl. 260—279.
- Jagenberg-Werke AG.: *See*—
  - Lenz, Bernhard. 3,185,402.
- Jahn, Gunther, to Siemens-Schuckertwerke Aktiengesellschaft. Electromagnet system for lifting and lowering a rod structure in a tubular housing. 3,185,909, 5-25-65, Cl. 318—135.
- James, Bertram G.: *See*—
  - Dryden, Vernon W., and James. 3,185,882.
- Janke, Wolfgang: *See*—
  - Meyer, Kurt, Heitmann, and Janke. 3,185,464.
- Jared Knitting Mills, Inc.: *See*—
  - Breitinger, August F. 3,184,930.
- Jatzeck, James T.: *See*—
  - Jatzeck, Orlo T. 3,184,881.
- Jatzeck, Orlo T., ½ to J. T. Jatzeck. King crab pot. 3,184,881, 5-25-65, Cl. 43—102.
- Jay, George, and E. V. Rankins. Machine for recompressing baled hay. 3,185,074, 5-25-65, Cl. 100—98.
- Jeanneret, Jules L. Machine-tools for copying. 3,185,003, 5-25-65, Cl. 82—14.
- Johansson, Carl E., to The Youngstown Steel Door Co. Drop bottom shipping container. 3,185,516, 5-25-65, Cl. 294—69.
- Johnson, Arthur E., to A. O. Smith Corp. Resistance controlled regulating system for multi-arc welding apparatus. 3,185,918, 5-25-65, Cl. 323—68.
- Johnson, Arthur W. Billet turner accessory for rolling mills. 3,185,329, 5-25-65, Cl. 214—340.
- Johnson, Clarence. Color blended proportion indicating device. 3 184,864, 5-25-65, Cl. 35—28.3.
- Johnson, David A.: *See*—
  - Fecho, Rhine G., and Johnson. 3,185,902.
- Johnson, Leopold J., to Lear Siegler, Inc. Control apparatus for the parallel operation of alternators. 3,185,857, 5-25-65, Cl. 307—57.
- Johnson, Nels A., ½ to G. M. Munson. Hydraulic system with automatic flow direction control valve. 3,185,303, 5-25-65, Cl. 210—136.
- Johnson, Thomas B., to H. H. Robertson Co. Plier type tool having a heel member and punch bit for aligning means. 3,184,838, 5-25-65, Cl. 29—271.
- Johnson, Thomas H., to Santa Barbara Research Center. Method of stabilization of dewar package thin film detectors. 3,185,842, 5-25-65, Cl. 250—83.
- Johnson, Wallace M., to General Electric Co. Transformer tap winding. 3,185,946, 5-25-65, Cl. 336—181.
- Johnston, Charles R. Freight car construction. 3,185,112, 5-25-65, Cl. 105—409.
- Jones, Bernard L. Scale breaker. 3,184,825, 5-25-65, Cl. 29—81.
- Jones, Curtis A., and J. W. Potts, to R-N Corp. Method and means for prevention of re-oxidation of iron concentrates and the like. 3,185,563, 5-25-65, Cl. 75—1.
- Jones, Hal J.: *See*—
  - Williams, Alvie P., Jones, Frisby, and Niven. 3,185,820.
- Jones, Herman L.: *See*—
  - Foss, Harry A., and Jones. 3,185,071.
- Jones, James B., and C. F. DePrisco, to Sonobond Corp. Method and apparatus employing vibratory energy for bonding metals. 3,184,841, 5-25-65, Cl. 29—470.
- Jones, Lee B. III. Self-adjusting standard. 3,185,423, 5-25-65, Cl. 248—188.3.
- Jordan, Charles E., to Jordan Controls, Inc. Coded control plate reader with plural signal actuated means. 3,185,949, 5-25-65, Cl. 338—131.
- Jordan Controls, Inc.: *See*—
  - Jordan, Charles E. 3,185,949.
- Jost, Max: *See*—
  - Koch, Jacob, and Jost. 3,185,698.
- Judd, Claude I., to Colgate-Palmolive Co. Aminoalkyl-N-benzodioxyl carbamates. 3,185,692, 5-25-65, Cl. 260—268.
- Judelshon, Oscar J., Inc.: *See*—
  - Judelson, David N. 3,185,005.
- Judelson, David N., to Oscar J. Judelshon, Inc. Cutting machine. 3,185 005, 5-25-65, Cl. 82—48.
- Justus, Edgar J., to Beloit Corp. Divided press. 3,185,617, 5-25-65, Cl. 162—274.
- Kaasenbrood, Petrus J C., to Stamicarbon N.V. Crystallization of urea. 3 185,731, 5-25-65, Cl. 260—555.
- Kagan, Sholly: *See*—
  - Gold, Nathan, Kagan, and Watters. 3,185,056.
- Kageyama, Hiroh, H. Okamoto, M. Iida, and K. Ohno, to Ajinomoto Co., Inc. Racemization of optically-active pyroglutamic acid. 3,185,703, 5-25-65, Cl. 260—326.3.
- Kahn, Donald J., and R. E. Chandler, to Esso Research and Engineering Co. Formamide of mono-alkenyl succinimide. 3,185,704, 5-25-65, Cl. 260—326.3.
- Kamalian, Neubar. Device for handling a rocket motor. 3,185,454, 5-25-65, Cl. 263—6.
- Kamoshida, Masatoshi, and A. Hayashi, to Oki Electric Industry Co., Ltd. Private branch telephone. 3,185,774, 5-25-65, Cl. 179—27.
- Kanbar, Maurice S. Apparatus for orienting the structure of synthetic yarn. 3,184,820, 5-25-65, Cl. 28—71.3.
- Kano, Hideo, and M. Ogata, to Shionogi & Co., Ltd. 4-nitropyridazines. 3,185,687, 5-25-65, Cl. 260—250.
- Kaptur, Robert E.: *See*—
  - Anderson, Arnold E., Bookout, and Kaptur. 3,184,918.
- Kasper, Robert J., and R. F. Seyfried, to The Ohio Crankshaft Co. Automatic induction furnace control. 3,185,811, 5-25-65, Cl. 219—10.77.
- Kass, Gus S., to Hazel Bishop Inc. Silicone composition. 3 185,627, 5-25-65, Cl. 167—90.
- Kasten, John E. Screw conveyer for feed mixer. 3,185,449, 5-25-65, Cl. 259—6.
- Katagiri, Yasohachi: *See*—
  - Miyagawa, Kiyoshi, and Katagiri. 3,185,987.
- Kats, Alex J., to Super Sagless Spring Corp. Beds. 3,184,765, 5-25-65, Cl. 5—67.
- Kay, Edward L.: *See*—
  - Knowles, Edwin C., and Kay. 3,185,644.
- Keller, Arthur C., to Bell Telephone Laboratories, Inc. Multiple wire electrical connector. 3,185,955, 5-25-65, Cl. 339—91.
- Kelly, James A.: *See*—
  - Scoles, George W., and Kelly. 3,185,562.

- Kelly, Joseph L., Jr., to Hughes Tool Co. Rotary-percussion drill bit with heel row inserts to prevent wedging. 3,185,228, 5-25-65, Cl. 175—410.
- Kelly, Kenneth R., and E. R. Fitzgerald, to The Ohio Crankshaft Co. Control circuit for multi-station sequencing and load power searching system. 3,185,855, 5-25-65, Cl. 307—35.
- Kemp, William J., to Molins Machine Co. Ltd. Hoppers for feeding cigarettes. 3,185,321, 5-25-65, Cl. 214—17.
- Kendall, Charles E., D. W. Huke, and D. D. Callander, to Dunlop Rubber Co. Ltd. Process of curing elastomeric materials. 3,185,673, 5-25-65, Cl. 260—79.5.
- Kendall Co., The: *See*—
  - Laakso, Perttu V. 3,185,697.
  - Trainer, Robert L. 3,185,299.
- Kennedy, Donald P. Safety cover for swimming pools. 3,184,763, 5-25-65, Cl. 4—172.
- Kennedy, Harry E., to Union Carbide Corp. Welding process and composition therefor. 3,185,813, 5-25-65, Cl. 219—74.
- Kenney, Robert W., to A. O. Smith Corp. Fluid control system and set stop control valve therefor. 3,185,344, 5-25-65, Cl. 222—20.
- Kilgore, Harry A., to General Motors Corp. Sand delivery nozzle assembly. 3,185,512, 5-25-65, Cl. 291—46.
- Killian, Charles R.: *See*—
  - Patmore, James R., and Killian. 3,185,934.
- Kindorf, Orlan C. Pipe hanger. 3,185,419, 5-25-65, Cl. 248—73.
- King, Gerald E.: *See*—
  - Stevens, Donald G., King, and Miller. 3,185,636.
- King, Oswald M., to Blue White Industries, Ltd. Dry chemical feeder. 3,185,347, 5-25-65, Cl. 222—67.
- Kingston Products Corp.: *See*—
  - Bowman, Joe. 3,185,867.
- Kinser, Charles F., and W. Lach, to Western Electric Co., Inc. Article straightening device. 3,185,186, 5-25-65, Cl. 140—147.
- Kirk, Joseph R., to Atwood Vacuum Machine Co. Automobile rear deck lock. 3,184,936, 5-25-65, Cl. 70—151.
- Kirk, Roy C., and R. E. Carr, to The Dow Chemical Co. High power output magnesium primary battery. 3,185,592, 5-25-65, Cl. 136—100.
- Kirner, Ernest O.: *See*—
  - Gunkel, William F., Willey, Christianson, Kirner, Jackson, Cordry, Papanicolaou, Bath, and Visher. 3,185,981.
- Klebe, Erich O. Firing control device for the trigger mechanism of repeating shotguns. 3,184,875, 5-25-65, Cl. 42—69.
- Kleber, Eugene V., R. C. Vickery, and H. M. Muir, to Nuclear Corp. of America. Refractory rare earth material. 3,185,652, 5-25-65, Cl. 252—478.
- Klein, Howard C.: *See*—
  - Dunkel, Morris, Loter, and Klein. 3,185,710.
- Klein, John G.: *See*—
  - Hornak, Michael B., and Klein. 3,184,945.
- Klein, Joseph F., to Leeds and Northrup Co. Gas analyzing systems. 3,184,954, 5-25-65, Cl. 73—27.
- Klein, Karl J., to General Aniline & Film Corp. Method of azo dye chromation. 3,185,676, 5-25-65, Cl. 260—145.
- Kleist, Robert A., to Ampex Corp. Drive system for tape transport system. 3,185,364, 5-25-65, Cl. 226—24.
- Klem, Carl T., to Ingersoll-Rand Co. Rock drill pipe storage and handling device. 3,185,310, 5-25-65, Cl. 211—60.
- Klingemann, Georg, and F. Klöhn, to Continental Gummi-Werke Aktiengesellschaft. Tread structure for pneumatic vehicle tires. 3,185,199, 5-25-65, Cl. 152—209.
- Klinger-Lohr, Hubert, to Istag A.G. Suhr/AG. Annular sealing elements. 3,185,489, 5-25-65, Cl. 277—100.
- Klöhn, Friedel: *See*—
  - Klingemann, Georg, and Klöhn. 3,185,199.
- Klun, Godfrey H., to Union Carbide Corp. Aerosol cap construction. 3,185,351, 5-25-65, Cl. 222—182.
- Klynman, Leonard H. Golf putter including club head-carried turf-repairing implement. 3,185,483, 5-25-65, Cl. 273—162.
- Knapp, Theodore F., to Lear Siegler, Inc. Magnetic switch-SCR for motor speed control system. 3,185,910, 5-25-65. Cl. 318—138.
- Knapsack-Griesheim Aktiengesellschaft: *See*—
  - Cremer, Joseph, and Rodis. 3,185,638.
- Kniffin, Edgar A.: *See*—
  - Pfaff, William A., Arnold, Kniffin, Brewster, and Crouse. 3,185,025.
- Knight, Carl P. Pusher type carrier scraper. 3,184,868, 5-25-65, Cl. 37—126.
- Knowles, Edwin C., and E. L. Kay, to Texaco Inc. Lubricating compositions containing amine salts of boron-containing compounds. 3,185,644, 5-25-65, Cl. 252—33.6.
- Knox, Lawrence H., to Syntex Corp. 5,10-seco-5,19-cyclosteroids of the androstane and pregnane series. 3,185,681, 5-25-65, Cl. 260—239.5.
- Knox, Lawrence H., to Syntex Corp. Methylene-19-norpregnanes, pregnenes and pregnadienes. 3,185,714, 5-25-65, Cl. 260—397.3.
- Knudsen, Karen E., to Farve-og Lakfabriken S. Dyrup & Co., Aktieselskab. Multi-color coating compositions and methods of preparation thereof. 3,185,653, 5-25-65, Cl. 260—4.
- Kobbe, John R., to Tektronix, Inc. Deflection amplifier compensation linearizer circuit. 3,185,887, 5-25-65, Cl. 315—26.
- Kobe, Inc.: *See*—
  - Coberly, Clarence J. 3,185,517.
- Koch, H., & Sons: *See*—
  - Gaylord, John A. 3,185,148.
- Koch, Jacob, and M. Jost, to Ciba Ltd. New anthraquinone dyestuffs. 3,185,698, 5-25-65, Cl. 260—303.
- Kohlhaas, Frank A., to Crown Zellerbach Corp. Bulk container. 3,185,379, 5-25-65, Cl. 229—23.
- Komander, Alfons A., and N. Tyreman, to Imperial Chemical Industries Ltd. Manufacture of 2-benzthiazylsulphenomorpholide. 3,185,685, 5-25-65, Cl. 260—247.1.
- Kompanek, Andrew J., Jr., F. Machate, and G. M. Zieber, Jr., to Teleflex Inc. Drivable hollow cable. 3,184,986, 5-25-65, Cl. 74—422.
- Kompelien, Arlon D., to Honeywell Inc. Photoelectric smoke detector. 3,185,975, 5-25-65, Cl. 340—237.
- Koopman, Harmannus, to North American Philips Co., Inc. Preparation of 2,6-dichlorobenzonitrile. 3,185,725, 5-25-65, Cl. 260—465.
- Koplin, Harry, to Hydraxtor Co. Piece separator and counter. 3,185,286, 5-25-65, Cl. 198—76.
- Koppatz, Rudolf: *See*—
  - Gitzinger, Peter, Bayer, and Koppatz. 3,185,749.
- Kortschot, Cornelis, to Plant Industries, Inc. Process for producing a friable, readily reconstitutable dehydrated food product. 3,185,581, 5-25-65, Cl. 99—206.
- Kosset Carpets Ltd.: *See*—
  - Short, Howard D., and Major. 3,185,084.
- Kotkins, Henry L. Luggage case. 3,185,271, 5-25-65, Cl. 190—41.
- Kovar, Henry C., to The Cornelius Co. Coin-operated release mechanism. 3,185,282, 5-25-65, Cl. 194—61.
- Kraus, Charles E., to Excelermatic, Inc. Toroidal transmission mechanism with torque loading cam means. 3,184,983, 5-25-65, Cl. 74—200.
- Krause, James N., to Anaconda Aluminum Co. Package and method of forming container utilized therein. 3,185,577, 5-25-65, Cl. 99—171.
- Krause, James N., and W. L. Ahlemeyer, to The Anaconda Aluminum Co. Baffling means for multiwall container. 3,185,383, 5-25-65, Cl. 229—52.
- Krebs, Josef, to Rohm & Haas G.m.b.H. Starch conversion. 3,185,633, 5-25-65, Cl. 195—17.
- Kromschroder, G., A.G.: *See*—
  - Hassa, Richard. 3,185,203.
- Krueger, Theodore H., to Better Packages, Inc. Manual strapping tool for pressure sensitive tape. 3,185,363, 5-25-65, Cl. 225—66.
- Kryzer, Benjamin H., to Union Tank Car Co. Regenerant supply system for liquid treatment apparatus. 3,185,302, 5-25-65, Cl. 210—126.
- Kuhne, Heinz A., J. W. Seehausen, and T. von Gebhardt, to The American Schack Co., Inc. High temperature recuperator. 3,185,210, 5-25-65, Cl. 165—134.
- Kulicke & Soffa Mfg. Co.: *See*—
  - Margulis, Lawrence G., and Zanger. 3,185,927.
- Kurtz, John S., and J. Graves, to Big Dutchman, Inc. Belt conveyor and safety mechanism therefor. 3,185,289, 5-25-65, Cl. 198—232.
- Kushmuk, Walter P., to Ammco Tools, Inc. Lathe spindle lock. 3,185,002, 5-25-65, Cl. 82—2.
- Kwiatek, Jack, and I. L. Mador, to National Distillers and Chemical Corp. Hydrogenation process. 3,185,727, 5-25-65, Cl. 260—491.
- Laakso, Perttu V., to The Kendall Co. Bicyclo-(2.2.1)-hept-5-ene-2-carbinylnicotinate. 3,185,697, 5-25-65, Cl. 260—295.5.
- Laboratory for Electronics, Inc.: *See*—
  - Barker, John L. 3,185,959.
  - Brinkerhoff, Joris M. 3,185,926.
  - Hansen, Carl W. 3,185,843.
  - Main, Robert M. 3,184,901.
- Lach, Walter: *See*—
  - Kinser, Charles F., and Lach. 3,185,186.
- Lackinger, Frank P. Automobile stalling device. 3,185,247, 5-25-65, Cl. 180—82.
- La Combe, Edward M., and B. Stewart, to Union Carbide Corp. Production of olefinic compounds from allyl sulfones. 3,185,743, 5-25-65, Cl. 260—682.
- Lacoste, Roger G.: *See*—
  - Schallenberg, Elmer E., and Lacoste. 3,185,728.
- La Fond, Robert J.: *See*—
  - Downie, Robert H., and La Fond. 3,185,568.
- Lafont, Pierre: *See*—
  - Balitrand, Georges, and Lafont. 3,185,657.
- Lagnce, Charles. Automobile back-rest. 3,185,497, 5-25-65, Cl. 280—150.
- Lagasse, Joseph L., to Northern Electric Co. Ltd. Portable pneumatic tool. 3,185,606, 5-25-65, Cl. 156—303.1.
- Lakin, Theodore J. Timer control system for electrical loads. 3,185,782, 5-25-65, Cl. 200—33.
- La Mantia, Norman E. Automatic automobile lighting system. 3,185,892, 5-25-65, Cl. 315—82.
- La Monica, James A.: *See*—
  - Brooks, Eugene T., and La Monica. 3,185,101.
- Land, Edwin H., to Polaroid Corp. Photographic product having X-ray intensifier screen as an integral component of the image receiving sheet. 3,185,841, 5-25-65, Cl. 250—68.
- Lane, George E. Ladder scaffold bracket. 3,185,425, 5-25-65, Cl. 248—238.
- Lane, Weldon V., and E. E. Malecki. Multilayer printed circuit board fabrication technique. 3,184,830, 5-25-65, Cl. 29—155.5.
- Lange, Ronald F., to E. I. du Pont de Nemours and Co. Linear polyesters of methylene-4,4′-bis(2-chloro-1-naphthol). 3,185,665, 5-25-65, Cl. 260—47.
- Lanmon, C. P., II, to McEvoy Co. Dual suspension and seal. 3,185,505, 5-25-65, Cl. 285—137.
- Lansky, Zdenek J., to Parker-Hannifin Corp. Air line lubricator. 3,185,253, 5-25-65, Cl. 184—55.
- Lanzenberger, Horst, to H. and F. W. Deckel. Clamping device. 3,185,038, 5-25-65, Cl. 90—16.
- Larey, Bert W., to United States of America, Navy. Transistorized multivibrator with built-in time delay. 3,185,865, 5-25-65, Cl. 307—88.5.

- Lashinco, Charles, Jr.: *See*—
  - Southcott, Marvin A., and Lashinco. 3,184,796.
- Laurie, Albert F.: *See*—
  - Rovang, Wallace G., and Laurie. 3,185,436.
- Laurizio, Jeremiah, to American Flange & Mfg. Co., Inc. Closure flange. 3,185,507, 5-25-65, Cl. 285—202.
- Laviolette, Jean G. H., to Lip Societe Anonyme d'Horlogerie. Electric watches. 3,184,910, 5-25-65, Cl. 58—28.
- Lawrence, Franklin L., to Esso Production Research Co. Static correction plotter. 3,184,848, 5-25-65, Cl. 33—1.
- Lawton, Ray A.: *See*—
  - Green, Homer T., and Lawton. 3,185,135.
- Lawton, William R.: *See*—
  - Baumann, Michael F., and Lawton. 3,185,583.
  - Baumann, Michael F., and Lawton. 3,185,584.
  - Baumann, Michael F., and Lawton. 3,185,585.
- Lear Siegler, Inc.: *See*—
  - Johnson, Leopold J. 3,185,857.
- Leaver, Eric W., and G. R. Mounce, to Electronic Associates Ltd. Quench circuit for radiation counter tube. 3,185,847, 5-25-65, Cl. 250—83.6.
- Le Beau, Lee. Slip ring assembly. 3,185,951, 5-25-65. Cl. 339—5.
- Lecler, Roger, to Societe Anonyme des Establissements Levivier. Sealing means for a liquid-storing reservoir having a floating roof. 3,185 335, 5-25-65, Cl. 220—26.
- Lee, Chi-Yuan, to Bell Telephone Laboratories, Inc. Information storage system. 3,185,965, 5-25-65, Cl. 340—172.5.
- Lee, Richard C., F. B. Cox, and M. E. Connelly, to United States of America, Navy. Pulsed analog computer. 3,185,821, 5-25-65, Cl. 235—150.
- Leeds and Northrup Co.: *See*—
  - Klein, Joseph F. 3,184,954.
- Leesona Corp.: *See*—
  - Alexander, Laurence R. 3,185,848.
- Legg, Robert, Ltd.: *See*—
  - Ward Harry. 3,185,196.
- Leis, Donald G., G. Magnus, and H. E. Fritz, to Union Carbide Corp. Stabilization of polyoxyalkylene compounds. 3 185,735, 5-25-65, Cl. 260—611.5.
- Leitich, Albert J., and D. J. Tanner, to Motorola, Inc. Sweep failure protective system. 3,185,886, 5-25-65, Cl. 315—20.
- Leitmeier, Franz X.: *See*—
  - Armbruster Eugen, and Leitmeier. 3,185,064.
- Lemaitre, Jacques. Multi-purpose stage for electronic probe microanalysis. 3,185,840, 5-25-65, Cl. 250—49.5.
- Lemmerman, Carl W. Jet engine noise attenuator. 3,185,252, 5-25-65, Cl. 181—51.
- Lennox Industries, Inc.: *See*—
  - Mercer, Robert T. Secrest, and Zsebo. 3,185,006.
  - Norris, John W. and Sieverding. 3,185 393.
- Lenz, Bernhard, to Jagenberg-Werke AG. Safety means for paper winding machine. 3,185,402, 5-25-65, Cl. 242—66.
- Leonard, Frederick, and N. Gruenfeld, to Geigy Chemical Corp. 2-phenyl-5,5-di-esters and di-amides of 2-pyrroline and the corresponding pyrrolidines. 3,185,705, 5-25-65, Cl. 260—326.3.
- Leonard William F.: *See*—
  - Erdman, William C., and Leonard. 3,184,984.
- Leopoldi, Norbert. Neurologist's hammer. 3,185,146, 5-25-65, Cl. 128—2.
- Le Parquier, Guy, to Compagnie Generale de Telegraphie Sans Fil. Direction responsive radar system with improved target detection circuit. 3,185,983, 5-25-65, Cl. 343—17.1.
- Lerner, Nathan B., to W. Braun Co. Container with an applicator and supporting means for the container. 3,185,291, 5-25-65 Cl. 206—15.3.
- Leucci, Gino. Automatic regulating device for bladder irrigation devices. 3,185,153, 5-25-65, Cl. 128—227.
- Levendoski, Alfred E.: *See*—
  - Holloway, Robert L., and Levendoski. 3,185,368.
- Lever Bros. Co.: *See*—
  - Hampson, George C., and Rickatson. 3,185,649.
- Levin, Carl A.: *See*—
  - Gill, Robert F. Jr., and Levin. 3,185,991.
- Levitan Monroe: *See*—
  - Schiffer, Silvan. 3,185,123.
- Levy Gerald J.: *See*—
  - Brubaker, Robert D. 3,185,485.
- Levy, William. Frame structure. 3,184,802, 5-25-65, Cl. 20—15.
- Lewis, Bernard L., to Radiation Inc. Satellite sensor and control system. 3 185,852, 5-25-65, Cl. 250—227.
- Lewis Engineering Co.: *See*—
  - Jackman, John A. 3,185,979.
- Lewis, Nigel W.: *See*—
  - Eggington Wilfred J., and Lewis. 3,185,240.
- Lewis, Oliver G., and H. R. Jacobus, to Esso Research and Engineering Co. Fuel ratings. 3,184,956, 5-25-65, Cl. 73—35.
- Lewis, Rufus J., Sr. Orientation jack. 3,185,318, 5-25-65, Cl. 214—1.
- Lichtenstein, Meier. Tape winding device. 3,185,407, 5-25-65, Cl. 242—96.
- Ligon, D Elmon, to American Brake Shoe Co. Hydraulic reciprocating system. 3,185,040, 5-25-65, Cl. 91—277.
- Likel, Harry C., to The Western Union Telegraph Co. Network repeater. 3,185,766, 5-25-65, Cl. 178—70.
- Liles, Clarence E., to Sperry Rand Corp. Power transmission. 3,185 104, 5-25-65, Cl. 103—162.
- Lillsunde, Bernhard: *See*—
  - Dahlblom, Rolf A., and Lillsunde. 3,185,771.
- Lincoln Electric Co. The: *See*—
  - Patton, Donald M. 3 185,369.
- Lincoln, John D., and E. P. Ceselski, to The Continental Can Co., Inc. Apparatus for laminating a continuous honeycomb sandwich. 3,185,610, 5-25-65, Cl. 156—549.
- Lindberg, Carl A., and H. A. Anderson, to Bissell Inc. Vacuum cleaner with removable filter bag. 3,184,778, 5-25-65, Cl. 15—344.
- Lindberg, Charles A., to SCM Corp. Cover assembly. 3,185,533, 5-25-65, Cl. 312—208.
- Lindemann, Robert E., and M. H. November, to D. M. Potter. Digital measuring instrument and densimeter. 3,184,975, 5-25-65, Cl. 73—453.
- Lindsay, Anthony: *See*—
  - Miracki, Zdislav S., and Lindsay. 3,185,141.
- Lindsay, Kenneth L., to Ethyl Corp. Olefin dimerization. 3,185,745, 5-25-65, Cl. 260—683.15.
- Lingenfelter, Stanley E.: *See*—
  - Bronte, William H., and Lingenfelter. 3,185,045.
- Lip Societe Anonyme d'Horlogerie; *See*—
  - Laviolette, Jean G. H. 3,184,910.
- Lipman, Elmer, to Valve Corp. of America. Pump dispensing device for liquid containers. 3,185,354, 5-25-65, Cl. 222—321.
- Lipman, Elmer, to Valve Corp. of America. Pump for liquid containers. 3,185 355, 5-25-65, Cl. 222—341.
- Lipowski, Stanley: *See*—
  - Fetscher, Charles A., and Lipowski. 3,185,628.
- Lithgo, William: *See*—
  - Printz, Warren G., Rubenis, and Lithgo. 3,185,010.
- Lithium Corp. of America: *See*—
  - Bach, Ricardo O., and Boardman. 3,185,546.
- Little, William A., and S. B. Watelski, to Texas Instruments Inc. Method of making silicon transistors. 3,184,823, 5-25-65, Cl. 29—25.3.
- Litton Systems, Inc.: *See*—
  - Collins, Harry C. 3,185,931.
  - Flink, Leslie R. 3,184,846.
- Litz, Milton B. Insulated pipe hanger. 3,185,758, 5-25-65, Cl. 174—40.
- Lively, Lawrence D., and G. M. Rouayheb, to Continental Oil Co. Method of and apparatus for analyzing chemical compounds. 3,185,845, 5-25-65, Cl. 250—83.6.
- Lloyd, Eugene A. Shaving lather applicator. 3,184,779, 5-25-65, Cl. 15—538.
- Loberg, Torsten, to Stal Refrigeration Aktiebolag. Resilient mounting means for a machine or the like. 3,185,389, 5-25-65, Cl. 230—235.
- Loch, Erwin, to Escher Wyss Aktiengesellschaft. Bearing bush suspension. 3,185,532, 5-25-65, Cl. 308—15.
- Locher, Hans, to Zellweger Ltd. Apparatus utilizing capacitance measuring means for the continuous monitoring of elongate materials during production to permit determination of the deviation of the denier from a desired value. 3,185,924, 5-25-65, Cl. 324—61.
- Lockheed Aircraft Corp.: *See*—
  - Freiberg, Leo. 3,185,941.
  - Spiro, Lloyd W., and Peterson. 3,185,197.
  - Suellentrop, Fred J., Brown, and Rule. 3,184,959.
- Lodge & Shipley Co., The: *See*—
  - Sporck, Claus L. 3 184,940.
  - Rowekamp, Edward F. 3,185,288.
- Lodjic, Carl L.: *See*—
  - Moore, Herbert C., and Lodjic. 3,184,772.
- Loeb, Abraham P., and M. P. O'Laughlin, to Dravo Corp. Radiant gas fired burner. 3,185,204, 5-25-65, Cl. 158—114.
- Loffelhardt, Heinrich, to Vereinigte Farbenglaswerke Aktiengesellschaft. Goblet. 3,185,331, 5-25-65, Cl. 215—10.
- Logan, Hugh H., G. I. Doty, and J. F. Nelson, to The Logan Mfg. Co. Multi-station shower fixture with sloping shower head panel. 3,184,762, 5-25-65, Cl. 4—145.
- Logan Mfg. Co., The: *See*—
  - Logan, Hugh H., Doty, and Nelson. 3,184,762.
- Lohbauer, Kenneth R., and J. E. Scheidt, to Caterpillar Tractor Co. Leakage control for bulldozer pitch jack circuit. 3,184,920, 5-25-65, Cl. 60—54.5.
- Lohf, Gerald W., P. F. Walker, and A. R. Ellsworth, to Allen-Bradley Co. Epicyclic clock drive mechanism. 3,184,909, 5-25-65 Cl 58—2.
- Lombard, Daniel L. Telephone message time-recording apparatus. 3,185,769, 5-25-65, Cl. 179—7.1.
- Lombard, Daniel L. Recording apparatus. 3,185,770, 5-25-65, Cl. 179—7.1.
- Long, Charles A. Internal pressure seal for pressure vessels. 3 185 337, 5-25-65, Cl 220—46.
- Long, Everett, and W. Rodwell, to United Kingdom Atomic Energy Authority. Assembly comprising a heat source and associated apparatus. 3,185,631, 5-25-65, Cl. 176—65.
- Long Mfg. Co. Inc.: *See*—
  - Atkinson, Wallace E. 3,184,935.
- Lord, Henry A.: *See*—
  - Reifers, Richard F., and Lord. 3,185,370.
- Lord Mfg. Co.: *See*—
  - Desai, Ramesh R., and Wallerstein. 3,184,928.
  - Farabaugh, Bernard A., Jr., and Gwinn. 3,185,426.
- Lortz, William H., to Baker Machinery Co. Counterbalancing weighing instrument. 3,185,234, 5-25-65, Cl. 177—246.
- Loter, Ira: *See*—
  - Dunkel, Morris, Loter, and Klein. 3,185,710.
- Louthan, Rector P.: *See*—
  - Goodhue, Lyle D., Louthan, and Cantrel. 3,185,620.
- Loveall, George A., Jr., and E. E. Davis, to Engineered Equipment, Inc. Material flow sensing and control device for belt-type conveyors. 3,185,346, 5-25-65, Cl. 222—55.
- Low, Charles A., Jr., and W. R. Mickelson, to United States of America, National Aeronautics and Space Administration. Electrostatic propulsion system with a direct nuclear electro generator. 3,184 915 5-25-65 Cl. 60—35.5.
- Lowe, Warren, and F. A. Stuart, to California Research Corp. Oxidation resistant lubricants. 3,185,643, 5-25-65, Cl. 252—32.7.
- Löwenstein, Karl: *See*—
  - Müller Josef, and Löwenstein. 3,185,835.
- Loy, Fred W., to Gardner-Denver Co. Wire connecting apparatus. 3,185,183, 5-25-65, Cl. 140—71.

- Loy, Fred W., and L. T. Wells, to Gardner-Denver Co. Positioning apparatus. 3,185,184, 5-25-65, Cl. 140—71.
- Ludloff, Wolfgang, to Gesellschaft fur Multiblitz-Gerate, Dr. Ing. D.A. Mannesmann m.b.H. Photographic flashlight illumination. 3,185,828, 5-25-65, Cl. 240—1.3.
- Lueft, Walter B., and J. Raamot, to Western Electric Co., Inc. Telephone test set. 3,185,781, 5-25-65, Cl. 179—175.
- Lummus, James L.: *See—*
  - Craig, Forrest F., Jr., and Lummus. 3,185,634.
- Lundh, Karl G., to A. Unda. Apparatus for the continuous ejection of material. 3,185,098, 5-25-65, Cl. 103—49.
- Lundquist, Ingemar H.: *See—*
  - Balaz, Charles S., and Lundquist. 3,185,008.
- Lunsford, Carl D. Basic esters of 3-aryl-3-pyrrolidinols. 3,185,702, 5-25-65, Cl. 260—326.3.
- Lurie, August J. Carton opening tool with guide plate spacing cutting blade from one face of carton. 3,184,843, 5-25-65, Cl. 30—2.
- Lusebrink, Elmer H., to E. I. du Pont de Nemours and Co. Temperature controlled device. 3,185,816, 5-25-65, Cl. 219—471.
- Lustman, Eldred G., to Helene Curtis Industries, Inc. Easel. 3,185,294, 5-25-65, Cl. 206—45.25.
- Luther, Paul E. Container filling apparatus and method. 3,185,187, 5-25-65, Cl. 141—7.
- Luther, Roger R., to Anchor Coupling Co., Inc. Pressed-on tube coupling having disassembly means. 3,185,500, 5-25-65, Cl. 285—4.
- Lyman Gun Sight Corp., The: *See—*
  - Hageman, Chester W. 3,184,852.
- Lyon, Charles G. Weatherstrips. 3,184,808, 5-25-65, Cl. 20—69.
- Lysett, Daniel W.: *See—*
  - Zeidler, Reinhold C., Barnes, and Lysett. 3,184,833.
- M & T Chemicals Inc.: *See—*
  - Pratt, Donald C. 3,185,130.
- MacArthur, Melvin D., to Hydril Co. Lined and sealed tubing joint. 3,185,502, 5-25-65, Cl. 285—55.
- Macdonald, Herbert G., D. J. Barbour, K. M. Claus, and R. B. Cleverly, to The Mosaic Tile Co. Method of fabricating a multiple unit assembly. 3,185,748, 5-25-65, Cl. 264—261.
- Machate, Fred: *See—*
  - Kompanek, Andrew J., Jr., Machate, and Zieber. 3,184,988.
- Machinery Center, Inc.: *See—*
  - O'Leary, Paul C. 3,185,222.
- Machines Bull (Societe Anonyme), Compagnie des: *See—*
  - Brette, Yves-Jean F., and Droux. 3,185,971.
- Madaus, Dr., & Co. Kommanditgesellschaft: *See—*
  - Winter, Arrien G. 3,184,887.
- Madison, Richard K., and W. J. Van Loo, Jr., to American Cyanamid Co. Process of treating cellulose textiles with certain alkylenebis(N-carboxamides) and products produced therefrom. 3,185,539, 5-25-65, Cl. 8—116.3.
- Mador, Irving L.: *See—*
  - Kklatek, Jack, and Mador. 3,185,727.
- Maffei, Jack D., to L. D. Maffei Seed Co., Inc. Bean pod stripper. 3,184,902, 5-25-65, Cl. 56—19.
- Maffei, L. D., Seed Co., Inc.: *See—*
  - Maffei, Jack D. 3,184,902.
- Magidson, William H.: *See—*
  - Stinson, Herman B., Jr., and Noon. 3,185,016.
- Magnavox Co., The: *See—*
  - Ferris, Lester W., and Martin. 3,185,996.
- Magnus, George: *See—*
  - Leis, Donald G., Magnus, and Fritz. 3,185,735.
- Mahan, John E.: *See—*
  - Gray, Roy A., and Mahan. 3,185,739.
- Maher, Philip K., to W. R. Grace & Co. Preparation of crystalline zeolites of uniform and controlled particle size. 3,185,544, 5-25-65, Cl. 23—112.
- Mahr, William H.: *See—*
  - Cunningham, Charles M., and McCadam. 3,184,844.
- Main, Robert M., to Laboratory For Electronics, Inc. Gaseous concentration and separation apparatus. 3,184,901, 5-25-65, Cl. 55—102.
- Major, Sandor: *See—*
  - Short, Howard D., and Major. 3,185,084.
- Malecki, Edmund E.: *See—*
  - Lane, Weldon V., and Malecki. 3,184,830.
- Malibeaux, Rene: *See—*
  - Dardaine, Edgard J. M., and Malibeaux. 3,185,328.
- Malick, Emil A., to Phillips Petroleum Co. Fast chemical reaction and process. 3,185,740, 5-25-65, Cl. 260—666.
- Mamiya, Shigeo, and T. Odashima, to Saginomiya Seisakusho Co., Ltd. Snap-action condition responsive switch. 3,185,796, 5-25-65, Cl. 200—140.
- Mangulis, Visvaldis, to Control Data Corp. Multi-directional radio frequency electro-magnetic energy deflector. 3,185,993, 5-25-65, Cl. 343—911.
- Manning, Charles E., to General Motors Corp. Apparatus for coating articles in a fluidised bed. 3,185,131, 5-25-65, Cl. 118—421.
- Manning Mfg. Corp.: *See—*
  - Mills, Thomas C., and Miyagawa. 3,185,830.
- Marcus, Milton: *See—*
  - Bruun, Eugene R., Flanders, and Marcus. 3,185,169.
- Margiloff, Irwin B. Data systems. 3,185,964, 5-25-65, Cl. 340—172.5.
- Margot, Alfred, to J. R. Geigy, A.-G. Method for control of nematodes with dithiocarbamic acid derivatives. 3,185,621, 5-25-65, Cl. 167—30.
- Margulies, Herman, 20% J. H. Quest, and 20% to J. Zeigler. Dispensing container. 3,185,373, 5-25-65, Cl. 229—17.
- Margulis, Lawrence G., and E. A. Zanger, Jr., to Kulicke & Soffa Mfg. Co. Probe instrument for inspecting semiconductor wafers including means for marking defective zones. 3,185,927, 5-25-65, Cl. 324—158.
- Markovics, Marton: *See—*
  - Bartfai, Bela M., Goncsi, Hajdu, Markovics, Ronai, and Szucs. 3,185,591.
- Marler, Arnold H. Handle and pouring spout with attaching means. 3,185,358 5-25-65, Cl. 222—475.
- Marler, Arnold H. Handles. 3,185,515, 5-25-65, Cl. 294—27.
- Maro, Joseph J., to Waldorf Paper Products Co. Display folder. 3,185,292, 5-25-65, Cl. 206—45.14.
- Maropis, Nicholas, to Aeroprojects Inc. Method and apparatus for delivering vibratory energy. 3,184,842, 5-25-65, Cl. 29—471.
- Marralaud Inc.: *See—*
  - Bell, James F. 3,184,961.
- Martin, Maurice S.: *See—*
  - Ferris, Lester W., and Martin. 3,185,996.
- Martin, Thomas B. Fly weight governor assembly. 3,184,979, 5-25-65, Cl. 73—539.
- Martinek, Thomas W.: *See—*
  - Remes, Nathaniel L., and Martinek. 3,185,724.
- Maryon Hoisery Mill, Inc.: *See—*
  - Hirsch, Theodor F. 3,184,758.
- Mason, Paul B., and A. J. Sable, to Polaroid Corp. Photographic document copying apparatus. 3,185,066, 5-25-65, Cl. 95—75.
- Masters, George R. Handkerchief holder. 3,184,759, 5-25-65, Cl. 2—279.
- Masterson, Horace T., T. N. Crook, and A. C. Reid, to Esso Production Research Co. Method of continuous wave seismic prospecting. 3,185,958, 5-25-65, Cl. 340—15.5.
- Matthews, Harry L. Powered tailgate lift. 3,185,322, 5-25-65, Cl. 214—75.
- Maurer, Edward C. Seat belt anchors. 3,185,246, 5-25-65, Cl. 180—82.
- Maurice, Jean, to Francaise du Ferodo, Societe Anonyme. Clutch device with multiple outputs. 3,185,274, 5-25-65, Cl. 192—48.
- Mazey, Alexander R., to Ampex Corp. Tape slack device. 3,185,400, 5-25-65, Cl. 242—55.12.
- May, Horace A.: *See—*
  - Huckins, Ralph A., and May. 3,185,510.
- Mayer, Alfred A., and C. E. Miller, to Olin Mathieson Chemical Corp. Cartridge case head. 3,185,095, 5-25-65, Cl. 102—44.
- Mayer, Stanley W., and D. E. McKenzie, to North American Aviation, Inc. Lightweight secondary battery. 3,185,590, 5-25-65, Cl. 136—6.
- Maytag Co., The: *See—*
  - Smith, Thomas R. 3,184,934.
- McCadam, Maurice B.: *See—*
  - Cunningham, Charles M., and McCadam. 3,184,844.
- McCarthy, John J., to Norco Inc. Quick-release fastening and locking device. 3,184,816, 5-25-65, Cl. 24—211.
- McCarty, Lourdes V.: *See—*
  - Gorske, Herman A., and McCarty. 3,185,896.
- McCaughna, James R., and R. R. Todesca. Microwave absorber and method of manufacture. 3,185,986, 5-25-65, Cl. 343—18.
- McCook, Mildred T. Babies' snap-back toy harness and exerciser. 3,184,883, 5-25-65, Cl. 46—32.
- McCreanor, Richard A., to Donart Electronics Inc. Method and apparatus for optically measuring the thickness of thin transparent films. 3,185,024, 5-25-65, Cl. 88—14.
- McDonald, Allen S., Jr.: *See—*
  - Coxe, Charles D., and McDonald. 3,184,835.
- McDonald, William L., and R. H. Thurmond, to International Business Machines Corp. Method and apparatus for translating decimal numbers to equivalent binary numbers. 3,185,825, 5-25-65, Cl. 235—155.
- McDowell, Hunter L., and J. E. Sidoti, to S-F-D Laboratories, Inc. Temperature compensated slow wave structure. 3,185,890, 5-25-65, Cl. 315—39.69.
- McEvoy Co.: *See—*
  - Lanmon, C. P., II. 3,185 505.
- McGinn, Earl P., to Drew Chemical Corp. Heater for drums. 3,185,145, 5-25-65, Cl. 126—369.
- McGraw-Edison Co.: *See—*
  - Phillips, Davis M. 3,185,757.
- McGregor, Arvin D.: *See—*
  - Craig, Harrison I., and McGregor. 3,185,082.
- McGregor, Arvin D., and E. G. Goetsch, to Control Data Corp. Belt and gear drive for high speed printer systems. 3,185,079, 5-25-65, Cl. 101—93.
- McGregor, Arvin D., and J. M. Irvin, Jr., to Control Data Corp. High speed printer with print hammer control. 3,185,075, 5-25-65, Cl. 101—93.
- McHugh, Donald H., to Burroughs Corp. Fabricated circuit structure. 3,185,761, 5-25-65, Cl. 174—68.5.
- McKee, Chester W., R. W. McKee, and C. M. Rich to Welding Service, Inc. Capacitor with metallic embedded plastic electrodes. 3,185 907, 5-25-65, Cl. 317—258.
- McKee, Richard W.: *See—*
  - McKee, Chester W., and R. W., and Rich. 3,185,907.
- McKenzie, Donald E.: *See—*
  - Mayer, Stanley W., and McKenzie. 3,185,590.
- McKey, Leo S. Planting pot. 3,184,890, 5-25-65 Cl. 47—37.
- McKinney, Aubrey R., to Standard Oil Co. Total liquid phase esterification. 3,185,669, 5-25-65, Cl. 260—75.
- McKinney, Aubrey R., to Standard Oil Co. Pressure esterification. 3,185,670, 5-25-65, Cl. 260—75.
- McMillen, William H.: *See—*
  - Gustafson, Walter R., McMillen, Rounding, and Shore. 3,185 980.
- McMillin, David C., to Olympia Oyster Co. Shellfish gathering machine. 3,184,866, 5-25-65, Cl. 37—55.
- McNeil Laboratories, Inc.: *See—*
  - Meschino, Joseph A. 3,185,707.
- McNelly, George W., to Inland Steel Co. Molten metal level indicator. 3,184,970, 5-25-65, Cl. 73—304.

- McTaggart, William R. Word game. 3,185,478, 5-25-65, Cl. 273—135.
- McWhorter, John R.: *See—*
  - Gilbert, Lyman F., and McWhorter. 3,185,846.
- Mead Corp., The: *See—*
  - Fletcher, Jack W. 3,185,293.
- Mead Johnson & Co.: *See—*
  - Gabby, John L., and Ashby. 3,185,574.
- Medford, Richard D.: *See—*
  - Waddell, Russell B., Jr., Osborn, and Medford. 3,185,182.
- Mehalso, Paul J.: *See—*
  - Meyer, Delbert H., and Mehalso. 3,185,668.
- Mehin, Marlowe D.: *See—*
  - Uhl, Donald A. 3,185,223.
- Mehrbrodt, Alfonso W.: *See—*
  - Chasar, Anthony R., and Mehrbrodt. 3,185,320.
- Meinhardt, James R., to The Seng Co. Tilting chair mechanism. 3,185,429, 5-25-65, Cl. 248—373.
- Meixner, Wilhelm: *See—*
  - Ruschig, Heinrich, Schmitt, Ther, and Meixner. 3,185,689.
- Mekelburg, Earl F.: *See—*
  - Bowman, Robert J., and Mekelburg. 3,185,806.
- Melpar, Inc.: *See—*
  - Turnage, Howard C., and Vossen. 3,185,944.
- Melvin, John R., to The Brush Beryllium Co. Trepanning tool for trepanning tapered metal shapes. 3,184,827, 5-25-65, Cl. 29—95.
- Mengel, William F. Vehicle turntable. 3,185,109, 5-25-65, Cl. 104—45.
- Mennesson, Andre L., to Societe Industrielle de Brevets et d'Etudes S.I.B.E. Carburetors working by continuous injection of fuel into the intake pipe of an internal combustion engine. 3,185,452, 5-25-65, Cl. 261—23.
- Mennesson, Andre L., to Societe Industrielle de Brevets et d'Etudes S.I.B.E. Carburetors. 3,185,453, 5-25-65, Cl. 261—39.
- Mercer, Robert T., L. W. Secrest, and F. J. Zsebo, to Lennox Industries, Inc. Method for trimming edges of sheets. 3,185,006, 5-25-65, Cl. 83—33.
- Mercier, Gilles, to Dominion Corset Co., Ltd. Containers. 3,185,353, 5-25-65, Cl. 222—206.
- Merck & Co., Inc.: *See—*
  - Sarett, Lewis, Strachan, and Hirschmann. 3,185,682.
- Merithew, Lester W., and H. O. Corbett, to National Distillers and Chemical Corp. Machine for cutting and sealing a web of thermoplastic material. 3,185,609, 5-25-65, Cl. 156—530.
- Merkel, Hans. Dispensing device for granular or pulverulent materials. 3,185,357, 5-25-65, Cl. 222—425.
- Merlin & Gerin, Etablissements: *See—*
  - Amalric, Jean. 3,185,802.
- Mero, Peter G. S.: *See—*
  - Bussey, William H., and Gunter. 3,185,998.
- Mescher, Harold E., and R. L. Allgeier, to Pacific Scientific Co. Vacuum furnace. 3,185,460, 5-25-65, Cl. 263—40.
- Meschino, Joseph A., to McNeil Laboratories, Inc. Alpha substituted phenyl aceto nitriles and hydrocinnamonitriles and the corresponding carbamates thereof. 3,185,707, 5-25-65, Cl. 260—340.5.
- Metallgesellschaft Aktiengesellschaft: *See—*
  - Meyer, Kurt, Heitmann, and Janke. 3,185,464.
- Metallurgique d'Esperance-Longdoz, S.A.: *See—*
  - Dauberay, Jean. 3,185,463.
- Metco, Inc.: *See—*
  - Charlop, Herbert. 3,185,368.
- Meter, Raymond S., and R. M. Pine, to Uarco, Inc. Trimmer having manually operable means to adjust tin width while trimmer is in operation. 3,185,009, 5-25-65, Cl. 83—423.
- Metrimpex Magyar Muszeripari Kulkereskedelmi Vallalat: *See—*
  - Bartfai, Bela and M., and Gonczi, Hajdu, Markovics, Ronai, and Szucs. 3,185,591.
- Meyer, Delbert H., and P. J. Mehalso, to Standard Oil Co. Direct esterification. 3,185,668, 5-25-65, Cl. 260—75.
- Meyer, Kurt, G. Heitmann, and W. Janke, to Metallgesellschaft Aktiengesellschaft. Iron ore reducing rotary furnace with mantle burner nozzles of concentric tubes. 3,185,464, 5-25-65, Cl. 266—24.
- Meyers, Cal Y.: *See—*
  - Harding, James, Sellers, and Meyers. 3,185,666.
- Meyers, John S., to Hoover Ball and Bearing Co. Reinforcing member for spring element. 3,185,466, 5-25-65, Cl. 267—105.
- Meyers, John S., to Hoover Ball and Bearing Co. Pad for covering contoured cushion spring structure. 3,184,767, 5-25-65, Cl. 5—345.
- Miaskoff, Leonard, and F. L. Warner, to Fairchild Camera and Instrument Corp. Double sheet detector for printing press. 3,185,473, 5-25-65, Cl. 271—56.
- Mickelsen, William R.: *See—*
  - Low, Charles A., Jr., and Mickelsen. 3,184,915.
- Middleton, William J., to E. I. du Pont de Nemours and Co. Dicyano-S-diaminomethylenesulfilidenes and dicyano-S-di(substituted)aminomethylenesulfilidenes, and preparation thereof. 3,185,700, 5-25-65, Cl. 260—309.7.
- Midwesco Enterprise, Inc.: *See—*
  - Eaton, Burton E. 3,184,958.
- Miescher, Guido M., to Commercial Solvents Corp. Rodenticide bait composition wtih monosodium glutamate. 3,185,622, 5-25-65, Cl. 167—48.
- Millar, Huntly D., to E & M Instrument Co., Inc. Recording equipment. 3,185,990, 5-25-65, Cl. 346—112.
- Miller, Arthur F.: *See—*
  - Stevens, Donald G., King, and Miller. 3,185,636.
- Miller, Charles E.: *See—*
  - Mayer, Alfred A., and Miller. 3,185,095.
- Miller, Clarence R.: *See—*
  - Miller, Lawrence E. and E. D. 3,185,278.
- Miller, Excie D.: *See—*
  - Miller, Lawrence E. and E. D. 3,185,278.
- Miller, Glenn E., to Western Electric Co., Inc. Article assembling apparatus. 3,184,836, 5-25-65, Cl. 29—203.
- Miller, Lawrence E. and E. D., to C. R. Miller. Electric iron with timer and ironing board and cabinet therefor. 3,185,278, 5-25-65, Cl. 194—1.
- Miller, Melvin W.: *See—*
  - Crawford, Duncan J., and Miller. 3,185,376.
- Miller, Wendell S. Apparatus and method for printing photographs with ultraviolet light. 3,185,065, 5-25-65, Cl. 95—73.
- Miller, Wendell S. Ball delivery apparatus. 3,185,475, 5-25-65, Cl. 273—49.
- Mills, James C., Jr.: *See—*
  - Gregory, Charles A., Jr., and Mills. 3,186,003.
- Mills, Thomas C., and F. K. Miyagawa, to Manning Mfg. Corp. Target apparatus. 3,185,830, 5-25-65, Cl. 240—6.41.
- Milton, Robert M.: *See—*
  - Breck, Donald W., Castor, and Milton. 3,185,540.
- Mims, Samuel S., to R. J. Reynolds Tobacco Co. Fused tricyclic lactones and their preparation. 3,185,708, 5-25-65, Cl. 260—343.2.
- Minerals & Chemicals Philipp Corp.: *See—*
  - Sawyer, Edgar W., Jr., and Haden. 3,185,642.
- Minister of Aviation in Her Majesty's Government of the United Kingdom of Great Britain: *See—*
  - Newman, Barry H., Spickernell, and Young. 3,185,601.
- Minnesota Mining and Mfg. Co.: *See—*
  - Davis, Horace R. 3,185,677.
- Miracki, Zdislav S., and A. Lindsay, to Simms Motor Units Ltd. Variable rate spring devices. 3,185,141, 5-25-65, Cl. 123—140.
- Mississippi Glass Co.: *See—*
  - Youngblood, Charles J., Jr. 3,185,034.
- Mitchell, Carl J.: *See—*
  - Fruth, Hal F., and Mitchell. 3,184,888.
- Mitchell, Gerald T., and R. Cunningham, Jr., to Vapor Corp. Burner for a boiler. 3,185,202, 5-25-65, Cl. 158—4.
- Mitralux Establishment: *See—*
  - Andreoli, Gianni. 3,185,028.
- Mittelsteadt, Glen L., to Herter's Inc. Filament fulcrum mechanism. 3 185,235, 5-25-65, Cl. 177—246.
- Miwag Mikrowellen Aktien Gesellschaft: *See—*
  - Bohm, Helmut, and Duras. 3,185,809.
- Miyagawa, Frank K.: *See—*
  - Mills, Thomas C., and Miyagawa. 3,185,830.
- Miyagawa, Kiyoshi, and Y. Katagiri, to Nippon Electric Co. Ltd. Oscillation control device for use in recording instruments. 3,185 987, 5-25-65, Cl. 346—65.
- Mobilaid, Inc.: *See—*
  - Pivacek, William J. 3,185,495.
  - Pivacek, William J. 3,185,527.
- Mobilcolor, Inc.: *See—*
  - Way, Frederick L. 3,184,872.
- Modernair Corp.: *See—*
  - Brandenberg, Karl A., and Bart. 3,185,177.
- Modine Mfg. Co.: *See—*
  - Piasecki, Thomas A. 3,184,971.
- Modrey, Henry J. Shaft bearing. 3,185,531, 5-25-65, Cl. 308—4.
- Molded Container Corp.: *See—*
  - Eastman, Watson S., and Alsman. 3,185 619.
- Molins, Desmond W., to Molins Machine Co., Ltd. Apparatus for feeding cigarettes. 3,185,284, 5-25-65, Cl. 198—20.
- Molins Machine Co., Ltd.: *See—*
  - Kemp, William J. 3,185 321.
  - Molins, Desmond W. 3,185,284.
- Moltchan, Floyd J. Rotary air pump. 3,185,385, 5-25-65, Cl. 230—137.
- Monarch Marking System Co., The: *See—*
  - Rieger, Frederic L., and Hamisch. 3,185,367.
- Monsanto Co.: *See—*
  - Armour, Donald F. 3,184,782.
  - Nielsen, Morris L. 3,185,733.
- Monsimer, Harold G., to Richardson-Merrell Inc. Oxobutyrolactones. 3,185,711, 5-25-65, Cl. 260—343.6.
- Monte, Matthew S.: *See—*
  - Fiore, Joseph V., Hooper, Monte, Mosby, and Schmidt. 3,185,162.
- Moore, George A. Container and blank therefor. 3,185,377, 5-25-65, Cl. 229—17.
- Moore, Glenn E., and J. L. Hughes, to Dover Corp. Sight-glass indicator or the like. 3,185,128, 5-25-65, Cl. 116—117.
- Moore, Herbert C., and C. L. Lodjic, to Stanray Corp. Telescoping loading and unloading structure for aircraft. 3 184,772, 5-25-65, Cl. 14—71.
- Moore, Ramona B.: *See—*
  - Burdeno, Lawrence T. 3,185,484.
- Morgan, John F.: *See—*
  - Gray, Charles E., Morgan, and O'Neal. 3,184,889.
- Morioka, Isao. Method of manufacturing reliefs by photographic means. 3,185,602, 5-25-65, Cl. 156—58.
- Morpul Research Corp.: *See—*
  - Buckner, Jewell A. 3,185,330.
- Morrill, Harry L., Jr. Auxiliary structure for an automobile seat. 3,185,523, 5-25-65, Cl. 297—226.
- Morton Salt Co.: *See—*
  - O'Connor, Donal J. 3,184 895.
- Mortrude, Albert D., to Clark Equipment Co. Passenger accommodations for vehicle. 3,184,766, 5-25-65, Cl. 5—118.
- Mosaic Tile Co., The: *See—*
  - Macdonald, Herbert G., Barbour, Claus, and Cleverly. 3,185,748.

Mosby, Raymond J.: *See—*
  Fiore, Joseph V., Hooper, Monte, Mosby, and Schmidt. 3,185,162.
Moss, John I., and W. J. Browner, to Relax-Acizor, Inc. Generator with blocking oscillator controls. 3,185,939, 5–25–65, Cl. 331—52.
Motorola, Inc.: *See—*
  Brewster, Franklin C. 3,185,916.
  Leitich, Albert J., and Tanner. 3,185,886.
Motzel, Werner. Composition for use as additive to animal drinking water and feed. 3,185,572, 5–25–65, Cl. 99—2.
Moughty, John J.: *See—*
  Downey, David F., and Moughty. 3,184,775.
Mounce, George R.: *See—*
  Leaver, Eric W., and Mounce. 3,185,847.
Mueller Co.: *See—*
  Bowan, Walte J., and Floren. 3,185,501.
  Mueller, Frank H., and Smith. 3,185,171.
Mueller, Frank H., and J. J. Smith, to Mueller Co. Valving structure for fire hydrant. 3,185,171, 5–25–65, Cl. 137—283.
Mueller, Walter E. Wall form, waler, and a waler bracket. 3,185,433, 5–25–65, Cl. 249—210.
Muir, Hubert M.: *See—*
  Kleber, Eugene V., Vickery, and Muir. 3,185,652.
Mulcahey, Robert L., to United Aircraft Corp. Cooling arrangement for crossover tubes. 3,184,918, 5–25–65, Cl. 60—39.66.
Muller, Donald C., to C. F. Butz, Engineering. Pedestrian carrier. 3,185,108, 5–25–65, Cl. 104—25.
Muller, Frank A. Clamp for pantograph arms. 3,184,850, 5–25–65, Cl. 33—25.
Müller, Helmut: *See—*
  Gabler, Rudolf, and Müller. 3,185,656.
Muller, Josef, and K. Löwenstein, to Trilux-Lenze K.G. Lamp for fluorescent illumination. 3,185,835, 5–25–65, Cl. 240—51.11.
Munro, Albert E., N. N. Crounse, and E. M. Davis, to Sterling Drug Inc. Process for obtaining crystal violet lactone. 3,185,709, 5–25–65, Cl. 260—343.4.
Nunson, George M.: *See—*
  Johnson, Nels A. 3,185,303.
Murr, William C., and G. J. Ellers, Jr., to Bio-Engineering, Inc. Electric tonometer. 3,184,960, 5–25–65, Cl. 73—80.
Mutaffis, Thomas D., F. Carluccio, and M. E. Chiddix, to General Aniline & Film Corp. Method for preparing alkali metal pyrrolidones. 3,185,706, 5–25–65, Cl. 260—326.5.
Mutter, William W.: *See—*
  Bennett, William O., Mutter, and Van Haaften. 3,184,981.
NSU Motorenwerke Aktiengesellschaft: *See—*
  Paschke, Hanns-Dieter. 3,185,387.
Nagamori, Tadayuki. Illuminated screw driver. 3,185,832, 5–25–65, Cl. 240—6.46.
Nagin, Harold, to Reliance Steel Products Co. Grating retaining means. 3,185,269 5–25–65, Cl. 189—84.
Nagy, John J. Tape splicer. 3,185,608, 5–25–65, Cl. 156—506.
Nakazawa, Masao, to Taisho Pharmaceutical Co., Ltd. Preparation of purified lipid A from crude lipid A derived from lipopolysaccharides of gram-negative bacteria. 3,185,624, 5–25–65, Cl. 167—78.
Nakazawa, Yuzo: *See—*
  Honda, Seiichi, and Nakazawa. 3,185,943.
Nalco Chemical Co.: *See—*
  O'Shea, Patrick J. 3,184,813.
  Reuter, Raymond. 3,184,815.
Nashua Corp.: *See—*
  Baumann, Michael F., and Lawton. 3,185,583.
  Baumann, Michael F., and Lawton. 3,185,584.
  Baumann, Michael F., and Lawton. 3,185,585.
Nathan, Jacques I., and R. M. Tubiana. Attachment for armchair. 3,185,113, 5–25–65, Cl. 108—47.
Nathan, Jerome, H. L. Helmar, and C. E. Reburn, to The Seeburg Corp. Vending machine. 3,185,280, 5–25–65, Cl. 194—2.
National Cash Register Co., The: *See—*
  Carlson, Carl O., Congleton, and Grafton. 3,185,026.
National Castings Co.: *See—*
  Willison, Donald. 3,185,317.
National Distillers and Chemical Corp.: *See—*
  Commisso, Nicholas D. 3,184,792.
  Kwiatek, Jack, and Mador. 3,185,727.
  Merithew, Lester W., and Corbett. 3,185,609.
National Lock Co.: *See—*
  Buntic, Robert Z. 3,185,359.
National Mine Service Co.: *See—*
  Breithaupt, Richard L., and Thomas. 3,185,324.
National Research Development Corp.: *See—*
  De Brie Perry, Forbes G. 3,184,990.
National Steel Corp.: *See—*
  Fugassi, Lucien A. 3,185,461.
  Hynd, James V. 3,185,456.
Navarro, Gustave. Vehicle suspensions. 3,185,260, 5–25–65, Cl. 188—86.
Nebgen, William H., ⅔ to F. A. Howard, deceased (I. A. and F. A. Howard, Jr., and The Chase Manhattan Bank, executors). Fluid heat transfer system. 3,185,212, 5–25–65, Cl. 165—86.
Nebout, Noel, to Societe Anonyme des Pneumatiques Dunlop. Method and apparatus for fitting bands of fabric or other material around wires for outer covers of pneumatic tyres. 3,185,607, 5–25–65, Cl. 156—443.
Neitzel, Edwin B.: *See—*
  Woods, John P., Neitzel, and Prickett. 3,185,994.
Nelson, Edwin B.: *See—*
  Ford, Franklin C., Nelson, Trimble, and Zizzo. 3,185,063.
Nelson, Fred B., to N. A. Nelson. Well drilling apparatus. 3,185,227, 5–25–65, Cl. 175—243.
Nelson, James A.: *See—*
  Walker, Norman C., and Nelson. 3,185,932.
Nelson, James F.: *See—*
  Logan, Hugh H., Doty, and Nelson. 3,184,762.
Nelson, Norman A.: *See—*
  Nelson, Fred B. 3,185,227.
Nelson, Permil N., to Lynn H. Ewing, d.b.a. Blackhawk Co. Rafter support. 3,184,800, 5–25–65, Cl. 20—1.
Nelson, Permil N., to Lynn H. Ewing, d.b.a. Blackhawk Co. Leaf sprayers. 3,185,397, 5–25–65, Cl. 239—556.
Nettleton, Gilbert H.: *See—*
  Buys, George R., and Nettleton. 3,185,792.
Newman, Barry H., G. J. Spickernell, and G. H. S. Young, to Minister of Aviation in Her Majesty's Government of the United Kingdom of Great Britain. Polyisobutene gas-producing compositions containing aluminium. 3,185,601, 5–25–65, Cl. 149—19.
Newman, Douglas A., and H. F. E. Dixon, to Columbia Ribbon and Carbon Mfg. Co., Inc. Thermographic duplicating process. 3,185,087, 5–25–65, Cl. 101—149.4.
Nicolaides, Christos: *See—*
  Bapseres, Pierre, and Nicolaides. 3,185,732.
Nielsen, Morris L., to Monsanto Co. Amine salts of trimetaphosphimic acid. 3,185,733, 5–25–65, Cl. 260—579.
Niemi, Onni W.: *See—*
  Huber, Charles L., Hitchcock, Niemi, Hoyt, and Turner. 3,185,050.
Niggeloh, Curt. Camera for photographic film. 3,185,054, 5–25–65, Cl. 95—11.
Nilsen, Leif. Spinnaker sail jibe. 3,185,121, 5–25–65, Cl. 114—103.
Nippon Electric Co. Ltd.: *See—*
  Miyagawa, Kiyoshi, and Katagiri. 3,185,987.
Niven, Francis J., Jr.: *See—*
  Williams, Alvie P., Jones, Frisby, and Niven. 3,185,820.
Nolk, Simon P., to Schlumberger Overseas S.A. Apparatus for examining fluid-filled bore holes. 3,184,965, 5–25–65. Cl. 73—152.
Noon, Ivor G.: *See—*
  Stinson, Herman B., Jr., and Noon. 3,185,016.
Nopco Chemical Co.: *See—*
  Dunkel, Morris, Loter, and Klein. 3,185,710.
  Fetscher, Charles A., and Lipowski. 3,185,628.
Norco Inc.: *See—*
  McCarthy, John J. 3,184,816.
Nord-Aviation Societe Nationale de Constructions Aeronautiques: *See—*
  Ravel, Maurice. 3,184,916.
Norden, Walter E. Lawn sweeper. 3,184,777, 5–25–65, Cl. 15—340.
Nordman, Robert G.: *See—*
  Rayfield, Harry F., and Nordman. 3,185,365.
Nordstrom, Carl J., and J. F. Ronnhult, to Scania-Vabis, Aktiebolaget. Vehicle hand brake comprising a servo device inserted in the linkage between the brake and a brake lever cooperating with a locking device. 3,185,264, 5–25–65, Cl. 188—265.
Norris, John W., and W. F. Sieverding, to Lennox Industries Inc. Integral thermostat for indoor comfort equipment. 3,185,393, 5–25–65, Cl. 236—38.
North American Aviation, Inc.: *See—*
  Anderson, Gerald V. 3,185,815.
  Case, Robert O., Jr., and Child. 3,185,982.
  Child, Claude H., and Frasure. 3,185,984.
  Child, Claude H., and Hovda. 3,185,985.
  Flatten, Orris H. 3,185,858.
  Mayer, Stanley W., and McKenzie. 3,185,590.
  Shelley, Rulon G. 3,185,817.
North American Philips Co. Inc.: *See—*
  Attwood, Brian E. 3,185,889.
  Koopman, Harmannus. 3,185,725.
Northern Electric Co Ltd: *See—*
  Lagasse, Joseph L. 3,185,606.
Northern Gas Products Co.: *See—*
  Frantzen, Karl H. 3,184,891.
  Frantzen, Karl H. 3,185,117.
Norton Co: *See—*
  Eves Robert A. 3,184,797.
Norton, Robert K., to Harris-Intertype Corp. Method and apparatus for predetermining settings for ink fountain keys. 3,185,088, 5–25–65, Cl 101—426.
November, Milton H.: *See—*
  Lindemann, Robert E., and November. 3,184,975.
Nuclear Corp. of America: *See—*
  Kleber, Eugene V., Vickery, and Muir. 3,185,652.
Nunn, Frank C., to The Procter & Gamble Co. Easy opening container. 3,185,382, 5–25–65, Cl. 229—051.
Nylock Corp., The: *See—*
  Brightman, John W. 3,185,468.
Oberrauch, Heinz: *See—*
  Durst Julius 3,185,059.
Oberrauch, Luis: *See—*
  Durst, Julius. 3,185,059.
O'Connor, Donal J., to Morton Salt Co. Method of packaging. 3,184,895, 5–25–65, Cl. 53—28.
Odashima, Takeshi: *See—*
  Mamiya, Shigeo, and Odashima. 3,185,796.
Oedjoe Djoerlaman: *See—*
  Davies, Deree F. V., Buchanan, and Oedjoe.. 3,185,529.
Oeland, Ernest N., Jr., to United States of America, Navy. Fail-safe device for porting stored rocket motors. 3,185,036, 5–25–65, Cl 89—1.7.
Office National d'Etudes et de Recherches: *See—*
  Galmiche, Philippe. 3,185,566.
Ogata, Masaru: *See—*
  Kano, Hideo, and Ogata. 3,185,687.
Ohio Brass Co., The: *See—*
  Harmon, Robert W. 3,185,763.
Ohio Crankshaft Co., The: *See—*
  Cachat, John F. 3,185,807.
  Kasper Robert J., and Seyfried. 3,185,811.
  Kelly, Kenneth R., and Fitzgerald. 3,185,855.

Ohio Crankshaft Co., The: *See*—Continued
  Peschel, William F., and Tudbury. 3,185,810.
  Sorensen, Phillips N., and Alberts. 3,185,808.
Ohno, Ko: *See—*
  Kageyama, Hiroh, Okamoto, Iida, and Ohno. 3,185,703.
Okamoto, Hajime: *See—*
  Kageyama, Hiroh, Okamoto, Iida, and Ohno. 3,185,703.
Oki Electric Industry Co., Ltd.: *See—*
  Kamoshida, Masatoshi, and Hayashi. 3,185,774.
O'Laughlin, Morgan P.: *See—*
  Loeb, Abraham P., and O'Laughlin. 3,185,204.
O'Leary, Paul C., to Machinery Center, Inc. Extendible and retractable mounting for rock drills. 3,185,222, 5–25–65, Cl. 173—44.
Olin Mathieson Chemical Corp.: *See—*
  Becker, Edward J., and Cohen. 3,185,713.
  Mayer, Alfred A., and Miller. 3,185,095.
  Pribyl, Edward J., and Turk. 3,185,691.
Oliver Instrument Co.: *See—*
  Garrison, Clifford L. 3,184,860.
Olsen, Emil A. Chain saw cutter bar and method of manufacturing same. 3,185,191, 5–25–65, Cl. 143—32.
Olsen, Norman G., to Allis-Chalmers Mfg. Co. Dozer hydraulic tilt and pitch control. 3,184,869, 5–25–65, Cl. 37—144.
Olsen, Zenny, to Sanders Associates, Inc. Electro-hydraulic servo valve unit. 3,185,167, 5–25–65, Cl. 137—85.
Olson, Harry F., and J. Preston, to Radio Corp. of America. Loudspeakers. 3,185,767, 5–25–65, Cl. 179—1.
Olson, Raymond G., to Ray Laboratories, Inc. Automatic tube bender. 3,184,949, 5–25–65, Cl. 72—302.
Olympia Oyster Co.: *See—*
  McMillin, David C. 3,184,866.
Omilian, Francis A., Jr., to Air Reduction Co., Inc. Opacified powdered insulation. 3,185,334, 5–25–65, Cl. 220—9.
Omnitronics, Inc.: *See—*
  Epstein, Herman, and Trollo. 3,185,911.
O'Neal, Andrew: *See—*
  Gray, Charles E., Morgan, and O'Neal. 3,184,889.
Optical Coating Laboratory, Inc.: *See—*
  Thelen, Alfred J. 3,185,020.
  Thelen, Alfred J., and Apfel. 3,185,834.
Optische Werke, G., Rodenstock: *See—*
  Armbruster, Eugen, and Leitmeier. 3,185,064.
Ording, James R.: *See—*
  Crawford, Thomas H., Ehrlich, and Ording. 3,185,930.
Ormonoterapia Richter S.p.A.: *See—*
  De Ruggieri, Pietro, Gandolfi, and Guzzi. 3,185,684.
Orr, Marion B. Hacksaw blade holder. 3,185,193, 5–25–65, Cl. 145—31.
Orser, Lawrence D., to Chamberlain Corp. Double-wire shelf. 3,185,314, 5–25–65, Cl. 211—153.
Ortega, Charlotte C. Ring-type ball throwing and catching toy. 3,185,479, 5–25–65, Cl. 273—96.
Orwin, Olaf J. B., to Fisher & Ludlow Ltd. Overload clutch or torque limited device. 3,185,275, 5–25–65, Cl. 192—56.
Osborn Carroll H.: *See—*
  Waddell, Russell B., Jr., Osborn, and Medford. 3,185,182.
Osborne, Leonard A., and V. G. Rivers, to Bristol Siddeley Engines Ltd. Methods of making resin reinforced articles. 3,185,605, 5–25–65, Cl. 156—289.
Osdene, Thomas S., to American Home Products Corp. 3-6-diamino - N - (substituted) - 2-quinoxaline carboxamides. 3,185,688, 5–25–65, Cl. 260—250.
O'Shea, Patrick J., to Nalco Chemical Co. Metal casting process. 3,184,813, 5–25–65, Cl. 22—139.
Osinksi, Alex J. Christmas tree stand. 3,185,416, 5–25–65, Cl. 248—44.
Osplack, Joseph J. and R. J. Involute face gearing and involute internal conical gearing. 3,184,988, 5–25–65, Cl. 74—457.
Osplack, Rodman J.: *See—*
  Osplack, Joseph J. and R. J. 3,184,988.
Oster, John, Mfg. Co.: *See—*
  Bradley, Addison B. 3,185,304.
Otis Engineering Corp.: *See—*
  Grimmer, George G., and Schramm. 3,185,219.
Owen, Frederick C. Perimeter wound transformer. 3,185,917, 5–25–65, Cl. 323—45.
Pace, Inc.: *See—*
  Huffman, John W. 3,185,795.
Pacific Scientific Co.: *See—*
  Mescher, Harold E., and Allgeier. 3,185,460.
Pack, Douglas H.: *See—*
  Cook, Melvin A., and Pack. 3,185,017.
Palamidessi, Giorgio: *See—*
  Camerino, Bruno, and Palamidessi. 3,185,686.
Pan American Petroleum Corp.: *See—*
  Craig, Forrest F., Jr., and Lummus. 3,185,634.
Papanicolaou, Nicholas M.: *See—*
  Gunkel, William F., Willey, Christianson, Kirner, Jackson, Cordry, Papanicolaou, Bath, and Visher. 3,185,981.
Parker Pen Co., The: *See—*
  Green, Homer T., and Lawton. 3,185,135.
Parker-Hannifin Corp.: *See—*
  Hastings, Douglas A. 3,185,402.
  Lansky, Zdenek J. 3,185,253.
Parkhurst, Robert F., and W. L. Weber, to Thiokol Chemical Corp. Flexible linear shaped charge for underwater use. 3,185,089, 5–25–65, Cl. 102—24.
Partain, Donald W., and J. E. Yingst, to Thompson Ramo Wooldridge Inc. Vane pump sealing glands. 3,185,102, 5–25–65, Cl. 103—144.
Paschke, Hanns-Dieter, to NSU Motorenwerke Aktiengesellschaft and Wankel G.m.b.H. Apex sealing means. 3,185,387, 5–25–65, Cl. 230—145.
Pase, Hugh H., to The Houston Co. Float valve. 3,185,173, 5–25–65, Cl. 137—443.
Pasquarelli, Aldo: *See—*
  Tessandori, Marco, and Pasquarelli. 3,185,701.
Pass & Seymour, Inc.: *See—*
  Despard, Victor R. 3,185,760.
Paterson, Norman J., to California Research Corp. Hydrocarbon conversion process. 3,185,639, 5–25–65, Cl. 208—68.
Pathe, Theophile. Method of obtaining cinematographic picture, and apparatus therefor. 3,186,002, 5–25–65, Cl. 352—86.
Patmore, James R., and C. R. Killian, to Electronic Associates Inc. Direct coupled high gain transistor amplifier including short circuit protection means. 3,185,934, 5–25–65, Cl. 330—19.
Patrick, Rex E. Door hinge recess jig. 3,184,859, 5–25–65, Cl. 33—197.
Patton, Donald M., to The Lincoln Electric Co. Backup for weld joints. 3,185,369, 5–25–65, Cl. 228—50.
Patton, Edward T. Locking device for blast furnace cooling plates. 3,185,465, 5–25–65, Cl. 266—32.
Paulus, Frank A.: *See—*
  Cromleigh, Ralph, and Paulus. 3,185,970.
Pavlecka, John. Interlocked panel structure. 3,185,267, 5–25–65, Cl. 189—34.
Peavy, Wesley R.: *See—*
  Ellersick, Frederick W., Jr., and Peavy. 3,185,823.
Peck, William G., and R. J. Pegis, to Bausch & Lomb Inc. Linear zoom optical system. 3,185,029, 5–25–65, Cl. 88—57.
Peel, Stuart W. Pet door. 3,184,803, 5–25–65, Cl. 20—16.
Pegis, Richard J.: *See—*
  Peck, William G., and Pegis. 3,185,029.
Peerless Photo Products, Inc.: *See—*
  Pfaff, William A., Arnold, Kniffin, Brewster, and Crouse. 3,185,025.
Pellicciotti, Fernando A., to Socony Mobil Oil Co., Inc. Wind-up reel for flexible conduit. 3,185,399, 5–25–65, Cl. 242—54.
Pelosi, Louis V., to United States of America, Navy. V.F.O. control for generating stable discrete frequencies. 3,185,938, 5–25–65, Cl. 331—11.
Pendleton, James W.: *See—*
  Gamble, Paul E., Rosenthal, and Pendleton. 3,184,791.
Pennington, William R. Novelty headwear. 3,184,757, 5–25–65, Cl. 2—199.
Pennsalt Chemicals Corp.: *See—*
  Frank, Raymond G. 3,184,862.
  Taylor, Kendrick C. 3,185,565.
Pensavecchia, Frank G., to Control Data Corp. Paper drive mechanism in a high speed printer. 3,185,078, 5–25–65, Cl. 101—93.
Pensavecchia, Frank G.: *See—*
  Spitsbergen, Merlin D., and Pensavecchia. 3,185,283.
Pensavecchia, Frank G., and H. R. Barnes, to Control Data Corp. Ribbon drive mechanism. 3,185,088, 5–25–65, Cl. 101—96.
Pepin, Stephen C.: *See—*
  Webb, Ernest C. 3,185,176.
Peppler, William S., to Diamond International Corp. Wrapping apparatus. 3,184,896, 5–25–65, Cl. 53—180.
Peras, Lucien, to Regie Nationale des Usines Renault. Poppet valves of internal combustion engines. 3,185,142, 5–25–65, Cl. 123—188.
Peras, Lucien, to Regie Nationale des Usines Renault. Packing devices comprising fixed and movable elements for rotary engines. 3,185,386, 5–25–65, Cl. 230—145.
Péras, Lucien, to Regie Nationale des Usines Renault. Two-position supporting pegs made of flexible material, more particularly for use in motor vehicles. 3,185,427, 5–25–65; Cl. 248—309.
Perkins, James M., P. F. Graf, and F. R. Braum, to United States of America, Navy. Method of making an expendable electrical connector. 3,184,832, 5–25–65, Cl. 29—155.5.
Perrot, Heinrich, and E. Schucker, to Perrot-Regnerbau G.m.b.H. & Co. Coupling arrangement. 3,185,504, 5–25–65, Cl. 285—105.
Perrot-Regnerbau G.m.b.M. & Co.: *See—*
  Perrot, Heinrich, and Schucker. 3,185,504.
Perry, Richmond E. Method of agglomerating iron ore fines. 3,185,564, 5–25–65, Cl. 75—3.
Peschel, William F., and C. A. Tudbury, to The Ohio Crankshaft Co. Bar end heating apparatus. 3,185,810, 5–25–65, Cl. 219—10.69.
Pet Milk Co.: *See—*
  Hazelton, Burton W. 3,185,340.
Peter, Martin: *See—*
  Jaccarino, Vincent, and Peter. 3,185,900.
Peters, Allan: *See—*
  Dennison, Denny. 3,185,478.
Peters, John, Jr. Safety container for toxic materials. 3,185,534, 5–25–65, Cl. 312—209.
Peters, Lowell E. Receptacle for window sash pivot lock. 3,184,784, 5–25–65, Cl. 16—171.
Peterson, Charles L.: *See—*
  Pine, Robert M., and Peterson. 3,185,007.
Peterson, Edwin F. Shaker apparatus. 3,185,328, 5–25–65, Cl. 214—83.3.
Peterson, Frank G.: *See—*
  Spiro, Lloyd W., and Peterson. 3,185,197.
Peterson, Norman E., and E. E. Courchene, Jr., to Stelma, Inc. Synchronizing system having reversible counter means. 3,185,963, 5–25–65, Cl. 340—168.
Peterson, Robert A., to Caterpillar Tractor Co. Adjustable cable hopper door actuating mechanism. 3,185,528, 5–25–65, Cl. 298—35.
Petrocelli, James A., to Gulf Research & Development Co. Gas chromatographic apparatus. 3,184,953, 5–25–65, Cl. 73—23.1.
Petrucelli, Jilio J. Rotating head-carried toy. 3,184,884, 5–25–65, Cl. 46—51.
Pfaff, G. M., AG: *See—*
  Buchner, Hans. 3,184,870.

Pfaff, William A., F. T. Arnold, E. A. Kniffin, S. S. Brewster, Jr., and G. B. Crouse, to Peerless Photo Products, Inc. Photocopy machine. 3,185,025, 5–25–65, Cl. 88—24.
Pfund, Adolf G., to Sobel Metal Products, Inc. Wire shaping apparatus. 3,185,185, 5–25–65, Cl. 140—106.
Pharmaseal Laboratories: *See—*
  Harautuneian, Andrew. 3,185,179.
Phillips, Davis M., to McGraw-Edison Co. Pole mounted terminal box and sectional lead-in conduit. 3,185,757, 5–25–65, Cl. 174—38.
Phillips, Harry, M. A. Chaloux, and R. A. De Vita, to United Shoe Machinery Corp. Shoe press. 3,184,770, 5–25–65, Cl. 12—33.
Phillips, James W., to Robertshaw Controls Co. Pneumatic function generator. 3,185,168, 5–25–65, Cl. 137—85.
Phillips Petroleum Co.: *See—*
  Goodhue, Lyle D., Louthan, and Cantrel. 3,185,620.
  Gray, Roy A., and Mahan. 3,185,739.
  Hitzman, Donald O. 3,185,215.
  Hitzman, Donald O. 3,185,216.
  Hoch, Robert S. 3,185,218.
  Hubby, John S. 3,185,661.
  Malick, Emil A. 3,185,740.
  Sherk, Fred T., and Cottle. 3,185,742.
  Zuech, Ernest A., and Roberts. 3,185,741.
Piasecki, Thomas A., to Modine Mfg. Co. Sight glass for a radiator. 3,184,971, 5–25–65, Cl. 73—334.
Picard, Jean P., and H. Walter, to United States of America, Army. New method for the preparation of high energy fuel. 3,185,726, 5–25–65, Cl. 260—467.
Piemonte, William J.: *See—*
  Caccavo, Joseph F., and Piemonte. 3,185,154.
Pierce, Aaron E.: *See—*
  Carlton, Louis A., and Pierce. 3,185,997.
Pilkington Bros. Ltd.: *See—*
  Wilcock, John E. 3,185,558.
  Wilcock, John E. 3,185,560.
Pine, Robert M.: *See—*
  Meter, Raymond S., and Pine. 3,185,009.
Pine, Robert M., and C. L. Peterson, to Uarco Inc. Paper control for business machines. 3,185,007, 5–25–65, Cl. 83—163.
Pinero, Emilio P. Three dimensional reticular structure. 3,185,164, 5–25–65, Cl. 135—4.
Pipe Machinery Co., The: *See—*
  Theuerkauf, Fred, and Satava. 3,184,956.
Pirsh, Edward A.: *See—*
  Boll, Richard H., and Pirsh. 3,185,457.
Pittsburgh Plate Glass Co.: *See—*
  Elliott, James H., Stauffer, and Garbin. 3,185,559.
  Saunders, Arnold E., and Wagner. 3,185,586.
Pivacek, William J., to Mobilaid, Inc. Wheel chair with reclining backrest and movable axle associated therewith. 3,185,495, 5–25–65, Cl. 280—34.
Pivacek, William J., to Mobilaid, Inc. Swinging foot rest. 3,185,527, 5–25–65, Cl. 297—429.
Pizzurro, Joseph C.: *See—*
  Abplanalp, Robert H., and Pizzurro. 3,185,350.
Plano Molding Co.: *See—*
  Henning, James L. 3,185,338.
Plant Industries, Inc.: *See—*
  Kortschot, Cornelis. 3,185,581.
Plasser, Franz, J. Theurer, and E. Schubert. Track level indicating device. 3,184,853, 5–25–65, Cl. 33—60.
Plate, John R., to Allis-Chalmers Mfg. Co. Directional hydraulic control valve. 3,185,175, 5–25–65, Cl. 137—596.12.
Pleuger, Friedrich W. Propulsion unit for watercraft. 3,185,122, 5–25–65, Cl. 114—151.
Plourde, Roger P. Apparatus for producing a continuous tubular article. 3,184,793, 5–25–65, Cl. 18—14.
Pneumatiques Dunlop, Societe Anonyme des: *See—*
  Nebout, Noel. 3,185,607.
Polaroid Corp.: *See—*
  Borghesani, Robert S. 3,185,060.
  Curtiss, Alan C. 3,185,055.
  Gold, Nathan, Kagan, and Watters. 3,185,056.
  Land, Edwin H. 3,185,841.
  Mason, Paul B., and Sable. 3,185,066.
  Rogers, Howard G. 3,185,567.
Pollak, George A., and A. Spear, to United States of America, Navy. Beverage reconstituting and dispensing device. 3,185,348, 5–25–65, Cl. 222—95.
Polymer Processes, Inc.: *See—*
  Dames, Carl W., Jr. 3,184,828.
Porter, Joseph W., to General Electric Co. Vacuum-type circuit interrupter with improved arc splitting means. 3,185,797, 5–25–65, Cl. 200—144.
Porter, Joseph W.: *See—*
  Greenwood, Allan N., and Porter. 3,185,799.
Potter, David M.: *See—*
  Lindemann, Robert E., and November. 3,184,975.
Potter, Nicholas B., to Union Carbide Corp. Package. 3,185,300, 5–25–65, Cl. 206—80.
Potter, Rossiter R., R. Ullman, and G. A. Fuller, to AMP Inc. Lead connection for printed circuit board. 3,185,952, 5–25–65, Cl. 339—17.
Potts, John W.: *See—*
  Jones, Curtis A., and Potts. 3,185,563.
Pratt, Donald C., to M & T Chemicals Inc. Multiple roller coating apparatus. 3,185,130, 5–25–65, Cl. 118—228.
Precision Valve Corp.: *See—*
  Abplanalp, Robert H., and Pizzurro. 3,185,350.
Premier Carton Co.: *See—*
  Fobiano, Frank E., and Haven. 3,185,381.
Press, Carl, to Alfred Teves, K.G. Disk brake. 3,185,244, 5–25–65, Cl. 188—73.
Press, Carl: *See—*
  Schanz, Hans, and Press. 3,185,263.
Preston, John: *See—*
  Olson, Harry F., and Preston. 3,185,767.
Preusser, Henry M., and E. B. Denton, to Weyerhaeuser Co. Heater for pavement markers. 3,185,455, 5–25–65, Cl. 263—11.
Pribyl, Edward J., and C. F. Turk, to Olin Mathieson Chemical Corp. Cycloocteno-pyrimidines. 3,185,691, 5–25–65, Cl. 260—256.4.
Price, William R. Wick-type heater device. 3,185,144, 5–25–65, Cl. 126—350.
Prickett, Tom, Jr.: *See—*
  Woods, John P., Neitzel, and Prickett. 3,185,994.
Prifogle, John S., to Belden Mfg. Co. Connector. 3,185,953, 5–25–65 Cl. 339—59.
Printz, Warren G., D. Rubenis, and W. Lithgo, to Diamond International Corp. Slitting mechanisms for endless web material. 3,185,010, 5–25–65, Cl. 83—482.
Prober, Maurice, to General Electric Co. Cyanoalkyl polysiloxanes. 3,185,663, 5–25–65, Cl. 260—46.5.
Prober, Maurice, to General Electric Co. Organosilicon compounds containing nitrile radicals. 3,185,719, 5–25–65, Cl. 260—448.2.
Procter & Gamble Co., The: *See—*
  Broaddus, Charles D. 3,185,744.
  Nunn, Frank C. 3,185,382.
Provi, Mike A., to The Brearley Co. Portable stand-up type bathroom scale. 3,185,233, 5–25–65, Cl. 177—239.
Pruscha, Calman S.: *See—*
  Broadway, Ralph H. 3,185,445.
Pulaski, Harry S.: *See—*
  Singleton, Robert W., and Pulaski. 3,184,821.
Pullman Inc.: *See—*
  Ferris, Ray L. 3,185,421.
  Hess, Francis M., Arentze, and Shaver. 3,185,111.
Pure Oil Co., The: *See—*
  Ayers, George W., and Allinder. 3,185,667.
  Bernard, George G., and Holbrook. 3,185,214.
  Folkins, Hillis O., and Beber. 3,185,301.
  Remes, Nathaniel L., and Martinek. 3,185,724.
Quaas, Joseph F., and D. D. Zielik, to Eutectic Welding Alloys Corp. Soldering flux. 3,185,598, 5–25–65, Cl. 148—26.
Quaker Oats Co., The: *See—*
  Brown, Lloyd H. 3,184,814.
Quest, James H.: *See—*
  Margulies, Herman. 3,185,373.
Quick, Lester K. Refrigeration and heating system. 3,185,209, 5–25–65, Cl. 165—30.
Quisenberry, Carter E., to American Machine and Foundry Co. Tricycle frame. 3,185,498, 5–25–65, Cl. 280—291.
R-N Corp.: *See—*
  Jones, Curtis A., and Potts. 3,185,563.
Raamot, Jaan: *See—*
  Lueft, Walter B., and Raamot. 3,185,781.
Radek, John R., to Ready Metal Mfg. Co. Display rack for carpeting. 3,185,309, 5–25–65, Cl. 211—46.
Radiation, Inc.: *See—*
  Lewis, Bernard L. 3,185,852.
Radio Corp. of America: *See—*
  Amodei, Juan J., and Burns. 3,185,864.
  Chang, Kern K. N. 3,185,937.
  Evans, John, Jr. 3,185,879.
  Olson, Harry F., and Preston. 3,185,767.
  Schade, Otto H., Sr. 3,185,954.
  Sie, Charles H., and Werner. 3,185,977.
  Ur, Hanoch. 3,185,860.
Ragan, Robert O., and R. F. Trant, to Waldorf Paper Products Co. Bags. 3,185,384, 5–25–65, Cl. 229—58.
Raillard, Heinz: *See—*
  Abbott, Harold W., and Raillard. 3,185,940.
Ramalho, Conrad D., to Hoffman Electronics Corp. Navigation bearing indicator system. 3,185,988, 5–25–65, Cl. 343—106.
Rand Associates, Inc.: *See—*
  Rand, Morris. 3,185,115.
Rand Morris, to Rand Associates, Inc. Display stand. 3,185,115, 5–25–65, Cl. 108—108.
Randall, Albert E. J.: *See—*
  Graf, Ernest H. H., and Randall. 3,185,039.
Rankins, Everett V.: *See—*
  Jay, George, and Rankins. 3,185,074.
Ratte, Robert W., to Water Gremlin Co. Line attachment and safety device for fishing tackle. 3,184,880, 5–25–65, Cl. 43—44.86.
Rau, Allen E. Dining room table. 3,185,829, 5–25–65, Cl. 240—4.
Ravel, Maurice, to Nord-Aviation Societe Nationale de Constructions Aeronautiques. Self-effacing nozzle for ramjet. 3,184,916, 5–25–65, Cl. 60—35.6.
Ray, Emma J., and E. Irich. Illuminated compacts. 3,185,831, 5–25–65, Cl. 240—6.45.
Ray Laboratories, Inc.: *See—*
  Olson, Raymond G. 3,184,949.
Rayfield, Harry F., and R. G. Nordman, to Burroughs Corp. Magnetic tape transport. 3,185,365, 5–25–65, Cl. 226—50.
Ready Metal Mfg. Co.: *See—*
  Radek, John R. 3,185,309.
Reburn, Charles E.: *See—*
  Nathan, Jerome, Helmar, and Reburn. 3,185,280.
Redington, Rowland W., and P. J. van Heerden, to General Electric Co. Electron optics for infrared camera tubes. 3,185,891, 5–25–65, Cl. 313—65.
Reed, Ralph H.: *See—*
  Doukas, George, and Reed. 3,185,754.
Reed, Robert D., to John Zink Co. Direct fired air heater. 3 185,458, 5–25–65, Cl. 263—19.
Reese, Terrell J. Load transfer hitch for vehicles. 3,185,499, 5–25–65, Cl. 280—406.

Regie Nationale des Usines Renault: *See—*
  Peras, Lucien. 3,185,142.
  Peras, Lucien. 3,185,386.
  Peras, Lucien. 3,185,427.
Reid, Alton C.: *See—*
  Masterson, Horace T., Crook, and Reid. 3,185,958.
Reid, Robert J. Device for use in the preparation of layer drinks. 3,185,189, 5–25–65, Cl. 141—100.
Reifers, Richard F., to Diamond International Corp. Molded pulp articles. 3,185,871, 5–25–65, Cl. 229—2.5.
Reifers, Richard F., to Diamond International Corp. Method and mold for controlled stock formation in a pulp molding operation. 3,185,615, 5–25–65, Cl. 162—228.
Reifers, Richard F., and W. J. Hrozenchik., to Diamond International Corp. Contoured board egg carton. 3,185,380, 5–25–65, Cl. 229—28.
Reifers, Richard F., and H. A. Lord, to Diamond International Corp. Molded pulp egg carton. 3,185,870, 5–25–65, Cl. 229—2.5.
Reisnecker, Ludwig, to Robert Bosch, G.m.b.H. Slip--ring assembly. 3,185,878, 5–25–65, Cl. 310—232.
Reiss, Raymond H., Sr., and P. R. T. Hahn, to Reiss, Routhor, Corp. Comprehensive drawer guiding system. 3,185,530, 5–25–65, Cl. 308—3.6.
Reiss, Routhor, Corp.: *See—*
  Reiss, Raymond H, Sr., and Hahn. 3,185,530.
Reitmeier, George F.: *See—*
  Bird, Walter W., Reitmeier, and Baschmann. 3,185,165.
Relax-Acizor, Inc.: *See—*
  Moss, John I., and Browner. 3,185,939.
Reliance Steel Products Co.: *See—*
  Nagin, Harold. 3,185,269.
Remes, Nathaniel L., and T. W. Martinek, to The Pure Oil Co. Process for manufacture of organoboron halides and esters. 3,185,724, 5–25–65, Cl. 260—462.
Remy, E. P., & Cie.: *See—*
  Dardaine, Edgard J. M., and Malibeaux. 3,185,328.
Renfro, Julian C.: *See—*
  Fletcher, George H. 3,184,801.
Reni, Cesare: *See—*
  Codignola, Franco, Reni, and Ackermann. 3,184,900.
Rentsch, Samuel B., Jr. Protective gear. 3,185,149, 5–25–65, Cl. 128—144.
Research-Cottrell, Inc.: *See—*
  Damyan, Charles W. 3,185,181.
Resnick, Joseph V., to International Research & Development Co. Method of coating a blowing agent onto the surface of polystyrene pellets. 3,185,588, 5–25–65, Cl. 117—100.
Reuter, Hermann, to Brown, Boveri & Cie Aktiengesellschaftf. Shroud-blading for turbines or compressors. 3,185,441, 5–25–65, Cl. 253—77.
Reuter, Raymond, to Nalco Chemical Co. Metal casting process. 3,184,815, 5–25–65, Cl. 22—139.
Reymes-Cole, John M. R. Circular knitting machines. 3,184,929, 5–25–65, Cl. 66—50.
Reynolds, R. J. Tobacco Co.: *See—*
  Mims, Samuel S. 3,185,708.
Rheinfrank, John J., to Xerox Corp. Magnetic recording. 3,185,777, 5–25–65, Cl. 179—100.2.
Rheinmetall G.m.b.H., Firma: *See—*
  Zehfeld, Paul. 3,185,094.
Rhodes, Sammy J., to Caterpillar Tractor Co. Control lever holding means. 3,184,989, 5–25–65, Cl. 74—471.
Rhone–Poulenc S.A.: *See—*
  Balitrand, Georges, and Lafont. 3,185,657.
Ribovich, John: *See—*
  Damon, Glenn H., Ribovich, and Herickes. 3,185,018.
Riccardi, Benjamin A.: *See—*
  Cantrall, Edward W., Bernstein, and Riccardi. 3,185,683.
Rice Engineering & Operating, Inc.: *See—*
  Rice. Ivan M. 3,185,437.
Rice, Ivan M., to Rice Engineering & Operating, Inc. Noncorrosive valve. 3,185,437, 5–25–65, Cl. 251—327.
Rich, Charles M.: *See—*
  McKee, Chester W., and R. W., and Rich. 3,185,907.
Richardson, Joseph G.: *See—*
  Brooks, Fred A., Jr., and Richardson. 3,185,217.
Richardson-Merrell Inc.: *See—*
  Monsimer, Harold G. 3,185,711.
Richter, Kenneth E., and T. A. Craig, to Union Carbide Corp. Gas-shielded electric arc welding. 3,185,812, 5–25–65, Cl. 219—74.
Rickard, Donn J., to Brown Citrus Machinery Corp. Juice extractor. 3,185,072, 5–25–65, Cl. 100—58.
Rickatson, William: *See—*
  Hampson, George C., and Rickatson. 3,185,649.
Rickless, Nathan, to Bausch & Lomb Inc. Modified Petzval type photographic objective. 3,185,032, 5–25–65, Cl. 88—57.
Rickless, Nathan: *See—*
  Betensky, Ellis I., and Rickless. 3,185,031.
Rickless, Nathan, and P. L. Ruben, to Bausch & Lomb Inc. Symmetrical projection objective. 3,185,030, 5–25–65, Cl. 88—57.
Rieger, Frederic L., and P. H. Hamisch, Jr., to The Monarch Marking System Co. Fastener gun. 3,185,367, 5–25–65, Cl. 227—95.
Riley, William T., to United States Steel Corp. Measuring device for particulate material. 3,184,974, 5–25–65, Cl. 73—432.
Ring, Wallace H., to Sorenson Research Corp. Intravenous catheter placement unit and method of use. 3,185,152, 5–25–65, Cl. 128—214.
Risdom Mfg. Co., The: *See—*
  Venus, Frank, Jr. 3,185,356.
Ritzerfeld, Gerhard: *See—*
  Ritzerfeld, Wilhelm, and G. 3 185,086.
Ritzerfeld, Wilhelm, and G. Method and arrangement for reproducing an image. 3,185,086, 5–25–65, Cl. 101—149.4.
Rivers, Victor G.: *See—*
  Osborne, Leonard A., and Rivers. 3,185,605.
Robbins, Frank E.: *See—*
  Bennett, Foster C., Robbins, and Warnock. 3,184,811.
  Bennett, Foster C., Robbins, and Warnock. 3,184,812.
Robbins, Richard J. Shaft sinking apparatus. 3,185,226, 5–25–65, Cl. 175—102.
Roberts, Ralph R., and E. C. Gerlitz. Paint brush holder. 3,185,311, 5–25–65, Cl. 211—66.
Roberts, William G.: *See—*
  Zuech, Ernest A., and Roberts. 3,185,741.
Robertshaw Controls Co.: *See—*
  Phillips, James W. 3,185,168.
Robertson, H. H. Co.: *See—*
  Johnson, Thomas B. 3,184,838.
Robinson Clay Product Co., The: *See—*
  Anderson, Richard H. 3,185,491.
Robinson, Leon H., Jr., to Esso Production Research Co. Apparatus for drilling boreholes. 3,185,224, 5–25–65, Cl. 175—2.
Rodis, Franz: *See—*
  Cremer, Joseph, and Rodis. 3,185,638.
Rodman, C. J.: *See—*
  Rodman, Clarence J., and Broome. 3,185,611.
Rodman, Clarence J., and T. K. Broome, ½ to C. J. Rodman, d.b.a. Alliance Tool Co. Composite coreboard and process for producing same. 3,185,611, 5–25–65, Cl. 161—36.
Rodwell, William: *See—*
  Long, Everett, and Rodwell. 3,185,631.
Roeder, Delmar M. Pad for nose rest for eyeglasses. 3,186,001, 5–25–65. Cl. 351—138.
Roeser, Arnold C.: *See—*
  Wiggins, Robert B., and Roeser. 3,185,618.
Rogallo, Francis M. Flexible wing vehicle configurations. 3,185,412, 5–25–65, Cl. 244—49.
Rogers, Elmer B., to United States of America, Army. Electric charge flow meter. 3,184,967, 5–25–65, Cl. 73—194.
Rogers, Howard G., to Polaroid Corp. Photographic color process and product. 3,185,567, 5–25–65, Cl. 96—3.
Rohm & Haas G.m.b.H.: *See—*
  Krebs, Josef. 3,185,633.
Rohrer, Thomas R.: *See—*
  Schornstheimer, Robert E., and Rohrer. 3,184,807.
Rolfe, Herbert E., Jr.: *See—*
  Shook, Jackson A., and Rolfe. 3,185,110.
Ronai, Bela: *See—*
  Bartfai, Bela M., Gonczi, Hajdu, Markovics, Ronai, and Szucs. 3,185,591.
Ronci, Fernando M. Molded composite heel and removable tap. 3,184,865, 5–25–65, Cl. 36—34.
Ronnhult, John F.: *See—*
  Nordstrom, Carl J., and Ronnhult. 3,185,264.
Roos, Jan, to High Voltage Engineering Corp. Positive corona stabilization apparatus for an electrostatic voltage generator. 3,185,915, 5–25–65, Cl. 322—2.
Rose, Howard E.: *See—*
  Headings, William W., and Rose. 3,185,105.
Rosemount Engineering Co.: *See—*
  Werner, Frank D. 3,184,968.
Rosen, Leo, to Anelex Corp. Digital coordinate resolver. 3,184,847, 5–25–65, Cl. 33—1.
Rosenblatt, Joseph: *See—*
  Schwartz, Daniel M., and Rosenblatt. 3,185,242.
Rosenburg, Charles W., Jr., to F. N. Burt Co., Inc. Collapsible cartons. 3,185,378, 5–25–65, Cl. 229—22.
Rosenfeld, Morton M. Generator and ventilation means. 3,185,873, 5–25–65, Cl. 310—66.
Rosenthal, Louis A.: *See—*
  Gambie, Paul E., Rosenthal, and Pendleton. 3,184,791.
Rosmarin, Ernest S., to Super Sagless Spring Corp. Multiposition reclining chair. 3,185,520, 5–25–65, Cl. 297—85.
Ross, Harold M. Process of preparing stabilized jelly filling. 3,185,576, 5–25–65, Cl. 99—129.
Ross, Russel. Stand with improved sock cymbals. 3,185,014, 5–25–65, Cl. 84—422.
Rössner, Wolfgang, G. Schaller, and E. Ulrich, to Siemens-Schuckertwerke Aktiengesellschaft. Method and apparatus for overlay welding. 3,185,814, 5–25–65, Cl. 219—76.
Rotaflex (Great Britain) Ltd.: *See—*
  Stern, Bernard. 3,185,837.
Rotron Mfg. Co., Inc.: *See—*
  Harris, Dwight E. 3,185,875.
Rouayheb, George M.: *See—*
  Lively, Lawrence D., and Rouayheb. 3,185,845.
Rounding, James R., Jr.: *See—*
  Gustafson, Walter R., McMillen, Rounding, and Shore. 3,185,980.
Roussel-UCLAF: *See—*
  Goffinet, Bernard, and Amiard. 3,185,729.
Rovang, Wallace G., and A. F. Laurie. Digester capping valve. 3,185,436, 5–25–65, Cl. 251—172.
Rowekamp, Edward F., to Lodge & Shipley Corp. Transfer feed conveyor. 3,185,288, 5–25–65, Cl. 198—203.
Ruben, Paul L.: *See—*
  Rickless, Nathan, and Ruben. 3,185,030.
Rubenis, Dimitrijs: *See—*
  Printz, Warren G., Rubenis, and Lithgo. 3,185,010.
Rubow, Eugene W., deceased, by L. V. R. Rubow, special administratrix, to American Can Co. Sheet feeding mechanism. 3,185,472, 5–25–65, Cl. 271—11.
Rubow, La Verne R.: *See—*
  Rubow, Eugene W. 3,185,472.
Ruhl, Noah E. Fishing and trolling rod. 3,184,879, 5–25–65, Cl. 43—42.74.
Rule, Eric: *See—*
  Suellentrop, Fred J., Brown, and Rule. 3,184,959.
Rumble, Robert C.: *See—*
  Hoyer, Wilmer A., and Rumble. 3,185,849.

- Runco, Joseph C.: *See—*
  - Shriner, William E., and Runco. 3,184,897.
- Runco, Joseph C., and H. W. Hoehn, to Anchor Hocking Glass Corp. Mechanism for feeding closures. 3,185,285, 5–25–65, Cl. 198—52.
- Ruschig, Heinrich, K. Schmitt, L. Ther, and W. Meixner, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning. 3-O-tolyl-4-(3H)-pyrimidones. 3,185,689, 5–25–65, Cl. 260—251.
- Russell, James T. Playing card holder and dispenser. 3,185,482, 5–25–65, Cl. 273—148.
- Rust, Donald. Berry harvesting apparatus. 3,184,908, 5–25–65, Cl. 56—330.
- Rutledge, William W. Building wall material. 3,185,297, 5–25–65, Cl. 206—59.
- Rutty, Edward C., to The Stanley Works. Sealing tool. 3,184,997, 5–25–65, Cl. 81—9.1.
- Ryan Aeronautical Co., The: *See—*
  - Chatelain, Maurice G. 3,185,989.
- Ryan, John W. Teeter-totter for dolls. 3,185,524, 5–25–65, Cl. 297—247.
- SCM Corp.: *See—*
  - Lindberg, Charles A. 3,185,533.
- S-F-D Laboratories, Inc.: *See—*
  - McDowell, Hunter L., and Sidoti. 3,185,890.
  - Wilczek, Andrew S. 3,185,884.
  - Wilczek, Andrew S., and Doyle. 3,185,885.
- Sable, Arthur J.: *See—*
  - Mason, Paul B., and Sable. 3,185,066.
- Sadofsky, Michael, to American Machine & Foundry Co. Magnetic inspection device having varaible intensity audible alarm means responsive to spacing between device and test piece. 3,185,923, 5–25–65, Cl. 324—37.
- Sagarin, Philip H., to Valve Corp. of America. Aerosol dispenser and cap construction therefor. 3,185,349, 5–25–65, Cl. 222—153.
- Saginomiva Seisakusho Co., Ltd.: *See—*
  - Mamiya, Shigeo, and Odashima. 3,185,796.
- Saiko, Alphons. Water sport towing device. 3,185,474, 5–25–65, Cl. 272—32.
- Sajovec, Frank M., Jr., to Curtiss-Wright Corp. Electromagnetically actuated normally disengaged spring clutches. 3,185,276, 5–25–65, Cl. 192—84.
- Salerno, Paul G., to Vapor Corp. Motor operated power transfer switch. 3,185,790, 5–25–65, Cl. 200—92.
- Sanders Associates, Inc.: *See—*
  - Olsen, Zenny. 3,185,167.
- Sanders, Robert. Navigation instrument. 3,184,845, 5–25–65, Cl. 33—1.
- Sankyo Co., Ltd.: *See—*
  - Iwasaki, Kanesuke. 3,185,231.
  - Iwasaki, Kanesuke. 3,185,232.
- Santa Barbara Research Center: *See—*
  - Johnson, Thomas H. 3,185,842.
- Sarett, Lewis, R. G. Strachan, and R. Hirschmann, to Merck & Co., Inc. Steroid glucuronides and processes for preparing the same. 3,185,682, 5–25–65, Cl. 260—239.55.
- Sass, Edward J., to United States of America, Atomic Energy Commission. Mini-cam tracer plate. 3,184,849, 5–25–65, Cl. 33—23.
- Satava, Donald M.: *See—*
  - Theuerkauf, Fred, and Satava. 3,184,856.
- Saunders, Arnold E., and W. E. Wagner, to Pittsburgh Plate Glass Co. Coated glass sheets. 3,185,586, 5–25–65, Cl. 117—54.
- Sawyer, Edgar W., Jr., and W. L. Haden, Jr., to Minerals & Chemicals Philipp Corp. Drilling fluid and mud thickening agent therefor. 3,185,642, 5–25–65, Cl. 252—8.5.
- Sawyer, Joseph A., to Tibbets Industries, Inc. Magnetic adjusting means for magnetic translating device. 3,185,779, 5–25–65, Cl. 179—114.
- Scania-Vabis, Aktiebolaget: *See—*
  - Nordstrom, Carl J., and Ronnhult. 3,185,264.
- Scarr, John, Jr., to Gulf Research & Development Co. Dual mercury switch having common conductor and spiral bimetal actuation. 3,185,794, 5–25–65, Cl. 200—138.
- Schade, Otto H., Sr., to Radio Corp. of America. Electron tube and socket. 3,185,954, 5–25–65, Cl. 339—90.
- Schallenberg, Elmer E., and R. G. Lacoste, to Texaco Inc. Ethylene diamine salts of thiophosphonic acids. 3,185,728, 5–25–65, Cl. 260—501.
- Schaller, Gert: *See—*
  - Rössner, Wolfgang, Schaller, and Ulrich. 3,185,814.
- Schans, Hans, and C. Press, to Alfred Teves K.G. Spot-type disk brake. 3,185,263, 5–25–65, Cl. 188—106.
- Scharre, Edward W., to Anaconda Aluminum Co. Easily openable package and closures therefor. 3,185,578, 5–25–65, Cl. 99—171.
- Schatz, Ralph H., R. G. Adams, and W. H. Smyers, to Esso Research and Engineering Co. Process for preparing a graft polymer. 3,185,659, 5–25–65, Cl. 260—33.6.
- Scheidt, James E.: *See—*
  - Lohbauer, Kenneth R., and Scheidt. 3,184,920.
- Schell, James D., to Clark Equipment Co. Swing mechanism for cranes and the like. 3,184,980, 5–25–65, Cl. 74—102.
- Schenk, Raymond L., Jr., to Union Carbide Corp. Reinforced cell closure. 3,185,595, 5–25–65, Cl. 136—133.
- Schiffer, Silvan, to S. Schiffer, and M. Levitan. Marine engine cooling system. 3,185,123, 5–25–65, Cl. 115—.5.
- Schiffman, Louis, to Amchem Products, Inc. Method of coating metal. 3,185,596, 5–25–65, Cl. 148—6.16.
- Schilling, Hugh K., to Horton Mfg. Co., Inc. Stop brake. 3,185,256, 5–25–65, Cl. 188—71.
- Schindler, Walter, and H. Blattner, to Geigy Chemical Corp. Azepine derivatives. 3,185,679, 5–25–65, Cl. 260—239.
- Schlage, Ernest L., to Schlage Lock Co. Lock box. 3,185,296, 5–25–65, Cl. 206—46.
- Schlage Lock Co.: *See—*
  - Schlage, Ernest L. 3,185,296.
- Schlotter, Thomas C., Jr.: *See—*
  - Deranah, Howard B., Schlotter, and Beach. 3,185,655.
- Schlumberger Overseas S.A.: *See—*
  - Nolk, Simon P. 3,184,965.
- Schmid & Wezel: *See—*
  - Wezel, Hansgeorg. 3,184,785.
- Schmidt, Otto K.: *See—*
  - Fiore, Joseph V., Hooper, Monte, Mosby, and Schmidt. 3,185,162.
- Schmidt, Robert J.: *See—*
  - Ellis, William H., and Schmidt. 3,184,957.
- Schmitt, Karl: *See—*
  - Ruschig, Heinrich, Schmitt, Ther, and Meixner. 3,185,689.
- Schmitz, Henry, and R. L. De Vault, to Bristol-Myers Co. Peptide. 3,185,675, 5–25–65, Cl. 260—112.
- Schneider, Friedrich. Apparatus for fastening a bushing in an eye-hole of a wagon tongue. 3,184,941, 5–25–65, Cl. 72—126.
- Schneider, Hans-Dieter, to Fernseh G.m.b.H. Scanning transistor circuit. 3,185,888, 5–25–65, Cl. 315—27.
- Schofield, Hubert P. Identification tags. 3,184,874, 5–25–65, Cl. 40—301.
- Schoonmaker, Lewis E.: *See—*
  - Hunt, Charles A., and Schoonmaker. 3,185,874.
- Schornstheimer, Robert E., and T. R. Rohrer, to The B. F. Goodrich Co. Gasket containing a permanent magnet. 3,184,807, 5–25–65, Cl. 20—69.
- Schramm, Harry B.: *See—*
  - Grimmer, George G., and Schramm. 3,185,219.
- Schubert, Egon: *See—*
  - Plasser, Franz, Theurer, and Schubert. 3,184,853.
- Schucker, Emil: *See—*
  - Perrot, Heinrich, and Schucker. 3,185,504.
- Scoles, George W., and J. A. Kelly, to The Dow Chemical Co. Emulsifiable pesticidal composition. 3,185,562, 5–25–65, Cl. 71—2.6.
- Scope, Inc.: *See—*
  - Williams, Richard E., and Gerig. 3,185,755.
- Scott, Thomas R., to Commonwealth Scientific and Industrial Research Organization. Production of alumina. 3,185,545, 5–25–65, Cl. 23—141.
- Schrader, Gerhard, to Farbenfabriken Bayer Aktiengesellschaft. Thiophosphonic acid esters or ester amides and processes for the production thereof. 3,185,721, 5–25–65, Cl. 260—461.
- Schrader, Gerhard, to Farbenfabriken Bayer Aktiengesellschaft. Phosphonic and phosphinic acids and their thio analogues containing a dichloro-benzylthio-ether group. 3,185,722, 5–25–65, Cl. 260—461.
- Schwartz, Daniel M., and J. Rosenblatt, to The Eimco Corp. Cooling system for earth handling vehicle. 3,185,242, 5–25–65, Cl. 180—54.
- Scully-Anthony Corp.: *See—*
  - Dziedzic, Harry R., and Alisauskis. 3,185,494.
- Scully-Jones and Co.: *See—*
  - Dziedzic, Harry R. 3,185,492.
- Sear, Brian E., to Sperry Rand Corp. Waveform level gating circuit employing a two tunnel-diode flip-flop controlled by another two tunnel-diode flip-flop. 3,185,863, 5–25–65, Cl. 307—88.5.
- Sears, Anthony. Direct current homopolar generator. 3,185,877, 5–25–65, Cl. 310—115.
- Sebastani, Peter. Measuring instrument having a resiliently mounted feeler and a spring loaded pointer beam and optical indication. 3,184,855, 5–25–65, Cl. 33—147.
- Secrest, Laurence W.: *See—*
  - Mercer, Robert T., Secrest, and Zsebo. 3,185,006.
- Secrest, Ralph T. Comminuting pump. 3,185,100, 5–25–65, Cl. 103—96.
- Seeburg Corp., The: *See—*
  - Nathan, Jerome, Helmar, and Reburn. 3,185,280.
- Seed, John B.: *See—*
  - Brander, Ian R., and Seed. 3,185,188.
- Seehausen, Jobst W.: *See—*
  - Kuhne, Heinz A., Seehausen, and von Gebhardi. 3,185,210.
- Sellers, Ralph F.: *See—*
  - Harding, James, Sellers, and Meyers. 3,185,666.
- Seng Co., The: *See—*
  - Meinhardt, James R. 3,185,429.
- Senne, David L., to W. J. Voit Rubber Corp. Underwater suction gun for trapping Marine life. 3,184,878, 5–25–65, Cl. 43—4.
- Serrano, Edwin A. Extrusion control system. 3,184,788, 5–25–65, Cl. 18—2.
- Servel, Inc.: *See—*
  - Coleman, Joseph J., Wilke, Steinhoff, and Brandeland. 3,185 593.
- Sessions Clock Co., The: *See—*
  - Hunt, Charles A., and Schoonmaker. 3,185,874.
- Seyfried, Richard F.: *See—*
  - Kasper, Robert J., and Seyfried. 3 185,811.
- Shanks, John L., D. E. Soland, and K. N. Burns, to Esso Production Research Co. Computing seismic information. 3,185,249, 5–25–65, Cl. 181—.5.
- Shaper, Harry B., to Dyna-Empire Inc. Height gage. 3,184 858, 5–25–65, Cl. 33—172.
- Shapiro, Hymin: *See—*
  - Brown, Jerome E., De Witt, and Shapiro. 3,185 718.
- Sharp, David H. Safety cap and closure. 3,185,333, 5–25–65, 215—82.
- Shaver, William R.: *See—*
  - Hess Francis M., Arentze, and Shaver. 3 185,111.
- Shaw, Gilbert. Method for manufacture of spatulated fibre. 3,184,822, 5–25–65, Cl. 28—72
- Shaw, Truman B., to Anderson Electric Corp. Cable connectors. 3,185,762, 5–25–65 Cl. 174—71.
- Sheehan, Joseph P., to Cornell-Dubilier Electric Corp. Tubular electrical condensers with overlap seam laminated casing. 3,185,759, 5–25–65, Cl. 174—52.

- Sheets, Ray H., to Jackes-Evans Mfg. Co. Valve means for waterers and the like. 3,185,134, 5–25–65, Cl. 119—80.
- Shelley, Rulon G., to North American Aviation, Inc. Gyroscope filtering and computing system. 3,185,817, 5–25–65, Cl. 235—61.5.
- Sher, Irving H., to Institute for Scientific Information. Voice controlled lock mechanism. 3,184,937, 5–25–65, Cl. 70—277.
- Sherk, Fred T., and J. E. Cottle, to Phillips Petroleum Co. Separation and recovery of tertiary amylenes. 3,185,742, 5–25–65, Cl. 260—677.
- Sherkin Morris A. Sealing apparatus for tires. 3,184,794, 5–25–65, Cl. 18—18.
- Sherlock, Edward, to Imperial Chemical Industries Ltd. Heterocyclic phosphorothioates. 3,185,699, 5–25–65, Cl. 260—309.
- Sherman, Rallston M., to The Silent Glow Oil Burner Corp. Combustion chamber with hollow duct and means to recirculate combustion products therearound. 3,185,200, 5–25–65, Cl. 158—1.
- Shionogi & Co., Ltd.: *See—*
  - Kano, Hideo, and Ogata. 3,185,687.
- Shirafuji, Ryoko: *See—*
  - Inaba, Seiuemon, Ito, and Shirafuji. 3,185,439.
- Shobert, Samuel M. Method of making arc extinguishing sleeve. 3,184,829, 5–25–65, Cl. 29—155.5.
- Shoffstall, Edgar D. Shell casing holder. 3,185,019, 5–25–65, Cl. 86—44.
- Shook, Jackson A., and H. E. Rolfe, Jr., to Evans Products Co. Freight bracing apparatus. 3,185,110, 5–25–65, Cl. 105—369.
- Shoor, Bernard A., to Endevco Corp. Transducer. 3,185,869, 5–25–65, Cl. 310—8.4.
- Shore, Leo: *See—*
  - Gustafson, Walter R., McMillen, Rounding, and Shore. 3,185,980.
- Shore, Louis L. Apparatus for mixing dental amalgam and separating excess mercury therefrom. 3,185,462, 5–25–65, Cl. 266—1.
- Short Howard D., and S. Major, to Kosset Carpets Ltd. Dyeing of pile fabrics. 3,185,084, 5–25–65, Cl. 101—115.
- Shriner, William E., and J. C. Runco, to Anchor Hocking Glass Corp. Container pressure device. 3,184,897, 5–25–65, Cl. 53—331.5.
- Sibler, Guentew W., to Baldwin-Lima Hamilton Corp. Extrusion press. 3 184,944, 5–25–65, Cl. 72—255.
- Sidoti, Joseph E.: *See—*
  - McDowell, Hunter L., and Sidoti. 3,185,890.
- Sie, Charles H., and L. H. Werner, to Radio Corp. of America. Analog to digital converters. 3,185,977, 5–25–65, Cl. 340—347.
- Siebertz, Karl to Siemens & Halske Aktiengesellschaft. Method of producing an electric contact with a semiconductor device. 3,184,831, 5–25–65, Cl. 29—155.5.
- Siegler, Lear, Inc.: *See—*
  - Knapp, Theodore F. 3 185 910.
- Siemens & Halske Aktiengesellschaft: *See—*
  - Siebertz, Karl. 3,184,831
- Siemens-Schuckertwerke Aktiengesellschaft: *See—*
  - Brunner, Julius. 3,185,920.
  - Jahn, Gunther. 3,185,909.
  - Rössner, Wolfgang, Schaller and Urich. 3,185,814.
  - Weissheimer, Herbert, and Abolins. 3,185,872.
- Sieverding, Wayne F.: *See—*
  - Norris, John W., and Sieverding. 3,185,393.
- Sieving, Alfred W.: *See—*
  - Campbell John J., Hendrickson, and Sieving. 3,185,261.
- Sihvonen, Kauno E., and A. W. Fischer, to Consolidated Electrodynamics Corp. Modular oscillograph. 3,186,000, 5–25–65, Cl. 346—109.
- Sikorski, Mathew E., to Bell Telephone Laboratories, Inc. Pressure transducers. 3,184,972, 5–25–65 Cl. 73—398.
- Silberkuhl, Wilhelm J., and E. Haeussler. Concrete construction element and process for making the same. 3,184,892, 5–25–65, Cl. 50—52.
- Silent Glow Oil Burner Corp., The: *See—*
  - Sherman Rallston M. 3,185,200.
- Silverman, Abraham, to Bentley Products, Inc. Cantilever seat. 3,185,305, 5–25–65, Cl. 211—13.
- Siman, Alfred W., and R. Stegmann, Jr., to Worthington Corp. Refrigeration compressor valve service. 3,185,388, 5–25–65, Cl. 230—228.
- Simmons, Ernest P. Gun sight. 3,184,851, 5–25–65, Cl. 33—47.
- Simms Motor Units Ltd.: *See—*
  - Miracki, Zdislav S., and Lindsay. 3,185,141.
- Simpson, Victor R.: *See—*
  - Furman, Frank J., and Simpson. 3,185,818.
- Singer, Franz, to Compur-Werk Gesellschaft mit beschrankter Haftung & Co. Single lens reflex camera. 3,185,058, 5–25–65, Cl. 95—42.
- Singleton, Robert W., and H. S. Pulaski, to Celanese Corp. of America. Treatment of filamentary material. 3,184,821, 5–25–65, Cl. 28—72.
- Sippel, Robert J., to International Business Machines Corp. Transducer positioning system utilizing record with interspersed data and positioning information. 3,185,972, 5–25–65, Cl. 340—174.1.
- Sirius: *See—*
  - Blanchard, Jean M. 3,185,446.
- Sitz, Gilbert C., to AMP Inc. Connector feeding device. 3,184,950, 5–25–65 Cl. 72—331.
- Skelton, Frank C. Jr., to Warner Electric Brake & Clutch Co. Magnet structure. 3,185,899, 5–25–65, Cl. 317—158.
- Slaten, John M., and C. L. Waal; said Waal assor. to said Slaten. Vein stripper. 3,185 155, 5–25–65, Cl. 128—303.
- Sloop Clifford E. Transformer mounting base assembly. 3,185,424, 5–25–65, Cl. 248—205.
- Smart, Raymond C. Vertical lift aircraft. 3,185,410, 5–25–65, Cl. 244—17.23.
- Smirl, Richard L., to Borg-Warner Corp. Hydraulic coupling with lock-up clutch. 3,185,273, 5–25–65, Cl. 192—3.2.
- Smirra, Johannes R. Cone labyrinth valve. 3,185,438, 5–25–65, Cl. 251—334.
- Smith, A. O., Corp.: *See—*
  - Johnson, Arthur E. 3,185,918.
  - Kenney, Robert W. 3,185,344.
  - Sullivan, James D. 3,185,587.
- Smith, Clifford E. Variable transmission power plant. 3,184,995, 5–25–65, Cl. 74—751.
- Smith, Daniel L., to Home Products, Inc. Brace and lid for receptacle pouring spout. 3,185,360, 5–25–65, Cl. 222—528.
- Smith, Fred, and E. F. Graham, to The Regents of the University of Minnesota. Preservation of animal semen. 3,185,623, 5–25–65, Cl. 167—53.2.
- Smith, Gerald L. Vehicle warning system. 3,185,992, 5–25–65, Cl. 343—228.
- Smith, John J.: *See—*
  - Mueller, Frank H., and Smith. 3,185,171.
- Smith, John W., and D. F. Cleary, to Hogan Faximile Corp. Recorder power supply. 3,185,912, 5–25–65, Cl. 321—18.
- Smith, Lester L. Roof ridge ventilator. 3,185,070, 5–25–65, Cl. 98—42.
- Smith, Ralph C., to Ingersoll-Rand Co. Spark pumps. 3,185,106, 5–25–65, Cl. 103—255.
- Smith, Ronald D.: *See—*
  - Fawcett, Frank S., and Smith. 3,185,734.
- Smith, Thomas R., to The Maytag Co. Clothes washing machine having a cycloidal gear case. 3,184,934, 5–25–65, Cl. 68—133.
- Smith, William S., Jr., and F. D. Cox, to Southern Aggregate Placing & Welding Inc. Method of distributing filter media into a filter basin. 3,185,327, 5–25–65, Cl. 214—152.
- Smyers, William H.: *See—*
  - Schatz, Ralph H., Adams, and Smyers. 3,185,659.
- Snyder, Joseph A. Aggregate mixer construction. 3,185,451, 5–25–65, Cl. 259—179.
- Sobel Metal Products, Inc.: *See—*
  - Pfund, Adolf G. 3,185,185.
- Societa Farmaceutici Italia: *See—*
  - Bernardi, Luigi, Goffredo, and Bosisio. 3,185,695.
  - Camerino, Bruno, and Palamidessi. 3,185,686.
- Societa Italiana Resine: *See—*
  - Codignola, Franco, Reni, and Ackermann. 3,184,900.
- Societe Alsacienne de Constructions Mecaniques: *See—*
  - Gauvain, Roger. 3,184,799.
- Societe d'Applications Generales d'Electricite et de Mecanique: *See—*
  - Berjon, Pierre R. 3,185,765.
- Société Francaise des Produits Pour Catalyse: *See—*
  - Bosc, Robert, and Belon. 3,185,651.
- Societe Industrielle de Brevets et d'Études S.I.B.E.: *See—*
  - Mennesson, Andre L. 3,185,452.
  - Mennesson, Andre L. 3,185,453.
- Societe National des/Petroles d'Aquitaine: *See—*
  - Bapseres, Pierre, and Nicolaides. 3,185,732.
- Socony Mobil Oil Co., Inc.: *See—*
  - Pellicciotti, Fernando A. 3,185,399.
- Sodeco, Soc'ete des Compteurs de Geneve: *See—*
  - Auer, Ulrich W. 3,184,982.
- Soland, Duane E.: *See—*
  - Ikard, Wallace L., and Soland. 3,185,957.
  - Shanks, John L., Soland, and Burns. 3,185,249.
- Sollich, Helmut, to Baker Perkins Holdings Ltd. Apparatus for decorating filled chocolates, pastry, and the like. 3,185,129, 5–25–65, Cl. 118—14.
- Sonobond Corp.: *See—*
  - Jones, James B., and DePrisco. 3,184,841.
- Sorensen, Phillips N., and R. P. Alberts, to The Ohio Crankshaft Co. Inductor for hardening gear teeth. 3,185,808, Cl. 219—10.43.
- Sorenson, James L. Intravenous catheter placement unit. 3,185,150, 5–25–65, Cl. 128—214.
- Sorenson Research Corp.: *See—*
  - Czorny, Vasil P. 3,185,151.
  - Ring, Wallace H. 3,185,152.
- South, Donald A. Aluminum molding for door and window frames. 3,185,270, 5–25–65, Cl. 189—85.
- Southcott, Marvin A., and C. Lashinco, Jr. Apparatus for bending plastic pipe. 3,184,796, 5–25–65, Cl. 18—19.
- Southern Aggregate Placing & Welding Inc.: *See—*
  - Smith, William S., Jr., and Cox. 3,185,327.
- Southern States, Inc.: *See—*
  - Howell, John C. 3,185,804.
- Spanel, Abraham N., to International Latex Corp. Universal stretch girdle with abdominal stress control. 3,185,159, 5–25–65, Cl. 128—521.
- Spear, Alexander: *See—*
  - Pollak George A., and Spear. 3,185,348.
- Spears, Willard B. Vending machine. 3,185,279, 5–25–65, Cl. 194—1.
- Spence, Henry U. Stern steering for hydraulic jet boat. 3,185,124, 5–25–65, Cl. 115—12.
- Sperling, Herman G., to Honeywell Inc. Control apparatus for restoration of brightness in electroluminescent cells. 3,185,893, 5–25–65, Cl. 315—246.
- Sperry Rand Corp.: *See—*
  - Bean, Harley F. 3,185,403.
  - Borkum, David B. 3,185,859.
  - Liles, Clarence E. 3,185,104.
  - Sear, Brian E. 3,185,863.
- Spickernell, Graham J.: *See—*
  - Newman, Barry H., Spickernell, and Young. 3,185,601.
- Spindler, Clemens E. Collapsible and adjustable machine framework construction. 3,185,422, 5–25–65, Cl. 248—124.
- Spiro, Lloyd W., and F. G. Peterson, to Lockheed Aircraft Corp. Modular protective cover. 3,185,197, 5–25–65, Cl. 150—52.

- Spitsbergen, Merlin D., to Control Data Corp. Hammer control means in high speed line printers. 3,185,081, 5–25–65, Cl. 101—93.
- Spitsbergen, Merlin D., and H. I. Craig, to Control Data Corp. Hammer magnet gate system in high speed printers using transistor circuits. 3,185,080, 5–25–65, Cl. 101—93.
- Spitsbergen, Merlin D., and F. G. Pensavecchia, to Control Data Corp. Paper advance control circuit in high speed printers. 3,185,283, 5–25–65, Cl. 197—133.
- Sporck, Claus L., to The Lodge & Shipley Co. Metal working. 3,184,940, 5–25–65, Cl. 72—68.
- Spring, Hans, to Watts Regulator Co. Motor mounting arrangement for liquid circulator. 3,185,099, 5–25–65, Cl. 103—87.
- Square D Co.: *See*—
  - Bowman, Robert J., and Mekelburg. 3,185,806.
- Stafford, Steward L., to Allied Chemical Corp. Organofluoro borates and boranes. 3,185,730, 5–25–65, Cl. 260—543.
- Stahl, Sebald K., to Caterpillar Tractor Co. Wheel drive mechanism. 3,184,994, 5–25–65, Cl. 74—674.
- Stal Refrigeration Aktiebolag: *See*—
  - Loberg, Torsten. 3,185,389.
- Stalker, Kenneth W., and R. A. Young, to Goodman Mfg. Co. Shuttle car. 3,185,325, 5–25–65, Cl. 214—83.36.
- Stamicarbon N.V.: *See*—
  - Kaasenbrood, Petrus J. C. 3,185,731.
- Standard Brands Inc.: *See*—,
  - Ellis, Earle B., and Chesney. 3,185,194.
- Standard Oil Co. (Indiana): *See*—
  - McKinney, Aubrey R. 3,185,669.
  - McKinney, Aubrey R. 3,185,670.
  - Meyer, Delbert H., and Mehalso. 3,185,668.
- Standard Oil Co., (Ohio) The: *See*—
  - Frazier, David. 3,184,899.
  - Standish, Norman W., and Cross. 3,185,648.
  - Stevens, Donald G., King, and Miller. 3,185,636.
- Standish, Norman W., and G. G. Cross, to The Standard Oil Co. (Ohio). Deicer composition. 3,185,648, 5–25–65, Cl. 252—70.
- Stanley Works, The: *See*—
  - Rutty, Edward C. 3,184,997.
- Stanray Corp.: *See*—
  - Moore, Herbert C., and Lodjic. 3,184,772.
- Sta-Rite Products, Inc.: *See*—
  - Allard, Gordon H. 3,185,132.
- Stauffer Chemical Co.: *See*—
  - Tilles, Harry, and Antognini. 3,185,720.
- Stauffer, Lawrence H.: *See*—
  - Elliott, James H., Stauffer, and Garbin. 3,185,559.
- Staunau, Heinz. Method of forming concrete pile in situ. 3,184,924, 5–25–65, Cl. 61—53.6.
- Steegmans, Paul J., to Gevaert Photo-Producten N.V. Device for stretching thermoplastic films. 3,184,787, 5–25–65, Cl. 18—1.
- Steelcase, Inc.: *See*—
  - Higgins, Robert H. 3,185,307.
- Stegmann, Rudolph, Jr.: *See*—
  - Siman, Alfred W., and Stegmann. 3,185,388.
- Stein, Joseph A., to Bacharach Industrial Instrument Co. Filter gauge. 3,185,041, 5–25–65, Cl. 92—94.
- Stein, Lawrence: *See*—
  - Fields, Paul R., Zirin, and Stein. 3,185,548.
- Steinberger, Dora. Combined brassiere and girdle attached together by zipper means. 3,185,156, 5–25–65, Cl. 128—438.
- Steinhoff, Ernest F.: *See*—
  - Coleman, Joseph J., Wilke, Steinhoff, and Brandeland. 3,185,593.
- Stelma, Inc.: *See*—
  - Peterson, Norman E., and Courchene. 3,185,963.
- Sterling Drug Inc.: *See*—
  - Baker, Claude W. 3,185,626.
  - Munro, Albert E., Crounse, and Davis. 3,185,709.
- Stern, Bernard, to Rotaflex (Great Britain) Ltd. Electric light fittings. 3,185,837, 5–25–65, Cl. 240—52.
- Sternbeck, Olaf, to Telefonaktiebolaget L M Ericsson. Electric condenser embedded in a thermosetting resin and provided with a protector breakable by an interior overpressure. 3,185,905, 5–25–65, Cl. 317—256.
- Stettner & Co.: *See*—
  - Gans, Heinrich W. 3,185,904.
- Stevens, Donald G., G. E. King, and A. F. Miller, to The Standard Oil Co. (Ohio). Removal of saturated carbonyls from acrylonitrile. 3,185,636, 5–25–65, Cl. 202—57.
- Stewart, Byron: *See*—
  - La Combe, Edward M., and Stewart. 3,185,743.
- Stewart, George W. Shell core forming apparatus. 3,184,809, 5–25–65, Cl. 22—10.
- Stewart, William H. Clamps or straps for conduits and the like. 3,185,420, 5–25–65, Cl. 248—74.
- Stinson, Herman B., Jr., and I. G. Noon; 20% to W. H. Magidson. Chord teaching device. 3,185,016, 5–25–65, Cl. 84—478.
- Stoddard, William G., and A. J. De Glas, to Dynamics Corp. of America. Crystal cage assembly. 3,185,870, 5–25–65, Cl. 310—9.4.
- Stone, Joseph J., Jr., to A. B. Dick Co. Method and means for making reproductions. 3,185,999, 5–25–65, Cl. 346—74.
- Stone, Wilfred S.: *See*—
  - Thomson, John E. 3,184,768.
- Strachan, Robert G.: *See*—
  - Sarett, Lewis, Strachan, and Hirschmann. 3,185,682.
- Straub, Harold E., and E. F. Averill, to Titus Mfg. Corp. Air distribution devices. 3,185,068, 5–25–65, Cl. 98—40.
- Straub, Harold E., and E. F. Averill, to Titus Mfg. Corp. Air distribution devices. 3,185,069, 5–25–65, Cl. 98—40.
- Struble, Glenn E.: *See*—
  - Weyman, Robert D., and Struble. 3,185,480.
- Struble, Glenn E., to Diamond International Corp. Method of producing intermediate partitioned panel carton. 3,185,048, 5–25–65, Cl. 93—37.
- Struble, Glenn E., and E. F. Borgemenke, to Diamond International Corp. Method for producing and assembling a multi-compartmented container. 3,185,047, 5–25–65, Cl. 93—37.
- Stuart, Frank A.: *See*—
  - Lowe, Warren, and Stuart. 3,185,643.
- Suburban Propane Gas Corp.: *See*—
  - Anton, Mark. 3,184,922.
- Suckanov, Donat K., to Vsesojuzny nauchno issledovatelsky Institut podjemno transportnoho mashinostrojenija. Conveyor with self-unloading cars for various-size loads. 3,185,287, 5–25–65, Cl. 198—154.
- Suellentrop, Fred J., A. E. Brown, and E. Rule, to Lockheed Aircraft Corp. Velocity of sound meter. 3,184,959, 5–25–65, Cl. 73—53.
- Sullivan, James D., to A. O. Smith Corp. Method of preventing hydrogen penetration into steel. 3,185,587, 5–25–65, Cl. 117—68.
- Sumter, Chester A. Combination battery carrier and voltmeter. 3,185,921, 5–25–65, Cl. 324—29.5.
- Suozzo, Leonard S. Spring support device. 3,185,417, 5–25–65, Cl. 248—54.
- Super Sagless Spring Corp.: *See*—
  - Katz, Alex J. 3,184,765.
  - Rosmarin, Ernest S. 3,185,520.
- Super-Temp Corp.: *See*—
  - Buckingham, Edgar C. 3,185,163.
- Sutton, Sidney D., to Veedip Ltd. Manufacture of latices, dispersions and compounds of polymeric organic materials containing metal. 3,185,751, 5–25–65, Cl. 264—301.
- Sweet, Ronald L.: *See*—
  - Jaffee, Edward E., and Sweet. 3,185,694.
- Swenson, Carl A. Derailleur guard. 3,184,993, 5–25–65, Cl. 74—611.
- Swenson, Oscar W., to The Western Union Telegraph Co. Tape crimper. 3,185,764, 5–25–65, Cl. 178—17.
- Sweo, Benjamin J., and J. H. Ginther, to Ferro Corp. Method for raw material pre-heating for glass melting. 3,185,554, 5–25–65, Cl. 65—17.
- Sylvania Electric Products, Inc.: *See*—
  - Altman, Roy F. 3,185,597.
  - Feinstein, Lester. 3,185,883.
- Symmank, William D., to Yumbo, Societe dite. Earthmoving machine having protected turntable seal. 3,184,867, 5–25–65, Cl. 37—103.
- Syntex Corp.: *See*—
  - Knox, Lawrence H 3,185,681.
  - Knox, Lawrence H. 3,185,714.
- Szlashta, Joseph. Sheet metal duct. 3,185,506, 5–25–65, Cl. 285—183.
- Szucs, Josef: *See*—
  - Bartfai, Bela, M., Gonczi, Hajdu, Markovics, Ronai, and Szucs. 3,185,591.
- Taisho Pharmaceutical Co., Ltd.: *See*—
  - Nakazawa, Masao. 3,185,624.
- Tanner, De Loss J.: *See*—
  - Leitich, Albert J., and Tanner. 3,185,886.
- Tanoue, Tatsuo. Plow device. 3,185,220, 5–25–65, Cl. 172—66.
- Taub, William, and S. Vromen. Alpha-keto-gamma-lacetone derivatives. 3,185,712, 5–25–65, Cl. 260—343.6.
- Taylor, Hugh P., and J. C. Davis, Jr., to United States of America, Air Force. Sum and difference frequency computers for amplitude modulators. 3,185,929, 5–25–65, Cl. 328—133.
- Taylor, James S., and W. A. Turner, to United States Steel Corp. Portable scraper for gripper dies of strip welder. 3,184,826, 5–25–65, Cl. 29—81.
- Taylor, Kendrick C., to Pennsalt Chemicals Corp. Method and apparatus for safe operation of vacuum chambers. 3,185,565, 5–25–65, Cl. 75—93.
- Tee-Pak, Inc.: *See*—
  - Ives, Clifford E. 3,184,786.
- Tektronix, Inc.: *See*—
  - Kobbe, John R. 3,185,887.
- Teleflex Inc.: *See*—
  - Bomberger, Arthur L. 3,184,991.
  - Kompanek, Andrew J., Jr., Machate, and Zieber. 3,184,986.
- Telefonaktiebolaget L. M. Ericsson: *See*—
  - Dahlblom, Rolf A., and Lillsunde. 3,185,771.
  - Edstrom, Nils H. 3,185,772.
  - Sternbeck, Olaf. 3,185,905.
- Telsta Corp.: *See*—
  - Eitel, Jay M. 3,185 443.
  - Eitel, Jay M. 3,185,444.
- Terlet, René H., to International Business Machines Corp. Photosensitive two state circuits and systems. 3,185,850, 5–25–65, Cl. 250—209.
- Terwilliger George E., to General Electric Co. Methods and apparatus for automatically threading strip rolling mills. 3,184,938, 5–25–65, Cl. 72—11.
- Tessandori, Marco, and A. Pasquarelli, to Aziende Colori Nazionali Affini ACNA S.p.A. Preparation of water-soluble phthalocyanine sulfonamide dyestuffs. 3,185,701, 5–25–65, Cl. 260—314.5.
- Teves Alfred, K.G.: *See*—
  - Press, Carl. 3,185,244.
  - Schanz, Hans, and Press. 3,185,263.
- Texaco Inc.: *See*—
  - Beavon, David K. 3,185,640.
  - Knowles, Edwin C., and Kay. 3 185,644.
  - Schallenberg, Elmer E., and Lacoste. 3,185,728.

- Texas Instruments Inc.: *See*—
  - Byrne, William R., and Brillon. 3,184,840.
  - Fairbairn, John D. 3,184,824.
  - Little, William A., and Watelski. 3,184,823.
- Thelen, Alfred J., to Optical Coating Laboratory, Inc. Three layer anti-reflection coating. 3,185,020, 5–25–65, Cl. 88—1.
- Thelen, Alfred J., and J. H. Apfel, to Optical Coating Laboratory, Inc. Light source. 3,185,834, 5–25–65, Cl. 240—41.35.
- Ther, Leopold: *See*—
  - Ruschig, Heinrich, Schmitt, Ther, and Meixner. 3,185,689.
- Theurer, Josef: *See*—
  - Plasser, Franz, Theurer, and Schubert. 3,184,858.
- Theuerkauf, Fred, and D. M. Satava, to The Pipe Machinery Co. Microgauge. 3,184,856, 5–25–65, Cl. 33—169.
- Thiers, Robrecht J., and D. A. Claeys, to Gevaert Photo-Production N.V. Process of preserving photographic gelatinous compositions from decomposition. 3,185,571, 5–25–65, Cl. 96—110.
- Thikol Chemical Corp.: *See*—
  - Parkhurst, Robert F., and Weber. 3,185,089.
  - Weber, William L. 3,185,090.
- Thomas, Arthur H., Co.: *See*—
  - Haack, Alfred. 3,185,550.
- Thomas, Earl A., to Ex-Cell-O Corp. Container with a gable top closure. 3,185,375, 5–25–65, Cl. 229—17.
- Thomas, Howard J.: *See*—
  - Breithaupt, Richard L., and Thomas. 3,185,824.
- Thompson, James S., to Thompson Ramo Wooldridge Inc. Focal isolation monochromator employing accentuation of longitudinal chromatic abberation. 3,185,021, 5–25–65, Cl. 88—14.
- Thompson Ramo Wooldridge, Inc.: *See*—
  - Conrad, Theodore T. 3,184,861.
  - Partain, Donald W., and Yingst. 3,185,102.
  - Thompson, James S. 3,185,021.
- Thomson, John E., ⅓ to W. S. Stone and, A. S. Zummer. Combination collapsible boat and carrying case. 3,184,768, 5–25–65, Cl. 9—2.
- Thorn, Richard P., to Ford Mfg. Co. Base for resilient load suspension. 3,185,415, 5–25–65, Cl. 248—21.
- Thornton, William E., and I. R. Cherry, to Avionics Research Products Corp. Electromagnetic flowmeter. 3,184,966, 5–25–65, Cl. 73—194.
- Thuesen, Niel C. Valve-reciprocating cage with guide means therefor. 3,185,139, 5–25–65, Cl. 123—90.
- Thurmond, Ray H.: *See*—
  - McDonald, William L., and Thurmond. 3,185,825.
- Tibbets Industries, Inc.: *See*—
  - Sawyer, Joseph A. 3,185,779.
- Tien, Jack M. 3′,6′-diaminofluoran derivatives of α-lactam. 3,185,696, 5–25–65, Cl. 260—295.
- Tilles, Harry, and J. Antognini, to Stauffer Chemical Co. Asymmetric thiolcarbamates. 3,185,720, 5–25–65, Cl. 260—455.
- Timblin, Lloyd O.: *See*—
  - Florey, Quentin L., and Timblin. 3,184,789.
- Tire Equipment Mfg. Corp.: *See*—
  - Haessler, Walter M. 3,185 487.
- Titus, Charles H., to General Electric Co. Electric circuit interrupter of the vacuum type with series-related arcing gaps. 3,185,798, 5–25–65, Cl. 200—144.
- Titus, Charles H., to General Electric Co. Vacuum type circuit interrupter with improved vapor-condensing shielding. 3,185,800, 5–25–65, Cl. 200—144.
- Titus Mfg. Corp.: *See*—
  - Straub, Harold E., and Averill. 3,185 068.
  - Straub, Harold E., and Averill. 3,185,069.
- Todesca, Roger R.: *See*—
  - McCaughna, James R., and Todesca. 3,185,986.
- Toledo Scale Corp.: *See*—
  - Bell, Robert E., Carroll, and Gallo. 3,185,229.
  - Williams, Lawrence S. 3,185,236.
- Toyo Communication Equipment Co., Ltd.: *See*—
  - Honda, Seiichi, and Nakazawa. 3,185,943.
- Toyo Rubber Industry Co., Ltd., The: *See*—
  - Araki Katsuji. 3 184 790.
- Toyotsushinki Kabushiki Kaisha (known as Toyo Communication Equipment Co., Ltd.): *See*—
  - Honda, Seiichi, and Nakazawa. 3,185,943.
- Trailmobile Inc: *See*—
  - Turnbull, Donald M., Bertolini, and Carr. 3,185,519.
- Trainer, Robert L., to The Kendall Co. Radiopaque suture package. 3,185,299, 5–25–65, Cl. 206—63.3.
- Trant, Robert F.: *See*—
  - Ragan, Robert O., and Trant. 3,185,384.
- Trebilcock, John W., to E. I. du Pont de Nemours and Co. Preparation of Werner complexes of chromium and alkenyl monocarboxylic acids. 3,185,717, 5–25–65, Cl. 260—438.
- Triax Co., The: *See*—
  - Chasar, Anthony R., and Mehrbrodt. 3,185,320.
- Trilux-Lenze K.G.: *See*—
  - Muller, Josef, and Löwenstein. 3,185,835.
- Trimble, William M.: *See*—
  - Ford, Franklin C., Nelson, Trimble, and Zizzo. 3,185,063.
- Trollo, Andrew E.: *See*—
  - Epstein Herman, and Trollo. 3,185,911.
- Trorel Mfg. Co.: *See*—
  - Faulhaber, Roland A. 3,185,522.
- Trout, Horace Q., and A. W. Yodis, to Allied Chemical Corp. Manufacture of metal fluorides. 3,185,543, 5–25–65, Cl. 23—88.
- Tubiana, Robert M.: *See*—
  - Nathan, Jacques I., and Tubiana. 3,185,113.
- Tudbury, Chester A.: *See*—
  - Peschel, William F., and Tudbury. 3,185,810.
- Turk, Chester F.: *See*—
  - Pribyl, Edward J., and Turk. 3,185,691.
- Turnage, Howard C., and B. Vossen, to Melpar, Inc. Coaxial filter. 3,185,944, 5–25–65, Cl. 333—73.
- Turner, Eugene L., to Bausch & Lomb Inc. Transparency mount. 3,184,873, 5–25–65, Cl. 40—158.
- Turner, Lyman H.: *See*—
  - Huber, Charles L., Hitchcock, Niemi, Hoyt, and Turner. 3,185,050.
- Turner, William A.: *See*—
  - Taylor, James S., and Turner. 3,184,826.
- Turnbull, Donald M., W. A. Bertolini, and G. W. Carr, to Trailmobile Inc. Platform trailer. 3,185,519, 5–25–65, Cl. 296—28.
- Tyreman, Neville: *See*—
  - Komander, Alfons A., and Tyreman. 3,185,685.
- Uarco, Inc.: *See*—
  - Meter, Raymond S., and Pine. 3,185,009.
  - Pine, Robert M., and Peterson. 3,185,007.
- Uhl, Donald A., 50% to M. D. Mehin. Fluid actuated impact device. 3,185,223, 5–25–65, Cl. 173—125.
- Ullman, Robert: *See*—
  - Potter, Rossiter R., Ullman, and Fuller. 3,185,952.
- Ullmer, Harold J. Receptacle for bottles. 3,185,319, 5–25–65, Cl. 214—6.
- Ulrich, Erhard: *See*—
  - Rössner Wolfgang, Schaller, and Ulrich. 3,185,814.
- Ultek Corp.: *See*—
  - Hauser, Hugo. 3,185,435.
- Unda, Anstalt: *See*—
  - Lundh, Karl G. 3,185,098.
- Underwood, Francis O.: *See*—
  - Bennett, Richard L., and Underwood. 3,185,965.
  - Bennett, Richard L., and Underwood. 3,185,966.
- Union Bag-Camp Paper Corp.: *See*—
  - Crane, William B., Jr. 3,185,295.
- Union Carbide Corp.: *See*—
  - Breck, Donald W., Castor, and Milton. 3,185,540.
  - Gamble, Paul E., Rosenthal, and Pendleton. 3,184,791.
  - Gray, Charles E., Morgan, and O'Neal. 3,184,889.
  - Harding, James, Sellers, and Meyers. 3,185,666.
  - Horn, Christian F. 3,185,671.
  - Kennedy, Harry E. 3,185,813.
  - Klun, Godfrey H. 3,185,351.
  - La Combe, Edward M., and Stewart. 3,185,743.
  - Leis, Donald G., Magnus, and Fritz. 3,185,735.
  - Potter, Nicholas B. 3,185,300.
  - Richter, Kenneth E., and Craig. 3,185,812.
  - Schenk, Raymond L., Jr. 3,185,595.
  - Urry, Lewis F. 3,185,594.
- Union Pump Co.: *See*—
  - Yohpe, Reinhard A. 3,185,103.
- Union Tank Car Co.: *See*—
  - Kryzer, Benjamin H. 3,185,302.
- Unisearch Ltd.: *See*—
  - Davies, Derec F. V., Buchanan, and Oedjoe. 3,185,529.
- United Aircraft Corp.: *See*—
  - Bruun, Eugene R., Flanders, and Marcus. 3,185,169.
  - Caouette, Zephirin A., and Fitton. 3,184,917.
  - Huckins, Ralph A., and May. 3,185,510.
  - Mulcahey, Robert L. 3,184,918.
- United Kingdom Atomic Energy Authority: *See*—
  - Bradley, Norman. 3 185,632.
  - Long, Evertt, and Rodwell. 3,185,631.
  - Welsher, Ronald A. G., Carter, and Salt. 3,185,509.
- United Shoe Machinery Corp.: *See*—
  - Phillips, Harry, Chaloux, and De Vita. 3,184,770.
- United States of America
  - Agriculture: *See*—
    - Hanrahan, Francis P., Bell, and Webb. 3,185,580.
  - Air Force: *See*—
    - Hammond, David L. 3,185,037.
    - Harpell, George F. 3,185,866.
    - Taylor, Hugh P., and Davis. 3,185,929.
  - Army: *See*—
    - Bird, Walter W., Reitmeier, and Baschmann. 3,185,165.
    - Coyle, Michael J. 3,185,928.
    - Picard, Jean P., and Walter. 3,185,726.
    - Rogers, Elmer B. 3,184,967.
    - Wright, William H., Jr. 3,185,945.
  - Atomic Energy Commission: *See*—
    - Fields, Paul R., Zirin, and Stein. 3,185,548.
    - Ford Franklin C., Nelson, Trimble, and Zizzo. 3,185,063.
    - Sass, Edward J. 3,184,849.
  - Interior: *See*—
    - Florey, Quentin L., and Timblin. 3,184,789.
  - National Aeronautics and Space Administration: *See*—
    - Groth, Willis G. 3,185,028.
    - Low, Charles A., Jr., and Mickelsen. 3,184,915.
  - Navy: *See*—
    - Coyle, Forrest E., and Hodges. 3,185,868.
    - Cushing, Vincent J., and Beaudry. 3,185,097.
    - Damon, Glenn H., Ribovich and Herickes. 3,185,018.
    - Dandelin, Roland G. 3,185,096.
    - Filler, William S. 3,184,955.
    - Gustafson, Walter R., McMillen, Rounding, and Shore. 3,185 980.
    - Larey, Bert W. 3,185,865.
    - Lee, Richard C., Cox, and Connelly. 3,185,821.
    - Oeland, Ernest N., Jr. 3,185,086.
    - Pelosi, Louis V. 3,185 988.
    - Perkins James M., Graf, and Braun. 3,184,882.
    - Pollak, George A., and Spear. 3,185,848.
    - Walker, Dale W. 3,185,418.
- United States Smelting Refining and Mining Co.: *See*—
  - Creglow, Loran A. 3,185,635.
- United States Steel Corp.: *See*—
  - Ambruster, Joseph R. 3 185,404.
  - Burch, Charles J. 3,184,774.

United States Steel Corp. : *See*—Continued
  Humphreys, Kenneth K. 3,184,952.
  Riley, William T. 3,184,974.
  Taylor, James S., and Turner. 3,184,826.
  Wilson, Charles G., Sr. 3,185,143.
Universal American Corp. : *See*—
  Hinsey, Robert S., and Davidson. 3,184,992.
Universal Moulded Fiber Glass Corp. : *See*—
  Boggs, LeRoy R. 3,185,746.
  Boggs, LeRoy R. 3,185,747.
  Boggs, LeRoy R. 3,185,603.
University of Minnesota, The Regents of the : *See*—
  Smith, Fred, and Graham. 3,185,623.
Ur, Hanoch, to Radio Corp. of America. Bistable device. 3,185,860, 5–25–65, Cl. 307—88.5.
Urquhart's (1926) Ltd. : *See*—
  Fraser, Reginald P., and Furman. 3,185,448.
Urry, Lewis F., to Union Carbide Corp. Lead-resistant dry cell. 3,185,594, 5–25–65, Cl. 136—107.
V-M Corp. : *See*—
  Hammond, Robert J. 3,185,968.
Valve Corp. of America : *See*—
  Lipman, Elmer. 3,185,354.
  Lipman, Elmer. 3,185,355.
  Sagarin, Philip H. 3,185,349.
Van Bierkom, Richard : *See*—
  Blasbalg, Herman, and Van Bierkom. 3,185,824.
Van Deburg, William R. Steam-cleaning apparatus. 3,185,395, 5–25–65, Cl. 239—131.
Vanderloop, Norbert A. Material hauling, mixing and spreading device. 3,185,326, 5–25–65, Cl. 214—83.36.
Van Essen, Harm : *See*—
  Beets, Muus G. J., and van Essen. 3,185,629.
Van Haaften, Egbert : *See*—
  Bennett, William O., Mutter, and Van Hafften. 3,184,981.
Van Hartesveldt, Carroll H., and B. D. Wahl, to Hoover Ball and Bearing Co. Apparatus for preventing belt distortion. 3,185,073, 5–25–65, Cl. 100—93.
Van Hartesveldt, Carroll H., and B. D. Wahl. Method and apparatus for making boards from wood products. 3,185,614, 5–25–65, Cl. 161—261.
Van Heerden, Pieter J. : *See*—
  Redingon, Rowland W., and van Heerden. 3,185,891.
Van Loo, William J., Jr. : *See*—
  Madison, Richard K., and Van Loo. 3,185,539.
Vapor Corp. : *See*—
  Mitchell, Gerald T., and Cunningham. 3,185,202.
  Salerno, Paul G. 3,185,790.
Vardell, William G. : *See*—
  Ball, Frank J., Doughty, and Vardell. 3,185,654.
Veedip Ltd. : *See*—
  Sutton, Sidney D. 3,185,751.
Vega, Paul E. Magnetic toy blocks. 3,184,882, 2–25–65, Cl. 46—25.
Venus, Frank, Jr., to The Risdon Mfg. Co. Metering valve. 3,185,356, 5–25–65, Cl. 222—394.
Vereinigte Aluminium-Werke Aktiengesellschaft : *See*—
  Gitzinger, Peter, Bayer, and Koppatz. 3,185,749.
Vereinigte Farbenglaswerke Aktiengesellschaft : *See*—
  Loffelhardt, Heinrich. 3,185,331.
Vermeulen, William P., to Electrolux Corp. Vacuum cleaners. 3,184,776, 5–25–65, Cl. 15—327.
Verspecht, Renaat J., to Gevaert Photo-Producten N.V. Packaging of film sheets. 3,185,298, 5–25–65, Cl. 206—62.
Viator, Rodney A. Wrench-tool handle grip. 3,185,001, 5–25–65, Cl. 81—177.
Vickers-Armstrongs (Engineers) Ltd. : *See*—
  Eggington, Wilfred J., and Lewis. 3,185,240.
Vickery, Ronald C. : *See*—
  Kleber, Eugene V., Vickery, and Muir. 3,185,652.
Victor Comptometer Corp. : *See*—
  Gill, Robert F., Jr., and Levin. 3,185,991.
Vinton, David S., G. C. Bristow, and F. H. Winters, to Caterpillar Tractor Co. Hydraulic starting system for engines. 3,184,919, 5–25–65, Cl. 60—52.
Visher, Wilbur A. : *See*—
  Gunkel, William F., Willey, Christianson, Kirner, Jackson, Cordry, Papanicolaou, Bath, and Visher. 3,185,981.
Voglis, Gregory M., and H. F. Willis, to The Commissioners for Executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland. Object detecting and locating apparatus. 3,185,956, 5–25–65, Cl. 340—6.
Voigt, Robert H., to Aseco, Inc. Resonant reed adjusting means. 3,185,901, 5–25–65, Cl. 317—182.
Volt, W. J., Rubber Corp. : *See*—
  Senne, David L. 3,184,878.
Voltz, Jacques, and W. Bossard, to J. R. Geigy A.G. Process for coloring polyacrylonitrile fibers with methine dye salts. 3,185,538, 5–25–65, Cl. 8—55.
Von Gebhardi, Theodor : *See*—
  Kuhne, Heinz A., Seehausen, and von Gabhardi. 3,185,210.
Von Tell Trading Co. AB : *See*—
  Dahlin, Carl E. I. 3,185,206.
Vossen, Bernd : *See*—
  Turnage, Howard C., and Vossen. 3,185,944.
Vromen, Sander : *See*—
  Taub, William, and Vromen. 3,185,712.
Vsesojusny nauchno issledovatelsky Institut podjemno transportnoho mashinostrojenija : *See*—
  Suckanov, Donat K. 3,185,287.
Waal, Christopher L. : *See*—
  Slaten, John M., and Waal. 3,185,155.
Wachovia Bank & Trust Co. : *See*—
  Gibson, James E., Jr. 3.184,885.
Waddell, Russell B., Jr., C. H. Osborn, and R. D. Medford, to Dayco Corp. Reinforced flexible conduit. 3,185,182, 5–25–65, Cl. 138—122.
Wagner Electric Corp. : *See*—
  Zollmann, William J., Jr. 3,185,788.
Wagner, William E. : *See*—
  Saunders, Arnold E., and Wagner. 3,185,586.
Wahl, Buddy D. : *See*—
  Van Hartesveldt, Carroll H., and Wahl. 3,185,073.
  Van Hartesveldt, Carroll H., and Wahl. 3,185,614.
Wahl, Frank, to Western Electric Co., Inc. Apparatus for mounting articles. 3,184,837, 5–25–65, Cl. 29—203.
Wakefield, Kenneth H. Combination seat-pack. 3,185,362, 5–25–65, Cl. 224—9.
Waldo, Russ K. Safety guard for child's high chair. 3,185,521, 5–25–65, Cl. 297—153.
Waldorf Paper Products Co. : *See*—
  Maro, Joseph J. 3,185,292.
  Ragan, Robert O., and Trant. 3,185,384.
Walker, Dale W., to United States of America, Navy. Integral tension bar retainer. 3,185,413, 5–25–65, Cl. 244—63.
Walker, Norman C., and J. A. Nelson, to Dana Laboratories, Inc. Method of adjusting direct-current amplifier to achieve substantially zero temperature drift coefficient. 3,185,932, 5–25–65, Cl. 330—12.
Walker, Odis. Tire valve assembly and air leak indicator for pneumatic tires which utilize inner tubes. 3,185,126, 5–25–65, Cl. 116—34.
Walker, Philip F. : *See*—
  Lohf, Gerald W., Walker, and Ellsworth. 3,184,909.
Wallerstein, Leon, Jr. : *See*—
  Desai, Ramesh R., and Wallerstein. 3,184,928.
Walter, Hans : *See*—
  Picard, Jean P., and Walter. 3,185,726.
Walther, Fritz. Firing pin safety mechanism for firearms. 3,184,876, 5–25–65, Cl. 42—70.
Wankel G.m.b.H. : *See*—
  Paschke, Hans-Dieter. 3,185,387.
Ward, Harry, to Robert Legg Ltd. Machine for cutting leaf tobacco. 3,185,196, 5–25–65, Cl. 146—119.
Ware, Ben F., to The Ajax Mfg. Co. Wire shaping and drawing. 3,184,943, 5–25–65. Cl. 72—206.
Warner Electric Brake & Clutch Co. : *See*—
  Skelton, Frank C., Jr. 3,185,899.
Warner, Frederick L. : *See*—
  Miaskoff, Leonard, and Warner. 3,185,473.
Warnock, Ray E. : *See*—
  Bennett, Foster C., Robbins, and Warnock. 3,184,811.
  Bennett, Foster C., Robbins, and Warnock. 3,184,812.
Warner-Lambert Pharmaceutical Co. : *See*—
  Crawford, Wiley C., Jr., and Gundelfinger. 3,185,211.
Warshawsky, Jerome. Friction controlled slidable and rotatable mounting for lamps. 3,185,838, 5–25–65, Cl. 240—81.
Wartenberg, Kurt W. Compact airtype exhaust steam condenser system. 3,185,213, 5–25–65, Cl. 165—124.
Washbond, Harry H. : *See*—
  Wochner, Joseph J., and Washbond. 3,185,511.
Wastvedt, John H. : *See*—
  Hedrick, William S., and Wastvedt. 3,184,964.
Watelski, Stacy B. : *See*—
  Little, William A., and Watelski. 3,184,823.
Water Gremlin Co. : *See*—
  Ratte, Robert W. 3,184,880.
Watkins, Frederick B. Bridge bidding device. 3,185,481, 5–25–65, Cl. 273—148.
Watters, Harry J. : *See*—
  Gold, Nathan, Kagan, and Watters. 3,185,056.
Watts Regulator Co. : *See*—
  Spring, Hans. 3,185,099.
Way, Frederick L., to Mobilcolor, Inc. Moving pattern simulator. 3,184,872, 5–25–65, Cl. 40—106.53.
Webb, Byron H. : *See*—
  Hanrahan, Francis P., Bell, and Webb. 3,185,580.
Webb, Ernest C., to S. C. Peplin. Sealing means for valves. 3,185,176, 5–25–65, Cl. 137—625.17.
Webb, Ernest C., to The Cleveland Trust Co. Band drive for standing pin detector. 3,185,477, 5–25–65, Cl 273—54.
Weber, Hans, to E. I. du Pont de Nemours and Co. Photographic silver halide material containing lactose. 3,185,569, 5–25–65, Cl. 96—94.
Weber, William L. : *See*—
  Parkhurst, Robert F., and Weber. 3,185,089.
Weber, William L., to Thiokol Chemical Corp. Dual shaped charge separation system. 3,185,090, 5–25–65, Cl. 102—24.
Weeks, Robert L. : *See*—
  Herbst, Walter A., Weeks, and Wilson. 3,185,201.
Wei, Peter H.-L., to American Home Products Corp. Reduced benzodiazepinium compounds. 3,185,680, 5–25–65, Cl. 260—239.3.
Weih, Julius, to Ideal Toy Corp. Doll including a combined sound and motion producing mechanism. 3,184,886, 5–25–65, Cl. 46—118.
Weissheimer, Herbert, and A. Abolins, to Siemens-Schuckertwerke Aktiengesellschaft. Liquid-cooled winding for electric machines. 3,185,872, 5–25–65, Cl. 310—54.
Welding Service, Inc. : *See*—
  McKee, Chester W. and R. W., and Rich. 3,185,907.
Wells, Lane T. : *See*—
  Loy, Fred W., and Wells. 3,185,184.
Welsh, John A., to General Aniline & Film Corp. Stabilized light-sensitive emulsions. 3,185,570, 5–25–65, Cl. 96—109.
Welsh, Ralph F., to Hoover Ball and Bearing Co. Seat hinging mechanism. 3,185,525, 5–25–65, Cl. 297—367.
Welsher, Ronald A. G., L. W. Carter, and D. J. Salt, to United Kingdom Atomic Energy Authority. Clamps. 3,185,509, 5–25–65, Cl. 287—54.
Wencil, Raymond H. Apparatus for piano playing in any key, for writing music, and for transposing music from one key to another. 3,185,015, 5–25–65, Cl. 84—478.
Werner, Frank D., to Rosemount Engineering Co. Level indicator. 3,184,968, 5–25–65, Cl. 73—290.
Werner, Leroy H. : *See*—
  Sie, Charles H., and Werner. 3,185,977.
West, Robert E., to Cascade Industries, Inc. Swimming pool cover. 3,184,764, 5–25–65, Cl. 4—172.

West Virginia Pulp and Paper Co. : *See*—
  Ball, Frank J., Doughty, and Vardell. 3,185,654.
Western Electric Co., Inc. : *See*—
  Barrett, Robert L. 3,195,469.
  Ehlschlager, Arthur J. 3,185,898.
  Green, Geoffrey D. 3,185,805.
  Kinser, Charles F., and Lach. 3,185,186.
  Lueft, Walter B., and Raamot. 3,185,781.
  Miller, Glenn E. 3,184,836.
  Wahl, Frank. 3,184,837.
Western Union Telegraph Co., The : *See*—
  Likel, Harry C. 3,185,766.
  Swenson, Oscar W. 3,185,764.
Western Unit Corp. : *See*—
  Harbers, Henry C. 3,185,496.
Westinghouse Electric Corp. : *See*—
  Easley, Gilbert J. 3,185,895.
  Fish, William A., Jr., and Wolf. 3,185,180.
Westman, George H. Liquid purification apparatus. 3,185,170, 5–25–65, Cl. 137—268.
Westphalen, Leonard F. Multifocal camera. 3,185,061, 5–25–65, Cl. 95—45.
Weyenberg, Lionel E. Adjustable resistance device. 3,185,950, 5–25–65, Cl. 338—176.
Weyerhaeuser Co. : *See*—
  Preusser, Henry M., and Denton. 3,185,455.
Weyman, Robert D., and G. E. Struble, to Diamond International Corp. Flying target with pyramidal element formed from sheet material. 3,185,480, 5–25–65, Cl. 273—105.4.
Wezel, Hansgeorg, to Schmid & Wezel. Rotary cutter. 3,184,785, 5–25–65, Cl. 17—21.
Wheeler, Roy E. : *See*—
  Dowdle, Walter F., and Wheeler. 3,185,783.
Wherry, Don M. Device for determining the reproduction characteristics of a magnetic recording medium. 3,185,922, 5–25–65, Cl. 324—34.
Whirlpool Corp. : *See*—
  Cobb, Clifton A., Wiessner, and Williams. 3,184,932.
  Fecho, Rhine G., and Johnson. 3,185,902.
  Hageman, James R. 3,184,780.
White, Donald L., to Bell Telephone Laboratories, Inc. Piezoelectric transducer. 3,185,935, 5–25–65. Cl. 333—30.
White, Donald L., to Bell Telephone Laboratories, Inc. Pulse time and frequency changer utilizing delay line with controllable delay. 3,185,942, 5–25–65, Cl. 333—30.
White, Gerome R. Hoisting apparatus. 3,185,265, 5–25–65, Cl. 189—12.
White, John L., to Cas-Craft, Inc. Adjustable casket bed. 3,184,819, 5–25–65, Cl. 27—12.
Wiessner, Edward E. : *See*—
  Cobb, Clifton A., Wiessner, and Williams. 3,184,932.
Wieszeck, Emil S. Camera light control mechanism. 3,185,953, 5–25–65, Cl. 95—10.
Wiggins, Robert B., and A. C. Roeser, to Fort Howard Paper Co. Silencers for suction rolls. 3,185,618, 5–25–65, Cl. 162—371.
Wilcock, John E., to Pilkington Brothers Ltd. Moulding hollow glass articles. 3,185,558, 5–25–65, Cl. 65—76.
Wilcock, John E., to Pilkington Brothers Ltd. Plural piston press forming apparatus. 3,185,560. 5–25–65, Cl. 65—314.
Wilczek, Andrew S., to S-F-D Laboratories, Inc. Microwave coupling apparatus for slow wave circuits and tubes using same. 3,185,884, 5–25–65, Cl 315—3.5.
Wilczek, Andrew S., and R. F. Doyle, to S-F-D Laboratories, Inc. Crossed-field tube coupling apparatus. 3,185,885, 5–25–65, Cl. 315—3.5.
Wilke, Milton E. : *See*—
  Coleman, Joseph J., Wilke, Steinhoff, and Brandeland. 3,185,593.
Willey, Robert E. : *See*—
  Gunkel, William F., Willey, Christianson, Kirner, Jackson, Cordry, Papanicolaou, Bath, and Visher. 3,185,981.
Williams, Alvie P., H. J. Jones, C. D. Frisby, and F. J. Niven, Jr., to Infotronics Corp. Integrator and recorder apparatus. 3,185 820, 5–25–65, Cl. 235—92.
Williams, James T. : *See*—
  Cobb, Clifton A., Wiessner, and Williams. 3,184,932.
Williams, Lawrence S., to Toledo Scale Corp. Weighing scales. 3 785.236, 5–25–65, Cl. 177—255.
Williams, Marion A. Telephone installation. 3,185,535, 5–25–65, Cl 312—223.
Williams, Richard E., and J. S. Gerig, to Scope, Inc. Musical device. 3,185 755, 5–25–65, Cl. 84—1.24.
Willis, Hector F. : *See*—
  Voglis, Gregory M., and Willis. 3,185 956.
Willison, Donald, to National Castings Co. Compensating draft gear. 3,185,317, 5–25–65, Cl. 213—45.
Willow, Bernard F. : *See*—
  Gottsegen, Ronald B., Willow, and Winstone. 3,185,342.
Wilson Charles G., Sr., to United States Steel Corp. Space heater. 3,185,143, 5–25–65, Cl. 126—91.
Wilson, James A. : *See*—
  Herbst, Walter A., Weeks, and Wilson. 3,185 201.
Wilson, Wallace D., to Elastic Stop Nut Corp. of America. Snap-action electric switch. 3,185,786, 5–25–65, Cl. 200—67.
Wilson, William : *See*—
  Clemo, Philip F., Briggs, Wilson, and Carter. 3,185,672.
Wimmer, Armin E. : *See*—
  Herrick, Clifford E., Jr., and Wimmer. 3,185,085.
Winstone, Ronald G. : *See*—
  Gottsegen, Ronald B., Willow, and Winstone. 3,185,342.
Winter, Arrien G., deceased (by I. Winter, heir), to Dr. Madaus & Co., Kommanditgesellschaft. Process of producing glycosides from living plants. 3,184,887, 5–25–65, Cl. 47—1.2.
Winter, Ilse : *See*—
  Winter, Arrien G. 3,184,887.
Winters, Frank H. : *See*—
  Vinton, David S., Bristow, and Winters. 3,184,919.
Winther, Ray, Co. : *See*—
  Blake, Julian H. 3,184,926.
Wochner, Joseph J., and H. H. Washbond, to Allis-Chalmers Mfg. Co. C-frame for tractor mounted tool. 3,185,511, 5–25–65, Cl. 287—129.
Wolf, Charles B. : *See*—
  Fish, William A., Jr., and Wolf. 3,185,180.
Wolfson, Anthony S., to Eitel-McCullough, Inc. Cathode mount and lead-in structure for electron tubes. 3,185,881, 5–25–65, Cl. 313—82.
Woodford Mfg. Co. : *See*—
  Breneman, Warren R. 3,184,773.
Woods, Herbert J. : *See*—
  Burnet, Arthur L., and Woods. 3,184,798.
Woods, John P., E. B. Neitzel, and T. Prickett, Jr., to The Atlantic Refining Co. Log transcribing and scale changing method and apparatus. 3,185,994, 5–25–65, Cl. 346—1.
Woolf, Cyril : *See*—
  Anello, Louis G., and Woolf. 3,185,541.
Worthington Corp. : *See*—
  Siman, Alfred W., and Stegmann. 3,185,388.
Woythal, Gilbert S. : *See*—
  Zernov, Peter, and Woythal. 3,185,616.
Wright, Malcolm E., to J. I. Case Co. Trippable furrow opener. 3,185,221, 5–25–65, Cl. 172—270.
Wright, Thomas B. Soap holder. 3,185,537, 5–25–65, Cl. 312—351.
Wright, William H., Jr., to United States of America, Army. Amplified microwave power limiter. 3,185,945, 5–25–65, Cl. 333—81.
Wyss, Escher, Aktiengesellschaft : *See*—
  Hullman, Heinrich, and Baumann. 3,185,440.
Xerox Corp. : *See*—
  Goffe, William L. 3,185,051.
  Huber, Charles L., Hitchcock, Nieml, Hoyt, and Turner. 3,185,050.
  Rheinfrank, John J. 3,185,777.
Yeo, W. L. : *See*—
  Hoern, Joseph H. 3,184,810.
Yingst, James E. : *See*—
  Partain, Donald W., and Yingst. 3,185,102.
Yodis, Anthony W., to Allied Chemical Corp. Production of the fluorinated compounds, NO$_2$F and the HF adduct thereof. 3,185 542, 5–25–65, Cl. 23—14.
Yodis Anthony W. : *See*—.
  Trout, Horace Q., and Yodis. 3,185,543.
Yohpe, Reinhard A., to Union Pump Co. Readily dismountable reciprocating pump assembly. 3,185,103, 5–25–65, Cl. 103—153.
Yoshino, Zensaburo. Gas lighter and method of carburetion of liquefied fuel. 3,184,931, 5–25–65, Cl. 67—7.1.
Young, George H. S. : *See*—
  Newman, Barry H., Spickernell, and Young. 3,185,601.
Young, Merrill A., to Curtiss-Wright Corp. Impact wrench with stabilizer handle. 3,184,998, 5–25–65, Cl. 81—52.3.
Young, Michael : *See*—
  Cousens, Reginald. 3,185,049.
Young, Richard A. : *See*—
  Stalker, Kenneth W., and Young. 3,185,325.
Youngblood, Charles J., Jr., to Mississippi Glass Co. Patterned glass. 3,185 034, 5–25–65, Cl. 88—60.
Youngstown Steel Door Co., The : *See*—
  Johansson, Carl E. 3,185,516.
Yumbo, Societe dite : *See*—
  Symmank, William D. 3,184,867.
Zanger, Earl A., Jr. : *See*—
  Margulis, Lawrence G., and Zanger. 3,185,927.
Zehfeld, Paul, to Rheinmetall G.m.b.H., Firma. Cartridge case extension piece for use with projectiles. 3,185,094, 5–25–65, Cl. 102—38.
Zeidler, Reinhold C., W. A. Barnes, and D. W. Lysett, to Borg-Warner Corp. Method of making vanes for hydraulic couplings. 3,184,833, 5–25–65, Cl. 29—156.8.
Zeigler, John : *See*—
  Margulies, Herman. 3,185,373.
Zellweger Ltd. : *See*—
  Locher, Hans. 3,185,924.
Zenith Radio Corp. : *See*—
  Hardy, Maurice E. 3,185,401.
Zentner, Paul R. Automotive camping device for use with station wagons. 3,185,518, 5–25–65, Cl. 296—23.
Zerand Corp. : *See*—
  Zernov, Peter, and Woythal. 3,185,616.
Zernov, Peter, and G. S. Woythal, to Zerand Corp. Web decurling apparatus. 3,185,616, 5–25–65, Cl. 162—271.
Zieber, George M., Jr. : *See*—
  Kompanek, Andrew J., Jr., Machate, and Zieber. 3,185,986.
Zielik, Daniel D. : *See*—
  Quaas, Joseph F., and Zielik. 3,185,598.
Zink, John, Co. : *See*—
  Reed, Robert D. 3,185,458.
Zirin Moshe H. : *See*—
  Fields, Paul R., Zirin, and Stein. 3,185,548.
Zitner, Berthold R. Universal work clamping fixtures for machine tools. 3,185,470, 5–25–65, Cl. 269—91.
Zisso Samuel G. : *See*—
  Ford, Franklin C., Nelson, Trimble, and Zisso. 3,185,068.
Zollmann, William J., Jr., to Wagner Electric Corp. Centrifugal control device with two sets of engageable contacts. 3,185,788, 5–25–65, Cl. 200—80.
Zsebo, Frank J. : *See*—
  Mercer, Robert T., Secrest, and Zsebo. 3 185,006.
Zuech, Ernest A., and W. G. Roberts, to Phillips Petroleum Co. Diene trimerization. 3,185,741, 5–25–65, Cl. 260—666.
Zummer, Anthony S. : *See*—
  Thomson, John E. 3,184,768.
Zundel Robert P. : *See*—
  General, Norman T., and Zundel. 3,184,978.

CLASSIFICATION OF PATENTS

ISSUED MAY 25, 1965

NOTE.—First number, class; secondnumber, subclass; third number, patent number

2 – 161 : 3,184,756
199 : 3,184,757
209 : 3,184,758
279 : 3,184,759
312 : 3,184,760
4 – 90 : 3,184,761
145 : 3,184,762
172 : 3,184,763
3,184,764
5 – 67 : 3,184,765
118 : 3,184,766
345 : 3,184,767
8 – 55 : 3,185,538
116.3 : 3,185,539
9 – 2 : 3,184,768
10 – 10 : 3,184,769
12 – 33 : 3,184,770
142 : 3,184,771
13 – 9 : 3,185,754
14 – 71 : 3,184,772
72 : 3,184,773
15 – 317 : 3,184,774
327 : 3,184,776
328 : 3,184,775
340 : 3,184,777
344 : 3,184,778
538 : 3,184,779
547 : 3,184,780
552 : 3,184,781
594 : 3,184,782
16 – 18 : 3,184,783
171 : 3,184,784
17 – 21 : 3,184,785
45 : 3,184,786
18 – 1 : 3,184,787
2 : 3,184,788
2.4 : 3,184,789
12 : 3,184,790
14 : 3,184,791
3,184,792
3,184,793
18 : 3,184,794
19 : 3,184,795
3,184,796
30 : 3,184,797
19 – 65 : 3,184,798
225 : 3,184,799
20 – 1 : 3,184,800
11 : 3,184,801
15 : 3,184,802
16 : 3,184,803
19 : 3,184,804
39 : 3,184,805
52 : 3,184,806
69 : 3,184,807
3,184,808
22 – 10 : 3,184,809
69 : 3,184,810
70 : 3,184,811
3,184,812
139 : 3,184,813
193 : 3,184,814
216.5 : 3,184,815
23 – 2 : 3,185,540
14 : 3,185,541
3,185,542
88 : 3,185,543
112 : 3,185,544
141 : 3,185,545
184 : 3,185,546
204 : 3,185,547
205 : 3,185,548
230 : 3,185,549
253 : 3,185,550
273 : 3,185,551
24 – 123 : 3,184,817
211 : 3,184,816
25 – 104 : 3,184,818
27 – 12 : 3,184,819
28 – 71.3 : 3,184,820
72 : 3,184,821
3,184,822
29 – 25.3 : 3,184,823
3,184,824
81 : 3,184,825
3,184,826
95 : 3,184,827
129 : 3,184,828
155.5 : 3,184,829
3,184,830
3,184,831
3,184,832
156.8 : 3,184,833
182 : 3,184,834
182.5 : 3,184,835
203 : 3,184,836

29 – 203 : 3,184,837
271 : 3,184,838
401 : 3,184,839
420.5 : 3,184,840
470 : 3,184,841
3,184,842
30 – 2 : 3,184,843
31 – 5 : 3,184,844
33 – 1 : 3,184,845
3,184,846
3,184,847
3,184,848
23 : 3,184,849
25 : 3,184,850
47 : 3,184,851
50 : 3,184,852
60 : 3,184,853
67 : 3,184,854
147 : 3,184,855
169 : 3,184,856
3,184,857
172 : 3,184,858
197 : 3,184,859
201 : 3,184,860
206 : 3,184,861
34 – 87 : 3,184,862
35 – 9 : 3,184,863
28.3 : 3,184,864
36 – 34 : 3,184,865
37 – 55 : 3,184,866
103 : 3,184,867
126 : 3,184,868
144 : 3,184,869
38 – 59 : 3,184,870
77 : 3,184,871
40 – 106.53: 3,184,872
158 : 3,184,873
301 : 3,184,874
42 – 69 : 3,184,875
70 : 3,184,876
72 : 3,184,877
43 – 4 : 3,184,878
42.74: 3,184,879
44.86: 3,184,880
102 : 3,184,881
44 – 42 : 3,185,552
69 : 3,185,553
46 – 25 : 3,184,882
32 : 3,184,883
51 : 3,184,884
61 : 3,184,885
118 : 3,184,886
47 – 1.2 : 3,184,887
1.5 : 3,184,888
9 : 3,184,889
37 : 3,184,890
58 : 3,184,891
50 – 52 : 3,184,892
532 : 3,184,893
51 – 241 : 3,184,894
53 – 28 : 3,184,895
180 : 3,184,896
331.5 : 3,184,897
382 : 3,184,898
55 – 16 : 3,184,899
31 : 3,184,900
102 : 3,184,901
56 – 19 : 3,184,902
25.4 : 3,184,903
126 : 3,184,904
130 : 3,184,905
256 : 3,184,906
295 : 3,184,907
330 : 3,184,908
58 – 2 : 3,184,909
28 : 3,184,910
44 : 3,184,911
126 : 3,184,912
60 – 19 : 3,184,913
23 : 3,184,914
35.5 : 3,184,915
35.55: 3,184,917
35.6 : 3,184,916
39.66: 3,184,918
52 : 3,184,919
53 : 3,185,557
54.5 : 3,184,920
3,184,921
61 – .5 : 3,184,922
1 : 3,184,923
53.6 : 3,184,924
66 : 3,184,925
62 – 155 : 3,184,926
64 – 21 : 3,184,927
27 : 3,184,928
65 – 17 : 3,185,554

65 – 18 : 3,185,555
39 : 3,185,556
76 : 3,185,558
291 : 3,185,559
314 : 3,185,560
66 – 50 : 3,184,929
200 : 3,184,930
67 – 7.1 : 3,184,931
68 – 12 : 3,184,932
23 : 3,184,933
133 : 3,184,934
70 – 75 : 3,184,935
151 : 3,184,936
277 : 3,184,937
71 – 2.5 : 3,185,561
2.6 : 3,185,562
72 – 11 : 3,184,938
22 : 3,184,939
68 : 3,184,940
126 : 3,184,941
179 : 3,184,942
206 : 3,184,943
255 : 3,184,944
256 : 3,184,945
263 : 3,184,946
294 : 3,184,947
297 : 3,184,948
307 : 3,184,949
331 : 3,184,950
453 : 3,184,951
73 – 12 : 3,184,952
23.1 : 3,184,953
27 : 3,184,954
35 : 3,184,955
3,184,956
38 : 3,184,957
40.5 : 3,184,958
53 : 3,184,959
80 : 3,184,960
88 : 3,184,961
88.5 : 3,184,962
3,184,963
141 : 3,184,964
152 : 3,184,965
194 : 3,184,966
3,184,967
290 : 3,184,968
3,184,969
304 : 3,184,970
334 : 3,184,971
398 : 3,184,972
422 : 3,184,973
432 : 3,184,974
453 : 3,184,975
462 : 3,184,976
492 : 3,184,977
523 : 3,184,978
539 : 3,184,979
74 – 102 : 3,184,980
142 : 3,184,981
143 : 3,184,982
200 : 3,184,983
333 : 3,184,984
377 : 3,184,985
422 : 3,184,986
424.8 : 3,184,987
457 : 3,184,988
471 : 3,184,989
472 : 3,184,990
507 : 3,184,991
534 : 3,184,992
611 : 3,184,993
674 : 3,184,994
751 : 3,184,995
822 : 3,184,996
75 – 1 : 3,185,563
3 : 3,185,564
93 : 3,185,565
212 : 3,185,566
81 – 9.1 : 3,184,997
52.3 : 3,184,998
101 : 3,184,999
128 : 3,185,000
177 : 3,185,001
82 – 2 : 3,185,002
14 : 3,185,003
37 : 3,185,004
48 : 3,185,005
83 – 33 : 3,185,006
163 : 3,185,007
224 : 3,185,008
423 : 3,185,009
482 : 3,185,010
84 – 1.24: 3,185,755
293 : 3,185,011
318 : 3,185,012

84 – 411 : 3,185,013
422 : 3,185,014
478 : 3,185,015
3,185,016
86 – 1 : 3,185,017
20 : 3,185,018
44 : 3,185,019
88 – 1 : 3,185,020
14 : 3,185,021
3,185,022
3,185,023
3,185,024
24 : 3,185,025
3,185,026
3,185,027
3,185,028
57 : 3,185,029
3,185,030
3,185,031
3,185,032
3,185,033
60 : 3,185,034
89 – 1.7 : 3,185,035
3,185,036
3,185,037
90 – 16 : 3,185,038
86 : 3,185,039
91 – 277 : 3,185,040
92 – 94 : 3,185,041
128 : 3,185,042
164 : 3,185,043
93 – 20 : 3,185,044
36 : 3,185,045
36.01: 3,185,046
37 : 3,185,047
3,185,048
80 : 3,185,049
95 – 1.7 : 3,185,050
3,185,051
10 : 3,185,052
3,185,053
11 : 3,185,054
3,185,055
11.5 : 3,185,056
34 : 3,185,057
42 : 3,185,058
44 : 3,185,059
45 : 3,185,060
3,185,061
53 : 3,185,062
3,185,063
64 : 3,185,064
73 : 3,185,065
75 : 3,185,066
96 – 3 : 3,185,567
37 : 3,185,568
94 : 3,185,569
109 : 3,185,570
110 : 3,185,571
98 – 40 : 3,185,067
3,185,068
3,185,069
42 : 3,185,070
99 – 2 : 3,185,572
3,185,573
86 : 3,185,574
123 : 3,185,575
129 : 3,185,576
171 : 3,185,577
3,185,578
172 : 3,185,579
203 : 3,185,580
206 : 3,185,581
100 – 53 : 3,185,071
3,185,072
93 : 3,185,073
98 : 3,185,074
101 – 93 : 3,185,075
3,185,076
3,185,077
3,185,078
3,185,079
3,185,080
3,185,081
3,185,082
96 : 3,185,083
115 : 3,185,084
149.2 : 3,185,085
149.4 : 3,185,086
3,185,087
426 : 3,185,088
102 – 24 : 3,185,089
3,185,090
3,185,091
3,185,092
28 : 3,185,093

102 – 38 : 3,185,094
44 : 3,185,095
49 : 3,185,096
50 : 3,185,097
103 – 49 : 3,185,098
87 : 3,185,099
96 : 3,185,100
111 : 3,185,101
144 : 3,185,102
153 : 3,185,103
162 : 3,185,104
3,185,105
255 : 3,185,106
263 : 3,185,107
104 – 25 : 3,185,108
45 : 3,185,109
105 – 369 : 3,185,110
376 : 3,185,111
409 : 3,185,112
108 – 47 : 3,185,113
65 : 3,185,114
108 : 3,185,115
141 : 3,185,116
111 – 7 : 3,185,117
51 : 3,185,118
112 – 412 : 3,185,119
114 – 66.5 : 3,185,120
103 : 3,185,121
151 : 3,185,122
115 – .5 : 3,185,123
12 : 3,185,124
26.3 : 3,185,125
116 – 34 : 3,185,126
86 : 3,185,127
117 : 3,185,128
117 – 11 : 3,185,582
36.8 : 3,185,583
3,185,584
36.9 : 3,185,585
54 : 3,185,586
68 : 3,185,587
100 : 3,185,588
3,185,589
118 – 14 : 3,185,129
228 : 3,185,130
421 : 3,185,131
119 – 14.08: 3,185,132
18 : 3,185,133
80 : 3,185,134
120 – 50 : 3,185,135
122 – 406 : 3,185,136
123 – 48 : 3,185,137
3,185,138
90 : 3,185,139
140 : 3,185,140
3,185,141
188 : 3,185,142
126 – 91 : 3,185,143
350 : 3,185,144
369 : 3,185,145
128 – 2 : 3,185,146
29 : 3,185,147
142 : 3,185,148
144 : 3,185,149
214 : 3,185,150
3,185,151
3,185,152
227 : 3,185,153
272 : 3,185,154
303 : 3,185,155
438 : 3,185,156
483 : 3,185,157
519 : 3,185,158
521 : 3,185,159
528 : 3,185,160
131 – 17 : 3,185,161
140 : 3,185,162
194 : 3,185,163
135 – 4 : 3,185,164
14 : 3,185,165
136 – 6 : 3,185,590
75 : 3,185,591
100 : 3,185,592
107 : 3,185,593
3,185,594
133 : 3,185,595
137 – 81.5 : 3,185,166
85 : 3,185,167
3,185,168
98 : 3,185,169
268 : 3,185,170
283 : 3,185,171
315 : 3,185,172
443 : 3,185,173
533.21: 3,185,174
596.12: 3,185,175

137 – 625.17: 3,185,176
625.27: 3,185,177
625.29: 3,185,178
625.47: 3,185,179
625.66: 3,185,180
138 – 37 : 3,185,181
122 : 3,185,182
140 – 71 : 3,185,183
3,185,184
105 : 3,185,185
147 : 3,185,186
141 – 7 : 3,185,187
12 : 3,185,188
100 : 3,185,189
360 : 3,185,190
143 – 32 : 3,185,191
144 – 208 : 3,185,192
145 – 31 : 3,185,193
146 – 2 : 3,185,194
28 : 3,185,195
119 : 3,185,196
148 – 6.16: 3,185,596
16 : 3,185,597
26 : 3,185,598
3,185,599
125 : 3,185,600
149 – 19 : 3,185,601
150 – 52 : 3,185,197
3,185,198
152 – 209 : 3,185,199
156 – 58 : 3,185,602
200 : 3,185,603
210 : 3,185,604
289 : 3,185,605
303.1 : 3,185,606
443 : 3,185,607
506 : 3,185,608
530 : 3,185,609
549 : 3,185,610
158 – 1 : 3,185,200
4 : 3,185,201
3,185,202
114 : 3,185,204
125 : 3,185,203
160 – 133 : 3,185,205
193 : 3,185,206
382 : 3,185,207
161 – 36 : 3,185,611
95 : 3,185,612
179 : 3,185,613
261 : 3,185,614
162 – 228 : 3,185,615
271 : 3,185,616
274 : 3,185,617
371 : 3,185,618
392 : 3,185,619
165 – 9 : 3,185,208
30 : 3,185,209
71 : 3,185,211
86 : 3,185,212
124 : 3,185,213
134 : 3,185,210
166 – 9 : 3,185,214
3,185,215
3,185,634
42 : 3,185,216
3,185,217
156 : 3,185,218
215 : 3,185,219
167 – 22 : 3,185,620
30 : 3,185,621
48 : 3,185,622
53.2 : 3,185,623
78 : 3,185,624
82 : 3,185,625
3,185,626
90 : 3,185,627
3,185,628
94 : 3,185,629
172 – 66 : 3,185,220
270 : 3,185,221
173 – 44 : 3,185,222
125 : 3,185,223
174 – 35 : 3,185,756
38 : 3,185,757
40 : 3,185,758
52 : 3,185,759
54 : 3,185,760
68.5 : 3,185,761
71 : 3,185,762
144 : 3,185,763
175 – 2 : 3,185,224
94 : 3,185,225
102 : 3,185,226
243 : 3,185,227
410 : 3,185,228

176– 54 : 3,185,630
65 : 3,185,631
68 : 3,185,632
177– 37 : 3,185,229
71 : 3,185,230
190 : 3,185,231
225 : 3,185,232
239 : 3,185,233
246 : 3,185,234
3,185,235
255 : 3,185,236
178– 17 : 3,185,764
22 : 3,185,765
70 : 3,185,766
179– 1 : 3,185,767
3,185,768
7.1 : 3,185,769
3,185,770
18 : 3,185,771
3,185,772
22 : 3,185,773
27 : 3,185,774
100.2 : 3,185,775
3,185,776
3,185,777
113 : 3,185,778
114 : 3,185,779
148 : 3,185,780
175 : 3,185,781
180– 1 : 3,185,237
7 : 3,185,238
3,185,239
3,185,240
53 : 3,185,241
54 : 3,185,242
3,185,243
79.2 : 3,185,245
82 : 3,185,246
3,185,247
82.1 : 3,185,248
181– .5 : 3,185,249
3,185,250
24 : 3,185,251
51 : 3,185,252
184– 55 : 3,185,253
185– 29 : 3,185,254
188– 1 : 3,185,255
71 : 3,185,256
72 : 3,185,257
73 : 3,185,244
3,185,258
3,185,259
86 : 3,185,260
90 : 3,185,261
100 : 3,185,262
106 : 3,185,263
265 : 3,185,264
189– 12 : 3,185,265
34 : 3,185,266
3,185,267
36 : 3,185,268
84 : 3,185,269
85 : 3,185,270
190– 41 : 3,185,271
57 : 3,185,272
192– 3.2 : 3,185,273
48 : 3,185,274
56 : 3,185,275
84 : 3,185,276
193– 31 : 3,185,277
194– 1 : 3,185,278
3,185,279
2 : 3,185,280
3,185,281
61 : 3,185,282
195– 17 : 3,185,633
197–133 : 3,185,283
198– 20 : 3,185,284
52 : 3,185,285
76 : 3,185,286
154 : 3,185,287
203 : 3,185,288
232 : 3,185,289
233 : 3,185,290
200– 33 : 3,185,782
44 : 3,185,783
61.18: 3,185,784
61.25: 3,185,785
67 : 3,185,786
68 : 3,185,787
80 : 3,185,788
84 : 3,185,789
92 : 3,185,790
106 : 3,185,791
116 : 3,185,792
3,185,793
138 : 3,185,794
3,185,795
140 : 3,185,796
144 : 3,185,797
3,185,798
3,185,799
3,185,800
147 : 3,185,801

200–148 : 3,185,802
159 : 3,185,803
162 : 3,185,804
166 : 3,185,805
168 : 3,185,806
202– 15 : 3,185,635
57 : 3,185,636
204– 55 : 3,185,637
312 : 3,185,638
206– 15.3 : 3,185,291
45.14: 3,185,292
45.21: 3,185,293
45.25: 3,185,294
45.31: 3,185,295
3,185,662
46 : 3,185,296
59 : 3,185,297
62 : 3,185,298
63.3 : 3,185,299
80 : 3,185,300
208– 68 : 3,185,639
134 : 3,185,640
226 : 3,185,641
209– 3 : 3,185,301
210–126 : 3,185,302
136 : 3,185,303
232 : 3,185,304
211– 13 : 3,185,305
28 : 3,185,306
40 : 3,185,307
45 : 3,185,308
46 : 3,185,309
60 : 3,185,310
66 : 3,185,311
87 : 3,185,312
104 : 3,185,313
153 : 3,185,314
3,185,315
212– 49 : 3,185,316
213– 45 : 3,185,317
214– 1 : 3,185,318
6 : 3,185,319
16.4 : 3,185,320
17 : 3,185,321
75 : 3,185,322
83.3 : 3,185,323
83.36: 3,185,324
3,185,325
3,185,326
152 : 3,185,327
309 : 3,185,328
340 : 3,185,329
506 : 3,185,330
215– 10 : 3,185,331
38 : 3,185,332
82 : 3,185,333
219– 8.5 : 3,185,807
10.43: 3,185,808
10.55: 3,185,809
10.69: 3,185,810
10.77: 3,185,811
74 : 3,185,812
3,185,813
76 : 3,185,814
137 : 3,185,815
471 : 3,185,816
220– 9 : 3,185,334
26 : 3,185,335
38 : 3,185,336
46 : 3,185,337
55.7 : 3,185,338
65 : 3,185,339
67 : 3,185,340
90.6 : 3,185,341
91 : 3,185,342
221– 13 : 3,185,343
222– 20 : 3,185,344
45 : 3,185,345
55 : 3,185,346
67 : 3,185,347
95 : 3,185,348
153 : 3,185,349
182 : 3,185,350
3,185,351
193 : 3,185,352
206 : 3,185,353
321 : 3,185,354
341 : 3,185,355
394 : 3,185,356
425 : 3,185,357
475 : 3,185,358
480 : 3,185,359
528 : 3,185,360
539 : 3,185,361
224– 9 : 3,185,362
225– 66 : 3,185,363
226– 24 : 3,185,364
50 : 3,185,365
176 : 3,185,366
227– 95 : 3,185,367
228– 2 : 3,185,368
50 : 3,185,369
229– 2.5 : 3,185,370
3,185,371

229– 3.5 : 3,185,372
17 : 3,185,373
3,185,374
3,185,375
3,185,376
3,185,377
22 : 3,185,378
23 : 3,185,379
28 : 3,185,380
35 : 3,185,381
51 : 3,185,382
52 : 3,185,383
58 : 3,185,384
230–137 : 3,185,385
145 : 3,185,386
3,185,387
228 : 3,185,388
235 : 3,185,389
233– 32 : 3,185,390
235– 61 : 3,185,391
61.5 : 3,185,817
61.9 : 3,185,818
92 : 3,185,819
3,185,820
150 : 3,185,821
153 : 3,185,822
154 : 3,185,823
3,185,824
155 : 3,185,825
175 : 3,185,826
197 : 3,185,827
236– 15 : 3,185,392
38 : 3,185,393
239– 36 : 3,185,394
131 : 3,185,395
336 : 3,185,396
556 : 3,185,397
240– 1.3 : 3,185,828
4 : 3,185,829
6.41: 3,185,830
6.45: 3,185,831
6.46: 3,185,832
9 : 3,185,833
41.35: 3,185,834
51.11: 3,185,835
51.12: 3,185,836
52 : 3,185,837
81 : 3,185,838
241– 20 : 3,185,398
242– 54 : 3,185,399
55.12: 3,185,400
55.13: 3,185,401
66 : 3,185,402
67.3 : 3,185,403
79 : 3,185,404
84.2 : 3,185,405
84.5 : 3,185,406
96 : 3,185,407
244– 7 : 3,185,408
17.11: 3,185,409
17.23: 3,185,410
30 : 3,185,411
49 : 3,185,412
63 : 3,185,413
245– 2 : 3,185,414
248– 21 : 3,185,415
44 : 3,185,416
54 : 3,185,417
72 : 3,185,418
73 : 3,185,419
74 : 3,185,420
119 : 3,185,421
124 : 3,185,422
188.3 : 3,185,423
205 : 3,185,424
238 : 3,185,425
250 : 3,185,426
309 : 3,185,427
358 : 3,185,428
373 : 3,185,429
381 : 3,185,430
429 : 3,185,431
249– 78 : 3,185,432
210 : 3,185,433
250– 43 : 3,185,839
49.5 : 3,185,840
65 : 3,185,841
83 : 3,185,842
83.3 : 3,185,843
3,185,844
83.6 : 3,185,845
3,185,846
3,185,847
3,185,848
84.5 : 3,185,849
209 : 3,185,850
223 : 3,185,851
227 : 3,185,852
239 : 3,185,853
251–134 : 3,185,434
158 : 3,185,435
172 : 3,185,436
327 : 3,185,437
334 : 3,185,438

252– 8.5 : 3,185,642
32.7 : 3,185,643
33.6 : 3,185,644
46.7 : 3,185,645
3,185,646
3,185,647
70 : 3,185,648
99 : 3,185,649
301.3 : 3,185,650
463 : 3,185,651
478 : 3,185,652
253– 1 : 3,185,439
59 : 3,185,440
77 : 3,185,441
254–104 : 3,185,442
134.3 : 3,185,443
3,185,444
256– 13.1 : 3,185,445
259– 1 : 3,185,446
4 : 3,185,447
3,185,448
6 : 3,185,449
172 : 3,185,450
179 : 3,185,451
260– 4 : 3,185,653
17.5 : 3,185,654
23 : 3,185,655
30.2 : 3,185,656
3,185,657
31.8 : 3,185,658
33.6 : 3,185,659
34.2 : 3,185,660
3,185,661
46.5 : 3,185,663
47 : 3,185,664
3,185,665
49 : 3,185,666
67 : 3,185,667
75 : 3,185,668
3,185,669
3,185,670
3,185,671
78 : 3,185,672
79.5 : 3,185,673
91.1 : 3,185,674
112 : 3,185,675
145 : 3,185,676
239 : 3,185,677
3,185,678
3,185,679
239.3 : 3,185,680
239.5 : 3,185,681
239.55: 3,185,682
3,185,683
3,185,684
247.1 : 3,185,685
250 : 3,185,686
3,185,687
3,185,688
251 : 3,185,689
256.4 : 3,185,690
3,185,691
268 : 3,185,692
3,185,693
279 : 3,185,694
285.5 : 3,185,695
295 : 3,185,696
295.5 : 3,185,697
303 : 3,185,698
309 : 3,185,699
309.7 : 3,185,700
314.5 : 3,185,701
326.3 : 3,185,702
3,185,703
3,185,704
3,185,705
326.5 : 3,185,706
340.5 : 3,185,707
343.2 : 3,185,708
343.4 : 3,185,709
343.6 : 3,185,710
3,185,711
3,185,712
397.25: 3,185,716
397.3 : 3,185,713
3,185,714
397.4 : 3,185,715
438 : 3,185,717
439 : 3,185,718
448.2 : 3,185,719
455 : 3,185,720
461 : 3,185,721
3,185,722
3,185,723
462 : 3,185,724
465 : 3,185,725
467 : 3,185,726
491 : 3,185,727
501 : 3,185,728
534 : 3,185,729
543 : 3,185,730
555 : 3,185,731
566 : 3,185,732
579 : 3,185,733

260–586 : 3,185,734
611.5 : 3,185,735
619 : 3,185,736
624 : 3,185,737
645 : 3,185,738
666 : 3,185,739
3,185,740
3,185,741
677 : 3,185,742
682 : 3,185,743
683.15: 3,185,745
683.2 : 3,185,744
261– 23 : 3,185,452
39 : 3,185,453
263– 6 : 3,185,454
11 : 3,185,455
15 : 3,185,456
19 : 3,185,457
3,185,458
33 : 3,185,459
40 : 3,185,460
41 : 3,185,461
264–137 : 3,185,746
209 : 3,185,747
261 : 3,185,748
262 : 3,185,749
294 : 3,185,750
301 : 3,185,751
316 : 3,185,752
331 : 3,185,753
266– 1 : 3,185,462
5 : 3,185,463
24 : 3,185,464
32 : 3,185,465
267–105 : 3,185,466
107 : 3,185,467
269– 61 : 3,185,468
74 : 3,185,469
91 : 3,185,470
221 : 3,185,471
271– 11 : 3,185,472
56 : 3,185,473
272– 32 : 3,185,474
273– 49 : 3,185,475
54 : 3,185,477
58 : 3,185,476
96 : 3,185,479
105.4 : 3,185,480
135 : 3,185,478
148 : 3,185,481
3,185,482
162 : 3,185,483
274– 4 : 3,185,484
47 : 3,185,485
275– 4 : 3,185,486
277– 20 : 3,185,487
42 : 3,185,488
100 : 3,185,489
170 : 3,185,490
237 : 3,185,491
279– 44 : 3,185,492
82 : 3,185,493
89 : 3,185,494
280– 34 : 3,185,495
125 : 3,185,496
150 : 3,185,497
291 : 3,185,498
406 : 3,185,499
285– 4 : 3,185,500
52 : 3,185,501
55 : 3,185,502
74 : 3,185,503
105 : 3,185,504
137 : 3,185,505
183 : 3,185,506
203 : 3,185,507
341 : 3,185,508
287– 54 : 3,185,509
100 : 3,185,510
129 : 3,185,511
290– 52 : 3,185,854
291– 46 : 3,185,512
292–281 : 3,185,513
294– 20 : 3,185,514
27 : 3,185,515
69 : 3,185,516
87 : 3,185,517
296– 23 : 3,185,518
28 : 3,185,519
297– 85 : 3,185,520
153 : 3,185,521
214 : 3,185,522
226 : 3,185,523
247 : 3,185,524
367 : 3,185,525
379 : 3,185,526
429 : 3,185,527
298– 35 : 3,185,528
302– 14 : 3,185,529
307– 35 : 3,185,855
55 : 3,185,856
57 : 3,185,857
88.5 : 3,185,858
3,185,859

307– 88.5 : 3,185,860
3,185,861
3,185,862
3,185,863
3,185,864
3,185,865
107 : 3,185,866
141.4 : 3,185,867
308– 3.6 : 3,185,530
4 : 3,185,531
15 : 3,185,532
310– 8.2 : 3,185,868
8.4 : 3,185,869
9.4 : 3,185,870
11 : 3,185,871
54 : 3,185,872
66 : 3,185,873
69 : 3,185,874
71 : 3,185,875
77 : 3,185,876
115 : 3,185,877
232 : 3,185,878
312–208 : 3,185,533
209 : 3,185,534
223 : 3,185,535
281 : 3,185,536
351 : 3,185,537
313– 65 : 3,185,891
78 : 3,185,879
3,185,880
82 : 3,185,881
83 : 3,185,882
269 : 3,185,883
315– 3.5 : 3,185,884
3,185,885
20 : 3,185,886
26 : 3,185,887
27 : 3,185,888
3,185,889
39.69: 3,185,890
82 : 3,185,892
246 : 3,185,893
317– 9 : 3,185,894
59 : 3,185,895
88 : 3,185,896
101 : 3,185,897
3,185,898
158 : 3,185,899
3,185,900
182 : 3,185,901
184 : 3,185,902
245 : 3,185,903
249 : 3,185,904
256 : 3,185,905
258 : 3,185,906
3,185,907
318– 6 : 3,185,908
135 : 3,185,909
138 : 3,185,910
275 : 3,185,911
321– 18 : 3,185,912
49 : 3,185,913
69 : 3,185,914
322– 2 : 3,185,915
28 : 3,185,916
323– 45 : 3,185,917
68 : 3,185,918
77 : 3,185,919
94 : 3,185,920
324– 29.5 : 3,185,921
34 : 3,185,922
37 : 3,185,923
61 : 3,185,924
77 : 3,185,925
3,185,926
158 : 3,185,927
328– 65 : 3,185,928
133 : 3,185,929
175 : 3,185,930
329–103 : 3,185,931
330– 12 : 3,185,932
14 : 3,185,933
19 : 3,185,934
59 : 3,185,936
63 : 3,185,937
331– 11 : 3,185,938
52 : 3,185,939
111 : 3,185,940
333– 1.1 : 3,185,941
30 : 3,185,935
3,185,942
72 : 3,185,943
73 : 3,185,944
81 : 3,185,945
336–181 : 3,185,946
192 : 3,185,948
200 : 3,185,947
338–131 : 3,185,949
176 : 3,185,950
339– 5 : 3,185,951
17 : 3,185,952
59 : 3,185,953
90 : 3,185,954
91 : 3,185,955

340– 6 : 3,185,956
15.5 : 3,185,957
3,185,958
38 : 3,185,959
58 : 3,185,960
81 : 3,185,961
146.3 : 3,185,962
168 : 3,185,963

340–172.5 : 3,185,964
3,185,965
3,185,966
173 : 3,185,967
3,185,968
174 : 3,185,969
174.1 : 3,185,970
3,185,971

340–174.1 : 3,185,972
199 : 3,185,973
233 : 3,185,974
237 : 3,185,975
266 : 3,185,976
347 : 3,185,977
350 : 3,185,978
373 : 3,185,979

343– 6 : 3,185,980
9 : 3,185,981
16 : 3,185,982
17.1 : 3,185,983
3,185,984
17.7 : 3,185,985
18 : 3,185,986
106 : 3,185,988

343–108 : 3,185,989
228 : 3,185,992
911 : 3,185,993
346– 1 : 3,185,994
3,185,995
22 : 3,185,996
33 : 3,185,997
65 : 3,185,987

346– 74 : 3,185,999
109 : 3,186,000
112 : 3,185,990
140 : 3,185,991
3,185,998
351–138 : 3,186,001
352– 86 : 3,186,002
208 : 3,186,003

CLASSIFICATION OF DESIGNS

D 7– 5 : 201,172
D 9– 6 : 201,173
D10– 8 : 201,174
201,175
D14– 3 : 201,176
201,177
D15– 11 : 201,178
D18– 2 : 201,179
201,180
201,181
201,182
D26– 1 : 201,183

D26– 5 : 201,184
10 : 201,185
D33– 8 : 201,186
D34– 4 : 201,187
5 : 201,188
15 : 201,189
201,190
201,191
D36– 2 : 201,192
201,193
201,194

D36– 8 : 201,195
201,196
D44– 10 : 201,197
201,198
D48– 4 : 201,199
D50– 5 : 201,200
D52– 6 : 201,201
D54– 12 : 201,202
13 : 201,203
14 : 201,204
D56– 4 : 201,205

D56– 4 : 201,206
9 : 201,207
201,208
201,209
D57– 1 : 201,210
D58– 5 : 201,211
201,212
6 : 201,213
201,214
201,215
201,216

D58– 6 : 201,217
201,218
201,219
8 : 201,220
201,221
26 : 201,222
201,223
201,224
D61– 1 : 201,225
D66– 1 : 201,226
D72– 1 : 201,227

D73– 1 : 201,228
201,229
D74– 1 : 201,230
17 : 201,231
D80– 9 : 201,232
D81– 4 : 201,233
10 : 201,234
D90– 1 : 201,235
5 : 201,236
11 : 201,237
20 : 201,238

CLASSIFICATION OF PLANTS

P. – 19 : 2,521
P. – 77 : 2,518
P. – 79 : 2,520
P. – 80 : 2,517
P. – 82 : 2,519

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama	1	Louisiana	17	Pennsylvania	37
Alaska	53	Maine	18	Puerto Rico	51
Arizona	2	Maryland	19	Rhode Island	38
Arkansas	3	Massachusetts	20	South Carolina	39
California	4	Michigan	21	South Dakota	40
Canal Zone	57	Minnesota	22	Tennessee	41
Colorado	5	Mississippi	23	Texas	42
Connecticut	6	Missouri	24	U.S. Army	55
Delaware	7	Montana	25	U.S. Air Force	54
District of Columbia	8	Nebraska	26	U.S. Navy	56
Florida	9	Nevada	27	U.S. Samoa	59
Georgia	10	New Hampshire	28	Utah	43
Guam	58	New Jersey	29	Vermont	44
Hawaii	50	New Mexico	30	Virgin Islands	52
Idaho	11	New York	31	Virginia	45
Illinois	12	North Carolina	32	Washington	46
Indiana	13	North Dakota	33	West Virginia	47
Iowa	14	Ohio	34	Wisconsin	48
Kansas	15	Oklahoma	35	Wyoming	49
Kentucky	16	Oregon	36		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1 : 3,185,023
3,185,227
3,185,563
3,185,564
3,185,762
2 : 3,184,818
3,184,889
3,185,193
4 : 3,184,762
3,184,772
3,184,788
3,184,796
3,184,809
3,184,844
3,184,878
3,184,882
3,184,890
3,184,898
3,184,901
3,184,902
3,184,905
3,184,926
3,184,957
3,184,959
3,184,960
3,184,979
3,184,993
3,185,008
3,185,012
3,185,020
3,185,021
3,185,026
3,185,036
3,185,037
3,185,045
3,185,057
3,185,062
3,185,063
3,185,065
3,185,072
3,185,074
3,185,104
3,185,108
3,185,139
3,185,140
3,185,148
3,185,163
3,185,177
3,185,178
3,185,179
3,185,187
3,185,189
3,185,195
3,185,197
3,185,211
3,185,238
3,185,257
3,185,277
3,185,296
3,185,305

4 : 3,185,312
3,185,341
3,185,344
3,185,347
3,185,364
3,185,365
3,185,399
3,185,400
3,185,406
3,185,407
3,185,409
3,185,414
3,185,419
3,185,435
3,185,438
3,185,442
3,185,443
3,185,444
3,185,454
3,185,460
3,185,475
3,185,479
3,185,481
3,185,488
3,185,496
3,185,502
3,185,508
3,185,514
3,185,517
3,185,524
3,185,526
3,185,528
3,185,533
3,185,534
3,185,553
3,185,590
3,185,639
3,185,643
3,185,645
3,185,646
3,185,647
3,185,652
3,185,720
3,185,778
3,185,803
3,185,813
3,185,815
3,185,817
3,185,833
3,185,834
3,185,842
3,185,857
3,185,858
3,185,865
3,185,869
3,185,871
3,185,881
3,185,882
3,185,897
3,185,908

4 : 3,185,922
3,185,931
3,185,932
3,185,933
3,185,941
3,185,951
3,185,969
3,185,970
3,185,974
3,185,978
3,185,982
3,185,984
3,185,985
3,185,986
3,185,988
3,185,989
3,185,996
3,186,000
5 : 3,184,789
3,185,040
3,185,144
3,185,792
6 : 3,184,775
3,184,776
3,184,782
3,184,795
3,184,816
3,184,835
3,184,847
3,184,852
3,184,917
3,184,918
3,184,930
3,184,997
3,185,067
3,185,095
3,185,136
3,185,149
3,185,161
3,185,162
3,185,169
3,185,173
3,185,200
3,185,252
3,185,280
3,185,349
3,185,363
3,185,370
3,185,371
3,185,380
3,185,510
3,185,531
3,185,552
3,185,615
3,185,719
3,185,776
3,185,874
3,185,959
3,185,963
3,185,979

7 : 3,184,756
3,185,575
3,185,613
3,185,658
3,185,660
3,185,665
3,185,674
3,185,700
3,185,717
3,185,734
3,185,736
3,185,738
3,185,995
8 : 3,184,845
3,184,863
3,184,967
9 : 3,184,766
3,184,801
3,185,071
3,185,111
3,185,125
3,185,147
3,185,327
3,185,360
3,185,423
3,185,581
3,185,604
3,185,852
10 : 3,184,758
3,185,293
3,185,424
3,185,523
3,185,804
12 : 3,184,786
3,184,800
3,184,813
3,184,814
3,184,815
3,184,843
3,184,859
3,184,869
3,184,888
3,184,895
3,184,914
3,184,919
3,184,920
3,184,936
3,184,949
3,184,958
3,184,974
3,184,987
3,184,989
3,184,994
3,185,002
3,185,007
3,185,009
3,185,015
3,185,042
3,185,061
3,185,070

12 : 3,185,097
3,185,107
3,185,112
3,185,146
3,185,171
3,185,172
3,185,174
3,185,186
3,185,202
3,185,214
3,185,233
3,185,253
3,185,261
3,185,273
3,185,286
3,185,290
3,185,291
3,185,292
3,185,294
3,185,299
3,185,301
3,185,303
3,185,309
3,185,323
3,185,325
3,185,329
3,185,338
3,185,342
3,185,359
3,185,384
3,185,396
3,185,397
3,185,401
3,185,418
3,185,421
3,185,429
3,185,490
3,185,492
3,185,494
3,185,498
3,185,500
3,185,501
3,185,511
3,185,512
3,185,548
3,185,593
3,185,627
3,185,640
3,185,667
3,185,678
3,185,697
3,185,724
3,185,768
3,185,775
3,185,783
3,185,790
3,185,805
3,185,809
3,185,830
3,185,844

12 : 3,185,886
3,185,903
3,185,907
3,185,916
3,185,939
3,185,947
3,185,991
3,185,998
3,185,999
13 : 3,184,819
3,184,829
3,184,970
3,185,168
3,185,499
3,185,535
3,185,574
3,185,622
3,185,668
3,185,669
3,185,670
3,185,867
3,185,953
3,186,001
14 : 3,184,773
3,184,832
3,184,934
3,185,068
3,185,069
3,185,118
3,185,133
3,185,230
3,185,255
3,185,314
3,185,315
3,185,346
3,185,393
3,185,422
3,185,447
3,185,486
15 : 3,184,803
3,184,851
3,185,194
3,185,408
3,185,437
16 : 3,185,324
3,185,383
3,185,577
3,185,578
3,185,825
17 : 3,184,757
3,184,877
3,185,001
3,185,221
3,185,279
3,185,737
3,185,745
18 : 3,185,779
19 : 3,184,955
3,184,961
3,184,962

19 : 3,185,096
3,185,113
3,185,120
3,185,166
3,185,374
3,185,469
3,185,544
3,185,580
3,185,752
3,185,823
3,185,824
3,185,868
3,185,981
3,185,992
20 : 3,184,769
3,184,770
3,184,793
3,184,797
3,184,840
3,184,951
3,185,046
3,185,055
3,185,056
3,185,060
3,185,066
3,185,099
3,185,115
3,185,251
3,185,356
3,185,555
3,185,567
3,185,625
3,185,821
3,185,841
3,185,843
3,185,854
3,185,866
3,185,880
3,185,892
3,185,915
3,185,925
3,185,926
3,185,929
3,185,946
3,185,948
3,185,973
21 : 3,184,767
3,184,778
3,184,780
3,184,781
3,184,810
3,184,811
3,184,812
3,184,833
3,184,860
3,184,864
3,184,913
3,184,932
3,184,978
3,184,980
3,184,984
3,184,985
3,184,988
3,185,039
3,185,075
3,185,076
3,185,077
3,185,078
3,185,079
3,185,080
3,185,081
3,185,082
3,185,083
3,185,103
3,185,110
3,185,116
3,185,137
3,185,138
3,185,183
3,185,184
3,185,208
3,185,245
3,185,267
3,185,278
3,185,283
3,185,307
3,185,313
3,185,330
3,185,354
3,185,355
3,185,375
3,185,376
3,185,456
3,185,466
3,185,467
3,185,478
3,185,482
3,185,484
3,185,503
3,185,525
3,185,536

21 : 3,185,562
3,185,592
3,185,650
3,185,655
3,185,693
3,185,718
3,185,761
3,185,810
3,185,853
3,185,901
3,185,902
3,185,910
3,185,961
3,185,968
22 : 3,184,804
3,184,846
3,184,875
3,184,880
3,184,964
3,184,968
3,185,170
3,185,235
3,185,246
3,185,256
3,185,281
3,185,282
3,185,302
3,185,345
3,185,379
3,185,595
3,185,623
3,185,677
3,185,893
3,185,975
24 : 3,185,016
3,185,034
3,185,134
3,185,198
3,185,340
3,185,433
3,185,476
3,185,758
3,185,788
3,185,936
26 : 3,184,777
3,184,805
3,184,836
3,184,891
3,185,117
3,185,243
3,185,831
28 : 3,185,043
3,185,053
3,185,167
3,185,362
3,185,420
3,185,583
3,185,584
3,185,585
3,185,612
3,185,784
29 : 3,184,765
3,184,791
3,184,830
3,184,837
3,184,922
3,184,956
3,184,972
3,184,975
3,184,983
3,185,013
3,185,127
3,185,130
3,185,145
3,185,158
3,185,159
3,185,181
3,185,201
3,185,265
3,185,306
3,185,311
3,185,334
3,185,343
3,185,348
3,185,373
3,185,388
3,185,417
3,185,468
3,185,487
3,185,507
3,185,530
3,185,539
3,185,541
3,185,542
3,185,573
3,185,576
3,185,628
3,185,642
3,185,659
3,185,666
3,185,682

29 : 3,185,690
3,185,691
3,185,694
3,185,704
3,185,706
3,185,713
3,185,726
3,185,730
3,185,764
3,185,767
3,185,786
3,185,812
3,185,816
3,185,856
3,185,860
3,185,884
3,185,885
3,185,890
3,185,900
3,185,934
3,185,935
3,185,937
3,185,942
3,185,945
3,185,954
3,185,977
30 : 3,184,849
3,185,756
31 : 3,184,761
3,184,779
3,184,792
3,184,802
3,184,820
3,184,821
3,184,850
3,184,854
3,184,857
3,184,858
3,184,872
3,184,873
3,184,886
3,184,893
3,184,896
3,184,907
3,184,911
3,184,938
3,184,946
3,184,969
3,184,981
3,184,996
3,184,999
3,185,005
3,185,019
3,185,022
3,185,025
3,185,029
3,185,030
3,185,031
3,185,032
3,185,033
3,185,050
3,185,051
3,185,085
3,185,087
3,185,089
3,185,106
3,185,121
3,185,123
3,185,154
3,185,156
3,185,165
3,185,212
3,185,295
3,185,300
3,185,308
3,185,316
3,185,350
3,185,361
3,185,366
3,185,368
3,185,372
3,185,377
3,185,378
3,185,410
3,185,416
3,185,471
3,185,473
3,185,520
3,185,540
3,185,543
3,185,556
3,185,570
3,185,588
3,185,589
3,185,598
3,185,600
3,185,609
3,185,626
3,185,644
3,185,663
3,185,675

31 : 3,185,676
3,185,683
3,185,705
3,185,710
3,185,715
3,185,728
3,185,750
3,185,760
3,185,766
3,185,773
3,185,780
3,185,781
3,185,785
3,185,789
3,185,791
3,185,818
3,185,822
3,185,826
3,185,838
3,185,848
3,185,850
3,185,859
3,185,861
3,185,862
3,185,873
3,185,875
3,185,877
3,185,883
3,185,891
3,185,906
3,185,912
3,185,914
3,185,928
3,185,940
3,185,955
3,185,960
3,185,964
3,185,965
3,185,966
3,185,967
3,185,972
3,185,993
32 : 3,184,798
3,184,885
3,184,966
3,185,318
3,185,483
3,185,546
3,185,708
3,185,759
3,185,917
34 : 3,184,784
3,184,807
3,184,827
3,184,856
3,184,861
3,184,897
3,184,899
3,184,906
3,184,915
3,184,921
3,184,933
3,184,940
3,184,943
3,184,945
3,184,948
3,184,992
3,184,998
3,185,000
3,185,006
3,185,010
3,185,047
3,185,048
3,185,073
3,185,088
3,185,101
3,185,102
3,185,105
3,185,124
3,185,128
3,185,131
3,185,176
3,185,182
3,185,207
3,185,223
3,185,229
3,185,236
3,185,248
3,185,270
3,185,276
3,185,285
3,185,288
3,185,317
3,185,320
3,185,351
3,185,367
3,185,369
3,185,381
3,185,382
3,185,385
3,185,451

34 : 3,185,457
3,185,462
3,185,477
3,185,480
3,185,485
3,185,495
3,185,516
3,185,519
3,185,527
3,185,554
3,185,594
3,185,610
3,185,611
3,185,614
3,185,630
3,185,636
3,185,637
3,185,648
3,185,709
3,185,727
3,185,733
3,185,744
3,185,748
3,185,763
3,185,769
3,185,777
3,185,795
3,185,807
3,185,808
3,185,811
3,185,846
3,185,898
35 : 3,184,848
3,184,879
3,185,215
3,185,216
3,185,218
3,185,249
3,185,405
3,185,458
3,185,491
3,185,547
3,185,620
3,185,634
3,185,641
3,185,739
3,185,740
3,185,741
3,185,742
3,185,845
36 : 3,184,908
3,185,209
3,185,339
3,185,391
3,185,436
3,185,493
3,185,537
3,185,619
3,185,887
37 : 3,184,763
3,184,764
3,184,768
3,184,774
3,184,826
3,184,828
3,184,834
3,184,838
3,184,841
3,184,842
3,184,862
3,184,884
3,184,928
3,184,937
3,184,944
3,184,947
3,184,950
3,184,952
3,184,953
3,184,954
3,184,986
3,184,991
3,185,004
3,185,014
3,185,024
3,185,041
3,185,049
3,185,090
3,185,143
3,185,153
3,185,180
3,185,185
3,185,204
3,185,210
3,185,247
3,185,254
3,185,269
3,185,289
3,185,310
3,185,336
3,185,337
3,185,392

37 : 3,185,404
3,185,413
3,185,415
3,185,428
3,185,432
3,185,434
3,185,461
3,185,465
3,185,549
3,185,559
3,185,565
3,185,586
3,185,596
3,185,597
3,185,662
3,185,680
3,185,688
3,185,707
3,185,711
3,185,770
3,185,787
3,185,794
3,185,797
3,185,798
3,185,799
3,185,800
3,185,851
3,185,855
3,185,863
3,185,864
3,185,870
3,185,879
3,185,895
3,185,911
3,185,927
3,185,938
3,185,952
3,185,980
38 : 3,184,865
3,185,506
39 : 3,185,297
3,185,654
41 : 3,184,760
3,185,114
3,185,190
3,185,522
3,185,603
3,185,746
3,185,747
3,185,921
42 : 3,184,759
3,184,823
3,184,824
3,184,973
3,185,011
3,185,091
3,185,092
3,185,126
3,185,217
3,185,219
3,185,224
3,185,228
3,185,394
3,185,403
3,185,505
3,185,661
3,185,754
3,185,820
3,185,827
3,185,849
3,185,923
3,185,930
3,185,958
3,185,990
3,185,994
3,185,997
43 : 3,185,017
3,185,150
3,185,151
3,185,152
3,185,222
3,185,242
3,185,635
44 : 3,184,822
45 : 3,184,868
3,184,883
3,184,935
3,185,018
3,185,027
3,185,412
3,185,561
3,185,608
3,185,702
3,185,755
3,185,913
3,185,944
3,185,957
3,186,003
46 : 3,184,866
3,185,100
3,185,226

46 : 3,185,234
3,185,271
3,185,322
3,185,450
3,185,455
3,185,518
3,185,521
3,185,782
3,185,829
47 : 3,185,671
3,185,735
3,185,743
48 : 3,184,771
3,184,806
3,184,903
3,184,904
3,184,909
3,184,912
3,184,971
3,184,976
3,185,093
3,185,109
3,185,132
3,185,135
3,185,155
3,185,175
3,185,241
3,185,304
3,185,319
3,185,326
3,185,425
3,185,445
3,185,449
3,185,470
3,185,472
3,185,568
3,185,587
3,185,616
3,185,617
3,185,618
3,185,692
3,185,757
3,185,806
3,185,819
3,185,836
3,185,896
3,185,899
48 : 3,185,918
3,185,949
3,185,950
49 : 3,185,395
53 : 3,184,881
61 : 3,184,995
3,185,225
3,185,529
3,185,545
3,185,839
62 : 3,184,853
3,185,489
3,185,550
64 : 3,184,787
3,185,298
3,185,463
3,185,571
3,185,664
70 : 3,184,783
3,184,794
3,184,808
3,184,894
3,185,157
3,185,160
3,185,191
3,185,192
3,185,250
3,185,332
3,185,333
3,185,353
3,185,358
3,185,497
3,185,515
3,185,557
3,185,606
3,185,847
73 : 3,185,696
77 : 3,185,653
80 : 3,184,874
3,184,929
3,184,942
3,184,977
3,184,990
3,185,035
3,185,084
3,185,141
3,185,188
80 : 3,185,196
3,185,237
3,185,239
3,185,240
3,185,258
3,185,259
3,185,272
3,185,275
3,185,284
3,185,321
3,185,398
3,185,448
3,185,509
3,185,513
3,185,558
3,185,560
3,185,601
3,185,605
3,185,631
3,185,632
3,185,649
3,185,672
3,185,673
3,185,685
3,185,699
3,185,723
3,185,751
3,185,753
3,185,837
3,185,889
3,185,956
3,185,962
83 : 3,184,799
3,184,817
3,184,867
3,184,910
3,184,916
3,184,923
3,184,925
3,184,965
3,185,003
3,185,142
3,185,205
3,185,260
3,185,274
3,185,328
3,185,335
83 : 3,185,386
3,185,427
3,185,430
3,185,431
3,185,446
3,185,452
3,185,453
3,185,459
3,185,566
3,185,607
3,185,651
3,185,657
3,185,716
3,185,729
3,185,732
3,185,765
3,185,802
3,185,971
3,185,976
3,185,983
3,186,002
84 : 3,184,785
3,184,831
3,184,839
3,184,855
3,184,870
3,184,876
3,184,887
3,184,892
3,184,924
3,184,939
3,184,941
3,185,038
3,185,044
3,185,052
3,185,054
3,185,058
3,185,064
3,185,086
3,185,094
3,185,122
3,185,129
3,185,199
3,185,203
3,185,213
3,185,244
3,185,262
84 : 3,185,263
3,185,266
3,185,268
3,185,331
3,185,357
3,185,387
3,185,402
3,185,411
3,185,440
3,185,441
3,185,464
3,185,504
3,185,569
3,185,572
3,185,579
3,185,599
3,185,633
3,185,638
3,185,689
3,185,721
3,185,722
3,185,749
3,185,793
3,185,814
3,185,828
3,185,835
3,185,872
3,185,876
3,185,878
3,185,888
3,185,904
3,185,909
3,185,920
89 : 3,185,591
96 : 3,185,712
97 : 3,184,900
3,184,927
3,185,059
3,185,352
3,185,390
3,185,684
3,185,686
3,185,695
3,185,701
3,185,840
99 : 3,184,790
3,184,931
99 : 3,185,119
3,185,220
3,185,231
3,185,232
3,185,439
3,185,602
3,185,624
3,185,687
3,185,703
3,185,774
3,185,796
3,185,832
3,185,943
3,185,987
102 : 3,185,098
104 : 3,185,681
3,185,714
106 : 3,185,629
3,185,725
3,185,731
111 : 3,185,426
124 : 3,184,963
3,185,206
3,185,264
3,185,389
3,185,771
3,185,772
3,185,894
3,185,905
3,185,919
125 : 3,184,871
3,184,982
3,185,028
3,185,474
3,185,532
3,185,538
3,185,551
3,185,621
3,185,656
3,185,679
3,185,698
3,185,801
3,185,924
132 : 3,184,825
136 : 3,185,164
3,185,582
152 : 3,185,287

DESIGN PATENTS

4 : 201,189
201,191
201,203
201,222
201,231
201,234
201,236
6 : 201,214
9 : 201,172
10 : 201,174
201,175
12 : 201,201
12 : 201,204
201,205
201,232
201,237
201,238
13 : 201,185
14 : 201,198
20 : 201,225
201,227
21 : 201,176
201,177
21 : 201,186
201,197
201,215
201,226
201,233
29 : 201,192
201,193
201,194
201,196
201,211
201,213
29 : 201,218
201,221
201,228
201,230
31 : 201,178
201,183
201,184
201,190
201,195
201,200
201,202
31 : 201,206
201,210
201,229
32 : 201,207
201,208
201,209
34 : 201,188
201,199
201,216
201,217
201,219
34 : 201,220
36 : 201,173
37 : 201,179
201,180
201,181
201,182
201,235
42 : 201,224
45 : 201,187
46 : 201,212
48 : 201,223

PLANT PATENTS

21 : 2,517
21 : 2,518
21 : 2,519
21 : 2,520
38 : 2,521

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
May 25, 1965 Volume 814 Number 4

TRADEMARKS

NOTICES

International Convention for the Protection of Industrial Property

Accession by Southern Rhodesia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by Southern Rhodesia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.
May 4, 1965.

International Convention for the Protection of Industrial Property

Accession by Zambia to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession, effective April 6, 1965, by the Republic of Zambia to the Paris Convention for the Protection of Industrial Property, as revised at Lisbon on October 31, 1958.

EDWARD J. BRENNER,
Commissioner of Patents.
May 4, 1965.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 203,931 (WELDWOOD), United States Plywood Co., Inc., Plywood, **filed** Feb. 5, 1965, D.C., S.D.N.Y., Doc. 65/380, *United States Plywood Corp.* v. *F. R. Weber, Inc.* Consent judgment; defendant enjoined Mar. 3, 1965.

Reg. No. 553,826 (SARONG), I. Newman & Sons, Incorporated, Corsets, girdles, and brassieres; **Reg. No. 622,358**, same, Sarong, Inc., Corsets and girdles; **Reg. No. 628,759** (SARI), same, Brassieres and girdles; **Reg. No. 659,410** (SARETTE), same, Brassieres; **Reg. No. 659,411** (SARONGSTER), same, Panty girdles; **Reg. No. 660,393** (SARABANDE), Maiden Form Brassiere Company, Inc., Brassieres; **Reg. No. 669,937** (SARONG TWO), Sarong, Inc., Corsets, girdles, and brassieres, **filed** Nov. 1, 1961, D.C., S.D.N.Y., Doc. 61/3895, *Sarong, Inc.* v. *Sari Foundations, Inc.* Stipulation and order of discontinuance Aug. 21, 1964.

Reg. No. 620,114 (PINE-AIR), Delta Chemical Company, Liquid cleaning agent having deodorizing and disinfecting qualities, **filed** Feb. 19, 1965, D.C., W.D. Tenn. (Memphis), Doc. C-65-51, *Coastal Chemical Co., Inc.* v. *Dust-A-Way, Inc.*

Reg. No. 622,358. (See Reg. No. 553,826.)

Reg. No. 628,759. (See Reg. No. 553,826.)

CONDITION OF TRADEMARK APPLICATIONS AS OF MARCH 31, 1965

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)] ---------- 15,573
Date of oldest new application ---------- August 26, 1964
Date of oldest amended application ---------- July 27, 1964

J. H. MERCHANT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) C. M. WENDT, Classes 2, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 41, 42, 43, 44	8-26-64	8-5-64
(II) H. E. KASCHUB, Classes 1, 3, 6, 7, 9, 10, 18, 22, 27, 38, 40, 45, 46, 47, 48, 49, 50, 51, 52; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, 107; Collective Membership Marks, Class 200; Certification Marks, Classes A and B	9-1-64	7-27-64
Renewals (All Classes)	3-8-65	3-29-65
Sec. 12 (c) Publications (All Classes)	3-16-65	-- ----

Applications filed during the month of March 1965—2,676

Registrations Issued ---------- 335—No. 789,821 to No. 790,155
Renewals Issued ---------- 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 10 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Reg. No. 648,087 (STP), Chemical compounds, additive compound for motor oils, **filed** Jan. 14, 1965, D.C., E.D. Okla. (Muskogee), Doc. 5760, *Studebaker Industries, Inc.* v. *Fowler Enterprises.* Trademark held valid and infringed; defendant enjoined Jan. 14, 1965.

Reg. No. 659,410. (See Reg. No. 553,826.)

Reg. No. 659,411. (See Reg. No. 553,826.)

Reg. No. 660,393. (See Reg. No. 553,826.)

Reg. No. 661,636 (BREATHALYZER), Robert F. Borkenstein, Apparatus for measuring the alcoholic content of individuals; **Reg. No. 662,413** (BREATHALYZER in script), same, Bottled chemical preparation used for absorbing and oxidizing alcohol, **filed** July 22, 1963, D.C., S.D. Calif. (Los Angeles), Doc. 63-851-CC, *Robert F. Borkenstein et al.* v. *Charles E. Curry Company.* Consent judgment; defendant enjoined Dec. 14, 1964.

Reg. No. 662,413. (See Reg. No. 661,636.)

Reg. No. 669,937. (See Reg. No. 553,826.)

Reg. No. 711,761 (TILT-TOP), Miller Tilt-Top Trailer, Inc., Heavy duty, single axle, flat top trailer, used for hauling, moving, loading machinery, farm equipment, and bulky heavy units generally, **filed** Jan. 2, 1962, D.C., E.D. Wis. (Milwaukee), Doc. 62-C-2, *Miller Tilt-Top Trailer, Inc.* v. *Wisconsin Trailer Co., Inc. et al.* Consent decree; defendant enjoined Jan. 4, 1965. **Same, filed** Mar. 29, 1962, D.C., E.D. Wis. (Milwaukee), Doc. 62 C-93, *Miller Tilt Top Trailer, Inc.* v. *Aring Equipment Co., Inc.* Consent decree; defendant enjoined Jan. 4, 1965.

Reg. No. 731,810 (TENSOR), Tensor Electric Development Company, Lamps, A.C.-D.C. voltage supplies, A.C. generators, master oscillator, etc.; **Des. 196,262**, E. K. Sovatsky, PORTABLE INCANDESCENT LAMP, **filed** Dec. 3, 1964, D.C., S.D. Calif. (Los Angeles), Doc. 64-1682-WM, *Tensor Corporation* v. *Sears, Roebuck & Co. et al.*

Erratum

In the OFFICIAL GAZETTE of March 30, 1965, vol. 812, p TM 184, under the heading "Trademark Suits," second column, line 41, beginning with "Reg. No. 717,500" strike out all to and including "granted Oct. 9, 1964." in line 48, same column.

Notice of Tentative Recordation of a Trade Name

[T.D. 56394]

Tentative recordation of trade name under section 42, Trademark Act of 1946, and section 11.16, Customs Regulations

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF CUSTOMS,
Washington, D.C., April 14, 1965.

To Collectors of Customs and Others Concerned:

An application has been filed in the Treasury Department for the recordation of the following described trade name under the provisions of section 42, Trademark Act of 1946 and section 11.16, Customs Regulations:

> "FANON-MASCO," the trade name used by Fanon Electronic Industries, Inc., a corporation organized under the laws of the State of New York, located and doing business at 439 Frelinghuysen Avenue, Newark, New Jersey. The trade name is associated with merchandise comprising electronic amplification, communication, recording, reproducing and signaling equipment and components thereof, manufactured in Japan.

Any person who desires to file an opposition to the recordation of this trade name shall notify the Commissioner of Customs, Bureau of Customs, Washington, D.C., 20226, before the expiration of 30 days after May 14, 1965, of his intent to oppose the recordation. If a notice of opposition is filed, the opposer will be furnished with a copy of the application for recordation of the trade name, together with its supporting documents and instructions as to the procedure to be followed. The customs officers concerned will be given notice within 45 days after May 14, 1965, of any opposition proceeding.

Until 45 days after May 14, 1965, all articles of foreign manufacture bearing names or marks which copy or simulate the above-mentioned trade name shall be detained, but not seized, and thereafter, shall receive the treatment provided for in section 11.17, Customs Regulations, unless a notice is received that an opposition has been filed, in which case such articles shall continue to be detained until a final determination is made concerning the right of the applicant to the trade name.

LESTER D. JOHNSON,
Acting Commissioner of Customs.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 178,129. Macrosonics Corporation, Carteret, N.J. Filed Oct. 1, 1963.

MULTISONS

Class 21—Electrical Apparatus, Machines, and Supplies

For Broad Band Ultrasonic Generators and Transducer Assemblies.

Class 26—Measuring and Scientific Appliances

For Sonic and Ultrasonic Power, Processing, Testing and Metering Equipment, Ultrasonic Chemical Reactors, and Sound Sources for Use in the Generation of Sound at Various Frequencies in Gases or Liquids for Research, Experimentation or in Commercial Applications Such as Sonic Cleaning, Chemical Reactions, Fog Production, and Loosening of Dust.

First use Sept. 13, 1963.

SN 180,066. British Nylon Spinners Limited, Pontypool, England. Filed Oct. 31, 1963.

FORONYLON

Priority claimed under Sec. 44(d) on British Reg. Nos. 850,237 and 850,238, dated June 12, 1963.

Class 1—Raw or Partly Prepared Materials

For Nylon Fibres and Filaments.

Class 43—Thread and Yarn

For Nylon Yarns and Threads.

SN 187,586. Marvin E. Kornegay, d.b.a. Kon-Gay Laboratories, Greensboro, N.C. Filed Feb. 27, 1964.

KON-GAY

Class 51—Cosmetics and Toilet Preparations

For Hair Preparations and Lotions.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use on or about October 1947.

SN 188,489. Werner & Mertz, G.m.b.H., Mainz, Germany. Filed Mar. 11, 1964.

UBAX

Owner of German Reg. No. 482,572, dated Feb. 5, 1936.

Class 4—Abrasives and Polishing Materials

For Floor Polish and Floor Polishing Materials.

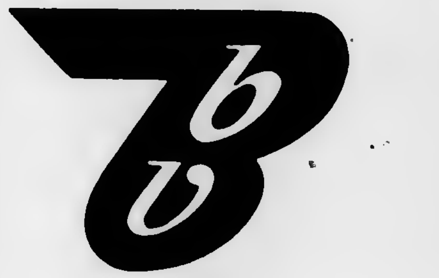
Class 6—Chemicals and Chemical Compositions

For Anti-Corrosion Agents, Leather Preserving Materials, Dressing and Tanning Substances.

Class 52—Detergents and Soaps

For Stain Removers, and Floor Cleaning Materials.

SN 194,025. Bendix-Balzers Vacuum, Inc., Rochester, N.Y. Filed May 22, 1964.



Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Furnaces, Pumps, Evaporators, and Parts Thereof for Industrial Use.

Class 26—Measuring and Scientific Appliances

For Electric Furnaces, Pumps, Evaporators, and Parts Thereof for Laboratory Use.

First use Apr. 21, 1964.

SN 194,807. Kaz Manufacturing Co., Inc., New York, N.Y. Filed June 3, 1964.

DYNAMIST

Class 34—Heating, Lighting, and Ventilating Apparatus

For Electric Room Humidifiers.

Class 44—Dental, Medical, and Surgical Appliances

For Electric Vaporizers for Medicinal Use.

First use Apr. 15, 1964.

SN 196,745. Vitalfa Corporation, Reseda, Calif. Filed June 29, 1964.

BREWSTER

Owner of Reg. No. 587,425.

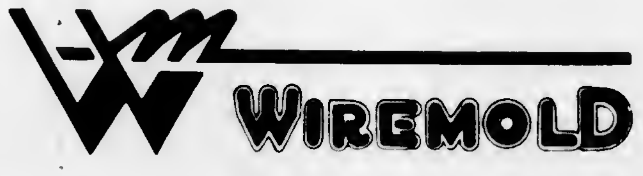
Class 18—Medicines and Pharmaceutical Preparations

For Vitamin and Mineral Concentrate Used as a Food Supplement, Dietary Food Supplement in Tablet Form, and Vitamin C in Tablet Form.
First use July 1, 1950.

Class 46—Foods and Ingredients of Foods

For High Protein Food Concentrate in Wafer Form.
First use about Mar. 1, 1956.

SN 198,512. The Wiremold Company, Hartford, Conn. Filed July 24, 1964.



Owner of Reg. Nos. 124,280, 750,865, and 769,872.

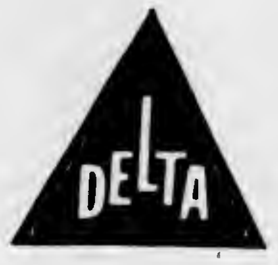
Class 21—Electrical Apparatus, Machines, and Supplies

For Wired Fluorescent Units.
First use Apr. 10, 1964.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Flexible Air Ducts.
First use July 1, 1963.

SN 200,423. Delta Mercantile Corp., New York, N.Y. Filed Aug. 24, 1964.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Metal Wires, Stitching Wires, Steel Strapping, Baling Wires and Staples.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Strapping Tools, Strapping Dispensers and Stapling Machines.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Strapping Seals.

First use January 1962.

SN 203,915. Waterloo Idea Companies, d.b.a. King Midas Products, Waterloo, Iowa. Filed Oct. 14, 1964.

The word "Product" is disclaimed apart from the mark as shown.

Class 2—Receptacles

For Serving Trays, Tiered Serving Pieces and Transparent Tape Dispensers.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Ashtrays and Cigarette Boxes.

Class 26—Measuring and Scientific Appliances

For Rulers.

Class 37—Paper and Stationery

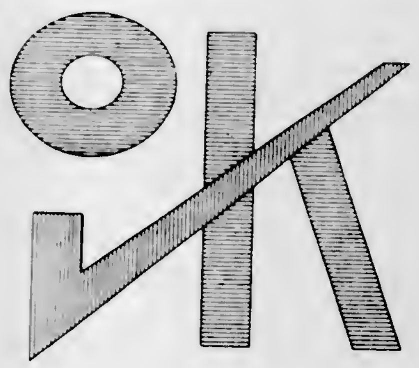
For Letter Holders, Pen and Pencil Holders, Desk Type Calendars, Desk File Boxes, Check Racks, Combination Name Plate and Calendar.

Class 50—Merchandise Not Otherwise Classified

For Name Plates.

First use July 1, 1964.

SN 205,495. Farwell, Ozmun, Kirk & Co., St. Paul, Minn. Filed Nov. 4, 1964.



The drawing is lined for red and blue.

Class 2—Receptacles

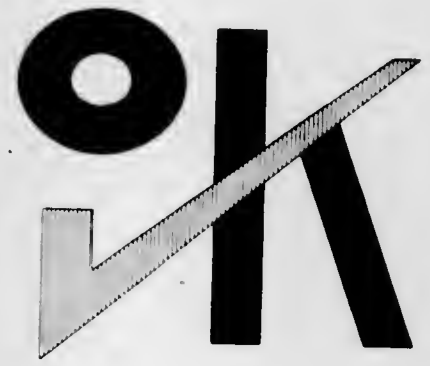
For Mail Boxes.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hardware Items, Specifically Including Nails, Hinges, Bolts and Nuts and Doorknobs.

First use Aug. 3, 1961.

SN 205,496. Farwell, Ozmun, Kirk & Co., St. Paul, Minn. Filed Nov. 4, 1964.



The drawing is lined for red.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hammers, Screw Drivers, Rakes, Hoes, Shovels, Axes and Saws.

Class 26—Measuring and Scientific Appliances

For Levelers and Miter Boxes.

Class 50—Merchandise Not Otherwise Classified

For Ladders.

First use Aug. 3, 1961.

SECTION 2

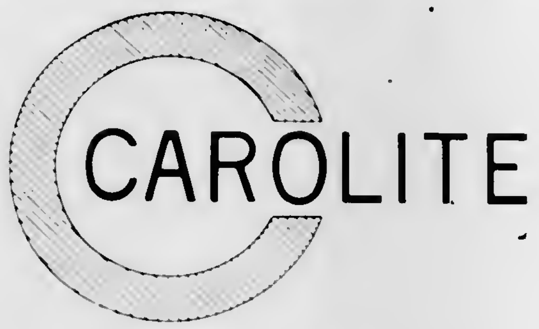
The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 181,459. J. W. Carroll & Sons, Gardena, Calif. Filed Nov. 19, 1963.



The drawing is lined for the color green.
For Plastic Goods—Namely, Plastic Sheets and Plastic Prismatic Sheets.
First use Apr. 18, 1963.

SN 188,145. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Mar. 6, 1964.

GAMMAPRENE

For Terpene Polymers and Copolymers.
First use Oct. 9, 1963.

SN 188,528. Fiber Sales and Development Corporation, North Tonawanda, N.Y. Filed Mar. 12, 1964.

KEYCEL

For Finely Divided Wood Pulp Cellulose, Also Known as Wood Flour Cellulose, for Use in the Manufacture of Moldable Plastic Material and Also for Use in Chemical Filtering Processes.
First use on or about Sept. 27, 1963.

SN 189,574. General Aniline & Film Corporation, New York, N.Y. Filed Mar. 25, 1964.

GANAPOL

Owner of Reg. No. 736,633.
For Water-Soluble Synthetic Resinous Polymers.
First use July 22, 1963.

SN 189,886. Fiberfil, Inc., Evansville, Ind. Filed Mar. 30, 1964.

HILUBE

For Synthetic Plastic Injection-Molding Materials in Pellet or Granular Form.
First use on or about Mar. 6, 1964.

SN 189,887. Fiberfil, Inc., Evansville, Ind. Filed Mar. 30, 1964.

PLASFIL

For Synthetic Plastic Injection-Molding Materials in Pellet or Granular Form.
First use on or about Mar. 6, 1964.

SN 190,168. Fiberfil, Inc., Evansville, Ind. Filed Apr. 2, 1964.

URAFIL

For Synthetic Plastic Injection-Molding Materials in Pellet or Granular Form.
First use on or about Nov. 16, 1962.

SN 190,170. Fiberfil, Inc., Evansville, Ind. Filed Apr. 2, 1964.

ETHOFIL

For Synthetic Plastic Injection-Molding Materials in Pellet or Granular Form.
First use on or about May 18, 1962.

SN 197,746. Monsanto Company, St. Louis, Mo. Filed July 13, 1964.

SKYGARD

For High Temperature Resistant Resins.
First use May 12, 1964.

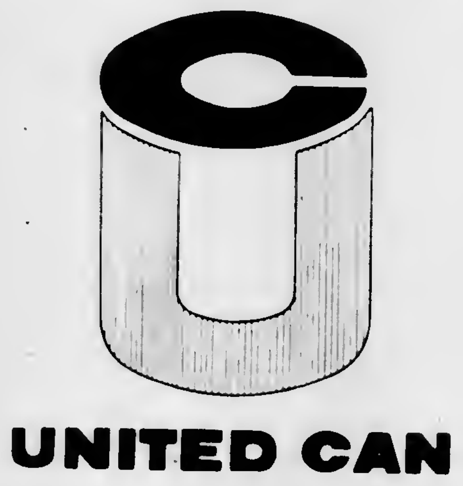
SN 197,878. Crown Rubber Company, Fremont, Ohio. Filed July 15, 1964.

VULCO SPONGE

No claim is made to the exclusive right to use the word "Sponge" apart from the mark "Vulco Sponge." Owner of Reg. No. 731,220.
For Sheet Material Consisting of Latex Foam Bonded to Fabric Used as Padding or Insole Material in Shoes.
First use August 1961.

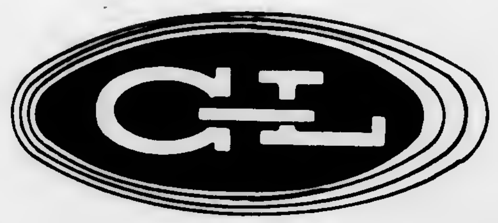
Class 2—Receptacles

SN 195,943. Hunt Foods and Industries, Inc., d.b.a. United Can Company, Fullerton, Calif. Filed June 18, 1964.



The drawing is lined for red. The word "Can" is disclaimed apart from the balance of the mark as shown.
For Tin and Aluminum Cans.
First use Jan. 13, 1964.

SN 200,094. Glass Laboratories, Inc., Brooklyn, N.Y. Filed Aug. 18, 1964.



For Coin Holders and Magnetic Utility Trays.
First use June 28, 1963.

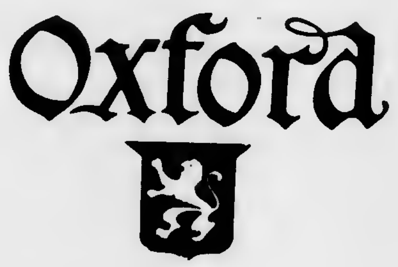
Class 4—Abrasives and Polishing Materials

SN 190,765. Todd Chemical Company, Inc., Great Neck, N.Y. Filed Apr. 9, 1964.

ARMOR-TEC

For Water and Scratch Resistant Composition Floor Finish, in the Nature of a Wax.
First use Apr. 3, 1964.

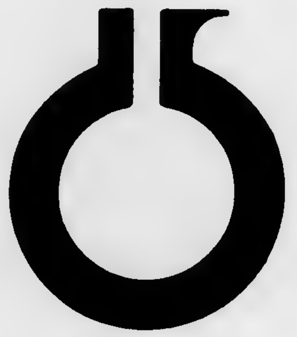
SN 204,990. New Jersey Chemical Company, Inc., Lyndhurst, N.J. Filed Oct. 28, 1964.



Owner of Reg. Nos. 704,131, 727,850, and others.
For Liquid and Paste Waxes, Self-Polishing Waxes, Slip-Retardant Waxes, Water Emulsion Waxes, Solvent Waxes, Waxless Finishing Compounds in the Nature of a Polish, and Metal Polish.
First use at least as early as November 1958.

Class 5—Adhesives

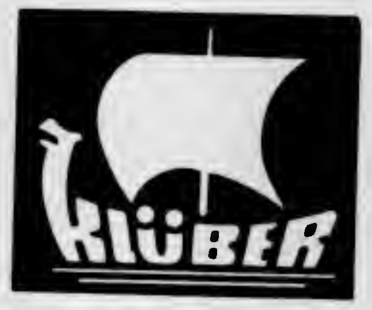
SN 204,538. Allegheny Steel Corporation, Bryn Mawr, Pa. Filed Oct. 22, 1964.



For Tire Sealant.
First use Oct. 1, 1963.

Class 6—Chemicals and Chemical Compositions

SN 188,415. August Kluber Company, Bergstrasse, Schriesheim, Germany. Filed Mar. 11, 1964.



Owner of German Reg. No. 757,526, dated Jan. 26, 1962.
For Chemical Preparations for the Conditioning and Purification of Water and Gas.

SN 191,659. Berkshire Color & Chemical Co., Reading, Pa. Filed Apr. 21, 1964.

DUROSPERSE

For Dyestuffs.
First use Jan. 6, 1958.

SN 191,660. Berkshire Color & Chemical Co., Reading, Pa. Filed Apr. 21, 1964.

DUROFAST

For Dyestuffs.
First use Sept. 7, 1952.

SN 191,661. Berkshire Color & Chemical Co., Reading, Pa. Filed Apr. 21, 1964.

DUROSOL

For Dyestuffs.
First use Jan. 6, 1958.

SN 191,662. Berkshire Color & Chemical Co., Reading, Pa. Filed Apr. 21, 1964.

POLYSPERSE

For Dyestuffs.
First use Jan. 6, 1958.

SN 191,663. Berkshire Color & Chemical Co., Reading, Pa. Filed Apr. 21, 1964.

PADISPERSE

For Dyestuffs.
First use Jan. 6, 1958.

SN 191,664. Berkshire Color & Chemical Co., Reading, Pa. Filed Apr. 21, 1964.

DURONYL

For Dyestuffs.
First use June 5, 1961.

SN 191,665. Berkshire Color & Chemical Co., Reading, Pa. Filed Apr. 21, 1964.

ASTRASOL

For Dyestuffs.
First use Sept. 11, 1961.

SN 191,666. Berkshire Color & Chemical Co., Reading, Pa. Filed Apr. 21, 1964.

DURONYLITE

For Dyestuffs.
First use June 5, 1961.

SN 191,667. Berkshire Color & Chemical Co., Reading, Pa. Filed Apr. 21, 1964.

DUROLAN

For Dyestuffs.
First use Jan. 6, 1958.

SN 192,883. Armour and Company, Chicago, Ill. Filed May 7, 1964.

ARMOSTAT

Owner of Reg. No. 742,199.
For Chemicals and Chemical Compositions for Inclusion in or Application to the Surface of Substantially Non-Conductive Materials To Reduce and To Prevent Accumulated Electrostatic Charges Thereon.
First use Feb. 20, 1964.

SN 195,986. Microleak-Seal Impregnant, Inc., Rome, N.Y., assignee of Hester H. Voorhoeve, d.b.a. The Microseal Co., Rome, N.Y. Filed June 18, 1964.

MICROSEAL

For Plastic Impregnant for Filling the Pores of Metal Castings and the Like.
First use on or before Sept. 1, 1959.

SN 197,606. Milchem Incorporated, Houston, Tex. Filed July 10, 1964.

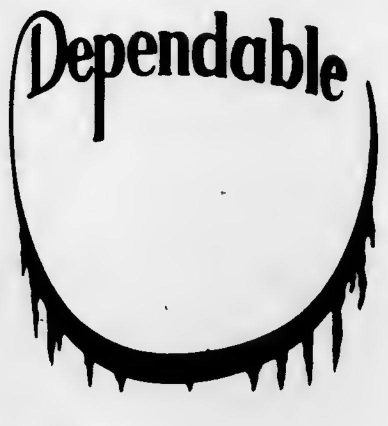
MIL-CRETE

For Chemical Composition Used as a Curing and Hardening Agent for Cement.
First use May 28, 1964.

SN 197,995. Stauffer Chemical Company, New York, N.Y. Filed July 16, 1964.

The words "Sodium Aluminum Phosphate" are disclaimed other than as shown in the mark.
For Sodium Aluminum Phosphate.
First use June 22, 1964.

SN 207,512. Mid-West Oil Company, Kansas City, Kans. Filed Dec. 4, 1964.



Owner of Reg. No. 640,237.
For Anti-Freeze.
First use Oct. 1, 1958.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 195,484. Zenza Bronica Kogyo Kabushiki Kaisha, Itabashi-ku, Tokyo, Japan. Filed June 11, 1964.

BRONICA

Owner of U.S. Reg. No. 704,604.
For Lighters for Cigars and Cigarettes.
First use November 1961; in commerce March 1963.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 186,706. The Dow Chemical Company, Midland, Mich. Filed Feb. 14, 1964.

STRATABLAST

For High Energy Explosive Additives—Namely, Metal Pellets.
First use Jan. 8, 1964.

Class 10—Fertilizers

SN 198,417. Hyper-Humus Company, d.b.a. Lafayette Peat Co., Newton, N.J. Filed July 23, 1964.

No claim is made to the word "Peat" apart from the mark as shown.
For Peat Humus.
First use August 1963.

Class 12 — Construction Materials

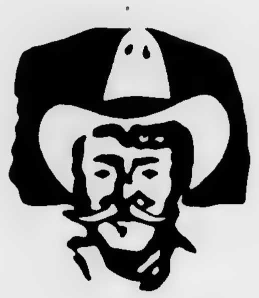
SN 201,094. Mary Carter Paint Co., Tampa, Fla. Filed Sept. 2, 1964.

TUFF STUFF

For Liquid Asbestos-Fibre, Asphaltum-Roof Coating.
First use Oct. 15, 1955.

SN 205,385. Arrow Plywood Corporation, Belmont, Mass. Filed Nov. 3, 1964.

Plywood Ranch



The word "Plywood" is disclaimed apart from the mark as shown.
For Plywood.
First use 1957.

SN 205,976. United States Plywood Corporation, New York, N.Y. Filed Nov. 10, 1964.

GRAPHICA

For Wood Veneer for Various Industrial Uses, Such as Edge Banding for Lumber, Wall Covering, and Plywood, Surface Material in High Pressure Laminates Used for Table, Counter, and Cabinet Tops, etc.
First use Aug. 25, 1964.

SN 205,977. United States Plywood Corporation, New York, N.Y. Filed Nov. 10, 1964.

FACAD

For Asbestos Cement Building Panels.
First use Oct. 26, 1964.

SN 206,019. Elmendorf Research Incorporated, Palo Alto, Calif. Filed Nov. 12, 1964.

STOP-CHECK

For Plywood Panels.
First use on about Sept. 24, 1964.

SN 206,184. H. H. Robertson Company, Pittsburgh, Pa. Filed Nov. 13, 1964.

RESOLITE

Owner of Reg. Nos. 617,047, 621,054, and 719,125.
For Glass-Fiber-Reinforced Polyester Laminated Sheets, Both Flat and Corrugated, Useful for Construction Sheets in the Erection of Buildings or Skylights, Glazing, Infill Panels and Siding.
First use Sept. 11, 1951.

SN 206,557. Lumaside, Inc., Milwaukee, Wis. Filed Nov. 19, 1964.

STEELSIDE

Owner of Reg. Nos. 555,309 and 693,030.
For House Siding Made of Steel.
First use Nov. 5, 1964.

SN 206,597. Baltimore Concrete Plank Corporation, Baltimore, Md. Filed Nov. 20, 1964.

CELDEX

For Prestressed and Precast Concrete Planks and Beams.
First use Oct. 13, 1964.

SN 206,728. Hunter Douglas International Corporation, New York, N.Y. Filed Nov. 23, 1964.

LUXAGRAIN

For Treated Plywood.
First use Oct. 21, 1964.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 181,491. Norco, Inc., Georgetown, Conn. Filed Nov. 19, 1963.

TENSOL

For Quick Release Fastener Pins of the Clevis Type.
First use Oct. 21, 1963.

SN 191,335. Clifford C. Warner, d.b.a. Camset Bolt Anchor Company, Denver, Colo. Filed Apr. 16, 1964.

CAMSET

For Rock and Construction Bolt Anchors.
First use Feb. 28, 1964.

SN 193,227. Simplex Wire & Cable Co., Cambridge, Mass. Filed May 11, 1964.

REEL-PIPE

For Flexible Armored Plastic Pipe.
First use Mar. 25, 1963.

SN 196,500. Chicago Metallic Manufacturing Company, Zurich, Ill. Filed June 26, 1964.

THRIFTI-BAKE

For Aluminum Baking Pans and Plates.
First use September 1958.

SN 199,432. Aluminum Specialty Company, Manitowoc, Wis. Filed Aug. 7, 1964.

CHILTON HOUSE

Owner of Reg. No. 673,072.
For Cooking Utensils—Namely, Combination Pan Sets, Covered Sauce Pans, Covered Sauce Pots, Drip Coffee Makers, Fry Pans and Percolators.
First use July 15, 1963.

SN 200,244. General Magnaplate Corporation, Belleville, N.J. Filed Aug. 20, 1964.

TUFRAM

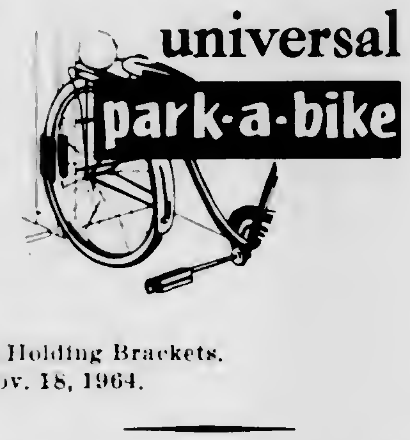
For Holloware and Cooking Utensils—Namely, Pots and Pans.
First use July 27, 1964.

SN 203,943. D & G Valve Mfg. Co., Inc., Stoneham, Mass. Filed Oct. 14, 1964.

GROSE-MEET-A-MIX

Owner of Reg. No. 758,296.
For Valves and Parts Therefor.
First use July 15, 1964.

SN 207,501. Michael J. Lacivita, Youngstown, Ohio. Filed Dec. 4, 1964.



For Bicycle Holding Brackets.
First use Nov. 18, 1964.

SN 207,603. Hyer Hardware Mfg. Co., Anaheim, Calif. Filed Dec. 7, 1964.

CONTESSA

For Hardware—Namely, Pulls, Knobs, Hinges and the Like.
First use Aug. 22, 1964.

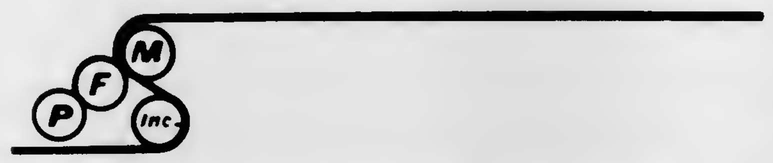
SN 207,931. Aerospace Nylok Corporation, Hawthorne, N.J. Filed Dec. 11, 1964.

BLACK-LOK

For Self Locking Threaded Fasteners.
First use Nov. 24, 1964.

Class 14 — Metals and Metal Castings and Forgings

SN 209,533. Pre Finish Metals Incorporated, Elk Grove Village, Ill. Filed Jan. 7, 1965.



The term, "Inc." is disclaimed apart from the mark as shown.
For Metal Sheet and Strip Surfaced With Organic and/or Inorganic Substances for Decorative and/or Functional Purpose.
First use June 11, 1964.

SN 211,498. The Beryllium Corporation, Reading, Pa. Filed Feb. 8, 1965.

BERYLCO NICKEL 440

Applicant disclaims the word "Nickel" apart from the mark as shown. Owner of Reg. Nos. 528,333, 700,144, and others.
For Nickel Base Alloys Containing Beryllium.
First use Oct. 3, 1963.

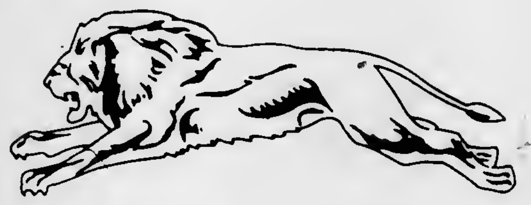
Class 15 — Oils and Greases

SN 193,194. Monsanto Company, St. Louis, Mo. Filed May 11, 1964.

LION

Owner of Reg. No. 636,706.
For Lubricating Oils, Transmission Oils, Lubricating Greases and Petroleum Fuel Distillates in the Nature of Gasoline, Kerosene, Gas Oil, Diesel Oil, Furnace Fuel Oil, and the Like.
First use May 1, 1929.

SN 193,195. Monsanto Company, St. Louis, Mo. Filed May 11, 1964.



Owner of Reg. No. 636,706.
For Lubricating Oil, Tranmission Oils, Lubricating Greases and Petroleum Fuel Distillates in the Nature of Gasoline, Kerosene, Gas Oil, Diesel Oil, Furnace Fuel Oil, and the Like.
First use Oct. 15, 1959.

SN 196,577. Witco Chemical Company, Inc., New York, N.Y. Filed June 26, 1964.

SONOPOLE

For Internal Lubricant for Polypropylene.
First use January 1962.

SN 197,408. Malco Products Inc., Akron, Ohio. Filed July 8, 1964.

Swell SEAL

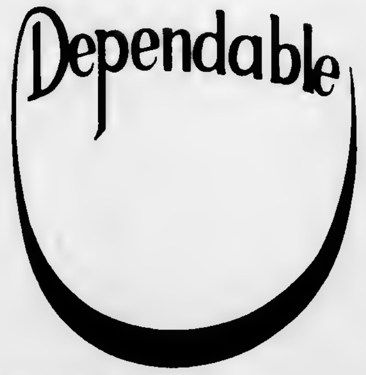
For Transmission Sealer and Conditioner.
First use September 1956.

SN 206,802. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Nov. 23, 1964.

QUICK BREAK

For Bunker and Diesel Fuel Additive, Especially To Provide a Sharp Separation Between Sea Water Ballast and the Fuel in Ships.
First use Nov. 6, 1963.

SN 207,511. Mid-West Oil Company, Kansas City, Kans. Filed Dec. 4, 1964.



Owner of Reg. No. 640,237.
For Grease and Automatic Transmission Fluid.
First use Oct. 1, 1957.

SN 207,766. Westran Corporation, Muskegon, Mich. Filed Dec. 8, 1964.

DALTON-EASE

For Lubricant.
First use Oct. 17, 1964.

SN 209,770. Coronet Lubricants Co., Los Angeles, Calif. Filed Jan. 12, 1965.

CORONET

Owner of Reg. No. 525,354.
For Motor Oils, Lubricating Oils and Greases and Automatic Transmission Fluid.
First use Oct. 27, 1947.

SN 210,380. Sulflo, Inc., Elizabeth, N.J. Filed Jan. 21, 1965.
Owner of Reg. No. 618,878.

SUL-LUBE

For Lubricant To Aid in the Working of Metals With Dies, Taps, Forming Tools of All Descriptions.
First use Jan. 12, 1965.

Class 16 — Protective and Decorative Coatings

SN 163,369. Keystone Lubricating Company, Calumet City, Ill. Filed Feb. 25, 1963.

KEYCOTE

For Oil Base, Water Insoluble, Rust Preventative To Protect Metal Parts and Machinery.
First use Dec. 21, 1962.

SN 175,205. Paper Converting Corporation, Chicago, Ill., by change of name from Paper Converting and Finishing Company, Chicago, Ill. Filed Aug. 16, 1963.

NO-MAR FILM

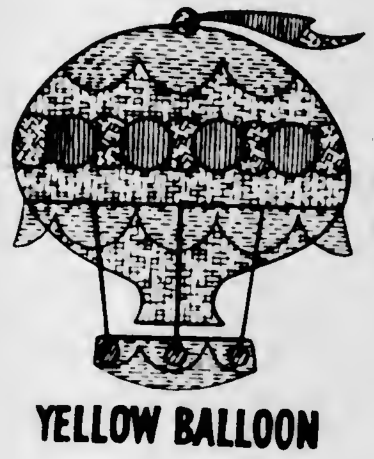
For Protective, Colorless Coating Used To Form a Permanent, Flexible, Washable Finish for Cloth, Paper, Foil and Other Articles Such as Catalog Covers, Book Jackets, Quality Labels, Advertising Displays, Box Wraps, and Menus.
First use in or about 1962.

SN 181,311. Bright Beauty, Inc., Chicago, Ill. Filed Nov. 18, 1963.

MULTONA

For Aerosol Packaged Spray Enamels.
First use Nov. 7, 1963.

SN 185,400. Hunt Foods and Industries, Inc., d.b.a. W. P. Fuller & Co., Fullerton, Calif. Filed Jan. 27, 1964.



No registration rights are claimed for the words "Yellow Balloon" apart from the mark shown, but applicant waives none of its common law rights in the mark shown or any feature thereof. The drawing is lined for the colors red, gray, orange, yellow, and brown.
For Spray Paint.
First use Jan. 2, 1963.

SN 190,559. Thermo Cote Inc., Paterson, N.J. Filed Apr. 7, 1964.

PROTEXO-COTE

For Pigmented or Non-Pigmented Vinyl Base Paint Which Forms a Temporary Strippable Protective Coating During Shipping, Storage and Installation of Metal, Glass and Ceramic Surfaces of Polished Metal Sheets and Shapes, Metal Doors, Window Frames, Finished Hardware, Mirrors, Glass Blocks, Moldings and Trim Bath Tubs, Shower Stalls, Plumbing Fixtures, and the Like.
First use Jan. 16, 1957.

SN 193,721. Thermo Cote Inc., Paterson, N.J. Filed May 18, 1964.

THERMO-COTE

For Strippable Protective Coating for the Protection of Metal Parts and Tools From Rust, Abrasion and the Like in Shipment and in Storage.
First use Nov. 1, 1953.

SN 194,130. Capitol Paint & Varnish Works, Inc., Chicago, Ill. Filed May 25, 1964.

UNIKOTE

For Flat Oil Paint for Use Over Wallpaper, Wallboard, Raw Plaster and Casein and Calcimine Painted Surfaces.
First use Jan. 1, 1925.

SN 195,516. G. & W. H. Corson, Inc., Plymouth Meeting, Pa. Filed June 12, 1964.

14k

For Vinyl Cement Paint for Interior and Exterior Masonry Surfaces.
First use May 8, 1964.

SN 200,027. Plextone Corporation of America, Newark, N.J. Filed Aug. 17, 1964.

ACOUSTI-PLEX

For Interior Paint for All Substrates Including Wood, Metal, Concrete, Wallboard and Masonite.
First use Apr. 15, 1964.

SN 200,832. Davis Paint Company, Kansas City, Mo. Filed Aug. 28, 1964.

DA-TUF

Owner of Reg. No. 444,135.
For Rubber Base Enamel Primarily for All Kinds of Floors, Inside and Out.
First use June 1952.

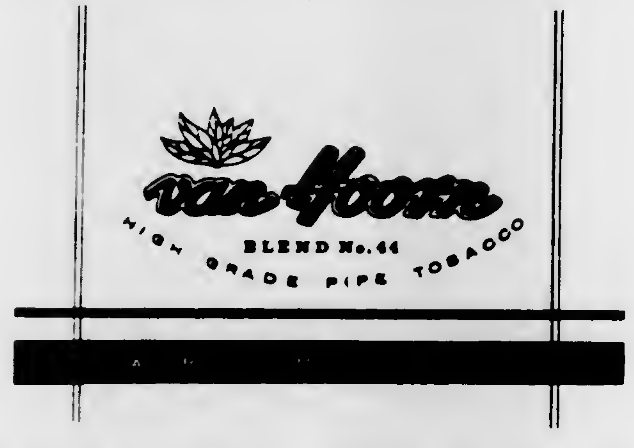
SN 200,833. Davis Paint Company, Kansas City, Mo. Filed Aug. 28, 1964.

POLY-DAX

Owner of Reg. No. 694,794.
For Clear Plastic Wood Finish Coating Which Produces a Hard Mar-Resistant Surface.
First use July 1961.

Class 17 — Tobacco Products

SN 187,065. Arnold Böninger Tabakfabrik G.m.b.H. & Co., Duisburg, Germany. Filed Feb. 20, 1964.



The words "Blend No. 44," "High Grade Pipe Tobacco," and "Aromatic" are disclaimed apart from the mark as shown.
For Smoking Tobacco—Namely, Pipe Tobacco, and Chewing Tobacco.
First use Oct. 25, 1907; in commerce Dec. 23, 1963.

SN 191,326. Smokers' Haven, Inc., Columbus, Ohio. Filed Apr. 16, 1964.

SMOKERS' HAVEN

For Pipe Tobacco.
First use June 1960.

SN 192,698. Freeman & Gossage, Inc., San Francisco, Calif. Filed May 5, 1964.

INCHKENNETH

For Snuff.
First use Apr. 15, 1964.

SN 192,700. Freeman & Gossage, Inc., San Francisco, Calif. Filed May 5, 1964.

CAMELEOPARD NO. 5

For Snuff.
First use Apr. 1, 1964.

SN 192,706. Freeman & Gossage, Inc., San Francisco, Calif. Filed May 5, 1964.

BEAU NASH

For Snuff.
First use Apr. 15, 1964.

SN 193,958. The Henry Straus Co., Cincinnati, Ohio. Filed May 21, 1964.

HENRY STRAUS'
Custom Made

Applicant disclaims the words "Custom Made" apart from the mark as shown. "Henry Straus" is not the name of a living individual. Owner of Reg. Nos. 565,849 and 743,287.
For Cigars.
First use Apr. 16, 1964.

SN 196,115. John Cotton Limited, Edinburgh, Scotland. Filed June 22, 1964.

CRANT

For Cigarettes.
First use Apr. 24, 1964; in commerce Apr. 24, 1964.

SN 203,646. Cigarette Manufacturing Company "Ethnos," G. A. Keranis, S.A., Piraeus, Greece. Filed Oct. 9, 1964.

Pallas

The drawing is lined for brown, but color is not claimed as a feature of the mark. Owner of Greek Reg. No. 33,928, dated June 4, 1963.
For Cigarettes.

SN 204,131. Casa Blanca Cigar Company, Inc., York, Pa. Filed Oct. 16, 1964.

APOLLO

For Cigars.
First use Sept. 21, 1964.

Class 18 — Medicines and Pharmaceutical Preparations

SN 178,979. Purex Corporation, Ltd., d.b.a. Campana Corporation, Lakewood, Calif. Filed Oct. 14, 1963.

DISPEL

For Medicinal Preparation for the Temporary Relief of Simple Headache, Minor Pain, Cramps and Discomfort Associated With the Menstrual Period.
First use July 11, 1963.

SN 180,077. Dermik Pharmacal Co., Inc., Syosset, N.Y. Filed Oct. 30, 1963.

DERMIK

For Group of Medicated Dermatologicals in the Form of Creams, Ointments, Lotions and Related Products for the Treatment of Various Skin Disorders.
First use May 6, 1947.

SN 182,887. Michael L. Newman, Brooklyn, N.Y. Filed Dec. 12, 1963.

MYCRO-SPAN

For Pharmaceutical Preparation in Capsule Form, for Use in the Treatment of Coughs, Colds and Nasal Congestion.
First use Sept. 15, 1959.

SN 192,251. American Home Products Corporation, New York, N.Y. Filed Apr. 29, 1964.

PEN-DI *hydro* STREP

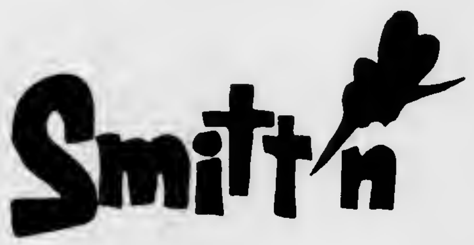
No claim of exclusive use is made to the term "Strap" apart from the mark as shown. Owner of Reg. No. 719,905.
For Antibiotic Preparation for Veterinary Use.
First use Mar. 31, 1964.

SN 196,124. 8 in 1 Pet Products, Inc., Long Island City, N.Y. Filed June 22, 1964.

FX

For Veterinary Medicated Preparations—Namely, a Preparation for Dogs Used To Treat Fungus and Ringworm, To Prevent Eczema and Itching and Also To Kill Fleas and Ticks; a Preparation for Cats Used To Treat Skin Infections, To Stop Itching, and Also To Kill Fleas and Ticks; and a Preparation for Birds Used To Prevent Skin Infections and Also To Kill Mites and Lice.
First use 1950.

SN 196,850. Counter-O-Inc., Chicago, Ill. Filed July 1, 1964.



For Medicinal Preparation for Relief From Insect Bites.
First use March 1964.

SN 196,881. Merck & Co., Inc., Rahway, N.J. Filed July 1, 1964.

CONCORDIN

For Medicinal Preparation for Use as a Psychotherapeutic Agent.
First use June 22, 1964.

SN 196,883. Merck & Co., Inc., Rahway, N.J. Filed July 1, 1964.

PROTRIPTIL

For Medicinal Preparation for Use as a Psychotherapeutic Agent.
First use June 22, 1964.

SN 203,901. Vermilye-Bell, Bothell, Wash. Filed Oct. 13, 1964.

PREDLON

For Topical Medicament for Application to the Gums for Relief of Pain.
First use February 1960.

Class 19 — Vehicles

SN 195,176. Clifford E. Tucker, Gardena, Calif. Filed June 8, 1964.

SCOTSMAN

Owner of Reg. No. 677,606.
For House Trailers, and Parts Thereof and Accessories Therefor—Namely, Window Frames, Windows, Doors, Axles, Tire Wheels, Front Caster Wheels, Hub Caps, Jacks, and Door Hardware.
First use at least as early as May 15, 1951.

SN 200,374. The Murray Ohio Manufacturing Co., Nashville, Tenn. Filed Aug. 21, 1964.

WILD CAT

For Bicycle.
First use Mar. 11, 1964.

SN 204,401. Pik-Up-Pak Mfg. Co., Wilton, Calif. Filed Oct. 20, 1964.

PAK-A-WAY

For Spare Tire Carriers for Trucks.
First use Aug. 20, 1962.

SN 204,688. L. Omar McGinnis, d.b.a. Atlas Sales, Santa Cruz, Calif. Filed Oct. 23, 1964.

ATLAS

For Prefabricated Rack for Pick-Up Trucks That Fits Over the Truck Bed and Cab Roof.
First use Apr. 18, 1964.

SN 204,941. Greencastle Coach Company, Inc., Greencastle, Pa. Filed Oct. 15, 1964.

The Homemaker

For Auto Trailers of the Travel Trailer and House Trailer Type.
First use December 1956.

SN 209,281. MGM Brakes, Inc., Cloverdale, Calif. Filed Jan. 4, 1965.

MGM MAGNUM

For Pressure Fluid Motors, Valves and Parts Therefor, for Actuating Vehicular Brakes.
First use Jan. 8, 1961.

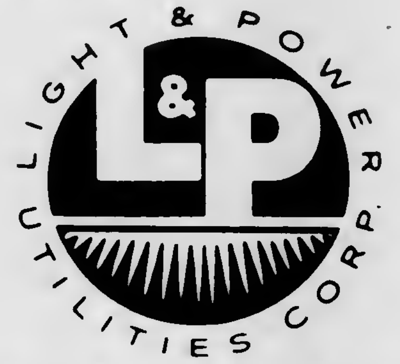
SN 209,282. MGM Brakes, Inc., Cloverdale, Calif. Filed Jan. 4, 1965.

MGM SHORTSTOP

For Pressure Fluid Motors, Valves and Parts Therefor, for Actuating Vehicular Brakes.
First use Nov. 1, 1964.

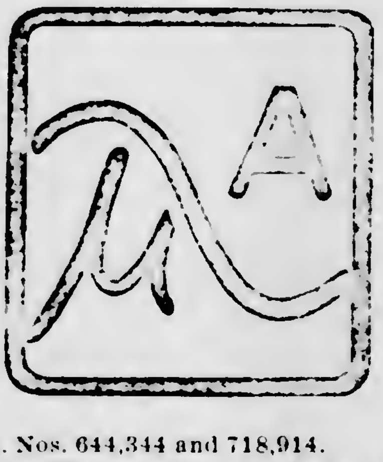
Class 21 — Electrical Apparatus, Machines, and Supplies

SN 186,862. Light and Power Utilities Corporation, Olive Branch, Miss. Filed Feb. 17, 1964.



Applicant hereby disclaims the words "Light and Power Utilities Corporation" apart from the mark as shown.
For Fluorescent and Incandescent Lighting Fixtures.
First use Jan. 2, 1954.

SN 187,305. Microwave Associates, Inc., Burlington, Mass. Filed Feb. 24, 1964.



Owner of Reg. Nos. 644,344 and 718,914.
For Microwave Transmission Apparatus—Namely, Magnetrons; Traveling Wave Tubes; Backward Wave Oscillators; Microwave Duplexers and Diplexers; Power Dividers; Microwave Pressure Windows; Microwave Ferrite Devices—Namely, Circulators, Isolators, Filters and Phase Shifters; Microwave Solid State Transmitters and Receivers; Microwave Refractometers; Solid State Power Sources; Oscillators; Multiplexers; Switches; Frequency Multipliers; Transitions Between Waveguide and Waveguide, Between Waveguide and Coaxial Line, and Between Coaxial Line and Strip-Transmission Line; Rotary and Motional Joints in Waveguide; Hybrid Junctions in Transmission Lines; Modulators and Mixers; and Limiters.
First use at least as early as August 1952.

SN 190,378. Holley Carburetor Company, Warren, Mich. Filed Apr. 6, 1964.

TPI

For Parts for Transistorized Ignition Systems for Internal Combustion Engines—Namely, Adapter Plates, Electrical Hardware, Mounting Hardware, Resistor and Bracket Assembly, Coil Brackets, and Kits for Said Parts.
First use Dec. 17, 1963.

SN 192,304. Dresser Industries, Inc., Dallas, Tex., assignee of Manning, Maxwell & Moore, Incorporated, Stratford, Conn. Filed Apr. 29, 1964.

SHAW-BOX

Owner of Reg. Nos. 519,891, 535,917, and 550,536.
For Electrically Driven Lifting, Hoisting, Transporting and Conveying Devices, and Parts, Components, and Accessories Therefor.
First use Sept. 20, 1932, on lifting devices.

SN 193,619. Beamco, Inc., Mountain View, Calif. Filed May 18, 1964.

GRAND CENTRAL

For Electrically Driven Vacuum Cleaning Systems and Component Parts Thereof.
First use Mar. 4, 1961.

SN 193,944. Duro-Test Corporation, North Bergen, N.J. Filed May 21, 1964.

COSMETIC LITE

For Incandescent Bulbs.
First use as early as Apr. 22, 1964.

SN 195,390. Federal Sign and Signal Corporation, Blue Island, Ill. Filed June 11, 1964.

FIRE BALL

For Electrical Revolving Warning Signal Lights for Use on Emergency Road Vehicles, Such as Police Cars and Fire and Highway Department Vehicles.
First use at least as early as July 1957.

SN 197,813. The Bendix Corporation, Holmdel, N.J. Filed July 14, 1964.

MOSAIC

For Semiconductor Devices, Transistors, Diodes, and Thin Film Circuitry.
First use on or about Mar. 1, 1964.

SN 197,819. Century Lighting, Inc., New York, N.Y. Filed July 14, 1964.

DYNACAST

For Indoor and Outdoor Lighting Fixtures Constructed Primarily of Aluminum Castings and Glass and Used in Commercial and Architectural Construction.
First use June 1, 1964.

SN 198,761. D. Napier & Son Limited, London, England. Filed July 29, 1964.

SPRAYMAT

Owner of British Reg. No. 851,497, dated July 11, 1963.
For Electrical Resistance Heaters for Use on Aircraft or on Parts of Aircraft.

SN 200,494. Rotron Manufacturing Company, Inc., Woodstock, N.Y. Filed Aug. 24, 1964.

DYNAC

For Frequency Doubler Employing Electronic Solid State Components.
First use on or about Aug. 5, 1964.

SN 201,275. Core Manufacturing Company, Washington, Mo. Filed Sept. 4, 1964.

CORTRAN

For Tanks for Transformers.
First use Aug. 13, 1964.

SN 201,324. Bryan Tape Company, St. Petersburg, Fla. Filed Sept. 1, 1964.

GRIP-LASTIC

For Plastic Electrical Tape.
First use Mar. 10, 1964.

SN 201,402. Electron Industries, Inc., Torrance, Calif. Filed Sept. 8, 1964.

POWERMAKER

For Electrical Alternators.
First use Oct. 18, 1963.

SN 201,891. Piconics, Incorporated, Billerica, Mass., assignee of Stephen A. Slenker, d.b.a. Piconics, Billerica, Mass. Filed Sept. 14, 1964.

PICONICS

For Tunable Inductors, Fixed Inductors, and Transformers.
First use Sept. 16, 1963.

SN 202,061. Cambridge Thermionic Corporation, Cambridge, Mass. Filed Sept. 17, 1964.

DOROIDAL

For Inductors and Components Therefor.
First use Aug. 31, 1964.

Class 22 — Games, Toys, and Sporting Goods

SN 185,443. The Roalex Company, Inc., Forest Hills, N.Y. Filed Jan. 27, 1964.

TEEN TILES

For Puzzle Comprising Interlocking Sliding Tile Pieces.
First use Jan. 7, 1964.

SN 185,445. The Roalex Company, Inc., Forest Hills, N.Y. Filed Jan. 27, 1964.

TOT'S TILES

For Puzzle Comprising Interlocking Sliding Tile Pieces.
First use Jan. 7, 1964.

SN 190,774. American Character, Inc., New York, N.Y. Filed Apr. 10, 1964.

AMERICAN RANGER

For Toy Radio Receiver and Transmitters.
First use Feb. 26, 1964.

SN 196,258. Deluxe Reading Corporation, Elizabeth, N.J. Filed June 23, 1964.

IWO JIMA COMBAT SET

Applicant makes no claim to exclusive rights in the words "Combat Set" apart from the mark shown.
For Toy Play Kit, Comprising a Tommy Gun, Pistol, Binoculars, and Water Canteen.
First use Mar. 24, 1964.

SN 197,992. Selchow & Righter Company, Bay Shore, N.Y. Filed July 16, 1964.

TANGLE

For Equipment and Accessories Comprising a Board and Plastic Pieces for Playing a Board Game.
First use June 1964.

SN 199,433. Aluminum Specialty Company, Manitowoc, Wis. Filed Aug. 7, 1964.

CHILTON HOUSE

Owner of Reg. No. 673,072.
For Toy Cooking Utensils—Namely, Combination Pan Sets, Covered Sauce Pans, Covered Sauce Pots, Drip Coffee Makers, Fry Pans, and Percolators.
First use July 15, 1963.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 179,796. Jabsco Pump Company, Costa Mesa, Calif. Filed Oct. 25, 1963.

AQUA MAID

For Portable Automatic Water Pressure Unit Comprising a Water Pump, Electric Motor, and Pressure Control System.
First use June 26, 1963.

SN 183,348. The Union Fork & Hoe Company, Columbus, Ohio. Filed Dec. 20, 1963.

ARROW HEAD

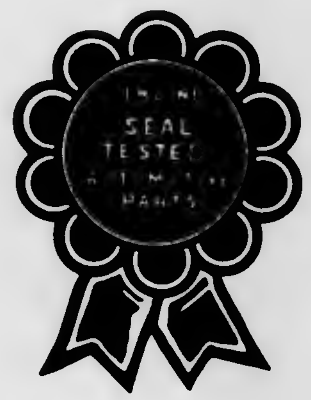
For Hand-Operated Lawn and Garden Tools—Namely, Shovels, Spades, Forks, Hoes, Rakes, Weeders, and Cultivators.
First use on or about July 1, 1947.

SN 183,545. American Machine & Tool Co. Inc., Royersford, Pa. Filed Dec. 26, 1963.

DYNASAW

For Wood or Metal Cutting Saws, Including Circular Bench Saws, Radial Saws, Jig Saws, Sabre Saws, and Portable Saws.
First use 1948.

SN 183,937. Transportation Parts Co. of New York, Inc., Hicksville, N.Y. Filed Jan. 2, 1964.



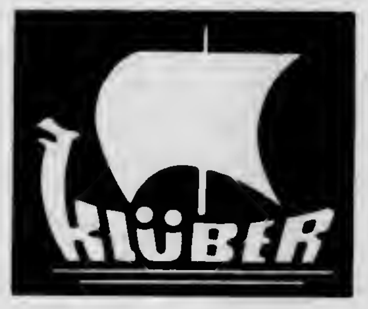
The applicant hereby disclaims the terms "Genuine" and "Automotive Parts" apart from the trademark as shown.
For Automotive Parts—Namely, Engine Parts, Clutch Parts, Transmission Parts, Differential Gears and Parts, Muffler and Exhaust System Parts, and Universal Joints.
First use Nov. 15, 1963.

SN 185,446. Zip Tube Systems, Inc., Los Angeles, Calif., assignee of Ross Cook, Inc., Los Angeles, Calif. Filed Jan. 27, 1964.

ZIP-TUBES

For Pneumatic Tube Systems, Components and Parts Therefor.
First use Dec. 6, 1963.

SN 188,413. August Kluber Company, Schriesheim, Germany. Filed Mar. 11, 1964.



Owner of German Reg. No. 757,526, dated Jan. 26, 1962.
Apparatus of the Dosing Type for the Chemical Treatment of Liquids and Gases.

SN 190,308. Schoeller-Bleckmann Stahlwerke Aktiengesellschaft, Vienna, Austria. Filed Apr. 2, 1964.

TRI-MOD

Priority claimed under Sec. 44(d) on Austrian application filed Oct. 2, 1963; Reg. No. 51,509, dated Dec. 10, 1963.
For Rotary Drill Collars for the Drilling of Deep Wells, Sucker Rods, Polished Rods, and Tool Joints.

SN 192,305. Dresser Industries, Inc., Dallas, Tex., assignee of Manning, Maxwell & Moore, Incorporated, Stratford, Conn. Filed Apr. 29, 1964.

SHAW-BOX

Owner of Reg. Nos. 519,891, 535,917, and 550,536.
For Lifting, Hoisting, Transporting and Conveying Devices, and Accessories, Parts, and Components Therefor.
First use Sept. 20, 1932, on lifting devices.

SN 193,029. National Engineering Company, Chicago, Ill. Filed May 8, 1964.

BULLOCK-NATIONAL

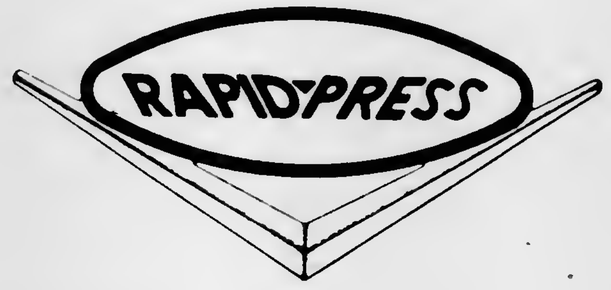
Owner of Reg. No. 594,231.
For Electro-Static Separators for Granular Material and Component Parts Used in Such Systems.
First use on or about Mar. 15, 1964.

SN 195,024. Joseph Trouin, Villeurbanne, Rhone, France. Filed June 5, 1964.

STOP-CHUTE

Owner of French Reg. No. 28,964, dated July 27, 1953 (Lyon); Natl. Inst. No. 16,379.
For Fall-Stopping Apparatus for Persons or Objects Suspended by a Cable.

SN 195,785. Greenlee Bros. & Co., Rockford, Ill. Filed June 16, 1964.



For Trim Presses.
First use October 1959.

SN 197,226. Wonder Products, Inc., Kansas City, Mo. Filed July 6, 1964.

WONDER CUTTER

No claim is made to the exclusive right to use the word "Cutter" apart from the mark as shown.
For Hobby Tool Employing an Electrically Heated Element for Cutting Styrofoam and Plastics.
First use May 1, 1964.

SN 198,127. Brewton Iron Works, Incorporated, Brewton, Ala. Filed July 20, 1964.

DULOY

For Cast Chain Sprockets Used To Drive Detachable and Engineered Chains in the Operation of Machinery or Parts.
First use May 7, 1964.

SN 199,106. Rain Jet Corp., Burbank, Calif. Filed Aug 3, 1964.

CRYSTAL CONE

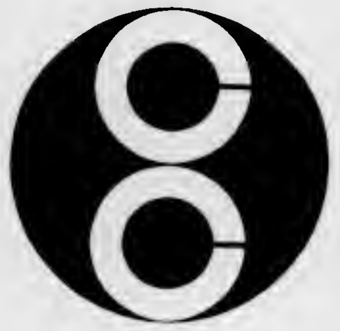
For Nozzle, Adequate Piping, a Pump, and a Motor for Driving the Pump, Sold as a Unit for Producing Ornamental Water Fountains.
First use June 6, 1962.

SN 199,107. Rain Jet Corp., Burbank, Calif. Filed Aug. 3, 1964.

DANCING JEWELS

For Nozzle, Adequate Piping, a Pump, and a Motor for Driving the Pump, Sold as a Unit for Producing Ornamental Water Fountains.
First use June 6, 1962.

SN 200,062. Beloit Corporation, Beloit, Wis. Filed Aug. 18, 1964.



Owner of Reg. Nos. 371,917, 614,351, and others.
For Paper-Making Machinery—Namely, Pressure Rolls Such as Used in Calenders, Press Sections, Breaker Stacks, and Other Similar Applications.
First use July 17, 1964.

SN 201,308. Cap-Roc Inc., Rochester, N.Y., by merger and change of name from Rochester Button Company, Rochester, N.Y. Filed Sept. 4, 1964.

SO-THRU

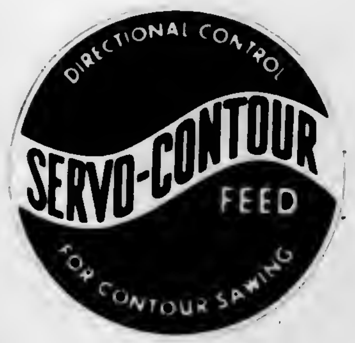
For Automatic Button Feeding Attachments for Sewing Machines.
First use February 1961.

SN 202,116. W. A. Whitney Manufacturing Company, Rockford, Ill. Filed Sept. 17, 1964.

HYDRAMIC

For Hydraulically Powered Metal Presses and Metal Shears.
First use October 1959.

SN 202,251. DoAll Company, Des Plaines, Ill. Filed Sept. 21, 1964.



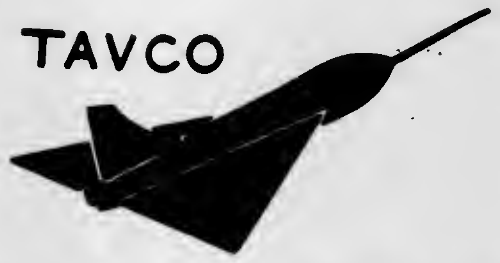
Applicant disclaims the words "Servo" and "Directional Control Feed for Contour Sawing" apart from the mark as a whole. Owner of Reg. No. 615,701.
For Directional Control Devices of Hydraulic Work Feeding Units Used on Band Sawing Machines.
First use Aug. 25, 1964.

SN 203,120. Rome Plow Company, Cedartown, Ga. Filed Oct. 1, 1964.

ROMAN WHEEL

Owner of Reg. No. 613,569.
For Earth Compacting Machines.
First use on or about Aug. 5, 1964.

SN 203,898. Tavco, Inc., Santa Monica, Calif. Filed Oct. 13, 1964.



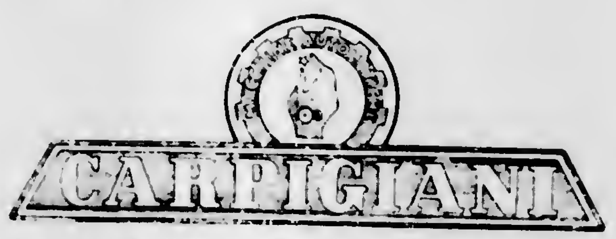
For Automatic Pressure, Temperature and Fluid Controls Individually and in the Form of Basic Control Systems, Exclusively for Air Borne Applications and Ground Support of These Systems.
First use January 1953.

SN 204,148. The Bruning Company, Lincoln, Nebr. Filed Oct. 21, 1964.

MAGNUM

For Quick Disconnect Couplings, Hydraulic Cylinders, and Valves.
First use July 27, 1964.

SN 205,390. Carpigiani Bruto S.p.A., Bologna, Italy. Filed Nov. 3, 1964.



Priority claimed under Sec. 44(d) on Italian application filed July 16, 1964; Reg. No. 5642/64, dated July 16, 1964. The drawing is lined for the colors red and blue.
For Automatic Machines for the Manufacture, Conservation and Distribution of Ice Cream, Whipped Cream, Soft Ice Cream, Beverages or the Like; Automatic and Coin-Operated Machines for the Distribution of Ice Cream, Soft Ice Cream, Beverages; Automatic Machines for the Manufacture of Whipped Cream and Fitting Equipment and Parts for Such Machines, Freezing Apparatus and Plants and Parts Thereof.

SN 205,925. Chicago Pneumatic Tool Company, New York, N.Y. Filed Nov. 10, 1964.

ZIP-SCRIBE

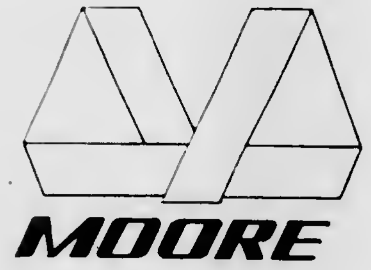
For Hand Held Pneumatic Tools, About the Size of a Pen, Which Deliver a Series of Hammer Blows to a Stylus.
First use October 1964.

SN 207,143. Orscheln Lever Sales Company, Moberly, Mo. Filed Nov. 30, 1964.

"ORSCHELN"

For Cables, and Levers for Actuating Parking Brakes, Chokes, Throttles, and Cables.
First use Mar. 1, 1948.

SN 207,515. Moore Business Forms, Inc., Niagara Falls, N.Y. Filed Dec. 4, 1964.



Owner of Reg. No. 627,324.
For Machines for Feeding Record Forms in Relation to Recording Machines Such as Tabulating Machines, Billing Machines, Typewriters and Parts of Said Feeding Machines Such as Guides, Slitters, and Drives; Autographic Register Machines; Holding Devices for Record Forms; Record Form Spacing Devices for Typewriters and the Like; Machines for Imprinting, Slitting and Detaching Record Forms; Machines for Decollating Carbon Papers From Record Forms; and Carbon Paper Saving Devices.
First use Oct. 29, 1964.

SN 207,533. Teale & Company, Omaha, Nebr. Filed Dec. 4, 1964.

SNooPER

For Truck-Mounted Cranes.
First use Nov. 16, 1964.

SN 207,570. Columbus McKinnon Corporation, Tonawanda, N.Y. Filed Dec. 7, 1964.

MERCURY

For Conveyor Line Trolleys.
First use Oct. 28, 1964.

SN 209,584. Central Engineering Co., Inc., Milwaukee, Wis. Filed Jan. 8, 1965.

SELECTO-SPREADER

For Vehicle Mounted Granular Material Spreaders.
First use Dec. 22, 1964.

SN 209,664. The Caldwell Company, Inc., Rockford, Ill. Filed Jan. 11, 1965.

ADJUST-A-LEG

For Equalizing Slings Adapted for Heavy Lifting With Cranes and the Like.
First use July 1946.

SN 209,754. AMP Incorporated, Harrisburg, Pa. Filed Jan. 12, 1965.

SPIRAP

Owner of Reg. No. 647,398.
For Hand Tools for Applying Spirally Formed Insulated Material to Electrical Wires, Cables, and the Like.
First use during the last quarter of 1958.

SN 209,794. Mid-States Distributing Company, Inc., St. Paul, Minn. Filed Jan. 12, 1965.

GILT-EDGE

For Shovels, Spades, Ice Scrapers, Floor Scrapers, Hoes, Pitch Forks, Ensilage Forks, Lawn and Garden Tools.
First use September 1964.

SN 209,894. The L. S. Starrett Company, Athol, Mass. Filed Jan. 12, 1965.

SAFE-FLEX

Owner of Reg. No. 414,365.
For Hack Saw Blades.
First use Mar. 1, 1944.

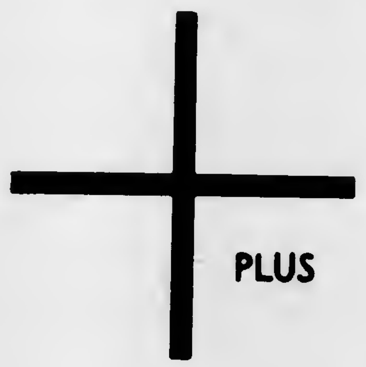
SN 210,329. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Jan. 21, 1965.

SPRAY-CATOR

For Apparatus for Applying a Stain Repeller Liquid to Fabrics.
First use Dec. 16, 1964.

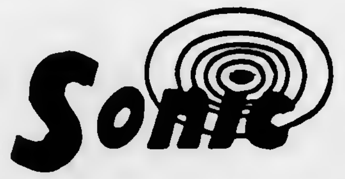
Class 24 — Laundry Appliances and Machines

SN 177,403. John B. Delander, d.b.a. Torette Manufacturing Company, St. Paul, Minn. Filed Sept. 20, 1963.



For Ironing Board Cover and an Ironing Board Cover and Pad.
First use July 1, 1963.

SN 196,992. Sonic Engineering Corporation, Norwalk, Conn. Filed July 2, 1964.



Owner of Reg. Nos. 595,480, 759,610, and others.

For Machinery Constituting a Complete System for the Filtration, Decolorizing and Treatment of Solvent Used in Dry Cleaning Machines and Parts Thereof—Namely, Carbon and Fabric Filters and Cartridges Therefor.

First use Nov. 20, 1962.

SN 205,027. Ametek, Inc., New York, N.Y. Filed Oct. 29, 1964.

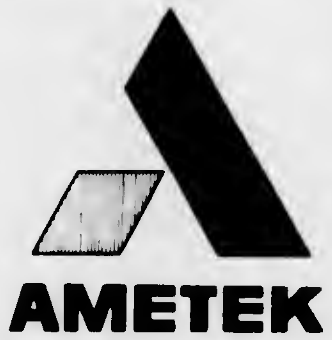
AMETEK

Owner of Reg. Nos. 744,391 and 744,809, and others.

For Garment Presses, Ironing Presses, Drying Tumblers, Dry Cleaning Apparatus, Garment Finishing Tables, and Parts Thereof.

First use Aug. 20, 1963.

SN 205,028. Ametek, Inc., New York, N.Y. Filed Oct. 29, 1964.



The drawing is lined for the color red. Owner of Reg. Nos. 744,761, 744,840, and others.

For Garment Presses, Ironing Presses, Drying Tumblers, Dry Cleaning Apparatus, Garment Finishing Tables, and Parts Thereof.

First use Aug. 20, 1963.

Class 26—Measuring and Scientific Appliances

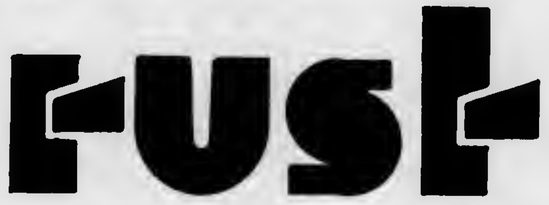
SN 166,310. Pinkerton Electro-Security Corporation, Webster, Mass. Filed Apr. 8, 1963.

RADAR-EYE

For Electronic Security Device—Namely, an Intruder Alarm.

First use Oct. 5, 1955.

SN 177,521. Rust Corporation of America, Cambridge, Mass., assignee of General Electronic Laboratories, Inc., Cambridge, Mass. Filed Sept. 23, 1963.



For Modular Semi-Automatic and Automatic Log Chart Recording Systems.

First use on or about Mar. 31, 1961.

SN 178,295. A/S Modulex, Billund, Jutland, Denmark. Filed Oct. 3, 1963.

MODULEX

Owner of Danish Reg. No. 756, dated Mar. 30, 1963.

For Scaled Building Blocks for Use in Industrial Planning and Architectural Modelling.

SN 179,160. Rockwell Manufacturing Company, Pittsburgh, Pa. Filed Oct. 16, 1963.

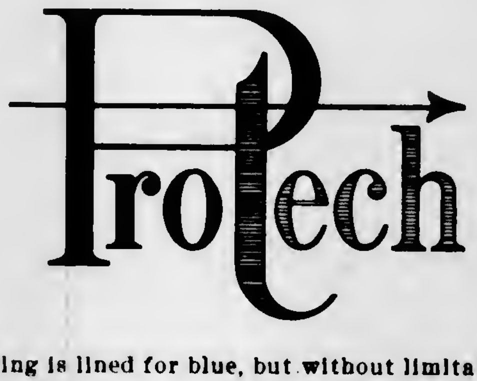
ROCKWELL

Owner of Reg. Nos. 553,232, 756,000, and others.

For Devices Operable To Produce, Vary, or Respond to a Fluid Characteristic—Namely, Pneumatic-Electric Flow Meters, Pneumatic Pressure Transmitters for Producing an Output Pressure According to a Continuously Adjustable Proportional Relationship to Input Pressure, Pneumatic Controllers and Steam Atomizing Desuperheaters for Reducing the Temperatures of Vapors With Condensate of a Vapor or Some Other Liquid, Parts Thereof and Attachments and Accessories Thereto.

First use Dec. 13, 1945.

SN 189,805. Pro-Tech, Inc., Springfield, Pa. Filed Mar. 27, 1964.



The drawing is lined for blue, but without limitation to that color.

For Instruments for Measuring, Monitoring, Indicating, Recording, Computing, and Controlling Physical, Chemical, and Biological Characteristics of Fluids, Components Thereof, and Contaminants Therein; Polarographic Electrode Assemblies, Fluid-Sampling Equipment, and Depth Recorders; Portable, Mobile, and Fixed-Station Systems Thereof; and Containers, Power Supplies, Pumps, and Trailers as Accessories Therefor.

First use June 13, 1962.

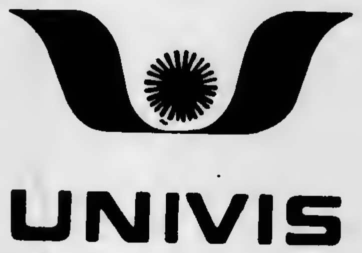
SN 190,236. Benton Product Development Co., Inc., Benton, Pa. Filed Apr. 3, 1964.

MOTOREYE

For Photographic Device for Installation in One Vehicle To Record the Speed and Identity of Another Vehicle.

First use Jan. 6, 1964.

SN 190,673. Univis, Inc., Fort Lauderdale, Fla. Filed Apr. 8, 1964.



Owner of Reg. No. 235,817.

For Ophthalmic Lenses, Frames, Mountings, and Parts Thereof.

First use Mar. 3, 1964.

SN 191,000. Minco Products, Inc., Minneapolis, Minn. Filed Jan. 20, 1964.

THERMOFOIL

For Thermal Devices Used for Heating and for Sensing Temperatures, and for a Combination of Heating and Sensing of Temperatures.

First use on or before Dec. 1, 1960.

SN 191,140. Dexter Machine Company, Clarendon Hills, Ill. Filed Apr. 15, 1964.

MAG-MIKE

For Micrometer for Measuring the Thickness of Non-Magnetic Coatings.

First use Mar. 30, 1964.

SN 191,486. Barber-Colman Company, Rockford, Ill. Filed Apr. 20, 1964.

DIGISET

For Condition Controllers for Furnaces, Ovens and the Like, Said Controllers Being Used To Regulate the Supply of Energy to Industrial Furnaces To Maintain a Desired Temperature Therein.

First use Feb. 28, 1964.

SN 192,544. American Processor Corporation, Cleveland, Ohio. Filed May 4, 1964.

FILM FLOW

The word "Film" is disclaimed apart from the mark as shown.

For Photographic Film and Developing and Processing Machine.

First use Apr. 22, 1964.

SN 192,583. Bert Friedberg & Co., San Francisco, Calif. Filed May 4, 1964.

DAYLITE

For Binoculars, Field Glasses, Opera or Theater Glasses, Telescopes, Spotting Scopes, Rifle Scopes, and Microscopes.

First use July 21, 1960.

SN 192,737. McDowell-Wellman Engineering Company, Cleveland, Ohio. Filed May 5, 1964.

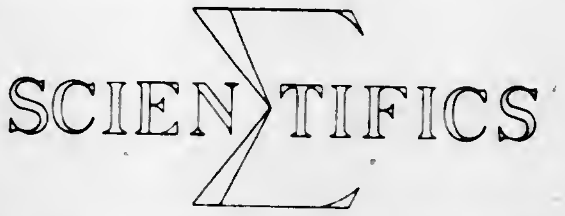
ABC

Owner of Reg. No. 645,735.

For Apparatus for Continuously Weighing, Recording, and Totalizing the Weight of Granular Materials and the Like, While Being Continuously Transported on Conveyors.

First use about Oct. 17, 1961.

SN 198,331. Peter G. Chaconas, d.b.a. Sigma Scientifics, Silver Spring, Md. Filed July 22, 1964.



For Laboratory Glassware—Namely, Glass Dewar Flasks, Ground Joints, Flasks, Beakers, Distilling Apparatus, Stopcocks, and Vacuum Apparatus.

First use Aug. 1, 1963.

SN 198,962. The Lionel Toy Corporation, d.b.a. Lionel-Porter, Hillside, N.J. Filed July 31, 1964.

MICRO-LAB

For Student Microscope Set, Including Microscope, Microscope Accessories, Prepared Slides, and Instruction Manual.

First use Mar. 25, 1964.

SN 199,775. Willo-Peer Corp., New York, N.Y., assignee of W.D.L. Corporation, Inc., Yonkers, N.Y. Filed Aug. 12, 1964.

CAVALIER

For Cameras and Camera Accessories—Namely, Camera Cases.

First use February 1964.

SN 203,495. Goodyear Aerospace Corporation, Akron, Ohio. Filed Oct. 7, 1964.

CORRELATRON

For Electron Image Correlator.

First use July 21, 1964.

SN 204,112. Western Industrial Equipment Co., Los Angeles, Calif. Filed Oct. 15, 1964.

UNIFLUX

For Nondestructive Testing Equipment.

First use Aug. 21, 1959.

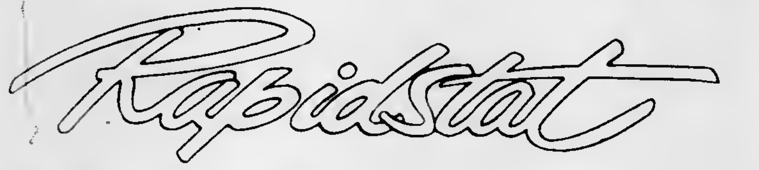
SN 204,151. Fairchild Camera and Instrument Corporation, Syosset, N.Y. Filed Oct. 16, 1964.

FAIRSTAR

For Optical Lenses.

First use Apr. 28, 1964.

SN 204,306. Statmaster Corporation, Hialeah, Fla. Filed Oct. 19, 1964.



For Reproduction Camera.

First use Aug. 10, 1964.

SN 204,585. Newport Instrument Corporation, Newport Beach, Calif. Filed Oct. 22, 1964.

NUTRIM

For Potentiometers.
First use June 17, 1964.

Class 27 — Horological Instruments

SN 211,314. The Sessions Clock Co., Forestville, Conn. Filed Feb. 3, 1965.

TIMEPROOF

For Clocks.
First use on or about Sept. 8, 1964.

SN 211,340. Benrus Watch Company, Inc., New York, N.Y. Filed Feb. 4, 1965.

QUALTEX

For Watches.
First use Jan. 20, 1965.

Class 28 — Jewelry and Precious-Metal Ware

SN 191,815. David Webb, Inc., New York, N.Y. Filed Apr. 22, 1964.

WEBB

For Men's and Women's Jewelry Comprising Precious Metal.
First use on or about June 1, 1953.

SN 206,706. Diplomat Jewelry Manufacturing Corporation, New York, N.Y. Filed Nov. 23, 1964.

DPL

For Ladies' Jewelry, Including Rings, Charms, Earrings, Pendants, Brooches, and Bracelets.
First use June 1, 1964.

SN 211,160. Fairdeal Manufacturing Co., Providence, R.I. Filed Feb. 2, 1965.

ROMA

For Costume Jewelry Made of Base Metals.
First use Dec. 23, 1963.

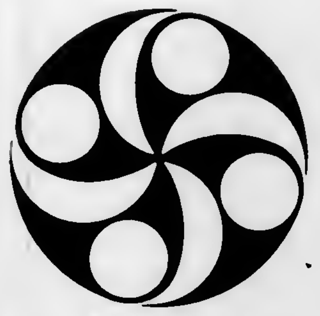
Class 29 — Brooms, Brushes, and Dusters

SN 193,389. Mecanair, Inc., Framingham, Mass. Filed May 13, 1964.

LADY-EZE

For Hand Held Window Cleaning Apparatus Having a Handle, a Motor, and a Cleaning Pad Which Is Agitated by the Motor.
First use February 1964.

SN 205,396. Finest Lambswool Products Co., Brooklyn, N.Y. Filed Nov. 3, 1964.



spin-rite

For Polishing, Cleaning and Washing Accessories—Namely, Sander and Polisher Kits, Comprising Lambs Wool Bonnet, Flexible Rubber Disc With Arbor, Sanding Disc and Countersunk Screw, Polishing Bonnets and Discs, and Washing and Polishing Mitts.
First use June 25, 1964.

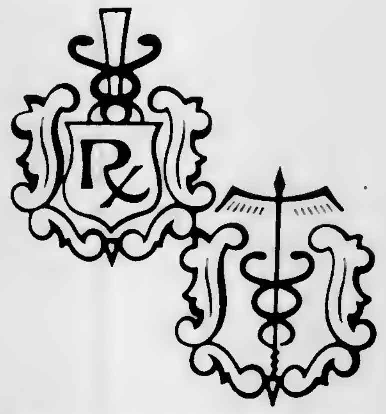
SN 208,425. American Brush Company, Inc., Roxbury, Mass. Filed Dec. 18, 1964.

American

Owner of Reg. No. 577,094.
For Paint, Varnish, and Shellac Brushes.
First use in or about September 1964.

Class 30 — Crockery, Earthenware, and Porcelain

SN 174,430. Owens-Illinois Glass Company, Toledo, Ohio. Filed Aug. 5, 1963.



The separate use of the simulation of the caduceus and "R" apart from the mark as shown are disclaimed.
For China Dinnerware and Coffee Pots Made of Earthenware.
First use in or about February 1958.

Class 31 — Filters and Refrigerators

SN 197,607. National Electronic Filter Company, Incorporated, Canonsburg, Pa. Filed July 10, 1964.

ELECTRONIC HOUSEKEEPER

The term "Electronic" is disclaimed apart from the mark as shown, however applicant reserves its common law rights therein.
For Electronic Air Cleaners for Electrically Cleaning Air of Dust Particles and the Like.
First use June 5, 1964.

SN 197,609. National Electronic Filter Company, Incorporated, Canonsburg, Pa. Filed July 10, 1964.

Magic Maid THE ELECTRONIC HOUSEKEEPER

The term "Electronic" is disclaimed apart from the mark as shown, however applicant reserves its common-law rights therein.
For Electronic Air Cleaners for Electrically Cleaning Air of Dust Particles and the Like.
First use June 5, 1964.

SN 197,610. National Electronic Filter Company, Incorporated, Canonsburg, Pa. Filed July 10, 1964.

NEFCO

For Electronic Air Cleaners for Electrically Cleaning Air of Dust Particles and the Like.
First use June 5, 1964.

SN 204,730. Admiral Corporation, Chicago, Ill. Filed Oct. 26, 1964.

Dura-last

For Door and Compartment Liners for Refrigerators, Freezers, and Combination Refrigerator-Freezers.
First use Oct. 10, 1963.

SN 205,188. Mermaid, Inc., Butler, Wis. Filed Oct. 30, 1964.

MERMAN

For Water Softening Equipment.
First use Sept. 11, 1964.

Class 32 — Furniture and Upholstery

SN 188,936. Robert Villency, d.b.a. Furniture Loft, New York, N.Y. Filed Mar. 17, 1964.

FURNITURE LOFT

The word "Furniture" is disclaimed apart from the mark as shown.
For Bedroom Dressers, Bedroom Chests, Night Tables, Headboards, Bedding, Bed Frames: Dining Room Buffets, Desks, Dining Tables, Desk Chairs, Dining Chairs, Hutches, Bookcases, End Tables, Lamp Tables, Cocktail Tables, Lamps, Sofas, Settees, Love Seats, Lounge Chairs, Club Chairs, Ottomans, Stools, Reclining Chairs, Rocking Chairs, Mirrors, Nests of Tables, Bars, Bar Stools, Planters, Tea Carts, Vanities, Wall Hung Cabinets and Shelves, Modular Stacking Bookcases and Shelves.
First use Nov. 30, 1963.

SN 196,381. Holland Wire Products, Incorporated, Holland, Mich. Filed June 24, 1964.

YOUNG MARRIED SET

For Spring Units for Mattresses and Box Springs.
First use Mar. 16, 1964.

SN 197,909. Restonic Corporation, Chicago, Ill. Filed July 15, 1964.

Spring Tonic

For Mattresses and Box Springs.
First use June 3, 1964.

SN 206,227. Carolina Wood Turning Company, d.b.a. Cherokee Furniture Company, Bryson City, N.C. Filed Nov. 16, 1964.

SOUTHBRIDGE

For Bedroom, Dining Room, and Living Room Furniture.
First use July 18, 1964.

SN 206,228. Carolina Wood Turning Company, d.b.a. Cherokee Furniture Company, Bryson City, N.C. Filed Nov. 16, 1964.

PLEASANT VALLEY

For Bedroom, Dining Room, and Living Room Furniture.
First use Dec. 1, 1962.

SN 206,530. The Englander Company, Inc., New York, N.Y. Filed Nov. 19, 1964.

COMFORT SEAL

For Mattresses and Springs.
First use on or about June 29, 1964.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 200,229. Black, Sivalls & Bryson, Inc., Kansas City, Mo. Filed Aug. 20, 1964.

VIT

For Emulsion Treater and Parts Thereof.
First use on or before May 25, 1964.

SN 201,027. Hart & Cooley Manufacturing Co., Holland, Mich. Filed Sept. 1, 1964.

METLVENT

Owner of Reg. No. 724,630.
For Gas Vent Pipes and Chimneys.
First use Apr. 9, 1959.

SN 204,203. The Stokermatic Company, Salt Lake City, Utah. Filed Oct. 16, 1964.

STOKERMATIC

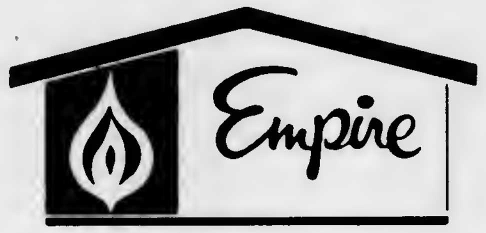
For Automatic Coal Stokers and Heaters and Furnaces Equipped With Automatic Coal Stokers.
First use in or about September 1929.

SN 204,333. Whirlpool Corporation, Benton Harbor, Mich. Filed Oct. 19, 1964.

BAR-B-KEWER

Owner of Reg. No. 385,594.
For Gas and Electric Cooking Stoves, Ovens, and Parts Thereof.
First use July 31, 1940.

SN 204,778. Empire Stove Company, Belleville, Ill. Filed Oct. 26, 1964.



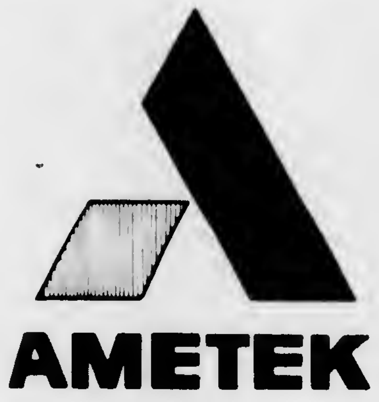
Owner of Reg. Nos. 346,539, 393,184, and 618,674.
For Gas Floor Furnaces, Gas Room Heaters, Gas Direct Vent Heaters and Furnaces, Gas Baseboard Heaters, Gas Wall Furnaces, Gas Central Forced Air Furnaces, Gas Winter Air Conditioners, Air Conditioners, Gas Horizontal Furnaces, Gas Low-Boy Furnaces, Gas Unit Heaters and Duct Work.
First use January 1961.

SN 205,026. Ametek, Inc., New York, N.Y. Filed Oct. 29, 1964.

AMETEK

Owner of Reg. Nos. 744,507, 744,809, and others.
For Steam Boilers.
First use Aug. 18, 1963.

SN 205,029. Ametek, Inc., New York, N.Y. Filed Oct. 29, 1964.



The drawing is lined for the color red. Owner of Reg. Nos. 744,829, 744,840, and others.
For Steam Boilers.
First use Aug. 18, 1963.

SN 205,033. Arcos Corporation, Philadelphia, Pa. Filed Oct. 29, 1964.

DUOMATIC

For Electric Welding Machines.
First use Apr. 27, 1963.

SN 205,075. Miller Electric Mfg. Co., Appleton, Wis. Filed Oct. 29, 1964.

ELECTROSLOPE

For Controls for Electric Welding Machines.
First use Dec. 7, 1963.

SN 205,078. Miller Electric Mfg. Co., Appleton, Wis. Filed Oct. 29, 1964.

TRAILBLAZER

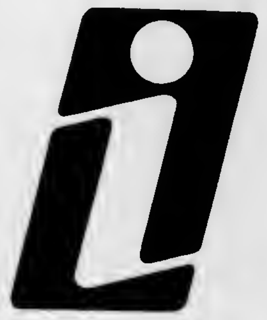
For Engine Driven Arc Welders.
First use April 1962.

SN 205,126. Whirlpool Corporation, Benton Harbor, Mich. Filed Oct. 29, 1964.

CONNOISSEUR

For Cooking Ranges.
First use Dec. 3, 1962.

SN 206,624. International Oil Burner Co., St. Louis, Mo. Filed Nov. 20, 1964.



For Cooking Stove Units, Heating and Air Conditioning Units for Homes and House Trailers.
First use Aug. 14, 1964, on cooking stove units.

Class 36 — Musical Instruments and Supplies

SN 179,157. J. Herbert Orr Enterprises, Inc., Opelika, Ala. Filed Oct. 16, 1963.

AUTOMATE

For Magnetic Tape Players for Playing Continuous Lengths of Magnetic Tape.
First use on or about Oct. 1, 1963.

SN 196,905. Ricoh Industries, U.S.A., Inc., New York, N.Y. Filed July 1, 1964.

COMMENTATOR SR

Owner of Reg. No. 767,584.
For Magnetic Tape Dictating Machines.
First use June 1, 1964.

SN 199,581. G. Leblanc Corporation, Kenosha, Wis. Filed Aug. 10, 1964.

CLARI-TONE

For Musical Wind Instruments.
First use July 21, 1964.

Class 37 — Paper and Stationery

SN 181,782. Kim-Kraft, Inc., Erie, Pa. Filed Nov. 22, 1963.

KIM - KRAFT RITE & REPLY

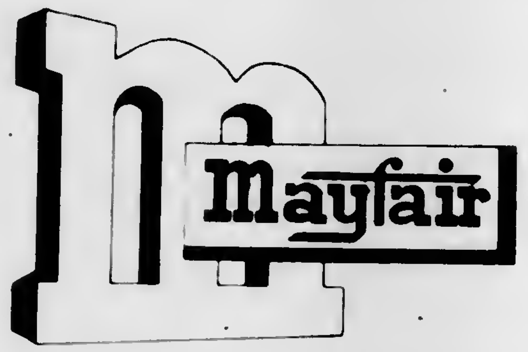
Applicant disclaims the words "Rite & Reply" apart from the mark as shown.
For Printed Manifold Forms Fastened Together at One End Which Are Interleaved With and Without Carbon Paper.
First use on or about June 15, 1963.

SN 188,090. Elm Farm Foods Co., Boston, Mass. Filed Mar. 6, 1964.

SAVE RITE

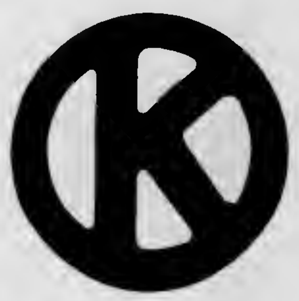
For Toilet Tissue.
First use Jan. 27, 1964.

SN 190,015. Arden Farms Co., Los Angeles, Calif., by merger from Mayfair Markets, Los Angeles, Calif. Filed Mar. 31, 1964.



For Facial Tissue, Lunch Bags, and Toilet Tissue.
First use June 10, 1963.

SN 194,890. Knowlton Brothers, Inc., Watertown, N.Y. Filed June 4, 1964.



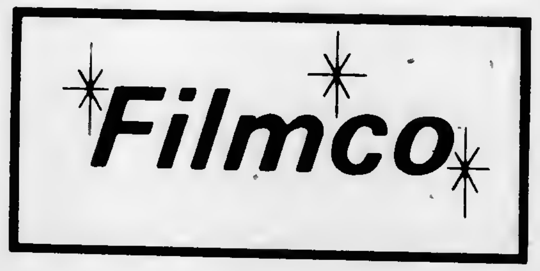
Owner of Reg. No. 133,446.
For Technical and Special Industrial Papers.
First use 1934.

SN 195,747. The Winterbottom Book Cloth Company Limited, Weaste, Salford, England. Filed June 15, 1964.

Imperial

Priority claimed under Sec. 44(d) on British Reg. No. 860,972, dated Feb. 29, 1964. Owner of U.S. Reg. No. 63,790.
For Tracing Cloth and Drafting Film.

SN 198,266. Filmco Inc., Aurora, Ohio. Filed July 21, 1964.



For Thin, Transparent Plastic Film, Including Vinyl Resin Based Films, for Use in Packaging.
First use Mar. 31, 1964.

SN 198,476. Hammermill Paper Company, Erie, Pa. Filed July 24, 1964.

HAMMERMILL WEBFORM

Applicant disclaims the word "Webform" apart from the mark as shown. Owner of Reg. Nos. 137,793, 780,343, and others.
For Bond Papers.
First use June 26, 1964.

SN 205,262. East Texas Pulp and Paper Company, Silsbee, Tex. Filed Nov. 2, 1964.

TEXVELLUM

Owner of Reg. Nos. 637,744, 732,159, and others.
For Fine Printing Paper.
First use Oct. 15, 1964.

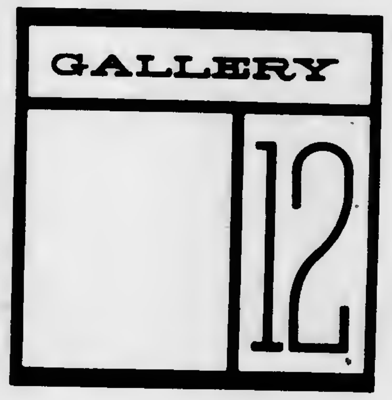
SN 205,474. Universal Paper Goods Company, d.b.a. Universal Paper Goods Co., Los Angeles, Calif. Filed Nov. 3, 1964.

UNIFAS

For Metal File Folder Fasteners.
First use Mar. 28, 1958.

Class 38 — Prints and Publications

SN 188,734. The Dayton Company, Minneapolis, Minn. Filed Mar. 16, 1964.



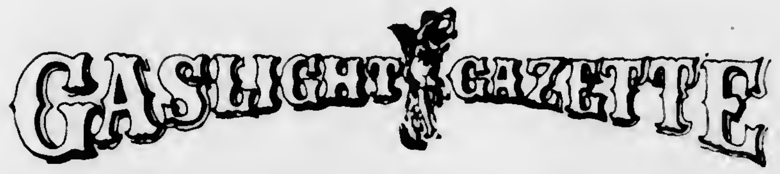
For Original Works of Art—Namely, Oil Paintings, Water Colors, Pastels, Drawings, Lithographs, Etchings, Engravings, Wood Cuts, Aqua Tints, and Intaglios.
First use Feb. 4, 1964.

SN 193,898. Quality Courts Motels, Inc., Daytona Beach, Fla. Filed May 20, 1964.

QUALITY COURTS

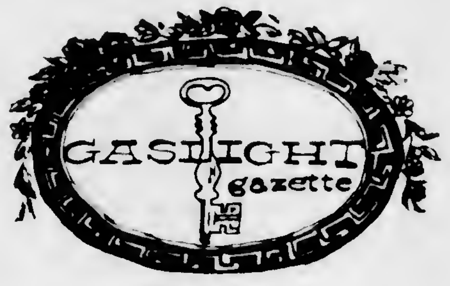
Owner of Reg. Nos. 578,820, 783,001, and others.
For Motel Directories Issued Periodically.
First use December 1939.

SN 194,094. Gaslight Club, Inc., Chicago, Ill. Filed May 8, 1964.



For Club and Publicity Magazine.
First use June 1962.

SN 194,095. Gaslight Club, Inc., Chicago, Ill. Filed May 19, 1964.



For Club and Publicity Magazine.
First use June 1962.

SN 195,135. Novo Card Publishers, Inc., Chicago, Ill. Filed June 8, 1964.

A NOVO LAUGH

For Greeting and Business Cards.
First use at least as early as 1930.

SN 197,316. National Spiritual Assembly of the Baha'is of the United States, d.b.a. Baha'i Publishing Trust, Wilmette, Ill. Filed July 7, 1964.

NATIONAL SPIRITUAL ASSEMBLY OF THE BAHÁ'ÍS OF THE UNITED STATES

Owner of Reg. No. 556,004.
For Publications—Namely, Books, Pamphlets, Periodicals, and Circulars.
First use Apr. 30, 1948.

SN 197,392. The Hearst Corporation, New York, N.Y. Filed July 8, 1964.

House Beautiful's Gardening and Outdoor Living

Applicant disclaims any exclusive right to the words "Gardening and Outdoor Living" except as part of the trademark herein. Owner of Reg. No. 273,427.
For Publication Published Annually.
First use Jan. 18, 1962.

SN 197,793. Paul J. Stelter, d.b.a. The Stelter Company, Des Moines, Iowa. Filed July 13, 1964.

The Family Scene

For Series of Pamphlets Which Are Sold to Banks for Distribution to Prospects for the Banks' Trust Services.
First use Mar. 26, 1964.

SN 198,516. The Greater New York Association of Industrial Nurses, Inc., New York, N.Y. Filed July 24, 1964.

NUTRIX

For Monthly Bulletin.
First use October 1962.

Class 39 — Clothing

SN 119,857. David Crystal, Inc., New York, N.Y. Filed May 12, 1961.

SPORTSWEAR FOR EVERYWEAR

Owner of Reg. Nos. 577,617 and 580,252.
For Dresses and Suits.
First use 1936.

SN 159,010. Martha Tredway, Denison, Tex. Filed Dec. 12, 1962.

DIAPER JEANS

For Baby Pants and Shirts and Jackets.
First use Aug. 1, 1950.

SN 174,353. Dominion Corset Company, Limited, Quebec, Quebec, Canada. Filed Aug. 5, 1963.

DAISY fresh

Owner of Canadian Reg. No. 106,103, dated Mar. 22, 1957.
For Brassieres and Corsets.

SN 179,239. Kiyyo Kasuals, Inc., Los Angeles, Calif. Filed Oct. 17, 1963.

KIYYO

For Women's and Children's Sports Wear—Namely, Skirts, Sweaters, Jackets, and Ski Clothing.
First use Mar. 28, 1961.

SN 184,620. Genesco, Inc., Nashville, Tenn. Filed Jan. 15, 1964.

SOU-WEST

For Suits, Top Coats, Overcoats, Slacks, Sport Coats, and Jackets for Men, Boys, and Youths.
First use Dec. 31, 1963.

SN 188,971. Figure Flattery Brassiere Company, Inc., New York, N.Y. Filed Mar. 18, 1964.

STRETCH-POWERLACE

For Brassieres and Girdles.
First use Dec. 9, 1963.

SN 190,795. Dutchess Underwear Corporation, New York, N.Y. Filed Apr. 10, 1964.

HONEY B'S

For Ladies' Briefs.
First use on or about Mar. 15, 1964.

SN 196,586. Angelica Uniform Company, St. Louis, Mo. Filed June 29, 1964.

ANGELFLEX

For Uniforms Made From Fabrics Containing Natural Yarns, Synthetic Yarns, and Combinations Thereof.
First use on or about Mar. 1, 1964.

SN 198,671. Sheffield Hosiery Mills, Inc., Miami, Fla. Filed July 28, 1964.

ALLTEST

For Ladies' Nylon Hosiery.
First use July 1, 1964.

SN 199,461. Eloesser-Heynemann Company, San Francisco, Calif. Filed Aug. 7, 1964.

CACTUS CUTS

Owner of Reg. Nos. 706,040 and 706,052.
For Trousers and Jackets.
First use May 8, 1964.

SN 199,718. Bryant Buying Corp., New York, N.Y. Filed Aug. 12, 1964.

Stretch Queen

The word "Stretch" is disclaimed apart from the mark as shown.
For Ladies' and Girls' Hats.
First use May 21, 1964.

SN 200,275. A. E. Nettleton Company, Syracuse, N.Y. Filed Aug. 20, 1964.

Loaflex

Owner of Reg. No. 353,854.
For Shoes.
First use June 20, 1964.

SN 200,377. Nelson Knitting Company, Rockford, Ill. Filed Aug. 21, 1964.

NK

For Hosiery.
First use April 1963.

SN 201,122. Victor B. Handal & Bro., Inc., New York, N.Y. Filed Sept. 2, 1964.

DECK-R-DEN

For Men's Slippers.
First use June 1964.

SN 201,140. Olga Company, Van Nuys, Calif. Filed Sept. 2, 1964.

HAPPY ENDING

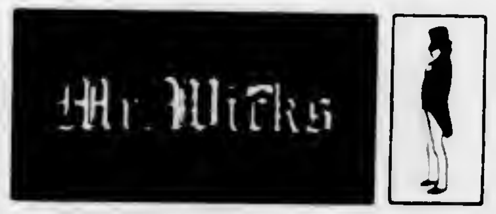
For Women's Underwear.
First use June 1, 1964.

SN 201,903. Wells & Coverly, Incorporated, Troy, N.Y. Filed Sept. 14, 1964.

COVERLEIGH

For Men's Slacks, Sport Coats, Suits, and Outercoats.
First use December 1961.

SN 201,989. Mr. Wicks, Inc., Little Rock, Ark. Filed Sept. 15, 1964.



For Suits, Sportcoats, Blazers, Shirts, Trousers, Walk Shorts, Underwear, Pajamas, Shoes, Socks, Ties, Belts, Sweaters, Jackets, Raincoats, and Hats.
First use Apr. 8, 1960.

SN 202,211. American Girl Shoe Co., Boston, Mass. Filed Sept. 21, 1964.

Ameri-Kins

Owner of Reg. Nos. 549,304, 780,394, and others.
For Women's and Misses' Shoes.
First use Oct. 10, 1963.

SN 202,336. Washington Manufacturing Company, Nashville, Tenn. Filed Sept. 21, 1964.

mr. Dee Cee

Owner of Reg. Nos. 168,367, 691,712, and others.
For Sport Shirts and Pajamas.
First use September 1961.

SN 202,384. A. Schreter & Sons Co., Inc., Baltimore, Md. Filed Sept. 22, 1964.

SILK 'N HONEY

Applicant hereby disclaims exclusive rights to use of the word "Silk" apart from the mark as shown.
For Neckties.
First use Sept. 3, 1964.

SN 203,159. Childstyle Inc., New York, N.Y. Filed Oct. 2, 1964.

Childstyle

Owner of Reg. No. 412,479.
For Infants' and Children's Clothing—Namely, Dresses, Blouses, Blouse-Slips, Nightwear, and Underwear.
First use May 1934.

SN 203,188. The H. D. Lee Company, Incorporated, Kansas City, Mo. Filed Oct. 2, 1964.

Leesure Lees

Owner of Reg. Nos. 130,792, 709,990, and others.
For Slacks.
First use Sept. 11, 1964.

SN 203,207. Savada Bros., Inc., New York, N.Y. Filed Oct. 2, 1964.

SPAND-A-MATIC

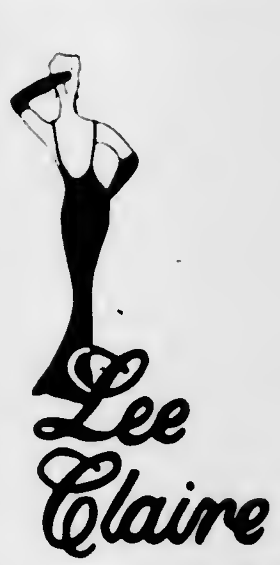
For Boys' and Young Men's Shirts.
First use Sept. 29, 1964.

SN 203,249. Charles H. Bacon Company, Inc., Lenoir City, Tenn. Filed Oct. 5, 1964.

THOROWEAR

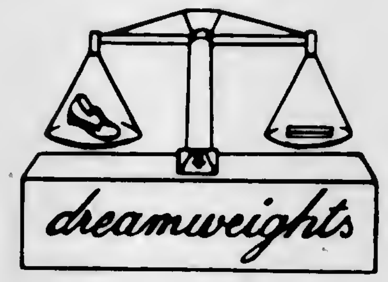
Owner of Reg. Nos. 193,295 and 268,452.
For Hosiery.
First use June 27, 1924.

SN 203,309. Lee Claire, Inc., New York, N.Y. Filed Oct. 5, 1964.



For Ladies' Dresses.
First use Mar. 1, 1963.

SN 203,436. Shuko Shoe Corp., Meadville, Pa. Filed Oct. 6, 1964.



The representation of the shoe is hereby disclaimed apart from the mark as shown.
For Ladies' Shoes.
First use Aug. 27, 1964.

SN 203,490. Educator Sports-Wear Co., Philadelphia, Pa. Filed Oct. 7, 1964.

GYM-A-TARD

For Knitted Athletic Gymnasium Suits for Women and Men; Knitted Costumes for Modern Dance.
First use Feb. 7, 1964.

SN 203,504. F. Jacobson & Sons, Inc., New York, N.Y. Filed Oct. 7, 1964.

JAY-SPAND

Owner of Reg. Nos. 389,337 and 782,492.
For Men's and Women's Shirts.
First use Sept. 3, 1964.

SN 204,567. The B. F. Goodrich Company, Akron, Ohio. Filed Oct. 22, 1964.

DURATUF

For Women's Overshoes and Boots Comprising a Heel Component Which When the Boot or Overshoe Is in Use Resists Being Punctured by the Heel of the Shoe of the Wearer.
First use Feb. 28, 1963.

SN 205,071. Manuel Pertegaz Ibanez, Barcelona, Spain. Filed Oct. 29, 1964.

PERTEGAZ

For Bridal Gowns, Evening Gowns, Cocktail Dresses, Playsuits, Sheaths, Suits, Raincoats, Overcoats, Jackets, Cloaks, Capes, Scarves, Boleros, Lounging Robes, Negligees, Dressing Gowns, Skirts, Slacks, Blouses, Hats, All Articles for Use by Women.
First use June 1943; in commerce September 1954.

SN 206,080. Samuels Shoe Company, St. Louis, Mo. Filed Nov. 12, 1964.

SOFTOWNER

For Women's Shoes.
First use Feb. 20, 1963.

SN 206,211. The B. F. Goodrich Company, Akron, Ohio. Filed Nov. 16, 1964.

SEAVEES

For Footwear, Particularly Rubber-Soled or Plastic-Soled Canvas Shoes.
First use June 26, 1964.

SN 206,489. Weldon Pajamas, Inc., New York, N.Y. Filed Nov. 18, 1964.

SLEEPSKIN

For Men's, Women's, and Children's Pajamas and Underwear.
First use Sept. 24, 1964.

SN 206,852. Huntington Mfg. Co., Inc., Chicago, Ill. Filed Nov. 24, 1964.

DAFFODIL

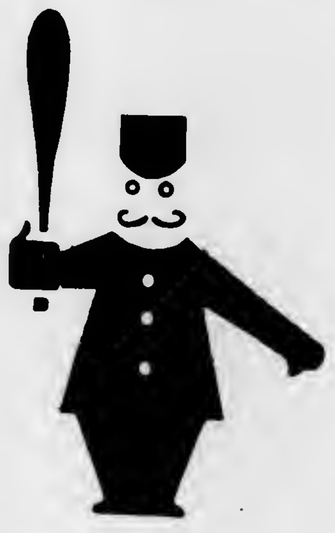
Owner of Reg. No. 200,259.
For Women's and Misses' Dresses and Frocks.
First use on or about Feb. 18, 1925.

SN 207,002. Belk Stores Services, Inc., Charlotte, N.C. Filed Nov. 27, 1964.

Miss Reigning Beauty

Owner of Reg. Nos. 640,736 and 758,888.
For Teenage Girls' Hosiery.
First use Oct. 1, 1964.

SN 207,152. Rhodia Inc., New York, N.Y. Filed Nov. 30, 1964.



For Dresses, Blouses, and Skirts.
First use Sept. 10, 1964.

SN 207,287. Julius Garfinckel & Co., Incorporated, Washington, D.C. Filed Dec. 2, 1964.

BROOKSTRAVELER

For Raincoats.
First use September 1964.

SN 207,381. Federated Department Stores, Inc., New York, N.Y. Filed Dec. 3, 1964.

SIXTIES EAST

Owner of Reg. No. 576,535.
For Women's Dresses.
First use Oct. 13, 1964.

SN 207,609. Kayser-Roth Corporation, New York, N.Y. Filed Dec. 7, 1964.

O.T.C.

For Men's and Boys' Socks.
First use Sept. 16, 1964.

SN 207,730. Novis Denne Co-Ordinates, Incorporated, Scottsdale, Ariz. Filed Dec. 8, 1964.

THE ROADRUNNER LINE

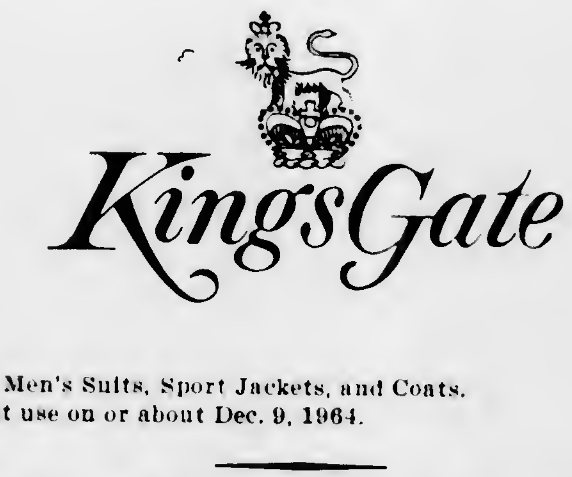
Applicant hereby disclaims the term "Line." Owner of Reg. No. 760,049.
For Women's Dresses and Misses' Ready-To-Wear and Sports Wear—Namely, Shirts, Shorts, Capri Pants, Skirts, Jackets, Dresses, and Coats.
First use October 1958.
Subj. to Intf. with SN 200,172.

SN 207,908. Rudin & Roth, Inc., New York, N.Y. Filed Dec. 10, 1964.

LOAD & LOCK

For Hosiery.
First use Nov. 23, 1964.

SN 208,179. Edwards & Hill, Inc., d.b.a. Lewis & Thos. Saltz, Chicago, Ill. Filed Dec. 15, 1964.



For Men's Suits, Sport Jackets, and Coats.
First use on or about Dec. 9, 1964.

SN 208,180. Elias Sayour Co., Inc., New York, N.Y. Filed Dec. 15, 1964.

Gigette

For Women's, Misses', and Children's Housecoats, Dresses, Negligees, Blouses, and Bed Jackets.
First use Oct. 29, 1964.

SN 208,238. Chicopee Mills, Inc., New York, N.Y. Filed Dec. 16, 1964.

CHIXETTES

Owner of Reg. Nos. 387,983, 707,225, and others.
For Baby Pants.
First use Aug. 15, 1963.

SN 212,250. Creative Shoes Ltd., Montreal, Quebec, Canada. Filed June 16, 1964.

MAMMA MIA

Owner of Canadian Reg. No. 135,321, dated Apr. 10, 1964.
For Ladies' Shoes.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 163,913. Vereinigte Papierwerke Schickedanz & Co., Nurnberg, Germany. Filed Dec. 27, 1962.

MOLTEX

Owner of German Reg. No. 710,808, dated Feb. 7, 1958.
For Decorating Fabric for Interior Decorating Purposes, Window Displays, and Woven and Knitted Fabrics.

SN 179,619. Crompton Company, New York, N.Y. Filed Oct. 23, 1963.

PORTS OF CALL

For Textile Fabrics in the Piece Composed of Cotton, Synthetic Fibers, and Blends Thereof.
First use Feb. 4, 1963.
Subj. to Intf. with SN 182,932.

SN 191,077. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Apr. 14, 1964.

FABRIFOIL

For Metalized Textile Fabrics in the Piece Suitable for Apparel, Household, Industrial, and Sporting Uses.
First use Feb. 12, 1964.

SN 191,078. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Apr. 14, 1964.

FABRALUM

For Metalized Textile Fabrics in the Piece Suitable for Apparel, Household, Industrial, and Sporting Uses.
First use Feb. 12, 1964.

SN 197,548. The Fiberwoven Corporation, Elkin, N.C. Filed July 10, 1964.

FIBERWOVEN

Owner of Reg. No. 762,804.
For Apparel Fabrics, Linings, Upholstery Fabrics, and Rugs and Carpets.
First use June 10, 1964, on apparel and lining fabrics.

SN 198,932. Burlington Industries, Inc., New York, N.Y. Filed July 31, 1964.

LYNSHIRE

For Fabrics in the Piece Suitable for Use in Men's, Women's, and Children's Outer Apparel Such as Men's Shirts, Jackets, Trousers, and Shorts; Women's Blouses, Skirts, and Dresses; and Children's Shirts, Jackets, Trousers, Shorts, Blouses, Skirts, and Dresses; and in Home Furnishings.
First use Jan. 5, 1951.

SN 199,328. United Merchants and Manufacturers, Inc., New York, N.Y. Filed Aug. 5, 1964.

COMPUTER COLOR

For Plain Dyed Piece Goods Made of Polyester/Cotton Fiber Blends and Polyester/Rayon Fiber Blends, and Adapted To Be Made Up Into Women's Wear.
First use on or about July 15, 1964.

SN 200,172. Erwin Mills, Inc., Durham, N.C. Filed Aug. 19, 1964.

ROAD RUNNER

For Cotton Piece Goods.
First use May 6, 1964.
Subj. to Intf. with SN 207,730.

SN 200,802. Waumbec Mills Incorporated, New York, N.Y. Filed Aug. 27, 1964.

MILITAIRE

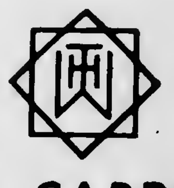
For Woven Fabrics, Especially for the Manufacture of Women's and Girls' Wearing Apparel, Including Coats, Slacks, Shifts, Jump Suits, Skirts, Suits, and Coordinate Sportswear.
First use July 29, 1964.

SN 204,722. Wain Shiell & Son Limited, London, England. Filed Oct. 23, 1964.

CASHANOVA

For Fabrics of Wool and Also Consisting Essentially of Wool, for Men's, Boys', Women's, Girls', and Children's Coats, Jackets, Suits, Vests, Slacks; and Women's, Girls', and Children's Skirts.
First use Jan. 31, 1964; in commerce Jan. 31, 1964.

SN 206,903. Th. Wittrup. Uldvare- & Taeppefabrik A/S, Vejle, Denmark. Filed Nov. 23, 1964.



WITTRUP CARPET MILLS

No claim is made to the words "Carpet Mills" apart from the mark as shown.
For Blankets, Travelling Rugs and Carpets.
First use 1928; in commerce 1928.

SN 207,243. Stacy Fabrics Corp., New York, N.Y. Filed Dec. 1, 1964.

VERIFORM

For Woven Synthetic Fabric Used in Lining and Underlining in Men's, Women's, and Children's Garments.
First use March 1958.

SN 207,289. Golding Bros. Company, Inc., New York, N.Y. Filed Dec. 2, 1964.

SANILON

For Mattress Ticking.
First use Aug. 27, 1964.

SN 207,442. J. P. Stevens & Co. Inc., New York, N.Y. Filed Dec. 3, 1964.

ASTROQUARTZ

Owner of Reg. No. 750,237.
For High Temperature Resistant Fabric Woven With Quartz Glass Yarns.
First use Nov. 27, 1964.

SN 207,443. J. P. Stevens & Co., Inc., New York, N.Y. Filed Dec. 3, 1964.

VIVENDO

For Piece Goods of One or More Natural Fibers Including Wool and of Synthetic Fibers or of Blends of the Foregoing.
First use Nov. 25, 1964.

SN 207,478. Dan River Mills, Incorporated, Danville, Va. Filed Dec. 4, 1964.

DANCOOL

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use Oct. 21, 1964.

SN 207,479. Dan River Mills, Incorporated, Danville, Va. Filed Dec. 4, 1964.

WINTERWEAVE

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use Nov. 13, 1964.

SN 207,480. Dan River Mills, Incorporated, Danville, Va. Filed Dec. 4, 1964.

COLORFROST

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use Oct. 21, 1964.

SN 207,481. Dan River Mills, Incorporated, Danville, Va. Filed Dec. 4, 1964.

DANPEPPER

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof.
First use Nov. 13, 1964.

SN 207,934. Alamac Knitting Mills, Inc., New York, N.Y. Filed Dec. 11, 1964.

FUNFIR

For Knitted Fabrics Made of Cotton and Synthetic Fibers for Use as Piece Goods and in the Manufacture of Wearing Apparel.
First use as early as Nov. 24, 1964.

SN 208,236. Cannon Mills Company, Kannapolis, N.C. Filed Dec. 16, 1964.

POTS 'N PATTERNS

For Towels, Dish Cloths, Pot Holders, Aprons, and Toaster Covers.
First use Nov. 30, 1964.

Class 43—Thread and Yarn

SN 198,974. Moulinage et Retorderie de Chavanoz, Societe Anonyme, Chavanoz, Isere, France. Filed July 31, 1964.

M. R. CHAVANOZ

Owner of French Reg. No. 1,279, dated July 23, 1963 (Vienne); Natl. Inst. No. 209,943.
For Yarns and Thread.

SN 207,132. N.V. Koninklijke Veenendaalsche Sajet- en Vijfschachtfabriek Voorheen Weduwe D. S. van Schuppen en Zoon, Veenendaal, Netherlands. Filed Nov. 30, 1964.

OSTARA

Owner of Dutch Reg. No. 146,776, dated Nov. 21, 1962.
For Woolen Yarns for Knitting by Hand, Synthetic or Artificial Fibres Being Added or Not.

SN 208,281. Roselon Yarns, Inc., Philadelphia, Pa. Filed Dec. 16, 1964.

ROCEL

For Yarn.
First use Feb. 23, 1960.

Class 44—Dental, Medical, and Surgical Appliances

SN 193,623. Harry J. Bosworth Company, Chicago, Ill. Filed May 18, 1964.

SUPERGEL

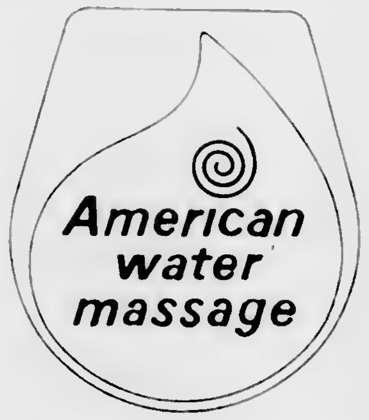
For Alginate Impression Material for Dental Impressions.
First use July 22, 1957.

SN 201,242. Stephenson Corporation, Red Bank, N.J. Filed Sept. 3, 1964.

RES-Q-PAC

For Apparatus for Use When Air is Contaminated Comprising a Canvas Carrying Bag, a Gas Cylinder and Demand Type Regulator, and a Face Mask.
First use June 7, 1963.

SN 203,401. Jacuzzi Research, Inc., Berkeley, Calif. Filed Oct. 6, 1964.



For Hydro-Massage Units for Therapeutic Purposes.
First use May 26, 1964.

SN 204,055. J. A. Deknatel & Son, Inc., Queens Village, N.Y. Filed Oct. 15, 1964.

POLYDEK

For Surgical Sutures.
First use Oct. 2, 1964.

SN 204,582. Thomas J. Mahon, Inc., Englewood Cliffs, N.J. Filed Oct. 22, 1964.

HUMIDETTE

For Nebulizer-Humidifier Unit for Nasal Oxygen and Bronchial Humidity.
First use Oct. 1, 1964.

SN 205,610. Prosthetics Research, Inc., Philadelphia, Pa. Filed Nov. 5, 1964.

pri die

Owner of Reg. No. 691,777.
For Dental Prosthetics—Namely, Resin Die Material.
First use Oct. 12, 1964.

Class 45—Soft Drinks and Carbonated Waters

SN 190,641. Pacific Hawaiian Products Company, Fullerton, Calif. Filed Apr. 8, 1964.

BRACE

For Powders for Making Soft Drinks
First use Mar. 18, 1964.

SN 194,793. Franksville, Inc., Chicago, Ill. Filed June 3, 1964.

FRANKSVILLE

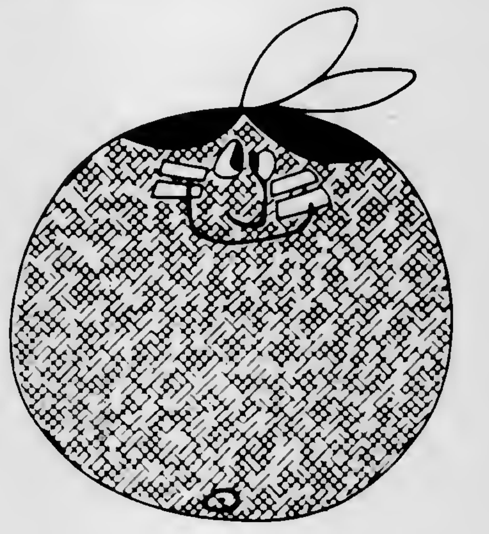
For Soft Drinks.
First use on or about Aug. 1, 1963.

SN 195,775. Franksville, Inc., Chicago, Ill. Filed June 16, 1964.

FRANKSVILLE

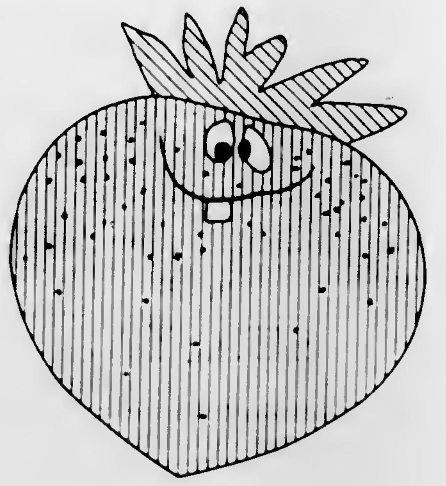
For Soft Drinks.
First use on or about Aug. 1, 1963.

SN 196,299. The Pillsbury Company, Minneapolis, Minn. Filed June 23, 1964.



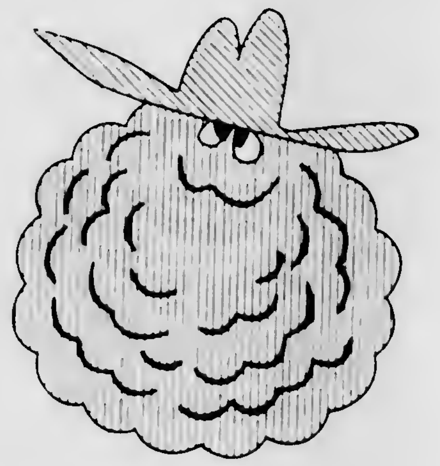
The drawing is lined for the color orange.
For Powders for Preparing Soft Drinks.
First use Feb. 15, 1964.

SN 196,300. The Pillsbury Company, Minneapolis, Minn. Filed June 23, 1964.



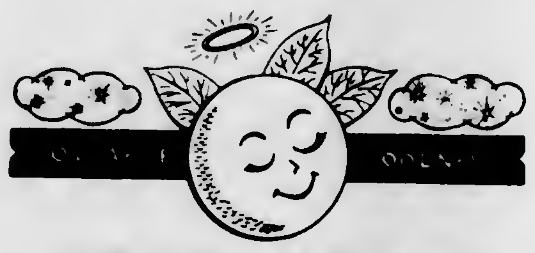
The drawing is lined for red and green.
For Powders for Preparing Soft Drinks.
First use Feb. 15, 1964.

SN 196,306. The Pillsbury Company, Minneapolis, Minn. Filed June 23, 1964.



The drawing is lined for red and green.
For Powders for Preparing Soft Drinks.
First use Feb. 15, 1964.

SN 197,615. Punch 'N Judy Beverage Co., Inc., Los Angeles, Calif. Filed July 10, 1964.



ORANGE JUDY

No registration rights are claimed for the word "Orange" apart from the mark shown in the drawing, but applicant waives none of its common law rights in the mark as shown or any feature thereof.
For Concentrated Syrup for Making Soft Drinks.
First use May 28, 1963.

SN 199,533. Beverage Distributing Corporation, Spartanburg, S.C., assignee, by mesne assignments, of Cap-Co. Enterprises, Durham, N.C. Filed Aug. 10, 1964.

WHITE LIGHTNIN'

For Soft Drinks.
First use on or about June 1, 1964.

Class 46—Foods and Ingredients of Foods

SN 179,915. Naamloose Vennootschap Cacaofabriek "De Zaan," Zaandijk, Kogg aan de Zaan, Netherlands. Filed Oct. 28, 1963.

LUNA

The word "Luna" is a Latin name for the "Goddess of the Moon."
For Cocoa Butter for Use in the Manufacture of Chocolate.
First use 1935; in commerce October 1962.

SN 181,304. Frederic D. Barton, d.b.a. Hawaiian Garden Resort, Holly, Mich. Filed Nov. 18, 1963.

The Inn-Com'parable

For Coffee.
First use Jan. 13, 1962.

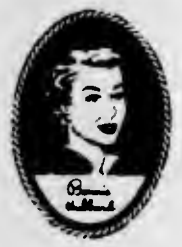
SN 182,847. United Grocers, Ltd., Richmond, Calif. Filed Dec. 11, 1963.

BONNIE HUBBARD'S

The name "Bonnie Hubbard's" is fanciful. Owner of Reg. Nos. 663,895 and 663,896.
For Canned and Frozen Vegetables and Fruits, Frozen Meats, Canned Tuna, Mayonnaise, Canned Vegetable and Fruit Juices, Coffee, Imitation Ice Milk, Peanut Butter, and Syrup for Food Purposes.
First use on or about Aug. 15, 1957, on coffee.

SN 182,848. United Grocers, Ltd., Richmond, Calif. Filed Dec. 11, 1963.

Bonnie Hubbard's



The name "Bonnie Hubbard's" and the portrait thereof are fictitious. Owner of Reg. Nos. 663,895 and 663,896.
For Canned and Frozen Vegetables and Fruits, Frozen Meats, Canned Tuna, Mayonnaise, Canned Vegetable and Fruit Juices, Coffee, Imitation Ice Milk, Peanut Butter, and Syrup for Food Purposes.
First use on or about Aug. 15, 1957, on coffee.

SN 194,794. Franksville, Inc., Chicago, Ill. Filed June 3, 1964.

FRANKSVILLE

For Cheese, Chile, Coffee, Doughnuts, French Fried Potatoes, Fish, Ice Cream, Milk, Milkshakes, Sauerkraut, Frankfurters, and Sausage.
First use on or about Aug. 1, 1963.

SN 195,776. Franksville, Inc., Chicago, Ill. Filed June 16, 1964.

FRANKSVILLE

For Cheese, Chile, Coffee, Doughnuts, French Fried Potatoes, Fish, Ice Cream, Milk, Milkshakes, Sauerkraut, Frankfurters, and Sausages.
First use on or about Aug. 1, 1963.

SN 196,374. Gertrude H. Ford Tea Co., Inc., Poughkeepsie, N.Y. Filed June 24, 1964.

THE TEAS THAT CARRY THEIR OWN MESSAGE

For Tea (in Bulk and in Individual Filled Bags).
First use Nov. 21, 1928.

SN 196,496. Beatrice Foods Co., Chicago, Ill. Filed June 26, 1964.

Old Style

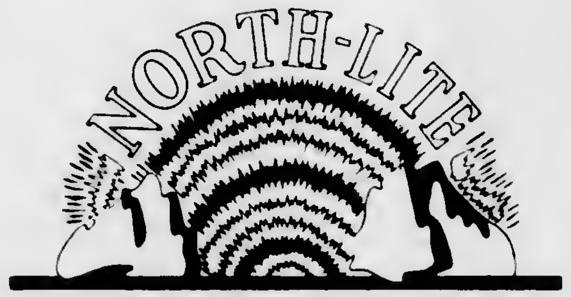
Owner of Reg. No. 410,393.
For Dressing for Salad and Meat.
First use Aug. 14, 1942.

SN 196,829. White Clover Dairy Company, Inc., Kaukauna, Wis. Filed June 30, 1964.

NORTH-LITE

For Cheese, Such as Gouda, Baby Gouda, Cheddar, Prim ost, etc.
First use June 10, 1949.

SN 196,830. White Clover Dairy Company, Inc., Kaukauna, Wis. Filed June 30, 1964.



For Cheese, Such as Gouda, Baby Gouda, Cheddar, Prim-ost, etc.
First use June 10, 1949.

SN 197,981. Pet Milk Company, St. Louis, Mo. Filed July 16, 1964.

STITCHERY

Owner of Reg. Nos. 269,399 and 571,157.
For Candy.
First use June 12, 1964.

SN 199,236. Swift & Company, Chicago, Ill. Filed Aug. 4, 1964.

THE COUNTRY SQUIRE'S

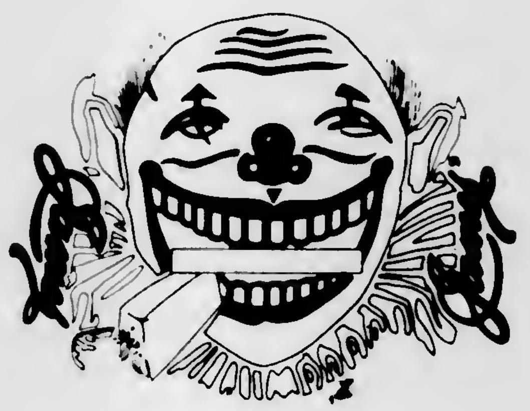
Owner of Reg. No. 686,032.
For Frozen Dressed Poultry.
First use 1948.

SN 199,507. Stiefvaters', Incorporated, d.b.a. Stiefvaters', San Francisco, Calif. Filed Aug. 7, 1964.

SHASTA

For Prepared Cake Mixes Which Are Sold Only in Bulk or Wholesale Packages to the Institutional Trade and Commercial Bakeries.
First use Oct. 4, 1898.

SN 199,743. James Candy Company, Atlantic City, N.J. Filed Aug. 12, 1964.



Owner of Reg. Nos. 184,690, 622,793, and others.
For Salt Water Taffy.
First use July 9, 1937.

Class 47 — Wines

SN 198,303. The Westminster Corporation, d.b.a. Diplomat Importers, Ltd., Long Island City, N.Y. Filed July 21, 1964.

ALIANÇA

For Wine.
First use Dec. 14, 1961.

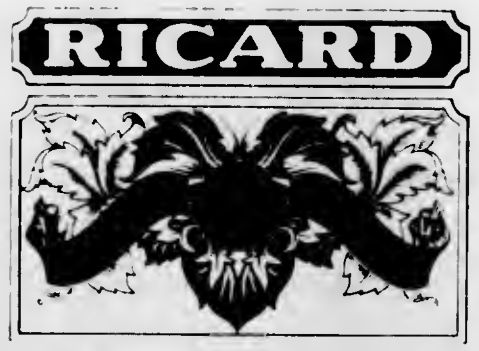
Class 49 — Distilled Alcoholic Liquors

SN 191,613. Schenley Distillers, Inc., New York, N.Y. Filed Apr. 20, 1964.

DESERT DRY

The word "Dry" is hereby disclaimed apart from the mark as shown.
For Gin.
First use Mar. 24, 1964.

SN 194,238. Ricard, Societe Anonyme, Paris, France. Filed May 25, 1964.



Owner of U.S. Reg. No. 759,342.
For Distilled Anise Aperitif.
First use 1932 ; in commerce Sept. 2, 1954.

Class 51 — Cosmetics and Toilet Preparations

SN 182,925. Charles M. Burt, d.b.a. Pharoah Cosmetics, El Segundo, Calif. Filed Dec. 13, 1963.

PHARAOH

For Cosmetic and Toilet Preparations for Men Specifically Cologne and After-Shave Lotions.
First use on or about Nov. 14, 1963.

SN 186,728. Jerome Lang, New York, N.Y. Filed Feb. 14, 1964.

COMPLEMENT

For Men's Multi-Purpose After Shave Facial Treatment Lotion, Creams, Lotions, Colognes, and Personal Deodorant.
First use January 1964.

SN 195,023. Tecnique, Inc., Clifton, N.J. Filed June 5, 1964.

COLOR A HEAD!

Applicant hereby disclaims the use of the word "Color" apart from the mark as shown.
For Hair Coloring Preparation.
First use Apr. 8, 1964.

SN 195,507. John H. Breck, Inc., Springfield, Mass. Filed June 12, 1964.

JASMINE

For Permanent Hair Waving Preparation.
First use May 14, 1964.

SN 195,980 Steveco Distributors, Inc., Chicago, Ill. Filed June 18, 1964.

STARDUST

For Hair Spray.
First use Feb. 17, 1964.

SN 199,199. Hattie Carnegie, Inc., New York, N.Y. Filed Aug. 4, 1964.

à Gogo

The term "À Gogo" means "galore" or "in abundance."
Owner of Reg. No. 362,102.
For Ladies' Colognes, Perfumes, Hair Tonics, and Lotions.
First use May 1, 1964.

Class 52 — Detergents and Soaps

SN 184,731. Le Chien, Inc., North Hollywood, Calif. Filed Jan. 16, 1964.

EASY FLUFF

For Shampoo for Pets.
First use Nov. 1, 1962.

SN 196,844. Chesebrough-Pond's Inc., New York, N.Y. Filed July 1, 1964.

BLACK WATCH

Owner of Reg. No. 764,430.
For Toilet Soap.
First use June 5, 1964.

SN 204,991. New Jersey Chemical Company, Inc., Lyndhurst, N.J. Filed Oct. 28, 1964.

Oxford

Owner of Reg. No. 728,082, and others.
For All-Purpose Detergents, Soaps, Rug Shampooing Compounds, Synthetic Cleansers, Floor Cleaning Compounds, Glass Cleaning Compounds, White Wall Tire Cleansers, Sweeping Compounds, Wax Removing Compounds, and Wax Remover and Floor Conditioner Compounds for Preparing Floors for Waxing.
First use at least as early as November 1958.

SERVICE MARKS

Class 100 — Miscellaneous

SN 179,520. Dodson Bros. Enterprises, Arlington, Tex. Filed Oct. 22, 1963.

DRUMMERS INN

For Motel Services.
First use on or about May 15, 1963.

SN 181,399. Parsons Corporation, Traverse City, Mich. Filed Nov. 18, 1963.

PAR-FORM

For Design of Seamless Tubular Metal Components to the Specifications of Others.
First use Oct. 3, 1962.

SN 186,263. Richard B. Mindlin, d.b.a. Minuteman Beverage Company, Kansas City, Mo. Filed Feb. 7, 1964.

MINUTEMAN

For Rental and Maintenance of Electrical Units for Heating Instant Beverages and Soups.
First use on or about Jan. 1, 1964.

SN 186,532. Horne's Enterprises, Inc., Bayard, Fla. Filed Feb. 12, 1964.

CROWN ROOM

For Restaurant Services.
First use Apr. 27, 1962.

SN 195,777. Franksville, Inc., Chicago, Ill. Filed June 16, 1964.

FRANKSVILLE

For Restaurant Services.
First use on or about Aug. 1, 1963.

SN 197,253. Atlantic Aerial Surveys, Inc., Huntsville, Ala. Filed July 7, 1964.

Atlantic Aerial Surveys, Inc.

For Aerial Photographic Surveys and Photogrammetric Engineering.
First use Sept. 1, 1962.

Class 101 — Advertising and Business

SN 192,908. Ruth T. Ellanson, Milwaukee, Wis. Filed May 7, 1964.

GOLD STAR ENTERPRISES

No claim is made to the word "Enterprises" apart from the mark as shown.
For Public Secretarial Services.
First use July 1, 1963.

SN 195,793. Keystone Readers' Service, Inc., Philadelphia, Pa. Filed June 16, 1964.

METRO READERS' SERVICE

No claim of exclusive right is made to the words "Readers' Service" apart from the mark as shown.
For Acting as Subscription Agent for Various Magazine Publishing Houses.
First use May 24, 1963.

SN 197,100. EAM Services Corporation, Irving, Tex. Filed July 6, 1964.

EAM

For Rental and Maintenance of Data Processing Equipment.
First use Mar. 1, 1964.

SN 197,756. Paradiso, Inc., Norwalk, Conn. Filed July 13, 1964.

PARADISO

The English translation of the Italian word "Paradiso" is "paradise."
For International Services to Management Which Include, Consulting With Clients as to Extending Their Business Activities Into Foreign Countries, Advising Them as to Selecting, Designing and Packaging Products To Be Sold Abroad, and Whether To Export Directly or To Establish Overseas Branches, or To License Manufacture, Sales and Merchandising to a Foreign Firm; Making on the Spot Surveys To Determine Whether an Interest in a Client's Product Actually Exists in a Foreign Country; Making Plans for Getting Products Established in Foreign Markets and Executing the Plans as by Determining the Most Logical Location, Facilities and Personnel, Screening Available Manufacturers and Sales Organizations, Obtaining Sales Representatives and Manufacturing Licensees in Foreign Markets; Counseling as to the Best Type of Advertising Program and If Desired Handling It for the Client, Locating Foreign Products To Sell in the Home Market; and Advising as to Trends and Changes in Foreign Markets.
First use March 1959.

SN 197,757. Paradiso, Inc., Norwalk, Conn. Filed July 13, 1964.

For International Services to Management Which Include, Consulting With Clients as to Extending Their Business Activities Into Foreign Countries, Advising Them as to Selecting, Designing and Packaging Products To Be Sold Abroad, and Whether To Export Directly or To Establish Overseas Branches, or To License Manufacture, Sales and Merchandising to a Foreign Firm; Making on the Spot Surveys To Determine Whether an Interest in a Client's Product Actually Exists in a Foreign Country; Making Plans for Getting Products Established in Foreign Markets and Executing the Plans as by Determining the Most Logical Location, Facilities and Personnel, Screening Available Manufacturers and Sales Organizations, Obtaining Sales Representatives and Manufacturing Licensees in Foreign Markets; Counseling as to the Best Type of Advertising Program and If Desired Handling It for the Client, Locating Foreign Products To Sell in the Home Market; and Advising as to Trends and Changes in Foreign Markets.
First use March 1959.

SN 198,864. New Process Company, Warren, Pa. Filed July 30, 1964.

NPC

For Retail Mail Order Merchandising.
First use July 1957.

SN 198,960. Keydata Corporation, Bedford, Mass. Filed July 31, 1964.

KEYDATA

For Data-Processing Services.
First use Nov. 13, 1963.

Class 102 — Insurance and Financial

SN 186,851. Insurance Company of North America, Philadelphia, Pa. Filed Feb. 17, 1964.

GOLDEN PACKAGES

For Underwriting of Insurance.
First use July 21, 1961.

SN 186,852. Insurance Company of North America, Philadelphia, Pa. Filed Feb. 17, 1964.

INA

The drawing is lined for gold. Owner of Reg. Nos. 713,192, 730,208, and others.
For Underwriting of Insurance.
First use Aug. 1, 1961.

SN 193,649. Fireman's Fund Insurance Company, d.b.a. Fireman's Fund American Insurance Companies, San Francisco, Calif. Filed May 18, 1964.

FIREMAN'S
FUND
AMERICAN
INSURANCE COMPANIES

The words "Insurance Companies" are disclaimed apart from the mark. Owner of Reg. No. 660,232.
For Writing of All Forms of Insurance Except Title and Mortgage Insurance.
First use on or about July 12, 1963.

SN 193,651. Fireman's Fund Insurance Company, d.b.a. Fireman's Fund American Insurance Companies, San Francisco, Calif. Filed May 18, 1964.

Owner of Reg. No. 660,232.
For Writing of All Forms of Insurance Except Title and Mortgage Insurance.
First use on or about July 12, 1963.

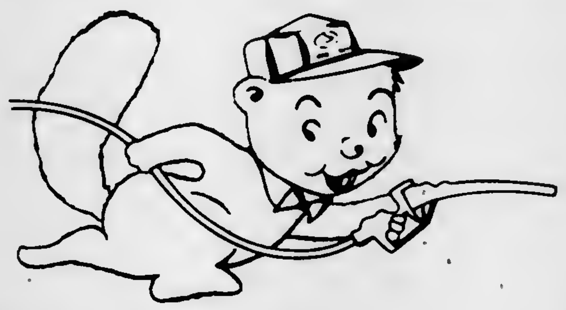
Class 103 — Construction and Repair

SN 180,554. The Auto-Soler Company, Atlanta, Ga. Filed Nov. 6, 1963.

HEEL BAR

Owner of Reg. Nos. 529,885, 708,711, and others.
For Advice and Consultation in the Establishment and Operation of Shoe Repair Shops.
First use May 1, 1963.

SN 197,081. Cities Service Oil Company, Tulsa, Okla. Filed July 6, 1964.



For Gasoline Station Services.
First use on or about May 6, 1959.

SN 197,376. Evans Electric Motor Repair Company, Oklahoma City, Okla. Filed July 8, 1964.

EVANS

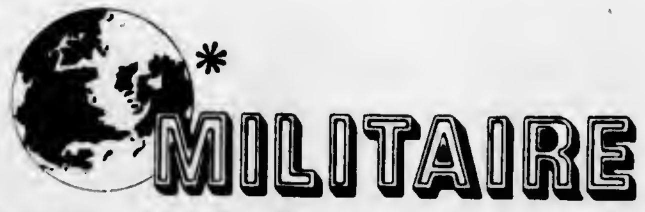
For Repairing and Reconditioning Electric Equipment.
First use Dec. 31, 1962.

SN 197,377. Evans Electric Motor Repair Company, Oklahoma City, Okla. Filed July 8, 1964.

PERM-A-WIND

For Rewinding of Electric Motors.
First use Dec. 31, 1962.

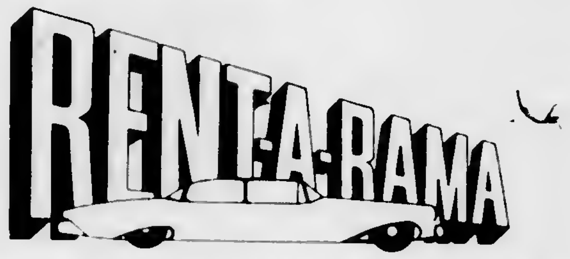
SN 197,452. Warren Unlimited, Inc., Atlanta, Ga. Filed July 8, 1964.



For Custom Cabinetwork, Bars and Counters; Remodeling; and Interior Decorating.
First use on or about July 15, 1963.

Class 105 — Transportation and Storage

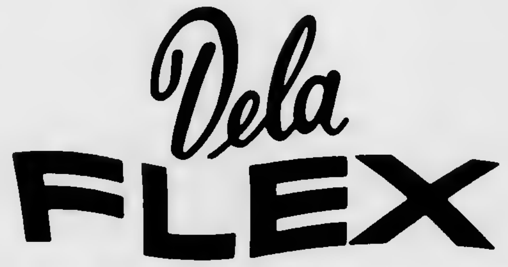
SN 181,802. Rent-A-Rama Auto Rental Agency, Inc., Plainview, N.Y. Filed Nov. 22, 1963.



For Wholesale and Retail Leasing of Automobiles, Trucks, and Trailers.
First use June 6, 1963.

Class 106 — Material Treatment

SN 186,696. Cold Spring Bleachery, Yardley, Pa. Filed Feb. 14, 1964.



Owner of Reg. Nos. 575,284, 724,944, and others.
For Finishing Service for Fabrics of Others.
First use January 1964.

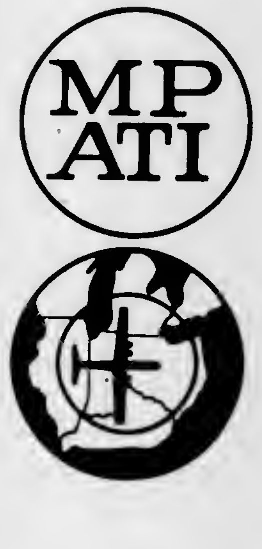
SN 197,078. Ceramic Coatings, Inc., Houston, Tex. Filed July 6, 1964.

CERAMA-SHIELD

For Coating of Mechanical Parts.
First use Jan. 20, 1964.
Subj. to Intf. with SN 194,643.

Class 107 — Education and Entertainment

SN 185,062. Midwest Program on Airborne Television Instruction, Inc., Lafayette, Ind. Filed Jan. 21, 1964.



For Instructional Service Through the Medium of Television, Commonly Referred to as Educational Television
First use Apr. 30, 1960.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

789,821. SVALOF. Allmanna Svenska Utsadesaktiebolaget. SN 181,102. Pub. 3-9-65. Filed 11-14-63.

789,822. GENETIC GIANT. Tomco Genetic Giant, Inc. SN 193,235. Pub. 3-9-65. Filed 5-11-64.

789,823. BLACK COAL ARROW AND DESIGN. Peabody Coal Company. SN 194,555. Pub. 3-9-65. Filed 5-29-64.

789,824. S AND DESIGN. Robert C. Sprague, Jr., d.b.a. Stonebrook Farm. SN 195,020. Pub. 3-9-65. Filed 6-5-64.

789,825. COMPAK. Pak-Tite, Inc. SN 196,707. Pub. 3-9-65. Filed 6-29-64.

789,826. JONATHAN GREEN. Jonathan Green & Sons. SN 198,475. Pub. 3-9-65. Filed 7-24-64.

789,827. HYDRAGLOSS. J. M. Huber Corporation. SN 198,846. Pub. 2-23-65. Filed 7-30-64.

Class 2 — Receptacles

789,828. GLOBEMASTER AND DESIGN. Globemaster, Inc. MULTIPLE CLASS (Classes 2, 4, 5, 7, 13, 21, 23, 25, 26, 29, and 34). SN 146,814. Pub. 9-10-63. Filed 6-13-62.

789,829. SUPER STEEL. Union Steel Chest Corporation. SN 163,434. Pub. 3-9-65. Filed 2-25-63.

789,830. DN AND DESIGN. Diamond National Corporation. CONSOLIDATED CERTIFICATE. SN 176,637, pub. 11-24-64, filed 9-10-63, Cl. 2; SN 176,638, pub. 11-17-64, filed 9-10-63, Cl. 9; SN 176,639, pub. 11-24-64, filed 9-10-63, Cl. 12; SN 176,640, pub. 10-27-64, filed 9-10-63, Cl. 12; SN 176,641, pub. 10-27-64, filed 9-10-63, Cl. 16; SN 176,642, pub. 3-17-64, filed 9-10-63, Cl. 23; SN 176,855, pub. 12-22-64, filed 9-10-63, Cl. 37; SN 176,854, pub. 10-20-64, filed 9-12-63, Cl. 44; SN 176,643, pub. 3-17-64, filed 9-10-63, Cl. 50; SN 176,644, pub. 3-2-65, filed 9-10-63, Cl. 101; SN 176,645, pub. 10-20-64, filed 9-10-63, Cl. 103.

789,831 CORD VALET. Corva Industries, Inc. SN 186,697. Pub. 3-9-65. Filed 2-14-64.

789,832. PW (DESIGN). Piney Wood Products Company. SN 192,745. Pub. 3-9-65. Filed 5-5-64.

789,833. BUSTELO PAC. Bustelo Coffee Roasting Co., Inc. SN 203,070. Pub. 3-9-65. Filed 10-1-64.

789,834. LITTLE SHAKE. Rexall Drug and Chemical Company, d.b.a. Tupperware. SN 204,195. Pub. 3-9-65. Filed 10-16-64.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

789,835. GOLD CROWN. Amity Leather Products Co. SN 195,914. Pub. 3-9-65. Filed 6-18-64.

Class 4 — Abrasives and Polishing Materials

789,828. (See Class 2 for this trademark.)

789,836. NU-BRITE. Western Chemical Company. SN 145,011. Pub. 7-16-63. Filed 5-18-62.

789,837. CHEM-CARE. Chem-Care Products, Incorporated. MULTIPLE CLASS (Classes 4, 6, and 52). SN 161,681. Pub. 3-9-65. Filed 1-30-63.

789,838. PURE ETC. AND DESIGN. The Pure Oil Company. MULTIPLE CLASS (Classes 4, 6, 15, 21, 23, 35, and 52). SN 189,727. Pub. 3-9-65. Filed 3-26-64.

789,839. SILIKLEEN. M. J. Gordon Company. SN 199,467. Pub. 3-9-65. Filed 8-7-64.

Class 5 — Adhesives

789,828. (See Class 2 for this trademark.)

Class 6 — Chemicals and Chemical Compositions

789,837. (See Class 4 for this trademark.)

789,838. (See Class 4 for this trademark.)

789,840. ALHIBITOL. Allied Chemical Corporation. SN 152,661. Pub. 3-9-65. Filed 9-7-62.

789,841. GLO-DANE 45. Chas. Pfizer & Co. Inc. SN 155,007. Pub. 3-9-65. Filed 10-11-62.

789,842. RED BARN STRIP-LEAF. Red Barn Chemicals, Inc. SN 160,137. Pub. 3-9-65. Filed 1-3-63.

789,843. VIA JET AND DESIGN. Virginia Aerosol, Inc. MULTIPLE CLASS (Classes 6 and 52). SN 168,878. Pub. 3-9-65. Filed 5-14-63.

789,844. OSAMUL 95. Best Chemicals & Fertilizer Co., Ltd. SN 171,525. Pub. 3-9-65. Filed 6-21-63.

789,845. KLENZADE AND DESIGN. Economics Laboratory, Inc. SN 172,981. Pub. 3-9-65. Filed 7-15-63.

789,846. CLARI-ZIMA. Bavaria, S.A. SN 173,887. Pub. 3-9-65. Filed 7-29-63.

789,847. CALIMULSE. Pilot Chemical Company. SN 175,871. Pub. 1-19-65. Filed 8-27-63.

789,848. CALAMIDE. Pilot Chemical Company. SN 175,872. Pub. 1-19-65. Filed 8-27-63.

789,849. TRIONIZED. The O. M. Scott & Sons Company. MULTIPLE CLASS (Classes 6 and 10). SN 178,227. Pub. 3-9-65. Filed 10-2-63.

789,850. LITH-KEM-KO. Litho Chemical & Supply Co., Inc. SN 179,142. Pub. 3-9-65. Filed 10-16-63.

789,851. BAREX GIVERS AND DESIGN. King Laboratories, Inc. SN 179,640. Pub. 3-9-65. Filed 10-23-63.

789,852. SOMETHING-SOFT. Colgate-Palmolive Company. SN 182,780. Pub. 3-9-65. Filed 12-11-63.

789,853. NICON-P. Harich Chemical Company. SN 183,757. Pub. 3-9-65. Filed 12-30-63.

789,854. TYCHEM. International Latex Corporation. SN 184,161. Pub. 3-9-65. Filed 1-7-64.

789,855. DYNAFLOC. Dynamit Nobel Aktiengesellschaft. SN 184,221. Pub. 3-9-65. Filed 1-8-64.

789,856. FATAZOLINE. Universal Chemicals Corp. SN 184,317. Pub. 3-9-65. Filed 1-9-64.

789,857. SHUR-OFF AND DESIGN. Crescent Chemical Co. SN 185,365. Pub. 3-9-65. Filed 1-27-64.

789,858. TCW AND DESIGN. Treibacher Chemische Werke Aktiengesellschaft. SN 186,978. Pub. 3-9-65. Filed 2-18-64.

789,859. TOLONATE. Societe Toulousaine de Produits Chimiques Tolochimie. SN 187,442. Pub. 3-9-65. Filed 2-25-64.

789,860. ALCHEM. Alchem Limited. SN 188,174. Pub. 2-16-65. Filed 3-9-64.

789,861. CASTLELUBE. Checkmate Chemicals, Inc. SN 189,435. Pub. 3-9-65. Filed 3-24-64.

789,862. KINGSOLVE. Checkmate Chemicals, Inc. SN 189,437. Pub. 3-9-65. Filed 3-24-64.

789,863. AMO-GUARD. The American Oil Company. SN 190,481. Pub. 3-9-65. Filed 4-7-64.

789,864. AG-O-MYST. Yardney Chemical Inc. SN 190,846. Pub. 3-9-65. Filed 4-10-64.

789,865. EMBIOZYME. Midwest Biochemical Corp. SN 193,805. Pub. 3-9-65. Filed 5-19-64.

789,866. KEMESTER. National Dairy Products Corporation. SN 196,700. Pub. 3-9-65. Filed 6-29-64.

789,867. DUOZINC. E. I. du Pont de Nemours and Company. SN 200,336. Pub. 3-9-65. Filed 8-21-64.

789,868. D-K-X. Guardian Chemical Corporation. SN 200,344. Pub. 3-9-65. Filed 8-21-64.

789,869. C-9 CARBON-TROL. Puma Corporation. SN 200,381. Pub. 3-9-65. Filed 8-21-64.

Class 7 — Cordage

789,828. (See Class 2 for this trademark.)

789,870. TRUE BLUE. The Longhorn Company. SN 173,373. Pub. 3-9-65. Filed 7-19-63.

789,871. KROP KING. J-M Trading Corporation. SN 188,366. Pub. 3-9-65. Filed 3-10-64.

Class 8 — Smokers' Articles, Not Including Tobacco Products

789,872. AR AND DESIGN. Kommandit-Gesellschaft Ernst Gideon Bek & Company. MULTIPLE CLASS (Classes 8 and 28). SN 156,129. Pub. 12-8-64. Filed 10-29-62.

789,873. TCW AND DESIGN. Treibacher Chemische Werke Aktiengesellschaft. SN 186,979. Pub. 3-9-65. Filed 2-18-64.

789,874. BUTALITE. Latama, Inc. SN 196,385. Pub. 3-9-65. Filed 6-24-64.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

789,830. CONSOLIDATED CERTIFICATE. See Class 2.

Class 10 — Fertilizers

789,849. (See Class 6 for this trademark.)

789,875. WOOD GROW AND DESIGN. Wood Chemical Co., Inc. SN 181,087. Pub. 3-9-65. Filed 11-13-63.

789,876. VITAL-EARTH AND DESIGN. Vital Earth Products, Inc. SN 189,638. Pub. 3-9-65. Filed 3-25-64.

Class 11 — Inks and Inking Materials

789,877. RULEORITE. Fairchild Camera and Instrument Corporation. SN 169,845. Pub. 5-12-64. Filed 5-28-63.

Class 12 — Construction Materials

789,830. CONSOLIDATED CERTIFICATE. See Class 2.

789,878. PENN-KOTE. Penn Crete Products Company, Inc. SN 173,678. Pub. 3-17-64. Filed 7-24-63.

789,879. RED THREAD. Dowsmith Inc. MULTIPLE CLASS (Classes 12, 13, and 21). SN 183,256. Pub. 3-9-65. Filed 12-19-63.

789,880. MONO-SCORE. Monarch Tile Manufacturing, Inc. (Delaware corporation), by assignment and change of name from Monarch Tile Manufacturing, Inc. (Texas corporation). SN 183,774. Pub. 10-20-64. Filed 12-30-63.

789,881. MONSANTO M. Monsanto Company. SN 192,503. Pub. 3-9-65. Filed 5-1-64.

789,882. FORCE. American Solder & Flux Co. MULTIPLE CLASS (Classes 12 and 34). SN 194,273. Pub. 3-9-65. Filed 5-26-64.

789,883. SAKRETE. Sakrete, Inc. SN 199,855. Pub. 3-9-65. Filed 8-13-64.

789,884. NEWNA-BAND. The Newnan Corporation. SN 199,911. Pub. 3-9-65. Filed 8-14-64.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

789,828. (See Class 2 for this trademark.)

789,879. (See Class 12 for this trademark.)

789,885. DOR-O MATIC HEADLINER. Republic Industries, Inc. SN 166,660. Pub. 3-9-65. Filed 4-12-63.

789,886. ZE. Atlas Corporation. SN 185,186. Pub. 3-9-65. Filed 1-23-64.

789,887. PERFSAFE. Mueller Co. SN 187,129. Pub. 12-29-64. Filed 2-20-64.

789,888. E-Z-FIX. Wal-Rich Corporation. SN 198,990. Pub. 3-9-65. Filed 7-31-64.

789,889. WHITE CAP. Kurk Products Co. SN 201,035. Pub. 3-9-65. Filed 9-1-64.

789,890. SANI-STACK. Metropolitan Wire Goods Corporation. SN 201,134. Pub. 3-9-65. Filed 9-2-64.

789,891. MUELLER/107. Mueller Co. SN 201,608. Pub. 3-9-65. Filed 9-10-64.

Class 14 — Metals and Metal Castings and Forgings

789,892. G TUBES AND DESIGN. Greenville Tubes, Inc. SN 186,530. Pub. 1-26-65. Filed 2-12-64.

Class 15 — Oils and Greases

789,838. (See Class 4 for this trademark.)

789,893. SHELLCOOL. Shell Oil Company. SN 185,818. Pub. 6-23-64. Filed 1-31-64.

789,894. NU-GARD. Nationwide Industries, Inc. SN 199,755. Pub. 3-9-65. Filed 8-12-64.

Class 16 — Protective and Decorative Coatings

789,830. CONSOLIDATED CERTIFICATE. See Class 2.

789,895. CHEMGLAZE. Lord Corporation, by change of name from Lord Manufacturing Company. SN 141,855. Pub. 7-23-63. Filed 4-9-62.

789,896. VULCOFERRAN. Harzer Achsenwerke K.G. Schwemann & Althoff. SN 182,083. Pub. 3-9-65. Filed 11-29-63.

Class 17 — Tobacco Products

789,897. NU LEAF. Consolidated Cigar Corporation. SN 182,591. Pub. 3-9-65. Filed 12-9-63.

789,898. THAT. Earl B. Cole. SN 187,248. Pub. 3-9-65. Filed 2-24-64.

789,899. TIPTIMO. La Primadora Cigar Corporation. SN 189,600. Pub. 3-9-65. Filed 3-25-64.

789,900. SWAGGER. General Cigar Co., Inc., d.b.a. Gradiaz, Annis and as Ignacio Haya. SN 191,378. Pub. 3-9-65. Filed 4-17-64.

789,901. THE MAGIC 13. Anna Wilke, d.b.a. Wilke Pipe Shop. SN 191,733. Pub. 3-9-65. Filed 4-21-64.

789,902. JAGAREN AND DESIGN. Svenska Tobaks Aktiebolaget (Swedish Tobacco Company). SN 200,058. Pub. 3-9-65. Filed 8-14-64.

789,903. KISS OF DEATH AND DESIGN. Blue Knight Enterprises. SN 201,270. Pub. 3-9-65. Filed 9-4-64.

Class 18 — Medicines and Pharmaceutical Preparations

789,904. EFRICON. The Lannett Company, Inc. SN 115,499. Pub. 6-13-61. Filed 3-13-61.

789,905. COFTROL. Drug Development Corporation. SN 143,014. Pub 1-1-63. Filed 4-25-62.

789,906. DEKALB AND DESIGN. Second DeKalb Molasses Feed Co. SN 164,395. Pub. 3-9-65. Filed 3-11-63.

789,907. PHILLIPS'. Sterling Drug Inc. SN 167,953. Pub. 11-19-63. Filed 5-1-63.

789,908. INSTIL. American Home Products Corporation. SN 173,321. Pub. 3-9-65. Filed 7-19-63.

789,909. TRIPTONE. American Home Products Corporation. SN 173,322. Pub. 3-9-65. Filed 7-19-63.

789,910. NAILEZE. American Home Products Corporation. SN 173,328. Pub. 3-9-65. Filed 7-19-63.

789,911. ANTICAY. The Colonial Sugar Refining Company Limited. SN 180,566. Pub. 3-9-65. Filed 11-6-63.

789,912. PEPSOCOLL. Western Research Laboratories, Inc., assignee of Western Research Laboratories. SN 184,539. Pub. 7-28-64. Filed 1-13-64.

789,913. TACKLETTE. Colgate-Palmolive Company. SN 185,111. Pub. 3-9-65. Filed 1-22-64.

789,914. MOLAFIL. E. C. De Witt & Co., Inc. SN 185,498. Pub. 3-9-65. Filed 1-28-64.

789,915. EXOPON. Ciba Limited. SN 186,495. Pub. 3-9-65. Filed 1-2-64.

789,916. TRYPSOVAX. Tasman Vaccine Laboratory Limited. SN 186,574. Pub. 3-9-65. Filed 2-12-64.

789,917. FUMATINIC. Laser, Inc. SN 195,946. Pub. 3-9-65. Filed 6-18-64.

789,918. LULU LOTION. Drug Service, Inc. SN 197,097. Pub. 3-9-65. Filed 7-6-64.

789,919. SEKREZYM. Luitpold-Werk. SN 197,591. Pub. 3-9-65. Filed 7-10-64.

789,920. GROOMETTES. 8 in 1 Pet Products, Inc. SN 198,339. Pub. 3-9-65. Filed 7-22-64.

789,921. SK & F. Smith Kline & French Laboratories. SN 199,127. Pub. 3-9-65. Filed 8-3-64.

789,922. MEDICURE. Nysco Laboratories, Inc., d.b.a. Medicure Pharmacal Co. SN 203,520. Pub. 3-9-65. Filed 10-7-64.

Class 19 — Vehicles

789,923. BEACHCOMBER AND DESIGN. Beachcomber Marine Corporation. SN 187,717. Pub. 12-15-64. Filed 3-2-64.

Class 21 — Electrical Apparatus, Machines, and Supplies

789,828. (See Class 2 for this trademark.)

789,838. (See Class 4 for this trademark.)

789,879. (See Class 12 for this trademark.)

789,924. STEREO THEATRE. The Magnavox Company. SN 100,275. Pub. 5-16-61. Filed 7-5-60.

789,925. N AND DESIGN. Northport Engineering, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 169,752. Pub. 1-5-65. Filed 5-27-63.

789,926. WC AND DESIGN. Welwyn Canada Limited. SN 180,544. Pub. 3-9-65. Filed 11-5-63.

789,927. THERMOTRON. C. W. Brabender Instruments, Inc. SN 181,749. Pub. 1-12-65. Filed 11-22-63.

789,928. BIG LEAF AND DESIGN. The Bendix Corporation. SN 185,354. Pub. 3-9-65. Filed 1-27-64.

789,929. OVENAIRE. Cardinal Electronics Company of Canada Limited. SN 185,654. Pub. 3-9-65. Filed 1-30-64.

789,930. THINLINE. Markite Corporation. SN 187,500. Pub. 3-9-65. Filed 2-26-64.

789,931. UA. United Aircraft Corporation. SN 191,738. Pub. 3-9-65. Filed 4-21-64.

789,932. MULTI-CRIMP. Malco Manufacturing Company, Inc. SN 194,554. Pub. 3-9-65. Filed 5-29-64.

789,933. LIONEL. The Lionel Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 194,993. Pub. 3-9-65. Filed 6-5-64.

789,934. DYNAKIT. Dynaco, Inc. SN 197,686. Pub. 3-2-65. Filed 7-13-64.

Class 22 — Games, Toys, and Sporting Goods

789,935. ELECTRO-GOLF AND DESIGN. Electronic Recreations Corporation. SN 170,900. Pub. 3-9-65. Filed 6-13-63.

789,936. SKEE TAN AND DESIGN. Caldwell Lace Leather Co. SN 178,873. Pub. 3-9-65. Filed 10-14-63.

789,937. AQUA TOGS AND DESIGN. Aqua Togs, Incorporated. SN 179,514. Pub. 3-9-65. Filed 10-22-63.

789,938. PLASTICART. Krystyna W. Boniecki. SN 181,610. Pub. 3-9-65. Filed 11-21-63.

789,939. GOLD RUSH. Center for the Gifted Child Inc. SN 184,136. Pub. 3-9-65. Filed 1-7-64.

789,940. STEP CHESS. Center for the Gifted Child Inc. SN 184,141. Pub. 3-9-65. Filed 1-7-64.

789,941. COLORMOS. Center for the Gifted Child Inc. SN 184,142. Pub. 3-9-65. Filed 1-7-64.

789,942. SWORDS & PLOWSHARES. Center for the Gifted Child Inc. SN 184,143. Pub. 3-9-65. Filed 1-7-64.

789,943. HELLO AGAIN. Edward J. Smith, d.b.a. World Wide Originals. SN 184,310. Pub. 3-9-65. Filed 1-9-64.

789,944. MASTER SER-VILLE. Edward J. Smith, d.b.a. World Wide Originals. SN 184,312. Pub. 3-9-65. Filed 1-9-64.

789,945. CAP 'N KNAP. Belknap Hardware and Manufacturing Company. SN 184,344. Pub. 3-9-65. Filed 1-10-64.

789,946. FUNNY FINK. Louis Marx & Co., Inc. SN 186,464. Pub. 10-20-64. Filed 2-11-64.

789,947. GUMBY THE SUPER-FLEX. Lakeside Industries, Inc., assignee, by mesne assignments, of Clokey Productions, Inc. SN 189,145. Pub. 2-9-65. Filed 3-20-64.

789,948. MAGIC LINE. American Machine & Foundry Company. SN 196,833. Pub. 3-9-65. Filed 7-1-64.

789,949. DESIGN OF FIGURE SEATED AT DESK WITHIN TWO CIRCLES. Playskool Manufacturing Company. SN 197,170. Pub. 3-9-65. Filed 7-6-64.

789,950. FLIKORE. Robert E. Harmond. SN 197,712. Pub. 3-9-65. Filed 7-13-64.

789,951. GCW. Rexall Drug and Chemical Company, assignee of The Seamless Rubber Company. SN 198,228. Pub. 3-9-65. Filed 7-20-64.

789,952. MITCHELL. The Garcia Corporation. SN 198,411. Pub. 3-9-65. Filed 7-23-64.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

789,828. (See Class 2 for this trademark.)

789,830. CONSOLIDATED CERTIFICATE. See Class 2.

789,838. (See Class 4 for this trademark.)

789,953. BLUE LINE HP AND SHIELD DESIGN. H-P Tool Mfg. Corp., d.b.a. H-P Tool Manufacturing Corporation and H.P. Tool Manufacturing Corp. SN 122,081. Pub. 8-7-62. Filed 6-15-61.

789,954. BLUE LINE. H-P Tool Mfg. Corp., d.b.a. H-P Tool Manufacturing Corporation and H.P. Tool Manufacturing Corp. SN 122,082. Pub. 7-3-62. Filed 6-15-61.

789,955. SPEEDMORE. Belknap Hardware and Manufacturing Company. SN 157,441. Pub. 11-5-63. Filed 11-19-62.

789,956. KUMFY-GRIP. The Acme Shear Company. SN 159,323. Pub. 9-3-63. Filed 12-18-62.

789,957. SPRED 'N CUTTER. Williams Cutlery, Inc. SN 188,319. Pub. 3-9-65. Filed 3-9-64.

789,958. CONTROLLED FORCE AND DESIGN. The Heald Machine Company. SN 188,867. Pub. 3-9-65. Filed 3-17-64.

789,959. AIRCHUTE. Irl Daffin Associates Incorporated. SN 194,782. Pub. 1-5-65. Filed 6-3-64.

789,960. ASCAMAT. Albert Schawalder. SN 197,911. Pub. 3-2-65. Filed 7-15-64.

789,961. DURA LAPPER. Durametallic Corporation. SN 199,547. Pub. 3-9-65. Filed 8-10-64.

789,962. BERNZ O MATIC FOUNTAINETTE AND DESIGN. Bernz O Matic Corporation. SN 200,543. Pub. 3-9-65. Filed 8-25-64.

789,963. BELTGARD. Link-Belt Company. SN 200,764. Pub. 3-9-65. Filed 8-27-64.

789,964. ANGLER. Outboard Marine Corporation. SN 204,819. Pub. 3-9-65. Filed 10-26-64.

789,965. STRONG SCOTT. The Strong-Scott Manufacturing Company. SN 204,853. Pub. 3-9-65. Filed 10-26-64.

789,966. MODERN HOME AND DESIGN. Modern Sewing Machine Co., Inc. SN 204,988. Pub. 3-9-65. Filed 10-28-64.

789,967. MISCELLANEOUS DESIGN. Simonds Saw and Steel Company, d.b.a. The Atrax Company. SN 205,112. Pub. 3-9-65. Filed 10-29-64.

789,968. PILLOW-JAC. Frederik Engel. SN 205,174. Pub. 3-9-65. Filed 10-30-64.

789,969. EVERSHARP. Eversharp, Inc. SN 206,845. Pub. 3-9-65. Filed 11-24-64.

789,970. ROLABAR. Sperry Rand Corporation. SN 207,090. Pub. 3-9-65. Filed 11-27-64.

Class 24 — Laundry Appliances and Machines

789,971. MSI AND DESIGN. MSI, Inc., by change of name from Maytag Stores International, Inc. SN 182,636. Pub. 5-26-64. Filed 12-9-63.

789,972. SHEER. Ametek, Inc. SN 183,550. Pub. 3-9-65. Filed 12-26-63.

789,973. H HOFFMAN AND DESIGN. Hoffman International Corporation. SN 185,516. Pub. 1-5-65. Filed 1-28-64.

789,974. WONDERWASHER. Handiform Plastic Corp. SN 203,286. Pub. 3-9-65. Filed 10-5-64.

Class 25 — Locks and Safes

789,828. (See Class 2 for this trademark.)

Class 26 — Measuring and Scientific Appliances

789,828. (See Class 2 for this trademark.)

789,925. (See Class 21 for this trademark.)

789,933. (See Class 21 for this trademark.)

789,975. GENALEX. The General Electric Company Limited. SN 71,776. Pub. 12-29-59. Filed 3-6-59.

789,976. POLY-VUE. Richard Manufacturing Co. SN 107,508. Pub. 5-23-61. Filed 10-31-60.

789,977. ACROMETER. American Cryogenics, Inc. (Delaware corporation), assignee of American Cryogenics, Inc. (Georgia corporation). SN 137,204. Pub. 7-14-64. Filed 2-5-62.

789,978. TELCOLUX. Ciba Limited. SN 171,620. Pub. 3-9-65. Filed 6-24-63.

789,979. SPORTSMAN. The Electric Storage Battery Company. SN 179,878. Pub. 1-5-65. Filed 10-28-63.

789,980. SUPRE-PRINT. Supreme Photo Supply Co., Inc. SN 184,850. Pub. 3-9-65. Filed 1-17-64.

789,981. DA-LAUR. Da-Laur, Incorporated. SN 195,285. Pub. 3-9-65. Filed 6-10-64.

789,982. I.B.A.C. Central Rediffusion Services Limited. SN 196,244. Pub. 3-9-65. Filed 6-23-64.

789,983. SORVALL AND DESIGN. Ivan Sorvall, Inc. SN 199,677. Pub. 3-9-65. Filed 8-11-64.

789,984. CENT-O-GRAM. Ohaus Scale Corporation. SN 200,860. Pub. 3-9-65. Filed 8-28-64.

Class 27 — Horological Instruments

789,985. KNIGHT TIME. Sunbeam Corporation. SN 171,400. Pub. 3-9-65. Filed 6-19-63.

Class 28 — Jewelry and Precious-Metal Ware

789,872. (See Class 8 for this trademark.)

789,986. EAGLE (DESIGN). Black, Starr and Frost, Ltd., by change of name, merger and assignment from Black, Starr & Frost, Ltd. SN 153,929. Pub. 6-2-64. Filed 9-26-62.

789,987. MILGLO. Milglo Jewelry Manufacturing Co. SN 192,495. Pub. 10-13-64. Filed 5-1-64.

Class 29 — Brooms, Brushes, and Dusters

789,828. (See Class 2 for this trademark.)

789,988. NAP-UP. Wilmar Enterprises. SN 176,598. Pub. 3-9-65. Filed 9-9-63.

789,989. SWEATER-NU. Maywood Industries. SN 193,024. Pub. 3-9-65. Filed 5-8-64.

789,990. SOFT SWEEP. Sunshine Broom & Brush Co. SN 201,760. Pub. 3-9-65. Filed 9-11-64.

Class 31 — Filters and Refrigerators

789,991. ON THE ROCKS. Rhinecold-Alaska, Inc. SN 201,306. Pub. 3-9-65. Filed 9-4-64.

Class 32 — Furniture and Upholstery

789,992. SARASOTA. Webster Spring Co., Inc. SN 185,543. Pub. 3-9-65. Filed 1-28-64.

789,993. BAB-E-MATIC. Baby Products Corporation. SN 189,647. Pub. 3-9-65. Filed 3-26-64.

789,994. FIJI BLINDS. Jack B. Spencer, d.b.a. Spencer Mfg. Co. SN 195,732. Pub. 3-9-65. Filed 6-15-64.

789,995. D DUNBAR. Dunbar Furniture Corp. of Indiana. SN 195,770. Pub. 3-9-65. Filed 6-16-64.

789,996. SPACENAUT. Nevil Enterprises, Inc. SN 197,417. Pub. 3-9-65. Filed 7-8-64.

Class 34 — Heating, Lighting, and Ventilating Apparatus

789,828. (See Class 2 for this trademark.)

789,882. (See Class 12 for this trademark.)

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

789,838. (See Class 4 for this trademark.)

Class 36 — Musical Instruments and Supplies

789,997. UNIVOX. Jennings Musical Industries Limited, d.b.a. Jennings Organ Company. SN 179,424. Pub. 11-24-64. Filed 10-21-63.

789,998. 111. Minnesota Mining and Manufacturing Company. SN 187,307. Pub. 3-9-65. Filed 2-24-64.

789,999. 175. Minnesota Mining and Manufacturing Company. SN 187,308. Pub. 3-9-65. Filed 2-24-64.

790,000. GOLD STRIPE. Adams-Millis Corporation. SN 194,452. Pub. 3-9-65. Filed 5-28-64.

790,001. EGMOND. Alexander Apfelbaum Company, Inc. SN 196,587. Pub. 3-9-65. Filed 6-29-64.

Class 37 — Paper and Stationery

789,830. CONSOLIDATED CERTIFICATE. See Class 2.

790,002. DEPENDOLITH PAPER. Millen Industries, Inc. SN 168,941. Pub. 1-26-65. Filed 5-15-63.

790,003. DEPENDOMATS OFFSET. Millen Industries, Inc. SN 168,942. Pub. 1-26-65. Filed 5-15-63.

790,004. PEACOCK. McCrory Corporation. SN 174,108. Pub. 7-14-64. Filed 7-31-63.

790,005. H. Hammermill Paper Company. SN 197,571. Pub. 3-9-65. Filed 7-10-64.

790,006. GARLAND. Fort Howard Paper Company. SN 208,062. Pub. 3-9-65. Filed 12-14-64.

Class 38 — Prints and Publications

790,007. TIC-TAC-DOUGH! Robert E. McCormick, d.b.a. McCormick Advertising. SN 168,749. Pub. 3-9-65. Filed 5-13-63.

790,008. TELCOLUX. Ciba Limited. SN 171,621. Pub. 3-9-65. Filed 6-24-63.

790,009. THE JOURNAL OF HOSPITAL RESEARCH. American Sterilizer Company. SN 175,540. Pub. 3-9-65. Filed 8-22-63.

790,010. UNIT SYSTEM. Roger William Algee, d.b.a. Landsite. SN 178,243. Pub. 3-9-65. Filed 10-3-63.

Class 39 — Clothing

790,011. SAMOACLOTH. Austin-Hill, Ltd. SN 180,552. Pub. 3-9-65. Filed 11-6-63.

790,012. LA PALAPA. La Palapa Imports. SN 180,745. Pub. 3-9-65. Filed 11-8-63.

790,013. TJ'S MONSTER. The Grove Company. SN 181,033. Pub. 3-9-65. Filed 11-13-63.

790,014. NURSE-TREDS. Barclay Shoe Corp. SN 182,702. Pub. 3-9-65. Filed 12-10-63.

790,015. SPORTCASTERS. Old Town Shoe Company. SN 183,444. Pub. 3-9-65. Filed 12-23-63.

790,016. MATCH-ETTES. Leonard Belts & Accessories, Inc. SN 183,685. Pub. 3-9-65. Filed 12-27-63.

790,017. PAPOOSE ETC. AND DESIGN. Alexander Bros. Company. SN 183,948. Pub. 3-9-65. Filed 1-3-64.

790,018. COPACA CASUALS. Sale Knitting Company, Inc. SN 184,654. Pub. 3-9-65. Filed 1-15-64.

790,019. TALIA. Textile Alliance Limited. SN 184,854. Pub. 3-9-65. Filed 1-17-64.

790,020. THE MINI-HANKY. Zeltex Products Company. SN 185,000. Pub. 3-9-65. Filed 1-20-64.

790,021. LUCIA. Luneburger Mechanische Strickerei Hans Pfohe. SN 185,144. Pub. 3-9-65. Filed 1-22-64.

790,022. LEMAC. Stockton Manufacturing Company, Inc. SN 185,165. Pub. 3-9-65. Filed 1-22-64.

790,023. MR. LEATHERMODE. Leathermode Sportswear, Inc. SN 185,687. Pub. 3-9-65. Filed 1-30-64.

790,024. GIRL (DESIGN). Lawrence Children's Underwear Co., Inc. SN 188,888. Pub. 3-9-65. Filed 3-17-64.

790,025. NORSEMAN. Sebago-Moc Company. SN 190,548. Pub. 3-9-65. Filed 4-7-64.

790,026. SHIRTIQUE. Weiss Shirt Company, Inc. SN 191,633. Pub. 3-9-65. Filed 4-20-64.

790,027. TMM TRIM MAN'S MOOD. Jaymar-Ruby, Inc., d.b.a. Jaymar. SN 192,292. Pub. 3-9-65. Filed 4-29-64.

790,028. EARLY ATTIC. Early Attic. SN 194,713. Pub. 3-9-65. Filed 6-2-64.

790,029. CAROL EVANS. J. C. Penney Company. SN 195,139. Pub. 3-9-65. Filed 6-8-64.

790,030. SHEER DELIGHT. Vanity Fair Mills, Inc. SN 195,179. Pub. 3-9-65. Filed 6-8-64.

790,031. PEDICROSS. Supowitz Bros. SN 195,255. Pub. 3-9-65. Filed 6-9-64.

790,032. CAREFREE. Sears, Roebuck and Co. SN 195,452. Pub. 3-9-65. Filed 6-11-64.

790,033. BABY ZODY'S SUPREME BRAND. Hartfield Stores, Incorporated. SN 196,376. Pub. 3-9-65. Filed 6-24-64.

790,034. BEL-AMI. Three B's Hosiery Mills. SN 196,402. Pub. 3-9-65. Filed 6-24-64.

790,035. CASSEE JUNIORS. Cassee Juniors, Inc. SN 196,614. Pub. 3-9-65. Filed 6-29-64.

790,036. ESCAPEZIOS. Capezio, Inc. SN 197,074. Pub. 3-9-65. Filed 7-6-64.

790,037. ROCKING K AND DESIGN. Republic Novelty Co. Inc. SN 197,986. Pub. 3-9-65. Filed 7-16-64.

790,038. BON MOT. Genesco Inc. SN 198,157. Pub. 3-9-65. Filed 7-20-64.

790,039. ECLAT. Genesco Inc. SN 198,158. Pub. 3-9-65. Filed 7-20-64.

790,040. FANNY PANTY. Thomas J. Roberts. SN 198,376. Pub. 3-9-65. Filed 7-22-64.

790,041. MAGIC MEMORY. Wright Manufacturing Company. SN 198,624. Pub. 3-9-65. Filed 7-24-64.

790,042. WINTOP. Wintop Uniforms Corp. SN 198,915. Pub. 3-9-65. Filed 7-30-64.

790,043. GLAMORISE AND DESIGN. Glamorise Foundations, Inc. SN 198,949. Pub. 3-9-65. Filed 7-31-64.

790,044. ETCETERA. Gelshu Inc. SN 199,987. Pub. 3-9-65. Filed 8-17-64.

790,045. ETC. Gelshu Inc. SN 199,988. Pub. 3-9-65. Filed 8-17-64.

790,046. AUDITIONS. Craddock-Terry Shoe Corporation. SN 200,164. Pub. 3-9-65. Filed 8-19-64.

790,047. JOHN BLAIR. New Process Company. SN 200,200. Pub. 3-9-65.' Filed 8-19-64.

790,048. AMY SUE. Stately Lady Nitewear, Inc. SN 200,211. Pub. 3-9-65. Filed 8-19-64.

790,049. PARK CITY. Classtex Knitting Mills. SN 200,235. Pub. 3-9-65. Filed 8-20-64.

790,050. SILKURA. Berg & Berg Knitwear Corp. SN 201,002. Pub. 3-9-65. Filed 9-1-64.

790,051. HI BROWS. The Williams Manufacturing Company. SN 201,557. Pub. 3-9-65. Filed 9-9-64.

Class 40 — Fancy Goods, Furnishings, and Notions

790,052. TRILOK. Scovill Manufacturing Company. SN 179,739. Pub. 12-29-64. Filed 10-21-63.

790,053. HONEY COMBS. Revlon, Inc. SN 199,852. Pub. 3-9-65. Filed 8-13-64.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

790,054. CHAMACRYL. Waumbec Mills Incorporated. SN 189,822. Pub. 12-29-64. Filed 3-27-64.

790,055. MIRACLAIRE. Registered Fabrics Corp. SN 190,027. Pub. 12-1-64. Filed 3-31-64.

790,056. BEADANGLES. Alanco Industries, Inc. SN 192,344. Pub. 3-9-65. Filed 4-30-64.

Class 44 — Dental, Medical, and Surgical Appliances

789,830. CONSOLIDATED CERTIFICATE. See Class 2.

790,057. MEDI FLEECE AND DESIGN. Roseland Fur Corp. SN 189,109. Pub. 3-9-65. Filed 3-19-64.

790,058. CAPRI. The Smith Laboratory, Inc. SN 196,070. Pub. 3-9-65. Filed 6-19-64.

790,059. MYSTOLIZER. Mead Johnson & Company. SN 202,607. Pub. 3-9-65. Filed 9-24-64.

Class 45 — Soft Drinks and Carbonated Waters

790,060. SOUR SCHNAPPS. Elisebeth Elderkin and Cedar Rapids Bottling Works (joint venture), d.b.a. Cedar Rapids Bottling Co. SN 169,124. Pub. 3-9-65. Filed 5-17-63.

790,061. R-J. Beverages International Inc. SN 195,200. Pub. 3-9-65. Filed 6-9-64.

790,062. SILVER REY. S. E. Rykoff & Co. SN 199,113. Pub. 3-9-65. Filed 8-3-64.

Class 46 — Foods and Ingredients of Foods

790,063. DARI-LICIOUS. National Dairy Products Corporation. SN 137,548. Pub. 11-6-62. Filed 2-8-62.

790,064. STABILAC. The Battelle Development Corporation. SN 156,261. Pub. 1-21-64. Filed 10-31-62.

790,065. LAZAR'S ETC. AND DESIGN. Sol Lazar, d.b.a. Lazar's Kosher Sausage Factory. SN 157,914. Pub. 3-9-65. Filed 11-26-62.

790,066. GOLDEN STAR. Armour and Company. SN 176,609. Pub. 3-24-64. Filed 9-10-63.

790,067. CRAX. Educator Biscuit Company, Incorporated. SN 177,617. Pub. 12-22-64. Filed 9-24-63.

790,068. BANANA SPLIT. H. L. Hildreth Company, Inc. SN 178,700. Pub. 3-9-65. Filed 10-10-63.

790,069. CHEF-A-RONI. Eastern Food Industries, Inc. SN 184,453. Pub. 3-9-65. Filed 1-13-64.

790,070. MERTASTE-5. Merck & Co., Inc. SN 184,738. Pub. 2-9-65. Filed 1-16-64.

790,071. "HELLO-DER." Westside Growers. SN 185,836. Pub. 3-9-65. Filed 1-31-64.

790,072. MATINEE. Duffy-Mott Company, Inc. SN 187,736. Pub. 3-9-65. Filed 3-2-64.

790,073. PEL-FALFA. Dixon Dryer Co. SN 189,059. Pub. 3-9-65. Filed 3-19-64.

790,074. GEMINI. Warner-Lambert Pharmaceutical Company, assignee of Leaf Brands, Inc. SN 192,186. Pub. 9-29-64. Filed 4-28-64.

790,075. BY GEMINI. Warner-Lambert Pharmaceutical Company, assignee of Leaf Brands, Inc. SN 192,187. Pub. 9-29-64. Filed 4-28-64.

790,076. HEIM'S AND DESIGN. Helm Brothers Packing Company, Inc. SN 193,165. Pub. 3-9-65. Filed 5-11-64.

790,077. VCA. Sanna Dairies, Inc. SN 194,664. Pub. 3-9-65. Filed 6-1-64.

790,078. DANIEL BOONE. Frank H. Fleer Corporation. SN 195,215. Pub. 3-9-65. Filed 6-9-64.

790,079. FLAV-R-TATERS. North Pacific Canners & Packers, Inc. SN 195,317. Pub. 3-9-65. Filed 6-10-64.

790,080. TRIM RITE. Jim Watkins Co., Inc. SN 197,217. Pub. 3-9-65. Filed 7-6-64.

790,081. PLYMOUTH. Piggly Wiggly Corporation. SN 197,426. Pub. 3-9-65. Filed 7-8-64.

790,082. SUNSET GOLD. Piggly Wiggly Corporation. SN 197,427. Pub. 3-9-65. Filed 7-8-64.

790,083. MAHATMA AND DESIGN. Louisiana State Rice Milling Company, Inc. SN 197,729. Pub. 3-9-65. Filed 7-13-64.

790,084. WATER MAID AND DESIGN. Louisiana State Rice Milling Company, Inc. SN 197,730. Pub. 3-9-65. Filed 7-13-64.

790,085. PREEN. Uncle Ben's, Inc. SN 198,241. Pub. 2-9-65. Filed 7-20-64.

790,086. KELSET. Kelco Company. SN 200,002. Pub. 3-9-65. Filed 8-17-64.

790,087. VALLEYBROOK. Hygrade Food Products Corporation. SN 200,255. Pub. 3-9-65. Filed 8-20-64.

790,088. LADDIE AND DESIGN. Williamson Candy Co. SN 200,882. Pub. 3-9-65. Filed 8-28-64.

790,089. SUN GLO. Sioux Honey Association, Cooperative, d.b.a. Reitz & Brew. SN 201,255. Pub. 3-9-65. Filed 9-1-64.

Class 48 — Malt Beverages and Liquors

790,090. STEFFL-BRAU. Brauerei Schwechat Aktiengesellschaft. SN 191,745. Pub. 3-9-65. Filed 4-22-64.

790,091. HUMOHOP. Chas. Pfizer & Co., Inc. SN 198,765. Pub. 3-9-65. Filed 7-29-64.

Class 49 — Distilled Alcoholic Liquors

790,092. PAVLOVA. London & Company, Inc. SN 187,591. Pub. 3-9-65. Filed 2-27-64.

790,093. HEDGES & BUTLER ROYAL. Hedges & Butler Limited. SN 194,488. Pub. 3-9-65. Filed 5-28-64.

790,094. GARNHEATH. Continental Distilling Corporation, d.b.a. Inver House Distillers, Limited. SN 195,650. Pub. 3-9-65. Filed 6-15-64.

790,095. PINWINNIE. Continental Distilling Corporation. d.b.a. Inver House Distillers, Limited. SN 195,653. Pub. 3-9-65. Filed 6-15-64.

790,096. YEOMAN. James Burrough Limited. SN 196,243. Pub. 3-9-65. Filed 6-23-64.

Class 50—Merchandise Not Otherwise Classified

789,830. CONSOLIDATED CERTIFICATE. See Class 2.

790,097. DEPENDOLITH OFFSET. Millen Industries, Inc. SN 168,944. Pub. 1-26-65. Filed 5-15-63.

790,098. PLAN-A-ROOM AND DESIGN. Paul MacAlister & Assocs. SN 173,082. Pub. 3-9-65. Filed 7-15-63.

790,099. DUNKIN' DOG AND DESIGN. Fred W. Jamison. SN 183,067. Pub. 3-9-65. Filed 12-16-63.

790,100. LADY MANHATTAN. The Manhattan Shirt Company. SN 204,910. Pub. 3-9-65. Filed 10-27-64.

Class 51 — Cosmetics and Toilet Preparations

790,101. AVON TOP COAT. Avon Products, Inc. SN 171,305. Pub. 3-9-65. Filed 6-19-63.

790,102. CHAPERONE ETC. AND DESIGN. Ray Drug Company, Inc. SN 172,685. Pub. 3-9-65. Filed 7-9-63.

790,103. GRAFFITI. Parfums Capucci. SN 179,059. Pub. 3-9-65. Filed 10-15-63.

790,104. BRIGHT IDEA. Helene Curtis Industries, Inc. SN 181,616. Pub. 3-9-65. Filed 11-21-63.

790,105. OZON FLUID NET. Ozon Products, Inc. SN 185,232. Pub. 3-9-65. Filed 1-23-64.

790,106. SUMMER GOLD. Mead Johnson & Company. SN 185,524. Pub. 3-9-65. Filed 1-28-64.

790,107. KRISTI AND DESIGN. Bonne Bell, Inc. SN 186,327. Pub. 3-9-65. Filed 2-10-64.

790,108. IDEOGRAM FOR BLUE CARNATION (DESIGN). Roger & Gallet, S.A. SN 187,432. Pub. 3-9-65. Filed 2-25-64.

790,109. K7. Keystone Laboratories, Inc., d.b.a, Long Aid Company. SN 192,406. Pub. 3-9-65. Filed 4-30-64.

790,110. RUTH BARRY. City Products Corporation. SN 192,568. Pub. 3-9-65. Filed 5-4-64.

790,111. HAIR-SEED. Hair Seed Mfg. Corp. SN 194,300. Pub. 3-9-65. Filed 5-26-64.

790,112. PEACH PUFF. Avon Products, Inc. SN 195,584. Pub. 3-9-65. Filed 6-15-64.

790,113. FIELD & STREAM. Carley, Inc. SN 196,014. Pub. 3-9-65. Filed 6-19-64.

790,114. PENNY DUTTON AND DESIGN. Adams-Barclay Co. SN 196,088. Pub. 3-9-65. Filed 6-22-64.

790,115. SUZANNE THIERRY. Suzanne Thierry Parfums, Inc. SN 198,238. Pub. 3-9-65. Filed 7-20-64.

Class 52 — Detergents and Soaps

789,837. (See Class 4 for this trademark.)

789,838. (See Class 4 for this trademark.)

789,843. (See Class 6 for this trademark.)

790,116. CHILDREN SHAMPOO AND DESIGN. John H. Breck, Inc., assignee of John H. Breck, Inc. SN 67,512. Pub. 10-25-60. Filed 2-11-59.

790,117. DICTACLEAN. Dictaphone Corporation. SN 171,239. Pub. 3-9-65. Filed 6-18-63.

790,118. RSR AND DESIGN. Baxter Laboratories, Inc. SN 179,857. Pub. 3-9-65. Filed 10-28-63.

790,119. BIO CARE. Madison Chemical Corporation, d.b.a. Bio-Chemical Products Div. SN 182,885. Pub. 3-9-65. Filed 12-12-63.

790,120. INSPIRE. The Procter & Gamble Company. SN 183,107. Pub. 9-15-64. Filed 12-16-63.

790,121. BLUE CARNATION. Roger & Gallet, S.A. SN 187,433. Pub. 3-9-65. Filed 2-25-64.

790,122. FORMULA 1013. San-Dee Chemical Products, Inc. SN 195,016. Pub. 3-9-65. Filed 6-5-64.

790,123. WESTOSAN. West Chemical Products, Inc. SN 198,913. Pub. 3-9-65. Filed 7-30-64.

790,124. CLIPPER-CLOR. Diamond Alkali Company. SN 199,037. Pub. 3-9-65. Filed 8-3-64.

790,125. 20/10 AND DESIGN. Jonbop Inc. SN 199,474. Pub. 3-9-65. Filed 8-7-64.

Service Marks

Class 100 — Miscellaneous

790,126. AMERICANA NURSING HOME AND DESIGN. Americana Nursing Homes, Inc. SN 125,577. Pub. 12-29-64. Filed 8-8-61.

790,127. RAYCARL. Textron Industries, Inc. SN 190,445. Pub. 3-9-65. Filed 4-6-64.

Class 101 — Advertising and Business

789,830. CONSOLIDATED CERTIFICATE. See Class 2.

790,128. SPELL C-A-S-H. Henry Reichman, assignee of Henry Reichman, Inc. SN 138,541. Pub. 3-9-65. Filed 2-23-62.

790,129. DUTCHER ETC. AND DESIGN. Dutcher Realty Company. SN 179,783. Pub. 3-9-65. Filed 10-25-63.

790,130. FF AND DESIGN. Furst and Furst Corporation. SN 181,540. Pub. 3-9-65. Filed 11-20-63.

790,131. KATZ. Katz Drug Company. SN 189,177. Pub. 3-9-65. Filed 3-20-64.

Class 103 — Construction and Repair

789,830. CONSOLIDATED CERTIFICATE. See Class 2.

790,132. POLLACKLEANED. S. Pollack, Inc. SN 178,298. Pub. 3-9-65. Filed 10-3-63.

Class 105 — Transportation and Storage

790,133. SANTINI THE 7 BROTHERS. Santini Bros., Inc. SN 113,446. Pub. 8-28-62. Filed 2-10-61.

Collective Membership Marks

Class 200

790,134. LUX ET VERITAS AND COAT OF ARMS (DESIGN). The Trustees of Indiana University. SN 147,973. Pub. 3-9-65. Filed 6-28-62.

790,135. FJG FINE JEWELERS GUILD AND DESIGN. Corrigan, Inc., d.b.a. Fine Jewelers Guild of America. SN 183,381. Pub. 3-9-65. Filed 12-23-63.

790,136. LUX ET VERITAS AND DESIGN. The Trustees of Indiana University. SN 184,991. Pub. 3-9-65. Filed 1-20-64.

790,137. GREEK LETTERS ALPHA DELTA THETA. Alpha Delta Theta. SN 198,805, Pub. 3-9-65. Filed 7-30-64.

790,138. GREEK LETTERS ALPHA DELTA THETA AND DESIGN. Alpha Delta Theta. SN 198,807. Pub. 3-9-65. Filed 7-30-64.

Certification Marks

Class A — Goods

790,139. TCA QUALITY CERTIFIED BY TILE COUNCIL OF AMERICA, INC. AND DESIGN. Tile Council of America, Inc. SN 198,099. Pub. 3-9-65. Filed 7-17-64.

790,140. MISCELLANEOUS DESIGN. The Wool Bureau, Inc. SN 198,688. Pub. 3-9-65. Filed 7-28-64.

790,141. TILE COUNCIL OF AMERICA INC. TCA FORMULA ETC. AND DESIGN. Tile Council of America, Inc. SN 200,878. Pub. 3-9-65. Filed 8-28-64.

790,142. G·A·L ETC. AND DESIGN. Gas Appliance Laboratory, Inc. SN 200,926. Pub. 3-9-65. Filed 8-31-64.

Class B — Services

790,143. NAT ETC. AND DESIGN. North American Tourists, Inc. SN 171,476. Pub. 3-9-65. Filed 6-20-63.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

790,144. Dormnn Products, Inc., Cincinnati, Ohio. SN 163,611. Filed P.R. 2-28-63; Am. S.R. 9-30-64.

ADD-A-DRAWER

For Small Parts Containers Which May Be Interlocked To Form a Cabinet.

First use July 31, 1961.

Class 12 — Construction Materials

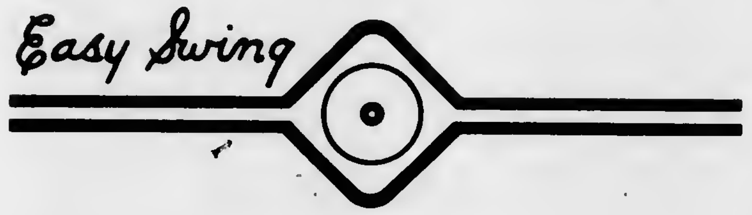
790,145. R.B.S. Corporation, Saginaw, Mich., assignee of Ross Builders Supplies, Inc., Greenville, S.C. SN 173,962. Filed P.R. 7-29-63; Am. S.R. 7-2-64.

ROSS HOMES

For Manufactured Homes.

First use May 17, 1962.

790,146. Ellason Refrigerator Company, Hartford, Mich. SN 185,372. Filed P.R. 1-27-64; Am. S.R. 3-22-65.



For Closure Structures Such as Doors in Partition Walls and for Walk-In Coolers and Parts Therefor.

First use January 1963.

Class 21 — Electrical Apparatus, Machines, and Supplies

790,147. Sorenson Lighted Controls, Inc., West Hartford, Conn. SN 165,086. Filed P.R. 3-20-63; Am. S.R. 2-16-65.

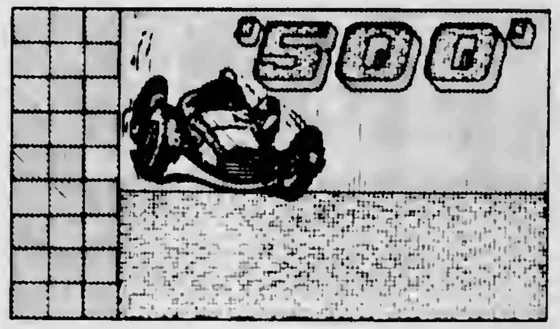
TIPPALITE

For Electric Switches.

First use Jan. 25, 1963.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

790,148. Site-Pannell Supply Company, d.b.a. 500 Company, St. Louis, Mo. SN 182,121. Filed P.R. 11-29-63; Am. S.R. 12-2-64.



The drawing is lined for color, the colors being red, gold and green.

For Automobile Parts—Namely, Water Pumps, Solenoids, Fuel Pumps, Carburetors, Starter Drives, and Clutches.

First use September 1961.

790,149. Powell Muffler Co., Inc., Chicago, Ill. SN 188,574. Filed P.R. 3-12-64; Am. S.R. 1-5-65.

POWELL

For Positive Crankcase Ventilation Valves—Namely, Valves Used in Internal Combustion Engines for Eliminating Crankcase Emissions.

First use on or about Nov. 27, 1963.

Class 26 — Measuring and Scientific Appliances

790,150. Astek Instrument Corp., Armonk, N.Y. SN 168,056. Filed P.R. 5-3-63; Am. S.R. 3-17-65.

AIRSPEEDATA

For Combined Airspeed and Mach Number Indicator.

First use about Oct. 1, 1961.

790,151. The Hilsinger Corporation, Plainville, Mass. SN 196,863. Filed P.R. 7-1-64; Am. S.R. 2-19-65.

TEMPLE-TITES

For Resilient Temple Hinge Rings for Eyeglasses.

First use January 1963.

Class 32 — Furniture and Upholstery

790,152. George Staten, Inc., Columbus, Ohio. SN 169,320. Filed P.R. 5-20-63; Am. S.R. 3-31-65.

STOR-A-BOTTLE

For Bottle Storage Racks.

First use Apr. 22, 1963.

Class 33 — Glassware

790,153. Anchor Hocking Glass Corporation, Lancaster, Ohio. SN 200,533. Filed 8-25-64.

Bake it easy
serve it with pride

For Glass Ovenware.

First use on or about Dec. 24, 1962.

Class 39 — Clothing

790,154. Aimcee Wholesale Corporation, New York, N.Y., assignee of The Associated Merchandising Corporation, New York, N.Y. SN 166,522. Filed P.R. 4-11-63; Am. S.R. 11-12-64.

Young designer

For Misses' and Women's Hosiery and Shoes.

First use August 1958 on hosiery.

790,155. The Strouse, Adler Company, New Haven, Conn. SN 194,338. Filed 5-18-64.

TRIMLOOK

For Foundation Garments.

First use May 8, 1963.

TRADEMARK REGISTRATIONS RENEWED

26,717. MURALO. Cl. 16. 6-18-1895.
44,509. LAVA. Cl. 52. 7-11-05.
44,597. PEQUOT WIDE COTTONS AND DESIGN. Cl. 42. 7-18-05.
45,656. REPRESENTATION OF HUMAN HAND GRIPPING A TOOL (DESIGN). Cl. 39. 8-29-05.
45,767. C/B. Cl. 39. 8-29-05.
46,146. RAMESES. Cl. 17. 9-5-05.
193,730. FOOD SERVICE. Cl. 38. 1-6-25.
193,943. CENT A POST AND DESIGN. Cl. 37. 1-13-25.
194,273. ORVILLE JOHNSON THE JOHNSON IDEAL HALTER AND DESIGN. Cl. 3. 1-20-25.
195,472. PALMA. Cl. 9. 2-24-25.
195,771. 4¾. Cl. 51. 3-3-25.
196,108. ALBRO. Cl. 46. 3-10-25.
196,793. THE FOLDAWAY. Cl. 39. 3-31-25.
196,910. GLOVER'S. Cl. 52. 3-31-25.
196,993. COLLEGIENNE AND DESIGN. Cl. 39. 4-7-25.
196,997. POLVOS MAJA AND DESIGN. Cl. 51. 4-7-25.
197,050. HOYLAKE AND DESIGN. Cl. 39. 4-7-25.
197,051. TRIPOR AND DESIGN. Cl. 39. 4-7-25.
197,102. SEALBORD. Cl. 12. 4-7-25.
197,230. MINUTE MAN. Cl. 51. 4-14-25.
197,505. PATEAN. Cl. 18. 4-21-25.
197,746. STEVENS. Cl. 39. 4-21-25.
198,128. GLOVER'S. Cl. 18. 5-5-25.
198,593. REPRESENTATION OF TWO COBBLERS (DESIGN). Cl. 39. 5-19-25.
199,177. OCECO. Cl. 26. 6-2-25.
199,684. OCECO. Cl. 23. 6-16-25.
199,757. MT. LASSEN. Cl. 46. 6-16-25.
199,766. BUTTE. Cl. 46. 6-16-25.
199,771. ONESTA. Cl. 46. 6-16-25.
199,817. SUPERLA. Cl. 46. 6-16-25.
200,394. BULL'S EYE AND DESIGN. Cl. 39. 6-30-25.
200,529. MT. SHASTA. Cl. 46. 7-7-25.
201,423. FUJI AND DESIGN. Cl. 46. 7-28-25.
201,554. SUGAR CREST. Cl. 46. 7-28-25.
201,834. JATON. Cl. 50. 8-11-25.
203,292. FLORSHEIM FEETURE ARCH AND DESIGN. Cl. 39. 9-15-25.
203,377. DIGIFORTIS. Cl. 18. 9-15-25.
203,385. OMEGA. Cl. 51. 9-15-25.
203,569. EL PRODUCTO FOR REAL ENJOYMENT AND DESIGN. Cl. 17. 9-22-25.
203,713. FOX RIVER-50. Cl. 37. 9-22-25.
409,070. NUODEX. Cl. 6. 9-12-44.
412,772. VAGABOND. Cl. 39. 3-27-45.
412,782. CONTEMPO. Cl. 50. 3-27-45.
412,802. PASTEURAY AND DESIGN. Cl. 21. 3-27-45.
412,928. DRYDENE. Cl. 15. 4-3-45.
412,937. BRULITE. Cl. 12. 4-3-45.
412,979. PINE-O-LENE. Cl. 52. 4-3-45.
413,252. NOXPATCH. Cl. 12. 4-17-45.
413,266. SARENE. Cl. 52. 4-17-45.
413,385. KNITTED OUTERWEAR TIMES. Cl. 38. 4-24-45.
413,527. ACTIVOL. Cl. 52. 5-1-45.
413,661. REPRESENTATION OF GREEN GIANT MAN HOLDING EAR OF CORN AND DESIGN. Cl. 46. 5-8-45.

413,686. EMUSLEPT. Cl. 52. 5–8–45.
413,787. KEMIDOL. Cl. 1. 5–15–45.
413,827. ENSIS COMPOUND. Cl. 15. 5–15–45.
413,850. POROCEL AND DESIGN. Cl. 6. 5–15–45.
413,964. LIMITED EDITION. Cl. 39. 5–22–45.
414,148. IVORY. Cl. 51. 5–29–45.
414,337. FLEX-TAY. Cl. 32. 6–5–45.
414,598. FOAMEX. Cl. 32. 6–19–45.
414,613. WEIRZIN. Cl. 14. 6–19–45.
414,767. MERLON. Cl. 1. 6–26–45.
414,861. JACK-O-MATIC. Cl. 23. 7–3–45.
415,747. BLUFORT. Cl. 46. 8–14–45.
415,752. HAMMER BRAND. Cl. 23. 8–14–45.
416,108. REPRESENTATION OF A WORLD GLOBE WITH A CHAIN AROUND IT. Cl. 28. 8–28–45.
416,211. AJAX-NORTHRUP. Cl. 21. 9–4–45.
416,287. HERMASEAL. Cl. 21. 9–4–45.
416,326. SOLITAIR. Cl. 51. 9–4–45.
416,433. EQINOTE. Cl. 36. 9–11–45.

TRADEMARK REGISTRATIONS CANCELED

Section 8

207,963. ROMNEY FROCKS. Cl. 39. 1–12–26.
362,696. STAINLESS-STITCH. Cl. 14. 11–29–38.
362,870. BU. Cl. 32. 12–6–38.
363,046. BU. Cl. 38. 12–13–38.

The following registrations issued Apr. 7, 1959

676,509. CHIFFONETTE. Cl. 1.
676,514. PRONTO. Cl. 1.
676,517. STURDY-PAK. Cl. 2.
676,519. EX-LINER. Cl. 2.
676,521. DESIGN OF PLAYING CARD. Cl. 2.
676,524. FASTEX. Cl. 2.
676,526. TABLE D'HOTE. Cl. 2.
676,527. THE COLONES PRIDE AND DESIGN. Cl. 2.
676,531. SURAL AND DESIGN. Cl. 2.
676,532. WEAVER'S AND DESIGN. Cl. 2.
676,534. CASUALITE. Cl. 3.
676,539. FOTO-KLEER. Cl. 4.
676,541. A-M AND DESIGN. Cl. 5.
676,542. A-M. Cl. 5.
676,543. DESIGN OF SHIELD. Cl. 5.
676,545. PHILLIPS 66 AND DESIGN. Cl. 5.
676,549. ASH-MASTER. Cl. 8.
676,552. VU-AD. Cl. 8.
676,555. VIBRO-SHOT. Cl. 9.
676,565. DESIGN OF PLAYING CARD. Cl. 12.
676,569. CORINTHIAN ONYX. Cl. 12.
676,582. INCONEL X. Cl. 14.
676,598. PROTECT-O-MATIC. Cl. 19.
676,599. KI KI. Cl. 19.
676,600. SEA EAGLE. Cl. 19.
676,601. SEA EAGLE AND DESIGN. Cl. 19.
676,603. DESIGNER SQUARES. Cl. 20.
676,604. SERVO-MATIC. Cl. 21.
676,606. ENAMELKOTE. Cl. 21.
676,616. AMECO AND DESIGN. Cl. 21.
676,629. RENT-O-MAT AND DESIGN. Cl. 21.
676,632. SEMICAP. Cl. 21.
676,633. ALUMITRON. Cl. 21.
676,634. SNOWCAP. Cl. 21.
676,635. GEN-EXC. Cl. 21.
676,639. SWEPT-WING AQUA-FIN. Cl. 22.
676,642. PRO-SWING. Cl. 22.
676,643. FRIDEN CREATES A NEW WORLD ETC. AND DESIGN. Cl. 23.
676,645. STATESMAN. Cl. 23.
676,646. PAN-A-VEND. Cl. 23.
676,654. PULJAK. Cl. 23.
676,658. HIDE-A-WAY. Cl. 23.
676,659. LITTLE WINDY AIRVAC. Cl. 23.
676,660. WORKMASTER JR. Cl. 23.
676,667. SCOTT. Cl. 23.
676,670. TESSINA. Cl. 26.
676,672. CADET. Cl. 26.
676,676. DYNAVIA. Cl. 26.
676,678. P WITH CONCENTRIC CIRCLES. Cl. 26.
676,679. TAPE-ARD. Cl. 26.
676,692. ENLEY AND DESIGN. Cl. 31.
676,696. PLATENIUM. Cl. 32.
676,700. SECTIONALS UNLIMITED. Cl. 32.
676,703. PILFER. Cl. 32.
676,712. SPEED MINDER. Cl. 36.
676,713. GS SEVENTY SEVEN. Cl. 39.
676,719. BILL-A-MASTER. Cl. 37.
676,721. DIAFOT. Cl. 37.
676,722. SPACE AND THE ATOM. Cl. 38.
676,727. SPEAK-EASY. Cl. 38.
676,729. D "DIAMOND BOOK" AND DESIGN. Cl. 38.
676,733. PURITAN. Cl. 39.
676,739. BEE BRAND AND DESIGN. Cl. 39.
676,742. GIAVANNI'S. Cl. 39.
676,745. LANCELOT JUNIOR AND DESIGN. Cl. 39.
676,749. CELEBRITY. Cl. 39.
676,675. ISOCHROM. Cl. 26.
676,757. GENEVIEVE. Cl. 39.
676,758. POMPADOUR AND DESIGN. Cl. 39.
676,762. TIME-SMILER. Cl. 39.
676,763. MIRACLE-BODICE. Cl. 39.
676,766. HUBERT DE GIVENCHY. Cl. 42.
676,769. TEXTULAR. Cl. 42.
676,770. WOODLAWN. Cl. 42.
676,772. EMPERADA. Cl. 42.
676,778. DEW LINE. Cl. 42.
676,780. SUNANAIR. Cl. 43.
676,781. LEAVERLON. Cl. 43.
676,783. SI SI. Cl. 45.
676,786. BONNIE LEE. Cl. 46.
676,790. FAC AND DESIGN. Cl. 50.
676,792. ROCKET TENT AND DESIGN. Cl. 50.
676,795. BLACK LILY. Cl. 50.
676,796. HELPMATE. Cl. 50.
676,802. AIRSECO AND DESIGN. Cl. 100.
676,803. ALPHA. Cl. 100.
676,804. TFA AND DESIGN. Cl. 101.
676,805. THRIFTAIR. Cl. 105.
676,806. TEEN TONES. Cl. 107.
676,818. ANDERSON CLAYTON'S GOLDEN. Cl. 46.
676,824. POND'S CREME DE JOUR ETC. AND DESIGN. Cl. 51.
676,825. POND'S CREAM DE TRAITEMENT AND DESIGN. Cl. 51.
676,826. POND'S CREME DEMAQUILLANTE AND DESIGN. Cl. 51.

Section 18

225,979. BREATH-A-MINT. Cl. 6. 3–29–27.
422,022. SHARY. Cl. 39. 6–25–46.
661,659. HANOVER BABY SITTER AND DESIGN. Cl. 32. 5–13–58.
744,264. SHANE. Cl. 39. 1–22–63.
768,908. BETTER BUTTER AND TAYLOR DESIGN. Cl. 46.

INDEX OF REGISTRANTS

MAY 25, 1965

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

Abshire, Harold W., to Pasteuray Corp., St. Louis, Mo. 412,802, ren. 5–25–65. Cl. 21.
Acme Shear Co., The, Bridgeport, Conn. 789,956, pub. 9–3–63. Cl. 23.
Acme Steel Co., Chicago, Ill. 362,696, canc. Cl. 14.
Adams-Barclay Co., Chicago, Ill. 790,114, pub. 3–9–65. Cl. 51.
Adams-Millis Corp., High Point, N.C. 790,000 pub. 3–9–65. Cl. 36.
Adler Mfg. Corp., Danville, Pa. 676,600–1, canc. Cl. 19.
Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 676,675, canc. Cl. 26.
Ahrens Publishing Co., Inc., New York, N.Y., to Electrical Information Publications, Inc., Madison, Wis. 193,730, ren. 5–25–65. Cl. 38.
Aimcee Wholesale Corp., from The Associated Merchandising Corp., New York, N.Y. 790,154. Cl. 39.
Airseco, Inc., Jamaica, N.Y. 676,802, canc. Cl. 100.
Ajax Electrothermic Corp., Ajax Park, Trenton, N.J., to Ajax Magnethermic Corp., Warren, Ohio. 416,211, ren. 5–25–65. Cl. 21.
Ajax Magnethermic Corp.: *See*—
  Ajax Electrothermic Corp.
Alanco Industries, Inc., New York, N.Y. 790,056, pub. 3–9–65. Cl. 42.
Albro Packing Co.: *See*—
  Altshuler Brothers & Co.
Alchem Ltd., Burlington, Ontario, Canada. 789,860, pub. 2–16–65. Cl. 6.
Alecander Apfelbaum Co., Inc., New York, N.Y. 790,001, pub. 3–9–65. Cl. 36.
Alexander Bros. Co., Savannah, Ga. 790,017, pub. 3–9–65. Cl. 39.
Algee, Roger W., d.b.a. Landsite, Lakeside, Calif. 790,010, pub. 3–9–65. Cl. 38.
Alpha Engineering Works, Inc., Mount Prospect, Ill. 676,803, canc. Cl. 100.
Allied Chemical Corp., New York, N.Y. 789,840, pub. 3–9–65. Cl. 6.
Allmanna Svenska Utsadesaktiebolaget, Svalov, Sweden. 789,821, pub. 3–9–65. Cl. 1.
Alpha Delta Theta, Milwaukee, Wis. 790,137–8, pub. 3–9–65. Cl. 200.
Altshuler Brothers & Co., Youngstown, Ohio, to Albro Packing Co., Springboro, Pa. 196,108, ren. 5–25–65. Cl. 46.
American Cryogenics, Inc., San Francisco, Calif., from American Cryogenics, Inc., South San Francisco, Calif. 789,977, pub. 7–14–64. Cl. 26.
American Home Products Corp., New York, N.Y. 789,908–10, pub. 3–9–65. Cl. 18.
American Machine & Foundry Co., New York, N.Y. 789,948, pub. 3–9–65. Cl. 22.
American-Marietta Co., Chicago, Ill. 676,541–2, canc. Cl. 5.
American Oil Co., The, Chicago, Ill. 789,863, pub. 3–9–65. Cl. 6.
American Solder & Flux Co., Philadelphia, Pa. 789,882, pub. 3–9–65. Multiple Class (Classes 12 and 34).
American Sterilizer Co., Erie, Pa. 790,009, pub. 3–9–65. Cl. 38.
Americana Nursing Homes, Inc., Monticello, Ill. 790,126, pub. 12–29–64. Cl. 100.
Ametek Inc., East Moline, Ill. 789,972, pub. 3–9–65. Cl. 24.
Amity Leather Products Co., West Bend, Wis. 789,835, pub. 3–9–65. Cl. 3.
Anchor Hocking Glass Corp., Lancaster, Ohio. 790,153. Cl. 33.
Anderson, Clayton & Co., Dallas, Tex. 676,818, canc. Cl. 46.
Andrews, H. P., Paper Co., to Andrews/Nelson/Whitehead, Inc., New York, N.Y. 193 943, ren. 5–25–65. Cl. 37.
Andrews/Nelson/Whitehead, Inc.: *See*—
  Andrews, H. P., Paper Co.
Aqua Togs, Inc., Cleveland, Ohio. 789,937, pub. 3–9–65. Cl. 22.
Armour and Co., Chicago, Ill. 790,066, pub. 3–24–64. Cl. 46.
Associated Merchandising Corp., The: *See*—
  Aimcee Wholesale Corp.
Aspergren & Co., Inc., New York, N.Y., to Aspegren & Co., Cincinnati, Ohio. 199,817, ren. 5–25–65. Cl. 46.
Astek Instrument Corp., Armonk, N.Y. 790,150. Cl. 26.
Atlas Corp., New York, N.Y. 789,886, pub. 3–9–65. Cl. 13.
Atrax Co., The: *See*—
  Simonds Saw and Steel Co.
Avon Products, Inc., New York, N.Y. 790,101, pub. 3–9–65. Cl. 51.
Austin-Hill, Ltd., Baltimore, Md. 790,011, pub. 3–9–65. Cl. 39.
Automation Machines & Equipment Co., Inc., Milwaukee, Wis. 676,616, canc. Cl. 21.
Avon Products, Inc., New York, N.Y. 790,112, pub. 3–9–65. Cl. 51.
B.V.D. Corp., The, Baltimore, Md., to Ship 'N Shore, Inc., Upland, Pa. 413,964, ren. 5–25–65. Cl. 39.
Baby Products Corp., East Longmeadow, Mass. 789,993, pub. 3–9–65. Cl. 32.
Barclay Shoe Corp., Orange, Mass. 790,014, pub. 3–9–65. Cl. 39.
Bavaria, S.A., Bogota, D.E., Colombia. 789,846, pub. 3–9–65. Cl. 6.
Baxter Laboratories, Inc., Morton Grove, Ill. 790,118, pub. 3–9–65. Cl. 52.
Battelle Development Corp., The, Columbus, Ohio. 790,064, pub. 1–21–64. Cl. 46.
Beachcomber Marine Corp., Lincoln, Nebr. 789,923, pub. 12–15–64. Cl. 19.
Bendix Corp., The, Holmdel, N.J. 789,928, pub. 3–9–65. Cl. 21.
Belknap Hardware and Mfg. Co., Louisville, Ky. 789,945, pub. 3–9–65. Cl. 22.
Belknap Hardware and Mfg. Co., Louisville, Ky. 789,955, pub. 11–5–63. Cl. 23.
Bell Enterprises: *See*—
  Bell, Norman.
Bell, Norman, d.b.a. Bell Enterprises, Brooklyn, N.Y. 676,703, canc. Cl. 32.
Berg & Berg Knitwear Corp., Brooklyn, N.Y. 790,050, pub. 3–9–65. Cl. 39.
Bernz O Matic Corp., Rochester, N.Y. 789,962, pub. 3–9–65. Cl. 23.
Best Chemicals & Fertilizer Co., Ltd., Honolulu, Hawaii. 789,844, pub. 3–9–65. Cl. 6.
Beverages International Inc., Evanston, Ill. 790,061, pub. 3–9–65. Cl. 45.
Beyer Co.: *See*—
  Beyer, W. R.
Bio-Chemical Products Div.: *See*—
  Madison Chemical Corp.
Beyer, W. R., d.b.a. Beyer Co., Odessa, Tex. 676,783, canc. Cl. 45.
Black, Starr and Frost, Ltd., New York, from Black, Starr & Frost, Ltd., White Plains, N.Y. 789,986, pub. 6–2–64. Cl. 28.
Blue Knight Enterprises, Tuxedo Park, N.Y. 789,903, pub. 3–9–65. Cl. 17.
Boniecki, Krystyna W., Denver, Colo. 789,938, pub. 3–9–65. Cl. 22.
Bonnie Bell, Inc., Lakewood, Ohio. 790,107, pub. 3–9–65. Cl. 51.
Borden Co., The, New York, N.Y. 415,747, ren. 5–25–65. Cl. 46.
Brabender, C. W., Instruments, Inc., South Hackensack, N.J. 789,927, pub. 1–12–65. Cl. 21.
Brauerei Schwechat Aktiengesellschaft, Vienna, Austria. 790,090, pub. 3–9–65. Cl. 48.
Breck, John H., Inc., Wilmington, Del., and Springfield, Mass. 790,116, pub. 10–25–60. Cl. 52.
Bullock's, Los Angeles, Calif., to Federated Department Stores, Inc., Cincinnati, Ohio. 196,993, ren. 5–25–65. Cl. 39.
Bulluck Hosiery, Inc., New York, N.Y. 676,739, canc. Cl. 39.
Barrough, James, Ltd., London, England. 790,096, pub. 3–9–65. Cl. 49.
Bustelo Coffee Roasting Co., Inc., Bronx, N.Y. 789,833, pub. 3–9–65. Cl. 2.
Caldwell Lace Leather Co., Auburn, Ky. 789,936, pub. 3–9–65 Cl. 22.
Campana Corp., Batavia, Ill., to Purex Corp., Ltd., Lakewood, Calif. 416,326, ren. 5–25–65. Cl. 51.
Carbisulphoil Co., Dallas, Tex. 413,527, ren. 5–25–65. Cl. 52.
Cardinal Electronics Co. of Canada, Ltd., Whitby, Ontario, Canada. 789,929, pub. 3–9–65. Cl. 21.
Carsello Chemical Products, Chicago, to Madison Chemical Corp., Maywood, Ill. 412,979, ren. 5–25–65. Cl. 52.
Carley, Inc., Haddonfield, N.J. 790,113, pub 3–9–65. Cl. 51.
Cassee Juniors, Inc., New York, N.Y. 790,035, pub. 3–9–65. Cl. 39.
Capezio, Inc., New York, N.Y. 790,036, pub. 3–9–65. Cl. 39.
Cedar Rapids Bottling Works: *See*—
  Elderkin, Ellsebeth.
Celebrity Belt Co., Philadelphia, Pa. 676,749, canc. Cl. 39.
Center for the Gifted Child, Inc., San Francisco, Calif. 789,939–42, pub. 3–9–65. Cl. 22.
Central Rediffusion Services Ltd., London, England. 789,982, pub. 3–9–65. Cl. 26.
Chamberlin, Frank H., Orange, Va. 676,719, canc. Cl. 37.
Checkmate Chemicals, Inc., Greenville, S.C. 789,861–2, pub. 3–9–65. Cl. 6.
Chem-Care Products, Inc., Glendale, Calif. 789,837, pub. 3–9–65. Consolidated Certificate (Classes 4, 6, and 52).
Chesebrough-Pond's Inc., New York, N.Y. 676,824–6, canc. Cl. 51.
Ciba Ltd., Basel, Switzerland. 789,915, pub. 3–9–65. Cl. 18.
Ciba Ltd., Basel, Switzerland. 790,008, pub. 3–9–65. Cl. 38.
Ciba Ltd., Basel, Switzerland. 789,978, pub. 3–9–65. Cl. 26.
City Products Corp., Chicago, Ill. 790,110, pub. 3–9–65. Cl. 51.
Classtex Knitting Mills, Orwigsburg, Pa. 790,049, pub. 3–9–65. Cl. 39.
Clokey Productions, Inc.: *See*—
  Lakeside Industries, Inc.
Continental Can Co., Inc., New York, N.Y. 676,517, canc. Cl. 2.

Continental Distilling Corp., d.b.a. Inver House Distillers, Ltd., Philadelphia, Pa. 790,094–5, pub. 3–9–65. Cl. 49.

Colgate-Palmolive Co., New York, N.Y. 789,852, pub. 3–9–65. Cl. 6.

Colgate-Palmolive Co., New York, N.Y. 789,913, pub. 3–9–65. Cl. 18.

Colonial Sugar Refining Co., Ltd., The, Sidney, New South Wales, Australia. 789,911, pub. 3–9–65. Cl. 18.

Cook, Peter, d.b.a. Scientific Electric Co., Wickliffe, Ohio. 676,635, canc. Cl. 21.

Cole, Earl B., Highland Park, Ill. 789,898, pub. 3–9–65. Cl 17.

Consolidated Cigar Corp.: *See*—
G.H.P. Cigar Co., Inc.

Consolidated Cigar Corp., New York, N.Y. 789,897, pub. 3–9–65. Cl. 17.

Corrigan, Inc., d.b.a. Fine Jewelers Guild of America, Houston, Tex. 790,135, pub. 3–9–65. Cl. 200.

Corva Industries, Inc., Minneapolis, Minn. 789,831, pub. 3–9–65. Cl. 2.

Cox, Reid H., d.b.a. Reid H. Cox Co., Atlanta, Ga. 676,527, canc. Cl. 2.

Cox, Reid H., Co:. *See*
Cox, Reid H.

Craddock-Terry Shoe Corp.: *See*
Joyce, Inc.

Craddock-Terry Shoe Corp., Lynchburg, Va. 790,046, pub. 3–9–65. Cl. 39.

Crescent Chemical Co., Alhambra, Calif. 789,857, pub. 3–9–65. Cl. 6.

Crofut & Knapp Co., The, to Hat Corp. of America, New York, N.Y. 196,793, ren. 5–25–65 Cl. 39

Curtis, Helene, Industries, Inc., Chicago, Ill. 790,104, pub. 3–9–65. Cl. 51.

Daffin, Irl, Associated, Inc., Lancaster, Pa. 789,959, pub. 1–5–65. Cl. 23.

Da-Laur, Inc., Boston, Mass. 789,981, pub. 3–9–65. Cl. 26.

De Witt, E. C., & Co., Inc., Chicago, Ill. 789,914, pub. 3–9–65. Cl. 18.

Diamond Alkali Co., Cleveland, Ohio. 790,124, pub. 3–9–65. Cl. 52.

Diamond National Corp., New York, N.Y. 789,830. Pub. 10–20–64, Cl. 2; pub. 11–24–64, Cl. 9; pub. 11–17–64, Cl. 12; pub. 10–24–64, Cl. 16; pub. 10–27–64, Cl. 23; pub. 3–17–64, Cl. 37; pub. 12–22–64, Cl. 44; pub. 10–20–64, Cl. 50; pub. 3–2–65, Cl. 101, Cl. 103. (Consolidated certificate, Classes 2, 9, 12, 16, 23, 37, 44, 50, 101, and 103.)

Dictaphone Corp., Bridgeport, Conn. 790,117, pub. 3–9–65. Cl. 52.

Dixon Dryer Co., Dixon, Calif. 790,073, pub. 3–9–65. Cl. 46.

Dockendorff and Co., Inc., Bridgeport, Conn. 676,654, canc. Cl. 23.

Dorman Products, Inc., Cincinnati, Ohio. 790,144. Cl. 2.

Dowsmith Inc., Little Rock, Ark. 789,879, pub. 3–9–65. Multiple Class (Classes 12, 13, and 21).

Drey, Sam, Phoenix, Ariz., from Salt River Valley Produce, Inc., Glendale, Ariz. 676,786, canc. Cl. 46.

Drug Development Corp., Brooklyn, N.Y. 789,905, pub. 1–1–63. Cl. 18.

Drug Service, Inc., Fresno, Calif. 789,918, pub. 3–9–65. Cl. 18.

Dryden Oil Co., Inc.: *See*—
Dryden, Frank W., & Sons.

Dryden, Frank W., & Sons, to Dryden Oil Co., Inc., Baltimore, Md. 412,928, ren. 5–25–65. Cl. 15.

Duffy-Mott Co., Inc., New York, N.Y. 790,072, pub. 3–9–65. Cl. 46.

Dunbar Furniture Corp. of Indiana, Berne, Ind. 789,995, pub. 3–9–65. Cl. 32.

Duplan Corp., The, Winston-Salem, N.C. 676,780, canc. Cl. 43.

Du Pont de Nemours, E. I., & Co., Wilmington, Del. 789,867, pub. 3–9–65. Cl. 6.

Dupree, Samuel F., Jr., Toledo, Ohio. 676,549, canc. Cl. 8.

Durametallic Corp., Kalamazoo, Mich. 789,961, pub. 3–9–65. Cl. 23.

Dutcher Realty Co., Grand Rapids, Mich. 790,129, pub. 3–9–65. Cl. 101.

Dynaco, Inc., Philadelphia, Pa. 789,934, pub. 3–2–65. Cl. 21.

Dynamit Nobel Aktiengesellschaft, Troisdorf, Bez. Cologne, Germany. 789,855, pub. 3–9–65. Cl. 6.

Dynavia Engineering Corp., Palo Alto, Calif. 676,676, canc. Cl. 26.

Early Attic, New York, N.Y. 790,028, pub. 3–9–65. Cl. 39.

East Coast Plastic Products: *See*—
Rumpel, Bernard N.

Eastern Food Industries, Inc., E. Greenwich, R.I. 790,069, pub. 3–9–65. Cl. 46.

Economics Laboratory, Inc., St. Paul, Minn. 789,845, pub. 3–9–65. Cl. 6.

Educator Biscuit Co., Inc., Lowell, Mass. 790,067, pub. 12–22–64. Cl. 46.

8 in 1 Pet Products, Inc., Long Island City, N.Y. 789,920, pub. 3–9–65. Cl. 18.

Elderkin, Elisebeth, and Cedar Rapids Bottling Works, d.b.a. Cedar Rapids Bottling Co., Cedar Rapids, Iowa. 790,060, pub. 3–9–65. Cl. 45.

Electric Storage Battery Co., The, Philadelphia, Pa. 789,979, pub. 1–5–65. Cl. 26.

Electrical Information Publications, Inc.: *See*—
Ahrens Publishing Co., Inc.

Electronic Recreations Corp., New York, N.Y. 789,935, pub. 3–9–65. Cl. 22.

Eliason Refrigerator Co., Hartford, Mich. 790,146. Cl. 12.

Emulsol Corp., The, Chicago, Ill., to Witco Chemical Co., Inc., New York, N.Y. 413,686, ren. 5–25–65. Cl. 52.

Engel, Frederik, Greenwich, Conn. 789,968, pub. 3–9–65. Cl. 23.

Enley Products, Inc., Brooklyn, N.Y. 676,692, canc. Cl. 31.

Eversharp, Inc., Milford, Conn. 789,969, pub. 3–9–65. Cl. 23.

Fairchild Camera and Instrument Corp., Syosset, N.Y. 789,877, pub. 5–12–64. Cl. 11.

Fashion Park, Inc.: *See*—
Stein-Bloch Co., The.

Federated Department Stores, Inc.: *See*—
Bullock's.

Fibreboard Paper Products Corp., San Francisco, Calif. 676,603, canc. Cl. 20.

Fine Jewelers Guild of America: *See*—
Corrigan, Inc.

Firestone Tire & Rubber Co., The, Akron, Ohio. 414,598, ren. 5–25–65. Cl. 32.

Fishel-Cohen Inc., New York, N.Y. 676,772, canc. Cl. 42.

500 Co.: *See*—
Site-Pannell Supply Co.

Fleer, Frank H., Corp., Philadelphia, Pa. 790,078, pub. 3–9–65. Cl. 46.

Florsheim Shoe Co., The, to International Shoe Co., Chicago, Ill. 203,292, ren. 5–25–65. Cl. 39.

Fort Howard Paper Co., Green Bay, Wis. 790,006, pub. 3–9–65. Cl. 37.

Fownes Brothers & Co., Inc.: *See*—
Fownes Brothers & Co.

Fownes Brothers & Co., London, England, and New York, N.Y., to Fownes Brothers & Co., Inc., New York, N.Y. 45,656, ren. 5–25–65. Cl. 39.

Fox River Corp.: *See*—
Fox River Paper Co.

Fox River Paper Co., to Fox River Corp., Appleton, Wis. 203,713, ren. 5–25–65. Cl. 37.

Friden Calculating Machine Co., Inc.: *See*—
Friden, Inc.

Friden, Inc., from Friden Calculating Machine Co., Inc., San Leandro, Calif. 676,643, canc. Cl. 23.

Fujo Trading Co., The, Chicago, Ill. 201,423, ren. 5–25–65. Cl. 46.

Fulton Bag & Cotton Mills, Atlanta, Ga. 676,792, canc. Cl. 50.

Furst and Furst Corp., Chicago, Ill. 790,130, pub. 3–9–65. Cl. 101.

G.H.P. Cigar Co., Inc., Philadelphia, Pa., to Consolidated Cigar Corp., New York, N.Y. 203,569, ren 5–25–65. Cl. 17.

Garcia Corp., The, Teaneck, N.J. 789,952, pub. 3–9–65 Cl. 22.

Gas Appliance Laboratory, Inc., Los Angeles, Calif. 790,142, pub 3–9–65. Cl. A.

Gehring Laces, Inc., New York, N.Y. 676,781, canc. Cl. 43.

Gelshu Inc., Brooklyn, N.Y. 790,044–5, pub. 3–9–65. Cl. 39

Gem Mfg. Co., Baltimore, Md. 676,531, canc. Cl. 2.

General Cigar Co., Inc., d.b.a. Gradiaz, Annis and as Ignacio Haya, New York, N.Y. 789,900, pub. 3–9–65. Cl. 17.

General Electric Co., Ltd., The, London, England. 789,975, pub. 12–29–59. Cl. 26

General Import & Export Trading Co., Inc., to Romney Fashions, Inc., New York, N.Y. 207,963, canc. Cl. 39.

Genesco Inc., Nashville, Tenn. 790,038–9, pub. 3–9–65. Cl. 39.

Gibson Art Co., The, Cincinnati, Ohio 363,046, canc. Cl. 38.

Gibson Art Co., The, Cincinnati, Ohio. 362,870, canc. Cl. 32.

Givenchy (Societe Anonyme), Paris, France. 676,766, canc. Cl. 42.

Glamorise Foundations, Inc., New York, N.Y. 790,043, pub. 3–9–65. Cl. 39.

Glaser Steers Corp., Belleville, N.J. 676,712–13, canc. Cl. 36.

Globemaster, Inc., Minneapolis, Minn. 789,828, pub. 9–10–63. Multiple Class (Classes 2, 4, 5, 7, 13, 21, 23, 25, 26, 29, and 34).

Glover, H. Clay, Co., Inc., Garden City, N.Y. 198,128, ren. 5–25–65 Cl. 18.

Glover, H. Clay, Co., Inc., Garden City, N.Y. 196,910, ren. 5–25–65. Cl. 52.

Gordon, M. J., Co., Wall, Pa. 789,839, pub. 3–9–65. Cl. 4.

Gray, Dan, d.b.a. Time Finance Adjusters, Fort Worth, Tex. 676,804, canc. Cl. 101.

Green Giant Co.: *See*—
Minnesota Valley Canning Co.

Green, Jonathan, & Sons, Kearny, N.J. 789,826, pub. 3–9–65. Cl. 1.

Greenville Tubes, Inc., Grenvill, Pa. 789,892, pub. 1–26–65. Cl. 14.

Grove Co., The, St. Louis, Mo 790,013, pub. 3–9–65. Cl. 39.

Guardian Chemical Corp., Long Island City, N.Y. 789,868, pub. 3–9–65. Cl. 6.

Gudeman Co., The, Chicago, Ill. 676,634, canc. Cl. 21.

H.P Tool Mfg. Corp.: *See*—
H-P Tool Mfg. Corp.

H-P Tool Mfg. Corp., d.b.a H-P Tool Mfg Corp. and H.P. Tool Mfg. Corp., Philadelphia, Pa. 789,953–4, pub. 8–7–62. Cl. 23.

Haines, Armour A., d.b.a. Richwood Box Mill, Detroit Lakes, Minn. 676,795, canc. Cl. 50.

Hair Seed Mfg. Corp., Weehawken, N.J. 790,111, pub. 3–9–65. Cl. 51.

Hallemite Mfg. Co., The, Cleveland, Ohio. 412,937, ren. 5–25–65. Cl. 12.

Halo Sales Corp., San Francisco, Calif. 676,514, canc. Cl. 1.

Handiform Plastic Corp., New York, N.Y. 789,974, pub. 3–9–65. Cl. 24.

Hammermill Paper Co., Erie, Pa. 790,005, pub. 3–9–65. Cl. 37.

Hanover Mfg. Co., Hanover, Ill. 661,659, canc. Cl. 32.

Harich Chemical Co., Longwood, Fla. 789,853, pub. 3–9–65. Cl. 6.

Harmond, Robert E., Union City, Tenn. 789,950, pub. 3–9–65. Cl. 22.

Hartfield Stores, Inc., Los Angeles, Calif. 790,033, pub. 3–9–65. Cl. 39.

Harzer Achsenwerke K.G. Schweman & Althoff, Bornum (Harz) Ueber Hildesheim, Germany. 789,896, pub. 3–9–65. Cl. 16.

Hat Corp. of America: *See*—
Crofut & Knapp Co., The.

Hat Corp. of America, New York, N.Y. 412,772, ren 5–25–65. Cl. 39.

Hearld Machine Co., The, Worcester, Mass. 789,958, pub. 3–9–65. Cl. 23.

Hedges & Butler Ltd., London, England. 790,093, pub 3–9–65. Cl. 49.

Heim Bros. Packing Co., Inc., Little Rock, Ark. 790,076, pub 3–9–65. Cl. 46.

Hermaseal Co., Inc., The: *See*
Hermaseal Co., The.

Hermaseal Co., The, to The Hermaseal Co., Inc., Elkhart, Ind. 416,287, ren. 5–25–65. Cl. 21.

Hildreth, H. L., Co., Inc., Boston, Mass. 790,068, pub. 3–9–65. Cl. 46.

Hilsinger Corp., The, Plainville, Mass. 790,151. Cl. 26.

Hoffman International Corp., Long Island City, N.Y. 789,973, pub. 1–5–65. Cl. 24.

Huber, J. M., Corp., Borger, Tex. 789,827, pub. 2–23–65. Cl. 1.

Hygrade Food Products Corp., Detroit, Mich. 790,087, pub. 3–9–65 Cl 46.

Illinois Tool Works, Chicago, Ill. 676,524, canc. Cl. 2.

Imperial Knife Associated Companies, Inc.: *See*
Imperial Knife Co., Inc.

Imperial Knife Co., Inc., to Imperial Knife Associated Companies, Inc., Providence, R.I. 414,861, ren. 5–25–65. Cl. 23.

Imperial Knife Co., Inc., to Imperial Knife Associated Companies, Inc., Providence, R.I. 415,752, ren. 5–25–65. Cl 23.

Inecto, Inc., to Sales Affiliates, Inc., New York, N.Y. 195,771, ren. 5–25–65. Cl. 51.

Indianapolis Glove Co., Inc.: *See*—
Indianapolis Glove Co.

Indianapolis Glove Co., to Indianapolis Glove Co., Inc., Indianapolis, Ind. 200,394, ren. 5–25–65. Cl. 39.

International Latex Corp., Dover, Del. 789,854, pub. 3–9–65. Cl 6.

International Nickel Co., Inc., The, New York, N.Y. 676,582, canc. Cl. 14.

International Rectifier Corp., El Segundo, Calif. 676,632, canc. Cl. 21.

International Shoe Co.: *See*—
Florsheim Shoe Co., The.

Inver House Distillers, Ltd.: *See*—
Continental Distilling Corp.

Ivan Sorvall, Inc., Norwalk, Conn. 789,983, pub. 3–9–65. Cl. 26.

J-M Trading Corp., Chicago, Ill. 789,871, pub. 3–9–65. Cl. 7.

Jamison, Fred W., Monroeville, Pa. 790,099, pub. 3–9–65. Cl. 50.

Jaymar: *See*—
Jaymar-Ruby, Inc.

Jaymar-Ruby, Inc., d.b.a. Jaymar, Michigan City, Ind. 790,027, pub. 3–9–65. Cl. 39.

Jennings Musical Industries, Ltd., d.b.a. Jennings Organ Co., Dartford, Kent, England. 789,997, pub. 11–24–64. Cl. 36.

Johnston & Jennings Co.: *See*—
Oil Conservation Engineering Co., The.

Johnson Ideal Halter Co.: *See*—
Johnson Ideal Halter Co., The.

Johnson Ideal Halter Co., The, to Johnson Ideal Halter Co., Aurora, Ill. 194,273, ren. 5–25–65. Cl. 3.

Jonhop Inc., Beaverton, Oreg. 790,125, pub. 3–9–65. Cl. 52.

Joyce, Inc., Pasadena, Calif., to Craddock-Terry Shoe Corp., Lynchburg, Va. 412,782, ren. 5–25–65. Cl. 50.

K.L.M. Royal Dutch Airlines: *See*—
Koninklije Luchtvaart Maatschappij N.V.

Katz Drug Co., Kansas City, Mo. 790,131, pub. 3–9–65. Cl. 101.

Kelco Co., San Diego, Calif. 790,086, pub. 3–9–65. Cl. 46.

Kerr Printers, Inc., Culver City, Calif. 676,729, canc. Cl. 38.

Keystone Laboratories, Inc., d.b.a. Long Aid Co., Memphis, Tenn. 790,109, pub. 3–9–65. Cl. 51.

King, Geo. W., Ltd., Stevenage, England. 676,521, canc. Cl. 2.

King, Geo. W., Ltd., Stevenage, England. 676,565, canc. Cl. 12.

King Laboratories, Inc., Syracuse, N.Y. 789,851, pub. 3–9–65. Cl. 6.

Kirk, James S., & Co., Chicago, Ill., to The Procter & Gamble Co., Cincinnati, Ohio. 197,230, ren. 5–25–65. Cl. 51.

Kline, Smith, & French Laboratories, Philadelphia, Pa. 789,921, pub. 3–9–65. Cl. 18.

Kommandit-Gesellschaft Ernst Gideon Bek & Co., Pforzheim/Baden, Germany. 789,872, pub. 12–8–64. Multiple Class (Classes 8 and 28).

Koninklijke Luchtvaart Maatschappij N.V., d.b.a. K.L.M. Royal Dutch Airlines, New York, N.Y. 676,805, canc. Cl. 105.

Kress, S. H., and Co., New York, N.Y. 676,745, canc. Cl. 39.

Kurk Products Co., Clifton, N.J. 789,889, pub. 3–9–65. Cl. 13.

Labinson, Sam, Inc., New York, N.Y. 676,757, canc. Cl. 39.

Lackawanna Leather Co., The, Hackettstown, N.J. 676,509, canc. Cl. 1.

Lakeside Industries, Inc., Minneapolis, Minn., from Clokey Productions, Inc., Glendora, Calif. 789,947, pub. 2–9–65. Cl. 22.

Landsite: *See*—
Algee, Roger W.

Lannett Co., Inc., The, Philadelphia, Pa. 789,904, pub. 6–13–61. Cl. 18.

La Palapa Imports, Myrtle Beach, S.C. 790,012, pub. 3–9–65. Cl. 39.

La Primadora Cigar Corp., New York, N.Y. 789,899, pub. 3–9–65. Cl. 17.

Laser, Inc., Crown Point, Ind. 789,917, pub. 3–9–65. Cl. 18.

Latama, Inc., Mount Vernon, N.Y. 789,874, pub. 3–9–65. Cl. 8.

Lawrence Children's Underwear Co., Inc., New York, N.Y. 790,024, pub. 3–9–65. Cl. 39.

Lazar's Kosher Sausage Factory: *See*—
Lazar, Sol.

Lazar, Sol, d.b.a. Lazar's Kosher Sausage Factory, Chicago, Ill. 790,065, pub. 3–9–65. Cl. 46.

Leaf Brands, Inc., Chicago, Ill. 790,074–5, pub. 9–29–64. Cl. 46.

Leathermode Sportswear, Inc., Bridgeport, Conn. 790,023, pub. 3–9–65. Cl. 39.

Leonard Belts & Accessories, Inc., New York, N.Y. 790,016, pub. 3–9–65. Cl. 39.

Levolor Lorentzen, Inc.: *See*—
Venasco, Inc.

Link-Belt Co., Chicago, Ill. 789,963, pub. 3–9–65. Cl. 23.

Lional Corp., The, New York, N.Y. 789,933, pub. 3–9–65. Multiple Class (Classes 21 and 26).

Litho Chemical & Supply Co., Inc., Lynbrook, N.Y. 789,850, pub. 3–9–65. Cl. 6.

Littell, C. S., & Co., Inc., to McKesson & Robbins, Inc., New York, N.Y. 197,505, ren. 5–25–65. Cl. 18.

London & Co., Inc., Elizabeth, N.J. 790,092, pub. 3–9–65. Cl. 49.

Long Aid Co.: *See*—
Keystone Laboratories, Inc.

Longhorn Co., Dallas, Tex. 789,870, pub. 3–9–65. Cl. 7.

Lord Corp., from Lord Mfg. Co., Erie, Pa. 789,895, pub. 7–23–63. Cl. 16.

Louis Lek Enterprises, Inc., San Diego, Calif. 676,599, canc. Cl. 19.

Louisiana State Rice Milling Co., Inc., Abbeville, La. 790,083–4 pub. 3–9–65. Cl 46.

Lucent Corp., The, New York, N.Y. 676,526, canc. Cl. 2.

Luitpold-Werk, Munich, Germany. 789,919, pub. 3–9–65. Cl. 18.

Luneburger Mechanische Strickerei Hans Pfobe, Luneburg, Germany. 790,021, pub. 3–9–65. Cl. 39.

M.M.A., Inc., Lancaster, Pa. 676,659, canc. Cl. 23.

MSI, Inc., from Maytag Stores International, Inc., Burbank, Calif. 789,971, pub. 5–26–64. Cl. 24.

Macalister, Paul, & Assocs., Lake Bluff, Ill. 780,098, pub. 3–9–65. Cl. 50.

Madison Chemical Corp.: *See*—
Carsello Chemical Products.

Madison Chemical Corp., d.b.a. Bio-Chemical Products Div., Maywood, Ill. 780,119, pub. 3–9–65. Cl. 52.

Magnavox Co., The, Fort Wayne, Ind. 789,924, pub. 5–16–61. Cl 21.

Maglio, Joseph A., New York, N.Y. 225,979, canc. Cl. 6.

Majestic Tile Co., Chicago, Ill 676,569, canc. Cl. 12.

Malco Mfg. Co., Inc., Chicago, Ill. 789,932, pub. 3–9–65. Cl 21.

Manhattan Shirt Co., The, New York, N.Y. 790,100, pub. 3–9–65. Cl. 50.

Marine Canvas Supply Corp.: *See*—
W.G. & F. Proofing Co. Inc.

Mark, Clayton, & Co., Evanston, Ill. 676,606, canc. Cl. 21.

Markite Corp., New York, N.Y. 789,930, pub. 3–9–65. Cl. 21.

Marx, Louis, & Co., Inc., New York, N.Y. 789,946, pub. 9–20–64 Cl. 22.

Maywood Industries, Newport Beach, Calif. 789,989, pub. 3–9–65. Cl. 29.

Maytag Stores International, Inc.: *See*—
MSI, Inc.

McCormick Advertising: *See*—
McCormick, Robert E.

McCormick Robert E., d.b.a McCormick Advertising, Akron, Ohio 790,007, pub. 3–9–65. Cl. 38.

McCrory Corp., New York, N.Y. 789,004, pub. 7–14–64. Cl 37.

McCulloch Corp., Minneapolis, Minn. 676,667, canc. Cl. 23.

McKesson & Robbins, Inc: *See*—
Littell C. S. & Co., Inc.

Mead Johnson & Co., Evansville, Ind. 790,106, pub. 3–9–65. Cl. 51.

Mead Johnson & Co., Evansville, Ind. 790,059, pub. 3–9–65. Cl. 44.

Medicure Pharmacal Co.: *See*—
Nysco Laboratories, Inc.

Merck & Co., Inc., Rahway, N.J. 790,070, pub. 2–9–65. Cl 46.

Metropolitan Wire Goods Corp., Wilkes-Barre, Pa. 789,890, pub. 3–9–65. Cl. 13.

Midwest Biochemical Corp., Milwaukee, Wis. 789,865, pub. 3–9–65. Cl. 6.

Milglo Jewelry Mfg. Co., New York, N.Y. 789,987, pub. 10–13–64. Cl. 28.

Millen Industries, Inc., New York, N.Y. 790,002–3, pub. 1–26–65. Cl. 37.

Millen Industries, Inc., New York, N.Y. 790,097, pub. 1–26–65. Cl. 50.

Mills, James, Orchards Co.: *See*—
Mills, James, Orchards Corp.

Mills, James, Orchards Corp., Hamilton City and Maxwell, Calif., to James Mills Orchards Co., Hamilton City, Calif. 200,529, ren. 5–25–65. Cl. 46.

Mills, James, Orchards Corp., Hamilton City and Maxwell, Calif., to James Mills Orchards Co., Hamilton City, Calif. 199,757, ren. 5–25–65. Cl. 46.

Mills, James, Orchards Corp., Hamilton City and Maxwell, Calif., to James Mills Orchards Co., Hamilton City, Calif. 199,766, ren. 5–25–65. Cl. 46.

Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. 676,672, canc. Cl. 26.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 789,998-9, pub. 3-9-65. Cl. 36.
Minnesota Valley Canning Co., to Green Giant Co., Le Sueur, Minn. 413,661, ren. 5-25-65. Cl. 46.
Mobay Chemical Co.: *See—*
Monsanto Chemical Co.
Monarch Tile Mfg., Inc.: *See—*
Monarch Tile Mfg.
Monarch Tile Mfg., Dallas, from Monarch Tile Mfg., Inc., San Angelo, Tex. 789,880-1, pub. 9-20-64. Cl. 12.
Modern Sewing Machine Co., Inc., Valley Stream, N.Y. 789,966, pub. 3-9-65. Cl. 23.
Monsanto Chemical Co., St. Louis, Mo. 676,519, canc. Cl. 2.
Monsanto Chemical Co., St. Louis, Mo., to Mobay Chemical Co., Pittsburgh, Pa. 414,767, ren. 5-25-65. Cl. 1.
Mueller Co., Decatur, Ill. 789,887, pub. 12-29-64. Cl. 13.
Mueller Co., Decatur, Ill. 789,891, pub. 3-9-65. Cl. 13.
Muralo Co., Inc., The: *See—*
Muralo Co., The.
Muralo Co., The, New Brighton, N.Y., to The Muralo Co., Inc., Bayonne, N.J. 26,717, ren. 5-25-65. Cl. 16.
Myrurgia S.A., Barcelona, Spain. 196,997, ren. 5-25-65. Cl. 51.
National Dairy Products Corp., Chicago, Ill. 790,063, pub. 11-6-62. Cl. 46.
National Dairy Products Corp., New York, N.Y. 789,866, pub. 3-9-65. Cl. 6.
National Knitted Outerwear Association, New York, N.Y. 413,385, ren. 5-25-65. Cl. 38.
National Steel Corp., Pittsburgh, Pa. 414,613, ren. 5-25-65. Cl. 14.
Nationwide Industries, Inc., Philadelphia, Pa. 789,894, pub. 3-9-65. Cl. 15.
Naumkeag Steam Cotton Co., Salem, Mass., to The Springs Cotton Mills, Lancaster, S.C. 44,597, ren. 5-25-65. Cl. 42.
Nelson, Hugh, Columbia Carpet Mills, Inc., Philadelphia, Pa. 676,769-70, canc. Cl. 42.
Neo-Matic Mfg. Corp.: *See—*
Servo Corp. of America.
New Process Co., Warren, Pa. 790,047, pub. 3-9-65. Cl. 39.
Newnan Corp., The, Newnan, Ga. 789,884, pub. 3-9-65. Cl. 12.
Newsweek Inc., from Weekly Publications, Inc., New York, N.Y. 676,722, canc. Cl. 38.
Nevil Enterprises, Inc., Buffalo, N.Y. 789,996, pub. 3-9-65. Cl. 32.
Nock and Son Co., The: *See—*
Nock and Sons Co.
Nock and Sons Co., to The Nock and Son Co., Cleveland, Ohio. 413,252, ren. 5-25-65. Cl. 12.
Norcal Electronics, Inc., Sacramento, Calif. 676,633, canc. Cl. 21.
North American Tourists, Inc., Denver, Colo. 790,143, pub. 3-9-65. Cl. B.
North Pacific Canners & Packers, Inc., Portland, Oreg. 790,079 pub. 3-9-65. Cl. 46.
Northport Engineering, Inc., St. Paul, Minn. 789,925, pub. 1-5-65. Multiple Class (Classes 21 and 26).
Nuodex Products Co. Inc., Elizabeth, N.J., to Tenneco Chemicals, Inc., New York, N.Y. 409,070, ren. 5-25-65. Cl. 6.
Nysco Laboratories, Inc., d.b.a. Medicure Pharmacal Co., Long Island City, N.Y. 789,922, pub. 3-9-65. Cl. 18.
Ohaus Scale Corp., Union, N.J. 789,984, pub. 3-9-65. Cl. 26.
Oil Conservation Engineering Co., The, Cleveland, Ohio, to The Johnston & Jennings Co., Chicago, Ill. 199,177, ren. 5-25-65. Cl. 26.
Oil Conservation Engineering Co., The, Cleveland, Ohio, to The Johnston & Jennings Co., Chicago, Ill. 199,684, ren. 5-25-65. Cl. 23.
Old Town Shoe Co., Boston, Mass. 790,015, pub. 3-9-65. Cl. 39.
Olson, Samuel, Mfg. Co., Inc., Chicago, Ill. 676,660, canc. Cl. 23.
Omega Chemical Co., Inc.: *See—*
Omega Chemical Co., The.
Omega Chemical Co., The, New York, N.Y., to Omega Chemical Co., Inc., Jersey City, N.J. 203,385, ren. 5-25-65. Cl 51.
Outboard Marine Corp., Waukegan, Ill. 789,964, pub. 3-9-65. Cl. 23.
Ozon Products, Inc., Brooklyn, N.Y. 790,105, pub. 3-9-65. Cl. 51.
Pak-Tite, Inc., New Orleans, La. 789,825, pub. 3-9-65. Cl. 1.
Papeteries Steinbach & Cie S.A., Malmedy, Belgium. 676,721, canc. Cl. 37.
Paramount Dress Co., Los Angeles, Calif. 422,022, canc. Cl. 39.
Parfums Capucci, Paris, France. 790,103, pub. 3-9-65. Cl. 51.
Parke, Davis & Co., Detroit, Mich. 203,377, ren. 5-25-65. Cl. 18.
Pasteuray Corp.: *See—*
Abshire, Harold W.
Peabody Coal Co., St. Louis, Mo. 789,823, pub. 3-9-65. Cl. 1.
Penn Crete Products Co., Inc., Philadelphia, Pa. 789,878, pub. 3-17-64. Cl. 12.
Penney, J. C., Co., New York, N.Y. 790,029, pub. 3-9-65. Cl. 39.
Petroleum Tool Research, Inc., Fort Worth, Tex. 676,555, canc. Cl. 9.
Pfizer, Chas., & Co., Inc., New York, N.Y. 790,091, pub. 3-9-65. Cl. 48.
Pfizer, Chas., & Co., Inc., New York, N.Y. 789,841, pub. 3-9-65. Cl. 6.
Piggly Wiggly Corp., Jacksonville, Fla. 790,081-2, pub. 3-9-65. Cl. 46.
Phillips Petroleum Co., Bartlesville, Okla. 676,545, canc. Cl. 5.
Phillips Petroleum Co., Bartlesville, Okla. 676,543, canc. Cl. 5.
Pilot Chemical Co., Santa Fe Springs, Calif. 789,847-8, pub. 1-19-65. Cl. 6.
Piney Wood Products Co., St. Louis, Mo. 789,832, pub. 3-9-65. Cl. 2.
Playskool Mfg. Co., Chicago, Ill. 789,949, pub. 3-9-65. Cl. 22.
Pollack, S., Inc., Pottsville, Pa. 790,132, pub. 3-9-65. Cl. 103.
Porocel Corp., Menlo Park, N.J. 413,850, ren. 5-25-65. Cl. 6.
Porter Chemical Co., The, Hagerstown, Md. 676,678, canc. Cl. 26.
Powell Muffler Co., Inc., Chicago, Ill. 790,149. Cl. 23.
Precision-Cosmet Co., Inc., Minneapolis, Minn. 676,539, canc. Cl. 4.
Price, Homer S., d.b.a. Speak-Easy Co., New York, N.Y. 676,727, canc. Cl. 38.
Protect-O-Matic Corp., Kenmore, N.Y. 676,598, canc. Cl. 19.
Procter & Gamble Co., The: *See—*
Aspegren & Co., Inc.
Waltke, William, & Co.
Procter & Gamble Co., The, Cincinnati, Ohio. 790,120, pub. 9-15-64. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 199,771, ren. 5-25-65. Cl. 46.
Procter & Gamble Co., The, Cincinnati, Ohio. 414,148, ren. 5-25-65. Cl. 51.
Pullman Couch Co., Chicago, Ill. 676,700, canc. Cl. 32.
Puma Corp., East Farmingdale, N.Y. 789,869, pub. 3-9-65. Cl. 6.
Pure Oil Co., The, Palatine, Ill. 789,838, pub. 3-9-65. Multiple Class (Classes 4, 6, 15, 21, 23, 35, and 52).
Purex Corp., Ltd.: *See—*
Campana Corp.
Puritan Mills, Inc., Roanoke, Va. 676,733, canc. Cl. 39.
R.B.S. Corp., Saginaw, Mich., from Ross Builders Supplies, Inc., Greenville, S.C. 790,145. Cl. 12.
Ray Drug Co., Inc., Oakland, Calif. 790,102, pub. 3-9-65. Cl. 51.
Record and Greeting Card Vending Machine Corp., New York, N.Y. 676,646, canc. Cl. 23.
Red Barn Chemicals, Inc., Shreveport, La. 789,842, pub. 3-9-65. Cl. 6.
Registered Fabrics Corp., New York, N.Y. 790,055, pub. 12-1-64. Cl. 42.
Reichman, Henry, Inc.: *See—*
Reichman, Henry.
Reichman, Henry, from Henry Reichman, Inc., New York, N.Y. 790,128, pub. 3-9-65. Cl. 101.
Reitz & Brew: *See—*
Sioux Honey Association Corp.
Remington Arms Co., Inc., Bridgeport, Conn. 195,472, ren. 5-25-65. Cl. 9.
"Renee of Hollywood": *See—*
S.D.S. Inc.
Republic Industries, Inc., Chicago, Ill. 789,885, pub. 3-9-65. Cl. 13.
Republic Novelty Co. Inc., New York, N.Y. 790,037, pub. 3-9-65. Cl. 39.
Retail Rentals, Inc., Dallas, Tex. 676,629, canc. Cl. 21.
Revlon, Inc., New York, N.Y. 790,053, pub 3-9-65. Cl. 40.
Rexall Drug and Chemical Co., d.b.a. Tupperware, Los Angeles, Calif. 789,834, pub. 3-9-65. Cl. 2.
Rexall Drug and Chemical Co., Los Angeles, Calif., from The Seamless Rubber Co., New Haven, Conn. 789,951, pub. 3-9-65. Cl. 22.
Rhinecold-Alaska, Inc., Yonkers, N.Y. 789,991, pub. 3-9-65. Cl. 31
Richwood Box Mill: *See—*
Haines, Armour A.
Richard Mfg. Co., Van Nuys, Calif. 789,976, pub. 5-23-61. Cl. 26.
Roberts Thomas J., Newnan, Ga. 790,040, pub. 3-9-65. Cl. 39.
Roger & Gallet, S.A., Paris, France. 790,108, pub. 3-9-65. Cl 51.
Roger & Gallet, S.A., Paris, France. 790,121, pub. 3-9-65. Cl. 52.
Romney Fashions, Inc.: *See—*
General Import & Export Trading Co., Inc.
Roseland Fur Corp., New York, N.Y. 790,057, pub. 3-9-65. Cl. 44.
Ross Builders Supplies, Inc: *See—*
R.B.S. Corp.
Rubbermaid Inc., Wooster, Ohio. 676,796 canc. Cl. 50.
Ruocco Albert A., Livingston, N.J. 676,642, canc Cl. 22.
Rumpel, Bernard N., d.b.a. East Coast Plastic Products, Deer Park, N.Y. 676,639 canc. Cl. 22.
Ruth Shoe Co., Newburyport, Mass. 676,742, canc. Cl. 39.
Rykoff, S. E., & Co., Los Angeles, Calif. 790,062, pub. 3-9-65. Cl. 45.
S.D.S. Inc., d.b.a. "Renee of Hollywood," Los Angeles, Calif. 676,758, canc. Cl. 39
Sakrete, Inc., Cincinnati, Ohio. 789,883, pub. 3-9-65. Cl. 12
Sale Knitting Co., Inc., Martinsville, Va. 790,018, pub. 3-9-65. Cl. 39.
Sales Affiliates, Inc.: *See—*
Inecto, Inc.
Salt River Valley Produce, Inc.: *See—*
Drey, Sam.
San-Dee Chemical Products, Inc., Chicago, Ill. 790,122, pub. 3-9-65. Cl. 52.
Sanna Dairies, Inc., Madison, Wis. 790,077, pub. 3-9-65. Cl. 46
Santini Bros., Inc., New York, N.Y. 790,133, pub. 8-28-62. Cl. 105.

Schawalder, Albert, Romanshorn, Switzerland. 789,960, pub. 3-2-65. Cl. 23.
Scheri & Roth, Inc., Cleveland, Ohio. 416,433, ren. 5-25-65. Cl 36.
Schneierson, I., & Sons Inc., New York, N.Y. 676,762-3, canc. Cl 39.
Scientific Electric Co.: *See—*
Cook, Peter.
Scott, O. M., & Sons Co., The, Marysville, Ohio. 789,849, pub. 3-9-65. Multiple Class (Classes 6 and 10).
Scovill Mfg. Co., Waterbury, Conn. 790,052, pub. 12-29-64. Cl. 40.
Scripto, Inc., Atlanta, Ga. 676,552, canc. Cl. 8.
Seamless Rubber Co., The: *See—*
Rexall Drug and Chemical Co.
Sears, Roebuck and Co., Chicago, Ill. 790,032, pub. 3-9-65. Cl. 39.
Sebago Moc Co., Westbrook, Maine. 790,025, pub. 3-9-65. Cl. 39.
Second DeKalb Molasses Feed Co., Rock Falls, Ill. 789,906, pub. 3-9-65. Cl. 18.
Servo Corp. of America, New Hyde Park, N.Y., from Neo-Matic Mfg. Corp., Aurora, Ill. 676,604, canc. Cl. 21.
Shane Boys Wear, Inc., Philadelphia, Pa. 744,264, canc. Cl 39.
Shell Oil Co.: *See—*
Shell Oil Co., Inc.
Shell Oil Co., Inc., San Francisco, Calif., to Shell Oil Co., New York, N.Y. 413,827, ren. 5-25-65. Cl. 15.
Shell Oil Co., New York, N.Y. 789,893, pub. 6-23-64. Cl. 15
Ship 'N Shore, Inc: *See—*
B.V.D. Corp., The.
Shoecraft, Inc.: *See—*
Shoecraft Shop, Inc.
Shoecraft Shop, Inc., to Shoecraft, Inc., New York, N.Y. 198,593, ren. 5-25-65. Cl. 39.
Simonds Saw and Steel Co., d.b.a. The Atrax Co., Fitchburg, Mass. 789,967, pub 3-9-65. Cl. 23.
Sioux Honey Association, Cooperative, d.b.a. Reitz & Brew, Summerfield, Fla. 790,089, pub. 3-9-65. Cl. 46.
Site-Pannell Supply Co., d.b.a. 500 Co., St. Louis, Mo. 790,148. Cl. 23
Skinner, William, & Sons, New York, N.Y. 676,778, canc. Cl. 42.
Skyway Luggage Co., Seattle, Wash. 676,534, canc. Cl. 3.
Smith, Edward J., d.b.a World Wide Originals, Milwaukee, Wis. 789,943-4, pub. 3-9-65. Cl. 22.
Smith Laboratory, Inc., The, Kansas City, Mo. 790,058, pub. 3-9-65. Cl. 44.
Societe Toulousaine de Produits Chimiques Tolochimie, Paris, France. 789,859, pub 3-9-65. Cl. 6.
Sohn, Ernest, Creations, Inc., New York, N.Y. 676,696, canc. Cl. 32.
Sorenson Lighted Controls, Inc., West Hartford, Conn. 790,147. Cl. 21.
Speak-Easy Co.: *See—*
Price, Homer S.
Spencer, Jack B., d.b.a. Spencer Mfg. Co., Orange, Calif. 789,994, pub. 3-9-65. Cl. 32.
Sperry Rand Corp., New Holland, Pa. 789,970, pub. 3-9-65. Cl. 23.
Sperry Rand Corp., New York, N.Y. 676,645, canc. Cl 23.
Sprague, Robert C., Jr., d.b.a. Stonebrook Farm, Williamstown, Mass. 789,824, pub. 3-9-65. Cl. 1.
Springs Cotton Mills, The: *See—*
Naumkeag Steam Cotton Co.
Stately Lady Nitewear, Inc., New York, N.Y. 790,048, pub. 3-9-65. Cl. 39.
Staten George, Inc., Columbus, Ohio. 790,152. Cl. 32.
Stein-Bloch Co., The Rochester, to Fashion Park, Inc., New York, N.Y. 197,050-1, ren. 5-25-65. Cl. 39.
Steineck, Rudolf, Lugano-Pregassona, Switzerland. 676,670, canc. Cl. 26.
Stephano Bros., to Stephano Brothers, Philadelphia, Pa. 46,146, ren. 5-25-65. Cl. 17.
Sterling Drug Inc., New York, N.Y. 789,907, pub. 11-19-63. Cl. 18.
Stevens, Chas. A., & Bros., to Chas. A. Stevens & Co., Chicago, Ill. 197,746, ren. 5-25-65. Cl. 39.
Stevens, Chas. A., & Co.: *See—*
Stevens, Chas. A., & Bros.
Stockton Mfg. Co., Inc., Dallas, Tex. 790,022, pub. 3-9-65. Cl 39
Stonebrook Farm: *See—*
Sprague, Robert C., Jr.
Strong-Scott Mfg. Co., The, Minneapolis, Minn. 789,965, pub. 3-9-65. Cl. 23.
Strouse, Adler Co., The, New Haven, Conn. 790,155. Cl. 39.
Strouse, Adler & Co., The: *See—*
Strouse, Adler & Co.
Strouse, Adler & Co., to The Strouse, Adler Co., New Haven, Conn. 45,767, ren. 5-25-65. Cl. 39.
Sunbeam Corp., Chicago, Ill. 789,985, pub. 3-9-65. Cl. 27.
Sunshine Broom & Brush Co., Cleveland, Ohio. 789,990, pub. 3-9-65. Cl. 29.
Supowitz Bros., Pittsburgh, Pa. 790,031, pub. 3-9-65. Cl. 39.
Suppreme Photo Supply Co., Inc., New York, N.Y. 789,980, pub. 3-9-65. Cl. 26.
Svenska Tobaks Aktiebolaget (Swedish Tobacco Co.), Stockholm, Sweden. 789,902, pub. 3-9-65. Cl. 17.
Sylwan Mark, Aktiebolag, Stockholm, Sweden. 676,790, canc. Cl. 50.
Tasman Vaccine Laboratory Ltd., Upper Hut, New Zealand. 789,916, pub 3-9-65. Cl. 18.
Taylor, J. C., Creamery, Inc., Cincinnati, Ohio. 768,908, canc. Cl. 46.
Teen Tones, Columbus, Ga. 676,806, canc. Cl. 107.
Tenneco Chemicals, Inc.: *See—*
Nuodex Products Co., Inc.
Textile Alliance, Ltd., Victoria, Hong Kong. 790,019, pub. 3-9-65. Cl. 39.
Textron Inc., Belmont, Calif. 676,679, canc. Cl. 26.
Textron Industries, Inc., Rockford, Ill. 790,127, pub. 3-9-65. Cl. 100.
Thierry, Suzanne, Parfums, Inc., Miami, Fla. 790,115, pub. 3-9-65. Cl. 51.
Three B's Hosiery Mills, New York, N.Y. 790,034, pub. 3-9-65. Cl. 39.
Tile Council of America, Inc., New York, N.Y. 790,139, pub. 3-9-65. Cl. A.
Tile Council of America, Inc., New York, N.Y. 790,141, pub. 3-9-65. Cl. A.
Time Finance Adjusters: *See—*
Gray, Dan.
Tomco Genetic Giant, Inc., Belmond, Iowa. 789,822, pub. 3-9-65. Cl. 1.
Treibacher Chemische Werke Aktiengesellschaft, Treibach, Karnten, Austria. 789,858, pub. 3-9-65. Cl. 6.
Treibacher Chemische Werke Aktiengesellschaft Treibach, Karnten, Austria. 789,873, pub. 3-9-65. Cl. 8.
Trustees of Indiana University, The, Bloomington, Ind. 790,134, pub. 3-9-65. Cl. 200.
Trustees of Indiana University, The, Bloomington, Ind. 790,136, pub. 3-9-65. Cl. 200.
Tupperware: *See—*
Rexall Drug and Chemical Co.
Uncle Ben's, Inc., Houston, Tex. 790,085, pub. 2-9-65. Cl. 46.
Underwood Corp., New York, N.Y. 676,658, canc. Cl. 23.
Union Steel Chest Corp., LeRoy, N.Y. 789,829, pub. 3-9-65. Cl. 2.
United Aircraft Corp., East Hartford, Conn. 789,931, pub. 3-9-65. Cl. 21.
United States Gypsum Co., Chicago, Ill. 413,787, ren. 5-25-65. Cl. 1.
U.S. Sanitary Specialties Corp., Chicago, Ill. 413,266, ren. 5-25-65. Cl. 52.
Universal Chain Co., Inc., Maplewood, N.J. 416,108, ren. 5-25-65. Cl. 28.
Universal Chemicals Corp., Central Falls, R.I. 789,856, pub. 3-9-65. Cl. 6.
Vanity Fair Mills, Inc., Reading, Pa. 790,030, pub. 3-9-65. Cl. 39.
Venasco, Inc., New York, N.Y., to Levolor Lorentzen, Inc., Hoboken, N.J. 414,337, ren. 5-25-65. Cl. 32.
Virginia Aerosol, Inc., Winchester, Va. 789,843, pub. 3-9-65. Multiple Class (Classes 6 and 52).
Vital Earth Products, Inc., Washington, D.C. 789,876, pub. 3-9-65. Cl. 10.
W.G. & F. Proofing Co. Inc., to Marine Canvas Supply Corp., Brooklyn N.Y. 201,834, ren. 5-25-65. Cl. 50.
Wal-Rich Corp., Long Island City, N.Y. 789,888, pub. 3-9-65. Cl. 13.
Waldorf Paper Products Co., St. Paul, Minn. 197,102, ren. 5-25-65. Cl. 12.
Waltke, William, & Co., St. Louis, Mo., to The Procter & Gamble Co., Cincinnati, Ohio. 44,509, ren. 5-25-65. Cl. 52.
Watkins, Jim, Co., Inc., Watsonville, Calif. 790,080, pub. 3-9-65. Cl. 46.
Waumbec Mills Inc., New York, N.Y. 790,054, pub. 12-29-64. Cl. 42.
Weaver's, Flomaton, Ala. 676,532, canc. Cl. 2.
Webster Spring Co., Inc., Oxford, Mass. 789,992, pub. 3-9-65. Cl. 32.
Weekly Publications, Inc.: *See—*
Newsweek Inc.
Weiss Shirt Co., Inc., New York, N.Y. 790,026, pub. 3-9-65. Cl. 39.
Welwyn Canada, Ltd., London, Ontario, Canada. 789,926, pub 3-9-65. Cl. 21.
West Chemical Products, Inc., Long Island City, N.Y. 790,123, pub. 3-9-65. Cl. 52.
Western Chemical Co., St. Joseph, Mo. 789,836, pub. 7-16-63. Cl. 4.
Western Research Laboratories: *See—*
Western Research Laboratories, Inc.
Western Research Laboratories, Inc., from Western Research Laboratories, Denver, Colo. 789,912, pub. 7-28-64. Cl. 18.
Westside Growers, Oxnard, Calif. 790,071, pub. 3-9-65. Cl. 46.
Wheeler, W. O., Portland, Oreg. 201,554, ren. 5-25-65. Cl. 46.
Wilke, Anna, d.b.a. Wilke Pipe Shop, New York, N.Y. 789,901, pub. 3-9-65. Cl. 17.
Wilke Pipe Shop: *See—*
Wilke, Anna.
Wilmar Enterprises, Newport Beach, Calif. 789,988, pub. 3-9-65. Cl 29.
Wintop Uniforms Corp., New York, N.Y. 790,042, pub. 3-9-65. Cl. 39.
Williams Cutlery, Inc., Seaman, Ohio. 789,957, pub. 3-9-65. Cl 23.
Williams Mfg. Co., The, Portsmouth, Ohio. 790,051, pub. 3-9-65. Cl. 39.
Williamson Candy Co., Chicago, Ill. 790,088, pub. 3-9-65. Cl. 46.
Witco Chemical Co., Inc.: *See—*
Emulsol Corp., The.
Wood Chemical Co., Inc., Lubbock, Tex. 789,875, pub. 3-9-65. Cl 10.
Wool Bureau, Inc., The, New York, N.Y. 790,140, pub. 3-9-65. Cl. A.
World Wide Originals: *See—*
Smith, Edward J.
Wright Mfg. Co., Toccoa, Ga. 790,041, pub 3-9-65. Cl. 39.
Yardney Chemical, Inc., New York, N.Y. 789,864, pub. 3-9-65. Cl. 6.
Zeltex Products Co., Bridgeport, Conn. 790,020, pub. 3-9-65. Cl. 39.

TITLE 37—PATENTS, TRADEMARKS AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART I—RULES OF PRACTICE IN PATENT CASES
PART 3—FORMS FOR PATENT CASES

Interference Practice

The following amendments are made to take effect July 1, 1965, and to apply only to interferences declared on and after that date. In all other cases, the rules prior to amendment shall apply. The text of these rules, except in certain particulars, was published in the Federal Register of February 26, 1965 (30 F.R. 2552–2556), and all persons who so desired were invited to submit written data, views, arguments or suggestions, or to attend the hearing held on April 8, 1965. The rules are being adopted after full consideration of all the material submitted and of all the views expressed at the oral hearing. The departures from the published text are made in the light of such material and views.

The text of the amendments is as follows:

Paragraphs (a) and (b) of § 1.203 are amended to read as follows:

§ 1.203 *Preparation for interference between applications; suggestion of claims for interference.*

(a) Before the declaration of interference it must be determined by the examiner that there is common subject matter in the cases of the respective parties, patentable to each of the respective parties, subject to the determination of the question of priority. Claims in the same language, to form the counts of the interference, must be present or be presented, in each application; except that, in cases where, owing to the nature of the disclosures in the respective applications, it is not possible for all applications to properly include a claim in identical phraseology to define the common invention, an interference may be declared, with the approval of the Commissioner, using as a count representing the interfering subject matter a claim differing from the corresponding claims of one or more of the interfering applications by an immaterial limitation or variation.

(b) When the claims of two or more applications differ in phraseology, but relate to substantially the same patentable subject matter, the examiner shall, if it has been determined that an interference should be declared, suggest to the parties such claims as are necessary to cover the common invention in the same language. The parties to whom the claims are suggested will be required to make those claims (i.e., present the suggested claims in their applications by amendment) within a specified time, not less than 30 days, in order that an interference may be declared. The failure or refusal of any applicant to make any claim suggested within the time specified, shall be taken without further action as a disclaimer of the invention covered by that claim unless the time be extended.

* * * * *

Paragraph (a) of § 1.205 is amended to read as follows:

§ 1.205 *Interference with a patent; copying claims from patent.*

(a) Before an interference will be declared with a patent, the applicant must present in his application, copies of all of the claims of the patent which also define his invention and such claims must be patentable in the application. However, an interference may be declared after copying the claims excluding an immaterial limitation or variation if such immaterial limitation or variation is not clearly supported in the application or if the applicant otherwise makes a satisfactory showing in justification thereof.

* * * * *

Section 1.206 is amended to read as follows:

§ 1.206 *Interference with a patent; claims improperly copied.*

(a) Where claims are copied from a patent and the examiner is of the opinion that the applicant can make only some of the claims so copied, he shall notify the applicant to that effect, state why he is of the opinion the applicant cannot make the other claims and state further that the interference will be promptly declared. The applicant may proceed under section 1.231 if he desires to further contest his right to make the claims not included in the declaration of the interference.

(b) Where the examiner is of the opinion that none of the claims can be made, he shall reject the copied claims stating in his action why the applicant cannot make the claims and set a time limit, not less than 30 days, for reply. If, after response by the applicant, the rejection is made final, a similar time limit shall be set for appeal. Failure to respond or appeal, as the case may be, within the time fixed will, in the absence of a satisfactory showing, be deemed a disclaimer of the invention claimed.

Section 1.207 is amended to read as follows:

§ 1.207 *Preparation of interference papers and declaration of interference.*

(a) When an interference is found to exist and the applications are in condition therefor, the primary examiner shall forward the files to the Board of Patent Interferences together with a statement indicating the claims of each applicant or patentee which are to form the respective counts of the interference and also indicating whether any party is entitled to the benefit of the filing date of any prior application as to the subject matter in issue, and, if so, identifying such application.

(b) A patent interference examiner will institute and declare the interference by forwarding notices to the several parties to the proceeding. Each notice shall include the name and residence of each of the other parties and those of his attorney or agent, and of any assignee, and will identify the application of each opposing party by serial number and filing date, or in the case of a patentee by the number and date of the patent. The notices shall also specify the issue of the interference, which shall be clearly and concisely defined in only as many counts as may be necessary to define the interfering subject matter (but in the case of an interference with a patent all the claims of the patent which can be made by the applicant should constitute the counts), and shall indicate the claim or claims of the respective cases corresponding to the count or counts. If the application or patent of a party included in the interference is a division, continuation or continuation-in-part of a prior application and the examiner has determined that it is entitled to the filing date of such prior application, the notices shall so state. Except as noted in section 1.207(e), the notices shall also set a schedule of times for taking various actions as follows:

(1) For filing the preliminary statements required by section 1.215 and serving notice of such filing, not less than two months from the date of declaration.

(2) For each party who files a preliminary statement to serve a copy thereof on each opposing party who also files a preliminary statement as required by section 1.215(b), not less than 15 days after the expiration of the time for filing preliminary statements.

(3) For filing motions under section 1.231, not less than four months from declaration.

(c) The notices of interference shall be forwarded by the patent interference examiner to all the parties, in care of their attorneys or agents; a copy of the notices will also be sent the patentees in person and, if the patent in interference has been assigned, to the assignees.

(d) When the notices sent in the interest of a patent are returned to the Office undelivered, or when one of the parties resides abroad and his agent in the United States is unknown, additional notice may be given by publication in the OFFICIAL GAZETTE for such period of time as the Commissioner may direct.

(e) In a case where the showing required by section 1.204(c) is deemed insufficient (section 1.228) the notice of interference will not set the time schedule specified in section 1.207(b) but will be accompanied by an order to show cause by the Board of Patent Interferences as provided by section 1.228.

Section 1.209 is cancelled.

Section 1.211 is amended to read as follows:

§ 1.211 *Jurisdiction of interference.*

(a) Upon the institution and declaration of the interference, as provided in section 1.207, the Board of Patent Interferences will take jurisdiction of the same, which will then become a contested case.

(b) The primary examiner will retain jurisdiction of the case until the declaration of interference is made.

Section 1.215 is amended to read as follows:

§ 1.215 *Preliminary statement required.*

(a) Each party to the interference will be required to file a concise preliminary statement giving certain facts and dates, on or before a date fixed by the Office. The preliminary statement must be signed and sworn to by the inventor but in appropriate circumstances, as when the inventor is dead or a showing is made of inability to obtain a statement from the inventor, the preliminary statement may be made by the personal representative or assignee or by someone authorized or entitled to make the statement and having knowledge of the facts.

(b) A party who files a preliminary statement shall at the same time notify all opposing parties of that fact and by the time set for that purpose he shall serve a copy of his preliminary statement including any attached documents on every opposing party from whom he has received notification of the filing of a statement.

(c) A party who fails to serve a copy of his preliminary statement as required in (b) above will be restricted to his effective filing date. (See section 1.223 (c).)

Section 1.216 is amended to read as follows:

§ 1.216 *Contents of the preliminary statement.*

(a) The preliminary statement must state that the party made the invention set forth by each count of the interference, and whether the invention was made in the United States or abroad. When the invention was made in the United States the preliminary statement must set forth as to the invention defined by each count the following facts including a brief statement as to the specific nature of each of the respective acts alleged:

(1) The date upon which the first drawing of the invention was made; if a drawing of the invention has not been made prior to the filing date of the application, it must be so stated.

(2) The date upon which the first written description of the invention was made; if a written description of the invention has not been made prior to the filing date of the application, it must be so stated.

(3) The date upon which the invention was first disclosed to another person; if the invention was not disclosed to another person prior to the filing date of the application, it must be so stated.

(4) The date of the first act or acts susceptible of proof (other than making a drawing or written description or disclosing the invention to another person) which, if proven, would establish conception of the invention, and a brief description of such act or acts; if there have been no such acts, it must be so stated.

(5) The date of the actual reduction to practice of the invention; if the invention has not been actually reduced to practice before the filing date of the application, it must be so stated.

(6) The date after conception of the invention when active exercise of reasonable diligence toward reducing the invention to practice began.

(b) When an allegation as to the first drawing (section 1.216(a)(1)) and/or as to the first written description (section 1.216(a)(2)) is made, a copy of such drawing and/or written description must be attached to the statement.

(c) If a party intends to rely solely on a prior application, domestic or foreign, and on no other evidence, the preliminary statement may so state and need not be signed or sworn to by the inventor.

Sectfon 1.218 is amended to read as follows:

§ 1.218 *Time for filing preliminary statement.*

The time for filing the preliminary statement is ordinarily specified in the notices of interference mailed to the parties (section 1.207). (For extension of the time set see section 1.245.)

Section 1.221 is cancelled.

Paragraphs (a) and (c) of section 1.223 are amended to read as follows:

§ 1.223 *Effect of statement.*

(a) The preliminary statement should be carefully prepared, as a party will not be allowed to amend his statement in any way except by motion under section 1.222, and any doubts as to definiteness or sufficiency of any allegation or compliance with formal requirements will be resolved against the party concerned by restriction to his record date or to the latest date of a period alleged as may be appropriate. Prior to final hearing a party will not be notified of any defect in his statement except that whenever a resulting restriction provides basis for an order to show cause (section 1.225) such order will be entered including notice of the defect. Each of the parties by whom or on whose behalf a preliminary statement is made will be strictly held in his proofs to the dates set forth therein. This includes joint applicants or patentees; a new preliminary statement will not be received in the event the application is amended or the patent is corrected to remove the names of those not inventors, nor will a preliminary statement alleging different dates be received if an application is amended or a patent is corrected to include a joint inventor, except by motion under section 1.222.

* * * * *

(c) If a party to an interference fails to file a statement, testimony will not be received subsequently from him to prove that he made the invention at a date prior to his effective filing date. If a party alleges in his statement a date of first drawing or first written description but does not attach a copy of such drawing or written description as required by section 1.216(b), he will be restricted to his effective filing date as to that allegation.

Section 1.224 is amended to read as follows:

§ 1.224 *Reliance on prior application.*

A party will not be permitted to rely on any prior application to obtain the benefit of its filing date unless the prior application is specified in the notice of interference (see section 1.226) or its benefit is sought by a motion filed in accordance with section 1.231. In the latter case, complete copies of the contents of the application file the benefit of which is sought, except affidavits under sections 1.131, 1.202 and 1.204, must be served on all opposing parties with the motion, and in the case of a foreign application the necessary papers to prove a date of priority under 35 U.S.C. 119 including a translation where required (section 1.55), must be filed (if they are not already of record) and copies served on all opposing parties with the motion. In either case the proof of service required by section 1.247 must include the prior application as well as the motion.

Section 1.225 is amended to read as follows:

§ 1.225 *Failure of junior party to file statements or to overcome filing date of senior party.*

If a junior party to an interference fails to file a preliminary statement, or if his statement fails to overcome the prima facie case made by the filing date of the application of another party, judgment on the record will be entered against such junior party unless he has filed a motion under section 1.231, within the time set for such motions, for some action in the interference. If such a motion has been timely filed but does not result in action in the interference which will remove the basis for a judgment on the record, such judgment on the record will be entered unless the motion related to matters which may be reviewed at final hearing under section 1.258, and within twenty days of the decision disposing of the motion the junior party concerned requests that final hearing be set to review such matters

Section 1.226 is amended to read as follows:

§ 1.226 *Access to applications.*

After the mailing of the notices of interference each party will be permitted to see or obtain copies of each other's applications which are set out in the notices except for copies of affidavits filed under sections 1.131, 1.202 and 1.204 which shall be and remain sealed until preliminary statements are opened under section 1.227, except as provided in section 1.228 regarding affidavits under section 1.204(c).

Section 1.227 is amended to read as follows:

§ 1.227 *Access to preliminary statements.*

(a) The preliminary statements shall be open to the inspection of the senior party, and of any junior party who himself filed a statement, after the date set for the serving of preliminary statements (section 1.207(b)(2)), but shall not be open to inspection prior to that time.

(b) A junior party who fails to file a preliminary statement shall not have access to the preliminary statement of any other party.

(c) If the interference be terminated before the preliminary statements have been opened to the inspection of the parties, the preliminary statements will remain sealed.

(d) After termination of an interference any unopened statements will be removed from the interference file and preserved by the Office, and in no case will such statements be open to the inspection of anyone (including opposing parties) without authority from the Commissioner.

Section 1.228 is amended to read as follows:

§ 1.228 *Summary judgment.*

When an interference is declared on the basis of a showing under section 1.204(c), such showing will be examined by a Board of Patent Interferences. If the Board considers that the facts set out in the showing provide sufficient basis for overcoming the effective filing date of the patentee, the interference will proceed in the normal manner as provided by these rules; otherwise an order shall be entered concurrently with the notice of interference pointing out wherein the showing is insufficient and notifying the applicant making such showing that summary judgment will be rendered against him because of such insufficiency at the expiration of a period specified in the notice, not less than thirty days, unless cause be shown why such action should not be taken. Any response made during the specified period will be considered by the Board without an oral hearing unless such hearing is requested by the applicant, but additional affidavits or exhibits will not be considered unless accompanied by a showing justifying their omission from the original showing. If the applicant files a response to the order to show cause, the patentee will be furnished with one of the copies of the showing under section 1.204(c) and will be allowed thirty days from its mailing date within which to present his views with respect thereto. He shall also be entitled to be represented at any oral hearing on the matter.

Section 1.231 is amended to read as follows:

§ 1.231 *Motions before the primary examiner.*

(a) Within the period set in the notice of interference for filing motions any party to an interference may file a motion seeking:

(1) To dissolve as to one or more counts, except that such motion based on facts sought to be established by affidavits or evidence outside of official records and printed publications will not normally be considered, and when one of the parties to the interference is a patentee, no motion to dissolve on the ground that the subject matter of the count is unpatentable to all parties or is unpatentable to the patentee will be considered, except that a motion to dissolve as to the patentee may be brought which is limited to such matters as may be considered at final hearing (section 1.258). Where a motion to dissolve is based on prior art, service on opposing parties must include copies of such prior art.

(2) To amend the issue by addition or substitution of new counts.

(3) To substitute any other application owned by him as to the existing issue, or to include any other application or patent owned by him as to any subject matter other than the existing issue but disclosed in his application or patent involved in the interference and in an opposing party's application or patent in the interference which should be made the basis of interference between himself and such other party. Copies of such other application must be served on all other parties and the motion must be accompanied by proof of such service.

(4) To shift the burden of proof, or to be accorded the benefit of an earlier application which would not change the order of the parties.

(5) To amend an involved application by adding or removing the names of one or more inventors as provided in rule 45.

(b) Each motion must contain a full statement of the grounds therefor and reasoning in support thereof. Any opposition to a motion must be filed within twenty days of the expiration of the time set for filing motions and the moving party may, if he desires, file a reply to such opposition within fifteen days of the date the opposition was filed. If a party files a timely motion to dissolve, any other party may file a motion to amend within twenty days of the expiration of the time set for filing motions. Service on opposing parties of an opposition to a motion to amend which is based on prior art must include copies of such prior art. In the case of action by the primary examiner under section 1.237, such motions may be made within twenty days from the date of the primary examiner's decision on motion wherein such action was incorporated or the date of the communication giving notice to the parties of the proposed dissolution of the interference.

(c) A motion to amend or to substitute another application must be accompanied by an amendment adding the claims in question to the application concerned if such claims are not already in that application.

(d) All proper motions will be transmitted to and considered by the primary examiner without oral argument. Requests for reconsideration will not be entertained.

(e) In the determination of a motion to dissolve an interference between an application and a patent, the prior art of record in the patent file may be referred to for the purpose of construing the issue.

(f) Upon the granting of a motion to amend and the adoption of the claims by the other parties within a time specified, or upon the granting of a motion to substitute another application, and after the expiration of the time for filing any new preliminary statements, a patent interference examiner shall redeclare the interference or shall declare such other interferences as may be necessary to include said claims. A preliminary statement as to the added claims need not be filed if a party states that he intends to rely on the original statement and such a declaration as to added claims need not be signed or sworn to by the inventor in person. A second time for filing motions will not be set and subsequent motions with respect to matters which have been once considered by the primary examiner will not be considered.

Sections 1.232 through 1.236 are cancelled.

Section 1.237 is amended to read as follows:

§ 1.237 *Dissolution at the request of examiner.*

If, during the pendency of an interference a reference or other reason be found which, in the opinion of the primary examiner, renders all or part of the counts unpatentable, the attention of the Board of Patent Interferences shall be called thereto. The interference may be suspended and referred to the primary examiner for consideration of the matter, in which case the parties will be notified of the reason to be considered. Arguments of the parties regarding the matter will be considered if filed within twenty days of the notification. The interference will be continued or dissolved in accordance with the determination by the primary examiner. If such reference or reason be found while the interference is before the primary examiner for determination of a motion, decision thereon may be incorporated in the decision on the motion, but the parties shall be entitled to reconsideration if they have not submitted arguments on the matter.

Section 1.241 is cancelled.

Section 1.243 is amended to read as follows:

§ 1.243 *Motions before the Board of Patent Interferences.*

Motions relating to matters other than those specified in section 1.231 will be determined by a patent interference examiner or the Board of Patent Interferences, as may be deemed appropriate. Such motions shall be made in writing and shall contain a full statement of the action sought and the grounds therefor, and satisfactory proof of any facts required must accompany the motion. Oral hearings will not be held except on order of a patent interference examiner or Board of Patent Interferences. Briefs or memoranda in support of such motions shall accompany the motion. Any reply to the motion, together with any brief or memorandum in support thereof, shall be filed within ten days unless some other date is set by the patent interference examiner.

Paragraph (d) of § 1.244 is amended to read as follows:

§ 1.244 *Motions; miscellaneous provisions.*

* * * * *

(d) There is no appeal from decisions rendered on motions but the Commissioner may consider on petition any matter involving abuse of discretion or the exercise of his supervisory authority, or such other matters as he may deem proper to consider. Any such petition must comply with section 1.181 and, if not filed within twenty days from the decision complained of, may be dismissed as untimely. Any reply thereto must be filed within ten days from the filing of the petition.

Section 1.246 is cancelled.

Section 1.247 is amended to read as follows:

§ 1.247 *Service of papers.*

Every paper filed in the Patent Office in interference proceedings must be served upon the other parties in the manner provided in section 1.248, except the following:

(a) preliminary statements at the time of filing but see section 1.215(b) and (c).

(b) documentary exhibits introduced at the taking of a deposition,

(c) certified transcripts of testimony under section 1.276 (but copies of the record must be served (section 1.253)),

(d) statutory disclaimers under 35 U.S.C. 253. The specification in certain sections that a designated paper must be served does not imply that other papers, not excepted above need not be served. However, the requirement for service of designated papers may be waived under particular circumstances and service may be required of other designated papers which need not ordinarily be served. Proof of such service must be made before the paper will be considered in the interference by the Office. A statement of the attorney, attached to or appearing in the original paper when filed, clearly stating the time and manner in which service was made will be accepted as prima facie proof of service.

Section 1.248 is amended to read as follows:

§ 1.248 *Service of papers; manner of service.*

Service of papers must be on the attorney or agent of the party if there be such or on the party if there is no attorney or agent, and may be made in either of the following ways:

(a) By delivering a copy of the paper to the person served;

(b) by leaving a copy at the usual place of business of the person served with someone in his employment;

(c) when the person served has no usual place of business, by leaving a copy at his residence, with a member of his family over 14 years of age and of discretion;

(d) Transmission by first class mail which may also be certified or registered. When service is by mail the date of mailing will be regarded as the date of service. Whenever it shall be satisfactorily shown to the Commissioner that none of the above modes of obtaining or serving the paper is practicable, service may be by notice published in the Official Gazette.

Paragraph (b) of § 1.251 is amended, and new paragraph (d) is added, as follows:

§ 1.251 *Assignment of times for taking testimony.*

* * * * *

(b) The time for taking testimony will ordinarily be assigned in notices sent to the parties after motions under section 1.231 have been disposed of or, if no such motions have been filed, after the close of the motion period (section 1.231).

* * * * *

(d) The date for final hearing will ordinarily be set in separate notices.

Paragraphs (a), (d) and (f) of section 1.253 are amended to read as follows:

§ 1.253 *Copies of the testimony.*

(a) In addition to the certified transcript of the testimony (sections 1.275 to 1.278), three true copies of the record of each party must be filed for the use of the Patent Office (a total of four copies) and one true copy of the record must be served upon each of the opposing parties.

* * * * *

(d) The copies of the record for all parties must be filed and served on the opposing parties by the date specified in the order setting times for taking testimony or such extension as may be granted.

* * * * *

(f) When the copies of the record are in typewritten form, they must be clearly legible on opaque unglazed, durable paper approximately 8½ by 11 inches in size (letter size) and one of the three copies must be a ribbon copy, but need not be executed by the certifying officer. (The certified transcript may be a properly executed carbon copy. See section 1.277.) The typing shall be on one side of the paper, in not smaller than pica type; and double-spaced with a margin of 1½ inches on the left-hand side of the page. The sheets shall be bound at their left edges, in such manner to lie flat when opened, in a volume or volumes of convenient size (approximately 100 pages per volume is suggested) provided with covers. Multigraphed or otherwise reproduced copies conforming to the standards specified will be accepted.

* * * * *

Section 1.254 is amended to read as follows:

§ 1.254 *Briefs at final hearing.*

Briefs at final hearing before the Board of Patent Interferences shall be submitted in printed form, except that when not in excess of fifty legal-size double spaced typewritten pages, or the equivalent thereof, and in any other case where satisfactory reason therefor is shown, they may be submitted in typewritten form. If submitted in printed form, they shall be the same in size and the same as to page and print as is specified for printed copies of testimony. Typewritten briefs shall conform to the requirements for typewritten copies of testimony, except that legal-size paper may be used and the binding and covers specified are not required. Three copies of each brief must be filed. The times for filing briefs will ordinarily be set in the order setting times for taking testimony.

Paragraphs (a) and (b) of § 1.258 are amended to read as follows:

§ 1.258 *Matters considered in determining priority.*

(a) In determining priority of invention, the Board of Patent Interferences will consider only priority of invention on the evidence submitted. Questions of patentability of a claim generally will not be considered in the decision on priority; and neither will the patentability of a claim to an opponent be considered, unless the nonpatentability of the claim to the opponent will necessarily result in the conclusion that the party raising the question is in fact the prior inventor on the evidence before the Office, or relates to matters which have been determined to be ancillary to priority and must be considered, but a party shall not be entitled to raise such nonpatentability unless he has duly presented a motion for dissolution under section 1.231 upon such ground or shows good reason why such a motion was not presented.

(b) The matters raised on a motion relating to the burden of proof (section 1.231) may be reviewed at final hearing.

* * * * *

Section 1.261 is amended to read as follows:

§ 1.261 *Termination of interference.*

An interference will be terminated by judgment after final hearing (sections 1.251 to 1.259), or by judgment on the record as provided by section 1.225 or section 1.252, or by summary judgment because of an insufficient showing under section 1.204(c) as provided by section 1.228, or by dissolution as provided by sections 1.231 or 1.237, or as otherwise provided.

Paragraph (c) of § 1.272 is amended to read as follows:

§ 1.272 *Manner of taking testimony.*

* * * * *

(c) By agreement of the parties, the testimony of any witness or witnesses of any party, may be submitted in the form of an affidavit by such witness or witnesses. The parties may stipulate what a particular witness would testify to if called, or the facts in the case of any party may be stipulated. When evidence is submitted in one of these forms, four copies of such affidavit or stipulated testimony (section 1.253(a)(f)) are required.

Paragraph (b) of section 1.282 is amended to read as follows:

§ 1.282 *Official records and printed publications.*

* * * * *

(b) In the case of prior applications, the filing date of which is claimed, compliance with the requirements of sections 1.224 and 1.231 is sufficient notice under this section.

The text of § 3.44 (Form 3.44) is revised as follows:

§ 3.44 *Interference; preliminary statement of domestic inventor.*

PRELIMINARY STATEMENT ------------

-------------- v. -------------- Interference No. ------------

-------------- -------------- ss:

------------, being duly sworn (or affirmed), deposes and says that he is a party to the above identified interference,

that he made the invention set forth by the counts of the interference in the United States; that

(1) The first drawing of the invention was (*give specific nature of the drawing*) made on ------------, 19 --. A copy is attached.[1]

(2) The first written description of the invention was in the form of a (*give specific nature of the document*) and was made on ------------, 19 --. A copy is attached.[1]

(3) The invention was first disclosed to others on --------, 19 --, when (*give brief description of circumstances*).[1]

(4) The date of the first act or acts susceptible of proof, other than acts of the character specified in (1), (2), and (3) which, if proven would establish conception of the invention, and a brief description of such act or acts are [e.g. the making of a nonoperating model on ------------, 19 --].

(5) The invention was actually reduced to practice on ------------, 19 -- by (*give brief description of the acts to be relied on*).

(6) Active exercise of reasonable diligence toward reducing the invention to practice began on ------------, 19 -- and comprised (*give brief description of the nature of the activity to be relied on*).[1]

------------------------------------ (Signature of inventor)

Subscribed and sworn to (or affirmed) before me this ------------ day of ------------, 19 --.

[SEAL]

------------------------------------ (Signature of notary public or officer)

------------------------------------ (Official character)

(Sec. 1, 66 Stat. 793, 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved:
WILLIAM W. EATON,
Deputy Assistant Secretary for Science and Technology.

April 30, 1965.

Published in 30 F.R. 6644–6649. May 14, 1965

---

[1] If there was no act corresponding to this allegation prior to the filing date of the application, it must be so stated. Note, however, date of completion of application drawing and specification, date of disclosure to person preparing the application, and diligence in preparing the application.

U.S. GOVERNMENT PRINTING OFFICE : O——1965

OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

MAY

VOL 814

1965

F

MICROFILMED B [illegible]
[illegible]
[illegible]
[illegible]